2.Echo Server data = client socket.recv(1024).decode() for x in ip: pyEchoClient.py print('Received from server: ' + data if str1 in x: message = input(" -> ") ind=ip.index(str1) import socket HOST = '127.0.0.1' print("the MAC address is: ",mac[ind]) client_socket.close() **PORT = 9999** if _name_ == '_main_': s = socket.socket(socket.AF INET, 7.FTP client program() socket.SOCK STREAM) Server Coding: s.connect((HOST, PORT)) 4. Executing remote command import socket str ='Hello, world' RemoteSender.py s = socket.socket() b = str.encode('utf-8') import socket host = socket.gethostname() UDP IP = "localhost" s.send(b) port = 8080 data = s.recv(1024)**UDP PORT = 8080** s.bind((host,port)) MESSAGE = "notepad" s.listen(1) s.close() print ('Received', data) print ("message:", MESSAGE) print(host) sock = socket.socket(socket.AF INET, print("Waiting for any incoming pyEchoServere.py socket.SOCK_DGRAM) connection... ") import socket sock.sendto(bytes(MESSAGE, "utf-8"), conn, addr = s.accept() HOST = '127.0.0.1' (UDP_IP, UDP_PORT)) print(addr, "Has connected to the **PORT = 9999** server") s = socket.socket(socket.AF INET, RemoteReceiver.py filename = input(str("Enter the name of the file to be transmitted: ")) socket.SOCK_STREAM) import socket s.bind((HOST, PORT)) import wmi file = open(filename, 'rb') s.listen(1) UDP IP = "localhost" file data = file.read(1024) conn, addr = s.accept() **UDP PORT = 8080** conn.send(file data) print ('Connected by', addr) sock = socket.socket(socket.AF INET, print("File has been transmitted socket.SOCK_DGRAM) successfully") while 1: data = conn.recv(1024) sock.bind((UDP_IP, UDP_PORT)) while True Client Coding: print(data) if not data: break data, addr = sock.recvfrom(1024) import socket conn.send(data) str=data.decode("utf-8") s = socket.socket() conn.close() print ("Received message:", str) host = input(str("Please enter the host print(" opening ", str); address of the sender: ")) 3.TCP client/server conn = wmi.WMI() port = 8080 Pyserver.py pid, returnval= s.connect((host,port)) import socket conn.Win32 Process.Create(CommandLi print("Connected ... ") def server_program(): filename = input(str("Please enter a host = socket.gethostname() filename for the incoming file: ")) port = 5000 5.ARP/RARP file = open(filename, 'wb') # Opens a file server_socket = socket.socket() ARPClient.py for writing only in binary format server_socket.bind((host, port)) import socket file data = s.recv(1024)server_socket.listen(2) UDP_IP = "localhost" file.write(file_data) conn, address = server_socket.accept() **UDP PORT = 8080** file.close() print("Connection from: " + str(address)) MESSAGE = "172.16.1.8" print("File has been received while True: print ("message:", MESSAGE) successfully.") data = conn.recv(1024).decode() sock = socket.socket(socket.AF_INET, socket.SOCK DGRAM) 8.Encryption/Decryption if not data: break sock.sendto(bytes(MESSAGE, "utf-8"), Encrypt.py (UDP_IP, UDP_PORT)) print("from connected user: " + def encrypt(string, shift): cipher = " str(data)) data = input(' -> ') for char in string: ARPserver.py conn.send(data.encode()) import socket if char == ' ': cipher = cipher + char UDP_IP = "localhost" conn.close() if _name_ == '_main_': UDP_PORT = 8080 elif char.isupper(): server_program() sock = socket.socket(socket.AF_INET, cipher = cipher + chr((ord(char) + shift pyclient.py socket.SOCK DGRAM) 65) % 26 + 65) else: sock.bind((UDP_IP, UDP_PORT)) cipher = cipher + chr((ord(char) + shift import socket ip=["172.16.1.9","172.16.1.8"] def client program(): 97) % 26 + 97) mac=["6A:08:AA:C2","8A:BC:E3:FA"] print('type bye to terminate') return cipher host = socket.gethostname() while True: text = input("enter string: ") port = 5000 # socket server port number data, addr = sock.recvfrom(1024) s = int(input("enter shift number:")) client socket = socket.socket() str1 = data.decode('utf-8') print("original string: ", text) client socket.connect((host, port)) print("after encryption: ", encrypt(text, I = len(data) message = input(" -> ") if I != 0: s)) while message.lower().strip() != 'bye': print("Received message:", str1)

