Global Information Assurance Certification Paper

Intrusion Detection In Depth

GCIA Practical Assignment

Version 2.9

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Assignment 1 -- Detects

Network Trace Analysis Section

Analysis # 1: SYN Flood Denial Of Service Attack

This data was captured on March 20, 2001 and covers the entire 24-hour period. This traffic is the result of a third-party effect. The data was run through TCPDUMP filtering the data to select only traffic involving host victim.host.cn. I have removed several of the records for the sake of brevity. Also, the source and destination IP addresses have been sanitized to protect the identity of the networks involved. The TCPDUMP data used for this analysis was generated by TCPDUMP version 3.4 with LIBPCAP version 0.4.

[hostname]# gunzip –c raw.tcpdump.file.gz |tcpdump –r - -nv host victim.host.cn

```
00:00:05.325495 victim.host.cn.19713 > CCC.DDD.66.50.26477: R 0:0(0) ack
357306772 win 0
00:00:05.851129 victim.host.cn.62401 > CCC.DDD.92.61.25897: R 0:0(0) ack
1586197602 win 0
00:00:13.862514 victim.host.cn.18688 > AAA.BBB.178.112.10721: R 0:0(0) ack
282119840 win 0
00:00:15.734722 victim.host.cn.26716 > AAA.BBB.239.62.59408: R 0:0(0) ack
1922412476 win 0
…….
00:01:01.753200 victim.host.cn.60548 > AAA.BBB.116.116.36724: R 0:0(0) ack
1253424384 win 0
00:01:05.021322 victim.host.cn.19214 > EEE.FFF.244.228.22705: R 0:0(0) ack
626599357 win 0
00:01:08.388103 victim.host.cn.62401 > CCC.DDD.156.189.27305: R 0:0(0) ack
287514210 win 0
……
00:02:05.619106 victim.host.cn.26774 > CCC.DDD.183.250.30085: R 0:0(0) ack
829011917 win 0
00:02:14.554244 victim.host.cn.42214 > AAA.BBB.84.195.45931: R 0:0(0) ack
1073833603 win 0
……
00:03:00.357609 victim.host.cn.25697 > AAA.BBB.51.7.40504: R 0:0(0) ack
1727698954 win 0
00:03:01.407003 victim.host.cn.50006 > AAA.BBB.183.188.9594: R 0:0(0) ack 1 win
0
00:03:07.953575 victim.host.cn.37952 > AAA.BBB.149.149.48845: R 0:0(0) ack
108292992 win 0
……..
00:04:02.411061 victim.host.cn.41772 > AAA.BBB.104.139.41364: R 0:0(0) ack
1273292517 win 0
00:04:08.837816 victim.host.cn.36687 > CCC.DDD.195.115.28655: R 0:0(0) ack
963576653 win 0
…….
00:51:10.972132 victim.host.cn.30827 > CCC.DDD.23.66.23019: R 0:0(0) ack
1407776676 win 0
00:51:13.053044 victim.host.cn.46217 > AAA.BBB.109.39.47773: R 0:0(0) ack
1392838048 win 0
…….
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```
01:00:00.356280 victim.host.cn.56930 > AAA.BBB.76.25.63384: R 0:0(0) ack
899064475 win 0
01:00:00.426227 victim.host.cn.57983 > GGG.HHH.111.222.53302: R 0:0(0) ack
752413067 win 0
01:00:04.174352 victim.host.cn.44080 > CCC.DDD.248.11.54382: R 0:0(0) ack
99130774 win 0
01:00:06.445800 victim.host.cn.13335 > CCC.DDD.178.98.58355: R 0:0(0) ack
1817842886 win 0
01:02:13.263338 victim.host.cn.51975 > CCC.DDD.237.81.57875: R 0:0(0) ack
1750046609 win 0
…….
01:24:26.444701 victim.host.cn.16972 > AAA.BBB.116.166.62904: R 0:0(0) ack
1839348423 win 0
01:24:26.816313 victim.host.cn.3510 > AAA.BBB.3.242.40891: R 0:0(0) ack
1524783358 win 0
01:24:27.904057 victim.host.cn.15962 > AAA.BBB.86.247.27588: R 0:0(0) ack
1817261562 win 0

01:48:59.593073 victim.host.cn.10464 > AAA.BBB.123.21.4205: R 0:0(0) ack
832170616 win 0
01:48:59.880870 victim.host.cn.50406 > AAA.BBB.236.172.17585: R 0:0(0) ack
240691700 win 0
01:49:02.914503 victim.host.cn.61732 > AAA.BBB.82.119.29422: R 0:0(0) ack
1867708312 win 0
01:49:03.441769 victim.host.cn.11127 > CCC.DDD.84.29.64269: R 0:0(0) ack
1018786354 win 0
01:49:03.457132 victim.host.cn.11851 > AAA.BBB.8.33.50564: R 0:0(0) ack
1599283551 win 0
…….
02:02:26.289329 victim.host.cn.46188 > CCC.DDD.152.108.35864: R 0:0(0) ack
1482632657 win 0
02:02:30.229635 victim.host.cn.2189 > CCC.DDD.113.174.33753: R 0:0(0) ack
1908287399 win 0
02:02:31.468289 victim.host.cn.50609 > AAA.BBB.163.224.43036: R 0:0(0) ack
147706525 win 0
02:02:32.785544 victim.host.cn.50178 > CCC.DDD.33.17.45895: R 0:0(0) ack
439205749 win 0
02:02:40.545441 victim.host.cn.39504 > AAA.BBB.173.207.39593: R 0:0(0) ack
657203863 win 0
…….
03:12:06.598617 victim.host.cn.50178 > CCC.DDD.33.81.33671: R 0:0(0) ack
930100661 win 0
03:12:09.372545 victim.host.cn.8992 > AAA.BBB.179.231.39733: R 0:0(0) ack
643403437 win 0
03:12:09.480322 victim.host.cn.51858 > AAA.BBB.4.128.16154: R 0:0(0) ack
1536003191 win 0
…….
04:13:46.066229 victim.host.cn.10908 > AAA.BBB.201.112.1963: R 0:0(0) ack
2139268837 win 0
04:13:47.286671 victim.host.cn.5191 > AAA.BBB.173.132.7113: R 0:0(0) ack
1030938308 win 0
04:13:50.136495 victim.host.cn.57372 > CCC.DDD.132.6.31033: R 0:0(0) ack
1749983189 win 0
04:13:51.719852 victim.host.cn.19545 > CCC.DDD.69.46.42800: R 0:0(0) ack
1978999831 win 0
04:13:56.880441 victim.host.cn.39098 > CCC.DDD.112.109.28158: R 0:0(0) ack
1486823943 win
……..
08:12:10.997507 victim.host.cn.7019 > AAA.BBB.92.254.17658: R 0:0(0) ack
1415199347 win 0
08:12:13.733272 victim.host.cn.3041 > AAA.BBB.80.116.35758: R 0:0(0) ack
1830311388 win 0
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08:12:14.254762 victim.host.cn.10617 > CCC.DDD.50.63.33879: R 0:0(0) ack
77120912 win 0
…….
22:56:35.643333 victim.host.cn.30388 > CCC.DDD.119.68.36761: R 0:0(0) ack
1813517330 win 0
22:56:35.734460 victim.host.cn.35200 > CCC.DDD.50.124.11161: R 0:0(0) ack
1773167938 win 0
22:56:36.102244 victim.host.cn.7019 > AAA.BBB.220.126.50554: R 0:0(0) ack
395057139 win 0
22:56:38.557208 victim.host.cn.44643 > AAA.BBB.222.190.39866: R 0:0(0) ack 1
win 0
22:56:39.242390 victim.host.cn.63269 > CCC.DDD.177.39.4137: R 0:0(0) ack
1947117272 win 0
……..
23:00:08.357919 victim.host.cn.2350 > CCC.DDD.73.217.31491: R 0:0(0) ack
724731909 win 0
23:00:11.232469 victim.host.cn.45214 > CCC.DDD.188.226.10278: R 0:0(0) ack
329880662 win 0
23:00:12.866921 victim.host.cn.43964 > AAA.BBB.195.106.3481: R 0:0(0) ack
207366747 win 0
……..
23:58:26.186701 victim.host.cn.10464 > AAA.BBB.123.21.2157: R 0:0(0) ack
1623541880 win 0
23:58:26.642481 victim.host.cn.29263 > CCC.DDD.109.131.44953: R 0:0(0) ack
1588985544 win 0
23:58:27.323237 victim.host.cn.31090 > CCC.DDD.18.109.17148: R 0:0(0) ack
1244601211 win 0
……..
23:59:54.506025 victim.host.cn.60373 > CCC.DDD.192.184.43161: R 0:0(0) ack
733593374 win 0
```

1. Source of Trace:
This trace data came from a network that I monitor as a part of my professional duties as a Network Security Analyst.

2. Detect was generated by:
The attack was detected using Shadow, the IDS system written by the Naval Surface Warfare Center (NSWC). It can be downloaded at no cost from http://nswc.navy.mil/ISSEC/CID. This detect was triggered because victim.host.cn sent several hundred packets to multiple hosts in our network within a 1 hour period. Shadow has been configured to list all hosts with IP addresses outside of our security domain which make excessive one-to-many connections during 1 hour. The TCPDUMP utility with a specific host filter was used against 24 hours of data captured by Shadow to gather additional information.

3. Probability the source address was spoofed:
The probability that the source address shown in this trace is spoofed is very unlikely. However, keep in mind this is the address of the victim of the attack not the perpetrator. The reset packets directed at our network are coming from the victim to us. The fact that the inbound traffic are RST-ACK packets further verifies that our addresses were spoofed in the original attack.

4. Description of the Attack

The data in this trace indicates a SYN flood denial of service (DoS) attack was launched against victim.host.cn using spoofed address from several of our networks. Each of our spoofed addresses was used to send several packets to the victim. This raises the issue that the hostile party has done some prior reconnaissance of our address space and collected a list of valid IP addresses which he is now using to attack another host. The traffic was dispersed such that the resulting reset packets had no negative impact on the hosts on our network; however this does suggest that our addresses were interleaved with addresses from other networks to launch the attack against victim.com.cn.

The use of spoofed addresses in this type of attack is common because the perpetrator is not interested in receiving the packet responses. DoS attacks are used to adversely affect system availability by abusing network resources such as bandwidth and system resources such as memory and processing cycles sometimes leading to system crashes. Disruptions of this type can cause major problems to organizations that rely on the availability of their systems to support mission critical processes.

5. Attack mechanism:

The goal of DoS attacks are to deny something from users or other machines/processes. This type of attack can be accomplished several ways. In this particular instance, SYN packets were directed at the victim looking for high numbered TCP ports. The destination ports were not available on the victim host; thus causing the generation of thousands of RST-ACK packets. TCP is a connection oriented protocol. It uses a mechanism called the 3-way handshake to establish sessions between hosts. During normal session establishment a SYN packet flows from the client to the server. The source port of the client is an ephemeral port and the destination port on the server is one of the well known TCP/IP service ports that is "listening" on the server machine. The server then places the connection in SYN_RECV state and sends a SYN/ACK packet back to the client. The client responds with an ACK packet and the connection is established (see diagram1).

SYN floods are used to prevent the victim from responding to legitimate session requests by overwhelming it with large volumes of mutant packets. Since TCP is a stateful protocol, system memory is required to track the status of each connection. When the victim is flooded with incomplete connections its memory is depleted leaving none for handling other processes.[1] There are several ways to interrupt the normal connection establishment data flow. The method used in this attack was as follows. The hostile host originating the attack crafted several thousand SYN packets with spoofed source IP addresses and directed them to high numbered TCP ports that were not "listening" on victim.host.cn. The victim machine responded with reset packets directed at the spoofed IP addresses (see diagram 2). The source of the stimulus is unknown and was not captured in the trace.

The SYN flood attack has been around for a long time, in fact it was one of the exploits Kevin Mitnick used in his famous Mitnick Attack. (A very good explanation of his attack is included in "Network Intrusion Detection An Analyst's Handbook 2nd Edition").

[1] Intrusion Signatures and Analysis

A very good write-up describing SYN flooding can be found on the Internet at http://www.niksula.cs.hut.fi/~dforsber/synflood/result.html.

6. Correlations:
This traffic was not captured by any other tool because it consisted of single reset packets directed at valid IP addresses and the source host was not filtered at the network perimeter by the router ACL. An informative explanation of DoS attacks is documented in chapter 11 of "Hacking Exposed Network Security Secrets and Solutions" by Stuart McClure, Joel Scambray, and George Kurtz.

7. Evidence of active targeting:
This was a targeted attack; however it was not targeted at us. The intended target was victim.host.cn. The traffic we saw on our network was the result of the spoofing of our IP addresses.

8. Severity:
(Criticality + Lethality) – (System Countermeasure + Network Countermeasures)
(1 +1) – (1+1) = 0
Criticality = 1 (No critical systems in our network were affected by the attack)
Lethality = 1 (There was no adverse effect on the hosts owning the spoofed addresses)
System Countermeasure = 1 (No host countermeasures were in place to prevent this type of attack)
Network Countermeasure = 1 (No network filters were in place to block this activity from entering our network)

9. Defensive recommendations:

Our network:

- If the volume of traffic is such that it has the potential to negatively impact our network block inbound traffic from victim.host.cn

Victim network:

- Adjust the timeout value for the maximum number of incomplete connections on the firewall. (This may not have helped in this case because the stream of traffic was constant for 24 hours.)

Victim host:

- Depending on which venders IP stack is used, consider increasing the size of the connection queue allowing the system administrator more time to respond to an attack by blocking the flow of inbound traffic at the network perimeter. This approach will affect the system performance; however, it may prevent a total system lockout.
- Disable all unnecessary services.
- Ensure all patches are current.

10. Multiple choice test question:
How can you identify the originating IP of a SYN flood attack when spoofed source addresses are used?

A. View router logs for the perimeter gateway looking for incoming traffic.
B. Use TCPDUMP output filtering for the source IP.
C. The originating IP cannot be determined.

The correct answer is C. The IP of the hostile machine that originated the attack can't be determined because the IP header has been crafted replacing the actual source IP with a spoofed address in the packets directed at the victim and the source IP address in the resulting reset packets are that of the victim.

3-WAY Handshake

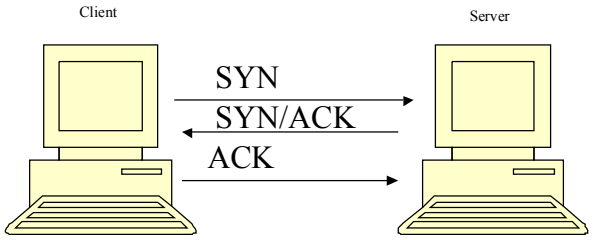

Diagram 1

SYN Flood Attack

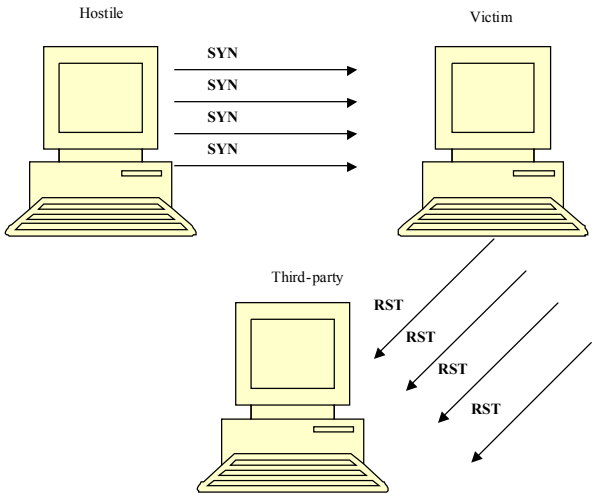

Diagram 2

Analysis 2 – Anomalous Traffic

I received this log of interesting traffic from an outside source requesting any insight I might have on what's happening. Here is the story, about once a month he sees numerous IP addresses that do SYN packets. The source and destination ports are normally high. They hit one IP address and leave. The activity usually only lasts one hour. If the source addresses are spoofed IP's, sending one packet to different systems does not accomplish anything. To many to be 'wrong addresses'. The IP addresses are foreign and domestic and some IANA Reserve. Can't be network mapping because any returns would go to the
real IP address holder.

14:33:15.249635 3.148.231.60.42711 > CCC.DDD.166.62.64656: S 1526567552:1526567552(0) win 1024
14:32:11.080174 7.14.211.44.29428 > XXX.YY.62.37.35462: S 204837356:204837356(0) win 1024
14:32:39.382679 8.190.221.14.16226 > AAA.BBB.90.49.57588: S 256851244:256851244(0) win 1024
14:35:33.251319 12.28.52.57.63955 > XXX.YY.44.92.24133: S 937855224:937855224(0) win 1024
14:32:56.010195 16.59.125.32.59249 > XXX.YY.37.30.26870: S 1861900171:1861900171(0) win 1024
14:34:13.934264 22.30.155.83.28283 > XXX.YY.101.8.6913: S 1095217197:1095217197(0) win 1024
14:32:20.540907 24.107.222.114.50841 > XXX.YY.86.110.54123: S 983128279:983128279(0) win 1024
14:35:27.896478 26.91.203.63.38771 > AAA.BBB.118.3.10880: S 525044744:525044744(0) win 1024
14:34:11.312196 32.73.129.10.773 > AAA.BBB.175.19.9735: S 1615895680:1615895680(0) win 1024
14:32:51.569994 32.123.160.90.55377 > XXX.YY.38.48.37264: S 1199012467:1199012467(0) win 1024
14:32:55.752094 34.168.52.11.18309 > XXX.YY.175.70.4707: S 1151188750:1151188750(0) win 1024
14:34:21.570973 35.147.238.7.47388 > XXX.YY.61.113.16841: S 1575498373:1575498373(0) win 1024
14:33:46.922766 38.106.51.20.13027 > XXX.YY.67.109.41670: S 1371042277:1371042277(0) win 1024
14:33:07.819816 41.119.199.23.29727 > XXX.YY.94.83.59235: S 1317679216:1317679216(0) win 1024
14:33:44.417406 43.216.194.93.51062 > XXX.YY.135.119.56630: S 1149496258:1149496258(0) win 1024
14:34:40.727891 49.125.4.53.33872 > XXX.YY.237.92.53910: S 1460596383:1460596383(0) win 1024
14:34:06.428514 50.34.157.1.38442 > AAA.BBB.204.113.51759: S 1910481752:1910481752(0) win 1024
14:34:39.352351 51.18.55.85.64261 > AAA.BBB.24.6.20306: S 73460914:734360914(0) win 1024
14:35:38.650546 54.115.91.12.6242 > AAA.BBB.227.55.9728: S 164768688:164768688(0) win 1024
14:35:38.651863 AAA.BBB.227.55.9728 > 54.115.91.12.6242: R 0:0(0) ack 164768689 win 0
14:34:51.997920 55.27.198.126.34045 > XXX.YY.47.76.55696: S 2009337647:2009337647(0) win 1024
14:32:30.599332 57.103.63.25.20453 > XXX.YY.111.69.10555: S 824037845:824037845(0) win 1024
14:32:33.184008 57.160.135.109.48086 > XXX.YY.136.20.52689: S 679633043:679633043(0) win 1024
14:32:47.840911 58.60.214.0.378 > CCC.DDD.164.46.25654: S 1996930868:1996930868(0) win 1024
14:33:57.741949 65.24.89.124.34750 > XXX.YY.202.49.54213: S 1253658434:1253658434(0) win 1024
14:33:27.437396 66.79.31.19.49704 > AAA.BBB.249.66.13602: S 1715773102:1715773102(0) win 1024
14:34:32.364184 70.6.143.88.62441 > XXX.YY.81.92.16051: S 1623331044:1623331044(0) win 1024
14:34:11.555179 73.31.28.126.50081 > CCC.DDD.206.106.32785: S 1853267591:1853267591(0) win 1024
14:32:19.485187 74.103.223.57.32901 > XXX.YY.173.11.46697: S 1525437335:1525437335(0) win 1024
14:33:17.936974 75.117.46.27.65369 > AAA.BBB.240.127.16547: S 1732579195:1732579195(0) win 1024
14:32:17.013089 76.243.131.51.24117 > XXX.YY.6.30.29504: S 667284403:667284403(0) win 1024
14:35:30.656537 77.157.11.1.12848 > XXX.YY.243.7.35863: S 192317861:192317861(0) win 1024
14:33:04.311999 78.214.16.9.8246 > XXX.YY.156.57.47151: S 105826935:105826935(0) win 1024
14:35:06.369071 80.202.35.109.2470 > XXX.YY.118.122.59744: S 1179661663:1179661663(0) win 1024
14:35:45.537142 85.91.248.2.34007 > CCC.DDD.40.44.5622: S 495259465:495259465(0) win 1024
14:33:06.418976 94.188.195.49.24848 > XXX.YY.65.104.52799: S 564023861:564023861(0) win 1024
14:34:05.336511 95.216.250.77.32289 > XXX.YY.67.28.65360: S 1981390132:1981390132(0) win 1024

14:34:54.832102 105.154.230.25.58883 > CCC.DDD.216.1.19663: S 1688707325:1688707325(0) win 1024
14:35:04.404923 106.185.255.4.22877 > XXX.YY.172.117.26059: S 940335749:940335749(0) win 1024
14:32:54.626964 109.101.221.98.11261 > XXX.YY.178.114.62986: S 21534820:21534820(0) win 1024
14:34:16.859466 110.36.25.13.12069 > CCC.DDD.190.35.60681: S 2140808247:2140808247(0) win 1024
14:34:17.857716 110.36.25.13.12069 > CCC.DDD.190.35.60681: S 2140808247:2140808247(0) win 1024
14:33:10.696147 116.229.150.39.18101 > XXX.YY.106.98.23131: S 557778362:557778362(0) win 1024
14:33:44.377790 128.90.158.72.48555 > AAA.BBB.18.80.5168: S 457383900:457383900(0) win 1024
14:34:47.281581 140.31.238.24.45571 > CCC.DDD.157.106.22185: S 1814977468:1814977468(0) win 1024
14:31:58.002048 141.222.157.3.19401 > XXX.YY.35.80.49344: S 1215896513:1215896513(0) win 1024
14:33:44.880787 142.56.44.54.9414 > XXX.YY.193.92.27092: S 393770813:393770813(0) win 1024
14:33:39.198779 142.122.99.98.42393 > XXX.YY.99.21.15516: S 2035081717:2035081717(0) win 1024
14:35:16.583019 149.1.217.75.44775 > AAA.BBB.118.62.12017: S 179154027:179154027(0) win 1024
14:34:38.694995 155.209.205.55.35251 > CCC.DDD.166.96.51699: S 331211381:331211381(0) win 1024
14:35:55.766890 162.8.220.58.35531 > XXX.YY.46.45.37335: S 1055146706:1055146706(0) win 1024
14:31:00.222922 163.78.171.74.24826 > XXX.YY.200.125.15093: S 871443120:871443120(0) win 1024
14:32:51.923339 163.106.59.57.24925 > XXX.YY.119.58.40289: S 2107912213:2107912213(0) win 1024
14:35:37.130365 164.167.117.19.20546 > XXX.YY.103.36.28487: S 600233144:600233144(0) win 1024
14:33:20.098181 167.55.132.28.7580 > AAA.BBB.18.8.54668: S 915689294:915689294(0) win 1024
14:33:20.100874 AAA.BBB.18.8.54668 > 167.55.132.28.7580: R 0:0(0) ack 915689295 win 0
14:35:33.172319 167.200.248.30.37411 > AAA.BBB.108.69.4903: S 794266716:794266716(0) win 1024
14:35:56.248020 173.82.165.52.18717 > XXX.YY.204.83.29936: S 1326359930:1326359930(0) win 1024
14:32:20.867638 175.4.126.61.51218 > CCC.DDD.194.90.13529: S 822031429:822031429(0) win 1024
14:32:20.869040 175.4.126.61.51218 > CCC.DDD.194.90.13529: S 822031429:822031429(0) win 1024
14:32:20.872038 CCC.DDD.194.90.13529 > 175.4.126.61.51218: R 375241667:375241667(0) ack 822031430 win 0
14:33:25.195769 175.24.195.103.57562 > CCC.DDD.156.43.43947: S 1465993220:1465993220(0) win 1024
14:35:39.034463 176.96.174.3.65380 > AAA.BBB.61.42.9748: S 1934971151:1934971151(0) win 1024
14:32:51.405560 179.184.82.109.61892 > AAA.BBB.243.10.15578: S 1554663995:1554663995(0) win 1024
14:33:54.323412 183.21.30.68.7022 > CCC.DDD.226.111.38560: S 195728921:195728921(0) win 1024
14:34:41.309918 183.143.157.125.41331 > CCC.DDD.228.122.10852: S 1503867492:1503867492(0) win 1024
14:33:26.660337 183.187.8.109.40664 > XXX.YY.162.36.24850: S 1138461710:1138461710(0) win 1024
14:34:03.184036 187.23.45.64.20068 > AAA.BBB.155.52.42268: S 25472293:25472293(0) win 1024
14:34:20.749152 187.235.0.26.55820 > XXX.YY.46.101.9893: S 271914991:271914991(0) win 1024
14:35:12.242563 190.243.163.81.57171 > XXX.YY.65.107.10259: S 1364009590:1364009590(0) win 1024
14:32:42.659136 193.37.192.69.41034 > XXX.YY.139.39.64110: S 1408788596:1408788596(0) win 1024
14:31:55.672752 196.141.112.3.12742 > XXX.YY.76.71.21747: S 1849163210:1849163210(0) win 1024
14:34:49.431007 197.55.178.99.9588 > XXX.YY.206.83.53499: S 273816151:273816151(0) win 1024
14:32:26.855687 205.54.210.62.2887 > CCC.DDD.226.88.60393: S 245785663:245785663(0) win 1024
14:35:48.921687 205.84.63.7.16664 > XXX.YY.31.58.57801: S 971031777:971031777(0) win 1024
14:35:59.047481 sea-adsl10-59.wolfenet.com.22397 > XXX.YY.74.104.33466: S 574900413:574900413(0) win 1024
14:35:33.324114 207.56.217.60.38734 > XXX.YY.94.28.33534: S 816832746:816832746(0) win 1024
14:30:58.646924 210.177.253.6.17083 > CCC.DDD.229.66.56674: S 198860669:198860669(0) win 1024
14:33:51.340688 213.2.213.117.62187 > CCC.DDD.110.126.32290: S 277155343:277155343(0) win 1024
14:35:18.428004 213.82.31.79.58050 > CCC.DDD.20.60.6864: S 618769483:618769483(0) win 1024
14:34:08.971870 215.174.209.92.34990 > AAA.BBB.79.66.4270: S 858786114:858786114(0) win 1024
14:35:48.553511 218.147.156.14.56059 > AAA.BBB.249.65.24624: S 1845508966:1845508966(0) win 1024
14:33:53.959083 218.176.41.30.9222 > XXX.YY.104.122.6874: S 860334603:860334603(0) win 1024
14:35:18.553064 219.10.226.102.7965 > XXX.YY.223.66.2435: S 988175338:988175338(0) win 1024

14:33:01.376787 219.165.227.117.60418 > XXX.YY.86.111.63901: S 1130536718:1130536718(0) win 1024
14:35:56.586099 242.61.6.62.43048 > XXX.YY.170.45.26128: S 1489174003:1489174003(0) win 1024
14:36:19.381703 247.155.78.52.1972 > XXX.YY.162.86.25622: S 939155749:939155749(0) win 1024
14:33:04.647086 247.164.252.91.30389 > XXX.YY.27.23.59943: S 1084435464:1084435464(0) win 1024

When he viewed the trace into hex here is what he found. He was concerned because there appeared to be 6 bytes of data included in the datagram.

