Homework 7

Due date: July 22 @6PM

100 Points

Dmytro Poliak
Student Number: 100443432
Section: S50
Date: 22.07.2024

Save as PDF then Upload to Moodle

Class Demo: July 22 : 5-6PM (0 if no Demo)
Cedar Room 2075

WRITE BELOW ALL KALI LINUX COMMANDS YOU USED TO INSTALL AND CONFIGURE SNORT V3 (10 POINTS)

- sudo -s
- apt update && apt full-upgrade -y
- mv /etc/apt/sources.list /etc/apt/sources.list.bak
- find /var/lib/apt/lists -type f -exec rm {} \;
- wget https://gist.githubusercontent.com/ishad0w/788555191c7037e249a439542c53e170/raw/3822ba49241e6fd851ca1c1cbcc4d7e87382f484/sources.list -O /etc/apt/sources.list
- apt-key adv --keyserver keyserver.ubuntu.com --recv-keys 3B4FE6ACC0B21F32
- apt-key adv --keyserver keyserver.ubuntu.com --recv-keys 871920D1991BC93C
- apt update && apt full-upgrade -y
- apt install snort
- find /var/lib/apt/lists -type f -exec rm {} \;

WRITE BELOW ALL KALI LINUX COMMANDS YOU USED TO INSTALL AND CONFIGURE SNORT V3 (10 POINTS)

- mv /etc/apt/sources.list /etc/apt/ubuntu_sources.list
- mv /etc/apt/sources.list.bak /etc/apt/sources.list
- apt update && apt full-upgrade -y

Paste a screen shot of running: snort --version command

```
┌──(dmytropoliak㉿kali)-[~]
└─$ snort --version

   ,,_     -*> Snort++ <*-
  o"  )~   Version 3.1.82.0
   ''''    By Martin Roesch & The Snort Team
           http://snort.org/contact#team
           Copyright (C) 2014-2024 Cisco and/or its affiliates. All rights reserved.
           Copyright (C) 1998-2013 Sourcefire, Inc., et al.
           Using DAQ version 3.0.12
           Using LuaJIT version 2.1.1700206165
           Using OpenSSL 3.2.2 4 Jun 2024
           Using libpcap version 1.10.4 (with TPACKET_V3)
           Using PCRE version 8.39 2016-06-14
           Using ZLIB version 1.3.1
           Using LZMA version 5.6.2

┌──(dmytropoliak㉿kali)-[~]
└─$
```