client_socket.send(message.encode())

break

Decrypt.py set n4 [\$ns node] \$ns at 0.5 "\$cbr0 start" def encrypt(string, shift): set n5 [\$ns node] \$ns at 4.5 "\$cbr0 stop" cipher = " \$ns duplex-link \$n0 \$n1 1Mb 10ms \$ns at 5.0 "finish" for char in string: DropTail Sns run if char == ' ': \$ns duplex-link \$n1 \$n2 1Mb 10ms cipher = cipher + char 11.a)Go Back N Protocol DropTail elif char.isupper(): \$ns duplex-link \$n2 \$n3 1Mb 10ms set ns [new Simulator] cipher = cipher + chr((ord(char) - shift -DropTail set n0 [\$ns node] \$ns duplex-link \$n3 \$n4 1Mb 10ms set n1 [\$ns node] 65) % 26 + 65) else:cipher = cipher + chr((ord(char) -DropTail set n2 [\$ns node] shift - 97) % 26 + 97) return cipher \$ns duplex-link \$n4 \$n5 1Mb 10ms set n3 [\$ns node] text = input("enter string: ") DropTail set n4 [\$ns node] s = int(input("enter shift number:")) \$ns duplex-link \$n5 \$n0 1Mb 10ms set n5 [\$ns node] print("original string: ", text) DropTail \$n0 color "purple" print("after encryption: ", encrypt(text, \$n1 color "purple" set tcp0 [new Agent/TCP] \$n2 color "violet" s)) \$tcp0 set class_ 1 \$ns attach-agent \$n1 \$tcp0 \$n3 color "violet" 10. Network Topology set sink0 [new Agent/TCPSink] \$n4 color "chocolate" Token Bus \$ns attach-agent \$n3 \$sink0 \$n5 color "chocolate" set ns [new Simulator] \$ns connect \$tcp0 \$sink0 \$n0 shape box; set nf [open out.nam w] set cbr0 [new Application/Traffic/CBR] \$n1 shape box; \$ns namtrace-all \$nf \$cbr0 set packetSize 500 \$n2 shape box; proc finish {} { \$cbr0 set interval 0.01 \$n3 shape box; global ns nf \$cbr0 attach-agent \$tcp0 \$n4 shape box; \$ns flush-trace \$ns at 0.5 "\$cbr0 start" \$n5 shape box; close \$nf \$ns at 4.5 "\$cbr0 stop" \$ns at 0.0 "\$n0 label SYS0" exec nam out.nam & \$ns at 5.0 "finish" \$ns at 0.0 "\$n1 label SYS1" exit 0} \$ns run \$ns at 0.0 "\$n2 label SYS2" set n0 [\$ns node] Token Star: \$ns at 0.0 "\$n3 label SYS3" set n1 [\$ns node] set ns [new Simulator] \$ns at 0.0 "\$n4 label SYS4" set n2 [\$ns node] set nf [open out.nam w] \$ns at 0.0 "\$n5 label SYS5" set n3 [\$ns node] \$ns namtrace-all \$nf set nf [open goback.nam w] set n4 [\$ns node] proc finish {} { \$ns namtrace-all \$nf set lan0 [\$ns newLan "\$n0 \$n1 \$n2 \$n3 global ns nf set f [open goback.tr w] \$n4" 0.5Mb 40ms LL Queue/DropTail \$ns flush-trace \$ns trace-all \$f MAC/Csma/Cd close \$nf \$ns duplex-link \$n0 \$n2 1Mb 20ms exec nam out.nam & Channel] set tcp0 [new Agent/TCP] exit0} \$ns duplex-link-op \$n0 \$n2 orient rightset n0 [\$ns node] down \$tcp0 set class_1 \$ns attach-agent \$n1 \$tcp0 set n1 [\$ns node] \$ns queue-limit \$n0 \$n2 5 set sink0 [new Agent/TCPSink] set n2 [\$ns node] \$ns duplex-link \$n1 \$n2 1Mb 20ms \$ns attach-agent \$n3 \$sink0 set n3 [\$ns node] DropTail \$ns connect \$tcp0 \$sink0 set n4 [\$ns node] \$ns duplex-link-op \$n1 \$n2 orient rightset cbr0 [new Application/Traffic/CBR] set n5 [\$ns node] \$cbr0 set packetSize_ 500 \$n0 shape square \$ns duplex-link \$n2 \$n3 1Mb 20ms \$ns duplex-link \$n0 \$n1 1Mb 10ms \$cbr0 set interval 0.01 \$cbr0 attach-agent \$tcp0 DropTail \$ns duplex-link-op \$n2 \$n3 orient right \$ns at 0.5 "\$cbr0 start" \$ns duplex-link \$n0 \$n2 1Mb 10ms \$ns duplex-link \$n3 \$n4 1Mb 20ms \$ns at 4.5 "\$cbr0 stop" DropTail DropTail \$ns at 5.0 "finish" \$ns duplex-link \$n0 \$n3 1Mb 10ms \$ns duplex-link-op \$n3 \$n4 orient right-\$ns run DropTail \$ns duplex-link \$n0 \$n4 1Mb 10ms Token Ring \$ns duplex-link \$n3 \$n5 1Mb 20ms set ns [new Simulator] DropTail DropTail set nf [open out.nam w] \$ns duplex-link \$n0 \$n5 1Mb 10ms \$ns duplex-link-op \$n3 \$n5 orient right-\$ns namtrace-all \$nf DropTail proc finish {} { set tcp0 [new Agent/TCP] Agent/TCP set_nam_tracevar_true global ns nf \$tcp0 set class 1 set tcp [new Agent/TCP] \$ns flush-trace \$ns attach-agent \$n1 \$tcp0 \$tcp set fid 1 close \$nf set sink0 [new Agent/TCPSink] \$ns attach-agent \$n1 \$tcp exec nam out.nam & \$ns attach-agent \$n3 \$sink0 set sink [new Agent/TCPSink] exit 0} \$ns connect \$tcp0 \$sink0 \$ns attach-agent \$n4 \$sink set cbr0 [new Application/Traffic/CBR] set n0 [\$ns node] \$ns connect \$tcp \$sink set n1 [\$ns node] \$cbr0 set packetSize_ 500 set ftp [new Application/FTP] set n2 [\$ns node] \$cbr0 set interval 0.01 \$ftp attach-agent \$tcp set n3 [\$ns node] \$ns at 0.05 "\$ftp start" \$cbr0 attach-agent \$tcp0