Packet 1
IP Header
Version: 4
Header Length: 20 bytes
Service Type: 0x00
Datagram Length: 40 bytes
Identification: 0x3825
Flags: MF=off, DF=off
Fragment Offset: 0
TTL: 59
Encapsulated Protocol: TCP
Header Checksum: 0x8B1A
Source IP Address: **7.14.211.44**
Destination IP Address: XXX.YY.62.37
TCP Header
Source Port: 29428 (<unknown>)
Destination Port: 35462 (<unknown>)
Sequence Number: 0204837356
Acknowledgement Number: 1249317570
Header Length: 20 bytes (data=0)
Flags: URG=off, ACK=off, PSH=off
RST=off, SYN=on, FIN=off
Window Advertisement: 1024 bytes
Checksum: 0xF67B
Urgent Pointer: 0
TCP Data
<No data>

I decoded the packet using a TCP header layout template to see what was happening.

14:32:11.080174 0:e0:fe:7c:30:a0 0:10:7:17:38:c0 **0800** 60: **7.14.211.44**.29428 > XXX.YY.62.37.35462: S 204837356:204837356(0) win 1024
4500 ***0028*** 3825 0000 3b06 8b1a 070e d32c
a431 3e25 **72f4 8a86 0c35 91ec 4a77 12c2**
5002 0400 f67b 0000 0011 0000 0600

TCP Header:

Src port 72F4								Dst port 8A86
Seq. # 0C35								91EC
Ack # 4A77								12C2
Hdr Len 5	Flags 00	0	0	0	0	1	0	Window size 0400
Checksum F67B								Urg Ptr 0000
Options								
Data **0011 0000 0600**								

1. Source of Trace:
This trace data was provided to me by an analyst of a network outside of my organization.

2. Detect was generated by:
The detect was done using TCPDUMP. The detailed breakdown of the packet was done using a packet analyzer such as Net-Xray to dump the content of the packet including the payload that was captured.

3. Probability the source address was spoofed:
I agree with my analyst friend, it is highly unlikely that the source addresses are spoofed. If they are sending one packet to different systems on different subnets does not accomplish anything.

4. Description of the Attack:
There is no clear indication that this data represents an attack. The desired mission of this analysis is to determine if an attack is occurring.

5. Attack mechanism:
It appears that data has been included in the initial SYN packet though it is not indicated in the TCPDUMP output. Detailed analysis of the hexadecimal breakdown of one of the packets raises some questions.

- The datagram length field in the IP header denotes a total datagram length of 40 bytes indicating that no data is present. In actuality the datagram is 46 bytes long. What are the extra 6 bytes intended for?

- Could they be garbled TCP options?
  No, the TCP header length is 0x5 which is 20 bytes the default TCP header length.

- Could this be data destined for an application? If so, what does it mean?
  The TCP header analysis indicates that there is no data included.

  ASCII conversion of extra 6 bytes:

NUL	VT	NUL	NUL	ACK	NUL
00	11	00	00	06	00

6. Correlations:
I began looking at the Ethernet header for clues as to what was going on. The type field contains **0800** indicating that the traffic is IP over Ethernet. Ethernet frames over IP have a minimum size restriction of 46 bytes. When necessary, the data field should be padded (with octets of zero) to meet the IEEE 802 minimum frame size requirements. This padding is not part of the IP datagram and is not included in the total length field of the IP header.[2]

This explains the extra 6 bytes of data not accounted for in the total length field; however, it does not explain why the extra 6 bytes are not all zeros. This could be the result of a flaw in building of the IP datagram at the source host. Of course, the truly paranoid might think this is an attempt to use a covert channel to the destination host.

7. Evidence of active targeting:
I imported the TCPDUMP output into Microsoft Excel and sorted it by source and destination IPs and there was no pattern to the packets. The traffic doesn't appear to be targeted at any particular host or network.

8. Severity:
(Criticality + Lethality) – (System Countermeasure + Network Countermeasures)
(1 +1) – (1+1) = 0
Criticality = 1 (No critical systems in our network were affected by the attack)
Lethality = 1 (There was no adverse affect on the destination hosts)
System Countermeasure = 1 (No host countermeasures were in place to prevent this type of attack)
Network Countermeasure = 1 (No network filters were in place to block this activity from entering our network)

9. Defensive recommendations:
- Disable all unnecessary services on host in the network.
- Ensure all patches are current.

10. Multiple choice test question:
Under what circumstances is it allowable to send data in an initial SYN packet?

A. When using T/TCP for client/server applications.
B. When the ACK flag is set to 0.
C. When the FIN flag is on.
D. Never

The correct answer is B. Data can be sent with an initial SYN packet as long as the ACK flag is not set. Setting the ACK flag would indicate that prior packets had been received. The data is saved at the receiving host and forwarded to the application at the completion of the 3-way handshake.

[2] TCP/IP Illustrated Vol 1

Analysis 3 - Attempted Intrusion of Mail Server

A intruder attempted to gain unauthorized access to a mission critical server via a telnet session.
The server involved was the organizations mail server. Unauthorized access to this server has the potential of taking down mail service to hundreds, if not thousands of users.

NID Connection Log Entries:

```
================================================
telnet
    index  warning                          source
destination
    -----  -------                          ------                    -------
----
     1618    8.722                    intruder.host.pl
smtp.host.com
     1565    8.722                    intruder.host.pl
smtp.host.com
```

TCPDUMP output:

```
13:54:32.080000 intruder.host.pl.1282 > smtp.host.com.23: S 2635135109:2635135109(0) win 8760 <mss
1460,nop,nop,sackOK> (DF) (ttl 112, id 7466)
13:54:32.080000 smtp.host.com.23 > intruder.host.pl.1282: S 102400000:102400000(0) ack 2635135110
win 32768 <mss 1460> (DF) (ttl 62, id 50593)
13:54:32.580000 smtp.host.com.23 > intruder.host.pl.1282: P 1:4(3) ack 1 win 32768 (DF) (ttl 62, id
50594)
13:54:33.030000 intruder.host.pl.1282 > smtp.host.com.23: P 1:4(3) ack 4 win 8757 (DF) (ttl 112, id 7468)
13:54:33.050000 smtp.host.com.23 > intruder.host.pl.1282: P 4:7(3) ack 4 win 32768 (DF) (ttl 62, id
50596)
13:54:34.080000 smtp.host.com.23 > intruder.host.pl.1282: P 4:7(3) ack 4 win 32768 (DF) (ttl 62, id
50597)
13:54:35.580000 smtp.host.com.23 > intruder.host.pl.1282: P 4:7(3) ack 4 win 32768 (DF) (ttl 62, id
50599)
13:54:35.950000 intruder.host.pl.1282 > smtp.host.com.23: P 1:4(3) ack 4 win 8757 (DF) (ttl 112, id 7470)
13:54:36.030000 intruder.host.pl.1282 > smtp.host.com.23: P 4:10(6) ack 7 win 8754 (DF) (ttl 112, id
7471)
13:54:36.040000 smtp.host.com.23 > intruder.host.pl.1282: P 7:16(9) ack 10 win 32768 (DF) (ttl 62, id
50601)
13:54:41.590000 smtp.host.com.23 > intruder.host.pl.1282: P 7:16(9) ack 10 win 32768 (DF) (ttl 62, id
50613)
13:54:41.970000 intruder.host.pl.1282 > smtp.host.com.23: P 4:10(6) ack 7 win 8754 (DF) (ttl 112, id
7473)
13:54:42.080000 intruder.host.pl.1282 > smtp.host.com.23: P 10:22(12) ack 16 win 8745 (DF) (ttl 112, id
7474)
13:54:42.420000 intruder.host.pl.1282 > smtp.host.com.23: P 22:32(10) ack 16 win 8745 (DF) (ttl 112, id
7475)
13:54:42.420000 smtp.host.com.23 > intruder.host.pl.1282: P 16:19(3) ack 32 win 32768 (DF) (ttl 62, id
50616)
13:54:42.860000 intruder.host.pl.1282 > smtp.host.com.23: P 32:35(3) ack 19 win 8742 (DF) (ttl 112, id
7476)
13:54:42.880000 smtp.host.com.23 > intruder.host.pl.1282: P 19:529(510) ack 35 win 32768 (DF) (ttl 62,
id 50618)
```

13:54:42.880000 smtp.host.com.23 > intruder.host.pl.1282: P 529:734(205) ack 35 win 32768 (DF) (ttl 62, id 50619)
13:54:42.940000 smtp.host.com.23 > intruder.host.pl.1282: P 734:741(7) ack 35 win 32768 (DF) (ttl 62, id 50620)
13:54:44.090000 smtp.host.com.23 > intruder.host.pl.1282: P 19:741(722) ack 35 win 32768 (DF) (ttl 62, id 50622)
13:54:44.680000 intruder.host.pl.1282 > smtp.host.com.23: P 35:38(3) ack 741 win 8020 (DF) (ttl 112, id 7479)
13:54:45.140000 intruder.host.pl.1282 > smtp.host.com.23: P 38:50(12) ack 741 win 8020 (DF) (ttl 112, id 7480)
13:54:45.140000 smtp.host.com.23 > intruder.host.pl.1282: P 741:744(3) ack 50 win 32765 (DF) (ttl 62, id 50630)
13:54:45.140000 smtp.host.com.23 > intruder.host.pl.1282: P 744:750(6) ack 50 win 32768 (DF) (ttl 62, id 50631)
13:54:45.590000 intruder.host.pl.1282 > smtp.host.com.23: P 50:53(3) ack 744 win 8017 (DF) (ttl 112, id 7481)
13:54:46.130000 intruder.host.pl.1282 > smtp.host.com.23: P 53:56(3) ack 750 win 8011 (DF) (ttl 112, id 7483)
13:54:48.280000 intruder.host.pl.1282 > smtp.host.com.23: P 53:59(6) ack 750 win 8011 (DF) (ttl 112, id 7484)
13:54:48.280000 smtp.host.com.23 > intruder.host.pl.1282: P 750:753(3) ack 59 win 32768 (DF) (ttl 62, id 50665)
13:54:49.590000 smtp.host.com.23 > intruder.host.pl.1282: P 750:753(3) ack 59 win 32768 (DF) (ttl 62, id 50690)
13:54:50.050000 intruder.host.pl.1282 > smtp.host.com.23: P 59:62(3) ack 753 win 8008 (DF) (ttl 112, id 7486)
13:54:50.050000 smtp.host.com.23 > intruder.host.pl.1282: P 753:756(3) ack 62 win 32768 (DF) (ttl 62, id 50701)
13:54:50.100000 smtp.host.com.23 > intruder.host.pl.1282: P 756:765(9) ack 62 win 32768 (DF) (ttl 62, id 50704)
13:54:52.590000 smtp.host.com.23 > intruder.host.pl.1282: P 756:765(9) ack 62 win 32768 (DF) (ttl 62, id 50726)
13:54:54.270000 intruder.host.pl.1282 > smtp.host.com.23: P 62:63(1) ack 765 win 7996 (DF) (ttl 112, id 7490)
13:54:54.740000 intruder.host.pl.1282 > smtp.host.com.23: P 63:64(1) ack 765 win 7996 (DF) (ttl 112, id 7491)
13:54:56.990000 intruder.host.pl.1282 > smtp.host.com.23: P 63:69(6) ack 765 win 7996 (DF) (ttl 112, id 7492)
13:54:57.000000 smtp.host.com.23 > intruder.host.pl.1282: P 765:767(2) ack 69 win 32768 (DF) (ttl 62, id 50764)
13:54:57.010000 smtp.host.com.23 > intruder.host.pl.1282: P 767:808(41) ack 69 win 32768 (DF) (ttl 62, id 50765)
13:54:58.030000 smtp.host.com.23 > intruder.host.pl.1282: P 808:809(1) ack 69 win 32768 (DF) (ttl 62, id 50767)
13:54:59.040000 smtp.host.com.23 > intruder.host.pl.1282: P 809:812(3) ack 69 win 32768 (DF) (ttl 62, id 50770)
13:54:59.080000 smtp.host.com.23 > intruder.host.pl.1282: P 812:819(7) ack 69 win 32768 (DF) (ttl 62, id 50771)
13:55:00.090000 smtp.host.com.23 > intruder.host.pl.1282: P 809:819(10) ack 69 win 32768 (DF) (ttl 62, id 50779)
13:55:09.250000 intruder.host.pl.1282 > smtp.host.com.23: P 69:70(1) ack 819 win 7942 (DF) (ttl 112, id 7501)
13:55:09.260000 smtp.host.com.23 > intruder.host.pl.1282: P 819:820(1) ack 70 win 32768 (DF) (ttl 62, id 50831)
13:55:09.710000 intruder.host.pl.1282 > smtp.host.com.23: P 70:72(2) ack 820 win 7941 (DF) (ttl 112, id 7502)

……..omitted packets ……
13:59:55.590000 intruder.host.pl.1291 > smtp.host.com.23: P 148:150(2) ack 961 win 7800 (DF) (ttl 112, id 7706)
13:59:56.430000 intruder.host.pl.1291 > smtp.host.com.23: P 148:153(5) ack 961 win 7800 (DF) (ttl 112, id 7707)
13:59:56.460000 smtp.host.com.23 > intruder.host.pl.1291: P 961:963(2) ack 153 win 32768 (DF) (ttl 62, id 53032)
13:59:57.460000 smtp.host.com.23 > intruder.host.pl.1291: P 1004:1005(1) ack 153 win 32768 (DF) (ttl 62, id 53040)
13:59:58.480000 smtp.host.com.23 > intruder.host.pl.1291: P 1005:1015(10) ack 153 win 32768 (DF) (ttl 62, id 53042)

1. Source of Trace:
This trace data came from a remote network monitored by our CERT team.

2. Detect was generated by:
The original detect was generated by **NID - Network Intrusion Detector v 2.2.1** which is developed and supported by Lawrence Livermore National Laboratory. You can find them on the web at http://www.llnl.gov.

- NID is made up of a suite of tools that collect, detect, and analyze network traffic
- Data is detected and collected based on criteria you specify in customization files.
    - Strings
    - TCP protocols (ports)
    - UDP protocols (ports)
    - Exceptions (traffic to ignore)
    - Trusted and untrusted hosts/servers
- NID is a passive detector so network users are unaware of its presence
- It requires no modification to the hosts that its monitoring
- As data is detected that matches the criteria you specified it's given assigned a "warning level" based on the protocol's capability and authentication required.
- For example telnet has a lot of capabilities but it also requires user authentication (password) to use.
- In contrast TFTP has high capability but the required authentication level is low.
- The mode of operation used to analyze this detect is call retrospective analysis.

ANALYSIS TOOLS

- STREAM - reads the raw data files and assembles all the packets associated with the session.
- PLAYBACK - displays the session streams.
- **Init** side
- **Dest** side
- PACKET PRINT - displays a portion of the packets displayed in the stream along with decoding the header information. (**-e** and **-ip** options)

TCPDUMP was used to filter out the header packets associated with the source and destination machines and provide a synopsis of the dataflow between the two systems.

3. Probability the source address was spoofed:
The probability that the source address was spoofed is slim to nil because the hostile must receive the response packets to successfully carry out the attack.

4. Description of the attack:
Hostile attempted login using telnet service (23/tcp) on two separate attempts.

5. Attack mechanism:
The intruder probed a single host for the TCP telnet service (port 23). The victim responded and the 3-way handshake was complete. The intruder than attempted to gain unauthorized access to the target host using default userids.

6. Correlations:
The initial detect was triggered in NID. Further investigation using TCPDUMP and the appropriate filters confirmed the connections and the passage of data between the hostile machine and the victim.

The telnet service is a common target of intruders because successful exploitation of this service can give the intruder root level authority on the target. At that point the target is susceptible to a wide variety of exploits, rootkits can be installed with trojanized processes, denial of service (DoS) attacks can be launched, and distributed denial of service tools (DdoS) installed for use in attacking other systems. There are literally hundreds of articles available on the Internet documenting the damage that can be done via a successful telnet exploit.

7. Evidence of active targeting:
This was a targeted attack. The hostile directed the activity only at smtp.host.com. This was the only traffic from the hostile machine for the day. This leads me to believe that prior reconnaissance had taken place.

8. Severity:
(Criticality + Lethality) – (System Countermeasure + Network Countermeasures)
(5 +2) – (3 + 1) = 3
Criticality = 5 (A critical system in the network was targeted for the attack)
Lethality = 2 (The attack was unsuccessful)
System Countermeasure = 3 (Default accounts were not left vulnerable to prevent this type of attack)
Network Countermeasure = 1 (No network filters were in place to block this activity from entering our network)

9. Defensive recommendations:
- Institute a block at the perimeter gateway for the offending IP.
- Disable all unnecessary services on smtp.host.com
- Ensure all applicable current patches are installed on smtp.host.com

10. Multiple choice question:
What TCPDUMP option will display the time to live, packet id, and options field from the TCP header?

A. –n
B. –e
C. –x
D. –vv

The correct answer is D. the –vv (verbose) option will display these additional fields. The –n option will prevent the IP to hostname conversion; -e displays the link-level header on each dump line; -x dumps each packet, minus the link level header, in hex.

Analysis 4 – ICQ Webfront Denial of Service

ICQ ("I Seek You") is a user-friendly Internet program that notifies you when your friends and associates are online and enables you to contact them. With ICQ, you can chat, send messages and files, exchange Web page addresses, play games, etc. This is an analysis of DoS attack against the ICQ Webfront service which allows users to create homepages.

Snort Rule (1.6 Ruleset):

alert tcp any any -> any 80 (msg:"MISC - ICQ Webfront HTTP DoS"; flags:PA; content:"??????????";)

Snort Alert

[**] MISC - ICQ Webfront HTTP DoS [**]
03/27-00:11:00.071491 0:0:C:36:6F:AB -> 0:10:2F:A9:78:80 type:0x800 len:0x382
my.net..229.36:4954-> victim.net.42.214:80 TCP TTL:126 TOS:0x0 ID:1684 DF
AP Seq: 0x1738E59B Ack: 0xB3189E0D Win: 0x2058 [Snort log]

Snort Log Content

[**] MISC - ICQ Webfront HTTP DoS [**]
03/27-00:11:00.071532 0:0:C:36:6F:AB -> 0:10:2F:A9:78:80 type:0x800 len:0x382
my.net..229.36:4954 -> victim.net.42.214:80 TCP TTL:126 TOS:0x0 ID:1684 DF
AP Seq: 0x1738E59B Ack: 0xB3189E0D Win: 0x2058
47 45 54 20 2F 73 63 72 69 70 74 73 2F 63 6D 73 GET /scripts/cms
2F 43 4D 53 2E 41 53 50 3F 49 44 3D 35 38 39 30 /CMS.ASP?ID=5890
39 33 33 26 44 32 3D 61 62 4F 41 43 53 4B 73 3F 933&D2=abOACSKs?
3F 3F 3F 5F 40 3F 3F 26 41 57 3D 31 36 37 26 4C ???_@??&AW=167&L
56 3D 32 30 34 35 26 4D 55 3D 39 38 35 36 35 32 V=2045&MU=985652
37 34 31 26 4C 43 3D 32 30 30 31 30 33 32 36 3A 741&LC=20010326:
31 26 43 46 3D 31 30 26 4E 50 3D 31 26 47 41 30 1&CF=10&NP=1&GA0
3D 30 26 48 41 30 3D 31 34 30 30 26 47 4E 36 3D =0&HA0=1400&GN6=
39 38 35 36 35 32 37 34 31 26 48 53 30 3D 3F 3F 985652741&HS0=??
3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F ????????????????
3F 3F 3F 3F 3F 43 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F ?????C??????????
3F 3F 3F 3F 3F 43 26 48 53 31 3D 3F 3F 3F 3F 3F ?????C&HS1=?????
3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F ????????????????
3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F ????????????????
3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F ????????????????
3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F ????????????????
3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 41 3F 3F ?????????????A??
3F 41 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F ?A??????????????
3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 43 26 48 53 32 3D ??????????C&HS2=
3F 3F 3F 4F 3F 3F 3F 3F 3F 53 3F 3F 3F 3F 3F 47 ???O?????S?????G
3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 6B 3F 3F 3F ???????????k???
3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 41 3F ?????????????A?
3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F ????????????????

```
3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F  ????????????????
3F 3F 43 43 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F  ??CC????????????
3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F  ????????????????
3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F  ????????????????
3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F  ????????????????
3F 5F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 5F 42  ?_????????????_B
3F 3F 43 51 63 73 26 48 53 33 3D 3F 43 41 3F 3F  ??CQcs&HS3=?CA??
3F 3F 3F 3F 3F 3F 3F 41 3F 6F 3F 40 41 3F 42 5F  ???????A?o?@A?B_
3F 3F 4F 3F 3F 3F 3F 3F 3F 3F 3F 4F 3F 3F 67 3F  ??O????????O??g?
3F 61 43 3F 3F 3F 3F 41 3F 3F 5F 3F 3F 3F 3F 4F  ?aC????A??_????O
3F 3F 5F 3F 3F 3F 3F 3F 41 3F 3F 3F 3F 3F 3F 3F  ??_?????A???????
3F 5F 3F 3F 3F 3F 3F 3F 3F 3F 5F 3F 3F 3F 3F 3F  ?_????????_?????
41 4F 3F 3F 41 26 52 48 33 3D 3F 3F 3F 3F 3F 3F  AO??A&RH3=??????
3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F  ????????????????
3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F  ????????????????
20 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 3F 4F 20   ?????????????O
48 54 54 50 2F 31 2E 30 0D 0A 55 73 65 72 2D 41  HTTP/1.0..User-A
67 65 6E 74 3A 20 4D 6F 7A 69 6C 6C 61 2F 34 2E  gent: Mozilla/4.
30 31 20 5B 65 6E 5D 20 28 57 69 6E 4E 54 3B 20  01 [en] (WinNT;
49 29 0D 0A 50 72 61 67 6D 61 3A 20 6E 6F 2D 63  I)..Pragma: no-c
61 63 68 65 0D 0A 48 6F 73 74 3A 20 77 77 77 2E  ache..Host: www.
63 6D 73 31 2E 6E 65 74 3A 38 30 0D 0A 41 63 63  cms1.net:80..Acc
65 70 74 3A 20 69 6D 61 67 65 2F 67 69 66 2C 20  ept: image/gif,
69 6D 61 67 65 2F 78 2D 78 62 69 74 6D 61 70 2C   image/x-xbitmap,
20 69 6D 61 67 65 2F 6A 70 65 67 2C 20 69 6D 61   image/jpeg, ima
67 65 2F 70 6A 70 65 67 2C 20 2A 2F 2A 0D 0A 41  ge/pjpeg, */*..A
63 63 65 70 74 2D 4C 61 6E 67 75 61 67 65 3A 20  ccept-Language:
65 6E 0D 0A 41 63 63 65 70 74 2D 43 68 61 72 73  en..Accept-Chars
65 74 3A 20 69 73 6F 2D 38 38 35 39 2D 31 2C 2A  et: iso-8859-1,*
2C 75 74 66 2D 38 0D 0A 0D 0A                    ,utf-8....
```

=+=
+=+

1. Source of Trace
This trace data was captured from a network I monitor as part of my professional duties as a Network Security Analyst.