30 Points

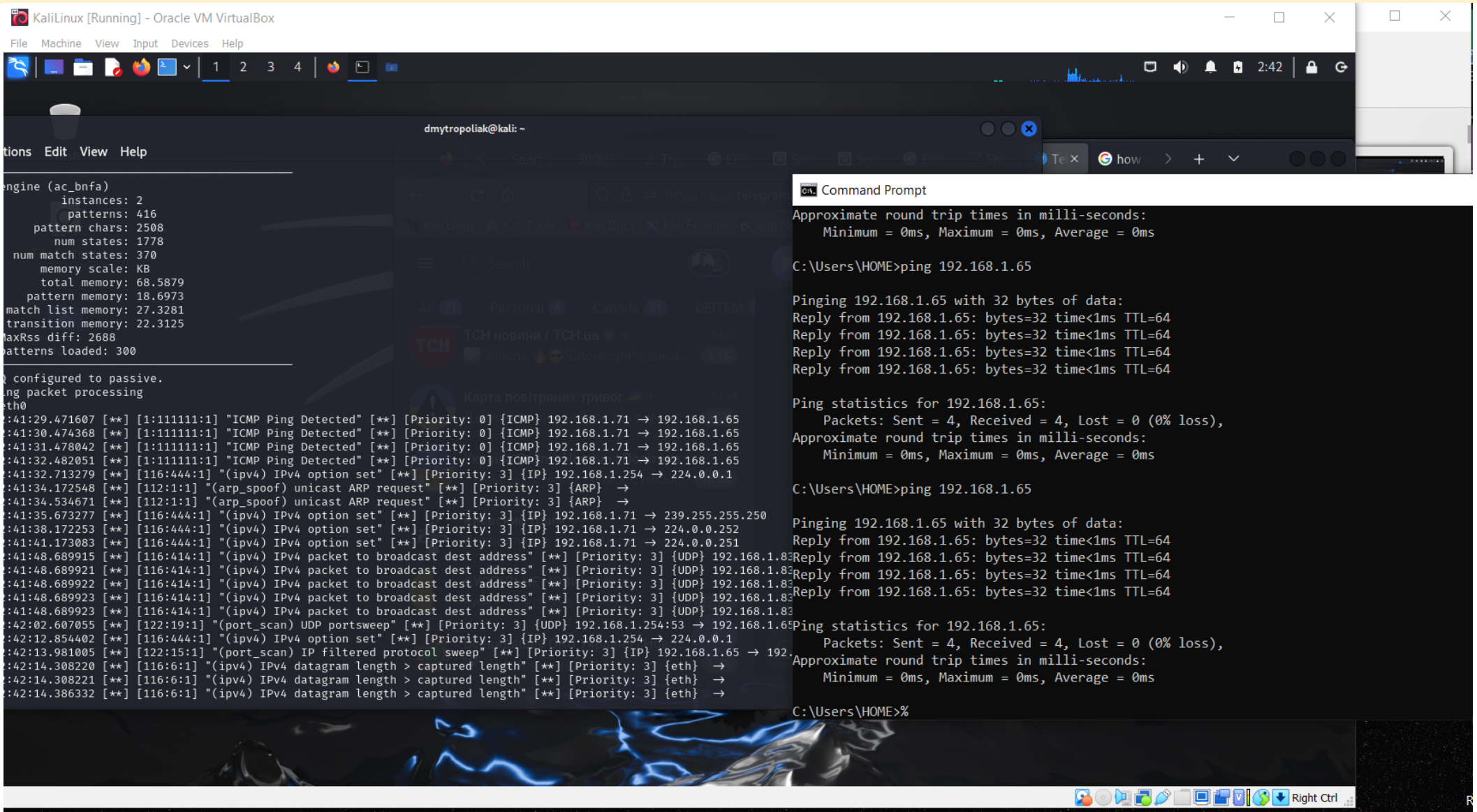
Generate ICMP Requests Alerts

1. stop snort
2. Write the rule
3. Start snort

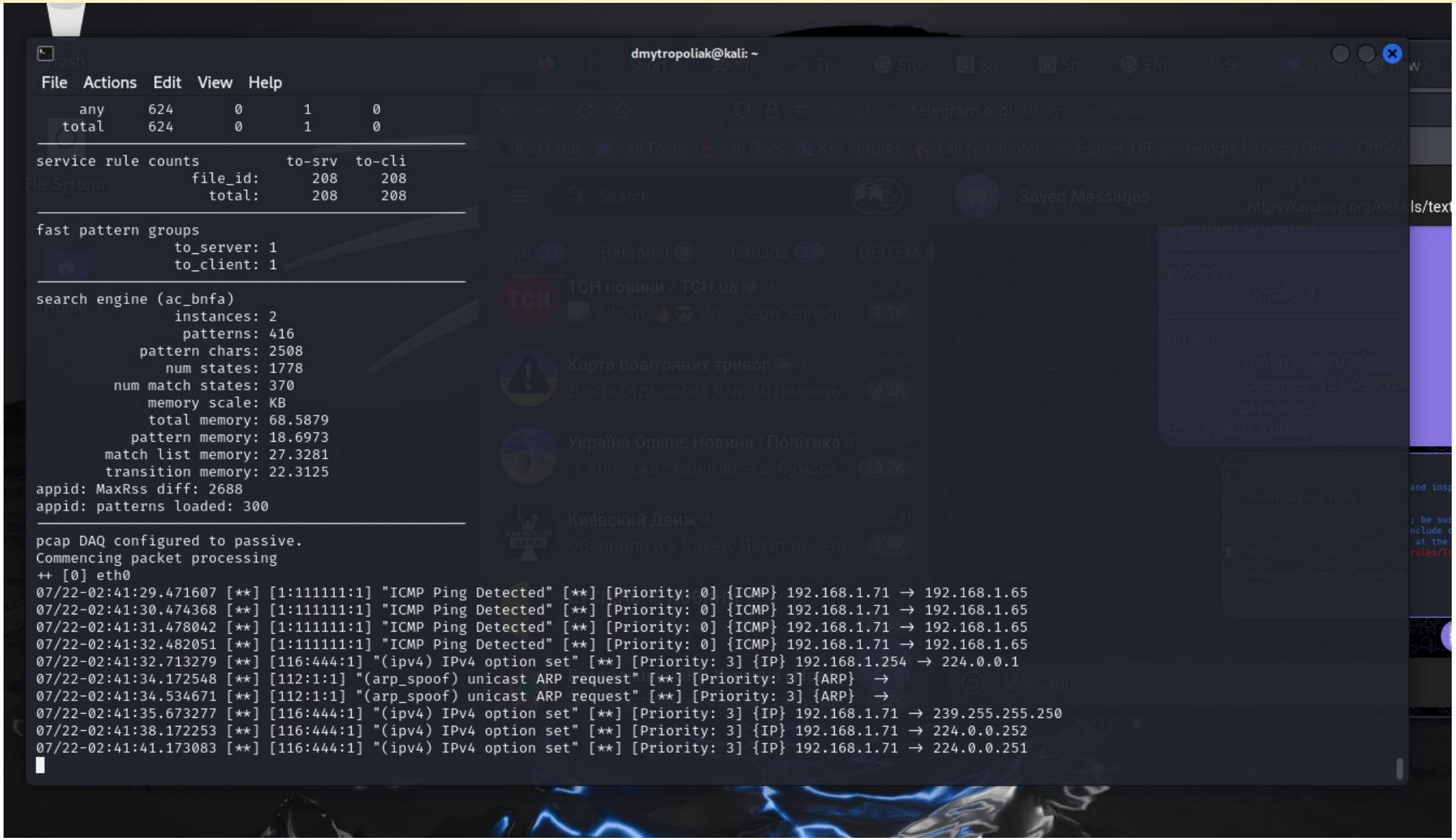
Write a rule to generate an alert when any host pings KALI machine use 111111 as the signature id

alert icmp any any -> 192.168.1.65 any (msg:"Ping detected"; itype:8; sid:111111; rev:1;)

Show a screenshot of executing the ping command on your Windows/MAC computer



Paste a screenshot that shows the rule is working (only correct if it matches the signature id)