\$ns at 0.06 "\$tcp set windowlnit 6" \$ns duplex-link \$n0 \$n2 1Mb 10ms 12.TCP/IP Data Transfer \$ns at 0.06 "\$tcp set maxcwnd 6" DropTail set ns [new Simulator] \$ns at 0.25 "\$ns queue-limit \$n3 \$n4 0" \$ns duplex-link-op \$n0 \$n2 orient rightset nf [open out.nam w] \$ns at 0.26 "\$ns queue-limit \$n3 \$n4 10" down \$ns namtrace-all \$nf \$ns at 0.305 "\$tcp set windowlnit 4" \$ns queue-limit \$n0 \$n2 5 set tr [open out.tr w] \$ns at 0.305 "\$tcp set maxcwnd 4" \$ns duplex-link \$n1 \$n2 1Mb 10ms \$ns trace-all \$tr \$ns at 0.368 "\$ns detach-agent DropTail proc finish {} { \$n1 \$tcp; \$ns detach-agent \$n4 \$sink" \$ns duplex-link-op \$n1 \$n2 orient rightglobal nf ns tr \$ns at 1.5 "finish" \$ns flush-trace \$ns at 0.0 "\$ns trace-annotate \$ns duplex-link \$n2 \$n3 1Mb 10ms close \$tr \"Goback N end\"" DropTail exec nam out.nam & \$ns at 0.05 "\$ns trace-annotate \$ns duplex-link-op \$n2 \$n3 orient right exit 0 \"FTP starts at 0.01\"" \$ns duplex-link \$n3 \$n4 1Mb 10ms \$ns at 0.06 "\$ns trace-annotate DropTail set n0 [\$ns node] \"Send 6Packets from SYS1 to SYS4\"" \$ns duplex-link-op \$n3 \$n4 orient rightset n1 [\$ns node] \$ns at 0.26 "\$ns trace-annotate set n2 [\$ns node] up \"Error Occurs for 4th packet \$ns duplex-link \$n3 \$n5 1Mb 10ms set n3 [\$ns node] so not sent ack for the Packet\"" DropTail \$ns duplex-link \$n0 \$n1 10Mb 10ms \$ns at 0.30 "\$ns trace-annotate \$ns duplex-link-op \$n3 \$n5 orient right-DropTail \"Retransmit Packet 4 to 6\"" \$ns duplex-link \$n1 \$n3 10Mb 10ms \$ns at 1.0 "\$ns trace-annotate \"FTP Agent/TCP set_nam_tracevar_true DropTail stops\"" \$ns duplex-link \$n2 \$n1 10Mb 10ms set tcp [new Agent/TCP] proc finish {} { \$tcp set fid 1 DropTail global ns nf \$ns attach-agent \$n1 \$tcp \$ns duplex-link-op \$n0 \$n1 orient right-\$ns flush-trace set sink [new Agent/TCPSink] down close \$nf \$ns attach-agent \$n4 \$sink \$ns duplex-link-op \$n1 \$n3 orient right puts "filtering..." \$ns connect \$tcp \$sink \$ns duplex-link-op \$n2 \$n1 orient right-#exec tclsh../bin/namfilter.tcl set ftp [new Application/FTP] up goback.nam \$ftp attach-agent \$tcp set tcp [new Agent/TCP] #puts "running nam..." \$ns at 0.05 "\$ftp start" \$ns attach-agent \$n0 \$tcp exec nam goback.nam & \$ns at 0.06 "\$tcp set windowlnit 8" set ftp [new Application/FTP] exit 