2. Detect was generated by:
This detect was generated by Snort using ruleset 1.6. Snort is a freely available lightweight network IDS written by Mr. Marty Roesch with contributions and enhancements contributed from many sources. Snort uses libpcap, a publicly available framework for capturing network traffic. It will run anywhere libpcap is installed.[3]

3. Probability the source address was spoofed:

[3] http://www.snort.org

The possibility that the source IP was spoofed by another host inside your network is possible though very unlikely. To verify that the IP was not spoofed, I used TCPDUMP with the –e option to view the link level (Ethernet) header in other legitimate traffic to the source IP. I used this data to compare MAC addresses with those in this trace. They were the same. Had this been spoofed traffic the MAC addresses would not match.

4. Description of the attack:
The ICQ Web Front DoS causes the mini httpd that comes with current ICQ clients, or sometimes the entire ICQ client, to crash by appending a "?" characher to the URL. This attack works on Windows 95/98 systems. The exploit and Discovery By: Charles Chear [4]

5. Attack mechanism
The attack sends a stimulus, the trailing "??" appended to the URL to the recipient to react by crashing the mini http daemon bringing down the users homepage.

6. Correlation:
This traffic was initially captured by the Snort Alert facility. The specific rule that was triggered was **alert tcp any any -> any 80 (msg:"MISC - ICQ Webfront HTTP DoS"; flags:PA; content:"??????????";).** This rule looks specifically for tcp traffic from any source IP (internal or external) using any source port that goes to any IP destination address with a destination port of 80 (HTTP). The packet must have the push and acknowledgement flags set. In addition, the packet payload must contain a string of question marks. Adding the flag settings and payload content values to the rule reduces the occurrences of false positives.

The more in-depth supporting data containing the packet payload content was logged in the Snort log which confirms the validity of the alert.

There are several entries in Bugtrac@securityfocus.com that discuss this vulnerability.

7. Evidence of targeting:
This was a targeted attack. The source host directed its attack at a single web server.

8. Severity:
(Criticality + Lethality) – (System Countermeasure + Network Countermeasures)
(5 +5) – (1 + 1) = 8
Criticality = 5 (Access to the user's homepage is interrupted, which could result in major inconveniences)
Lethality = 5 (The attack will bring down the httpd and in some cases the entire ICQ client)
System Countermeasure = 1 (No patch available to prevent the attack)
Network Countermeasure = 1 (No network filters were in place to block this activity from entering our network)

[4] http://www.shmoo.com/mail/bugtraq/sep00/msg00598.shtml

9. Defensive recommendations:

- Implement the flexible response feature of Snort to reset sessions that trigger this alert. This would prevent the attacks from originating inside or entering into our network. This approach would be a more affective approach than implementing egress/ingress filters at the perimeter gateway because Snort can examine payload content and gateways and firewalls cannot. Careful consideration must be taken before implementing the flexible response feature however; because it could result in you launching a DoS attack against yourself. Also, if you are sniffing your network in stealth mode this feature will not work.[5]
- Ensure all system patches are current.
- Implement a security policy on the allowance of ICQ traffic.

10. Multiple choice test question:

What option does Snort 1.8 other that would allow you to gather additional information on this session?

A. Rst_snd
B. Icmp_host
C. Tag

The correct answer is C. The Tag option allows you to tag sessions that trigger a rule and log all traffic involving the perpetrator for a specified period of time.

[5] Intrusion Detection- Snort Style, by Marty Roesch, SANS Institute

Analysis 5: Buffer Overflow

Buffer overflow attacks violate system memory by overwriting storage boundaries with rogue machine code that will get executed when the violated area is accessed and give the attacker root level access.

NID Connection Log Entry

```
================================================
telnet
   index  warning                source             destination
   -----  -------                ------             -----------
     10    8.722        hacker.guy.bg        victim.host.org

-------------------------------------------------------------------------------------------------

==========================================================================
==
Source      =    BAD.NET.1.75 -- hacker.guy.bg
Destination = MY.NET.10.233 -- victim.host.org
Start time  = Sun Jun  3 12:04:04 2001
Protocols   = [32879 23] (6)
Stream      = conn.010603:12.10.stream.init
==========================================================================
==

ÿú$XXXX    Ä   Ä
ÿÿÿÿ$ó#ÿÿ#ä#åþ¯äþ¯àþ£àþÿÿÿÿÌ/bin/sh%32614c%11$hn%86000c%12$hnÿðÿú$_RLD
Ä   Ä
ÿÿÿÿ$ó#ÿÿ#ä#åþ¯äþ¯àþ£àþÿÿÿÿÌ/bin/sh%32614c%11$hn%86000c%12$hnÿð/bin/unam
e -a
  [*** 40 second idle time reduced to 10 seconds. ***]
grep -v '#' /etc/inetd.conf ;
last -20 ;

CAT /ETC/HOSTS* ;

  [*** 37 second idle time reduced to 10 seconds. ***]
tail -20 /etc/inetd.conf ;

  [*** 62 second idle time reduced to 10 seconds. ***]
echo tcpmux stream tcp nowait root /usr/bin/tcpmux tcpmux >> /etc/inetd.conf ;
ls ; /usr/sbin/inetd ; ls -l /usr/sbin/inetd ;
which inetd ;
find / -name inetd ;
```

```
  [*** 99 second idle time reduced to 10 seconds. ***]
cat /etc/passwd ;
/usr/etc/inetd ;
  [*** 68 second idle time reduced to 10 seconds. ***]
cp /bin/sh /bin/trsh ; chmod 7755 root:RCtHJd1B6QD1I:0:0:Super-User:/:/bin/tcsh

……..omitted data ……

cp /bin/sh /bin/trsh ;
chmod 7755 /bin/trsh ;
ls -l /bin/trsh ;
ls -l  ;
tail -30 list.txt ;
cd /var/log ; ls -l ;

  [***** End of stream *****]
```

1. Source of trace

This trace was captured on a network monitored as a part of my duties as an network analyst.

2. Detect was generated by

The original detect was generated by **NID - Network Intrusion Detector v 2.2.1** which is developed and supported by Lawrence Livermore National Laboratory. You can find them on the web at http://www.llnl.gov.

- NID is made up of a suite of tools that collect, detect, and analyze network traffic
- Data is detected and collected based on criteria you specify in customization files.
    - Strings
    - TCP protocols (ports)
    - UDP protocols (ports)
    - Exceptions (traffic to ignore)
    - Trusted and untrusted hosts/servers
- NID is a passive detector so network users are unaware of its presence
- It requires no modification to the hosts that its monitoring
- As data is detected that matches the criteria you specified it's given assigned a "warning level" based on the protocol's capability and authentication required.
- For example telnet has a lot of capabilities but it also requires user authentication (password) to use.
- In contrast TFTP has high capability but the required authentication level is low.
- The mode of operation used to analyze this detect is call retrospective analysis.

ANALYSIS TOOLS

- STREAM - reads the raw data files and assembles all the packets associated with the session.
- PLAYBACK - displays the session streams.
- **Init** side
- **Dest** side
- PACKET PRINT - displays a portion of the packets displayed in the stream along with decoding the header information. (**-e** and **-ip** options)

3. Probability that the source address was spoofed
The source I was not spoofed. For this attack to be successful the attacker must receive the response packets.

4. Description of the attack
"There exists a vulnerability in the telnetd service and its code portion incorrectly handling user supplied data as format strings in the sprintf() and syslog() functions. If successfully exploited, arbitrary commands can be executed on a vulnerable system with the root user privileges"[6]

5. Attack mechanism
The attacker exploited the vulnerability in the telnetd daemon to cause a buffer overflow and gain root access on an SGI system.

6. Correlations
http://archives.neohapsis.com/archives/vendor/2000-q3/0067.html
http://lsd-pl.net/files/get?IRIX/irx_telnetd
http://msgs.securepoint.com/cgi-bin/get/bugtraq0008/152.html

7. Evidence of targeting
This was a targeted attack directed at a SGI host. This indicates prior reconnaissance activity to identify vulnerable hosts.

8. Severity: (Criticality + Lethality) – (System Countermeasure + Network Countermeasures)
(5 +5) – (1 + 1) = 8
Criticality = 5
Lethality = 5 (The attack was successful)
System Countermeasure = 1 (Available patch not installed to prevent the attack)
Network Countermeasure = 1 (No network filters were in place to block this activity from entering our network)

[6] http://lsd-pl.net/files/get?IRIX/irx_telnetd

9. Defensive Recommendations

Install appropriate patches to SGI host
Block the hostile IP address at the perimeter gateway
Disable all unnecessary services

10. Multiple choice question

What pattern string should you include in your string based IDS to detect this type of attack.

A. telnet
B. /bin/sh
C. passwd

The correct answer is B. The attacker passes /bin/sh in the packet payload to invoke a shell.

Assignment 2 - White Paper

Security In the World of E-Commerce

At the closing of the Clinton administration, President Clinton made the following statement:

> "During my Administration, America's economy and society has been transformed by new information and communications technologies. The information technology sector has accounted for almost one-third of U.S. economic growth, and has helped spark an increase in U.S. productivity and global competitiveness. "[7]

The Internet provides a service that is highly accessible. Over three hundred million people now use the Internet, compared to three million in 1994. They can access more than one billion web pages, with an estimated three million new pages added every day. In 2000, Internet usage worldwide was up almost 80% from 1999.[8]

This explosion in Internet usage has fueled the growth and popularity of e-commerce. In the spring of 2000, the Census Bureau released the first official measure of an important subset of business-to-consumer e-commerce, "e-retail." In the fourth quarter of 1999, online sales by retail establishments totaled $5.3 billion, or 0.64 percent of all retail sales. Consumers spent US$3.9 billion online in May 2001. Though this was a 9 percent decrease from the $4.3 billion racked up in Internet sales in April, this is an astounding statistic.[9] People increasingly use the Internet not only to make purchases, but also to arrange financing, take delivery of digital products, and get follow-up service.

The Internet is providing a way for small business to participate in business-to-business e-commerce. In the past, larger companies used private networks to carry out electronic commerce, but high costs kept the resulting efficiencies out of reach for most small businesses. The Internet has changed this by making it easier and cheaper for all businesses to transact business and exchange information.

Electronic commerce (e-commerce) is defined as any transaction that involves the exchange of something of value over a communications network. E-commerce involves selling directly to the customer via the Internet whereas e-business involves sharing information and/or streamlining interactions with business partners. The very nature of the technology poses some difficult security problems because it actively encourages outsiders to access merchant's systems.

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[7] http://www.ecommerce.gov/ecomnews/01-16-POTUS-STATEMENT.html

[8] http://www.esa.doc.gov/de2k.htm

[9] http://www.ecommercetimes.com/perl/story/11308.html

As early as July 1999, a study conducted by Information Security Magazine indicated that e-commerce operations are 57 percent more likely to experience a security breach than other online sites. Additionally, e-commerce sites were 24 percent more likely to be the target of a hacker/cracker attack.[10]

There are several types of security threats looming on the Internet. Eavesdropping involves intercepting and reading messages. Masquerading refers to the sending and receiving data using someone else's identity. Message tampering is the altering of messages. Replaying involves using previously sent messages to gain unauthorized privileges. Infiltration is the abuse of authority to run hostile or malicious code. Traffic analysis is really the unauthorized sniffing traffic from the network. Denial of service attacks prevents authorized access to resources.

There are 2 basic approaches to secure electronic commerce. The first focuses on securing servers and network sites to protect resources via perimeter security for example using firewalls. Unfortunately firewalls cannot protect against attacks that do not go through the firewall.

The second approach focuses on transaction security. This addresses prevention of 'sniffers', authentication of all parties involved in the transaction, message integrity to prevent message tampering, and a nonrepudiable record of the transaction. Prevention of 'sniffers' means that transaction details such as credit card details transferred during online transactions use channel and document based security, to prevent eavesdropping.

In global Internet commerce, the parties involved may not know each other, therefore it is necessary to validate authentication of both parties. Certificate authorities (CA) which are financial institutions like VeriSign or FirstVirtual systems, act as third parties for the transactions. The CA authenticates clients by issuing them with certificates that are digitally authorized by the CA and which contains a secure digital signature. The client can then use this signature in online transactions.

Another major thing that needs to be done to protect consumers is the enactment of laws against cyber crime. This is a critical step if e-commerce is to reach its full potential. A study conducted by McConnell International, a Washington consulting company in December of 2000 reported that most nations laws don't deter cyber crime. Thirty-three of the 52 nations participating in the survey didn't have criminal codes to deal with computer crime.[11]

The data involved in e-commerce transactions is critical and sensitive pertaining to customers and business partners. In some cases attackers have tools such as "packet

[10] E-Commerce Times, July 26, 1999
[11] Nations' Laws Lag on Cybercrime, http://www.zdnet.com/zdnn/stories/news/0,4586,2661973,00.html

sniffers" to monitor a computer network, accessing confidential e-mails, account names, passwords and credit card information.

E-commerce merchants must focus on web servers and their associated databases management systems to provide secure environments. Many businesses use freely available software in the implementation of their e-commerce solutions. Although this reduces the overhead costs involved in providing the service, it certainly increases the security risks. On June 19th, Newsbytes magazine reported that several small online shops were exposing their customer order data, including credit card numbers, because of improperly installed online shopping cart software. A free online shopping cart program called DCShop, from Boston-based DC Business Solutions, caused the exposure. Thousands of copies of DCShop have been downloaded from the company's site.[12]

On June 13, DCBS posted an advisory at its site warning DCShop operators of the vulnerability. The advisory states that if the program is improperly installed unauthorized Internet users would be able to retrieve sensitive customer information including names, mailing addresses, e-mails and credit card numbers with expiration dates. The DCShop security advisory is available here: http://www.dcscripts.com/dcforum/dcshop/44.html

Protecting against financial fraud is another major challenge. In a study conducted by The Worldwide E-Commerce Fraud Prevention Network in April of this year found that nearly half of e-tailers surveyed said online fraud is a "significant problem,".

> "The survey, which was conducted over the week of March 5 on the Network's Web site, found that 50 percent of those surveyed reported online losses from fraud of between $1,000 and $10,000. Nineteen percent said they had lost more than $100,000."[13]

Merchants categorized the most effectives tools for fraud prevention this way. Those with address verification ranked highest at 68 percent of those surveyed, real-time authorization at 52 percent, card verification codes at 49 percent, and customized rules at 42 percent.

After taking a look at the current security posture of e-commerce, the natural question that came to mind was, how do you address the challenges? There are some basic security services defined by the International Organization for Standardization [14]

- Authentication ensures that the identity or data origin is genuine.
- Access control ensures that only authorized users/processes gain access to protected data.

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[12] Special to Newsbytes, Mc Williams. http://www.newsbytes.com/news/01/167000.html

[13] http://www.infoworld.com/cgi-bin/fixup.pl?story=http://www.infoworld.com/articles/hn/xml/01/04/05/010405hnfraud.xml&dctag=ecommerce

[14] ISO, http://www.iso.ch

- Data confidentiality ensures that only authorized user/processes understand the protected data.
- Data integrity protects data against unauthorized modification.
- Nonrepudiation ensures that users/processes are not denied the required access to resources.

What tools are available to help overcome the security challenges? My research yielded several tools available on the market today. This is in no way an exhaustive list. I must add a disclaimer here; I am in no way recommending or advocating the use of any of these tools. I cannot, and do not speak for the effectiveness of them. My intent is just to take a look at some of the available options.

At a presentation conducted by the Department of Defense in May of last year several multi-platform products were highlighted.

Usage: Single Web Server Access and transaction control
Platform: NT, HP-UX, Solaris
Praesidium Domainguard Access and Domainguard Rules,

Web authorization managers that combine powerful Web security with ease of use. The products, Praesidium Domainguard Access and Domainguard Rules, make it easy for organizations to create and manage a secure Web environment within which customers, business partners and employees can perform transactions and share sensitive information.

Usage: Portal Access and Transaction Control
Platform NT, HP-UX, Solaris
DomainGuard Enterprise

DomainGuard Enterprise is a user access solution for Microsoft-based (NT/IIS) environments providing a centralized point of control for all access to Web objects. It interfaces with existing user definitions and access groups by plugging into the LDAP directory, and managers and administrators can control and assign access to individual Web objects.

Features of the authentication interface include single sign-on, meaning that a user need only login once and replication, which allows user and policy data to be instantly replicated across multiple servers.[15]

Usage: Application Protection
Platform: HP-UX
VirtualVault

[15] http://ipw.internet.com/e-business/extranet/948212951.html

Virtualvault is a secure Web transaction server that is designed to safely connect enterprise applications and databases to clients on the Internet.[16]
On April 25, 2001 - Hewlett-Packard was awarded Best General Security product in the Reader's Trust category for HP Virtualvault. This is the second year running that Virtualvault has received this award.[17]

Usage: Windows Server Protection
Platform: NT/IS, W2000
WebEnforcer

Webenforcer automatically uncovers hundreds of vulnerabilities, eliminates them, and continuously monitors and enforces security.[18]

Usage: Web Queue & Service management
Platform: HP-UX, NT, Solaris, Linux
WebQoS

HP webqos is a multi-platform server-based used to control web site performance and resources. Webqos receives and looks at all HTTP request and data packets before passing them on to the web server. No data is passed to via a HTTP connection request to the web server unless there is legitimate data associated with the request. Therefore, the web server will not be affected by a HTTP denial of service.[19]

Usage: Network Traffic security
Platform: NT, HP-UX, Solaris
E-Firewall

E-Firewall uses a robust set of application proxies to examine the entire data stream of every connection attempted through the firewall. Traffic is filtered according to explicit order-independent rules.[20]

Extranet Security
Platform: NT, HP-UX, Solaris
Extranet VPN

Extranet VPN secures communications between third-party users and a company's internal network, with user-based authentication and strong encryption of information sent over the Internet.[21]

[16] http://www.hp.com/security/products/virtualvault/
[17] http://www.hp.com/security/press/releases/20010425-scaward/
[18] http://www.hp.com/security/products/webenforcer/
[19] http://www.hp.com/security/products/webenforcer/
[20] http://www.erpworld.org/vendor/prod/f175.html
[21] http://www.hp.com/security/products/vpn/

Accelerates SSL connection on Web Servers
Platform: HP-UX
SpeedCard

HP Speedcard improves the performance of applications running on HP servers whenever user authentication protocols such as the Secure Sockets Layer (SSL) bundled into Netscape Enterprise Server are implemented. It offloads cryptographic computations from web server. [22]

E-commerce security is a work in progress. There is no "silver bullet" solution to the security problems associated with e-commerce. The problem is a global one and it will require input and cooperation from nations around the world to meet the challenge.

[22] http://www.hp.com/security/products/speedcard/

Additional References:

http://www.securityfocus.com/focus/ids/articles/marcmyers.html
Hassler, Vesna. Security Fundamentals for E-Commerce, Artech House 2001

Assignment 3 – Analyze This

Executive Summary:

Thank you for the opportunity to review and assess the security posture of your organization's network. This report provides an initial assessment of your network based on a sampling of your network traffic. It includes recommendations that will improve security practices in your organization.

Observations/Recommendations:
Establish and enforce policies on appropriate network use. There is a considerable amount of traffic generated by tools such as Gnutella and ICQ; 67% of the scan activity originated inside your network. High volumes of this type of traffic take away resources that could be used to support the organization.

Consider the placement of your sensor. Seven percent of the total detects where involving private network addresses. Six percent of the detects were generated by host 10.0.0.1 which is generating bootp traffic to the network broadcast address 10.255.255.255 which could be normal traffic if it is a diskless workstation or it could be an indication of a misconfigured machine. The other 1% of the detects were generated by netbios name service traffic (UDP port 137) from host 192.168.0.2

There was evidence of possible the presence of compromised hosts in the network. Those hosts are specified in the detailed section of the report. Verification, containment, and eradication must be done on the effected systems. Known Trojan ports should be blocked at the perimeter gateway.

Ingress and regress filtering should be implemented to prevent packets with source IP addresses outside of your address range from leaving your network. This will prevent attackers from using your network as a launch pad for distributed denial of service attacks.

Detailed Analysis based upon the following data:

Alerts

File Name:	Begin Date/Time:	End Date/Time:
Alert-01-Apr	Mar 31 00:16:24	Apr 1 00:03:54
Alert-03-Apr	Apr 2 00:16:13	Apr 2 23:48:12
Alert-23-Mar	Mar 22 00:19:45	Mar 23 00:05:39
Alert-26-Mar	Mar 25 00:16:50	Mar 26 00:05:58
Alert-27-Mar	Mar 26 00:24:49	Mar 26-23:50:03

Scans

File Name:	Begin Date/Time:	End Date/Time:
SnortScan-01-Apr	Mar 31 00:00:16	Mar 31 23:58:36
SnortScan-03-Apr	Apr 2 00:00:09	Apr 2 23:56:58
SnortScan-23-Mar	Mar 22 00:04:49	Mar 22 23:50:49
SnortScan-26-Mar	Mar 25 00:00:32	Mar 25 23:56:16
SnortScan-27-Mar	Mar 26 00:10:42	Mar 26 23:57:00

Out of Spec

File Name:	Begin Date/Time:	End Date/Time:
OOS-Apr-02	Apr 2 00:04:39	Apr 2 23:47:52
OOS-Mar-23	Mar 23 01:20:57	Mar 23 22:55:33
OOS-Mar-26	Mar 26 01:55:25	Mar 26 22:45:05
OOS-Mar-27	Mar 27 01:18:05	Mar 27 22:44:26
OOS-Mar-28	Mar 28 01:27:04	Mar 28 23:42:35

Alert Listing

Duration: Earliest alert at **00:04:49**.047251 *on 03/22/2001*
Latest alert at **23:48:12**.158179 *on 04/02/2001*

Total		Alerts	
10906		Watchlist 000220 IL-ISDNNET-990517	
10833		Attempted Sun RPC high port access	
3175		UDP SRC and DST outside network	
2494		SYN-FIN scan!	
431		External RPC call	
307		connect to 515 from outside	
296		Possible RAMEN server activity	
243		SMB Name Wildcard	
139		Queso fingerprint	
136		Watchlist 000222 NET-NCFC	
117		WinGate 1080 Attempt	
109		Back Orifice	
96		TCP SRC and DST outside network	
49		Russia Dynamo – SANS Flash 28-jul-00	
38		Null scan!	
29		Port 55850 tcp - Possible myserver activity - ref. 010313-1	
24		NMAP TCP ping!	
20		Tiny Fragments - Possible Hostile Activity	
10		SUNRPC highport access!	
8		ICMP SRC and DST outside network	
2		connect to 515 from inside	
		Total:	29462

Detects Prioritized by Number of Occurrences in Descending Order

Detect #1: Watchlist 000220 IL-ISDNNET-990517

SnortSnarf signature page
`Watchlist 000220 IL-ISDNNET-990517`
SnortSnarf v052301.1

10906 alerts with this signature using input module SnortFileInput, with sources:

- D:/GIAC/massalrt.txt

Duration: Earliest such alert at **04:07:26**.296525 *on 03/22/2001*
Latest such alert at **23:07:48**.661953 *on 04/02/2001*

Watchlist 000220 IL-ISDNNET-990517	26 sources	25 destinations

---

Top 5 Sources triggering this attack signature

Source	# Alerts (sig)	# Alerts (total)	# Dsts (sig)	# Dsts (total)
212.179.4.50	6473	6473	1	1
212.179.127.41	2160	2160	1	1
212.179.72.226	1082	1082	1	1
212.179.28.66	831	831	1	1
212.179.27.6	91	91	4	4

Top 5 Destinations receiving this attack signature

Destinations	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
999.999.222.154	6561	6562	4	5
999.999.156.55	2160	2166	1	5
999.999.201.238	1082	1082	1	1
999.999.219.14	831	840	1	4
999.999.219.38	97	97	5	5

Threat/Vulnerabilities: Gnutella allows the sharing of files through firewalls:
gnutella-svc 6346/tcp gnutella-svc

gnutella-svc 6346/udp gnutella-svc
gnutella-rtr 6347/tcp gnutella-rtr
gnutella-trt 6347/udp gnutella-rtr
The source host are registered to Israeli address.
Correlations: http://www.sans.org/y2k/051900.htm
http://ouah.bsdjeunz.org/George_Bakos.html
Reference:
http://www.iana.org/assignments/port-numbers

Detect #2: Attempted Sun RPC high port access

SnortSnarf signature page
Attempted Sun RPC high port access
SnortSnarf v052301.1

10833 alerts with this signature using input module SnortFileInput, with sources:

- D:/GIAC/massalrt.txt

Duration: Earliest such alert at **19:42:24**.114048 *on 03/26/2001*
Latest such alert at **22:40:51**.585106 *on 04/02/2001*

Attempted Sun RPC high port access	4 sources	4 destinations

Sources triggering this attack signature

Source	# Alerts (sig)	# Alerts (total)	# Dsts (sig)	# Dsts (total)
63.121.232.185	10379	10379	2	2
209.150.227.153	452	452	1	1
205.188.153.101	1	1	1	1
205.188.153.97	1	1	1	1

Destinations receiving this attack signature

Destinations	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
999.999.221.198	8926	8926	1	1
999.999.224.2	1905	1905	2	2
999.999.224.58	1	1	1	1
999.999.228.90	1	3	1	2

Threat/Vulnerabilities:

Rpc bind32 Check	The Rpcbind service normally only listens on port 111. Under Solaris the Rpcbind service will also listen under port 32771, this sometimes allows attackers to bypass packet filtering firewalls.

