CONGESTION AVOIDANCE

mininet@mininet-vm:~$ sudo python ./ecn_test.py
*** Adding controller
*** Adding hosts
*** Adding switch
*** Adding router
*** Creating links
(1.00Mbit 30ms delay ECN) (1.00Mbit 30ms delay ECN)
*** Starting network
*** Configuring hosts
h1 h2 h3 router
*** Starting controller
*** Starting 1 switches
s1 (1.00Mbit 30ms delay ECN)
*** Setting up routes
*** Testing connectivity
*** Ping: testing ping reachability
h1 -> h2 h3 router
h2 -> h1 h3 router
h3 -> h1 h2 router
router -> h1 h2 h3
*** Results: 0% dropped (12/12 received)
<h1>: traceroute to 10.0.1.2 (10.0.1.2), 30 hops max, 60 byte packets
 1 10.0.1.2 (10.0.1.2) 6.919 ms 7.679 ms 6.002 ms
<h1>: traceroute to 10.0.2.1 (10.0.2.1), 30 hops max, 60 byte packets
 1 10.0.1.254 (10.0.1.254) 65.323 ms 66.218 ms 62.620 ms
 2 10.0.2.1 (10.0.2.1) 66.841 ms 68.284 ms 66.660 ms
<h2>: traceroute to 10.0.1.1 (10.0.1.1), 30 hops max, 60 byte packets
 1 10.0.1.1 (10.0.1.1) 5.724 ms 5.551 ms 4.261 ms
<h2>: traceroute to 10.0.2.1 (10.0.2.1), 30 hops max, 60 byte packets
 1 10.0.1.254 (10.0.1.254) 65.521 ms 62.886 ms 64.667 ms
 2 10.0.2.1 (10.0.2.1) 62.879 ms 62.815 ms 62.937 ms
<h3>: traceroute to 10.0.1.1 (10.0.1.1), 30 hops max, 60 byte packets
 1 10.0.2.254 (10.0.2.254) 0.038 ms 0.026 ms 0.021 ms
 2 10.0.1.1 (10.0.1.1) 61.269 ms 61.223 ms 66.625 ms
<h3>: traceroute to 10.0.1.2 (10.0.1.2), 30 hops max, 60 byte packets
 1 10.0.2.254 (10.0.2.254) 0.011 ms 0.005 ms 0.004 ms
 2 10.0.1.2 (10.0.1.2) 64.211 ms 64.124 ms 64.194 ms
*** Disable ECN
net.ipv4.tcp_ecn = 0
monitoring output for 20 seconds
<h3>: ---
<h3>: Server listening on TCP port 5001

