Task 1: Simple Firewall program

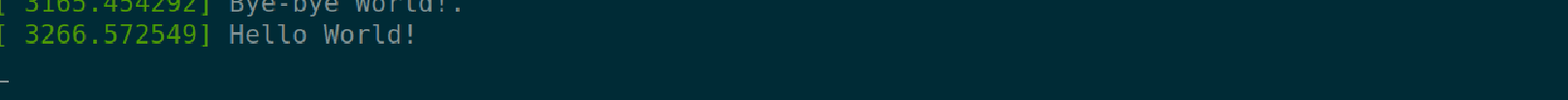
Screenshots:

Running the program:

Text

Description automatically generated

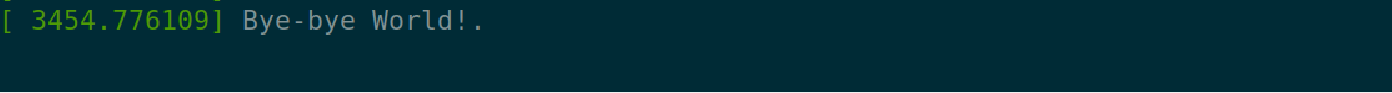
After the running the program we will hello world as output, which we can see using dmseg



When we remove the module we will get bye message, To remove the module we use bellow commands:

Text

Description automatically generated



Task 2.1: protecting router

Screenshots:

Running iptables commands

A picture containing calendar

Description automatically generated

Trying to ping and telnet:

S Graphical user interface, text

Description automatically generated

Task 2.B

Screenshot

Running the commands

Graphical user interface, text, application

Description automatically generated

Trying to ping eth0:

Text

Description automatically generated

Outside hosts can ping the router:

Table

Description automatically generated with low confidence

Internal hosts can ping outside hosts:

Text

Description automatically generated with low confidence

All other packets between the internal and external networks should be blocked.

Running commands:

Trying to access outside host

Text

Description automatically generated with medium confidence

Task 3:

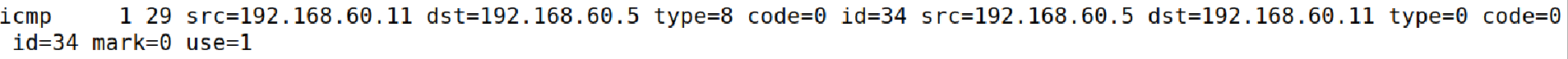
ICMP experiment:

ping 192.168.60.5 on 10.9.0.5

Table

Description automatically generated

Checking the time using conntrack tool:



UDP experiment:

start a netcat UDP server:

A picture containing text

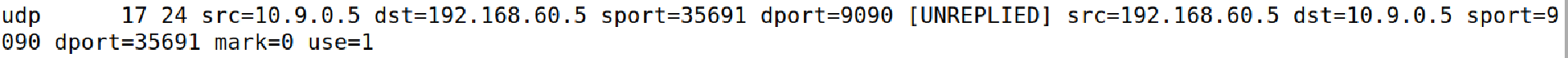
Description automatically generated

send out UDP packets:

A picture containing text

Description automatically generated

Tracking Screenshot:

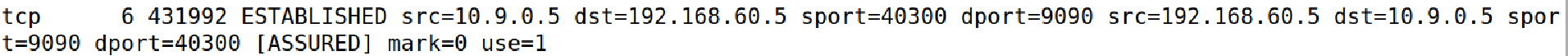


TCP experiment:

start a netcat TCP server:



send out TCP packets:



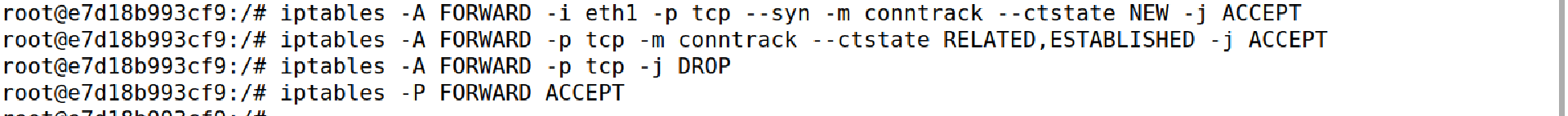
Task 3.b:

Checking Conntrack:

Diagram

Description automatically generated with medium confidence

Running iptables commands:



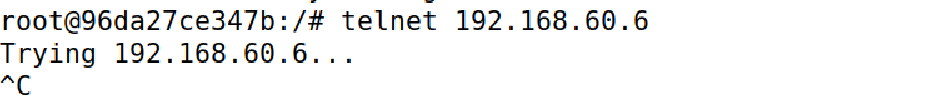
Checking rules:

Screenshot 1:

Text

Description automatically generated

Screenshot 2:



Task 4:

Screenshots:

Rule 1:



Checking above rule:

Table

Description automatically generated

Rule 2:



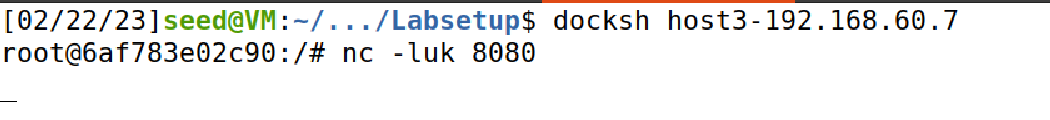
Checking rule 2:

Text

Description automatically generated

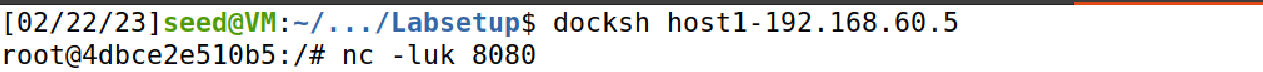
Task 5:

start the server on each of the hosts:



Text

Description automatically generated with medium confidence

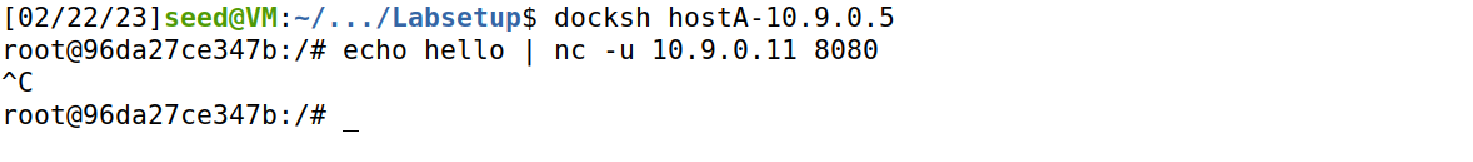


Running the rule:

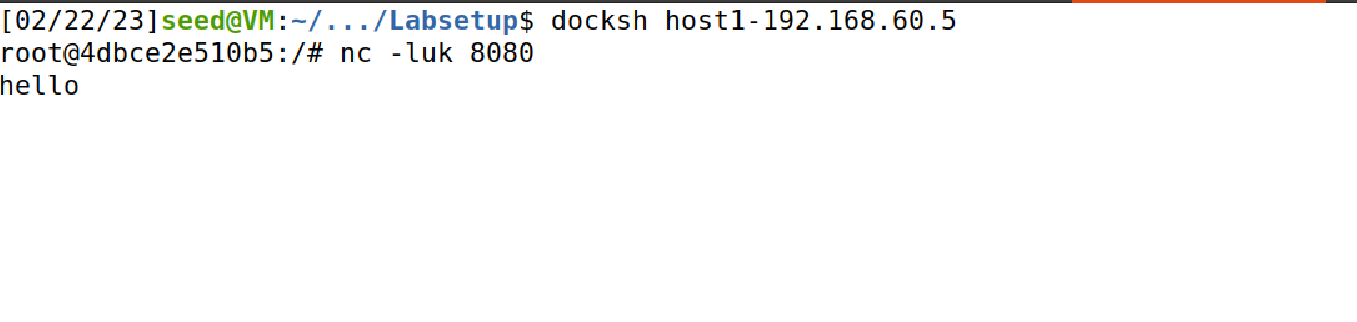
Text

Description automatically generated with medium confidence

Sending UDP packet:



We added a rule for only 192.168.60.5 so we can see the out put on that host:



Adding the rule to all hosts:

Chart

Description automatically generated with low confidence

Now checking the hosts:

Text

Description automatically generated

Host 1:

A picture containing text

Description automatically generated

Host2:

A picture containing text

Description automatically generated

Host 3:

A picture containing text

Description automatically generated

Using random mode:

Commands:

A picture containing diagram

Description automatically generated

Text

Description automatically generated

Hosts screenshot:

Host 1:

Text

Description automatically generated

Host 2:

Text

Description automatically generated

Host 3:

Text

Description automatically generated