CVE-1999-0189
Solaris rpcbind listens on a high numbered UDP port, which may not be filtered since the standard port number is 111.

Rule: alert udp any any -> $HOME_NET 32771 (msg: "Attempted Sun RPC high port access";)
http://www.clark.net/~roesch/misc-lib

Correlation: http://www.sans.org/y2k/021500.htm
http://www.sans.org/y2k/051900.htm
http://www.cpmc.columbia.edu/misc/docs/iss/html/ch_2.html
http://cve.mitre.org/cve/refs/refmap/source-SUN.html

Detect #3: UDP SRC and DST outside network

SnortSnarf signature page

UDP SRC and DST outside network

SnortSnarf v052301.1

3175 alerts with this signature using input module SnortFileInput, with sources:

- D:/GIAC/massalrt.txt

Duration: Earliest such alert at **00:30:45**.656617 *on 03/22/2001*
Latest such alert at **23:48:12**.158179 *on 04/02/2001*

UDP SRC and DST outside network	65 sources	268 destinations

Top 5 Sources triggering this attack signature

Source	# Alerts (sig)	# Alerts (total)	# Dsts (sig)	# Dsts (total)
10.0.0.1	1502	1502	1	1
129.2.225.92	502	502	1	1
192.168.0.2	384	384	2	2
169.254.67.123	246	246	212	212
192.168.0.13	101	101	2	2

Top 5 Destinations receiving this attack signature

Destinations	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
10.255.255.255	1502	1502	1	1
128.183.7.7	502	502	1	1
192.168.0.255	383	383	1	1
235.80.68.83	167	167	33	33
169.254.255.255	58	58	3	3

Threat/Vulnerabilities: Neither side of the connection was within your network. This traffic could be an indication of IP address forgery, or that your network is being used to launch an attack on some other network. I should not see this type of traffic normally.
Correlations: http://www.cs.wright.edu/~pmateti/Courses/499/IPexploits/

Detect #4: SYN-FIN scan!

SnortSnarf signature page
SYN-FIN scan!
SnortSnarf v052301.1

2494 alerts with this signature using input module SnortFileInput, with sources:

- D:/GIAC/massalrt.txt

Duration: Earliest such alert at **00:00:52**.899361 *on 03/31/2001*
Latest such alert at **23:48:17**.240683 *on 03/31/2001*

SYN-FIN scan!	2 sources	1950 destinations

Sources triggering this attack signature

Source	# Alerts (sig)	# Alerts (total)	# Dsts (sig)	# Dsts (total)
211.178.63.4	2493	2493	1949	1949
24.17.64.12	1	4	1	2

Top 5 Destinations receiving this attack signature

Destinations	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
999.999.218.49	4	4	1	1
999.999.2.49	4	4	1	1
999.999.144.83	3	3	1	1
999.999.18.61	3	3	1	1
999.999.5.92	3	3	1	1

Threat/Vulnerabilities: SYN/FIN scans are often used to avert firewalls and scan for open ports. This is a well known reconnaissance tactic used by hackers. It can also be used as a way to fingerprint the target operating system. The primary source of this attack is registered to a Korean network address.
Rule: alert TCP $EXTERNAL any -> $INTERNAL any (msg: " SYN-FIN Scan!"; flags:SF;)
Correlations: http://www.whitehats.com/cgi/arachNIDS/Show?_id=ids198&view=event

Detect #5: External RPC call

SnortSnarf signature page
External RPC call
SnortSnarf v052301.1

---

431 alerts with this signature using input module SnortFileInput, with sources:

- D:/GIAC/massalrt.txt

Duration: Earliest such alert at **16:26:56**.292779 *on 03/25/2001*
Latest such alert at **23:18:23**.558962 *on 04/02/2001*

External RPC call	7 sources	344 destinations

Top 5 Sources triggering this attack signature

Source	# Alerts (sig)	# Alerts (total)	# Dsts (sig)	# Dsts (total)
209.217.53.190	130	130	130	130
61.129.39.161	81	81	65	65
24.91.102.156	69	69	69	69
209.189.124.214	52	52	52	52
209.70.72.22	44	44	44	44

Top 5 Destinations receiving this attack signature

Destinations	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
999.999.135.210	3	3	3	3
999.999.132.110	3	3	2	2
999.999.132.138	3	3	3	3
999.999.132.114	3	3	2	2
999.999.132.208	3	3	3	3

Threat/Vulnerabilities: RPC implements a logical client-to-server communications system designed specifically for the support of network applications.
Rule:
Correlations: http://www.sans.org/y2k/010300-0900.htm
Reference: http://nscp.upenn.edu/aix4.3html/aixprggd/progcomc/ch8_rpc.htm

Detect #6: connect to 515 from outside

SnortSnarf signature page
connect to 515 from outside
SnortSnarf v052301.1

---

307 alerts with this signature using input module SnortFileInput, with sources:

- D:/GIAC/massalrt.txt

Duration: Earliest such alert at **10:03:20**.841926 *on 03/22/2001*
Latest such alert at **18:07:49**.638079 *on 04/02/2001*

connect to 515 from outside	7 sources	234 destinations

Top 5 Sources triggering this attack signature

Source	# Alerts (sig)	# Alerts (total)	# Dsts (sig)	# Dsts (total)
216.162.44.140	188	188	143	143
63.123.106.6	37	37	37	37
207.124.229.123	33	33	31	31
212.125.177.199	20	20	20	20
205.238.235.88	17	17	16	16

Top 5 Destinations receiving this attack signature

Destinations	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
999.999.133.216	4	4	2	2
999.999.133.208	3	3	2	2
999.999.134.81	3	4	2	3
999.999.134.31	3	4	2	3
999.999.134.54	3	4	2	3

Threat/Vulnerabilities: Adore scans the Internet checking Linux hosts to determine whether they are vulnerable to any of the following well-known exploits: LPRng, rpc-statd, wu-ftpd and BIND. LPRng is installed by default on Red Hat 7.0 systems. From the

reports so far, Adore appears to have started its spread on April 1.(http://www.sans.org/y2k/adore.htm)
TCP port 515 (LPD) can also be used for remote OS detection - not a root exploit.
Correlations: http://www.sans.org/y2k/122100-1200.htm
http://packetstorm.securify.com/advisories/l0pht/l0pht.00-01-08.lpd

There are several CVE entries involving TCP port 515:
CVE-1999-0299 - Buffer overflow in FreeBSD lpd through long DNS hostnames.
http://www.cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-1999-0299
CVE-2000-0534 - The apsfilter software in the FreeBSD ports package does not properly read user filter configurations, which allows local users to execute commands as the lpd user.
http://www.cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2000-0534
CAN-1999-0061 ** CANDIDATE (under review) ** File creation and deletion, and remote execution, in the BSD line printer daemon (lpd).
http://www.cve.mitre.org/cgi-bin/cvename.cgi?name=CAN-1999-0061
CAN-2000-0839 ** CANDIDATE (under review) ** WinCOM LPD 1.00.90 allows remote attackers to cause a denial of service by sending a large number of LPD options to the LPD port (515).
http://www.cve.mitre.org/cgi-bin/cvename.cgi?name=CAN-2000-0839
CAN-2000-0879 ** CANDIDATE (under review) ** LPPlus programs dccsched, dcclpdser, dccbkst, dccshut, dcclpdshut, and dccbkstshut are installed setuid root and world executable, which allows arbitrary local users to start and stop various LPD services.
http://www.cve.mitre.org/cgi-bin/cvename.cgi?name=CAN-2000-0879
CAN-2000-1064 ** CANDIDATE (under review) ** Buffer overflow in the LPD service in HP JetDirect printer card Firmware x.08.20 and earlier allows remote attackers to cause a denial of service.
http://www.cve.mitre.org/cgi-bin/cvename.cgi?name=CAN-2000-1064
Reference: http://sluglug.ucsc.edu/pipermail/sluglug/2001-April/003109.html

Detect #7: Possible RAMEN server activity

SnortSnarf signature page
Possible RAMEN server activity
SnortSnarf v052301.1

296 alerts with this signature using input module SnortFileInput, with sources:

- D:/GIAC/massalrt.txt

Duration: Earliest such alert at **01:24:02**.231341 *on 03/22/2001*
Latest such alert at **19:57:08**.989338 *on 04/02/2001*

Possible RAMEN server activity	92 sources	120 destinations

Top 5 Sources triggering this attack signature

Source	# Alerts (sig)	# Alerts (total)	# Dsts (sig)	# Dsts (total)
203.199.88.59	65	65	31	31
63.10.42.245	15	15	1	1
999.999.209.86	13	13	1	1
999.999.221.26	10	10	4	4
999.999.98.171	9	9	1	1

Top 5 Destinations receiving this attack signature

Destinations	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
63.10.40.155	17	17	2	2
24.180.160.210	16	16	3	3
999.999.210.2	15	15	1	1
999.999.221.26	10	10	7	7
203.199.88.59	10	10	5	5

Threat/Vulnerabilities: Ramen is a self-propagating worm that exploits vulnerabilities in Red Hat versions of Linux. It is spread using port 27374. Hosts 999.999.209.86, 999.999.221.26, and 999.999.98.171 show indication of compromise.
Correlations: http://www.linuxsecurity.com/articles/network_security_article-2335.html

http://www.internetnews.com/wd-news/article/0,,10_563141,00.html
http://www.trusecure.com/html/tspub/hypeorhot/alerts/linuxramenworm.shtml

Detect #8: SMB Name Wildcard

signature page

SMB Name Wildcard

SnortSnarf v052301.1

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243 alerts with this signature using input module SnortFileInput, with sources:

- D:/GIAC/massalrt.txt

Duration: Earliest such alert at **00:11:57**.626793 *on 03/22/2001*
Latest such alert at **23:35:23**.810694 *on 04/02/2001*

SMB Name Wildcard	120 sources	90 destinations

Top 5 Sources triggering this attack signature

Source	# Alerts (sig)	# Alerts (total)	# Dsts (sig)	# Dsts (total)
4.41.3.11	6	6	1	1
211.118.86.11	6	6	1	1
217.1.75.169	6	6	1	1
61.113.69.107	5	5	1	1
62.47.50.129	5	5	1	1

Top 5 Destinations receiving this attack signature

Destinations	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
999.999.132.36	20	22	5	7
999.999.133.32	15	15	3	3
999.999.135.45	11	12	3	4
999.999.133.245	11	13	7	9
999.999.135.25	6	6	2	2

Threat/Vulnerabilities: replacing the name in standard Netbios "nbstat" frames with an "*" followed by blanks, attackers can gain valuable Netbios naming information and node status information from Netbios and SAMBA clients. Taking advantage of the inability of SMB to parse correctly when the wildcard is used. The response contains a listing of any Netbios names known to that node.
Correlations: http://www.sans.org/y2k/051300.htm
http://www.sans.org/y2k/practical/Loras_Evan_GCIA.doc

Detect #9: Queso fingerprint

SnortSnarf signature page
`Queso fingerprint`
SnortSnarf v052301.1

139 alerts with this signature using input module SnortFileInput, with sources:

- D:/GIAC/massalrt.txt

Duration: Earliest such alert at **00:59:01**.795512 *on 03/22/2001*
Latest such alert at **15:30:33**.434439 *on 04/02/2001*

Queso fingerprint	14 sources	20 destinations

Top 5 Sources triggering this attack signature

Source	# Alerts (sig)	# Alerts (total)	# Dsts (sig)	# Dsts (total)
129.206.170.20	101	101	2	2
158.75.57.4	13	13	9	9
24.50.80.131	6	6	1	1
213.64.149.61	5	5	1	1
130.233.26.197	5	5	1	1

Top 5 Destinations receiving this attack signature

Destinations	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
999.999.202.54	98	99	1	2
999.999.219.14	8	840	2	4
999.999.229.38	7	20	2	8
999.999.219.134	5	5	1	1
999.999.218.142	3	3	1	1

Threat/Vulnerabilities: Queso is a tool used to attempt to determine what operating system a host is running. This could be potentially dangerous as attackers could use this information to launch targeted attacks.

Correlations:
http://www.securityfocus.com/frames/?focus=ids&content=/focus/ids/articles/portscan.html

Detect #10: Watchlist 000222 NET-NCFC

SnortSnarf signature page
Watchlist 000222 NET-NCFC
SnortSnarf v052301.1

136 alerts with this signature using input module SnortFileInput, with sources:

- D:/GIAC/massalrt.txt

Duration: Earliest such alert at **06:02:56**.754894 *on 03/22/2001*
Latest such alert at **21:37:37**.636498 *on 04/02/2001*

Watchlist 000222 NET-NCFC	10 sources	9 destinations

Top 5 Sources triggering this attack signature

Source	# Alerts (sig)	# Alerts (total)	# Dsts (sig)	# Dsts (total)
159.226.92.9	94	94	1	1
159.226.41.166	22	22	1	1
159.226.6.6	5	5	1	1
159.226.158.188	4	4	1	1
159.226.47.217	4	4	1	1

Top 5 Destinations receiving this attack signature

Destinations	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
999.999.144.54	94	95	1	2
999.999.100.81	22	23	1	2
999.999.253.43	6	7	2	3
999.999.6.47	4	8	1	3
999.999.140.236	4	4	1	1

Threat/Vulnerabilities: This alert was generated because the source addresses involved are associated with the Computer Network Center Chinese Academy of Sciences and they are attempting to access a mail server in your network**.** This could indicate that some malicious activity will follow.
Correlations:http://www.zeltser.com/sans/practical/

Detect #11: WinGate 1080 Attempt

SnortSnarf signature page
WinGate 1080 Attempt
SnortSnarf v052301.1

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117 alerts with this signature using input module SnortFileInput, with sources:

- D:/GIAC/massalrt.txt

Earliest such alert at **00:44:14**.910522 *on 03/22/2001*
Latest such alert at **22:20:11**.600061 *on 04/02/2001*

WinGate 1080 Attempt	53 sources	64 destinations

Top 5 Sources triggering this attack signature

Source	# Alerts (sig)	# Alerts (total)	# Dsts (sig)	# Dsts (total)
204.117.70.5	8	8	3	3
195.66.170.8	8	8	3	3
217.10.143.59	6	6	5	5
63.102.227.48	6	6	3	3
216.54.223.198	5	5	2	2

Top 5 Destinations receiving this attack signature

Destinations	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
999.999.60.11	6	8	4	6
999.999.204.102	5	5	2	2
999.999.202.58	4	4	2	2
999.999.156.55	4	2166	3	5
999.999.254.10	4	4	1	1

Threat/Vulnerabilities: Wingate allows multiple hosts to share a single internet connection. Attackers use this to hide while launching attacks.
Correlations: http://cve.mitre.org/cgi-bin/cvename.cgi?name=cve-1999-0441
http://cve.mitre.org/cgi-bin/cvename.cgi?name=cve-1999-0291

Detect #12: Back Orifice

SnortSnarf signature page
Back Orifice
SnortSnarf v052301.1

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109 alerts with this signature using input module SnortFileInput, with sources:

- D:/GIAC/massalrt.txt

Duration: Earliest such alert at **14:37:58**.116356 *on 03/26/2001*
Latest such alert at **14:38:45**.807857 *on 03/26/2001*

Back Orifice	1 sources	109 destinations

Sources triggering this attack signature

Source	# Alerts (sig)	# Alerts (total)	# Dsts (sig)	# Dsts (total)
24.162.245.198	109	109	109	109

Top 5 Destinations receiving this attack signature

Destinations	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
999.999.7.53	1	1	1	1
999.999.20.130	1	1	1	1
999.999.7.57	1	1	1	1
999.999.20.6	1	1	1	1
999.999.2.105	1	1	1	1

Threat/Vulnerabilities: Back Orifice allows remote users to gain access to you computer and potentially run malicious code. The source of these alerts are registered to ServiceCo LLC - Road Runner (NET-ROAD-RUNNER-5)
13241 Woodland Park Road Herndon, VA 20171 US

Correlations: http://www.symantec.com/avcenter/warn/backorifice.html
http://www.zdnet.com/zdnn/stories/zdnn_smgraph_display/0,3441,2124585,00.html

Detect #13: TCP SRC and DST outside network

SnortSnarf signature page

TCP SRC and DST outside network

SnortSnarf v052301.1

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96 alerts with this signature using input module SnortFileInput, with sources:

- D:/GIAC/massalrt.txt

Duration: Earliest such alert at **08:10:56**.202450 *on 03/22/2001*
Latest such alert at **22:24:19**.069127 *on 04/02/2001*

TCP SRC and DST outside network	22 sources	35 destinations

Sources triggering this attack signature

Source	# Alerts (sig)	# Alerts (total)	# Dsts (sig)	# Dsts (total)
65.9.246.190	42	44	2	4
169.254.101.152	19	19	10	10
172.140.196.73	12	12	2	2
206.196.177.82	3	3	3	3
192.168.0.5	2	2	1	1

Destinations receiving this attack signature

Destinations	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
172.173.102.93	40	40	1	1
12.77.186.67	10	10	1	1
205.188.49.19	5	5	1	1
205.188.49.16	3	3	1	1
205.188.45.241	3	3	1	1

Threat/Vulnerabilities: Neither side of the connection was within your network. This traffic could be an indication of IP address forgery, or that your network is being used to launch an attack on some other network. I should not see this type of traffic normally.
Correlations: http://www.cs.wright.edu/~pmateti/Courses/499/IPexploits/
http://www.all.net/journal/netsec/9606.html

Detect #14: Russia Dynamo - SANS Flash 28-jul-00

SnortSnarf signature page

`Russia Dynamo - SANS Flash 28-jul-00`

SnortSnarf v052301.1

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49 alerts with this signature using input module SnortFileInput, with sources:

- D:/GIAC/massalrt.txt

Duration: Earliest such alert at **09:55:13**.472191 *on 03/22/2001*
Latest such alert at **19:02:52**.309207 *on 04/02/2001*

Russia Dynamo - SANS Flash 28-jul-00	4 sources	3 destinations

---

Sources triggering this attack signature

Source	# Alerts (sig)	# Alerts (total)	# Dsts (sig)	# Dsts (total)
194.87.6.189	43	43	1	1
999.999.178.42	4	4	1	1
194.87.6.164	1	1	1	1
194.87.6.21	1	1	1	1

Destinations receiving this attack signature

Destinations	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
999.999.178.42	44	46	2	4
194.87.6.21	4	4	1	1
999.999.219.14	1	840	1	4

Threat/Vulnerabilities: The 194.87.6.x network is registered to a Russian address. This could be an indication of compromised hosts in your network. I recommend that the 999.999.178.42 and 999.999.219.14 hosts be checked for any indication of a Trojan.

CORRELATIONS:
HTTP://ARCHIVES.NEOHAPSIS.COM/ARCHIVES/SANS/2000/0068.HTML

HTTP://WWW.SANS.ORG/Y2K/072818.HTM

HTTP://WWW.SANS.ORG/Y2K/PRACTICAL/MIIKA_TURKIA_GCIA.HTML

Detect #15: Null scan!

SnortSnarf signature page

Null scan!

SnortSnarf v052301.1

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38 alerts with this signature using input module SnortFileInput, with sources:

- D:/GIAC/massalrt.txt

Duration: Earliest such alert at **00:04:49**.047251 *on 03/22/2001*
Latest such alert at **04:38:08**.108174 *on 04/02/2001*

Null scan!	26 sources	19 destinations

Top 5 Sources triggering this attack signature

Source	# Alerts (sig)	# Alerts (total)	# Dsts (sig)	# Dsts (total)
24.108.215.109	6	6	1	1
24.43.241.223	4	4	1	1
24.17.64.12	3	4	2	2
24.141.54.29	2	2	1	1
24.201.95.135	2	2	1	1

Top 5 Destinations receiving this attack signature

Destinations	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
999.999.209.30	9	10	4	5
999.999.220.38	6	7	1	2
999.999.229.38	5	20	5	8
999.999.226.82	2	3	2	3
999.999.209.154	2	2	1	1

Threat/Vulnerabilities: Null scans are used by attackers for reconnaissance gathering about open port on target hosts.

CORRELATIONS: HTTP://WWW.NCMAG.COM/2001_03/CYBERCRIME/

HTTP://WWW.NETWORKICE.COM/ADVICE/INTRUSIONS/2000309/DEFAULT.HTM

Detect #16: Port 55850 tcp - Possible myserver activity - ref. 010313-1

SnortSnarf signature page

Port 55850 tcp - Possible myserver activity - ref. 010313-1

SnortSnarf v052301.1

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29 alerts with this signature using input module SnortFileInput, with sources:

- D:/GIAC/massalrt.txt

Duration: Earliest such alert at **03:30:35**.045398 *on 03/22/2001*
Latest such alert at **16:47:04**.593439 *on 03/31/2001*

Port 55850 tcp - Possible myserver activity - ref. 010313-1	9 sources	10 destinations

Sources triggering this attack signature

Source	# Alerts (sig)	# Alerts (total)	# Dsts (sig)	# Dsts (total)
999.999.218.86	16	16	2	2
199.20.66.1	4	4	1	1
198.81.129.194	3	3	1	1
999.999.60.38	1	1	1	1
212.158.113.194	1	1	1	1

Top 5 Destinations receiving this attack signature

Destinations	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
172.154.1.109	14	14	1	1
999.999.229.38	4	20	1	8
999.999.253.112	3	3	1	1
213.44.175.50	2	2	1	1
63.97.226.2	1	1	1	1

Threat/Vulnerabilities: MyServer is a DdoS tool. The agent uses port 55850. Hosts 999.999.218.86 and 999.999.60.38 should be checked for indication of compromise.
Correlations: http://www.sans.org/y2k/082200.htm
http://archives.neohapsis.com/archives/incidents/2000-10/0136.html

Detect #17: NMAP TCP ping!

