Criptografía y Seguridad 2022-2 Proyecto 02

Diego Dozal Magnani. No de cuenta: 316032708 José Eduardo González Jasso. No de cuenta: 316093837

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1. whois

```
Domain Name: STEAMGAMES.COM
Registry Domain ID: 109479104_DOMAIN_COM-VRSN
Registrar WHOIS Server: whois.networksolutions.com
Registrar URL: http://networksolutions.com
Updated Date: 2020-11-08T07:09:362
Creation Date: 2024-01-07T16:32:12Z
Registry Expiry Date: 2024-01-07T16:32:12Z
Registry Expiry Date: 2024-01-07T16:32:12Z
Registrar: Network Solutions, LLC
Registrar IANA ID: 2
Registrar Abuse Contact Email: abuse@web.com
Registrar Abuse Contact Phone: +1.8003337680
Domain Status: clientTransferProhibited https://icann.org/epp#clientTransferProhibited
Name Server: A1-164.AKAM.NET
Name Server: A1-66.AKAM.NET
Name Server: A24-64.AKAM.NET
Name Server: A26-65.AKAM.NET
Name Server: A9-67.AKAM.NET
Name Server: A9-67.AKAM.NET
Name Server: A9-67.AKAM.NET
UNSSEC: unsigned
URL of the ICANN Whois Inaccuracy Complaint Form: https://www.icann.org/wicf/
>>> Last update of whois database: 2022-04-27T22:06:55Z <<<
```

2. nslookup

```
iegodm@diegodm-Aspire-A515-54:~/Semestre_2022_2/Criptografia /Proyectos/P_2% nslookup -type=any steamgames Server: 127.0.0.53
Address: 127.0.0.53#53

Non-authoritative answer: a2-64.akam.net. steamgames.com nameserver = a2-64.akam.net. steamgames.com nameserver = a2-64.akam.net. steamgames.com nameserver = a2-64.akam.net. steamgames.com nameserver = a2-65.akam.net. steamgames.com nameserver = a2-67.akam.net. steamgames.com nameserver = a2-67.akam.net. steamgames.com nameserver = a9-65.akam.net. steamgames.com nameserver = a9-65.akam.net. steamgames.com mail exchanger = 10 us-smtp-inbound-1.mimecast.com. steamgames.com mail exchanger = 10 us-smtp-inbound-2.mimecast.com. steamgames.com mail exchanger = 10 us-smtp-inbound-2.mimecast.com. steamgames.com nameserver = a2-65.akam.net. steamgames.com nameserver = a2-65.akam.net. steamgames.com nameserver = a2-65.akam.net. steamgames.com nameserver = a9-65.akam.net. steamgames.com nameserver = a2-67.akam.net. steamgames.com nameserver nameserver
```

3. traceroute

```
diegodm@diegodm-Aspire-A515-54:~$ traceroute facebook.com
traceroute to facebook.com (31.13.89.35), 30 hops max, 60 byte packets
1 10.4.255.254 (10.4.255.254) 6.811 ms 6.682 ms 6.616 ms
2 132.248.166.6 (132.248.166.6) 6.562 ms 6.509 ms 6.578 ms
3 1010-dgtic.redunam.unam.mx (132.247.237.1) 17.503 ms 17.452 ms 17.399 ms
4 132.247.254.14 (132.247.254.14) 6.247 ms 6.191 ms 6.131 ms
5 fixed-187-188-69-125.totalplay.net (187.188.69.125) 17.448 ms 17.390 ms 13.608 ms
6 * * *
7 * * *
8 ae19.pr04.gro1.tfbnw.net (157.240.65.56) 43.608 ms 43.574 ms 43.540 ms
9 po104.psw01.gro1.tfbnw.net (157.240.51.5) 43.505 ms 16.059 ms po104.psw03.gro1.tfbnw.net (157.240.51.9) 15.975 ms
10 157.240.38.195 (157.240.38.195) 15.934 ms 173.252.67.33 (173.252.67.33) 15.899 ms 157.240.38.69 (157.240.38.69) 1
11 edge-star-mini-shv-01-gro1.facebook.com (31.13.89.35) 15.828 ms 16.753 ms 16.634 ms
diegodm@diegodm-Aspire-A515-54:~$
```

diegodm@diegodm-Aspire-A515-54:~\$ nslookup 31.13.89.35
35.89.13.31.in-addr.arpa name = edge-star-mini-shv-01-qro1.facebook.com.
Authoritative answers can be found from:

