

Lab task 3

ANAND M K
242CS008

- Creating namespace

```
root@csdept-HP:/home/anandmk# ip netns add red
root@csdept-HP:/home/anandmk# ip netns add blue
root@csdept-HP:/home/anandmk# ip netns add router
root@csdept-HP:/home/anandmk# ip netns
red
blue
router
root@csdept-HP:/home/anandmk#
```

- Add two links

```
root@csdept-HP:/home/anandmk# ip link add eth0 type veth peer name eth1
root@csdept-HP:/home/anandmk# ip link add eth2 type veth peer name eth3
root@csdept-HP:/home/anandmk# ip link
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN mode DEFAULT group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
2: eno1: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP mode DEFAULT group default qlen 1000
    link/ether c0:18:03:c1:8a:2d brd ff:ff:ff:ff:ff:ff
    altname enp0s31f6
3: eth1@eth0: <BROADCAST,MULTICAST,M-DOWN> mtu 1500 qdisc noop state DOWN mode DEFAULT group default qlen 1000
    link/ether 5e:93:2e:db:a2:5b brd ff:ff:ff:ff:ff:ff
4: eth0@eth1: <BROADCAST,MULTICAST,M-DOWN> mtu 1500 qdisc noop state DOWN mode DEFAULT group default qlen 1000
    link/ether 1a:f8:f7:83:6d:64 brd ff:ff:ff:ff:ff:ff
5: eth3@eth2: <BROADCAST,MULTICAST,M-DOWN> mtu 1500 qdisc noop state DOWN mode DEFAULT group default qlen 1000
    link/ether e6:4a:c4:3a:55:c1 brd ff:ff:ff:ff:ff:ff
6: eth2@eth3: <BROADCAST,MULTICAST,M-DOWN> mtu 1500 qdisc noop state DOWN mode DEFAULT group default qlen 1000
    link/ether da:5c:eb:47:41:52 brd ff:ff:ff:ff:ff:ff
```

- Shift ethernet interface to namespace

```
root@csdept-HP:/home/anandmk# ip link set eth0 netns red
root@csdept-HP:/home/anandmk# ip link set eth2 netns router
root@csdept-HP:/home/anandmk# ip link set eth1 netns router
root@csdept-HP:/home/anandmk# ip link set eth3 netns blue
root@csdept-HP:/home/anandmk# ip link
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN mode DEFAULT group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
2: eno1: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP mode DEFAULT group default qlen 1000
    link/ether c0:18:03:c1:8a:2d brd ff:ff:ff:ff:ff:ff
    altname enp0s31f6
root@csdept-HP:/home/anandmk#
```

- Turn on all interface

```
altname enp0s31f6
root@csdept-HP:/home/anandmk# ip netns exec red ip link set lo up
root@csdept-HP:/home/anandmk# ip netns exec blue ip link set lo up
root@csdept-HP:/home/anandmk# ip netns exec router ip link set lo up
root@csdept-HP:/home/anandmk# ip netns exec red ip link set eth0 up
root@csdept-HP:/home/anandmk# ip netns exec router ip link set eth1 up
root@csdept-HP:/home/anandmk# ip netns exec router ip link set eth2 up
root@csdept-HP:/home/anandmk# ip netns exec blue ip link set eth3 up
root@csdept-HP:/home/anandmk#
```

- Assigning ip Address

```
root@csdept-HP:/home/anandmk# ip netns exec red ip address add 10.0.0.1/24 dev eth0
root@csdept-HP:/home/anandmk# ip netns exec router ip address add 10.0.0.2/24 dev eth1
root@csdept-HP:/home/anandmk# ip netns exec router ip address add 10.0.1.1/24 dev eth2
root@csdept-HP:/home/anandmk# ip netns exec blue ip address add 10.0.1.2/24 dev eth3
root@csdept-HP:/home/anandmk#
```

- Setting default route

```
root@csdept-HP:/home/anandmk# ip netns exec red ip route add default via 10.0.0.2 dev eth0
root@csdept-HP:/home/anandmk# ip netns exec blue ip route add default via 10.0.1.1 dev eth3
```

- Setting ip forwarding

```
root@csdept-HP:/home/anandmk# ip netns exec router sysctl -w net.ipv4.ip_forward=1
net.ipv4.ip_forward = 1
```

- Ping

```
root@csdept-HP:/home/anandmk
root@csdept-HP:/home/anandmk# ip netns exec red bash
root@csdept-HP:/home/anandmk# ping 10.0.1.2
PING 10.0.1.2 (10.0.1.2) 56(84) bytes of data.
64 bytes from 10.0.1.2: icmp_seq=1 ttl=63 time=0.113 ms
64 bytes from 10.0.1.2: icmp_seq=2 ttl=63 time=0.071 ms
64 bytes from 10.0.1.2: icmp_seq=3 ttl=63 time=0.075 ms
64 bytes from 10.0.1.2: icmp_seq=4 ttl=63 time=0.075 ms
64 bytes from 10.0.1.2: icmp_seq=5 ttl=63 time=0.068 ms
64 bytes from 10.0.1.2: icmp_seq=6 ttl=63 time=0.091 ms
64 bytes from 10.0.1.2: icmp_seq=7 ttl=63 time=0.077 ms
64 bytes from 10.0.1.2: icmp_seq=8 ttl=63 time=0.070 ms
64 bytes from 10.0.1.2: icmp_seq=9 ttl=63 time=0.066 ms
64 bytes from 10.0.1.2: icmp_seq=10 ttl=63 time=0.069 ms
64 bytes from 10.0.1.2: icmp_seq=11 ttl=63 time=0.070 ms
64 bytes from 10.0.1.2: icmp_seq=12 ttl=63 time=0.080 ms
64 bytes from 10.0.1.2: icmp_seq=13 ttl=63 time=0.038 ms
64 bytes from 10.0.1.2: icmp_seq=14 ttl=63 time=0.067 ms
64 bytes from 10.0.1.2: icmp_seq=15 ttl=63 time=0.064 ms
64 bytes from 10.0.1.2: icmp_seq=16 ttl=63 time=0.073 ms
64 bytes from 10.0.1.2: icmp_seq=17 ttl=63 time=0.069 ms
64 bytes from 10.0.1.2: icmp_seq=18 ttl=63 time=0.071 ms
^C
--- 10.0.1.2 ping statistics ---
18 packets transmitted, 18 received, 0% packet loss, time 17390ms
rtt min/avg/max/mdev = 0.038/0.072/0.113/0.013 ms
root@csdept-HP:/home/anandmk#
```

```
root@csdept-HP: /home/anandmk
root@csdept-HP:/home/anandmk# ip netns exec blue bash
root@csdept-HP:/home/anandmk# ping 10.0.0.1
PING 10.0.0.1 (10.0.0.1) 56(84) bytes of data.
64 bytes from 10.0.0.1: icmp_seq=1 ttl=63 time=0.077 ms
64 bytes from 10.0.0.1: icmp_seq=2 ttl=63 time=0.068 ms
64 bytes from 10.0.0.1: icmp_seq=3 ttl=63 time=0.072 ms
64 bytes from 10.0.0.1: icmp_seq=4 ttl=63 time=0.072 ms
64 bytes from 10.0.0.1: icmp_seq=5 ttl=63 time=0.073 ms
64 bytes from 10.0.0.1: icmp_seq=6 ttl=63 time=0.070 ms
64 bytes from 10.0.0.1: icmp_seq=7 ttl=63 time=0.069 ms
64 bytes from 10.0.0.1: icmp_seq=8 ttl=63 time=0.066 ms
64 bytes from 10.0.0.1: icmp_seq=9 ttl=63 time=0.070 ms
64 bytes from 10.0.0.1: icmp_seq=10 ttl=63 time=0.073 ms
64 bytes from 10.0.0.1: icmp_seq=11 ttl=63 time=0.064 ms
64 bytes from 10.0.0.1: icmp_seq=12 ttl=63 time=0.071 ms
^C
--- 10.0.0.1 ping statistics ---
12 packets transmitted, 12 received, 0% packet loss, time 11275ms
rtt min/avg/max/mdev = 0.064/0.070/0.077/0.003 ms
root@csdept-HP:/home/anandmk#
```

