## HY455 Cyber Security Assignment 4 Chris Papastamos (csd4569)

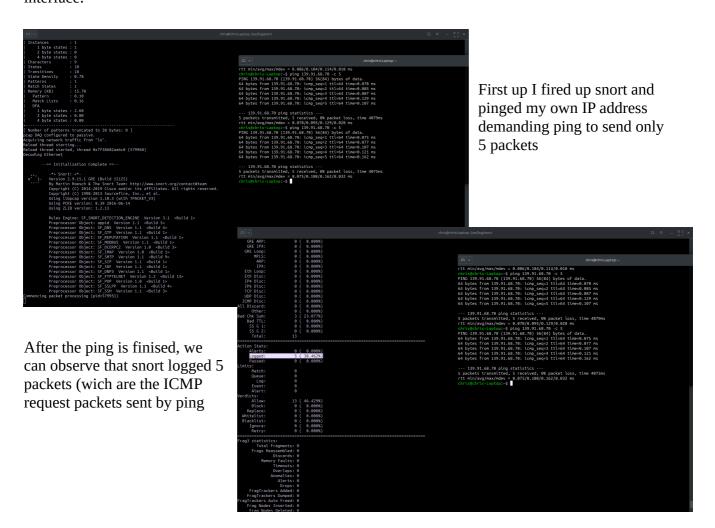
## **Ouestion 1**

For the rules described in the assignment I created the following 5 rules:

- log icmp any any -> 139.91.68.70 any (msg:"Captured ICMP packet destined to the host";itype:8;sid:1000001;rev:1;)
- log tcp any any -> any 7000:7999 (msg:"Captured FIN packet destined to the host";flags:F;sid:1000002;rev:1;)
- alert tcp any any -> any any (msg:"FIN and SYN flags detected at the same time!";flags:FS+;sid:1000003;rev:1;)
- log tcp any any -> any 21 (msg:"Root FTP login detected!";content:"USER root";nocase;sid:1000004;rev:1;)
- log tcp any any -> any 22 (detection\_filter:track by\_src, count 3, seconds 60;sid:1000005;rev:1;)

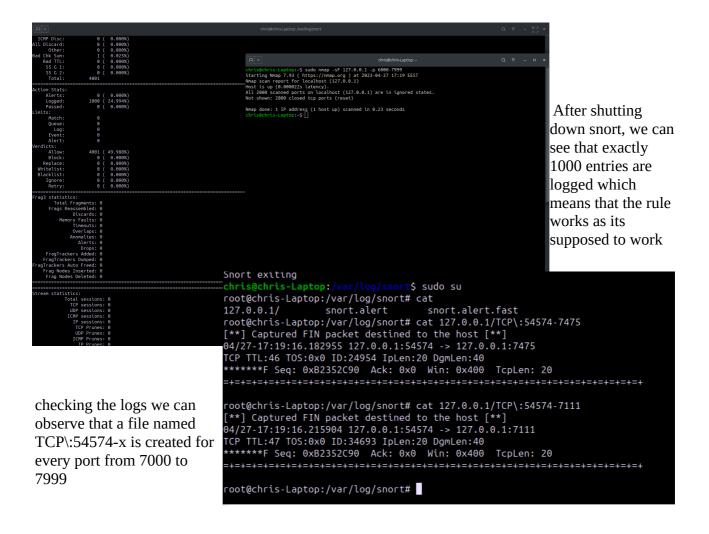
For demonstrating these rules I will run snort default configuration file while including only the local rules file. In this file I will append my rules mentioned above

For demonstrating the ICMP request rule I will ping my own IP address and will run snort on the lo interface:



Examining the log files (in ASCII as I requested from snort using "-K ascii") we can see the 5 packets logged and the message from the rule I created appearing in before each logged packet