SnortSnarf signature page
NMAP TCP ping!
SnortSnarf v052301.1

---

24 alerts with this signature using input module SnortFileInput, with sources:

- D:/GIAC/massalrt.txt

Duration: Earliest such alert at **00:23:38**.294659 *on 03/22/2001*
Latest such alert at **20:32:54**.095143 *on 04/02/2001*

NMAP TCP ping!	8 sources	12 destinations

Top 5 Sources triggering this attack signature

Source	# Alerts (sig)	# Alerts (total)	# Dsts (sig)	# Dsts (total)
192.102.197.234	11	11	2	2
199.197.130.21	3	3	3	3
202.187.24.3	3	3	3	3
63.119.91.2	2	2	2	2
194.133.58.2	2	2	2	2

Top 5 Destinations receiving this attack signature

Destinations	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
999.999.1.8	8	8	1	1
999.999.1.10	3	3	1	1
999.999.100.165	2	2	2	2
999.999.60.14	2	3	2	3
999.999.1.3	2	2	2	2

Threat/Vulnerabilities: This event indicates that a remote user has used the NMAP portscanning tool to probe the server. An NMAP TCP ping was sent to determine if a host is reachable. pcAnywhere 8.x and 9.x allows remote attackers to cause a denial of service via a TCP SYN scan, e.g. by nmap.
Correlations: http://cve.mitre.org/cgi-bin/cvename.cgi?name=CAN-2000-0324
http://www.whitehats.com/IDS/28

Detect #18: Tiny Fragments - Possible Hostile Activity

SnortSnarf signature page

Tiny Fragments - Possible Hostile Activity

SnortSnarf v052301.1

---

20 alerts with this signature using input module SnortFileInput, with sources:

- D:/GIAC/massalrt.txt

Duration: Earliest such alert at **17:44:11**.884673 *on 03/25/2001*
Latest such alert at **16:48:11**.374219 *on 04/02/2001*

Tiny Fragments - Possible Hostile Activity	2 sources	14 destinations

---

Sources triggering this attack signature

Source	# Alerts (sig)	# Alerts (total)	# Dsts (sig)	# Dsts (total)
202.39.78.125	18	18	12	12
202.39.78.124	2	2	2	2

Top 5 Destinations receiving this attack signature

Destinations	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
999.999.203.150	4	5	1	2
999.999.203.50	2	2	1	1
999.999.230.42	2	2	1	1
999.999.208.142	2	2	1	1
999.999.204.218	1	1	1	1

Threat/Vulnerabilities: Attackers sometimes use tools to craft packets containing tiny fragments to prevent detection by intrusion detection systems. By fragmenting packets and spreading the signature over multiple packets hostile traffic can often get by pattern matching IDS systems. Fragmentation can sometimes occur in normal traffic; however it can cause problems when reassembly is not handled correctly. There are several known exploits that utilize fragmentation such as teardrop, jolt2, etc.
Correlations: http://archives.neohapsis.com/archives/snort/2000-10/0176.html
http://www.sans.org/infosecFAQ/encryption/IP_frag.htm

Detect #19: SUNRPC highport access!

SnortSnarf signature page
SUNRPC highport access!
SnortSnarf v052301.1

---

10 alerts with this signature using input module SnortFileInput, with sources:

- D:/GIAC/massalrt.txt

Duration: Earliest such alert at **14:58:28**.952796 *on 03/25/2001*
Latest such alert at **14:58:29**.585974 *on 03/25/2001*

SUNRPC highport access!	1 sources	1 destinations

Sources triggering this attack signature

Source	# Alerts (sig)	# Alerts (total)	# Dsts (sig)	# Dsts (total)
216.136.171.195	10	10	1	1

Destinations receiving this attack signature

Destinations	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
999.999.100.225	10	10	1	1

Threat/Vulnerabilities: This alert was generated as a result of a lone host being targeted and probed for SUNRPC services. The source of this attack is of special interest because it is registered to an address in the Netherlands.
Correlations: CVE-1999-0189
Solaris rpcbind listens on a high numbered UDP port, which may not be filtered since the standard port number is 111.

Detect #20: ICMP SRC and DST outside network

SnortSnarf signature page

ICMP SRC and DST outside network

SnortSnarf v052301.1

---

8 alerts with this signature using input module SnortFileInput, with sources:

- D:/GIAC/massalrt.txt

Duration: Earliest such alert at **08:11:09**.556945 *on 03/22/2001*
Latest such alert at **18:49:26**.972974 *on 04/02/2001*

ICMP SRC and DST outside network	4 sources	5 destinations

Sources triggering this attack signature

Source	# Alerts (sig)	# Alerts (total)	# Dsts (sig)	# Dsts (total)
172.168.100.123	3	6	1	2
65.9.246.190	2	44	2	4
172.167.9.216	2	2	1	1
172.128.30.236	1	1	1	1

Destinations receiving this attack signature

Destinations	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
217.32.140.237	3	3	1	1
216.101.207.124	2	2	1	1
172.164.87.212	1	1	1	1
207.91.16.230	1	1	1	1
24.162.140.146	1	1	1	1

Threat/Vulnerabilities: Neither side of the connection was within your network. This traffic could be an indication of IP address forgery, or that your network is being used to launch an attack on some other network. I should not see this type of traffic normally. Additionally, the TCP packets source and destination port numbers are unusual. The source port is 137 (Netbios name service) and the destination port is 53 (DNS).
Correlations: http://www.cs.wright.edu/~pmateti/Courses/499/IPexploits/
http://www.all.net/journal/netsec/9606.html

Detect #21: connect to 515 from inside

SnortSnarf signature page
`connect to 515 from inside`
SnortSnarf v052301.1

---

2 alerts with this signature using input module SnortFileInput, with sources:

- D:/GIAC/massalrt.txt

Earliest such alert at **10:43:50**.894426 *on 03/22/2001*
Latest such alert at **10:59:47**.384457 *on 03/22/2001*

connect to 515 from inside	1 sources	1 destinations

`Sources triggering this attack signature`

Source	# Alerts (sig)	# Alerts (total)	# Dsts (sig)	# Dsts (total)
999.999.179.78	2	2	1	1

`Destinations receiving this attack signature`

Destinations	# Alerts (sig)	# Alerts (total)	# Srcs (sig)	# Srcs (total)
24.13.123.8	2	2	1	1

Threat/Vulnerabilities: A host inside your network is accessing the spooler port of a host outside of your network; though this could be normal it could also be an indication of an unauthorized transfer to data or the presence of a tool such as Netcat.
Correlations: http://www.sans.org/y2k/practical/Loras_Evan_GCIA.doc

top ten talkers involved in Detects

Total Connections = 23,764

#Connections	Src IP	Dst IP
8926	63.121.232.185	999.999.221.198
6473	212.179.4.50	999.999.222.154
2160	212.179.127.41	999.999.156.55
*1502	10.0.0.1	10.255.255.255
1453	63.121.232.185	999.999.224.2
1082	212.179.72.226	999.999.201.238
831	212.179.28.66	999.999.219.14
502	129.2.225.92	128.183.7.7
452	209.150.227.153	999.999.224.2
*383	192.168.0.2	192.168.0.255

* These are internal private network addresses. They are generating bootp traffic.
81% of the total detects where generated by these top 10 hosts.

Top ten talkers involved in Scans

Total Scans	Src IP
22269	193.251.27.118
19589	212.144.16.169
16860	999.999.220.42
14683	200.51.8.209
13326	999.999.221.198
10071	999.999.227.206
9978	999.999.224.2
7573	202.112.209.30
6374	999.999.218.86
5409	999.999.224.130

67% of the total scans originated from inside
33% of the total scans originated from outside

Whois info for 10 External Source Address

I selected these hosts because 8 of them were prime talkers involved in detects and the remaining 2 were primary participants in scanning activity.

External IP Addr
193.251,27.118*
212.144.16.169*
63.121.232.185
212.179.4.50
212.179.127.41
63.121.232.185
212.179.72.226
212.179.28.66
129.2.225.92
209.150.227.153

Whois: 193.251.27.118

inetnum: 193.251.0.0 - 193.251.95.255
netname: IP2000-ADSL-BAS
descr: France Telecom IP2000 ADSL BAS
descr: BAS for services FTI-1 and FTI-2
country: FR
admin-c: WITR1-RIPE
tech-c: WITR1-RIPE
status: ASSIGNED PA
remarks: for hacking, spamming or security problems send mail to
remarks: postmaster@wanadoo.fr AND abuse@wanadoo.fr
remarks: for ANY problem send mail to gestionip.ft@francetelecom.com
notify: gestionip.ft@francetelecom.com
mnt-by: FT-BRX
changed: gestionip.ft@francetelecom.fr 20000525
changed: gestionip.ft@francetelecom.fr 20001010
changed: gestionip.ft@francetelecom.com 20010510
source: RIPE

route: 193.251.0.0/18
descr: France Telecom
descr: RAIN-TRANSPAC
origin: AS3215
mnt-by: FT-BRX
changed: gestionip.ft@francetelecom.fr 20001026
source: RIPE

role: Wanadoo Interactive Technical Role
address: France Telecom Wanadoo Interactive
address: 41, rue Camille Desmoulins
address: 92442 ISSY LES MOULINEAUX Cedex
address: FR
phone: +33 1 41 33 39 00
fax-no: +33 1 41 33 39 01
e-mail: abuse@wanadoo.fr
e-mail: postmaster@wanadoo.fr
admin-c: FTI-RIPE
tech-c: TEFS1-RIPE
nic-hdl: WITR1-RIPE
notify: gestionip.ft@francetelecom.com
mnt-by: FT-BRX
changed: gestionip.ft@francetelecom.com 20010504
source: RIPE

Whois: 212.144.16.169

inetnum: 212.144.16.0 - 212.144.17.255
netname: O-TEL-O-IPBB
descr: o.tel.o GmbH
descr: Essen
country: DE
admin-c: RH10371-RIPE
tech-c: TW39-RIPE
status: ASSIGNED PA
notify: hostmaster@o-tel-o.de
mnt-by: OTELO-MNT
changed: hostmaster@o-tel-o.de 20001107
changed: hostmaster@o-tel-o.de 20010522
source: RIPE
route: 212.144.0.0/16
descr: Mannesmann o.tel.o GmbH & Co
descr: Germany
origin: AS3209
notify: ip-registry@arcor.net
mnt-by: ARCOR-MNT
changed: ip-registry@arcor.net 20000103
source: RIPE
person: Ralf Haupt
address: o.tel.o GmbH
address: Deutz-Muelheimer-Strasse 111
address: D-51063 Koeln
address: Germany
phone: +49 221 808 8682
fax-no: +49 221 808 7530
e-mail: hostmaster@o-tel-o.de
nic-hdl: RH10371-RIPE
notify: hostmaster@o-tel-o.de
mnt-by: OTELO-MNT
changed: hostmaster@o-tel-o.de 20010424
source: RIPE
person: Thomas Weigel
address: Mannesmann o.tel.o GmbH
address: Deutz-Muehlheimer-Str. 111
address: D-51063 Koeln
address: Germany
phone: +49 221 808 8735
fax-no: +49 221 808 7984
e-mail: thomas.weigel@o-tel-o.de
nic-hdl: TW39-RIPE
notify: guardian@xlink.net
mnt-by: XLINK-MNT

changed: nipper@xlink.net 19951206
changed: guardian@xlink.net 19960226
changed: guardian@xlink.net 19961108
changed: hostmaster@o-tel-o.de 19970512
changed: hostmaster@o-tel-o.de 19970804
changed: mlelstv@xlink.net 19980618
changed: guardian@xlink.net 20000111
changed: maier@xlink.net 20000529
source: RIPE

Whois: 63.121.232.185

UUNET Technologies, Inc. (NETBLK-UUNET63)
3060 Williams Drive, Suite 601
Fairfax, Virginia 22031
US
Netname: UUNET63
Netblock: 63.64.0.0 - 63.127.255.255
Maintainer: UU
Coordinator:
UUNET, Technical Support (OA12-ARIN) help@uu.net
(800) 900-0241
Domain System inverse mapping provided by:
AUTH03.NS.UU.NET 198.6.1.83
AUTH00.NS.UU.NET 198.6.1.65
ADDRESSES WITHIN THIS BLOCK ARE NON-PORTABLE

Sigecom (NETBLK-UU-63-121-232)
6045 Wedeking Avenue
Evansville, IN 47715
US
Netname: UU-63-121-232
Netblock: 63.121.232.0 - 63.121.239.255
Maintainer: SIGE
Coordinator:
Wilkison, Chris (CW471-ARIN) cwilkison@sigecom.net
812-437-0530

Whois: 212.179.4.50

inetnum: 212.179.4.48 - 212.179.4.63
netname: SCP-SYSTEMS-LTD
descr: SCP-SYSTEMS-LAN
country: IL
admin-c: ES4966-RIPE
tech-c: NP469-RIPE
status: ASSIGNED PA
notify: hostmaster@isdn.net.il
mnt-by: RIPE-NCC-NONE-MNT
changed: hostmaster@isdn.net.il 20000628
source: RIPE

route: 212.179.0.0/17
descr: ISDN Net Ltd.
origin: AS8551
notify: hostmaster@isdn.net.il
mnt-by: AS8551-MNT
changed: hostmaster@isdn.net.il 19990610
source: RIPE

person: Eran Shchori
address: BEZEQ INTERNATIONAL
address: 40 Hashacham Street
address: Petach-Tikva 49170 Israel
phone: +972 3 9257710
fax-no: +972 3 9257726
e-mail: hostmaster@bezeqint.net
nic-hdl: ES4966-RIPE
changed: registrar@ns.il 20000309
source: RIPE

person: Nati Pinko
address: Bezeq International
address: 40 Hashacham St.
address: Petach Tikvah Israel
phone: +972 3 9257761
e-mail: hostmaster@isdn.net.il
nic-hdl: NP469-RIPE
changed: registrar@ns.il 19990902
source: RIPE

Whois: 212.179.127.41

inetnum: 212.179.127.0 - 212.179.127.127
netname: ARAVA-DEVELOPMENT-COMPANY-LTD
descr: ARAVA-DEVELOPMENT-LAN
country: IL
admin-c: ES4966-RIPE
tech-c: NP469-RIPE
status: ASSIGNED PA
notify: hostmaster@isdn.net.il
mnt-by: RIPE-NCC-NONE-MNT
changed: hostmaster@isdn.net.il 20000525
source: RIPE

route: 212.179.0.0/17
descr: ISDN Net Ltd.
origin: AS8551
notify: hostmaster@isdn.net.il
mnt-by: AS8551-MNT
changed: hostmaster@isdn.net.il 19990610
source: RIPE

person: Eran Shchori
address: BEZEQ INTERNATIONAL
address: 40 Hashacham Street
address: Petach-Tikva 49170 Israel
phone: +972 3 9257710
fax-no: +972 3 9257726
e-mail: hostmaster@bezeqint.net
nic-hdl: ES4966-RIPE
changed: registrar@ns.il 20000309
source: RIPE

person: Nati Pinko
address: Bezeq International
address: 40 Hashacham St.
address: Petach Tikvah Israel
phone: +972 3 9257761
e-mail: hostmaster@isdn.net.il
nic-hdl: NP469-RIPE
changed: registrar@ns.il 19990902
source: RIPE

Whois: 63.121.232.185

UUNET Technologies, Inc. (NETBLK-UUNET63)
3060 Williams Drive, Suite 601
Fairfax, Virginia 22031
US
Netname: UUNET63
Netblock: 63.64.0.0 - 63.127.255.255
Maintainer: UU
Coordinator:
UUNET, Technical Support (OA12-ARIN) help@uu.net
(800) 900-0241

Domain System inverse mapping provided by:

AUTH03.NS.UU.NET 198.6.1.83
AUTH00.NS.UU.NET 198.6.1.65

ADDRESSES WITHIN THIS BLOCK ARE NON-PORTABLE

Sigecom (NETBLK-UU-63-121-232)
6045 Wedeking Avenue
Evansville, IN 47715
US

Netname: UU-63-121-232
Netblock: 63.121.232.0 - 63.121.239.255
Maintainer: SIGE

Coordinator:
Wilkison, Chris (CW471-ARIN) cwilkison@sigecom.net
812-437-0530

Whois: 212.179.72.226

inetnum: 212.179.72.224 - 212.179.72.239
netname: KESHET
descr: KESHET-LAN
country: IL
admin-c: ES4966-RIPE
tech-c: NP469-RIPE
status: ASSIGNED PA
notify: hostmaster@isdn.net.il
mnt-by: RIPE-NCC-NONE-MNT
changed: hostmaster@isdn.net.il 20000320
source: RIPE

route: 212.179.0.0/17
descr: ISDN Net Ltd.
origin: AS8551
notify: hostmaster@isdn.net.il
mnt-by: AS8551-MNT
changed: hostmaster@isdn.net.il 19990610
source: RIPE

person: Eran Shchori
address: BEZEQ INTERNATIONAL
address: 40 Hashacham Street
address: Petach-Tikva 49170 Israel
phone: +972 3 9257710
fax-no: +972 3 9257726
e-mail: hostmaster@bezeqint.net
nic-hdl: ES4966-RIPE
changed: registrar@ns.il 20000309
source: RIPE

person: Nati Pinko
address: Bezeq International
address: 40 Hashacham St.
address: Petach Tikvah Israel
phone: +972 3 9257761
e-mail: hostmaster@isdn.net.il
nic-hdl: NP469-RIPE
changed: registrar@ns.il 19990902
source: RIPE

Whois: 212.179.28.66
inetnum: 212.179.28.64 - 212.179.28.127
netname: VSOFT
descr: VSOFT-LAN
country: IL
admin-c: NP469-RIPE
tech-c: NP469-RIPE
status: ASSIGNED PA
notify: hostmaster@isdn.net.il
mnt-by: RIPE-NCC-NONE-MNT
changed: hostmaster@isdn.net.il 20000106
source: RIPE

route: 212.179.0.0/17
descr: ISDN Net Ltd.
origin: AS8551
notify: hostmaster@isdn.net.il
mnt-by: AS8551-MNT
changed: hostmaster@isdn.net.il 19990610
source: RIPE

person: Nati Pinko
address: Bezeq International
address: 40 Hashacham St.
address: Petach Tikvah Israel
phone: +972 3 9257761
e-mail: hostmaster@isdn.net.il
nic-hdl: NP469-RIPE
changed: registrar@ns.il 19990902
source: RIPE

Whois: 129.2.225.92
University of Maryland (NET-UMD-BOGON-NET)
Network Operations Center Bldg 224, Room 1301
College Park, MD 20742
US

Netname: UMD-BOGON-NET
Netblock: 129.2.0.0 - 129.2.255.255

Coordinator:
University of Maryland DNS Administration (UM-ORG-ARIN)
dnsadmin@NOC.UMD.EDU
(301) 405-3003

Domain System inverse mapping provided by:

NOC.UMD.EDU	128.8.5.2
NS1.UMD.EDU	128.8.74.2
NS2.UMD.EDU	128.8.76.2

Whois: 209.150.227.153
Clarity Connect Inc (NETBLK-CCI-NETWORK)
200 Pleasant Grove Road
Ithaca, NY 14850
US

Netname: CCI-NETWORK
Netblock: 209.150.224.0 - 209.150.255.255
Maintainer: CLCO

Coordinator:
Lalley, Joseph (JL583-ARIN) lalley@CLARITYCONNECT.COM
607-257-8596

Domain System inverse mapping provided by:

NS1.CLARITYCONNECT.COM 206.64.143.2
NS2.CLARITYCONNECT.COM 206.64.143.10

Scan Activity Analysis

- The biggest offender from inside your network was host 999.999.220.42 with 16,860 connections. Further investigation of the combined scans file using MS-Excel reviled that on March 22nd between the hours of 20:00 and 22:00 host 999.999.220.42 was scanning a lot of hosts. I also noticed that the source port was unchanging (port 9737). The destination ports ranged from 9017 – 9897. This could be an indication that some automated scanning tool such as Nessus was running.
- 67% of the scan activity originated from inside your network.
- 3% of the scan activity originated from outside your network.
- There was a high volume of scanning activity on March 31st. That was a Saturday and it is obvious that the attackers took advantage of the fact that most CERT teams operate at a reduced staffing level on weekends.
- March 31st beginning at midnight, host 195.22.0.154 started a telnet scan to multiple hosts in your network on subnets 206 – 214, 218 – 222, and 224 – 230.
- These are crafted packets scanning for FTP, HTTP, POP2, DNS, SUNRPC services. Attackers often set both the SYN and FIN flags in an attempt to get through firewalls.

```
Mar 31 00:05:54 211.178.63.4:21 -> 999.999.132.34:21 SYNFIN **SF****
Mar 31 00:06:07 211.178.63.4:8080 -> 999.999.130.34:8080 SYNFIN **SF****
Mar 31 00:06:50 211.178.63.4:21 -> 999.999.143.34:21 SYNFIN **SF****
Mar 31 00:08:42 211.178.63.4:21 -> 999.999.165.34:21 SYNFIN **SF****
Mar 31 00:08:58 211.178.63.4:109 -> 999.999.170.34:109 SYNFIN **SF****
Mar 31 00:10:09 211.178.63.4:21 -> 999.999.182.34:21 SYNFIN **SF****
Mar 31 00:11:47 211.178.63.4:109 -> 999.999.203.34:109 SYNFIN **SF****
Mar 31 00:12:41 211.178.63.4:53 -> 999.999.210.34:53 SYNFIN **SF****
Mar 31 00:14:34 211.178.63.4:53 -> 999.999.232.34:53 SYNFIN **SF****
Mar 31 00:21:27 211.178.63.4:21 -> 999.999.60.35:21 SYNFIN **SF****
Mar 31 00:27:44 211.178.63.4:111 -> 999.999.133.35:111 SYNFIN **SF****
Mar 31 00:29:42 211.178.63.4:21 -> 999.999.157.35:21 SYNFIN **SF****
Mar 31 00:30:25 211.178.63.4:8080 -> 999.999.161.35:8080 SYNFIN **SF****
```

- The hostile was conducting reconnaissance the entire class "B" network searching for DNS servers possibly for later targeting with an exploit. **This source IP is registered to a Denmark address.**

```
Mar 31 00:39:37 195.41.102.2:2073 -> 999.999.1.52:53 SYN **S*****
Mar 31 00:39:38 195.41.102.2:2120 -> 999.999.1.99:53 SYN **S*****
Mar 31 00:39:38 195.41.102.2:2125 -> 999.999.1.104:53 SYN **S*****
Mar 31 00:39:38 195.41.102.2:2137 -> 999.999.1.116:53 SYN **S*****
```

Mar 31 00:39:38 195.41.102.2:2140 -> 999.999.1.119:53 SYN **S*****
Mar 31 00:39:38 195.41.102.2:2141 -> 999.999.1.120:53 SYN **S*****
Mar 31 00:39:38 195.41.102.2:2146 -> 999.999.1.125:53 SYN **S*****
Mar 31 00:39:38 195.41.102.2:2154 -> 999.999.1.133:53 SYN **S*****
Mar 31 00:39:38 195.41.102.2:2176 -> 999.999.1.155:53 SYN **S*****
Mar 31 00:39:38 195.41.102.2:2178 -> 999.999.1.157:53 SYN **S*****
Mar 31 00:39:38 195.41.102.2:2184 -> 999.999.1.163:53 SYN **S*****
Mar 31 00:39:38 195.41.102.2:2190 -> 999.999.1.169:53 SYN **S*****
…..

Mar 31 00:56:06 195.41.102.2:1548 -> 999.999.154.247:53 SYN **S*****
Mar 31 00:56:06 195.41.102.2:1550 -> 999.999.154.249:53 SYN **S*****
Mar 31 00:56:07 195.41.102.2:1576 -> 999.999.155.20:53 SYN **S*****
Mar 31 00:56:07 195.41.102.2:1580 -> 999.999.155.24:53 SYN **S*****
Mar 31 00:56:07 195.41.102.2:1650 -> 999.999.155.94:53 SYN **S*****
Mar 31 00:56:07 195.41.102.2:1654 -> 999.999.155.98:53 SYN **S*****
Mar 31 00:56:07 195.41.102.2:1658 -> 999.999.155.102:53 SYN **S*****
Mar 31 00:56:07 195.41.102.2:1690 -> 999.999.155.134:53 SYN **S*****
Mar 31 00:56:07 195.41.102.2:1701 -> 999.999.155.145:53 SYN **S*****

- Continuing reconnaissance for DNS service.

Mar 31 01:19:51 209.116.250.194:2380 -> 999.999.1.17:53 SYN **S*****
Mar 31 01:19:52 209.116.250.194:2403 -> 999.999.1.40:53 SYN **S*****
Mar 31 01:19:52 209.116.250.194:2409 -> 999.999.1.46:53 SYN **S*****
Mar 31 01:19:52 209.116.250.194:2414 -> 999.999.1.51:53 SYN **S*****
Mar 31 01:19:52 209.116.250.194:2413 -> 999.999.1.50:53 SYN **S*****
Mar 31 01:19:52 209.116.250.194:2416 -> 999.999.1.53:53 SYN **S*****
Mar 31 01:19:52 209.116.250.194:2472 -> 999.999.1.109:53 SYN **S*****
Mar 31 01:19:52 209.116.250.194:2479 -> 999.999.1.116:53 SYN **S*****
Mar 31 01:19:53 209.116.250.194:2550 -> 999.999.1.187:53 SYN **S*****
Mar 31 01:19:53 209.116.250.194:2552 -> 999.999.1.189:53 SYN **S*****
Mar 31 01:19:53 209.116.250.194:2551 -> 999.999.1.188:53 SYN **S*****
Mar 31 01:19:53 209.116.250.194:2554 -> 999.999.1.191:53 SYN **S*****
Mar 31 01:19:53 209.116.250.194:2556 -> 999.999.1.193:53 SYN **S*****
Mar 31 01:19:54 209.116.250.194:2370 -> 999.999.1.7:53 SYN **S*****
Mar 31 01:19:55 209.116.250.194:2390 -> 999.999.1.27:53 SYN **S*****
Mar 31 01:19:55 209.116.250.194:2400 -> 999.999.1.37:53 SYN **S*****
Mar 31 01:19:55 209.116.250.194:2484 -> 999.999.1.121:53 SYN **S*****

- A host inside your network was scanning for **DMSetup Trojan** . This activity continued until 19:56:06.