- Iperf

```
root@csdept-HP: /home/anandmk
root@csdept-HP:/home/anandmk# iperf -c 10.0.1.2
-----
Client connecting to 10.0.1.2, TCP port 5001
TCP window size: 85.0 KByte (default)
-----
[  1] local 10.0.0.1 port 56090 connected with 10.0.1.2 port 5001
[ ID] Interval           Transfer     Bandwidth
[  1] 0.0000-10.0130 sec   69.2 GBytes  59.4 Gbits/sec
root@csdept-HP:/home/anandmk#
```

```
root@csdept-HP: /home/anandmk
root@csdept-HP:/home/anandmk# iperf -s
-----
Server listening on TCP port 5001
TCP window size: 128 KByte (default)
-----
[  1] local 10.0.1.2 port 5001 connected with 10.0.0.1 port 56090
[ ID] Interval           Transfer     Bandwidth
[  1] 0.0000-10.0004 sec   69.2 GBytes  59.4 Gbits/sec

```


- Tcpcdump -i eth1

```

root@csdept-HP: /home/anandmk
root@csdept-HP: /home/anandmk

root@csdept-HP: /home/anandmk# tcpcdump -i eth1
tcpcdump: verbose output suppressed, use -v[v]... for full protocol decode
listening on eth1, link-type EN10MB (Ethernet), snapshot length 262144 bytes
15:50:58.329948 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 59, length 64
15:50:58.329991 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 59, length 64
15:50:59.353978 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 60, length 64
15:50:59.354022 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 60, length 64
15:51:00.377967 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 61, length 64
15:51:00.378011 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 61, length 64
15:51:01.401974 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 62, length 64
15:51:01.402019 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 62, length 64
15:51:02.425925 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 63, length 64
15:51:02.425966 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 63, length 64
15:51:03.449947 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 64, length 64
15:51:03.449990 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 64, length 64
15:51:04.473929 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 65, length 64
15:51:04.473970 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 65, length 64
15:51:05.497960 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 66, length 64
15:51:05.498005 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 66, length 64
15:51:06.521956 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 67, length 64
15:51:06.522000 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 67, length 64
15:51:07.545929 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 68, length 64
15:51:07.545973 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 68, length 64
15:51:08.569961 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 69, length 64
15:51:08.570008 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 69, length 64
15:51:08.697893 ARP, Request who-has 10.0.0.2 tell 10.0.0.1, length 28
15:51:08.697949 ARP, Reply 10.0.0.2 is-at 5e:93:2e:db:a2:5b (oui Unknown), length 28
15:51:09.593860 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 70, length 64
15:51:09.593903 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 70, length 64
15:51:10.617957 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 71, length 64
15:51:10.617999 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 71, length 64
15:51:11.641924 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 72, length 64
15:51:11.641965 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 72, length 64
15:51:12.665930 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 73, length 64
15:51:12.665978 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 73, length 64
15:51:13.689946 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 74, length 64
15:51:13.689991 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 74, length 64
15:51:14.713962 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 75, length 64
15:51:14.714006 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 75, length 64
15:51:15.737887 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 76, length 64

```

```

root@csdept-HP: /home/anandmk
root@csdept-HP: /home/anandmk

15:54:52.825958 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 288, length 64
15:54:53.849920 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 289, length 64
15:54:53.849963 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 289, length 64
15:54:54.873919 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 290, length 64
15:54:54.873960 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 290, length 64
15:54:55.897951 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 291, length 64
15:54:55.897993 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 291, length 64
15:54:56.921956 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 292, length 64
15:54:56.921997 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 292, length 64
15:54:57.945947 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 293, length 64
15:54:57.945989 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 293, length 64
15:54:58.970159 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 294, length 64
15:54:58.970202 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 294, length 64
15:54:59.994945 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 295, length 64
15:54:59.994990 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 295, length 64
15:55:01.017950 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 296, length 64
15:55:01.017993 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 296, length 64
15:55:02.041983 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 297, length 64
15:55:02.042035 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 297, length 64
15:55:03.065954 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 298, length 64
15:55:03.065998 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 298, length 64
15:55:04.089935 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 299, length 64
15:55:04.089982 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 299, length 64
15:55:05.113958 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 300, length 64
15:55:05.114003 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 300, length 64
15:55:05.241827 ARP, Request who-has 10.0.0.2 tell 10.0.0.1, length 28
15:55:05.241871 ARP, Reply 10.0.0.2 is-at 5e:93:2e:db:a2:5b (oui Unknown), length 28
15:55:06.137892 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 301, length 64
15:55:06.137936 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 301, length 64
15:55:07.161957 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 302, length 64
15:55:07.162003 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 302, length 64
15:55:07.289814 ARP, Request who-has 10.0.0.1 tell 10.0.0.2, length 28
15:55:07.289886 ARP, Reply 10.0.0.1 is-at 1a:f8:f7:83:6d:64 (oui Unknown), length 28
15:55:08.185928 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 303, length 64
15:55:08.185971 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 303, length 64
15:55:09.209964 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 304, length 64
15:55:09.210007 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 304, length 64

534 packets captured
534 packets received by filter
0 packets dropped by kernel
root@csdept-HP: /home/anandmk#

