

```

set ns [new Simulator]
set nf [open lab3.nam w]
$ns namtrace-all $nf
set tf [open lab3.tr w]
$ns trace-all $tf

proc finish {} {
    global ns nf tf
    $ns flush-trace
    close $nf
    close $tf
    exec nam lab3.nam &
    exit 0
}

set n0 [$ns node]
set n1 [$ns node]
set n2 [$ns node]
set n3 [$ns node]

$ns make-lan "$n0 $n1 $n2 $n3" 100mb 100ms LL Queue/DropTail Mac/802_3
# Source <--> Destination: n0 <--> n2, n1 <--> n3

set tcp0 [new Agent/TCP]
$ns attach-agent $n0 $tcp0
set tcp1 [new Agent/TCP]
$ns attach-agent $n1 $tcp1
set sink2 [new Agent/TCPSink]
$ns attach-agent $n2 $sink2
set sink3 [new Agent/TCPSink]
$ns attach-agent $n3 $sink3

set ftp0 [new Application/FTP]
$ftp0 attach-agent $tcp0
set ftp1 [new Application/FTP]
$ftp1 attach-agent $tcp1

```

```
$ns connect $tcp0 $sink2
$ns connect $tcp1 $sink3

set file1 [open file1.tr w]
set file2 [open file2.tr w]
$tcp0 attach $file1
$tcp1 attach $file2
$tcp0 trace cwnd_
$tcp1 trace cwnd_
```

```
$ns at 0.1 "$ftp0 start"
$ns at 5.0 "$ftp0 stop"
$ns at 6.0 "$ftp0 start"
$ns at 11.0 "$ftp0 stop"
$ns at 1.0 "$ftp1 start"
$ns at 6.0 "$ftp1 stop"
$ns at 7.0 "$ftp1 start"
$ns at 12.0 "$ftp1 stop"
$ns at 13.0 "finish"

$ns run
```

AWK FILE

```
BEGIN {}

{
  if($6 == "cwnd_")
    printf("%f\t%f\n", $1, $7);
}

END {}
```