<h3>: TCP window size: 256 KByte (WARNING: requested 128 KByte)
<h3>: --
<h1>: --
<h1>: Client connecting to 10.0.2.1, TCP port 5001
<h1>: TCP window size: 256 KByte (WARNING: requested 128 KByte)
<h1>: --
<h1>: [4] local 10.0.1.1 port 39959 connected with 10.0.2.1 port 5001
<h2>: --
<h2>: Client connecting to 10.0.2.1, TCP port 5001
<h2>: TCP window size: 256 KByte (WARNING: requested 128 KByte)
<h2>: --
<h2>: [4] local 10.0.1.2 port 55769 connected with 10.0.2.1 port 5001
<h3>: [5] local 10.0.2.1 port 5001 connected with 10.0.1.1 port 39959
<h3>: [6] local 10.0.2.1 port 5001 connected with 10.0.1.2 port 55769
<h2>: [ID] Interval   Transfer   Bandwidth
<h2>: [4] 0.0-13.9 sec   896 KBytes   527 Kbits/sec
<h1>: [ID] Interval   Transfer   Bandwidth
<h1>: [4] 0.0-14.5 sec 1.00 MBytes   579 Kbits/sec
<h3>: [ID] Interval   Transfer   Bandwidth
<h3>: [6] 0.0-15.6 sec   896 KBytes   471 Kbits/sec
<h3>: [5] 0.0-16.3 sec 1.00 MBytes   514 Kbits/sec
*** Enable ECN
net.ipv4.tcp_ecn = 1
monitoring output for 20 seconds
<h3>: --
<h3>: Server listening on TCP port 5001
<h3>: TCP window size: 256 KByte (WARNING: requested 128 KByte)
<h3>: --
<h1>: --
<h1>: Client connecting to 10.0.2.1, TCP port 5001
<h1>: TCP window size: 256 KByte (WARNING: requested 128 KByte)
<h1>: --
<h1>: [4] local 10.0.1.1 port 39961 connected with 10.0.2.1 port 5001
<h2>: --
<h2>: Client connecting to 10.0.2.1, TCP port 5001
<h2>: TCP window size: 256 KByte (WARNING: requested 128 KByte)
<h2>: --
<h2>: [4] local 10.0.1.2 port 55771 connected with 10.0.2.1 port 5001
<h3>: [5] local 10.0.2.1 port 5001 connected with 10.0.1.1 port 39961
<h3>: [6] local 10.0.2.1 port 5001 connected with 10.0.1.2 port 55771
<h1>: [ID] Interval   Transfer   Bandwidth
<h1>: [4] 0.0-13.0 sec   896 KBytes   564 Kbits/sec
<h2>: [ID] Interval   Transfer   Bandwidth
<h2>: [4] 0.0-13.5 sec   896 KBytes   542 Kbits/sec
<h3>: [ID] Interval   Transfer   Bandwidth
<h3>: [5] 0.0-14.9 sec   896 KBytes   494 Kbits/sec

\<h3\>: [6] 0.0-15.2 sec   896 KBytes   482 Kbits/sec
*** Stopping network
*** Stopping 1 switches
s1 ...
*** Stopping 4 hosts
h1 h2 h3 router
*** Stopping 1 controllers
c0
*** Done
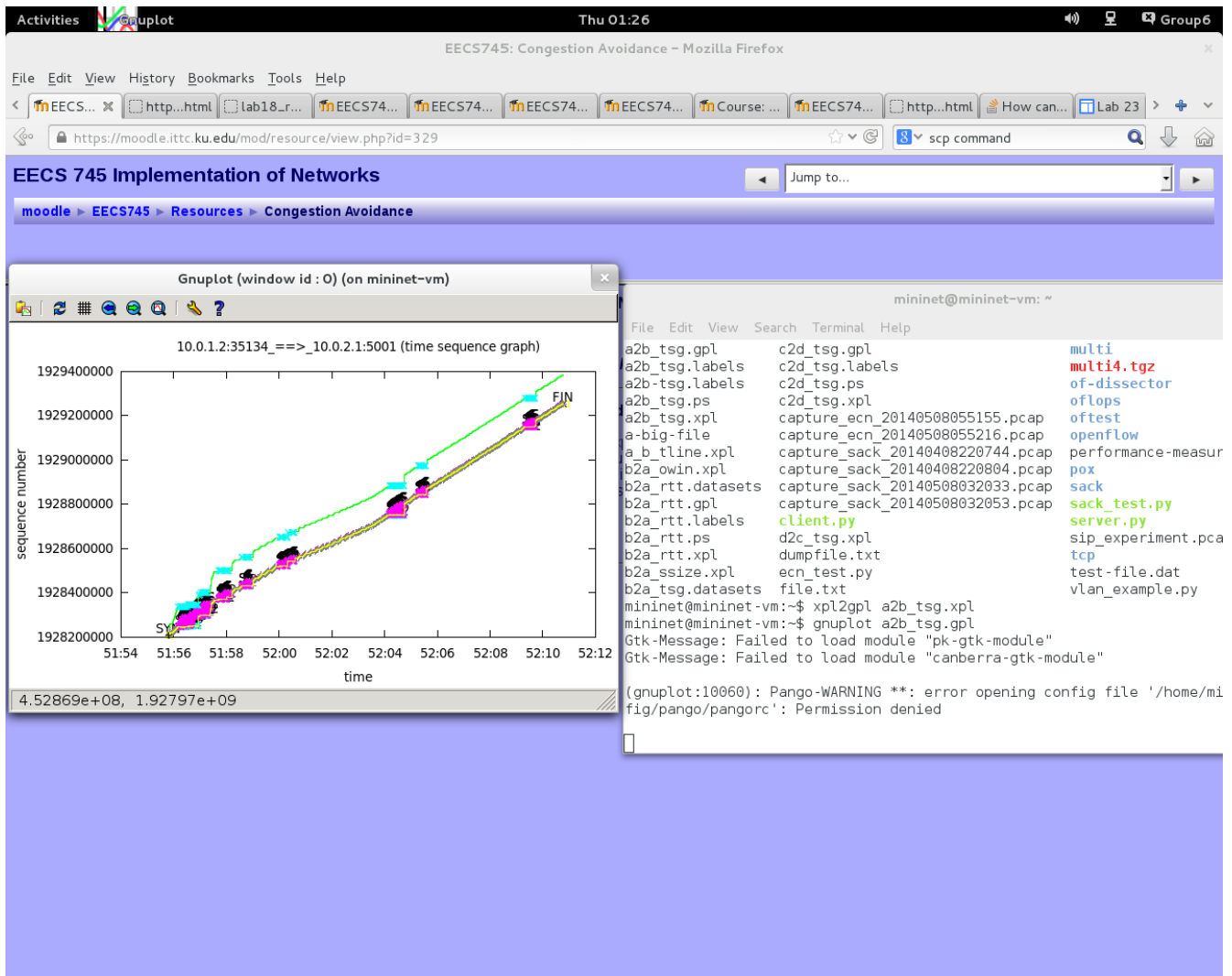
EECS745: Congestion Avoidance – Mozilla Firefox   ×