Paste a screenshot that shows the rule is working (only correct if it matches the signature id)

```
        transition memory: 23.3281
        fast pattern only: 1
appid: MaxRss diff: 2688
appid: patterns loaded: 300
-------------------------------------------------
pcap DAQ configured to passive.
Commencing packet processing
++ [0] eth0
07/22-17:56:23.369293 [**] [1:111111:1] "Ping detected" [**] [Priority: 0] {ICMP} 192.168.1.71 -> 192.168.1.65
07/22-17:56:24.374720 [**] [1:111111:1] "Ping detected" [**] [Priority: 0] {ICMP} 192.168.1.71 -> 192.168.1.65
07/22-17:56:25.386637 [**] [1:111111:1] "Ping detected" [**] [Priority: 0] {ICMP} 192.168.1.71 -> 192.168.1.65
07/22-17:56:26.402282 [**] [1:111111:1] "Ping detected" [**] [Priority: 0] {ICMP} 192.168.1.71 -> 192.168.1.65
07/22-17:56:28.171703 [**] [112:1:1] "(arp_spoof) unicast ARP request" [**] [Priority: 3] {ARP}  ->
07/22-17:56:28.491581 [**] [112:1:1] "(arp_spoof) unicast ARP request" [**] [Priority: 3] {ARP}  ->
07/22-17:56:33.136190 [**] [116:444:1] "(ipv4) IPv4 option set" [**] [Priority: 3] {IP} 192.168.1.89 -> 239.255.255.250
07/22-17:56:35.813267 [**] [116:444:1] "(ipv4) IPv4 option set" [**] [Priority: 3] {IP} 192.168.1.80 -> 232.239.0.17
07/22-17:56:36.617409 [**] [116:444:1] "(ipv4) IPv4 option set" [**] [Priority: 3] {IP} 192.168.1.82 -> 232.239.0.17
07/22-17:56:37.952618 [**] [116:444:1] "(ipv4) IPv4 option set" [**] [Priority: 3] {IP} 192.168.1.88 -> 239.255.255.250
07/22-17:56:38.662584 [**] [116:444:1] "(ipv4) IPv4 option set" [**] [Priority: 3] {IP} 192.168.1.74 -> 232.239.0.17
07/22-17:56:39.182939 [**] [116:6:1] "(ipv4) IPv4 datagram length > captured length" [**] [Priority: 3] {eth}  ->
07/22-17:56:39.182941 [**] [116:6:1] "(ipv4) IPv4 datagram length > captured length" [**] [Priority: 3] {eth}  ->
07/22-17:56:39.182943 [**] [116:6:1] "(ipv4) IPv4 datagram length > captured length" [**] [Priority: 3] {eth}  ->
07/22-17:56:40.000133 [**] [116:6:1] "(ipv4) IPv4 datagram length > captured length" [**] [Priority: 3] {eth}  ->
07/22-17:56:40.000134 [**] [116:6:1] "(ipv4) IPv4 datagram length > captured length" [**] [Priority: 3] {eth}  ->
07/22-17:56:40.000137 [**] [116:6:1] "(ipv4) IPv4 datagram length > captured length" [**] [Priority: 3] {eth}  ->
07/22-17:56:40.000138 [**] [116:6:1] "(ipv4) IPv4 datagram length > captured length" [**] [Priority: 3] {eth}  ->
07/22-17:56:40.000479 [**] [116:6:1] "(ipv4) IPv4 datagram length > captured length" [**] [Priority: 3] {eth}  ->
07/22-17:56:40.091984 [**] [116:6:1] "(ipv4) IPv4 datagram length > captured length" [**] [Priority: 3] {eth}  ->
07/22-17:56:41.633762 [would_reset] [**] [1:222222:1] "ICMP request rejected" [**] [Priority: 0] {ICMP} 192.168.1.67 -> 192.168.1.65
```

25 Points

Reject ICMP Requests

1. stop snort
2. Write the rule
3. Start snort

Write a rule to reject ICMP requests from any host use 222222 as the signature id

