

Performance Measurement

Inside mininet

Use the commands `sudo mn`

Open xterms and

On h1 --> `tcpdump -w "file-name"`

on h2 --> `iperf -s`

Again on h1 ---> `iperf -c "server IP" -i 1`

Then use wireshark "file-name" to display the tcpdump file.

```
Activities | Term | The OO-01 | Group6
mininet@mininet-vm: ~$ sudo mn
*** Configuration summary ***
Add nodes:
h1 h2
Add links:
s1
*** Add links:
[0] local 10.0.0.1 port 4818 connected with 10.0.0.2 port 5001
[1] Interval: Transfer: Bandwidth:
[0] 0.0-1.0 sec: 306 Kbytes 2.57 Gbits/sec
[1] 1.0-2.0 sec: 223 Kbytes 1.79 Gbits/sec
[0] 2.0-3.0 sec: 358 Kbytes 3.00 Gbits/sec
[1] 3.0-4.0 sec: 238 Kbytes 2.00 Gbits/sec
[0] 4.0-5.0 sec: 257 Kbytes 1.82 Gbits/sec
[1] 5.0-6.0 sec: 144 Kbytes 1.24 Gbits/sec
[0] 6.0-7.0 sec: 182 Kbytes 1.52 Gbits/sec
[1] 7.0-8.0 sec: 352 Kbytes 2.36 Gbits/sec
[0] 8.0-9.0 sec: 306 Kbytes 2.58 Gbits/sec
[1] 9.0-10.0 sec: 250 Kbytes 2.29 Gbits/sec
mininet@mininet-vm: ~$
mininet@mininet-vm: ~$

Node: h1 (on mininet-vm)
root@mininet-vm:~# iperf -c 10.0.0.2 -i 1
Client connecting to 10.0.0.2, TCP port 5001
TCP window size: 65.3 Kbyte (default)
[0] local 10.0.0.1 port 4818 connected with 10.0.0.2 port 5001
[1] Interval: Transfer: Bandwidth:
[0] 0.0-10.0 sec: 2.51 Gbytes 2.35 Gbits/sec

Node: h2 (on mininet-vm)
root@mininet-vm:~# iperf -s
Server listening on TCP port 5001
TCP window size: 65.3 Kbyte (default)
[0] local 10.0.0.2 port 5001 connected with 10.0.0.1 port 4818
[1] Interval: Transfer: Bandwidth:
[0] 0.0-10.0 sec: 2.51 Gbytes 2.35 Gbits/sec

Node: h1 (on mininet-vm)
root@mininet-vm:~# tcpdump -w performance-measurement
tcpdump: listening on h1-eth0, link-type ENETHER (Ethernet), capture size 65535 bytes
[]
```

Activities The 00:07 performance-measurement [Wireshark 1.8.2] (on mininet-vm)

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Filter: Expression... Clear Apply Save

No.	Time	Source	Destination	Protocol	Length	Info
2.0.000000	0.000000	7a:bd:ed:c7:79:12	ff:ff:ff:ff:ff:ff	ARP	42	Who has 10.0.0.2? (10.0.0.2)
2.0.000052	0.000052	42:20:f0:18:5:0d:36	10.0.0.2	1s	42	10.0.0.2 is at 42:20:f0:18:5:0d:36
3.0.000060	0.000060	10.0.0.1	10.0.0.2	TCP	74	46191 → 5001 [SYN] Seq=0 Win=1488 Len=0 MSS=1480 SACK_PERM=1 TSval=3406022 TSecr=0 WS=512
4.0.001588	0.001588	10.0.0.2	10.0.0.1	TCP	74	5801 → 46191 [SYN, ACK] Seq=0 Ack=1 Win=1488 Len=0 MSS=1480 SACK_PERM=1 TSval=3406022 TSecr=3406022
5.0.001603	0.001603	10.0.0.1	10.0.0.2	TCP	66	46191 → 5001 [ACK] Seq=1 Ack=1 Win=1488 Len=0 TSval=3406022 TSecr=3406022
6.0.001653	0.001653	10.0.0.1	10.0.0.2	TCP	96	46191 → 5001 [PSH, ACK] Seq=1 Ack=1 Win=1488 Len=24 TSval=3406022 TSecr=3406022
7.0.003620	0.003620	10.0.0.1	10.0.0.2	TCP	1514	46191 → 5001 [ACK] Seq=25 Ack=1 Win=1488 Len=1448 TSval=3406023 TSecr=3406022
8.0.003928	0.003928	10.0.0.1	10.0.0.2	TCP	1514	46191 → 5001 [ACK] Seq=1473 Ack=1 Win=1488 Len=1448 TSval=3406023 TSecr=3406022
9.0.003961	0.003961	10.0.0.1	10.0.0.2	TCP	1514	46191 → 5001 [ACK] Seq=2921 Ack=1 Win=1488 Len=1448 TSval=3406023 TSecr=3406022
10.0.004006	0.004006	10.0.0.1	10.0.0.2	TCP	1514	46191 → 5001 [ACK] Seq=4369 Ack=1 Win=1488 Len=1448 TSval=3406023 TSecr=3406022
11.0.004028	0.004028	10.0.0.1	10.0.0.2	TCP	1514	46191 → 5001 [ACK] Seq=5817 Ack=1 Win=1488 Len=1448 TSval=3406023 TSecr=3406022
12.0.004048	0.004048	10.0.0.1	10.0.0.2	TCP	1514	46191 → 5001 [PSH, ACK] Seq=7285 Ack=1 Win=1488 Len=1448 TSval=3406023 TSecr=3406022
13.0.004074	0.004074	10.0.0.1	10.0.0.2	TCP	1514	46191 → 5001 [ACK] Seq=8713 Ack=1 Win=1488 Len=1448 TSval=3406023 TSecr=3406022

0 Frame 1: 42 bytes on wire (336 bits), 42 bytes captured (336 bits) on interface 0
 0 Ethernet II, Src: 7a:bd:ed:c7:79:12 [7a:bd:ed:c7:79:12], Dst: Broadcast (ff:ff:ff:ff:ff:ff)
 0 Address Resolution Protocol (request)

```

0000  ff ff ff ff ff ff 7a bd ed c7 79 12 08 06 00 01  .....0...f.....
0010  08 06 04 00 01 7a bd ed c7 79 12 04 00 00 01  .....0...f.....
0020  00 00 00 00 00 00 04 00 00 02  .....:
  
```

File: performance-measur... Packets: 274325 Displayed: 274325 Marked: 0 Load time: 0:06.318 Profile: Default