

Farhad Ahmed  
Computer Networking  
11/28/18

## Lab – ICMP Pinger

*Running ifconfig:*

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Last login: Wed Nov 28 13:34:44 on ttys003
[farhads-MacBook-Pro:~ Farhad_Ahmed$ ifconfig
lo0: flags=8049<UP,LOOPBACK,RUNNING,MULTICAST> mtu 16384
    options=1203<RXCSUM,TXCSUM,TXSTATUS,SW_TIMESTAMP>
    inet 127.0.0.1 netmask 0xff000000
    inet6 ::1 prefixlen 128
    inet6 fe80::1%lo0 prefixlen 64 scopeid 0x1
    nd6 options=201<PERFORMNUD,DAD>
gif0: flags=8010<POINTOPOINT,MULTICAST> mtu 1280
stf0: flags=0<> mtu 1280
XHC20: flags=0<> mtu 0
en0: flags=8863<UP,BROADCAST,SMART,RUNNING,SIMPLEX,MULTICAST> mtu 1500
    ether ac:bc:32:91:a2:af
    inet6 fe80::81d:2f61:5ded:e014%en0 prefixlen 64 secured scopeid 0x5
    inet 192.168.0.8 netmask 0xfffff00 broadcast 192.168.0.255
    inet6 2604:2000:6aa5:4500:42f:6470:410b:b373 prefixlen 64 autoconf secured
    inet6 2604:2000:6aa5:4500:3948:21d0:7073:6f15 prefixlen 64 autoconf temporary
    nd6 options=201<PERFORMNUD,DAD>
    media: autoselect
    status: active
p2p0: flags=8843<UP,BROADCAST,RUNNING,SIMPLEX,MULTICAST> mtu 2304
    ether 0e:bc:32:91:a2:af
    media: autoselect
    status: inactive
awd10: flags=8943<UP,BROADCAST,RUNNING,PROMISC,SIMPLEX,MULTICAST> mtu 1484
    ether e2:e4:b5:cb:2b:b0
    inet6 fe80::e0e4:b5ff:feeb:2bb0%awd10 prefixlen 64 scopeid 0x7
    nd6 options=201<PERFORMNUD,DAD>
    media: autoselect
    status: active
en1: flags=8963<UP,BROADCAST,SMART,RUNNING,PROMISC,SIMPLEX,MULTICAST> mtu 1500
    options=60<TS04,TS06>
    ether 4a:00:02:92:f1:80
    media: autoselect <full-duplex>
    status: inactive
en2: flags=8963<UP,BROADCAST,SMART,RUNNING,PROMISC,SIMPLEX,MULTICAST> mtu 1500
    options=60<TS04,TS06>
    ether 4a:00:02:92:f1:81
    media: autoselect <full-duplex>
    status: inactive
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status: inactive
bridge0: flags=8863<UP,BROADCAST,SMART,RUNNING,SIMPLEX,MULTICAST> mtu 1500
options=63<RXCSUM,TXCSUM,TSO4,TSO6>
ether 4a:00:02:92:f1:80
Configuration:
    id 0:0:0:0:0:0 priority 0 hellotime 0 fwddelay 0
    maxage 0 holdcnt 0 proto stp maxaddr 100 timeout 1200
    root id 0:0:0:0:0:0 priority 0 ifcost 0 port 0
    ipfilter disabled flags 0x2
member: en1 flags=3<LEARNING,DISCOVER>
    ifmaxaddr 0 port 8 priority 0 path cost 0
member: en2 flags=3<LEARNING,DISCOVER>
    ifmaxaddr 0 port 9 priority 0 path cost 0
nd6 options=201<PERFORMNUD,DAD>
media: <unknown type>
status: inactive
utun0: flags=8051<UP,POINTOPOINT,RUNNING,MULTICAST> mtu 2000
    inet6 fe80::92b6:970f:9f29:4cbe%utun0 prefixlen 64 scopeid 0xb
    nd6 options=201<PERFORMNUD,DAD>
utun1: flags=8051<UP,POINTOPOINT,RUNNING,MULTICAST> mtu 1380
    inet6 fe80::5a51:5bba:4b61:ef68%utun1 prefixlen 64 scopeid 0xc
    nd6 options=201<PERFORMNUD,DAD>

```

First ping: google.com