4. nmap

1.

```
root@pepper:~# nmap 172.30.96.1
Starting Nmap 7.80 ( https://nmap.org ) at 2022-05-04 22:07 CDT
Nmap scan report for pepper.mshome.net (172.30.96.1)
Host is up (0.00060s latency).
Not shown: 999 filtered ports
PORT STATE SERVICE
3306/tcp open mysql
MAC Address: 00:15:5D:27:68:9F (Microsoft)

Nmap done: 1 IP address (1 host up) scanned in 4.63 seconds
```

2 .

```
root@pepper:~# nmap -sS 172.30.96.1
Starting Nmap 7.80 ( https://nmap.org ) at 2022-05-04 22:08 CDT
Nmap scan report for pepper.mshome.net (172.30.96.1)
Host is up (0.00060s latency).
Not shown: 999 filtered ports
PORT STATE SERVICE
3306/tcp open mysql
MAC Address: 00:15:5D:27:68:9F (Microsoft)
```

3 .

```
root@pepper:~# nmap -sU 172.30.96.1
Starting Nmap 7.80 ( https://nmap.org ) at 2022-05-04 22:09 CDT
Nmap scan report for pepper.mshome.net (172.30.96.1)
Host is up (0.00031s latency).
All 1000 scanned ports on pepper.mshome.net (172.30.96.1) are open|filtered
MAC Address: 00:15:5D:27:68:9F (Microsoft)

Nmap done: 1 IP address (1 host up) scanned in 21.51 seconds
```

4 .

```
root@pepper:~# nmap -0 172.30.96.1
Starting Nmap 7.80 ( https://nmap.org ) at 2022-05-04 22:13 CDT
Nmap scan report for pepper.mshome.net (172.30.96.1)
Host is up (0.00064s latency).
Not shown: 999 filtered ports
PORT STATE SERVICE
3306/tcp open mysql
MAC Address: 00:15:50:27:68:9F (Microsoft)
Warning: OSScan results may be unreliable because we could not find at least 1 open and 1 closed port
Device type: general purpose|firewall|router
Running (JUST GUESSING): FreeBSD 6.X (95%), Microsoft Windows 10|2008 (93%), Juniper JUNOS 12.X|9.X|10.X (86%)
OS CPE: cpe:/o:freebsd:freebsd:6.2 cpe:/o:microsoft:windows_lo cpe:/o:microsoft:windows_server_2008::beta3 cpe:/o:microsoft:windows_server_2008::beta3 cpe:/o:microsoft:windows_server_2008 cpe:/o:freebsd:freebsd:6.3 cpe:/o:juniper:junos:12.1 cpe:/o:juniper:junos:9.07.10 cpe:/o:juniper:junos:10
Aggressive OS guesses: FreeBSD 6.2-RELEASE (95%), Microsoft Windows 10 (93%), Microsoft Windows Server 2008 or 2008 Beta 3 (91
%), Microsoft Windows Server 2008 SP1 (87%), monowall 1.3b11 - 1.3b15 (FreeBSD 6.3) (86%), Juniper SRX-series firewall (JUNOS 12.1) (86%), Juniper SRX100-series or SRX200-series firewall (JUNOS 10.4 - 12.1) (85%)
No exact OS matches for host (test conditions non-ideal).
Network Distance: 1 hop

OS detection performed. Please report any incorrect results at https://nmap.org/submit/.
Nmap done: 1 IP address (1 host up) scanned in 9.51 seconds
```

5.

```
root@pepper:~# nmap -sV 172.30.96.1
Starting Nmap 7.80 ( https://nmap.org ) at 2022-05-04 22:22 CDT
Nmap scan report for pepper.mshome.net (172.30.96.1)
Host is up (0.000856 latency).
Not shown: 999 filtered ports
PORT STATE SERVICE VERSION
3306/tcp open mysql MySQL (unauthorized)
MAC Address: 00:15:5D:27:68:9F (Microsoft)

Service detection performed. Please report any incorrect results at https://nmap.org/submit/.
Nmap done: 1 IP address (1 host up) scanned in 5.81 seconds
```