```

- Tcpcdump -i eth2

```

root@csedepth-HP: /home/anandmk
root@csedepth-HP: /home/

root@csedepth-HP: /home/anandmk# tcpcdump -i eth2
tcpcdump: verbose output suppressed, use -v[v]... for full protocol decode
listening on eth2, link-type EN10MB (Ethernet), snapshot length 262144 bytes
15:57:52.025946 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 463, length 64
15:57:52.025962 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 463, length 64
15:57:53.049922 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 464, length 64
15:57:53.049943 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 464, length 64
15:57:54.073962 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 465, length 64
15:57:54.073986 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 465, length 64
15:57:55.098918 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 466, length 64
15:57:55.098938 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 466, length 64
15:57:56.121894 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 467, length 64
15:57:56.121934 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 467, length 64
15:57:57.145889 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 468, length 64
15:57:57.145910 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 468, length 64
15:57:58.169902 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 469, length 64
15:57:58.169922 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 469, length 64
15:57:59.193874 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 470, length 64
15:57:59.193896 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 470, length 64
15:58:00.217933 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 471, length 64
15:58:00.217956 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 471, length 64
15:58:01.241927 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 472, length 64
15:58:01.241950 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 472, length 64
15:58:02.265971 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 473, length 64
15:58:02.265992 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 473, length 64
15:58:03.289936 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 474, length 64
15:58:03.289961 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 474, length 64
15:58:04.313975 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 475, length 64
15:58:04.313999 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 475, length 64
15:58:05.337940 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 476, length 64
15:58:05.337968 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 476, length 64
15:58:06.361954 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 477, length 64
15:58:06.361978 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 477, length 64
15:58:07.385967 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 478, length 64
15:58:07.385989 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 478, length 64
15:58:08.409968 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 479, length 64
15:58:08.409994 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 479, length 64
15:58:09.433964 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 480, length 64
15:58:09.433987 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 480, length 64
15:58:10.457955 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 481, length 64
15:58:10.457984 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 481, length 64
15:58:11.481974 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 482, length 64

```

```

root@csedepth-HP: /home/anandmk
root@csedepth-HP: /home/

15:58:47.321903 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 517, length 64
15:58:48.345879 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 518, length 64
15:58:48.345900 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 518, length 64
15:58:49.369890 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 519, length 64
15:58:49.369910 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 519, length 64
15:58:49.497861 ARP, Request who-has 10.0.1.2 tell 10.0.1.1, length 28
15:58:49.497898 ARP, Reply 10.0.1.2 is-at e6:4a:c4:3a:55:c1 (oui Unknown), length 28
15:58:50.393968 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 520, length 64
15:58:50.393991 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 520, length 64
15:58:51.417943 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 521, length 64
15:58:51.417966 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 521, length 64
15:58:52.442847 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 522, length 64
15:58:52.442858 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 522, length 64
15:58:53.465970 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 523, length 64
15:58:53.465993 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 523, length 64
15:58:54.489953 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 524, length 64
15:58:54.489978 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 524, length 64
15:58:55.513903 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 525, length 64
15:58:55.513934 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 525, length 64
15:58:56.537875 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 526, length 64
15:58:56.537897 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 526, length 64
15:58:57.561947 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 527, length 64
15:58:57.561970 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 527, length 64
15:58:58.585878 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 528, length 64
15:58:58.585900 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 528, length 64
15:58:59.609959 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 529, length 64
15:58:59.609982 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 529, length 64
15:59:00.633937 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 530, length 64
15:59:00.633960 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 530, length 64
15:59:01.657949 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 531, length 64
15:59:01.657977 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 531, length 64
15:59:02.681899 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 532, length 64
15:59:02.681921 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 532, length 64
15:59:03.705944 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 533, length 64
15:59:03.705969 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 533, length 64
15:59:04.729977 IP 10.0.0.1 > 10.0.1.2: ICMP echo request, id 1410, seq 534, length 64
15:59:04.730003 IP 10.0.1.2 > 10.0.0.1: ICMP echo reply, id 1410, seq 534, length 64

152 packets captured
152 packets received by filter
0 packets dropped by kernel
root@csedepth-HP: /home/anandmk#

```

- NETPERF

```

root@csdept-HP:/home/anandmk# netperf -H 10.0.0.2
MIGRATED TCP STREAM TEST from 0.0.0.0 (0.0.0.0) port 0 AF_INET to 10.0.0.2 () port
0 AF_INET : demo
Recv  Send  Send
Socket Socket Message Elapsed
Size  Size  Size  Time  Throughput
bytes bytes bytes secs.  10^6bits/sec

131072 16384 16384 12.22 9.54
root@csdept-HP:/home/anandmk#

```

```

root@csdept-HP:/home/anandmk# netserver
Starting netserver with host 'IN(6)ADDR_ANY' port '12865' and family AF_UNSPEC
root@csdept-HP:/home/anandmk#

```

- Stream

```

131072 16384 16384 12.22 9.54
root@csdept-HP:/home/anandmk# netperf -H 10.0.0.2 -t TCP_STREAM
MIGRATED TCP STREAM TEST from 0.0.0.0 (0.0.0.0) port 0 AF_INET to 10.0.0.2 () port
0 AF_INET : demo
Recv  Send  Send
Socket Socket Message Elapsed
Size  Size  Size  Time  Throughput
bytes bytes bytes secs.  10^6bits/sec

131072 16384 16384 12.22 9.54
root@csdept-HP:/home/anandmk#

```

- Reverse stream

```

root@csdept-HP:/home/anandmk# netperf -H 10.0.0.2 -t TCP_MAERTS
MIGRATED TCP MAERTS TEST from 0.0.0.0 (0.0.0.0) port 0 AF_INET to 10.0.0.2 () port
0 AF_INET : demo
Recv  Send  Send
Socket Socket Message Elapsed
Size  Size  Size  Time  Throughput
bytes bytes bytes secs.  10^6bits/sec

131072 16384 16384 10.00 47.52
root@csdept-HP:/home/anandmk#