File   Edit   View   History   Bookmarks   Tools   Help

EECS... ×   http...html   lab18_r...   EECS74...   EECS74...   EECS74...   EECS74...   Course: ...   EECS74...   http...html   How can...   Lab 23

https://moodle.ittc.ku.edu/mod/resource/view.php?id=329   scp command

EECS 745 Implementation of Networks   ◄   Jump to...   ►

Gnuplot (window id : 0) (on mininet-vm)   ×

10.0.1.1:42707_==>_10.0.2.1:5001 (time sequence graph)

4.52869e+08, 4.01957e+09

mininet@mininet-vm: ~

Edit   View   Search   Terminal   Help

pango/pangorc': Permission denied

net@mininet-vm:~$ tcptrace -S capture_ecn_20140508055216.pcap
g remaining, starting with 'capture_ecn_20140508055216.pcap'
rmann's tcptrace -- version 6.6.7 -- Thu Nov 4, 2004

packet 1: reserved bits are not all zero.
    Further warnings disabled, use '-w' for more info
packets seen, 2103 TCP packets traced
sed wallclock time: 0:00:00.030462, 69036 pkts/sec analyzed
e file elapsed time: 0:00:15.347629
connection info:
  10.0.1.1:42707 - 10.0.2.1:5001 (a2b)   638>   417< (complete)
  10.0.1.2:35137 - 10.0.2.1:5001 (c2d)   638>   410< (complete)
net@mininet-vm:~$ xpl2gpl a2b_tsg.xpl
net@mininet-vm:~$ gnuplot a2b_tsg.gpl
Message: Failed to load module "pk-gtk-module"
Message: Failed to load module "canberra-gtk-module"

(gnuplot:10114): Pango-WARNING **: error opening config file '/home/mininet
fig/pango/pangorc': Permission denied