Mar 31 01:47:44 999.999.221.26:60148 -> 217.68.101.100:59 SYN **S*****
Mar 31 01:47:44 999.999.221.26:60272 -> 24.108.111.232:59 SYN **S*****
Mar 31 01:47:46 999.999.221.26:8150 -> 24.66.132.216:59 SYN **S*****
Mar 31 01:47:46 999.999.221.26:17909 -> 12.21.214.85:59 SYN **S*****

Mar 31 01:47:46 999.999.221.26:12140 -> 24.43.71.151:59 SYN **S*****
Mar 31 01:47:46 999.999.221.26:12164 -> 24.5.207.45:59 SYN **S*****
Mar 31 01:47:47 999.999.221.26:63236 -> 24.9.130.48:59 SYN **S*****
Mar 31 01:47:47 999.999.221.26:60544 -> 203.164.232.30:59 SYN **S*****
Mar 31 01:47:47 999.999.221.26:41122 -> 24.157.16.175:59 SYN **S*****
Mar 31 01:47:49 999.999.221.26:17533 -> 63.201.209.54:59 SYN **S*****
Mar 31 01:47:49 999.999.221.26:17776 -> 24.49.67.40:59 SYN **S*****
……
Mar 31 19:55:59 999.999.221.26:18002 -> 216.254.120.114:59 SYN **S*****
Mar 31 19:56:00 999.999.221.26:12114 -> 24.12.173.190:59 SYN **S*****
Mar 31 19:56:00 999.999.221.26:7530 -> 142.227.44.92:59 SYN **S*****
Mar 31 19:56:00 999.999.221.26:6164 -> 24.17.220.59:59 SYN **S*****
Mar 31 19:56:00 999.999.221.26:45915 -> 216.46.130.228:59 SYN **S*****
Mar 31 19:56:02 999.999.221.26:20886 -> 203.45.25.125:59 SYN **S*****
Mar 31 19:56:04 999.999.221.26:20897 -> 141.218.165.172:59 SYN **S*****
Mar 31 19:56:06 999.999.221.26:14506 -> 194.249.91.201:59 SYN **S*****
Mar 31 19:56:06 999.999.221.26:25568 -> 212.226.129.212:59 SYN **S*****

- Hostile searching for Unix boxes running SUNRPC services.

Mar 31 04:01:24 24.91.102.156:4759 -> 999.999.132.1:111 SYN **S*****
Mar 31 04:01:24 24.91.102.156:4788 -> 999.999.132.29:111 SYN **S*****
Mar 31 04:01:25 24.91.102.156:4842 -> 999.999.132.84:111 SYN **S*****
Mar 31 04:01:25 24.91.102.156:4844 -> 999.999.132.86:111 SYN **S*****
Mar 31 04:01:25 24.91.102.156:4846 -> 999.999.132.88:111 SYN **S*****
Mar 31 04:01:25 24.91.102.156:4854 -> 999.999.132.95:111 SYN **S*****
Mar 31 04:01:25 24.91.102.156:4858 -> 999.999.132.100:111 SYN **S*****
Mar 31 04:01:25 24.91.102.156:4860 -> 999.999.132.102:111 SYN **S*****
Mar 31 04:01:25 24.91.102.156:4864 -> 999.999.132.106:111 SYN **S*****
Mar 31 04:01:25 24.91.102.156:4870 -> 999.999.132.114:111 SYN **S*****
Mar 31 04:01:25 24.91.102.156:4872 -> 999.999.132.112:111 SYN **S*****
Mar 31 04:01:25 24.91.102.156:4882 -> 999.999.132.123:111 SYN **S*****
Mar 31 04:01:26 24.91.102.156:4932 -> 999.999.132.174:111 SYN **S*****

- Continuing reconnaissance for DNS service. **The source IP is registered to a Chinese address.**

Mar 31 06:06:35 202.112.209.30:3744 -> 999.999.2.72:53 SYN **S*****
Mar 31 06:06:35 202.112.209.30:3745 -> 999.999.2.73:53 SYN **S*****
Mar 31 06:06:35 202.112.209.30:3746 -> 999.999.2.74:53 SYN **S*****
Mar 31 06:06:35 202.112.209.30:3748 -> 999.999.2.76:53 SYN **S*****
Mar 31 06:06:35 202.112.209.30:3747 -> 999.999.2.75:53 SYN **S*****
Mar 31 06:06:35 202.112.209.30:3750 -> 999.999.2.78:53 SYN **S*****
Mar 31 06:06:35 202.112.209.30:3752 -> 999.999.2.80:53 SYN **S*****
Mar 31 06:06:35 202.112.209.30:3754 -> 999.999.2.82:53 SYN **S*****
Mar 31 06:06:35 202.112.209.30:3756 -> 999.999.2.84:53 SYN **S*****

Mar 31 06:06:35 202.112.209.30:3758 -> 999.999.2.86:53 SYN **S*****
Mar 31 06:06:35 202.112.209.30:3760 -> 999.999.2.88:53 SYN **S*****
Mar 31 06:06:35 202.112.209.30:3762 -> 999.999.2.90:53 SYN **S*****

- Host inside looking for MP3 services (GNUtella port 6346, Kazaa prot 1214)

Mar 31 07:20:03 999.999.227.130:3147 -> 199.8.9.49:6346 SYN **S*****
Mar 31 07:20:03 999.999.227.130:3149 -> 24.16.148.124:6346 SYN **S*****
Mar 31 07:20:03 999.999.227.130:3151 -> 213.213.36.7:6346 SYN **S*****
Mar 31 07:20:03 999.999.227.130:3150 -> 130.132.70.123:6346 SYN **S*****
Mar 31 07:20:03 999.999.227.130:3152 -> 24.170.100.47:6346 SYN **S*****
Mar 31 07:20:03 999.999.227.130:3153 -> 172.173.44.248:6346 SYN **S*****
Mar 31 07:20:03 999.999.227.130:3156 -> 63.202.80.2:6346 SYN **S*****
Mar 31 07:20:03 999.999.227.130:3158 -> 63.173.98.100:6347 SYN **S*****
….
Mar 31 10:11:57 999.999.222.50:1372 -> 131.238.220.240:1214 SYN **S*****
Mar 31 10:11:59 999.999.222.50:1366 -> 131.238.210.104:1214 SYN **S*****
Mar 31 10:12:02 999.999.222.50:1288 -> 152.7.51.92:1214 SYN **S*****
Mar 31 10:12:02 999.999.222.50:1287 -> 56.8.200.78:1214 SYN **S*****
Mar 31 10:12:02 999.999.222.50:1294 -> 76.47.156.55:23578 SYN **S*****
Mar 31 10:12:03 999.999.222.50:1355 -> 129.16.94.52:1214 SYN **S*****
Mar 31 10:12:03 999.999.222.50:1390 -> 128.138.37.218:1214 SYN **S*****
…
Mar 31 13:20:11 999.999.215.18:1645 -> 129.24.214.149:1214 SYN **S*****
Mar 31 13:20:11 999.999.215.18:1599 -> 63.88.159.93:1214 SYN **S*****
Mar 31 13:20:11 999.999.215.18:1654 -> 138.234.67.251:1214 SYN **S*****
Mar 31 13:20:11 999.999.215.18:1655 -> 62.46.98.110:1214 SYN **S*****
Mar 31 13:20:11 999.999.215.18:1646 -> 24.14.153.253:1214 SYN **S*****
Mar 31 13:20:12 999.999.215.18:1660 -> 138.234.87.69:1214 SYN **S*****
Mar 31 13:20:12 999.999.215.18:1605 -> 138.234.185.51:1214 SYN **S*****
….
Mar 31 18:43:32 999.999.223.246:1312 -> 24.27.204.247:6347 SYN **S*****
Mar 31 18:43:32 999.999.223.246:1314 -> 24.190.120.245:6346 SYN **S*****
Mar 31 18:43:32 999.999.223.246:1315 -> 24.70.113.130:6346 SYN **S*****
Mar 31 18:43:32 999.999.223.246:1311 -> 134.2.15.134:6346 SYN **S*****
Mar 31 18:43:32 999.999.223.246:1319 -> 24.178.237.10:6346 SYN **S*****
Mar 31 18:43:32 999.999.223.246:1320 -> 62.178.117.106:6347 SYN **S*****
Mar 31 18:43:32 999.999.223.246:1316 -> 209.204.154.37:6346 SYN **S*****
Mar 31 18:43:32 999.999.223.246:1321 -> 153.42.75.18:6347 SYN **S*****
……
Mar 31 23:11:55 999.999.209.50:3569 -> 194.95.170.157:1214 SYN **S*****
Mar 31 23:11:55 999.999.209.50:3586 -> 128.138.37.160:1214 SYN **S*****
Mar 31 23:11:55 999.999.209.50:3585 -> 193.40.254.184:1214 SYN **S*****
Mar 31 23:11:55 999.999.209.50:3542 -> 59.183.220.47:11024 SYN **S*****
Mar 31 23:11:55 999.999.209.50:3591 -> 128.232.70.217:38585 SYN **S*****
Mar 31 23:11:57 999.999.209.50:3595 -> 169.237.58.33:1214 SYN **S*****

Mar 31 23:11:57 999.999.209.50:3578 -> 136.165.138.205:1214 SYN **S*****
Mar 31 23:11:57 999.999.209.50:3584 -> 138.234.67.208:1214 SYN **S*****
Mar 31 23:11:59 999.999.209.50:3599 -> 137.48.135.8:1214 SYN **S*****
……
Mar 26 02:29:34 999.999.209.30:4191 -> 167.206.191.134:6346 SYN **S*****
Mar 26 02:29:34 999.999.209.30:4189 -> 216.93.96.188:6346 SYN **S*****
Mar 26 02:29:37 999.999.209.30:4197 -> 64.230.85.231:6346 SYN **S*****
Mar 26 02:29:34 999.999.209.30:4198 -> 64.230.0.138:6346 SYN **S*****
Mar 26 02:29:36 999.999.209.30:4182 -> 198.182.99.5:6346 SYN **S*****
Mar 26 02:29:36 999.999.209.30:4184 -> 213.224.208.64:6346 SYN **S*****

Mar 31 19:02:30 999.999.205.162:3139 -> 146.186.232.166:1214 SYN **S*****
Mar 31 19:02:30 999.999.205.162:3059 -> 138.234.67.207:1214 SYN **S*****
Mar 31 19:02:31 999.999.205.162:3153 -> 129.74.170.114:1214 SYN **S*****
Mar 31 19:02:32 999.999.205.162:3168 -> 24.88.154.189:1214 SYN **S*****
Mar 31 19:02:33 999.999.205.162:3175 -> 24.130.188.80:1214 SYN **S*****
Mar 31 19:02:33 999.999.205.162:3087 -> 24.201.72.177:1214 SYN **S*****
Mar 31 19:02:34 999.999.205.162:3090 -> 213.44.202.199:1214 SYN **S*****
Mar 31 19:02:34 999.999.205.162:3179 -> 24.115.162.148:1214 SYN **S*****
Mar 31 19:02:34 999.999.205.162:3180 -> 138.234.146.35:1214 SYN **S*****

- Hostile scanning for spooler services possibly looking for exploitable spooler services.

Mar 31 13:35:50 207.124.229.123:3636 -> 999.999.132.251:515 SYN **S*****
Mar 31 13:35:51 207.124.229.123:3575 -> 999.999.132.190:515 SYN **S*****
Mar 31 13:35:52 207.124.229.123:3600 -> 999.999.132.215:515 SYN **S*****
Mar 31 13:35:52 207.124.229.123:3604 -> 999.999.132.219:515 SYN **S*****
Mar 31 13:35:52 207.124.229.123:4121 -> 999.999.134.226:515 SYN **S*****
Mar 31 13:35:52 207.124.229.123:4123 -> 999.999.134.228:515 SYN **S*****
Mar 31 13:35:52 207.124.229.123:4127 -> 999.999.134.232:515 SYN **S*****
Mar 31 13:35:52 207.124.229.123:4133 -> 999.999.134.238:515 SYN **S*****
Mar 31 13:35:52 207.124.229.123:4135 -> 999.999.134.240:515 SYN **S*****

- Hostile scanning for SubSeven, SubSeven Apocalypse, or BackDoor-G

Mar 31 13:51:46 4.3.193.56:1124 -> 999.999.20.9:1243 SYN **S*****
Mar 31 13:51:46 4.3.193.56:1125 -> 999.999.20.10:1243 SYN **S*****
Mar 31 13:51:46 4.3.193.56:1141 -> 999.999.20.26:1243 SYN **S*****
Mar 31 13:51:46 4.3.193.56:1143 -> 999.999.20.28:1243 SYN **S*****
Mar 31 13:51:46 4.3.193.56:1169 -> 999.999.20.54:1243 SYN **S*****
Mar 31 13:51:46 4.3.193.56:1171 -> 999.999.20.56:1243 SYN **S*****
Mar 31 13:51:46 4.3.193.56:1175 -> 999.999.20.60:1243 SYN **S*****
Mar 31 13:51:47 4.3.193.56:1116 -> 999.999.20.1:1243 SYN **S*****
Mar 31 13:51:49 4.3.193.56:1155 -> 999.999.20.40:1243 SYN **S*****
Mar 31 13:51:49 4.3.193.56:1165 -> 999.999.20.50:1243 SYN **S*****

Mar 31 13:51:50 4.3.193.56:1180 -> 999.999.20.65:1243 SYN **S*****
Mar 31 13:51:50 4.3.193.56:1198 -> 999.999.20.83:1243 SYN **S*****
Mar 31 13:51:50 4.3.193.56:1202 -> 999.999.20.87:1243 SYN **S*****
Mar 31 13:51:50 4.3.193.56:1204 -> 999.999.20.89:1243 SYN **S*****
Mar 31 13:51:53 4.3.193.56:1196 -> 999.999.20.81:1243 SYN **S*****
Mar 31 13:51:53 4.3.193.56:1202 -> 999.999.20.87:1243 SYN **S*****
Mar 31 13:51:53 4.3.193.56:1200 -> 999.999.20.85:1243 SYN **S*****
Mar 31 13:51:53 4.3.193.56:1220 -> 999.999.20.105:1243 SYN **S*****
Mar 31 13:51:53 4.3.193.56:1216 -> 999.999.20.101:1243 SYN **S*****
Mar 31 13:51:53 4.3.193.56:1218 -> 999.999.20.103:1243 SYN **S*****
Mar 31 13:51:53 4.3.193.56:1226 -> 999.999.20.111:1243 SYN **S*****
Mar 31 13:51:53 4.3.193.56:1232 -> 999.999.20.117:1243 SYN **S*****

- Automated multi-port scan of lone host. The source IP is registered to an address in the Netherlands.

Mar 31 11:42:08 213.93.18.144:4310 -> 999.999.219.134:883 SYN **S*****
Mar 31 11:42:08 213.93.18.144:4313 -> 999.999.219.134:1347 SYN **S*****
Mar 31 11:42:08 213.93.18.144:4326 -> 999.999.219.134:709 SYN **S*****
Mar 31 11:42:09 213.93.18.144:4347 -> 999.999.219.134:512 SYN **S*****
Mar 31 11:42:09 213.93.18.144:4352 -> 999.999.219.134:952 SYN **S*****
Mar 31 11:42:09 213.93.18.144:4369 -> 999.999.219.134:1550 SYN **S*****
Mar 31 11:42:09 213.93.18.144:4374 -> 999.999.219.134:625 SYN **S*****
Mar 31 11:42:09 213.93.18.144:4377 -> 999.999.219.134:237 SYN **S*****
Mar 31 11:42:09 213.93.18.144:4410 -> 999.999.219.134:745 SYN **S*****
Mar 31 11:42:09 213.93.18.144:4414 -> 999.999.219.134:6558 SYN **S*****
Mar 31 11:42:10 213.93.18.144:4426 -> 999.999.219.134:752 SYN **S*****
Mar 31 11:42:10 213.93.18.144:4428 -> 999.999.219.134:419 SYN **S*****
Mar 31 11:42:10 213.93.18.144:4429 -> 999.999.219.134:1007 SYN **S*****
Mar 31 11:42:10 213.93.18.144:4461 -> 999.999.219.134:1412 SYN **S*****
Mar 31 11:42:10 213.93.18.144:4465 -> 999.999.219.134:58 SYN **S*****
Mar 31 11:42:10 213.93.18.144:4474 -> 999.999.219.134:783 SYN **S*****
Mar 31 11:42:10 213.93.18.144:4507 -> 999.999.219.134:2045 SYN **S*****
Mar 31 11:42:11 213.93.18.144:4555 -> 999.999.219.134:1422 SYN **S*****
Mar 31 11:42:11 213.93.18.144:4557 -> 999.999.219.134:945 SYN **S*****

- Hostile performing scan of the class "B" network via crafted packets, note the source and destination ports are the same and both the SYN and FIN flags are set. This was a low and slow scan that continued until 23:58:36.

Mar 31 00:00:52 211.178.63.4:53 -> 999.999.71.34:53 SYNFIN **SF****
Mar 31 00:05:54 211.178.63.4:21 -> 999.999.132.34:21 SYNFIN **SF****
Mar 31 00:06:07 211.178.63.4:8080 -> 999.999.130.34:8080 SYNFIN **SF****
Mar 31 00:06:50 211.178.63.4:21 -> 999.999.143.34:21 SYNFIN **SF****
Mar 31 00:08:42 211.178.63.4:21 -> 999.999.165.34:21 SYNFIN **SF****
Mar 31 00:08:58 211.178.63.4:109 -> 999.999.170.34:109 SYNFIN **SF****

Mar 31 00:10:09 211.178.63.4:21 -> 999.999.182.34:21 SYNFIN **SF****
Mar 31 00:11:47 211.178.63.4:109 -> 999.999.203.34:109 SYNFIN **SF****
Mar 31 00:12:41 211.178.63.4:53 -> 999.999.210.34:53 SYNFIN **SF****
Mar 31 00:14:34 211.178.63.4:53 -> 999.999.232.34:53 SYNFIN **SF****
Mar 31 00:21:27 211.178.63.4:21 -> 999.999.60.35:21 SYNFIN **SF****
Mar 31 00:27:44 211.178.63.4:111 -> 999.999.133.35:111 SYNFIN **SF****
Mar 31 00:29:42 211.178.63.4:21 -> 999.999.157.35:21 SYNFIN **SF****
…….
Mar 31 23:43:48 211.178.63.4:53 -> 999.999.232.99:53 SYNFIN **SF****
Mar 31 23:48:17 211.178.63.4:8080 -> 999.999.27.100:8080 SYNFIN **SF****
Mar 31 23:53:30 211.178.63.4:109 -> 999.999.94.100:109 SYNFIN **SF****
Mar 31 23:54:14 211.178.63.4:8080 -> 999.999.97.100:8080 SYNFIN **SF****
Mar 31 23:54:47 211.178.63.4:21 -> 999.999.108.100:21 SYNFIN **SF****
Mar 31 23:54:52 211.178.63.4:21 -> 999.999.109.100:21 SYNFIN **SF****
Mar 31 23:58:03 211.178.63.4:8080 -> 999.999.142.100:8080 SYNFIN **SF****
Mar 31 23:58:20 211.178.63.4:109 -> 999.999.151.100:109 SYNFIN **SF****
Mar 31 23:58:36 211.178.63.4:109 -> 999.999.154.100:109 SYNFIN **SF****
Mar 31 23:58:36 211.178.63.4:53 -> 999.999.151.100:53 SYNFIN **SF****

- Hostile scanning for FTP servers. The source IP is registered to a German address. This activity could be a precursor to further hostile activity.

Mar 31 14:31:10 217.85.227.219:4536 -> 999.999.1.72:21 SYN **S*****
Mar 31 14:31:10 217.85.227.219:4539 -> 999.999.1.75:21 SYN **S*****
Mar 31 14:31:12 217.85.227.219:4490 -> 999.999.1.26:21 SYN **S*****
Mar 31 14:31:12 217.85.227.219:4522 -> 999.999.1.58:21 SYN **S*****
Mar 31 14:31:12 217.85.227.219:4532 -> 999.999.1.68:21 SYN **S*****
Mar 31 14:31:12 217.85.227.219:4500 -> 999.999.1.36:21 SYN **S*****
Mar 31 14:31:12 217.85.227.219:4478 -> 999.999.1.14:21 SYN **S*****
Mar 31 14:31:12 217.85.227.219:4526 -> 999.999.1.62:21 SYN **S*****

- Host on your network scanning for TransScout, Insane Network 4, Millennium

Mar 31 17:00:49 999.999.227.162:37770 -> 24.31.244.33:2000 SYN **S*****
Mar 31 17:00:49 999.999.227.162:39520 -> 172.136.52.196:2000 SYN **S*****
Mar 31 17:00:49 999.999.227.162:44770 -> 24.17.187.55:2000 SYN **S*****
Mar 31 17:00:49 999.999.227.162:46330 -> 24.214.101.119:2000 SYN **S*****
Mar 31 17:00:49 999.999.227.162:53430 -> 24.22.218.4:2000 SYN **S*****
Mar 31 17:00:50 999.999.227.162:41680 -> 65.80.14.120:2000 SYN **S*****
Mar 31 17:00:51 999.999.227.162:35660 -> 172.155.192.248:2000 SYN **S*****
Mar 31 17:00:51 999.999.227.162:51230 -> 64.231.82.228:2000 SYN **S*****
Mar 31 17:00:52 999.999.227.162:47620 -> 172.150.137.69:2000 SYN **S*****
Mar 31 17:00:52 999.999.227.162:48740 -> 64.228.91.64:2000 SYN **S*****
Mar 31 17:00:52 999.999.227.162:47550 -> 209.233.30.67:2000 SYN **S*****
Mar 31 17:00:58 999.999.227.162:32650 -> 172.155.174.151:2000 SYN **S*****

- Hostile scan for DNS servers originating from a host registered to a Polish address.

Mar 31 18:56:42 212.87.234.136:3548 -> 999.999.1.25:53 SYN **S*****
Mar 31 18:56:42 212.87.234.136:3549 -> 999.999.1.26:53 SYN **S*****
Mar 31 18:56:42 212.87.234.136:3550 -> 999.999.1.27:53 SYN **S*****
Mar 31 18:56:42 212.87.234.136:3558 -> 999.999.1.35:53 SYN **S*****
Mar 31 18:56:43 212.87.234.136:3583 -> 999.999.1.4:53 SYN **S*****
Mar 31 18:56:43 212.87.234.136:3585 -> 999.999.1.9:53 SYN **S*****
Mar 31 18:56:45 212.87.234.136:3543 -> 999.999.1.20:53 SYN **S*****
Mar 31 18:56:45 212.87.234.136:3544 -> 999.999.1.21:53 SYN **S*****
Mar 31 18:56:49 212.87.234.136:3592 -> 999.999.1.64:53 SYN **S*****
Mar 31 18:56:49 212.87.234.136:3603 -> 999.999.1.75:53 SYN **S*****
Mar 31 18:56:49 212.87.234.136:3618 -> 999.999.1.90:53 SYN **S*****
Mar 31 18:56:49 212.87.234.136:3621 -> 999.999.1.93:53 SYN **S*****
Mar 31 18:56:49 212.87.234.136:3622 -> 999.999.1.94:53 SYN **S*****
Mar 31 18:56:49 212.87.234.136:3655 -> 999.999.1.127:53 SYN **S*****
…….
Mar 31 19:22:43 212.87.234.136:4627 -> 999.999.254.157:53 SYN **S*****
Mar 31 19:22:43 212.87.234.136:4628 -> 999.999.254.158:53 SYN **S*****
Mar 31 19:22:43 212.87.234.136:4629 -> 999.999.254.159:53 SYN **S*****
Mar 31 19:22:43 212.87.234.136:4630 -> 999.999.254.160:53 SYN **S*****
Mar 31 19:22:43 212.87.234.136:4631 -> 999.999.254.161:53 SYN **S*****
Mar 31 19:22:43 212.87.234.136:4632 -> 999.999.254.162:53 SYN **S*****
Mar 31 19:22:43 212.87.234.136:4635 -> 999.999.254.165:53 SYN **S*****
Mar 31 19:22:43 212.87.234.136:4636 -> 999.999.254.166:53 SYN **S*****

- Hostile scanning for Telnet servers. This is possibly a precursor to further hostile activity. The source IP is registered to a Portuguese address.