```

- TCP_RR

```

root@csdept-HP:/home/anandmk# netperf -H 10.0.0.2 -t TCP_RR
MIGRATED TCP REQUEST/RESPONSE TEST from 0.0.0.0 (0.0.0.0) port 0 AF_INET to 10.0.0.2 () port 0 AF_INET : demo : first burst 0
Local /Remote
Socket Size Request Resp. Elapsed Trans.
Send Recv Size Size Time Rate
bytes Bytes bytes bytes secs. per sec

16384 131072 1 1 10.01 64.75
16384 131072
root@csdept-HP:/home/anandmk#

```

- TCP_CRR

```

root@csdept-HP:/home/anandmk# netperf -H 10.0.0.2 -t TCP_CRR
MIGRATED TCP Connect/Request/Response TEST from 0.0.0.0 (0.0.0.0) port 0 AF_INET to 10.0.0.2 () port 0 AF_INET : demo
Local /Remote
Socket Size Request Resp. Elapsed Trans.
Send Recv Size Size Time Rate
bytes Bytes bytes bytes secs. per sec

16384 131072 1 1 10.00 32.60
16384 131072
root@csdept-HP:/home/anandmk#

```


- Stop netserver process

```
root@csdept-HP:/home/anandmk# netserver
Starting netserver with host 'IN(6)ADDR_ANY' port '12865' and family AF_UNSPEC
root@csdept-HP:/home/anandmk# ps aux | grep netserver
root      1278      0.0  0.0  3960  912 ?        Ss   10:18   0:00 /usr/bin/netserver
root      4789      0.0  0.0  3960   900 ?        Ss   11:01   0:00 netserver
root      5309      0.0  0.0  9212 2560 pts/3    R+   11:10   0:00 grep --color=auto netserver
root@csdept-HP:/home/anandmk# kill 1278
root@csdept-HP:/home/anandmk#
```

