**CS 372 Introduction to Computer Networks Spring 2014**

**Lab #1 Name: Danny Burrows - burrowsd**

**Due Sunday, April 13th Submit to Blackboard &** [**http://engr.oregonstate.edu/teach**](http://engr.oregonstate.edu/teach) **before midnight.**

**Objectives**: Introduction to

* a few network applications
* verifying connectivity
* a few networking metrics

**Assignment**: Do the following experiments. Fill in the requested information on these pages, and submit this document as your lab report.

**Part I**. Using *telnet* to send spoof email.

NOTE: It’s OK to use a different server, but your ISP might make this difficult.

NOTE: Do not abuse this capability. This is intended to demonstrate how easy it is to be victimized by spoof email.

1. Log in at access.engr.orst.edu with *SSH*, *PuTTY*, or some similar terminal emulator.

At “Terminal type ? [vt100]”, simply hit the *Enter* key. This will display a list of current users. Now type

/usr/bin/who ↲

Find your name in the list, and copy your domain name.

Example: c-98-222-178-63.hsd1.or.comcast.net

For convenience, the remaining instructions will refer to the domain name as *DN*.

***DN* = 69-92-184-212.cpe.cableone.net**

(Actually, the *engr* server automatically substitutes your IP address for your domain name, so you can use just about any domain name you like).

1. Find the domain name of a mail server, which we’ll call *MS*. If you’re working on the *engr* network, you can use mail.engr.orst.edu .

***MS* = mail.engr.orst.edu**

1. Contact the mail server (*MS*) on port 25 using *telnet*.

telnet <*MS*> 25 ↲

The server should respond with some kind of identification.

**Server response: 220 zen.engr.oregonstate.edu ESMTP Sendmail 8.14.4/8.14.1**

1. Try sending a spoof email to yourself as a test. Then send an email message to your instructor from a spoofed address (i.e., use a fake email address). The commands are shown below. Substitute actual names for the text in < >, and omit the < >.

HELO <*DN*>

MAIL FROM: <*your spoofed email address*>

RCPT TO: **osu.cs372@gmail.com**

DATA

<*The message section must have at least two lines of text.*>

<***Include your real name in the text, so we can give credit****.*>

.  *Type a period on a line by itself to terminate the message.*

QUIT

* Example:

HELO c-98-222-178-63.hsd1.or.comcast.net

MAIL FROM: fredflintstone@bedrock.usa

RCPT TO: osu.cs372@gmail.com

DATA

Don’t imagine that this is untraceable.

Multiple daemons are watching you!

.

QUIT

* Extra Credit Challenge: Figure out how to include a “subject” line.

**Part II**. Using *ping* to determine reachability.

NOTE: Some sites will block *ping* requests.

NOTE: On *engr*, *ping* is located in usr/sbin.

1. Find out how to get the list of *ping* flags and arguments.

How did you do this?

**man ping**

1. Ping a well-known site (such as [www.google.com](http://www.google.com/)) to verify that *ping* is working

What does *ping* return?

**The number of packets transmitted, received, percent lost and total time**

**rtt min/avg/max/mdev**

1. Find an option that causes *ping* to send more packets, and ping a site 100 times.

What was the average round-trip time?

**13.142**

What percentage of packets were lost?

**0%**

1. Ping sites 100 times in at least 3 of the following regions:

* Africa
* Western Europe
* Eastern Europe / Russia
* The middle-east
* South Asia
* China / Mongolia / Taiwan / Japan
* Southeast Asia
* Australia / New Zealand / Pacific islands
* Central / South America

What sites did you ping?

What was the average round-trip time for each site?

What was the percentage of packets lost for each site?

**www.telegraf.rs – 187.494 – 0%**

**www.door.ac – 141.134 – 0%**

**Www.mercadolibre.com.pe – 95.133 - 0%**

**Part III**. Using *traceroute* to find a path.

NOTE: *traceroute* can be found on *engr* in usr/sbin.

NOTE: If you use *Windows*, the application name is *tracert*.)

Use *traceroute* to show the complete routes to sites in at least 2 additional regions not used in Part II.

marambio.aq - Antartica

1 engr-gw.engr.oregonstate.edu (128.193.54.250) 0.363 ms 0.425 ms 0.459 ms

2 mc1-HUB.cr.net.oregonstate.edu (128.193.88.97) 0.398 ms 0.476 ms 0.541 ms

3 ob1.oregonstate.edu (128.193.88.34) 0.329 ms 0.359 ms 0.394 ms

4 198.32.163.225 (198.32.163.225) 3.566 ms 3.548 ms 3.533 ms

5 xe-9-2-0.692.sttl0.tr-cps.internet2.edu (137.164.131.41) 6.941 ms 6.931 ms 6.916 ms

6 \* \* \*

7 ae0-30G.scr1.SEA1.gblx.net (67.16.143.21) 6.423 ms 6.419 ms 6.394 ms

8 xe0-0-0-10G.ar1.ROS1.ROS.gblx.net (67.16.164.165) 205.262 ms 205.239 ms 205.230 ms

9 201-234-144-150.static.impsat.net.ar (201.234.144.150) 191.377 ms 191.147 ms 191.135 ms

10 soldini.dattaweb.com (200.58.111.50) 194.055 ms 192.141 ms 192.224 ms

sina.com.cn – People's republic of china

1 engr-gw.engr.oregonstate.edu (128.193.54.250) 0.324 ms 0.445 ms 0.728 ms

2 mc1-HUB.cr.net.oregonstate.edu (128.193.88.97) 0.435 ms 0.486 ms 0.714 ms

3 ob1.oregonstate.edu (128.193.88.34) 0.367 ms 0.351 ms 0.407 ms

4 corv-car1-gw.nero.net (199.201.139.9) 0.293 ms 0.277 ms 0.258 ms

5 ptck-core1-gw.nero.net (207.98.64.179) 3.215 ms 3.208 ms 3.194 ms

6 te-8-2.car1.Seattle1.Level3.net (4.53.150.45) 5.906 ms 5.861 ms 5.846 ms

7 ae-23-52.car3.Seattle1.Level3.net (4.69.147.165) 6.128 ms 6.119 ms 6.107 ms

8 sprint-level3-te.Seattle1.Level3.net (4.68.63.34) 5.826 ms 5.860 ms 5.842 ms

9 144.232.1.153 (144.232.1.153) 11.716 ms 11.707 ms 11.688 ms

10 144.232.4.154 (144.232.4.154) 29.384 ms 30.854 ms 29.640 ms

11 144.232.12.43 (144.232.12.43) 30.724 ms 30.640 ms 29.502 ms

12 144.232.25.242 (144.232.25.242) 38.867 ms 37.162 ms 37.132 ms

13 144.232.19.26 (144.232.19.26) 35.521 ms 35.658 ms 35.630 ms

14 \* \* \*

15 \* 219.158.102.81 (219.158.102.81) 326.825 ms \*

16 \* \* 219.158.97.245 (219.158.97.245) 314.055 ms

17 219.158.3.165 (219.158.3.165) 324.191 ms 320.748 ms 320.606 ms

18 \* \* \*

19 61.148.143.18 (61.148.143.18) 310.700 ms \* 311.668 ms

20 210.74.178.198 (210.74.178.198) 319.298 ms \* \*

21 \* \* \*

22 202.108.33.60 (202.108.33.60) 307.060 ms 306.105 ms 306.105 ms