CSNB314 Lab Work

Lab 1: Basic Windows and Linux Networking Commands (30 marks)

Introduction

As an SN student, it is compulsory that you know basic networking commands in both Windows and Linux/Unix systems. In this lab, you are required to explore and try out basic networking commands / utilities commonly available in both Windows and Linux.

Instruction

Work in pairs. Try out the Windows and Linux networking commands listed below. Answer the given questions on a piece of paper. At the end of the lab, submit your answer to the questions.

Basic Windows Networking Commands

Try out each of the following networking commands on Windows command prompt. To bring out the command prompt, go to the Start button, and then type *cmd* inside the *Search program and files* textbox. Answer the following questions.

1) ping
   a) What is the use of this command?
   b) Ping a host inside uniten (for example metalab.uniten.edu.my). Write down the name of the host. What is the time taken to receive a reply?
   c) Ping a host outside of Uniten but inside Malaysia. Write down the name of the host. What is the time taken to receive a reply?
   d) Ping a host outside Malaysia. Write down the name of the host. What is the time taken to receive a reply?

2) tracert
   a) What is the use of this command?
   b) Perform tracert to a host inside Malaysia. Write down the name of the host. How many hops does it take to reach the destination?
   c) Perform tracert to a host outside Malaysia. Write down the name of the host. How many hops does it take to reach the destination?

3) ipconfig
   a) What is the use of this command?
   b) Identify the IP address, subnet mask and default gateway of your computer.
   c) Try also ‘ipconfig /all’. What extra information do you get?

4) nslookup
   a) What is the use of this command?
   b) Choose three Web sites that you normally go to and find their IP addresses.

5) netstat
   a) What is the use of this command?
   b) How many ongoing TCP connections that have been established by your computer?

6) route print
   a) What is the use of this command?

7) arp -a
   a) What is the use of this command?
   b) How many interfaces are listed inside your table?
   c) Can you recall what the difference between an IP address and a physical address is?

Basic Linux Networking Commands

Linux has all the network commands available on Windows, plus several others. Some of the commands such as *ping*, *nslookup*, *netstat*, and *telnet* have the same names and are also used in pretty much the same way. Some commands such as *route* and *arp* have the same name but are used in slightly different ways (different options / parameters). Some of the commands have slightly different names. There are also commands not available on Windows by default (they can, however, be added by installing the corresponding programs / utilities).

Since you are currently working on a Windows machine, you need to first gain access to a Linux machine. The easiest way to do this is by remotely logging onto a Linux machine. Nowadays, remote login is normally done using ssh and you need an ssh client to do so (in the old days, remote login is normally done using telnet). There are many different ssh clients. For this class, I would recommend you using putty (http://www.chiark.greenend.org.uk/~sgtatham/putty/). You can download putty from the "Labs" section in the Moodle class page. The information to be used for logging in will be made available during lab time.

Once you have logged in, try out the following networking commands. Answer the corresponding questions.

1) traceroute
   a) What is the use of this command?
   b) What is the corresponding command in Windows?

2) ifconfig
   a) What is the use of this command?
   b) What is the corresponding command in Windows?

3) dig
   a) What is the use of this command?
   b) Does it serve the same purpose as any other commands you have tried before? Which one?

4) nmap
   a) What is the use of this command?
   b) Try to run nmap on the www.uniten.edu.my. What are the server applications running on that server?

5) telnet
   a. What is the use of this command?
   b. What is default port number used when using telnet? Can you telnet to a different port number? How?

6) ssh
   a) What is the use of this command?
   b) What is the difference between this command and telnet?