- Iperf3

```
root@csdept-HP:/home/anandmk# iperf3 -c 10.0.0.2
Connecting to host 10.0.0.2, port 5201
[ 5] local 10.0.0.1 port 59500 connected to 10.0.0.2 port 5201
[ ID] Interval      Transfer    Bitrate      Retr  Cwnd
[ 5] 0.00-1.00 sec  1.78 MBytes 14.9 Mb/s    0    122 KBytes
[ 5] 1.00-2.00 sec  1.30 MBytes 10.9 Mb/s    0    180 KBytes
[ 5] 2.00-3.00 sec  1.24 MBytes 10.4 Mb/s    0    239 KBytes
[ 5] 3.00-4.00 sec  1.62 MBytes 13.6 Mb/s    0    297 KBytes
[ 5] 4.00-5.00 sec  1.30 MBytes 10.9 Mb/s    0    355 KBytes
[ 5] 5.00-6.00 sec  1.55 MBytes 13.0 Mb/s    0    413 KBytes
[ 5] 6.00-7.00 sec   891 KBytes  7.30 Mb/s    0    472 KBytes
[ 5] 7.00-8.00 sec  1.93 MBytes 16.2 Mb/s    0    530 KBytes
[ 5] 8.00-9.00 sec  1.12 MBytes  9.38 Mb/s    0    588 KBytes
[ 5] 9.00-10.00 sec  1.18 MBytes  9.90 Mb/s    0    648 KBytes
-----
[ ID] Interval      Transfer    Bitrate      Retr  sender receiver
[ 5] 0.00-10.00 sec 13.9 MBytes 11.7 Mb/s    0
[ 5] 0.00-10.58 sec 12.0 MBytes  9.52 Mb/s    0
iperf Done.
root@csdept-HP:/home/anandmk#
```

```
root@csdept-HP:/home/anandmk# iperf3 -s
Server listening on 5201
-----
Accepted connection from 10.0.0.1, port 59492
[ 5] local 10.0.0.2 port 5201 connected to 10.0.0.1 port 59500
[ ID] Interval      Transfer    Bitrate      Retr  Cwnd
[ 5] 0.00-1.00 sec  1.09 MBytes  9.13 Mb/s    0    122 KBytes
[ 5] 1.00-2.00 sec  1.14 MBytes  9.58 Mb/s    0    180 KBytes
[ 5] 2.00-3.00 sec  1.14 MBytes  9.57 Mb/s    0    239 KBytes
[ 5] 3.00-4.00 sec  1.14 MBytes  9.55 Mb/s    0    297 KBytes
[ 5] 4.00-5.00 sec  1.14 MBytes  9.57 Mb/s    0    355 KBytes
[ 5] 5.00-6.00 sec  1.14 MBytes  9.56 Mb/s    0    413 KBytes
[ 5] 6.00-7.00 sec  1.14 MBytes  9.58 Mb/s    0    472 KBytes
[ 5] 7.00-8.00 sec  1.14 MBytes  9.57 Mb/s    0    530 KBytes
[ 5] 8.00-9.00 sec  1.14 MBytes  9.54 Mb/s    0    588 KBytes
[ 5] 9.00-10.00 sec  1.14 MBytes  9.58 Mb/s    0    648 KBytes
-----
[ ID] Interval      Transfer    Bitrate      Retr  sender receiver
[ 5] 0.00-10.58 sec 12.0 MBytes  9.52 Mb/s    0
Server listening on 5201
```

```
root@csdept-HP:/home/anandmk# iperf3 -c 10.0.0.2 -P 2
Connecting to host 10.0.0.2, port 5201
[ 5] local 10.0.0.1 port 60184 connected to 10.0.0.2 port 5201
[ 7] local 10.0.0.1 port 60188 connected to 10.0.0.2 port 5201
[ ID] Interval      Transfer    Bitrate      Retr  Cwnd
[ 5] 0.00-1.00 sec  1.03 MBytes  8.66 Mb/s    0    93.3 KBytes
[ 7] 0.00-1.00 sec  1.03 MBytes  8.66 Mb/s    0    93.3 KBytes
[SUM] 0.00-1.00 sec  2.07 MBytes 17.3 Mb/s    0
-----
[ 5] 1.00-2.00 sec   764 KBytes  6.26 Mb/s    0    124 KBytes
[ 7] 1.00-2.00 sec   509 KBytes  4.17 Mb/s    0    120 KBytes
[SUM] 1.00-2.00 sec  1.24 MBytes 10.4 Mb/s    0
-----
[ 5] 2.00-3.00 sec   636 KBytes  5.21 Mb/s    0    153 KBytes
[ 7] 2.00-3.00 sec   891 KBytes  7.30 Mb/s    0    151 KBytes
[SUM] 2.00-3.00 sec  1.49 MBytes 12.5 Mb/s    0
-----
[ 5] 3.00-4.00 sec   700 KBytes  5.73 Mb/s    0    184 KBytes
[ 7] 3.00-4.00 sec   700 KBytes  5.73 Mb/s    0    178 KBytes
[SUM] 3.00-4.00 sec  1.37 MBytes 11.5 Mb/s    0
-----
[ 5] 4.00-5.00 sec   827 KBytes  6.78 Mb/s    0    212 KBytes
[ 7] 4.00-5.00 sec   827 KBytes  6.78 Mb/s    0    208 KBytes
[SUM] 4.00-5.00 sec  1.62 MBytes 13.6 Mb/s    0
-----
[ 5] 5.00-6.00 sec   954 KBytes  7.82 Mb/s    0    245 KBytes
[ 7] 5.00-6.00 sec   445 KBytes  3.65 Mb/s    0    235 KBytes
[SUM] 5.00-6.00 sec  1.37 MBytes 11.5 Mb/s    0
-----
[ 5] 6.00-7.00 sec   573 KBytes  4.69 Mb/s    0    272 KBytes
[ 7] 6.00-7.00 sec   106 MBytes  8.86 Mb/s    0    266 KBytes
[SUM] 6.00-7.00 sec  1.62 MBytes 13.6 Mb/s    0
-----
[ 5] 7.00-8.00 sec   573 KBytes  4.69 Mb/s    0    305 KBytes
[ 7] 7.00-8.00 sec   636 KBytes  5.21 Mb/s    0    313 KBytes
[SUM] 7.00-8.00 sec  1.18 MBytes  9.90 Mb/s    0
-----
[ 5] 8.00-9.00 sec   149 MBytes 12.5 Mb/s    0    402 KBytes
[ 7] 8.00-9.00 sec   700 KBytes  5.73 Mb/s    0    397 KBytes
[SUM] 8.00-9.00 sec  2.17 MBytes 18.2 Mb/s    0
-----
[ 5] 9.00-10.00 sec  1018 KBytes  8.34 Mb/s    0    510 KBytes
[ 7] 9.00-10.00 sec   891 KBytes  7.30 Mb/s    0    516 KBytes
[SUM] 9.00-10.00 sec  1.86 MBytes 15.6 Mb/s    0
-----
```

```
Server listening on 5201
-----
Accepted connection from 10.0.0.1, port 60170
[ 5] local 10.0.0.2 port 5201 connected to 10.0.0.1 port 60184
[ 8] local 10.0.0.2 port 5201 connected to 10.0.0.1 port 60188
[ ID] Interval      Transfer    Bitrate      Retr  Cwnd
[ 5] 0.00-1.00 sec   571 KBytes  4.68 Mb/s    0    93.3 KBytes
[ 8] 0.00-1.00 sec   568 KBytes  4.66 Mb/s    0    93.3 KBytes
[SUM] 0.00-1.00 sec  1.11 MBytes  9.34 Mb/s    0
-----
[ 5] 1.00-2.00 sec   628 KBytes  5.14 Mb/s    0    124 KBytes
[ 8] 1.00-2.00 sec   540 KBytes  4.43 Mb/s    0    120 KBytes
[SUM] 1.00-2.00 sec  1.14 MBytes  9.57 Mb/s    0
-----
[ 5] 2.00-3.00 sec   544 KBytes  4.46 Mb/s    0    153 KBytes
[ 8] 2.00-3.00 sec   624 KBytes  5.11 Mb/s    0    151 KBytes
[SUM] 2.00-3.00 sec  1.14 MBytes  9.57 Mb/s    0
-----
[ 5] 3.00-4.00 sec   638 KBytes  5.22 Mb/s    0    184 KBytes
[ 8] 3.00-4.00 sec   530 KBytes  4.34 Mb/s    0    178 KBytes
[SUM] 3.00-4.00 sec  1.14 MBytes  9.57 Mb/s    0
-----
[ 5] 4.00-5.00 sec   576 KBytes  4.71 Mb/s    0    212 KBytes
[ 8] 4.00-5.00 sec   591 KBytes  4.84 Mb/s    0    208 KBytes
[SUM] 4.00-5.00 sec  1.14 MBytes  9.56 Mb/s    0
-----
[ 5] 5.00-6.00 sec   625 KBytes  5.12 Mb/s    0    245 KBytes
[ 8] 5.00-6.00 sec   543 KBytes  4.45 Mb/s    0    235 KBytes
[SUM] 5.00-6.00 sec  1.14 MBytes  9.57 Mb/s    0
-----
[ 5] 6.00-7.00 sec   547 KBytes  4.48 Mb/s    0    272 KBytes
[ 8] 6.00-7.00 sec   619 KBytes  5.07 Mb/s    0    266 KBytes
[SUM] 6.00-7.00 sec  1.14 MBytes  9.56 Mb/s    0
-----
[ 5] 7.00-8.00 sec   556 KBytes  4.55 Mb/s    0    305 KBytes
[ 8] 7.00-8.00 sec   611 KBytes  5.00 Mb/s    0    313 KBytes
[SUM] 7.00-8.00 sec  1.14 MBytes  9.56 Mb/s    0
-----
[ 5] 8.00-9.00 sec   650 KBytes  5.33 Mb/s    0    402 KBytes
[ 8] 8.00-9.00 sec   518 KBytes  4.24 Mb/s    0    397 KBytes
[SUM] 8.00-9.00 sec  1.14 MBytes  9.57 Mb/s    0
-----
[ 5] 9.00-10.00 sec   518 KBytes  4.24 Mb/s    0    510 KBytes
[ 8] 9.00-10.00 sec   650 KBytes  5.33 Mb/s    0    516 KBytes
[SUM] 9.00-10.00 sec  1.14 MBytes  9.57 Mb/s    0
-----
```

