



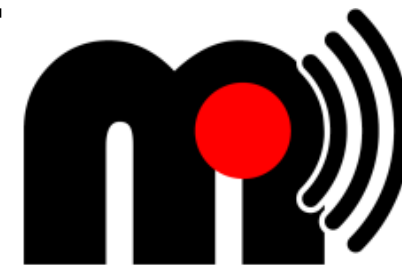
# **Path tracing with tracebox**

## ***MAMI summer school***

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**measurement and architecture for a middleboxed internet**



# Milestone 1

# Ping destination (10.0.0.10)



```
vagrant@mmb-tutorial:~$ ping -c 5 10.0.0.10
PING 10.0.0.10 (10.0.0.10) 56(84) bytes of data.
64 bytes from 10.0.0.10: icmp_seq=1 ttl=58 time=344 ms
64 bytes from 10.0.0.10: icmp_seq=2 ttl=58 time=190 ms
64 bytes from 10.0.0.10: icmp_seq=3 ttl=58 time=309 ms
64 bytes from 10.0.0.10: icmp_seq=4 ttl=58 time=294 ms
64 bytes from 10.0.0.10: icmp_seq=5 ttl=58 time=381 ms

--- 10.0.0.10 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4016ms
rtt min/avg/max/mdev = 190.015/304.035/381.793/64.564 ms
vagrant@mmb-tutorial:~$
```

# Traceroute



```
vagrant@mmb-tutorial:~$ sudo scamper -c trace -i 10.0.0.10
traceroute from 10.100.100.1 to 10.0.0.10
1  *
2  20.100.2.12  68.135 ms
3  20.0.3.10   119.904 ms
4  20.0.2.2    257.572 ms
5  30.0.0.6    122.110 ms
6  30.100.2.2  321.615 ms
7  10.0.0.10   378.122 ms
vagrant@mmb-tutorial:~$
```

# Paris Traceroute



```
vagrant@mmb-tutorial:~$ sudo scamper -c tracelb -i 10.0.0.10
tracelb from 10.100.100.1 to 10.0.0.10, 7 nodes, 6 links, 33 probes, 95%
* -> 20.100.2.12
20.100.2.12 -> 20.0.3.10
20.0.3.10 -> 20.0.2.2
20.0.2.2 -> 30.0.0.6
30.0.0.6 -> 30.100.2.2
30.100.2.2 -> 10.0.0.10
vagrant@mmb-tutorial:~$
```

# NAT



```
vagrant@mmb-tutorial:~$ sudo python3 simple_tracebox.py 10.0.0.10
```

```
flags      : FlagsField (5 bits)      = 0 (0)
frag       : BitField (13 bits)      = 0 (0)
ttl        : ByteField                = 0 (64)
proto      : ByteEnumField            = 6 (0)
chksum     : XShortField              = 48391 (None)
src        : SourceIPField            = '20.100.2.10' (None)
dst        : DestIPField              = '10.0.0.10' (None)
options    : PacketListField         = [] ([])
--
sport      : ShortEnumField           = 20 (20)
dport      : ShortEnumField           = 81 (80)
```

# Firewall









```
vagrant@mmb-tutorial:~$ sudo scamper -c "ping -P tcp-syn -d 53" -i 10.0.0.10
ping 10.100.100.1 to 10.0.0.10: 40 byte packets
--- 10.0.0.10 ping statistics ---
4 packets transmitted, 0 packets received, 100% packet loss
```

```
vagrant@mmb-tutorial:~$ sudo scamper -c "ping -P udp -d 33435" -i 10.0.0.10
ping 10.100.100.1 to 10.0.0.10: 40 byte packets
68 bytes from 10.0.0.10, seq=0 ttl=58 time=228.292 ms
68 bytes from 10.0.0.10, seq=1 ttl=58 time=158.681 ms
68 bytes from 10.0.0.10, seq=2 ttl=58 time=403.701 ms
68 bytes from 10.0.0.10, seq=3 ttl=58 time=328.779 ms
--- 10.0.0.10 ping statistics ---
4 packets transmitted, 4 packets received, 0% packet loss
round-trip min/avg/max/stddev = 158.681/279.863/403.701/93.639 ms
```

---

# Firewall (cont.)



Ports	UDP	TCP
25, 53, 445		
80, 443, 8000, 8080		
135, 139, 161, 162		



# Topology