6.

```
root@pepper:~# nmap -sA 172.30.96.1
Starting Nmap 7.80 ( https://nmap.org ) at 2022-05-04 22:41 CDT
Nmap scan report for pepper.mshome.net (172.30.96.1)
Host is up (0.00038s latency).
All 1000 scanned ports on pepper.mshome.net (172.30.96.1) are filtered
MAC Address: 00:15:5D:27:68:9F (Microsoft)

Nmap done: 1 IP address (1 host up) scanned in 21.52 seconds
```

• auth. Estos scripts se ocupan de las credenciales de autenticación en el sistema de destino como: x11-access, ftp-anon y oracle-enum-users.

```
root@pepper:~# nmap 172.30.96.1 --script=auth
Starting Nmap 7.80 ( https://nmap.org ) at 2022-05-04 23:14 CDT
Nmap scan report for pepper.mshome.net (172.30.96.1)
Host is up (0.00061s latency).
Not shown: 999 filtered ports
PORT STATE SERVICE
3306/tcp open mysql
|_mysql-empty-password: Host '172.30.102.254' is not allowed to connect to this MySQL server
MAC Address: 00:15:50:27:68:9F (Microsoft)
Nmap done: 1 IP address (1 host up) scanned in 5.62 seconds
```

• broadcast. Los scripts de esta categoría normalmente detectan hosts que no aparecen en la línea de comandos mediante la difusión en la red local.

```
root@pepper:-# nmap 172.30.96.1 --script=broadcast
Starting Nmap 7.80 ( https://nmap.org ) at 2022-05-04 23:17 CDT
too short
Pre-scan script results:
| broadcast-igmp-discovery:
| 172.30.96.1
| Interface: eth0
| Version: 2
| Group: 224.0.251
| Description: mONS (rfc6762)
| Description: mONS (rfc6762)
| Use the newtargets script-arg to add the results as targets
| broadcast-listener:
| ether
| udp
| Leap-info: please specify an interface with -e
| ipv6-multicast-mld-list:
| fe80::c2b:lac6:e5d2:f360:
| device: eth0
| mac: 08:15:5d:27:68:9f
| multicast_ips:
| ff02::iffd2:f360 (NDP Solicited-node)
| ff02::c
| ff02::iff6e:ad6a (Solicited-Node Address)
| targets-ipv6-multicast-mld:
| rj fe80::c2b:lac6:e5d2:f360 MAC: 00:15:5d:27:68:9f IFACE: eth0
| lp: fe80::c2b:lac6:e5d2:f360 MAC: 00:15:5d:27:68:9f IFACE: eth0
```

• brute. Estos scripts se utilizan en ataques de fuerza bruta para adivinar las credenciales de autenticación de un servidor remoto.

```
root@pepper:~# nmap 172.30.96.1 --script=brute
Starting Nmap 7.80 ( https://nmap.org ) at 2022-05-04 23:21 CDT
Nmap scan report for pepper.mshome.net (172.30.96.1)
Host is up (0.00657s latency).
Not shown: 999 filtered ports
PORT STATE SERVICE
3306/tcp open mysql
| mysql-brute:
| Accounts: No valid accounts found
| Statistics: Performed 50009 guesses in 12 seconds, average tps: 4167.4
| mysql-enum:
| Accounts: No valid accounts found
| Statistics: Performed 10 guesses in 1 seconds, average tps: 10.0
MAC Address: 00:15:50:27:68:9F (Microsoft)

Nmap done: 1 IP address (1 host up) scanned in 18.11 seconds
```