- Generating entries with Bitrate 1Mb/s(default)

```

root@csdept-HP: /home/anandmk# iperf3 -c 10.0.0.2 -u
Connecting to host 10.0.0.2, port 5201
[ 5] local 10.0.0.1 port 54839 connected to 10.0.0.2 port 5201
[ID] Interval      Transfer      Bitrate      Total Datagrams
[ 5] 0.00-1.00 sec    129 KBytes    1.05 Mb/s/sec  91
[ 5] 1.00-2.00 sec    127 KBytes    1.04 Mb/s/sec  90
[ 5] 2.00-3.00 sec    129 KBytes    1.05 Mb/s/sec  91
[ 5] 3.00-4.00 sec    127 KBytes    1.04 Mb/s/sec  90
[ 5] 4.00-5.00 sec    129 KBytes    1.05 Mb/s/sec  91
[ 5] 5.00-6.00 sec    129 KBytes    1.05 Mb/s/sec  91
[ 5] 6.00-7.00 sec    127 KBytes    1.04 Mb/s/sec  90
[ 5] 7.00-8.00 sec    129 KBytes    1.05 Mb/s/sec  91
[ 5] 8.00-9.00 sec    127 KBytes    1.04 Mb/s/sec  90
[ 5] 9.00-10.00 sec   129 KBytes    1.05 Mb/s/sec  91
[ID] Interval      Transfer      Bitrate      Jitter      Lost/Total  Datagrams
[ 5] 0.00-10.00 sec   1.25 MBytes    1.05 Mb/s/sec  0.000 ms    0/906 (0%)  sender
[ 5] 0.00-10.05 sec   1.25 MBytes    1.04 Mb/s/sec  0.009 ms    0/906 (0%)  receiver
iperf Done.
root@csdept-HP: /home/anandmk#
-----
[ 5] local 10.0.0.2 port 5201 connected to 10.0.0.1 port 54839
[ID] Interval      Transfer      Bitrate      Jitter      Lost/Total  Datagrams
[ 5] 0.00-1.00 sec    122 KBytes    0.96 Kbits/sec  0.011 ms    0/86 (0%)
[ 5] 1.00-2.00 sec    127 KBytes    1.04 Mb/s/sec  0.009 ms    0/90 (0%)
[ 5] 2.00-3.00 sec    129 KBytes    1.05 Mb/s/sec  0.008 ms    0/91 (0%)
[ 5] 3.00-4.00 sec    129 KBytes    1.05 Mb/s/sec  0.007 ms    0/91 (0%)
[ 5] 4.00-5.00 sec    127 KBytes    1.04 Mb/s/sec  0.006 ms    0/90 (0%)
[ 5] 5.00-6.00 sec    129 KBytes    1.05 Mb/s/sec  0.004 ms    0/91 (0%)
[ 5] 6.00-7.00 sec    127 KBytes    1.04 Mb/s/sec  0.006 ms    0/90 (0%)
[ 5] 7.00-8.00 sec    129 KBytes    1.05 Mb/s/sec  0.012 ms    0/91 (0%)
[ 5] 8.00-9.00 sec    127 KBytes    1.04 Mb/s/sec  0.010 ms    0/90 (0%)
[ 5] 9.00-10.00 sec   129 KBytes    1.05 Mb/s/sec  0.007 ms    0/91 (0%)
[ 5] 10.00-10.05 sec   7.07 KBytes    1.06 Mb/s/sec  0.009 ms    0/5 (0%)
[ID] Interval      Transfer      Bitrate      Jitter      Lost/Total  Datagrams
[ 5] 0.00-10.05 sec   1.25 MBytes    1.04 Mb/s/sec  0.009 ms    0/906 (0%)  receiver
server listening on 5201

```

- Generating entries with Bitrate 5Mb/s

```

root@csdept-HP:/home/anandmk# lperf3 -c 10.0.0.2 -u -b 5M
Connecting to host 10.0.0.2, port 5201
[ 5] local 10.0.0.1 port 5201 connected to 10.0.0.2 port 5201
[ ID] Interval      Transfer      Bitrate      Total Datagrams
[ 5] 0.00-1.00 sec   611 KBytes    5.00 Mb/s/sec 432
[ 5] 1.00-2.00 sec   609 KBytes    4.99 Mb/s/sec 431
[ 5] 2.00-3.00 sec   611 KBytes    5.00 Mb/s/sec 432
[ 5] 3.00-4.00 sec   611 KBytes    5.00 Mb/s/sec 432
[ 5] 4.00-5.00 sec   609 KBytes    4.99 Mb/s/sec 431
[ 5] 5.00-6.00 sec   611 KBytes    5.00 Mb/s/sec 432
[ 5] 6.00-7.00 sec   611 KBytes    5.00 Mb/s/sec 432
[ 5] 7.00-8.00 sec   609 KBytes    4.99 Mb/s/sec 431
[ 5] 8.00-9.00 sec   611 KBytes    5.00 Mb/s/sec 432
[ 5] 9.00-10.00 sec  609 KBytes    4.99 Mb/s/sec 431
-----
[ ID] Interval      Transfer      Bitrate      Jitter      Lost/Total Datagrams
[ 5] 0.00-10.00 sec  5.96 MBytes    5.00 Mb/s/sec 0.000 ms    0/4316 (0%) sender
[ 5] 0.00-10.06 sec  5.96 MBytes    4.97 Mb/s/sec 0.020 ms    0/4316 (0%) receiver
lperf Done.

Accepted connection from 10.0.0.1, port 51236
[ 5] local 10.0.0.2 port 5201 connected to 10.0.0.1 port 42761
[ ID] Interval      Transfer      Bitrate      Jitter      Lost/Total Datagrams
[ 5] 0.00-1.00 sec   577 KBytes    4.73 Mb/s/sec 0.016 ms    0/408 (0%)
[ 5] 1.00-2.00 sec   609 KBytes    4.99 Mb/s/sec 0.009 ms    0/431 (0%)
[ 5] 2.00-3.00 sec   611 KBytes    5.00 Mb/s/sec 0.013 ms    0/432 (0%)
[ 5] 3.00-4.00 sec   609 KBytes    4.99 Mb/s/sec 0.027 ms    0/431 (0%)
[ 5] 4.00-5.00 sec   611 KBytes    5.00 Mb/s/sec 0.025 ms    0/432 (0%)
[ 5] 5.00-6.00 sec   611 KBytes    5.00 Mb/s/sec 0.013 ms    0/432 (0%)
[ 5] 6.00-7.00 sec   611 KBytes    5.00 Mb/s/sec 0.024 ms    0/432 (0%)
[ 5] 7.00-8.00 sec   609 KBytes    4.99 Mb/s/sec 0.018 ms    0/431 (0%)
[ 5] 8.00-9.00 sec   611 KBytes    5.00 Mb/s/sec 0.020 ms    0/432 (0%)
[ 5] 9.00-10.00 sec  611 KBytes    5.00 Mb/s/sec 0.017 ms    0/432 (0%)
[ 5] 10.00-10.06 sec 32.5 KBytes    4.85 Mb/s/sec 0.020 ms    0/23 (0%)
-----
[ ID] Interval      Transfer      Bitrate      Jitter      Lost/Total Datagrams
[ 5] 0.00-10.06 sec  5.96 MBytes    4.97 Mb/s/sec 0.020 ms    0/4316 (0%) receiver
Server listening on 5201