Mar 31 20:08:04 195.22.0.154:4334 -> 999.999.53.13:23 SYN **S*****
Mar 31 20:08:04 195.22.0.154:1038 -> 999.999.53.53:23 SYN **S*****
Mar 31 20:08:04 195.22.0.154:1045 -> 999.999.53.59:23 SYN **S*****
Mar 31 20:08:04 195.22.0.154:1047 -> 999.999.53.63:23 SYN **S*****
Mar 31 20:08:04 195.22.0.154:1049 -> 999.999.53.61:23 SYN **S*****
Mar 31 20:08:05 195.22.0.154:1066 -> 999.999.53.79:23 SYN **S*****
Mar 31 20:08:06 195.22.0.154:1090 -> 999.999.53.96:23 SYN **S*****
Mar 31 20:08:06 195.22.0.154:1104 -> 999.999.53.108:23 SYN **S*****
Mar 31 20:08:06 195.22.0.154:1107 -> 999.999.53.110:23 SYN **S*****
Mar 31 20:08:10 195.22.0.154:1109 -> 999.999.53.112:23 SYN **S*****
Mar 31 20:08:10 195.22.0.154:1799 -> 999.999.53.156:23 SYN **S*****
Mar 31 20:08:11 195.22.0.154:1826 -> 999.999.53.176:23 SYN **S*****
Mar 31 20:08:11 195.22.0.154:1127 -> 999.999.53.126:23 SYN **S*****
Mar 31 20:08:11 195.22.0.154:1849 -> 999.999.53.194:23 SYN **S*****
Mar 31 20:08:12 195.22.0.154:1852 -> 999.999.53.196:23 SYN **S*****
Mar 31 20:08:12 195.22.0.154:1857 -> 999.999.53.201:23 SYN **S*****

Mar 31 20:08:12 195.22.0.154:1862 -> 999.999.53.205:23 SYN **S*****
Mar 31 20:08:12 195.22.0.154:1879 -> 999.999.53.219:23 SYN **S*****
Mar 31 20:08:13 195.22.0.154:1809 -> 999.999.53.161:23 SYN **S*****

- Inside hosts scanning for NewsEDGE server TCP (TCP 1), Unreal Admin Webserver, Ultima Online, mIRC, or NewsEDGE server TCP (TCP 1) / external shell (test).

Mar 31 20:51:11 999.999.204.26:4134 -> 63.196.54.13:8888 SYN **S*****
Mar 31 20:51:12 999.999.204.26:4138 -> 63.196.54.18:8888 SYN **S*****
Mar 31 20:51:12 999.999.204.26:4139 -> 63.196.54.4:8888 SYN **S*****
Mar 31 20:51:12 999.999.204.26:4144 -> 63.196.54.35:8888 SYN **S*****
Mar 31 20:51:12 999.999.204.26:4145 -> 63.196.54.38:8888 SYN **S*****
Mar 31 20:51:12 999.999.204.26:4151 -> 63.196.54.23:8888 SYN **S*****
Mar 31 20:51:13 999.999.204.26:4154 -> 63.196.54.22:8888 SYN **S*****
Mar 31 20:51:13 999.999.204.26:4156 -> 217.3.91.95:8888 SYN **S*****

- Automated multi-port scan of lone host. The source IP is registered to an address in the Philippians.

Mar 31 22:01:11 210.23.241.119:4371 -> 999.999.97.77:12345 SYN **S*****
Mar 31 22:01:11 210.23.241.119:4376 -> 999.999.97.77:23 SYN **S*****
Mar 31 22:01:11 210.23.241.119:4377 -> 999.999.97.77:20034 SYN **S*****
Mar 31 22:01:11 210.23.241.119:4378 -> 999.999.97.77:40421 SYN **S*****
Mar 31 22:01:11 210.23.241.119:4381 -> 999.999.97.77:5400 SYN **S*****
Mar 31 22:01:11 210.23.241.119:4382 -> 999.999.97.77:9872 SYN **S*****
Mar 31 22:01:11 210.23.241.119:4383 -> 999.999.97.77:20000 SYN **S*****
Mar 31 22:01:11 210.23.241.119:4384 -> 999.999.97.77:7307 SYN **S*****

- Hostile searching for Unix boxes running SUNRPC services.

Mar 31 23:17:26 209.217.53.190:111 -> 999.999.132.110:111 SYN **S*****
Mar 31 23:17:26 209.217.53.190:111 -> 999.999.132.116:111 SYN **S*****
Mar 31 23:17:26 209.217.53.190:111 -> 999.999.132.138:111 SYN **S*****
Mar 31 23:17:26 209.217.53.190:111 -> 999.999.132.142:111 SYN **S*****
Mar 31 23:17:26 209.217.53.190:111 -> 999.999.132.144:111 SYN **S*****
Mar 31 23:17:26 209.217.53.190:111 -> 999.999.132.146:111 SYN **S*****
Mar 31 23:17:26 209.217.53.190:111 -> 999.999.132.148:111 SYN **S*****
Mar 31 23:17:26 209.217.53.190:111 -> 999.999.132.150:111 SYN **S*****
Mar 31 23:17:26 209.217.53.190:111 -> 999.999.132.156:111 SYN **S*****
Mar 31 23:17:26 209.217.53.190:111 -> 999.999.132.170:111 SYN **S*****
Mar 31 23:17:26 209.217.53.190:111 -> 999.999.132.172:111 SYN **S*****

- Hostile scanning for SMTP servers. This could be a precursor to an exploit attempt. The source IP is registered to an Australian address. This activity continued until 02:05.

Mar 26 00:38:53 203.89.246.250:2977 -> 999.999.1.106:25 SYN **S*****
Mar 26 00:38:53 203.89.246.250:2973 -> 999.999.1.102:25 SYN **S*****
Mar 26 00:38:53 203.89.246.250:2945 -> 999.999.1.74:25 SYN **S*****
Mar 26 00:38:53 203.89.246.250:2933 -> 999.999.1.62:25 SYN **S*****
Mar 26 00:38:53 203.89.246.250:2931 -> 999.999.1.60:25 SYN **S*****
Mar 26 00:38:53 203.89.246.250:2927 -> 999.999.1.56:25 SYN **S*****
Mar 26 00:38:53 203.89.246.250:2925 -> 999.999.1.54:25 SYN **S*****
Mar 26 00:38:53 203.89.246.250:2921 -> 999.999.1.50:25 SYN **S*****
……..
Mar 26 02:05:29 203.89.246.250:1344 -> 999.999.254.225:25 SYN **S*****
Mar 26 02:05:29 203.89.246.250:1346 -> 999.999.254.227:25 SYN **S*****
Mar 26 02:05:29 203.89.246.250:1348 -> 999.999.254.229:25 SYN **S*****
Mar 26 02:05:29 203.89.246.250:1350 -> 999.999.254.231:25 SYN **S*****
Mar 26 02:05:29 203.89.246.250:1352 -> 999.999.254.233:25 SYN **S*****
Mar 26 02:05:29 203.89.246.250:1368 -> 999.999.254.249:25 SYN **S*****

- Host from the Philippians looking for NetBus 2 Pro **inside host may be compromised**

Mar 31 22:01:11 210.23.241.119:4377 -> 999.999.97.77:20034 SYN **S*****

- Scanning for NetBus 2 Pro on a host in registered to a Netherland address.

Mar 26 03:00:56 999.999.204.26:4520 -> 212.204.216.51:20034 SYN **S*****
Mar 26 03:35:43 999.999.204.26:1228 -> 212.204.216.51:20034 SYN **S*****
Mar 26 04:00:38 999.999.204.26:1671 -> 212.204.216.51:20034 SYN **S*****
Mar 26 06:26:07 999.999.204.26:4589 -> 212.204.216.51:20034 SYN **S*****

- Inside host scanning for most likely a web server.

Mar 26 03:00:58 999.999.204.26:4522 -> 63.161.255.184:8888 SYN **S*****
Mar 26 03:00:58 999.999.204.26:4524 -> 65.33.65.240:8888 SYN **S*****
Mar 26 03:01:01 999.999.204.26:4524 -> 65.33.65.240:8888 SYN **S*****
Mar 26 03:30:32 999.999.204.26:1101 -> 63.196.54.11:8888 SYN **S*****
Mar 26 03:30:33 999.999.204.26:1103 -> 63.196.54.20:8888 SYN **S*****
Mar 26 03:30:33 999.999.204.26:1105 -> 63.196.54.19:8888 SYN **S*****
Mar 26 03:30:33 999.999.204.26:1106 -> 63.196.54.4:8888 SYN **S*****
Mar 26 03:30:33 999.999.204.26:1108 -> 63.196.54.15:8888 SYN **S*****
Mar 26 03:30:33 999.999.204.26:1113 -> 63.196.54.17:8888 SYN **S*****
Mar 26 03:30:33 999.999.204.26:1114 -> 63.196.54.34:8888 SYN **S*****
Mar 26 03:30:34 999.999.204.26:1124 -> 63.196.54.28:8888 SYN **S*****
Mar 26 03:35:41 999.999.204.26:1202 -> 63.196.54.19:8888 SYN **S*****
Mar 26 03:35:42 999.999.204.26:1203 -> 63.196.54.4:8888 SYN **S*****
Mar 26 03:35:43 999.999.204.26:1225 -> 63.196.54.21:8888 SYN **S*****
Mar 26 03:35:43 999.999.204.26:1226 -> 216.138.208.138:8888 SYN **S*****
Mar 26 03:35:43 999.999.204.26:1228 -> 212.204.216.51:**20034** SYN **S*****

Mar 26 04:00:37 999.999.204.26:1651 -> 63.196.54.14:8888 SYN **S*****

- Inside host scanning for Diablo 2 (game)

Mar 25 22:14:22 999.999.210.154:6112 -> 162.39.139.185:6112 UDP
Mar 25 22:14:22 999.999.210.154:6112 -> 64.230.185.177:6112 UDP
Mar 25 22:14:23 999.999.210.154:6112 -> 24.65.103.234:6112 UDP
Mar 25 22:14:23 999.999.210.154:6112 -> 172.133.159.140:6112 UDP
Mar 25 22:14:23 999.999.210.154:6112 -> 199.35.166.40:6112 UDP
Mar 25 22:14:24 999.999.210.154:6112 -> 65.33.35.247:6112 UDP
Mar 25 22:14:24 999.999.210.154:6112 -> 207.12.8.149:6112 UDP
Mar 25 22:14:24 999.999.210.154:6112 -> 24.68.150.224:6112 UDP
Mar 25 22:14:25 999.999.210.154:6112 -> 64.108.60.91:6112 UDP

- Inside host scanning for SMTP servers.

Mar 26 04:59:14 999.999.253.24:34825 -> 204.127.134.16:25 SYN **S*****
Mar 26 04:59:15 999.999.253.24:34829 -> 204.127.134.18:25 SYN **S*****
Mar 26 04:59:15 999.999.253.24:34832 -> 192.28.4.11:25 SYN **S*****
Mar 26 04:59:15 999.999.253.24:34833 -> 206.46.170.43:25 SYN **S*****
Mar 26 04:59:15 999.999.253.24:34835 -> 131.96.5.77:25 SYN **S*****
Mar 26 04:59:16 999.999.253.24:34836 -> 204.210.65.65:25 SYN **S*****
Mar 26 04:59:16 999.999.253.24:34837 -> 32.97.166.40:25 SYN **S*****
Mar 26 04:59:16 999.999.253.24:34810 -> 208.200.190.6:25 SYN **S*****
Mar 26 04:59:17 999.999.253.24:34842 -> 194.75.152.225:25 SYN **S*****
Mar 26 04:59:17 999.999.253.24:34845 -> 64.12.136.57:25 SYN **S*****

- Hostile scanning for SUNRPC service. The source IP is registered to a Chinese address.

Mar 26 06:26:42 61.129.39.161:1408 -> 999.999.132.20:111 SYN **S*****
Mar 26 06:26:42 61.129.39.161:1405 -> 999.999.132.17:111 SYN **S*****
Mar 26 06:26:42 61.129.39.161:1406 -> 999.999.132.18:111 SYN **S*****
Mar 26 06:26:42 61.129.39.161:1416 -> 999.999.132.28:111 SYN **S*****
Mar 26 06:26:42 61.129.39.161:1419 -> 999.999.132.31:111 SYN **S*****
Mar 26 06:26:42 61.129.39.161:1410 -> 999.999.132.22:111 SYN **S*****
Mar 26 06:26:42 61.129.39.161:1414 -> 999.999.132.26:111 SYN **S*****
Mar 26 06:26:42 61.129.39.161:1426 -> 999.999.132.38:111 SYN **S*****
Mar 26 06:26:42 61.129.39.161:1431 -> 999.999.132.43:111 SYN **S*****
Mar 26 06:26:42 61.129.39.161:1430 -> 999.999.132.42:111 SYN **S*****
Mar 26 06:26:42 61.129.39.161:1429 -> 999.999.132.41:111 SYN **S*****
Mar 26 06:26:43 61.129.39.161:1466 -> 999.999.132.78:111 SYN **S*****
Mar 26 06:26:43 61.129.39.161:1468 -> 999.999.132.80:111 SYN **S*****
Mar 26 06:26:43 61.129.39.161:1477 -> 999.999.132.89:111 SYN **S*****
Mar 26 06:26:43 61.129.39.161:1489 -> 999.999.132.101:111 SYN **S*****
Mar 26 06:26:43 61.129.39.161:1490 -> 999.999.132.102:111 SYN **S*****

Mar 26 06:26:43 61.129.39.161:1486 -> 999.999.132.98:111 SYN **S*****
Mar 26 06:26:43 61.129.39.161:1498 -> 999.999.132.110:111 SYN **S*****
Mar 26 06:26:43 61.129.39.161:1501 -> 999.999.132.113:111 SYN **S*****

- Inside host doing muli-port scan with attack ports intermingled. Often attackers use this method to hide their presence. (sadmind) http://www.cert.org/advisories/CA-1999-16.html. Csmd exploit http://www.sans.org/infosecFAQ/malicious/cmsd.htm. This is **very likely a compromised host.**

Mar 26 19:26:11 999.999.5.54:3240 -> 65.9.248.100:282 SYN **S*****
Mar 26 19:26:11 999.999.5.54:3241 -> 65.9.248.100:755 SYN **S*****
Mar 26 19:26:11 999.999.5.54:3252 -> 65.9.248.100:262 SYN **S*****
Mar 26 19:26:11 999.999.5.54:3253 -> 65.9.248.100:575 SYN **S*****
Mar 26 19:26:12 999.999.5.54:3341 -> 65.9.248.100:**1008** SYN **S***** **Lion Worm**
Mar 26 19:26:12 999.999.5.54:3391 -> 65.9.248.100:369 SYN **S*****
Mar 26 19:26:12 999.999.5.54:3392 -> 65.9.248.100:567 SYN **S*****
Mar 26 19:26:12 999.999.5.54:3393 -> 65.9.248.100:1453 SYN **S*****
Mar 26 19:26:12 999.999.5.54:3395 -> 65.9.248.100:814 SYN **S*****
Mar 26 19:26:12 999.999.5.54:3396 -> 65.9.248.100:26 SYN **S*****
Mar 26 19:26:12 999.999.5.54:3397 -> 65.9.248.100:1373 SYN **S*****
Mar 26 19:26:12 999.999.5.54:3406 -> 65.9.248.100:539 SYN **S*****
Mar 26 19:26:12 999.999.5.54:3407 -> 65.9.248.100:642 SYN **S*****
Mar 26 19:26:12 999.999.5.54:3409 -> 65.9.248.100:153 SYN **S*****
Mar 26 19:26:13 999.999.5.54:3468 -> 65.9.248.100:25 SYN **S*****
Mar 26 19:26:13 999.999.5.54:3469 -> 65.9.248.100:806 SYN **S*****
Mar 26 19:26:13 999.999.5.54:3470 -> 65.9.248.100:1009 SYN **S*****
Mar 26 19:26:13 999.999.5.54:3471 -> 65.9.248.100:**32773** SYN **S***** **sadmind**
Mar 26 19:26:13 999.999.5.54:3504 -> 65.9.248.100:2003 SYN **S*****
Mar 26 19:26:13 999.999.5.54:3505 -> 65.9.248.100:108 SYN **S*****
Mar 26 19:26:13 999.999.5.54:3506 -> 65.9.248.100:238 SYN **S*****
Mar 26 19:26:13 999.999.5.54:3507 -> 65.9.248.100:2002 SYN **S*****
Mar 26 19:26:13 999.999.5.54:3508 -> 65.9.248.100:6143 SYN **S*****
….
Mar 26 19:26:15 999.999.5.54:3689 -> 65.9.248.100:253 SYN **S*****
Mar 26 19:26:15 999.999.5.54:3690 -> 65.9.248.100:856 SYN **S*****
Mar 26 19:26:15 999.999.5.54:3703 -> 65.9.248.100:**32779** SYN **S*****
Mar 26 19:26:15 999.999.5.54:3704 -> 65.9.248.100:1507 SYN **S*****
…
Mar 26 19:26:24 999.999.5.54:4767 -> 65.9.248.100:859 SYN **S*****
Mar 26 19:26:24 999.999.5.54:4768 -> 65.9.248.100:**22273** SYN **S***** **Prosiak Trojan Horse**
..
Mar 26 19:28:55 999.999.5.54:1143 -> 65.9.248.100:693 SYN **S*****
Mar 26 19:28:55 999.999.5.54:1145 -> 65.9.248.100:**27665** SYN **S***** **Trin00 slave port**

Mar 26 19:28:55 999.999.5.54:1164 -> 65.9.248.100:920 SYN **S*****

- Internal host looking for Trin00 slave. This may be a trin00 master, **compromised host**.

Mar 22 10:43:52 999.999.179.78:3607 -> 24.13.123.8:27665 SYN **S*****

- Internal host appears to be offering an NFS services to foreign hosts in places like Germany, the Netherlands, Great Britain coupled with the fact that this activity is occurring on a Saturday. This is very likely a **compromised host.**

Mar 31 14:23:32 999.999.204.202:2000 -> **212.137.72.48**:7858 UDP
Mar 31 14:23:32 999.999.204.202:2000 -> 195.245.183.76:7701 UDP
Mar 31 14:24:13 999.999.204.202:2000 -> 212.30.198.98:7778 UDP
Mar 31 14:24:13 999.999.204.202:2000 -> 12.47.50.159:7778 UDP
Mar 31 14:24:18 999.999.204.202:2000 -> 194.239.134.25:7821 UDP
Mar 31 14:24:18 999.999.204.202:2000 -> 130.236.146.82:14001 UDP
Mar 31 14:24:29 999.999.204.202:2000 -> **203.164.3.201**:20341 UDP
Mar 31 14:24:32 999.999.204.202:2000 -> 196.25.13.11:7778 UDP
Mar 31 14:24:33 999.999.204.202:2000 -> 151.23.31.23:10201 UDP
Mar 31 14:24:34 999.999.204.202:2000 -> 207.98.129.241:7798 UDP
Mar 31 14:24:36 999.999.204.202:2000 -> 128.2.22.21:7778 UDP
Mar 31 14:24:43 999.999.204.202:2000 -> 212.134.63.254:7838 UDP
Mar 31 14:24:51 999.999.204.202:2000 -> 216.28.23.187:7778 UDP
Mar 31 14:24:52 999.999.204.202:2000 -> 193.229.161.8:7788 UDP
Mar 31 14:24:54 999.999.204.202:2000 -> 209.61.204.11:7798 UDP
Mar 31 14:24:54 999.999.204.202:2000 -> 152.2.217.245:7778 UDP
Mar 31 14:25:08 999.999.204.202:2000 -> 62.7.173.229:7778 UDP
Mar 31 14:42:01 **217.85.227.219**:2000 -> 999.999.53.36:21 SYN **S*****
….
Mar 31 19:12:29 999.999.206.2:2000 -> 24.95.227.74:7778 UDP
Mar 31 19:12:57 999.999.206.2:2000 -> 24.222.75.162:7778 UDP
Mar 31 19:13:06 999.999.206.2:2000 -> 212.137.171.101:7778 UDP
Mar 31 19:24:11 999.999.203.150:2000 -> 209.181.63.237:7778 UDP
Mar 31 19:24:26 999.999.203.150:2000 -> 195.23.135.102:7758 UDP
…..
Mar 31 19:34:53 999.999.209.82:2000 -> 194.185.88.48:8601 UDP
Mar 31 19:34:56 999.999.209.82:2000 -> 192.148.252.49:7778 UDP
Mar 31 19:35:01 999.999.209.82:2000 -> 208.185.73.201:7778 UDP
Mar 31 19:35:05 999.999.209.82:2000 -> 66.26.61.33:7778 UDP
…

- ICQ traffic originating from within your network.

Mar 26 12:17:47 999.999.227.26:1580 -> 212.137.72.20:40000 UDP
Mar 26 12:42:59 999.999.224.130:4202 -> 193.45.237.247:4000 UDP
Mar 26 12:48:55 999.999.224.130:1655 -> 193.45.237.247:4000 UDP

Mar 26 12:48:56 999.999.224.130:1655 -> 193.45.237.247:4000 UDP
Mar 26 13:53:19 999.999.225.238:3145 -> 213.25.21.82:40000 UDP
Mar 26 13:54:02 999.999.209.14:2570 -> 193.45.237.247:4000 UDP
Mar 26 14:36:05 999.999.209.14:3924 -> 193.45.237.247:4000 UDP
Mar 26 15:00:22 999.999.209.14:3056 -> 134.102.123.7:4000 UDP

- Internal host scanning for DNS and SMTP servers.

Mar 31 13:13:05 999.999.100.230:32782 -> 194.79.69.129:53 UDP
Mar 31 13:13:05 999.999.100.230:32782 -> 143.89.41.155:53 UDP
Mar 31 13:13:05 999.999.100.230:32782 -> 204.134.124.2:53 UDP
Mar 31 13:13:06 999.999.100.230:32782 -> 192.5.5.241:53 UDP
Mar 31 13:13:06 999.999.100.230:32782 -> 195.13.10.226:53 UDP
Mar 31 13:13:06 999.999.100.230:32782 -> 146.230.192.5:53 UDP
Mar 31 13:13:07 999.999.100.230:32782 -> 212.95.66.1:53 UDP
Mar 31 13:13:07 999.999.100.230:32782 -> 143.248.1.177:53 UDP
Mar 31 13:16:45 999.999.100.230:32782 -> 192.26.92.30:53 UDP
Mar 31 13:16:45 999.999.100.230:32782 -> 216.53.130.3:53 UDP
Mar 31 13:16:45 999.999.100.230:32782 -> 193.78.240.1:53 UDP
Mar 31 13:16:47 999.999.100.230:32782 -> 138.253.31.3:53 UDP
Mar 31 13:16:47 999.999.100.230:32782 -> 195.40.1.250:53 UDP
Mar 31 13:16:47 999.999.100.230:32782 -> 154.32.105.30:53 UDP
Mar 31 13:16:47 999.999.100.230:32782 -> 207.69.194.186:53 UDP
…..
Mar 22 05:05:49 999.999.100.230:32782 -> 192.238.49.35:53 UDP
Mar 22 05:05:49 999.999.100.230:38264 -> 155.69.148.201:25 SYN **S*****
Mar 22 05:05:49 999.999.100.230:38266 -> 203.237.51.27:25 SYN **S*****
Mar 22 05:05:49 999.999.100.230:32782 -> 159.226.63.190:53 UDP
Mar 22 05:05:53 999.999.100.230:38266 -> 203.237.51.27:25 SYN **S*****
Mar 22 05:05:56 999.999.100.230:38267 -> 199.249.20.13:25 SYN **S*****
Mar 22 05:05:59 999.999.100.230:38266 -> 203.237.51.27:25 SYN **S*****
Mar 22 05:06:00 999.999.100.230:38267 -> 199.249.20.13:25 SYN **S*****

- Scan for SUNRPC service via crafted packets; note the source and destination ports are the same.

