

PERFORMANCE OF TCP CONGESTION CONTROL ALGORITHMS:

1. TCP New Reno

```
Waf: Entering directory `/home/vineet/tarballs/ns-allinone-3.30/ns-3.30/build'
Waf: Leaving directory `/home/vineet/tarballs/ns-allinone-3.30/ns-3.30/build'
Build commands will be stored in build/compile_commands.json
'build' finished successfully (1.094s)

*** Flow monitor statistics ***
  Tx Packets/Bytes:   113 / 65376
  Offered Load: 0.494838 Mbps
  Rx Packets/Bytes:   94 / 54204
5
  Packets/Bytes Dropped by Queue Disc:   19 / 11172
5
  Packets/Bytes Dropped by NetDevice:    0 / 0
  Throughput: 0.518679 Mbps
  Mean delay:  0.0277755
  Mean jitter:  0.00434391
-----
Flow Id: 1
Tx Bytes: 65376
Drop Packet Count: 19
-----
Flow Id: 2
Tx Bytes: 4124
Drop Packet Count: 0
-----
Flow Id: 3
Tx Bytes: 52380
Drop Packet Count: 7
-----
Flow Id: 4
Tx Bytes: 45900
Drop Packet Count: 7
-----
Flow Id: 5
Tx Bytes: 19440
Drop Packet Count: 3
-----
Flow Id: 6
Tx Bytes: 19440
Drop Packet Count: 5
-----
Flow Id: 7
Tx Bytes: 19440
Drop Packet Count: 2
```

2. TCP Hybla

```
Waf: Entering directory `/home/vineet/tarballs/ns-allinone-3.30/ns-3.30/build'
Waf: Leaving directory `/home/vineet/tarballs/ns-allinone-3.30/ns-3.30/build'
Build commands will be stored in build/compile_commands.json
'build' finished successfully (1.106s)
```

```
*** Flow monitor statistics ***
```

```
Tx Packets/Bytes:   116 / 67140
```

```
Offered Load: 0.585741 Mbps
```

```
Rx Packets/Bytes:   94 / 54204
```

```
5
```

```
Packets/Bytes Dropped by Queue Disc:   22 / 12936
```

```
5
```

```
Packets/Bytes Dropped by NetDevice:    0 / 0
```

```
Throughput: 0.483947 Mbps
```

```
Mean delay:   0.0282492
```

```
Mean jitter:  0.00432465
```

```
-----
```

```
Flow Id: 1
```

```
Tx Bytes: 67140
```

```
Drop Packet Count: 22
```

```
-----
```

```
Flow Id: 2
```

```
Tx Bytes: 4308
```

```
Drop Packet Count: 0
```

```
-----
```

```
Flow Id: 3
```

```
Tx Bytes: 52380
```

```
Drop Packet Count: 6
```

```
-----
```

```
Flow Id: 4
```

```
Tx Bytes: 45900
```

```
Drop Packet Count: 6
```

```
-----
```

```
Flow Id: 5
```

```
Tx Bytes: 19440
```

```
Drop Packet Count: 5
```

```
-----
```

```
Flow Id: 6
```

```
Tx Bytes: 19440
```

```
Drop Packet Count: 5
```

```
-----
```

```
Flow Id: 7
```

```
Tx Bytes: 19440
```

```
Drop Packet Count: 2
```

3. TCP Westwood

```
Waf: Entering directory `/home/vineet/tarballs/ns-allinone-3.30/ns-3.30/build'
Waf: Leaving directory `/home/vineet/tarballs/ns-allinone-3.30/ns-3.30/build'
Build commands will be stored in build/compile_commands.json
'build' finished successfully (1.086s)

*** Flow monitor statistics ***
  Tx Packets/Bytes:   84 / 48324
  Offered Load: 0.363382 Mbps
  Rx Packets/Bytes:   71 / 40680
5
  Packets/Bytes Dropped by Queue Disc:   13 / 7644
5
  Packets/Bytes Dropped by NetDevice:    0 / 0
  Throughput: 0.386061 Mbps
  Mean delay:   0.0262267
  Mean jitter:  0.00423566
-----
Flow Id: 1
Tx Bytes: 48324
Drop Packet Count: 13
-----
Flow Id: 2
Tx Bytes: 2864
Drop Packet Count: 0
-----
Flow Id: 3
Tx Bytes: 52380
Drop Packet Count: 6
-----
Flow Id: 4
Tx Bytes: 45900
Drop Packet Count: 5
-----
Flow Id: 5
Tx Bytes: 19440
Drop Packet Count: 3
-----
Flow Id: 6
Tx Bytes: 19440
Drop Packet Count: 6
-----
Flow Id: 7
Tx Bytes: 19440
Drop Packet Count: 2
```

4. TCP Scalable

```
Waf: Entering directory `/home/vineet/tarballs/ns-allinone-3.30/ns-3.30/build'
Waf: Leaving directory `/home/vineet/tarballs/ns-allinone-3.30/ns-3.30/build'
Build commands will be stored in build/compile_commands.json
'build' finished successfully (1.084s)

*** Flow monitor statistics ***
  Tx Packets/Bytes:   158 / 91836
  Offered Load: 0.409135 Mbps
  Rx Packets/Bytes:   115 / 66552
5
  Packets/Bytes Dropped by Queue Disc:   39 / 22932
5
  Packets/Bytes Dropped by NetDevice:    0 / 0
  Throughput: 0.298397 Mbps
  Mean delay:   0.0321063
  Mean jitter:  0.00401797
-----
Flow Id: 1
Tx Bytes: 91836
Drop Packet Count: 39
-----
Flow Id: 2
Tx Bytes: 6284
Drop Packet Count: 0
-----
Flow Id: 3
Tx Bytes: 52380
Drop Packet Count: 8
-----
Flow Id: 4
Tx Bytes: 45900
Drop Packet Count: 11
-----
Flow Id: 5
Tx Bytes: 19440
Drop Packet Count: 6
-----
Flow Id: 6
Tx Bytes: 19440
Drop Packet Count: 5
-----
Flow Id: 7
Tx Bytes: 19440
Drop Packet Count: 2
```


5. TCP Vegas

```
Waf: Entering directory `/home/vineet/tarballs/ns-allinone-3.30/ns-3.30/build'
Waf: Leaving directory `/home/vineet/tarballs/ns-allinone-3.30/ns-3.30/build'
Build commands will be stored in build/compile_commands.json
'build' finished successfully (1.081s)

*** Flow monitor statistics ***
Tx Packets/Bytes:   104 / 60084
Offered Load: 0.540742 Mbps
Rx Packets/Bytes:   97 / 55968
5
Packets/Bytes Dropped by Queue Disc:   7 / 4116
5
Packets/Bytes Dropped by NetDevice:   0 / 0
Throughput: 0.515863 Mbps
Mean delay:   0.029791
Mean jitter:   0.0039305
-----
Flow Id: 1
Tx Bytes: 60084
Drop Packet Count: 7
-----
Flow Id: 2
Tx Bytes: 3264
Drop Packet Count: 0
-----
Flow Id: 3
Tx Bytes: 52380
Drop Packet Count: 4
-----
Flow Id: 4
Tx Bytes: 45900
Drop Packet Count: 5
-----
Flow Id: 5
Tx Bytes: 19440
Drop Packet Count: 7
-----
Flow Id: 6
Tx Bytes: 19440
Drop Packet Count: 6
-----
Flow Id: 7
Tx Bytes: 19440
Drop Packet Count: 3
```