```

- Generating entries with Bitrate 20Mb/s)

```

root@csdept-HP:/home/anandmk# iperf3 -c 10.0.0.2 -u -b 20M
Connecting to host 10.0.0.2, port 5201
[ 5] local 10.0.0.1 port 42357 connected to 10.0.0.2 port 5201
[ ID] Interval           Transfer     Bitrate      Total Datagrams
[ 5] 0.00-1.00 sec      2.38 MBytes  20.0 Mb/s/sec 1725
[ 5] 1.00-2.00 sec      2.38 MBytes  20.0 Mb/s/sec 1727
[ 5] 2.00-3.00 sec      2.38 MBytes  20.0 Mb/s/sec 1726
[ 5] 3.00-4.00 sec      2.38 MBytes  20.0 Mb/s/sec 1727
[ 5] 4.00-5.00 sec      2.38 MBytes  20.0 Mb/s/sec 1726
[ 5] 5.00-6.00 sec      2.38 MBytes  20.0 Mb/s/sec 1727
[ 5] 6.00-7.00 sec      2.38 MBytes  20.0 Mb/s/sec 1727
[ 5] 7.00-8.00 sec      2.38 MBytes  20.0 Mb/s/sec 1726
[ 5] 8.00-9.00 sec      2.38 MBytes  20.0 Mb/s/sec 1727
[ 5] 9.00-10.00 sec     2.38 MBytes  20.0 Mb/s/sec 1726
-----
[ ID] Interval           Transfer     Bitrate      Jitter      Lost/Total Datagrams
[ 5] 0.00-10.00 sec     23.8 MBytes  9.67 Mb/s/sec 0.000 ms    0/17264 (0%) sender
[ 5] 0.00-11.24 sec     13.0 MBytes  9.67 Mb/s/sec 0.297 ms    7879/17263 (46%) receiver
iperf Done.

ams
[ 5] 0.00-1.00 sec      1.09 MBytes  9.17 Mb/s/sec 0.582 ms    0/792 (0%)
[ 5] 1.00-2.00 sec      1.16 MBytes  9.72 Mb/s/sec 0.579 ms    0/839 (0%)
[ 5] 2.00-3.00 sec      1.16 MBytes  9.72 Mb/s/sec 0.313 ms    565/1404 (40%)
[ 5] 3.00-4.00 sec      1.16 MBytes  9.72 Mb/s/sec 0.30
[ 5] 4.00-5.00 sec      1.16 MBytes  9.72 Mb/s/sec 0.30
[ 5] 5.00-6.00 sec      1.16 MBytes  9.72 Mb/s/sec 0.315 ms    888/1727 (51%)
[ 5] 6.00-7.00 sec      1.16 MBytes  9.72 Mb/s/sec 0.290 ms    887/1726 (51%)
[ 5] 7.00-8.00 sec      1.16 MBytes  9.72 Mb/s/sec 0.299 ms    888/1727 (51%)
[ 5] 8.00-9.00 sec      1.16 MBytes  9.72 Mb/s/sec 0.303 ms    887/1726 (51%)
[ 5] 9.00-10.00 sec     1.16 MBytes  9.72 Mb/s/sec 0.300 ms    888/1727 (51%)
[ 5] 10.00-11.00 sec    1.16 MBytes  9.72 Mb/s/sec 0.285 ms    887/1726 (51%)
[ 5] 11.00-11.24 sec    286 KBytes  9.72 Mb/s/sec 0.297 ms    214/416 (51%)
-----
[ ID] Interval           Transfer     Bitrate      Jitter      Lost/Total Datagr
ams
[ 5] 0.00-11.24 sec     13.0 MBytes  9.67 Mb/s/sec 0.297 ms    7879/17263 (46%)
receiver
Server listening on 5201
-----

```

```
root@csdept-HP:/home/anandmk# httpperf --server=10.0.0.2 --port=8000 --num-conns=100 --rate=10
0 --timeout=1
httpperf --timeout=1 --client=0/1 --server=10.0.0.2 --port=8000 --uri=/ --rate=10 --send-buffer=4096
--recv-buffer=16384 --num-conns=100 --num-calls=1
httpperf: warning: open file limit > FD_SETSIZE; limiting max. # of open files to FD_SETSIZE
Maximum connect burst length: 1

Total: connections 100 requests 100 replies 100 test-duration 9.931 s

Connection rate: 10.1 conn/s (99.3 ms/conn, <=1 concurrent connections)
Connection time [ms]: min 30.6 avg 30.9 max 46.4 median 30.5 stddev 1.6
Connection time [ms]: connect 15.1
Connection length [replies/conn]: 1.000

Request rate: 10.1 req/s (99.3 ms/req)
Request size [B]: 61.0

Reply rate [replies/s]: min 10.0 avg 10.0 max 10.0 stddev 0.0 (1 samples)
Reply time [ms]: response 15.7 transfer 0.0
Reply size [B]: header 187.0 content 114.0 footer 0.0 (total 301.0)
Reply status: 1xx=0 2xx=100 3xx=0 4xx=0 5xx=0

CPU time [s]: user 2.23 system 7.70 (user 22.5% system 77.5% total 100.0%)
Net I/O: 3.6 KB/s (0.0*10^6 bps)

Errors: total 0 client-timo 0 socket-timo 0 connrefused 0 connreset 0
Errors: fd-unavail 0 addrunavail 0 ftab-full 0 other 0
root@csdept-HP:/home/anandmk#
```

```
root@csdept-Hr:/home/anandmk/Anand# python -m http.server
Serving HTTP on 0.0.0.0 port 8000 (http://0.0.0.0:8000/) ...
10.0.0.1 - - [17/Jan/2025 15:44:09] "GET / HTTP/1.1" 200
10.0.0.1 - - [17/Jan/2025 15:44:09] "GET / HTTP/1.1" 200
10.0.0.1 - - [17/Jan/2025 15:44:09] "GET / HTTP/1.1" 200
10.0.0.1 - - [17/Jan/2025 15:44:10] "GET / HTTP/1.1" 200
10.0.0.1 - - [17/Jan/2025 15:44:10] "GET / HTTP/1.1" 200
10.0.0.1 - - [17/Jan/2025 15:44:10] "GET / HTTP/1.1" 200
10.0.0.1 - - [17/Jan/2025 15:44:10] "GET / HTTP/1.1" 200
10.0.0.1 - - [17/Jan/2025 15:44:10] "GET / HTTP/1.1" 200
10.0.0.1 - - [17/Jan/2025 15:44:10] "GET / HTTP/1.1" 200
10.0.0.1 - - [17/Jan/2025 15:44:10] "GET / HTTP/1.1" 200
10.0.0.1 - - [17/Jan/2025 15:44:10] "GET / HTTP/1.1" 200
10.0.0.1 - - [17/Jan/2025 15:44:11] "GET / HTTP/1.1" 200
10.0.0.1 - - [17/Jan/2025 15:44:11] "GET / HTTP/1.1" 200
10.0.0.1 - - [17/Jan/2025 15:44:11] "GET / HTTP/1.1" 200
10.0.0.1 - - [17/Jan/2025 15:44:11] "GET / HTTP/1.1" 200
10.0.0.1 - - [17/Jan/2025 15:44:11] "GET / HTTP/1.1" 200
10.0.0.1 - - [17/Jan/2025 15:44:11] "GET / HTTP/1.1" 200
10.0.0.1 - - [17/Jan/2025 15:44:11] "GET / HTTP/1.1" 200
10.0.0.1 - - [17/Jan/2025 15:44:11] "GET / HTTP/1.1" 200
10.0.0.1 - - [17/Jan/2025 15:44:11] "GET / HTTP/1.1" 200
10.0.0.1 - - [17/Jan/2025 15:44:12] "GET / HTTP/1.1" 200
10.0.0.1 - - [17/Jan/2025 15:44:12] "GET / HTTP/1.1" 200
10.0.0.1 - - [17/Jan/2025 15:44:12] "GET / HTTP/1.1" 200
10.0.0.1 - - [17/Jan/2025 15:44:12] "GET / HTTP/1.1" 200
```