0 \$ns at 0.06 "\$tcp set maxcwnd 8" \$ftp attach-agent \$tcp }\$ns run \$ns at 0.25 "\$ns queue-limit \$n3 \$n4 0" set sink [new Agent/TCPSink] \$ns at 0.26 "\$ns queue-limit \$n3 \$n4 10" \$ns attach-agent \$n3 \$sink 11.b)Selective Repeat Protocol \$ns at 0.30 "\$tcp set windowlnit 1" set udp [new Agent/UDP] set ns [new Simulator] \$ns at 0.30 "\$tcp set maxcwnd 1" \$ns attach-agent \$n2 \$udp set n0 [\$ns node] \$ns at 0.30 "\$ns queue-limit \$n3 \$n4 10" set cbr [new Application/Traffic/CBR] set n1 [\$ns node] \$ns at 0.47 "\$ns detach-agent \$n1 \$cbr attach-agent \$udp \$tcp;\$ns detach-agent \$n4 \$sink" set n2 [\$ns node] set null [new Agent/Null] \$ns at 1.75 "finish" set n3 [\$ns node] \$ns attach-agent \$n3 \$null set n4 [\$ns node] \$ns at 0.0 "\$ns trace-annotate \$ns connect \$tcp \$sink set n5 [\$ns node] \"Select and repeat\"" \$ns connect \$udp \$null \$n0 color "red" \$ns at 0.05 "\$ns trace-annotate \$ns rtmodel-at 1.0 down \$n1 \$n3 \$n1 color "red" \"FTP starts at 0.01\"" \$ns rtmodel-at 2.0 up \$n1 \$n3 \$n2 color "green" \$ns at 0.06 "\$ns trace-annotate \$ns rtproto DV \$n3 color "green" \"Send 8Packets from SYS1 to SYS4\"" \$ns at 0.0 "\$ftp start" \$n4 color "black" \$ns at 0.26 "\$ns trace-annotate \$ns at 0.0 "\$cbr start" \$ns at 5.0 "finish" \$n5 color "black" \"Error Occurs in 4th packet \"" \$ns at 0.30 "\$ns trace-annotate \$n0 shape circle; Sns run \$n1 shape circle; \"Retransmit Packet 4 \$n2 shape circle; from SYS1 to SYS4\"" 13.a) Program: DV.tcl \$ns at 1.5 "\$ns trace-annotate set ns [new Simulator] \$n3 shape circle; \$n4 shape circle; \"FTP stops\"" set nr [open thro.tr w] \$n5 shape circle; proc finish {} { \$ns trace-all \$nr \$ns at 0.0 "\$n0 label SYS1" global ns nf set nf [open thro.nam w] \$ns at 0.0 "\$n1 label SYS2" \$ns flush-trace \$ns namtrace-all \$nf \$ns at 0.0 "\$n2 label SYS3" close \$nf proc finish { } { puts "filtering..." \$ns at 0.0 "\$n3 label SYS4" global ns nr nf \$ns at 0.0 "\$n4 label SYS5" #exec tclsh../bin/namfilter.tcl \$ns flush-trace \$ns at 0.0 "\$n5 label SYS6" srepeat.nam close \$nf set nf [open Srepeat.nam w] #puts "running nam..." close \$nr exec nam thro.nam & \$ns namtrace-all \$nf exec nam Srepeat.nam & set f [open Srepeat.tr w] exit 0} exit 0 \$ns trace-all \$f \$ns run for { set i 0 } { \$i< 12} { incr i 1 } {