• default. Son el conjunto predeterminado de scripts y se ejecutan cuando se usan las opciones -sC o -A en lugar de enumerar los scripts con la bandera -script. Para ser ejecutados se toman en cuenta diversos factores como: velocidad, utilidad, verbosidad, fiabilidad, intrusividad y privacidad.

```
root@pepper:~# nmap 172.30.96.1 --script=default
Starting Nmap 7.80 ( https://nmap.org ) at 2022-05-04 23:22 CDT
Nmap scan report for pepper.mshome.net (172.30.96.1)
Host is up (0.00051s latency).
Not shown: 999 filtered ports
PORT STATE SERVICE
3306/tcp open mysql
MAC Address: 00:15:5D:27:68:9F (Microsoft)
Nmap done: 1 IP address (1 host up) scanned in 6.95 seconds
```

 discovery. Estos scripts intentan descubrir activamente más sobre la red consultando registros públicos, dispositivos habilitados para SNMP, servicios de directorio y similares.

```
roofspoper-of-mass 177.38.06.1 — recripted seconds

roofs of the particles of the particles
```

• dos. Los scripts de esta categoría pueden provocar una denegación de servicio. A veces, esto se hace para probar la vulnerabilidad a un método de denegación de servicio, pero más comúnmente es un efecto secundario no deseado por necesidad de probar una vulnerabilidad tradicional. Estas pruebas a veces bloquean servicios vulnerables.

```
root@pepper:~# nmap 172.30.96.1 --script=dos
Starting Nmap 7.80 ( https://nmap.org ) at 2022-05-04 23:27 CDT
Nmap scan report for pepper.mshome.net (172.30.96.1)
Host is up (0.000055s latency).
Not shown: 999 filtered ports
PORT STATE SERVICE
3306/tcp open mysql
MAC Address: 00:15:5D:27:68:9F (Microsoft)
Nmap done: 1 IP address (1 host up) scanned in 15.03 seconds
```

• exploit. Estos scripts tienen como objetivo explotar activamente alguna vulnerabilidad.

```
root@pepper: # mmap 172.30.96.1 --script-exploit
Starting Nmap 7.80 ( https://nmap.org ) at 2022-05-04 23:33 CDT
Nmap scan report for pepper.mshome.net (172.30.96.1)
Host is up (0.00047s latency).
Not shown: 999 filtered ports
PORT STATE SERVICE
3306/tcp open mysql
__clamav-exec: ERROR: Script execution failed (use -d to debug)
MAC Address: 00:15:5D:27:68:9F (Microsoft)

Nmap done: 1 IP address (1 host up) scanned in 5.09 seconds
```

• external. Los scripts de esta categoría pueden enviar datos a una base de datos de terceros u otro recurso de red. Siempre existe la posibilidad de que los operadores de la base de datos de terceros registren cualquier cosa que les envíe, que en muchos casos incluirá su dirección IP y la dirección del

objetivo. La mayoría de los scripts involucran tráfico estrictamente entre la computadora de escaneo y el cliente; cualquiera que no se coloca en esta categoría.

• fuzzer. Esta categoría contiene scripts que están diseñados para enviar al software del servidor campos aleatorios o inesperados en cada paquete. Si bien esta técnica puede ser útil para encontrar errores y vulnerabilidades no descubiertos en el software, es un proceso lento y requiere mucho ancho de banda.

```
root@pepper:~# nmap 172.30.96.1 --script=fuzzer
Starting Nmap 7.80 ( https://nmap.org ) at 2022-05-04 23:36 CDT
Nmap scan report for pepper:mshome.net (172.30.96.1)
Host is up (0.00045s latency).
Not shown: 999 filtered ports
PORT STATE SERVICE
3306/tcp open mysql
MAC Address: 00:15:5D:27:68:9F (Microsoft)
Nmap done: 1 IP address (1 host up) scanned in 4.79 seconds
```

• intrusive. Estos son scripts que no se pueden clasificar en la categoría segura porque los riesgos son demasiado altos de que bloqueen el sistema de destino, consuman recursos significativos en el host de destino (como el ancho de banda o el tiempo de CPU) o que el sistema los perciba como maliciosos. administradores del sistema de destino.

```
root@pepper:"# nmap 172.30.96.1 --script=intrusive
Starting Nmap 7.80 ( https://nmap.org ) at 2022-05-04 23:36 CDT
Nmap scan report for pepper.mshome.net (172.30.96.1)
Host is up (0.00035s latency).
Not shown: 909 filtered ports
PORT STATE SERVICE
3306/tcp open mysql
mysql-prute:
Accounts: No valid accounts found
Statistics: Performed 50009 guesses in 19 seconds, average tps: 2632.1
mysql-empty-password: Host '172.30.102.254' is not allowed to connect to this MySQL server
mysql-enum:
Accounts: No valid accounts found
Statistics: Performed 10 guesses in 1 seconds, average tps: 10.0
mysql-enum:
Accounts: No valid accounts found
Accounts: No valid accounts found
MAC Address: 00:15:50:27:68:9F (Microsoft)
Host script results:
dns-brute:
DNS Brute-force hostnames:
www.mshome.net - 104.215.95.107
www.mshome.net - 52.164.206.56
mysmlp done: 1 IP address (1 host up) scanned in 34.20 seconds
```