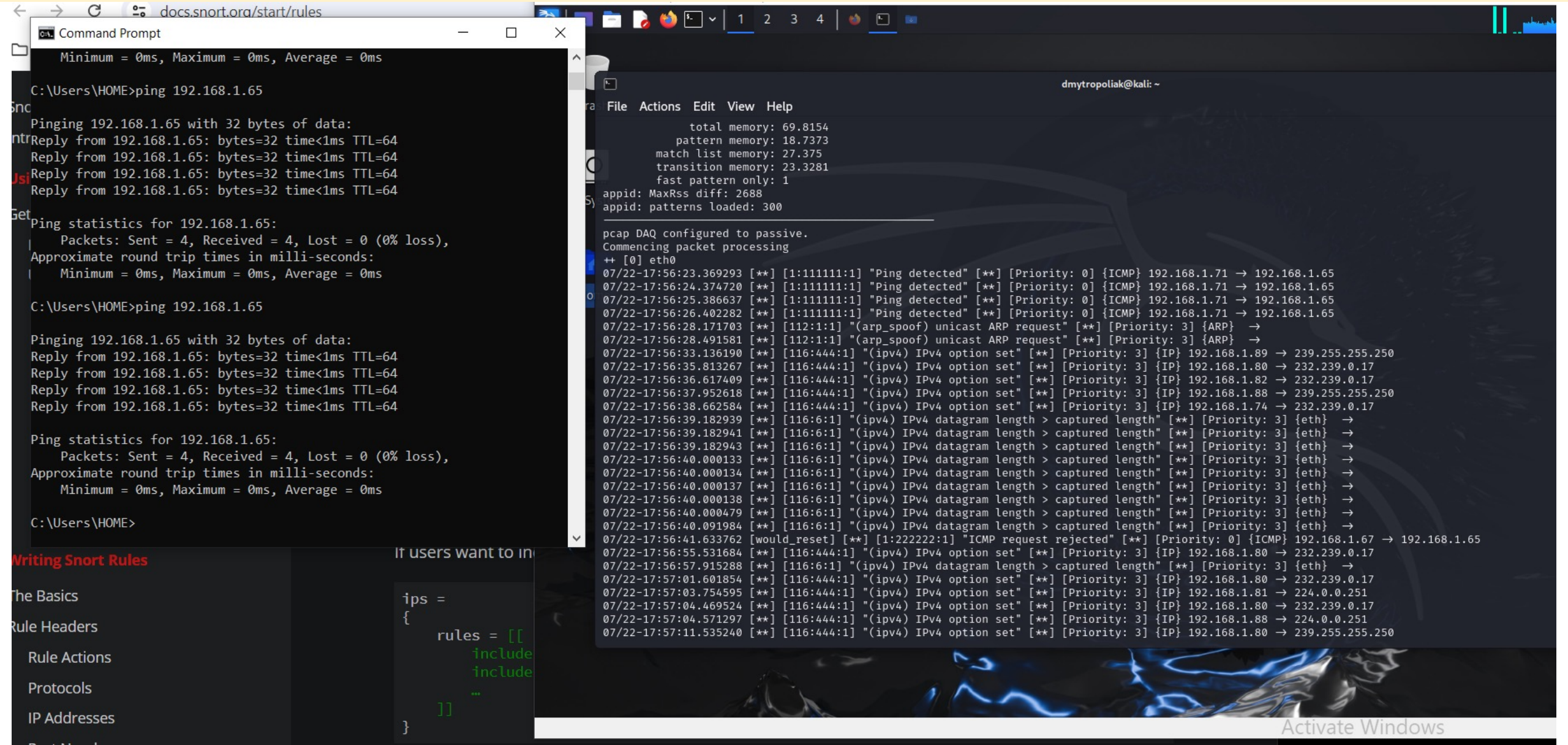
```
reject icmp any any -> $HOME_NET any (msg:"ICMP request rejected";
itype:8; content:"|08|"; sid:222222; rev:1;)
```