set n(\$i) [\$ns node]} ns duplex-link (i) (expr i+1)create-god \$val(nn) for {set i 0} {\$i< 8} {incr i} { 1Mb 10ms DropTail } \$ns node-config -adhoc Routing \$val(rp) $n = \frac{1}{2} \sin \frac{1}{2} \sin$ \$ns duplex-link \$n(0) \$n(8) 1Mb 10ms 1Mb 10ms DropTail } DropTail -IIType \$val(II) \ \$ns duplex-link \$n(0) \$n(8) 1Mb 10ms \$ns duplex-link \$n(1) \$n(10) 1Mb 10ms -macType \$val(mac) \ -ifqType \$val(ifq) \ DropTail DropTail \$ns duplex-link \$n(1) \$n(10) 1Mb 10ms \$ns duplex-link \$n(0) \$n(9) 1Mb 10ms -ifqLen \$val(ifqlen) \ DropTail DropTail -antType \$val(ant) \ \$ns duplex-link \$n(0) \$n(9) 1Mb 10ms \$ns duplex-link \$n(9) \$n(11) 1Mb 10ms -propType \$val(prop) \ DropTail DropTail -phyType \$val(netif) \ \$ns duplex-link \$n(9) \$n(11) 1Mb 10ms \$ns duplex-link \$n(10) \$n(11) 1Mb 10ms -channelType \$val(chan) \ DropTail DropTail -topolnstance \$topo \ \$ns duplex-link \$n(10) \$n(11) 1Mb 10ms \$ns duplex-link \$n(11) \$n(5) 1Mb 10ms -agentTrace ON \ DropTail DropTail -routerTrace OFF \ \$ns duplex-link \$n(11) \$n(5) 1Mb 10ms set udp0 [new Agent/UDP] -macTrace OFF \ \$ns attach-agent \$n(0) \$udp0 -movementTrace OFF DropTail set cbr0 [new Application/Traffic/CBR] set udp0 [new Agent/UDP] set node0 [\$ns node] \$ns attach-agent \$n(0) \$udp0 \$cbr0 set packetSize_ 500 set node1 [\$ns node] set cbr0 [new Application/Traffic/CBR] \$cbr0 set interval_ 0.005 set node2 [\$ns node] \$cbr0 set packetSize 500 \$cbr0 attach-agent \$udp0 \$ns initial_node_pos \$node0 10 \$cbr0 set interval_ 0.005 set null0 [new Agent/Null] \$ns initial_node_pos \$node1 10 \$ns initial node pos \$node2 10 \$cbr0 attach-agent \$udp0 \$ns attach-agent \$n(5) \$null0 set null0 [new Agent/Null] \$ns connect \$udp0 \$null0 \$node0 set X 25.0 \$ns attach-agent \$n(5) \$null0 set udp1 [new Agent/UDP] \$node0 set Y 50.0 \$ns connect \$udp0 \$null0 \$ns attach-agent \$n(1) \$udp1 \$node0 set Z 0.0 \$node1 set X_ 50.0 set udp1 [new Agent/UDP] set cbr1 [new Application/Traffic/CBR] \$ns attach-agent \$n(1) \$udp1 \$cbr1 set packetSize_ 500 \$node1 set Y_ 50.0 set cbr1 [new Application/Traffic/CBR] \$cbr1 set interval 0.005 \$node1 set Z 0.0 \$cbr1 set packetSize 500 \$cbr1 attach-agent \$udp1 \$node2 set X 65.0 \$cbr1 set interval_ 0.005 set null0 [new Agent/Null] \$node2 set Y_ 50.0 \$cbr1 attach-agent \$udp1 \$ns attach-agent \$n(5) \$null0 \$node2 set Z_ 0.0 set null0 [new Agent/Null] \$ns connect \$udp1 \$null0 set tcp1 [new Agent/TCP] \$ns attach-agent \$n(5) \$null0 \$ns rtproto LS \$ns attach-agent \$node0 \$tcp1 \$ns rtmodel-at 10.0 down \$n(11) \$n(5) \$ns connect \$udp1 \$null0 set ftp [new Application/FTP] Sns rtproto DV \$ns rtmodel-at 15.0 down \$n(7) \$n(6) \$ftp attach-agent \$tcp1 \$ns rtmodel-at 10.0 down \$n(11) \$n(5) \$ns rtmodel-at 30.0 up \$n(11) \$n(5) set sink1 [new Agent/TCPSink] \$ns rtmodel-at 15.0 down \$n(7) \$n(6) \$ns rtmodel-at 20.0 up \$n(7) \$n(6) \$ns attach-agent \$node2 \$sink1 \$ns rtmodel-at 30.0 up \$n(11) \$n(5) \$udp0 set fid 1 \$ns connect \$tcp1 \$sink1 \$ns rtmodel-at 20.0 up \$n(7) \$n(6) \$udp1 set fid 2 \$ns at 10.0 "\$node1 set dest 50.0 90.0 \$udp0 set fid 1 \$ns color 1 Red \$udp1 set fid_ 2 \$ns color 2 Green \$ns at 50.0 "\$node1 set dest 50.0 10.0 \$ns color 1 Red \$ns at 1.0 "\$cbr0 start" Sns color 2 Green \$ns at 2.0 "\$cbr1 start" \$ns at 0.5 "\$ftp start" \$ns at 1.0 "\$cbr0 start" \$ns at 45 "finish" \$ns at 1000 "\$ftp stop" \$ns at 2.0 "\$cbr1 start" \$ns run \$ns at 1000 "finish" \$ns at 45 "finish" proc finish {} { \$ns run 14. Mobile Adhoc Network global ns tf tf1 set val(chan) Channel/WirelessChannel \$ns flush-trace 13.b)Linkstate routing algorithm close \$tf set val(prop) set ns [new Simulator] Propagation/TwoRayGround exec nam output.nam & set nr [open thro.tr w] set val(netif) Phy/WirelessPhy exit 0} \$ns run \$ns trace-all \$nr set val(mac) Mac/802_11 set val(ifq) Queue/DropTail/PriQueue set nf [open thro.nam w] \$ns namtrace-all \$nf set val(II) LL 15.TCP in Sensor Network proc finish { } { set val(ant) Antenna/OmniAntenna set ns [new Simulator] global ns nr nf set val(ifglen) 50 \$ns color 1 Blue \$ns color 2 Red \$ns flush-trace set val(nn) 3 close \$nf set val(rp) DSDV **#Open the Trace files** close \$nr set ns [new Simulator] set file1 [open out.tr w] exec nam thro.nam & set tf [open output.tr w] set winfile [open WinFile w] exit 0 \$ns trace-all \$tf \$ns trace-all \$file1 set file2 [open out.nam w] set tf1 [open output.nam w] for { set i 0 } { \$i< 12} { incr i 1 } { \$ns namtrace-all-wireless \$tf1 100 100 \$ns namtrace-all \$file2 set n(\$i) [\$ns node]} set topo [new Topography] proc finish {} { for {set i 0} {\$i< 8} {incr i} { \$topo load_flatgrid 100 100 global ns file1 file2