- Httpperf

```
root@csdept-HP:/home/anandmk# httpperf --server=10.0.0.2 --port=8000 --num-conns=100 --rate=10 --timeout=1
httpperf --timeout=1 --client=0/1 --server=10.0.0.2 --port=8000 --uri=/ --rate=10 --send-buffer=4096 --recv-buffer=16384 --num-conns=100 --num-calls=1
httpperf: warning: open file limit > FD_SETSIZE; limiting max. # of open files to FD_SETSIZE
Maximum connect burst length: 1

Total: connections 100 requests 100 replies 100 test-duration 9.931 s

Connection rate: 10.1 conn/s (99.3 ms/conn, <=1 concurrent connections)
Connection time [ms]: min 30.6 avg 30.9 max 46.4 median 30.5 stddev 1.6
Connection time [ms]: connect 15.1
Connection length [replies/conn]: 1.000

Request rate: 10.1 req/s (99.3 ms/req)
Request size [B]: 61.0

Reply rate [replies/s]: min 10.0 avg 10.0 max 10.0 stddev 0.0 (1 samples)
Reply time [ms]: response 15.7 transfer 0.0
Reply size [B]: header 187.0 content 114.0 footer 0.0 (total 301.0)
Reply status: 1xx=0 2xx=100 3xx=0 4xx=0 5xx=0

CPU time [s]: user 2.23 system 7.70 (user 22.5% system 77.5% total 100.0%)
Net I/O: 3.6 KB/s (0.0*10^6 bps)

Errors: total 0 client-timo 0 socket-timo 0 connrefused 0 connreset 0
Errors: fd-unavail 0 addrunavail 0 ftab-full 0 other 0
root@csdept-HP:/home/anandmk#
```

```
root@csdept-HP:/home/anandmk/Anand# python -m http.server
Serving HTTP on 0.0.0.0 port 8000 (http://0.0.0.0:8000/) ...
10.0.0.1 - [17/Jan/2025 15:44:09] "GET / HTTP/1.1" 200
10.0.0.1 - [17/Jan/2025 15:44:09] "GET / HTTP/1.1" 200
10.0.0.1 - [17/Jan/2025 15:44:09] "GET / HTTP/1.1" 200
10.0.0.1 - [17/Jan/2025 15:44:10] "GET / HTTP/1.1" 200
10.0.0.1 - [17/Jan/2025 15:44:10] "GET / HTTP/1.1" 200
10.0.0.1 - [17/Jan/2025 15:44:10] "GET / HTTP/1.1" 200
10.0.0.1 - [17/Jan/2025 15:44:10] "GET / HTTP/1.1" 200
10.0.0.1 - [17/Jan/2025 15:44:10] "GET / HTTP/1.1" 200
10.0.0.1 - [17/Jan/2025 15:44:10] "GET / HTTP/1.1" 200
10.0.0.1 - [17/Jan/2025 15:44:10] "GET / HTTP/1.1" 200
10.0.0.1 - [17/Jan/2025 15:44:10] "GET / HTTP/1.1" 200
10.0.0.1 - [17/Jan/2025 15:44:10] "GET / HTTP/1.1" 200
10.0.0.1 - [17/Jan/2025 15:44:10] "GET / HTTP/1.1" 200
10.0.0.1 - [17/Jan/2025 15:44:10] "GET / HTTP/1.1" 200
10.0.0.1 - [17/Jan/2025 15:44:11] "GET / HTTP/1.1" 200
10.0.0.1 - [17/Jan/2025 15:44:11] "GET / HTTP/1.1" 200
10.0.0.1 - [17/Jan/2025 15:44:11] "GET / HTTP/1.1" 200
10.0.0.1 - [17/Jan/2025 15:44:11] "GET / HTTP/1.1" 200
10.0.0.1 - [17/Jan/2025 15:44:11] "GET / HTTP/1.1" 200
10.0.0.1 - [17/Jan/2025 15:44:11] "GET / HTTP/1.1" 200
10.0.0.1 - [17/Jan/2025 15:44:11] "GET / HTTP/1.1" 200
10.0.0.1 - [17/Jan/2025 15:44:11] "GET / HTTP/1.1" 200
10.0.0.1 - [17/Jan/2025 15:44:11] "GET / HTTP/1.1" 200
10.0.0.1 - [17/Jan/2025 15:44:11] "GET / HTTP/1.1" 200
10.0.0.1 - [17/Jan/2025 15:44:12] "GET / HTTP/1.1" 200
10.0.0.1 - [17/Jan/2025 15:44:12] "GET / HTTP/1.1" 200
10.0.0.1 - [17/Jan/2025 15:44:12] "GET / HTTP/1.1" 200
10.0.0.1 - [17/Jan/2025 15:44:12] "GET / HTTP/1.1" 200
```