Paste a screenshot that shows the rule is working (only correct if it matches the signature id)

```
07/22-17:56:40.000479 [**] [116:6:1] "(ipv4) IPv4 datagram length > captured length" [**] [Priority: 3] {eth}  →
07/22-17:56:40.091984 [**] [116:6:1] "(ipv4) IPv4 datagram length > captured length" [**] [Priority: 3] {eth}  →
07/22-17:56:41.633762 [would_reset] [**] [1:222222:1] "ICMP request rejected" [**] [Priority: 0] {ICMP} 192.168.1.67 → 192.168.1.65
07/22-17:56:55.531684 [**] [116:444:1] "(ipv4) IPv4 option set" [**] [Priority: 3] {IP} 192.168.1.80 → 232.239.0.17
07/22-17:56:57.915288 [**] [116:6:1] "(ipv4) IPv4 datagram length > captured length" [**] [Priority: 3] {eth}  →
```

```
        transition memory: 23.3281
        fast pattern only: 1
appid: MaxRss diff: 2688
appid: patterns loaded: 300
-------------------------------------------------
pcap DAQ configured to passive.
Commencing packet processing
++ [0] eth0
07/22-17:56:23.369293 [**] [1:111111:1] "Ping detected" [**] [Priority: 0] {ICMP} 192.168.1.71 → 192.168.1.65
07/22-17:56:24.374720 [**] [1:111111:1] "Ping detected" [**] [Priority: 0] {ICMP} 192.168.1.71 → 192.168.1.65
07/22-17:56:25.386637 [**] [1:111111:1] "Ping detected" [**] [Priority: 0] {ICMP} 192.168.1.71 → 192.168.1.65
07/22-17:56:26.402282 [**] [1:111111:1] "Ping detected" [**] [Priority: 0] {ICMP} 192.168.1.71 → 192.168.1.65
07/22-17:56:28.171703 [**] [112:1:1] "(arp_spoof) unicast ARP request" [**] [Priority: 3] {ARP}  →
07/22-17:56:28.491581 [**] [112:1:1] "(arp_spoof) unicast ARP request" [**] [Priority: 3] {ARP}  →
07/22-17:56:33.136190 [**] [116:444:1] "(ipv4) IPv4 option set" [**] [Priority: 3] {IP} 192.168.1.89 → 239.255.255.250
07/22-17:56:35.813267 [**] [116:444:1] "(ipv4) IPv4 option set" [**] [Priority: 3] {IP} 192.168.1.80 → 232.239.0.17
07/22-17:56:36.617409 [**] [116:444:1] "(ipv4) IPv4 option set" [**] [Priority: 3] {IP} 192.168.1.82 → 232.239.0.17
07/22-17:56:37.952618 [**] [116:444:1] "(ipv4) IPv4 option set" [**] [Priority: 3] {IP} 192.168.1.88 → 239.255.255.250
07/22-17:56:38.662584 [**] [116:444:1] "(ipv4) IPv4 option set" [**] [Priority: 3] {IP} 192.168.1.74 → 232.239.0.17
07/22-17:56:39.182939 [**] [116:6:1] "(ipv4) IPv4 datagram length > captured length" [**] [Priority: 3] {eth}  →
07/22-17:56:39.182941 [**] [116:6:1] "(ipv4) IPv4 datagram length > captured length" [**] [Priority: 3] {eth}  →
07/22-17:56:39.182943 [**] [116:6:1] "(ipv4) IPv4 datagram length > captured length" [**] [Priority: 3] {eth}  →
07/22-17:56:40.000133 [**] [116:6:1] "(ipv4) IPv4 datagram length > captured length" [**] [Priority: 3] {eth}  →
07/22-17:56:40.000134 [**] [116:6:1] "(ipv4) IPv4 datagram length > captured length" [**] [Priority: 3] {eth}  →
07/22-17:56:40.000137 [**] [116:6:1] "(ipv4) IPv4 datagram length > captured length" [**] [Priority: 3] {eth}  →
07/22-17:56:40.000138 [**] [116:6:1] "(ipv4) IPv4 datagram length > captured length" [**] [Priority: 3] {eth}  →
07/22-17:56:40.000479 [**] [116:6:1] "(ipv4) IPv4 datagram length > captured length" [**] [Priority: 3] {eth}  →
07/22-17:56:40.091984 [**] [116:6:1] "(ipv4) IPv4 datagram length > captured length" [**] [Priority: 3] {eth}  →
07/22-17:56:41.633762 [would_reset] [**] [1:222222:1] "ICMP request rejected" [**] [Priority: 0] {ICMP} 192.168.1.67 → 192.168.1.65
```

Paste a screenshot that shows the rule is working (only correct if it matches the signature id)



10 Points

SSH – Access

1. No Rule Writing

Paste a screenshot: Accessing KALI from windows/Mac command prompt using ssh before writing the ssh rule

```
C:\Users\HOME>ssh dmytropoliak@192.168.1.65
The authenticity of host '192.168.1.65 (192.168.1.65)' can't be established.
ECDSA key fingerprint is SHA256:cKQrCdKeti0RmINFxFhn1o6LhZwXiW/mnqXB6mR9KQU.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '192.168.1.65' (ECDSA) to the list of known hosts.
dmytropoliak@192.168.1.65's password:
Linux kali 6.8.11-amd64 #1 SMP PREEMPT_DYNAMIC Kali 6.8.11-1kali2 (2024-05-30) x86_64

The programs included with the Kali GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Kali GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
┌──(dmytropoliak㉿ kali)-[~]
└─$
```