```

[farhads-MacBook-Pro:CompNetworking Farhad_Ahmed$ sudo python fa961_ICMP_Pinger_L
ab.py
Pinging 216.58.219.206 using Python:
0.0274450778961
0.021656036377
0.01784491539
0.0224120616913
0.0281939506531
0.0167279243469
0.0154070854187
0.02610206604
0.0263240337372
0.131416082382
0.0169100761414
0.0288350582123
0.0258839130402
0.0212562084198
0.018040895462
0.0174551010132
0.0197269916534
ICMP_pinger_lab.py
    myChecksum = htons(myC
else:
    myChecksum = htons(myC
header = struct.pack("bb
packet = header + data
mySocket.sendto(packet,
# Both LISTS and TUPLES co
# which can be referenced
def doOnePing(destAddr, tim
icmp = getprotobyname("ic
# SOCK_RAW is a powerful s
mySocket = socket(AF_INET
myID = os.getpid() & 0xFF
sendOnePing(mySocket, de
delay = receiveOnePing(my
mySocket.close()
return delay
def ping(host, timeout=1):
# timeout=1 means: If one
Traceback (most recent call last):
  File "/Users/Farhad_Ahmed/Desktop/Co
  line 119, in <module>
    ping("127.0.0.1")
  File "/Users/Farhad_Ahmed/Desktop/Co
  line 113, in ping
    delay = doOnePing(dest, timeout)
  File "/Users/Farhad_Ahmed/Desktop/Co
  line 94, in doOnePing
    mySocket = socket(AF_INET, SOCK_RAW,
  File "/usr/local/Cellar/python@2/2.7
  s/2.7/lib/python2.7/socket.py", line 1
    _sock = _realsocket(family, type, pr
error: [Errno 1] Operation not permitte
>>>
RESTART: /Users/Farhad_Ahmed/Desktop,
Pinging 172.217.10.14 using Python:
Traceback (most recent call last):
  File "/Users/Farhad_Ahmed/Desktop/Co
  line 120, in <module>
    ping("172.217.10.14")

```

Second Ping: youtube.com

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[farhads-MacBook-Pro:CompNetworking Farhad_Ahmed$ sudo python fa961_ICMP_Pinger_Lab.py
Pinging 172.217.10.14 using Python:

0.019917011261
0.0225899219513
0.109112024307
0.0171401500702
0.0220239162445
0.025768995285
0.0196340084076
0.0197768211365
0.030061006546

error: [Errno 1] Operation not permitted
>>>
RESTART: /Users/Farhad_Ahmed/Desktop/CompNetworking
Pinging 127.0.0.1 using Python:

Traceback (most recent call last):
  File "/Users/Farhad_Ahmed/Desktop/CompNetworking/fa961_ICMP_Pinger_Lab.py", line 119, in <module>
    ping("127.0.0.1")
  File "/Users/Farhad_Ahmed/Desktop/CompNetworking/fa961_ICMP_Pinger_Lab.py", line 113, in ping
    delay = doOnePing(dest, timeout)
  File "/Users/Farhad_Ahmed/Desktop/CompNetworking/fa961_ICMP_Pinger_Lab.py", line 94, in doOnePing
    mySocket = socket(AF_INET, SOCK_RAW, IPPROTO_ICMP)
error: [Errno 1] Operation not permitted
>>>
```

Third Ping: bbc.co.uk

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[farhads-MacBook-Pro:CompNetworking Farhad_Ahmed$ sudo python fa961_ICMP_Pinger_Lab.py
Pinging 151.101.0.81 using Python:

0.021754026413
0.0218770503998
0.0192399024963
0.0219538211823
0.0204420089722
0.0163509845734
0.0165719985962
0.0264751911163
0.0184259414673
0.0311698913574
0.0352890491486
0.0234320163727

error: [Errno 1] Operation not permitted
>>>
RESTART: /Users/Farhad_Ahmed/Desktop/CompNetworking
Pinging 127.0.0.1 using Python:

Traceback (most recent call last):
  File "/Users/Farhad_Ahmed/Desktop/CompNetworking/fa961_ICMP_Pinger_Lab.py", line 119, in <module>
    ping("127.0.0.1")
  File "/Users/Farhad_Ahmed/Desktop/CompNetworking/fa961_ICMP_Pinger_Lab.py", line 113, in ping
    delay = doOnePing(dest, timeout)
  File "/Users/Farhad_Ahmed/Desktop/CompNetworking/fa961_ICMP_Pinger_Lab.py", line 94, in doOnePing
    mySocket = socket(AF_INET, SOCK_RAW, IPPROTO_ICMP)
  File "/usr/local/Cellar/python@2.7.2.2/Frameworks/Python.framework/Versions/2.7/lib/python2.7/socket.py", line 131, in _realsocket
    _sock = _realsocket(family, type, proto)
error: [Errno 1] Operation not permitted
>>>
```

Fourth Ping: au.int

```
[farhads-MacBook-Pro:CompNetworking Farhad_Ahmed$ sudo python fa961_ICMP_Pinger_Lab.py
Pinging 23.111.128.195 using Python:
0.0555150508881
0.052768945694
0.0519599914551
0.0510859489441
0.0570797920227
0.0584888458252
0.0738961696625
0.0556180477142
0.0554950237274
0.0556950569153
0.0586879253387
0.0482139587402
0.0525081157684
0.0601470470428
0.0498929023743

Traceback (most recent call last):
  File "/Users/Farhad_Ahmed/Desktop/CompNetworking/ICMP_pinger_lab.py", line 119, in <module>
    ping("127.0.0.1")
  File "/Users/Farhad_Ahmed/Desktop/CompNetworking/ICMP_pinger_lab.py", line 113, in ping
    delay = doOnePing(dest, timeout)
  File "/Users/Farhad_Ahmed/Desktop/CompNetworking/ICMP_pinger_lab.py", line 94, in doOnePing
    mySocket = socket(AF_INET, SOCK_RAW, IPPROTO_ICMP)
  File "/usr/local/Cellar/python@2/2.7.16_1/Frameworks/Python.framework/Versions/2.7/lib/python2.7/socket.py", line 170, in socket
    _sock = _realsocket(family, type, proto)
error: [Errno 1] Operation not permitted

RESTART: /Users/Farhad_Ahmed/Desktop/CompNetworking/ICMP_pinger_lab.py
Pinging 172.217.10.14 using Python:
Traceback (most recent call last):
  File "/Users/Farhad_Ahmed/Desktop/CompNetworking/ICMP_pinger_lab.py", line 120, in <module>
    ping("172.217.10.14")
  File "/Users/Farhad_Ahmed/Desktop/CompNetworking/ICMP_pinger_lab.py", line 113, in ping
    delay = doOnePing(dest, timeout)
  File "/Users/Farhad_Ahmed/Desktop/CompNetworking/ICMP_pinger_lab.py", line 94, in doOnePing
    mySocket = socket(AF_INET, SOCK_RAW, IPPROTO_ICMP)
  File "/usr/local/Cellar/python@2/2.7.16_1/Frameworks/Python.framework/Versions/2.7/lib/python2.7/socket.py", line 170, in socket
    _sock = _realsocket(family, type, proto)
error: [Errno 1] Operation not permitted
```