Otto-Friedrich-University of Bamberg

Professorship for Computer Science,
Communication Services, Telecommunication
Systems and Computer Networks

Foundation of Internet Communication

Assignment 4
NATting, Firewalls, and Virtual Private Networks

Submitted by:
Group X

Moktahid Al Faisal
Abdullah Al Mosabbir
Mohammed Mehedi Hasan
Kazi Sayef Shawgat
Sheikh Jumon Ahmed

Supervisor: Prof. Dr. Udo Krieger

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1 Network Address Translation (NAT) and Firewalls

1.1 Network Address Translation (NAT)

Configuration of r2


```
set nat source rule 100 outbound-interface 'eth1'
set nat source rule 100 source address '40.40.0.2/24'
set nat source rule 100 translation address 'masquerade'
```

Figure 1: Configuration of r2

r1 and r3 remove the route to reach collision domain (CD) D

Figure 2: remove route from collision domain D

Figure 3: remove route from collision domain D

web sheldon is not pingable, but curl gik de still delivers a result from pc2

On CD B and CD D capture the call curl gik de with wireshark

Figure 4: web sheldon not pingable but curl gik de is working
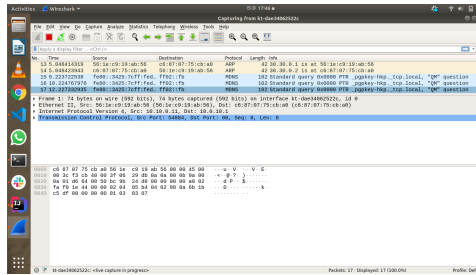
Figure 5: Capture packet with wireshark

1.2 Firewall

1. Create a default filter policy to drop all packets

Figure 6: Drop packets

2. than allow unlimited traffic on the loopback interface lo again

Figure 7: Allow trafic

3. Forward packets of the DNS network 2.0.0.0/8 without any restrictions

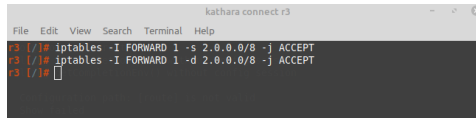Allow all web servers in CD E to accept connections on tcp port 80
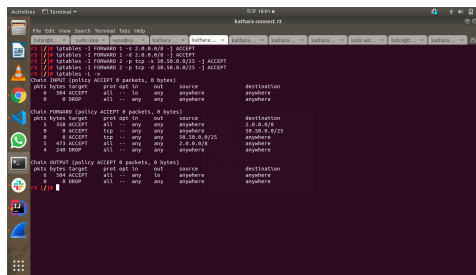

Figure 8: Forward Packets

Figure 9: accept connections on tcp port 80

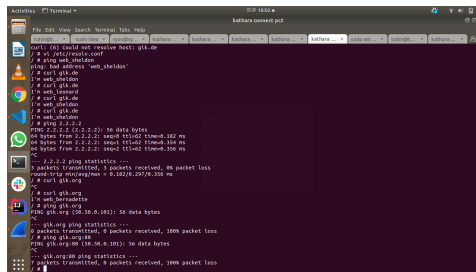Ping gik org fails, but curl gik org displays the website content

Figure 10: ping fails, but curl gik displays the website content

2 Virtual Private Network (VPN)

2.1 Softether Server and Client

Unable to execute vpn command

Figure 11: VPN command error

2.2 Softether Cascade Connections