Apr 2 11:36:43 209.217.53.190:111 -> 999.999.132.1:111 SYN **S*****
Apr 2 11:36:43 209.217.53.190:111 -> 999.999.132.18:111 SYN **S*****
Apr 2 11:36:43 209.217.53.190:111 -> 999.999.132.22:111 SYN **S*****
Apr 2 11:36:43 209.217.53.190:111 -> 999.999.132.28:111 SYN **S*****
Apr 2 11:36:43 209.217.53.190:111 -> 999.999.132.30:111 SYN **S*****
Apr 2 11:36:43 209.217.53.190:111 -> 999.999.132.32:111 SYN **S*****
Apr 2 11:36:43 209.217.53.190:111 -> 999.999.132.42:111 SYN **S*****
Apr 2 11:36:43 209.217.53.190:111 -> 999.999.132.54:111 SYN **S*****
Apr 2 11:36:43 209.217.53.190:111 -> 999.999.132.56:111 SYN **S*****
Apr 2 11:36:43 209.217.53.190:111 -> 999.999.132.58:111 SYN **S*****

```
Apr  2 11:36:43 209.217.53.190:111 -> 999.999.132.64:111 SYN **S*****
Apr  2 11:36:43 209.217.53.190:111 -> 999.999.132.84:111 SYN **S*****
Apr  2 11:36:43 209.217.53.190:111 -> 999.999.132.86:111 SYN **S*****
Apr  2 11:36:43 209.217.53.190:111 -> 999.999.132.88:111 SYN **S*****
```

- Scan for FTP servers from a host registered to a Netherlands address. This is likely reconnaissance for a future exploit attempt.

```
Apr  2 16:22:30 24.132.123.102:2527 -> 999.999.5.7:21 SYN **S*****
Apr  2 16:22:30 24.132.123.102:2538 -> 999.999.5.18:21 SYN **S*****
Apr  2 16:22:30 24.132.123.102:2545 -> 999.999.5.24:21 SYN **S*****
Apr  2 16:22:30 24.132.123.102:2548 -> 999.999.5.27:21 SYN **S*****
Apr  2 16:22:30 24.132.123.102:2559 -> 999.999.5.38:21 SYN **S*****
Apr  2 16:22:30 24.132.123.102:2573 -> 999.999.5.52:21 SYN **S*****
Apr  2 16:22:30 24.132.123.102:2575 -> 999.999.5.54:21 SYN **S*****
Apr  2 16:22:30 24.132.123.102:2592 -> 999.999.5.71:21 SYN **S*****
Apr  2 16:22:33 24.132.123.102:2548 -> 999.999.5.27:21 SYN **S*****
Apr  2 16:22:33 24.132.123.102:2525 -> 999.999.5.5:21 SYN **S*****
Apr  2 16:22:33 24.132.123.102:2615 -> 999.999.5.93:21 SYN **S*****
Apr  2 16:23:13 24.132.123.102:2791 -> 999.999.6.11:21 SYN **S*****
Apr  2 16:23:13 24.132.123.102:2840 -> 999.999.6.60:21 SYN **S*****
Apr  2 16:23:13 24.132.123.102:2821 -> 999.999.6.41:21 SYN **S*****
Apr  2 16:23:13 24.132.123.102:2837 -> 999.999.6.57:21 SYN **S*****
```

- Scan for FTP servers from a host registered to a German address. This is likely reconnaissance for a future exploit attempt.

```
Apr  2 23:12:42 217.1.32.130:3238 -> 999.999.1.28:21 SYN **S*****
Apr  2 23:12:42 217.1.32.130:3250 -> 999.999.1.40:21 SYN **S*****
Apr  2 23:12:42 217.1.32.130:3256 -> 999.999.1.46:21 SYN **S*****
Apr  2 23:12:42 217.1.32.130:3262 -> 999.999.1.52:21 SYN **S*****
Apr  2 23:12:42 217.1.32.130:3260 -> 999.999.1.50:21 SYN **S*****
Apr  2 23:12:42 217.1.32.130:3268 -> 999.999.1.58:21 SYN **S*****
Apr  2 23:12:44 217.1.32.130:3466 -> 999.999.2.2:21 SYN **S*****
Apr  2 23:12:44 217.1.32.130:3468 -> 999.999.2.4:21 SYN **S*****
Apr  2 23:12:44 217.1.32.130:3472 -> 999.999.2.8:21 SYN **S*****
Apr  2 23:12:44 217.1.32.130:3476 -> 999.999.2.12:21 SYN **S*****
Apr  2 23:12:44 217.1.32.130:3480 -> 999.999.2.16:21 SYN **S*****
```

- Scan for DNS servers from a host registered to an address in the Netherlands. This is likely reconnaissance for a future exploit attempt.

```
Apr  2 23:56:41 128.148.184.75:1356 -> 999.999.2.4:53 SYN **S*****
Apr  2 23:56:41 128.148.184.75:1358 -> 999.999.2.6:53 SYN **S*****
Apr  2 23:56:41 128.148.184.75:1359 -> 999.999.2.7:53 SYN **S*****
Apr  2 23:56:41 128.148.184.75:1360 -> 999.999.2.8:53 SYN **S*****
Apr  2 23:56:41 128.148.184.75:1362 -> 999.999.2.10:53 SYN **S*****
Apr  2 23:56:41 128.148.184.75:1376 -> 999.999.2.24:53 SYN **S*****
Apr  2 23:56:41 128.148.184.75:1386 -> 999.999.2.34:53 SYN **S*****
Apr  2 23:56:41 128.148.184.75:1408 -> 999.999.2.56:53 SYN **S*****
Apr  2 23:56:50 128.148.184.75:4906 -> 999.999.4.22:53 SYN **S*****
Apr  2 23:56:50 128.148.184.75:4907 -> 999.999.4.23:53 SYN **S*****
Apr  2 23:56:50 128.148.184.75:4908 -> 999.999.4.24:53 SYN **S*****
Apr  2 23:56:50 128.148.184.75:4910 -> 999.999.4.26:53 SYN **S*****
Apr  2 23:56:50 128.148.184.75:4911 -> 999.999.4.27:53 SYN **S*****
```

Out Of Spec Analysis

Top 10 Out of Specs culprits

# of Conns	Src Ips	Dst IP
33	63.100.208.92	999.999.253.125
9	128.46.156.117	999.999.60.38
9	130.233.26.197	999.999.219.134
9	24.108.146.141	999.999.207.218
8	24.22.21.90	999.999.100.165
7	213.51.144.129	999.999.217.42
7	999.999.208.226	129.2.249.90
6	213.45.5.54	999.999.229.38
6	24.169.64.7	999.999.211.74
5	158.75.57.4	999.999.215.62

```
=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
04/02-07:07:52.674309 999.999.227.130:0 -> 24.77.6.95:1560
TCP TTL:126 TOS:0x0 ID:1234  DF
*1SFR*A* Seq: 0x18CA1491   Ack: 0xD5DC0094   Win: 0x5018
TCP Options => EOL EOL
3D E0 FF 8E 2F 51                               =.../Q
=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
04/02-07:30:01.461854 999.999.227.130:0 -> 65.33.22.243:2237
TCP TTL:126 TOS:0x0 ID:11344  DF
21*FRP*U Seq: 0x18CA152F   Ack: 0x768900AE   Win: 0x5010

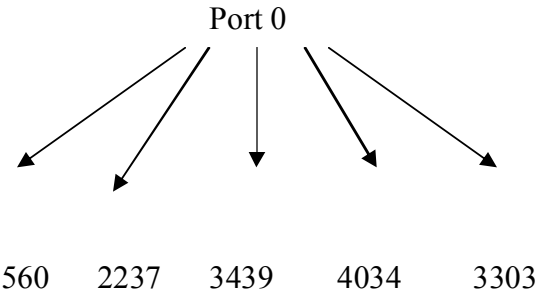
=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
04/02-08:45:51.811938 999.999.227.130:0 -> 24.181.55.20:3439
TCP TTL:126 TOS:0x0 ID:37479  DF
21SFR**U Seq: 0x18CA15AB   Ack: 0x77E50203   Win: 0x5010
77 E5 02 03 21 E7 50 10 22 21 00 5F 20 20 20 20  w...!.P."!._
20 00                                             .
=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
04/02-09:23:35.584520 999.999.227.130:0 -> 24.164.123.230:4034
TCP TTL:126 TOS:0x0 ID:46891  DF
2*SFRP*U Seq: 0x18CA15D5   Ack: 0xE64C7B0D   Win: 0x5018
21 9E EF 5D 00 00 7A 41 70 B8 C5 94 33 73 FF 01  !..]..zAp...3s..
8E 01                                            ..

=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
04/02-19:38:32.987027 999.999.227.130:0 -> 64.123.0.172:3003
TCP TTL:126 TOS:0x0 ID:21799  DF
21*FRPA* Seq: 0x18CA17A6   Ack: 0x53D900AC   Win: 0x5018
TCP Options => EOL EOL Opt 221 (4): F6B1

=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
```

Port 0 is a reserved port and should not appear in normal traffic. This is one-way traffic from inside your network out. Judging by the sequence numbers the source host is not a busy host.

Link Diagram:



```
=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
03/23-17:12:16.782480 63.100.208.92:2323 -> 999.999.253.125:80
TCP TTL:47 TOS:0x0 ID:0  DF
21S***** Seq: 0x9452B87A   Ack: 0x0   Win: 0x16D0
TCP Options => MSS: 1460 SackOK TS: 1962109 0 EOL EOL EOL EOL

=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
03/23-17:12:16.885806 63.100.208.92:2325 -> 999.999.253.125:80
TCP TTL:47 TOS:0x0 ID:0  DF
21S***** Seq: 0x942D6234   Ack: 0x0   Win: 0x16D0
TCP Options => MSS: 1460 SackOK TS: 1962119 0 EOL EOL EOL EOL

=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
03/23-17:12:16.906894 63.100.208.92:2326 -> 999.999.253.125:80
TCP TTL:47 TOS:0x0 ID:0  DF
21S***** Seq: 0x93A3C525   Ack: 0x0   Win: 0x16D0
TCP Options => MSS: 1460 SackOK TS: 1962122 0 EOL EOL EOL EOL

=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
03/23-17:12:26.207353 63.100.208.92:2329 -> 999.999.253.125:80
TCP TTL:47 TOS:0x0 ID:0  DF
21S***** Seq: 0x9488C70E   Ack: 0x0   Win: 0x16D0
TCP Options => MSS: 1460 SackOK TS: 1963052 0 EOL EOL EOL EOL

=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
03/23-17:12:36.771631 63.100.208.92:2340 -> 999.999.253.125:80
TCP TTL:47 TOS:0x0 ID:0  DF
21S***** Seq: 0x95AD3075   Ack: 0x0   Win: 0x16D0
TCP Options => MSS: 1460 SackOK TS: 1964108 0 EOL EOL EOL EOL

=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
03/23-17:12:37.653241 63.100.208.92:2341 -> 999.999.253.125:80
TCP TTL:47 TOS:0x0 ID:0  DF
21S***** Seq: 0x95AE5181   Ack: 0x0   Win: 0x16D0
TCP Options => MSS: 1460 SackOK TS: 1964197 0 EOL EOL EOL EOL

=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
03/23-17:13:56.303137 63.100.208.92:2388 -> 999.999.253.125:80
TCP TTL:47 TOS:0x0 ID:0  DF
21S***** Seq: 0x9A70CA2B   Ack: 0x0   Win: 0x16D0
TCP Options => MSS: 1460 SackOK TS: 1972061 0 EOL EOL EOL EOL

=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
03/23-17:13:58.224986 63.100.208.92:2389 -> 999.999.253.125:80
TCP TTL:47 TOS:0x0 ID:0  DF
21S***** Seq: 0x9B58DBF4   Ack: 0x0   Win: 0x16D0
TCP Options => MSS: 1460 SackOK TS: 1972253 0 EOL EOL EOL EOL

=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
03/23-17:13:58.262160 63.100.208.92:2390 -> 999.999.253.125:80
TCP TTL:47 TOS:0x0 ID:0  DF
21S***** Seq: 0x9B27D3AE   Ack: 0x0   Win: 0x16D0
TCP Options => MSS: 1460 SackOK TS: 1972256 0 EOL EOL EOL EOL

=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
03/23-17:13:58.288327 63.100.208.92:2391 -> 999.999.253.125:80
TCP TTL:47 TOS:0x0 ID:0  DF
```

```
21S***** Seq: 0x9B45013E   Ack: 0x0   Win: 0x16D0
TCP Options => MSS: 1460 SackOK TS: 1972260 0 EOL EOL EOL EOL

=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
03/23-17:13:58.329155 63.100.208.92:2392 -> 999.999.253.125:80
TCP TTL:47 TOS:0x0 ID:0  DF
21S***** Seq: 0x9AA59910   Ack: 0x0   Win: 0x16D0
TCP Options => MSS: 1460 SackOK TS: 1972263 0 EOL EOL EOL EOL

=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
03/23-17:14:11.103018 63.100.208.92:2397 -> 999.999.253.125:80
TCP TTL:47 TOS:0x0 ID:0  DF
21S***** Seq: 0x9BA800BC   Ack: 0x0   Win: 0x16D0
TCP Options => MSS: 1460 SackOK TS: 1973540 0 EOL EOL EOL EOL

=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
03/23-17:14:16.572539 63.100.208.92:2401 -> 999.999.253.125:80
TCP TTL:47 TOS:0x0 ID:0  DF
21S***** Seq: 0x9C29C474   Ack: 0x0   Win: 0x16D0
TCP Options => MSS: 1460 SackOK TS: 1974087 0 EOL EOL EOL EOL

=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
03/23-17:14:30.044847 63.100.208.92:2411 -> 999.999.253.125:80
TCP TTL:47 TOS:0x0 ID:0  DF
21S***** Seq: 0x9D0C474B   Ack: 0x0   Win: 0x16D0
TCP Options => MSS: 1460 SackOK TS: 1975436 0 EOL EOL EOL EOL

=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
03/23-17:14:37.423332 63.100.208.92:2413 -> 999.999.253.125:80
TCP TTL:47 TOS:0x0 ID:0  DF
21S***** Seq: 0x9CFDBDA2   Ack: 0x0   Win: 0x16D0
TCP Options => MSS: 1460 SackOK TS: 1976172 0 EOL EOL EOL EOL

=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
03/23-17:14:41.903105 63.100.208.92:2414 -> 999.999.253.125:80
TCP TTL:47 TOS:0x0 ID:0  DF
21S***** Seq: 0x9D4EB34F   Ack: 0x0   Win: 0x16D0
TCP Options => MSS: 1460 SackOK TS: 1976620 0 EOL EOL EOL EOL

=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
03/23-17:16:19.356373 63.100.208.92:2507 -> 999.999.253.125:80
TCP TTL:47 TOS:0x0 ID:0  DF
21S***** Seq: 0xA2F1AACE   Ack: 0x0   Win: 0x16D0
TCP Options => MSS: 1460 SackOK TS: 1986365 0 EOL EOL EOL EOL

=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
03/23-17:16:19.397451 63.100.208.92:2508 -> 999.999.253.125:80
TCP TTL:47 TOS:0x0 ID:0  DF
21S***** Seq: 0xA3478A73   Ack: 0x0   Win: 0x16D0
TCP Options => MSS: 1460 SackOK TS: 1986368 0 EOL EOL EOL EOL

=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
03/23-17:16:19.514928 63.100.208.92:2510 -> 999.999.253.125:80
TCP TTL:47 TOS:0x0 ID:0  DF
21S***** Seq: 0xA2F81E70   Ack: 0x0   Win: 0x16D0
TCP Options => MSS: 1460 SackOK TS: 1986381 0 EOL EOL EOL EOL
```

```
=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
03/23-17:16:33.208213 63.100.208.92:2519 -> 999.999.253.125:80
TCP TTL:47 TOS:0x0 ID:0  DF
21S***** Seq: 0xA491F0D8   Ack: 0x0   Win: 0x16D0
TCP Options => MSS: 1460 SackOK TS: 1987749 0 EOL EOL EOL EOL

=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
03/23-17:16:33.978147 63.100.208.92:2522 -> 999.999.253.125:80
TCP TTL:47 TOS:0x0 ID:0  DF
21S***** Seq: 0xA3CA5C7B   Ack: 0x0   Win: 0x16D0
TCP Options => MSS: 1460 SackOK TS: 1987826 0 EOL EOL EOL EOL

=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
03/23-17:16:39.596736 63.100.208.92:2527 -> 999.999.253.125:80
TCP TTL:47 TOS:0x0 ID:0  DF
21S***** Seq: 0xA45B4C6B   Ack: 0x0   Win: 0x16D0
TCP Options => MSS: 1460 SackOK TS: 1988388 0 EOL EOL EOL EOL

=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
03/23-17:16:53.088358 63.100.208.92:2541 -> 999.999.253.125:80
TCP TTL:47 TOS:0x0 ID:0  DF
21S***** Seq: 0xA53FFE08   Ack: 0x0   Win: 0x16D0
TCP Options => MSS: 1460 SackOK TS: 1989737 0 EOL EOL EOL EOL

=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
03/23-17:17:06.373781 63.100.208.92:2549 -> 999.999.253.125:80
TCP TTL:47 TOS:0x0 ID:0  DF
21S***** Seq: 0xA6807632   Ack: 0x0   Win: 0x16D0
TCP Options => MSS: 1460 SackOK TS: 1991064 0 EOL EOL EOL EOL

=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
03/23-17:17:06.962170 63.100.208.92:2550 -> 999.999.253.125:80
TCP TTL:47 TOS:0x0 ID:0  DF
21S***** Seq: 0xA5B54336   Ack: 0x0   Win: 0x16D0
TCP Options => MSS: 1460 SackOK TS: 1991114 0 EOL EOL EOL EOL

=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
03/23-17:17:15.579071 63.100.208.92:2553 -> 999.999.253.125:80
TCP TTL:47 TOS:0x0 ID:0  DF
21S***** Seq: 0xA683780E   Ack: 0x0   Win: 0x16D0
TCP Options => MSS: 1460 SackOK TS: 1991986 0 EOL EOL EOL EOL

=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
03/23-17:17:26.395956 63.100.208.92:2555 -> 999.999.253.125:80
TCP TTL:47 TOS:0x0 ID:0  DF
21S***** Seq: 0xA76CBFE5   Ack: 0x0   Win: 0x16D0
TCP Options => MSS: 1460 SackOK TS: 1993068 0 EOL EOL EOL EOL

=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
03/23-17:17:29.410869 63.100.208.92:2557 -> 999.999.253.125:80
TCP TTL:47 TOS:0x0 ID:0  DF
21S***** Seq: 0xA8FCB964   Ack: 0x0   Win: 0x16D0
TCP Options => MSS: 1460 SackOK TS: 1993369 0 EOL EOL EOL EOL

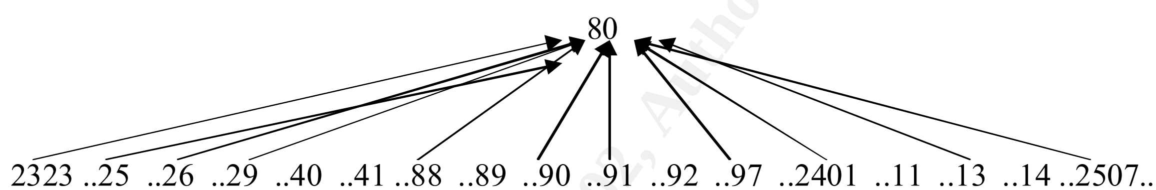
=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
03/23-17:17:35.292030 63.100.208.92:2561 -> 999.999.253.125:80
TCP TTL:47 TOS:0x0 ID:0  DF
```

```
21S***** Seq: 0xA884EA00   Ack: 0x0   Win: 0x16D0
TCP Options => MSS: 1460 SackOK TS: 1993957 0 EOL EOL EOL EOL

=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
03/23-17:17:38.094552 63.100.208.92:2565 -> 999.999.253.125:80
TCP TTL:47 TOS:0x0 ID:0  DF
21S***** Seq: 0xA88ED840   Ack: 0x0   Win: 0x16D0
TCP Options => MSS: 1460 SackOK TS: 1994238 0 EOL EOL EOL EOL
```

This traffic represents a targeted probe that was likely generated by an automated scanning tool such as NMAP or Netcat to probe a lone host inside your network for web services. Note the neatly incrementing source port numbers and the setting of the reserved TCP flag bits. This method is often used to bypass IDS systems that only trigger on SYN flags. The setting of the reserved bits is also a method of OS detection.

Link Diagram:



```
03/26-12:31:54.395774 152.66.225.153:1328 -> 999.999.221.46:6699
TCP TTL:118 TOS:0x0 ID:50979  DF
21SFRPAU Seq: 0x2DA67B   Ack: 0xDA972B7A   Win: 0x5010
05 30 1A 2B 00 2D A6 7B DA 97 2B 7A 00 FF 50 10  .0.+.-.{..+z..P.
22 38 E8 26 00 00 00 00 00 00                    "8.&......
=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
04/02-10:20:16.259320 195.249.200.155:6700 -> 999.999.228.102:3018
TCP TTL:114 TOS:0x0 ID:22215  DF
21SFRPAU Seq: 0x1ABED9EA   Ack: 0x260C3F50   Win: 0x3D
1A BE D9 EA 26 0C 3F 50 10 FF 00 3D B0 00 00 20  ....&.?P...=...
02 04 05 B4 0D 5F                                .....
=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
03/27-13:34:55.783388 999.999.202.30:2555 -> 206.176.11.95:6688
TCP TTL:126 TOS:0x0 ID:15520  DF
21SFRPAU Seq: 0x6022C1   Ack: 0x12D853A   Win: 0x5010
09 FB 1A 20 00 60 22 C1 01 2D 85 3A 00 FF 50 10  ... .`"..-.:..P.
FF 00 BC AC 20 20 20 20 20 00                    ....     .
```

These packets have all the TCP flag bits set and this is not normal. Packets of this type are not used in normal communication and should not be seen. Packet generating tools such as Hping, Queso, and NMAP can be used to generate these invalid packets for the purpose of network mapping and OS detection. With that in mind I found it interesting that two of the host that were involved all had European address; 152.66.225.153 – Hungray, and 195.249.200.155 – Denmark.

Assignment 4 - Analysis Process

I conducted my analysis on a HP Pavilion 9870 running Windows/ME. This was my first challenge since most of the tools used in prior practicals were Unix based. I'd like to extend my thanks to Loras Even for her insight. Reviewing her practical was a big help.

I had to do quite a bit of up-front preparation before I could begin to analyze the data. I've listed here the steps I performed to complete my analysis.

1. I installed several tools on my box. I've listed them here:
   - WIN32 versions of unix tools such as grep, and sed
   - WIN32Perl
   - Apache Web Server for viewing SnortSnarf HTML output

2. After installing the tools, I selected the subset of data that I would analyze and saved them in .txt files.
   Data Used

   Alerts:
   April 1,2,3 (content data is for Mar 31, Apr 1, and Apr 2 respectively)
   Mar 23,26,27 (content data is for Mar 22, Mar25, and Mar26 respectively)

   Scans:
   April 1,2,3 (content data is for Mar 31, Apr 1, and Apr 2 respectively)
   Mar 23,26,27 (content data is for Mar 22, Mar25, and Mar26 respectively)

   Out Of Spec Data:
   April 2 (content data is for Apr 1)
   Mar 23,26,27,28 (content data is for Mar 22, Mar 25, Mar 26, and Mar 27 respectively)

3. All of the Alert*.txt files were combined into one file using the dos COPY command. After combining the files I used sed to replace all instances of MY.NET with 999.999 and redirected the output to a new file. I had to do this because I got the following error attempting to run SnortScan files through snortsnaf with "MY.NET" string. To resolve this I changed MY.NET to 999.999.

   Use of uninitialized value in numeric comparison (<=>) at
   :/usr/local/lib/MemTimeBase.pm line 69, <ifh000> line 3329.
   Use of uninitialized value in numeric^C comparison (<=>) at
   C:/usr/local/lib/MemTimeBase.pm line 69, <ifh000> line 3329

4. I downloaded snortsnarf.pl from www.silicondefense.com/software/snortsnarf and processed the output from step 3. This allowed me to use my web browser to view the data in html format.

5. Next I processed each day's scan file through snortsnarf individually. I could not combine them because the volume of data caused memory shortage errors.

6. I pulled out critical data for analysis using perl scripts from Mike Bell's practical. (Many thanks to Mike) I modified them replacing MY.NET with 999.999

7. I used Mike's perl script to create a listing of the total number of alerts by type and imported the resulting file into MS-Excel for sorting since I don't have the sort utility.

8. Big Talkers – the top 10 talkers (ran the script top_talkers.pl and imported the resulting file into MS-Excel for sorting since I don't have the sort utility) input file = massalrt.txt (combined alerts file) output file= Top Ten Big_talkers

9. To get the total number of connections (29,434) I used the Excel SUM function to total the connection count column from the Big-Talkers file.

10. To get the list of source IP addresses and the number of associated scans I used Mike's snort_source.pl script. I saved the output as a text file using WORDPAD. I imported the text file into Excel and sorted it by total connections. input file = allscans.txt (combined alerts file) output file= Scanner SourceIPs

11. To get the list of the source/destination pairs for the top Out of Spec talkers is used Mike's top_talkers_oos.pl input file = ooSpec.txt output file=D:\SANS\top oos talkers (ran the script top_talkers.pl and imported the resulting file into MS-Excel for sorting since I don't have the sort utility) This was the data I used to my link graph.

12. I used grep to analyze the combined scans file because the file was too large to load into MS-Excel.

Performing this analysis in a windows platform was challenging at best; however it has shown me that network traffic analysis can be done outside of the Unix arena.

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1. Paul Asadoorian #0337
2. Loras Even #325
3. Mike Bell (Perl scripts)