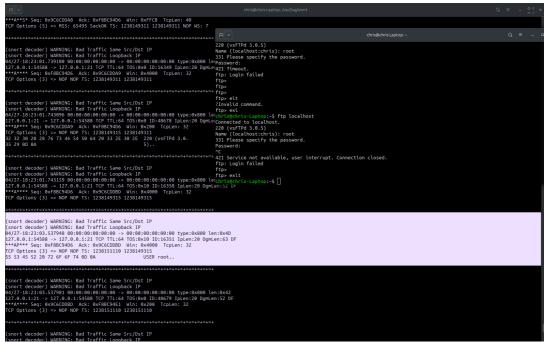
For the demonstration of the second rule, I will use the FIN scan option of nmap in order to send FIN TCP packets to the loopback interface and then capure and log them using snort. I am going to scan ports 6000 through 7999 so that we can check if only the ports 7000-7999 are logged:



For the alert rule, I will run snort using the option "-A console" which is gonna display alerts in the prompt in real time. On the other terminal I will run nmap with the option "--scanflags 3" to craft a SYN FIN packet and send it to every port.

For the last two rules the tests were not successful...

For the ftp login rule I created a dummy FTP server and then tried to login (unsuccesfully) as root user. Snort did not manage to log the packet even though I managed to find it using packet sniffer mode and displaying the packet contents on the screen. Therefore I still don't know why the highlighted packet doesn't trigger the log rule



Question 2

Rule	Explanation
alert icmp any any -> any any (msg:"ICMP Source Quench";itype:4'icode:0;)	This snort rule alerts for any ICMP packets with the following fields on the header: type=4 (Source Quench) code=0 (echo reply)
alert tcp \$EXTERNAL NET any -> \$HOME NET 53 (msg:"DNSEXPLOIT named overflow";flags:A+;content:"thisissometempspacefort hesockinaddrinyeahyeahiknowthisislamebutanyway whocareshorizongotitworkingsoalliscool";reference:cv e,CVE-1999-0833;)	This snort rule alerts for any incoming tcp connections from the EXTERNAL_NET variable (default=! HOME_NET=any), destined to the HOME_NET variable (default = any) and to port 53 (Which is used by DNS servers), is an acknowledgment (flags:A+;) and includes the string "thisissometempspaceforthesockinaddriny eahyeahiknowthisislamebutanyway whocareshorizongotitworkingsoalliscool", When this alert is executed, the message that is displayed is "DNSEXPLOIT named overflow" and contains a CVE reference.
alert tcp \$EXTERNAL NET any -> \$HOME NET 139 (msg:"NETBIOS SMB ADMIN\$access"; flow:to_server,established; content:"\\ADMIN\$[00 41 3a 00]"; reference:arachnids,340; classtype:attempted-admin; sid:532; rev:4;)	This snort rule alerts any tcp from the EXTERNAL_NET to HOME_NET port 139 (used by SMB dialects that communicate over NetBIOS), triggered when the client sends packet to the server, only for an established TCP connection. The content should contain the following string "\ADMIN\$ 00 41 3a 00 " (the hex numbers contained in the two columns is treated as hex). The rule also has the classtype attempted-admin which gives the rule high priority as it describes an Attempted Administrator Privilege Gain. Finally it has a message to display, a referance to arachnids an sid and a revision number.
alert ip \$EXTERNAL_NET \$SHELLCODE_PORTS -> \$HOME_NET any (msg:"SHELLCODE sparc NOOP"; content:"  a61c c013 a61c c013 a61c c013 a61c c013 "; reference:arachnids,355; classtype:shellcode- detect; sid:646; rev:4;)	This snort rule alerts for any EXTERNAL_NET connections from the SHELLCODE_PORTS (!80) to any HOME_NET port with content as described in the rule (contains hex code). The rule has a classtype of shellcode-detect which is for executable code detected and has high priority. This rule also has a message to display, a reference to arachnids, a sid and a revision number

## **Ouestion 4**

For the installation of Pulled Pork all I had to do is follow the instructions on the github README file. When I was thrrough with the instructions I had to make some changes to the configuration file, like inputing my oinkcode and describing which rulesets I want to download. I also had to change some path variables. After all the configuration, I ran pulledpork and the rules file was created in the rules directory of snort:

Due to some compatability issues (pulledpork3 is for snort3 while I ran snort 2) I didn't manage to run snort with the pulledpork.rules rules that beeing because some rules have options not compatitable with snort2 (like service). The generated pulledpork.rules file can be seen below

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