• malware . Estos scripts prueban si la plataforma de destino está infectada por malware o puertas traseras. Los ejemplos incluyen smtp-strangeport, que busca servidores SMTP que se ejecutan en números de puerto inusuales, y auth-spoof, que detecta demonios de suplantación de identidad que brindan una respuesta falsa incluso antes de recibir una consulta. Ambos comportamientos se asocian comúnmente con infecciones de malware.

```
root@pepper:~# nmap 172.30.96.1 —-script=malware
Starting Nmap 7.80 ( https://nmap.org ) at 2022-05-04 23:37 CDT
Nmap scan report for pepper.mshome.net (172.30.96.1)
Host is up (0.000946s latency).
Not shown: 999 filtered ports
PORT STATE SERVICE
3306/tcp open mysql
MAC Address: 00:15:5D:27:68:9F (Microsoft)
Nmap done: 1 IP address (1 host up) scanned in 17.98 seconds
```

• safe . Los scripts que no fueron diseñados para bloquear servicios, usar grandes cantidades de ancho de banda de la red u otros recursos, o explotar agujeros de seguridad se clasifican como seguros. Es menos probable que ofendan a los administradores remotos, aunque (al igual que con todas las demás funciones de Nmap) no podemos garantizar que nunca causen reacciones adversas. La mayoría de estos realizan un descubrimiento de red general.

• version . Los scripts de esta categoría especial son una extensión de la función de detección de versiones y no se pueden seleccionar de forma explícita. Se seleccionan para ejecutarse solo si se solicitó la detección de versión (-sV). Su salida no se puede distinguir de la salida de detección de versión y no producen resultados de script de host o servicio.

```
root@pepper:~# nmap 172.30.96.1 --script=version
starting Nmap 7.80 ( https://nmap.org ) at 2022-05-04 23:40 CDT
Nmap scan report for pepper.mshome.net (172.30.96.1)
Host is up (0.00032s latency).
Not shown: 999 filtered ports
PORT STATE SERVICE
3386/tcp open mysql
MAC Address: 00:15:5D:27:68:9F (Microsoft)
Nmap done: 1 IP address (1 host up) scanned in 5.29 seconds
```

• vuln . Estos scripts verifican vulnerabilidades específicas conocidas y, en general, solo informan los resultados si se encuentran.

```
root@pepper:~# nmap 172.30.96.1 --script=vuln
Starting Nmap 7.80 ( https://nmap.org ) at 2022-05-04 23:42 CDT
Nmap Scan report for pepper.mshome.net (172.30.96.1)
Host is up (0.00042s latency).
Not shown: 999 filtered ports
PORT STATE SERVICE
3306/tcp open mysql
|_clamav-exec: ERROR: Script execution failed (use -d to debug)
|_clwsql-vuln-cve2012-2122: ERROR: Script execution failed (use -d to debug)
MRAC Address: 00:15:50:27:68:9F (Microsoft)

Nmao done: 1 IP address (1 host up) scanned in 15.83 seconds
```

8 . Exploit (del inglés exploit, "explotar" o 'aprovechar') es un fragmento de software, fragmento de datos o secuencia de comandos y/o acciones, utilizada con el fin de aprovechar una vulnerabilidad de seguridad de un sistema de información para conseguir un comportamiento no deseado del mismo. En la captura del punto 5 podemos observar que el único puerto disponible y que además está abierto es el 3306, por el cual accedemos al servicio de mysql. Un posible Exploit podría ser habilitar la conexción remota con el ordenador y controlar mysql.