\$ns flush-trace

close \$file1

close \$file2

exec nam out.nam &

exit 0}

set n0 [\$ns node]

set n1 [\$ns node]

set n2 [\$ns node]

set n3 [\$ns node]

set n4 [\$ns node]

set n5 [\$ns node]

\$n1 color red

\$n1 shape box

\$ns duplex-link \$n0 \$n2

2Mb 10ms DropTail

\$ns duplex-link \$n1

\$n2 2Mb 10ms DropTail

\$ns simplex-link \$n2

\$n3 0.3Mb 100ms DropTail

\$ns simplex-link \$n3

\$n2 0.3Mb 100ms DropTail

set lan [\$ns newLan "\$n3 \$n4 \$n5"

0.5Mb 40ms LL Queue/DropTail

MAC/Csma/Cd Channel]

set tcp [new Agent/TCP/Newreno]

\$ns attach-agent \$n0 \$tcp

set sink [new Agent/TCPSink/DelAck]

\$ns attach-agent \$n4 \$sink

\$ns connect \$tcp \$sink

\$tcp set fid_ 1

\$tcp set window_ 8000

\$tcp set packetSize_ 552

#Setup a FTP over TCP connection

set ftp [new Application/FTP]

\$ftp attach-agent \$tcp

\$ftp set type_FTP

\$ns at 1.0 "\$ftp start"

\$ns at 124.0 "\$ftp stop"

proc plotWindow {tcpSource file} {

global ns

set time 0.1

set now [\$ns now]

set cwnd [\$tcpSource set cwnd_]

set wnd [\$tcpSource set window_]

puts \$file "\$now \$cwnd"

\$ns at [expr \$now+\$time] "plotWindow

\$tcpSource \$file" }

\$ns at 0.1 "plotWindow \$tcp \$winfile"

\$ns at 5 "\$ns trace-annotate \"packet

drop\""

\$ns at 125.0 "finish"

\$ns run