25 Points

SSH Rejection

1. Stop snort
2. Write the rule
3. Start snort

Write a rule to reject SSH requests from your windows host to KALI : use *333333* as a signature id (enter the rule below)

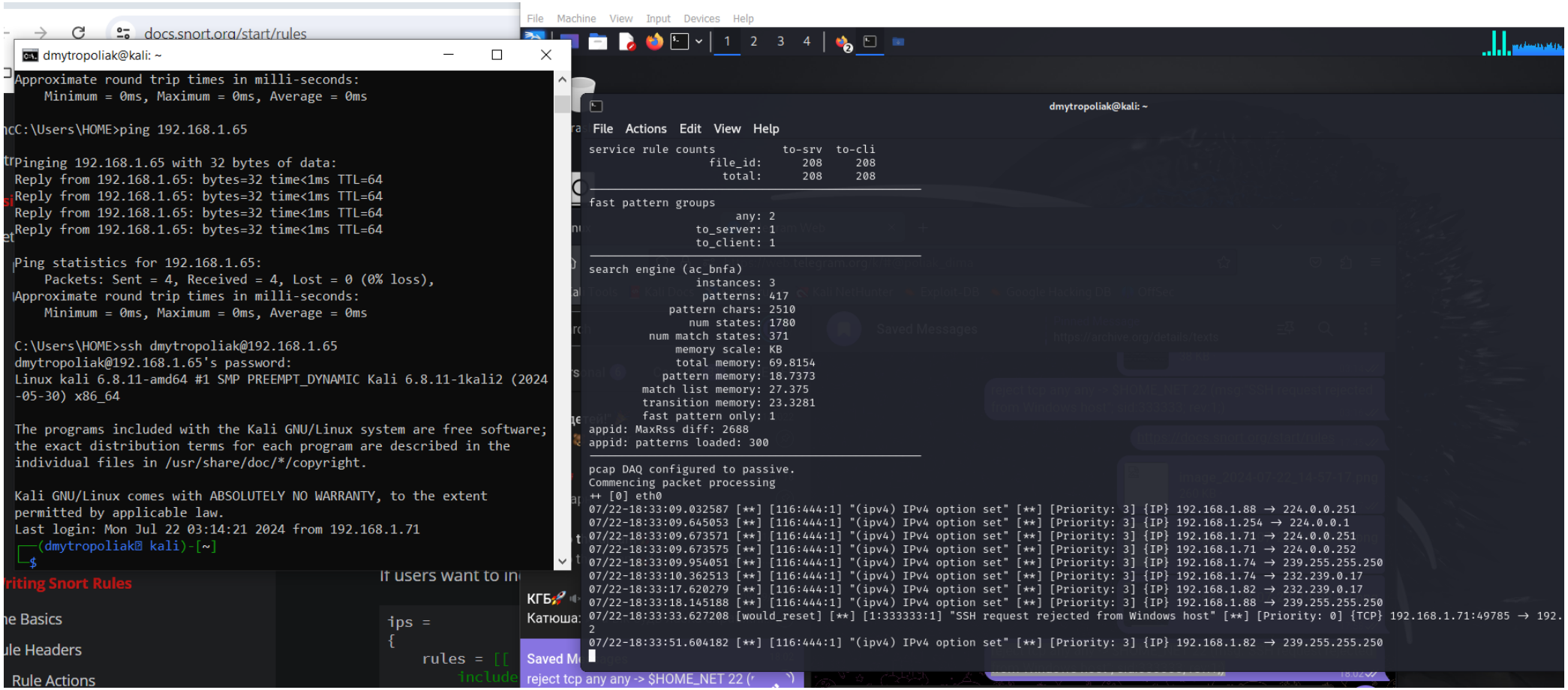
reject tcp any any -> $HOME_NET 22 (msg:"SSH request rejected from Windows host"; sid:333333; rev:1;)

Paste a screenshot that shows the rule is working (only correct if it matches the signature id)

```
        transition memory: 23.3281
        fast pattern only: 1
appid: MaxRss diff: 2688
appid: patterns loaded: 300

pcap DAQ configured to passive.
Commencing packet processing
++ [0] eth0
07/22-18:33:09.032587 [**] [116:444:1] "(ipv4) IPv4 option set" [**] [Priority: 3] {IP} 192.168.1.88 -> 224.0.0.251
07/22-18:33:09.645053 [**] [116:444:1] "(ipv4) IPv4 option set" [**] [Priority: 3] {IP} 192.168.1.254 -> 224.0.0.1
07/22-18:33:09.673571 [**] [116:444:1] "(ipv4) IPv4 option set" [**] [Priority: 3] {IP} 192.168.1.71 -> 224.0.0.251
07/22-18:33:09.673575 [**] [116:444:1] "(ipv4) IPv4 option set" [**] [Priority: 3] {IP} 192.168.1.71 -> 224.0.0.252
07/22-18:33:09.954051 [**] [116:444:1] "(ipv4) IPv4 option set" [**] [Priority: 3] {IP} 192.168.1.74 -> 239.255.255.250
07/22-18:33:10.362513 [**] [116:444:1] "(ipv4) IPv4 option set" [**] [Priority: 3] {IP} 192.168.1.74 -> 232.239.0.17
07/22-18:33:17.620279 [**] [116:444:1] "(ipv4) IPv4 option set" [**] [Priority: 3] {IP} 192.168.1.82 -> 232.239.0.17
07/22-18:33:18.145188 [**] [116:444:1] "(ipv4) IPv4 option set" [**] [Priority: 3] {IP} 192.168.1.88 -> 239.255.255.250
07/22-18:33:33.627208 [would_reset] [**] [1:333333:1] "SSH request rejected from Windows host" [**] [Priority: 0] {TCP} 192.168.1.71:49785 -> 192.168.1.65:2
2
07/22-18:33:51.604182 [**] [116:444:1] "(ipv4) IPv4 option set" [**] [Priority: 3] {IP} 192.168.1.82 -> 239.255.255.250
07/22-18:33:55.355449 [**] [116:444:1] "(ipv4) IPv4 option set" [**] [Priority: 3] {IP} 192.168.1.74 -> 232.239.0.17
07/22-18:33:57.147624 [**] [116:444:1] "(ipv4) IPv4 option set" [**] [Priority: 3] {IP} 192.168.1.88 -> 239.255.255.250
07/22-18:33:57.766310 [**] [116:444:1] "(ipv4) IPv4 option set" [**] [Priority: 3] {IP} 192.168.1.80 -> 232.239.0.17
07/22-18:33:57.773614 [**] [116:444:1] "(ipv4) IPv4 option set" [**] [Priority: 3] {IP} 192.168.1.88 -> 224.0.0.251
07/22-18:33:59.657552 [**] [116:444:1] "(ipv4) IPv4 option set" [**] [Priority: 3] {IP} 192.168.1.82 -> 232.239.0.17
07/22-18:34:12.895616 [**] [122:15:1] "(port_scan) IP filtered protocol sweep" [**] [Priority: 3] {IP} 192.168.1.65 -> 192.168.1.254
07/22-18:34:13.339529 [**] [116:6:1] "(ipv4) IPv4 datagram length > captured length" [**] [Priority: 3] {eth}  ->
```

Paste a screenshot that shows the rule is working (only correct if it matches the signature id)



Paste Windows/Mac screenshot that shows connection is denied

```
C:\Users\HOME>ssh dmytropoliak@192.168.1.65
dmytropoliak@192.168.1.65's password:
Linux kali 6.8.11-amd64 #1 SMP PREEMPT_DYNAMIC Kali 6.8.11-1kali2 (2024-05-30) x86_64

The programs included with the Kali GNU/Linux system are free software;the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Kali GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Mon Jul 22 03:14:21 2024 from 192.168.1.71
┌──(dmytropoliak㉿ kali)-[~]
└─$
```