INB251 Assignment Specification

Worth: 40%
Due: 25th October 2010

Synopsis

This assignment will require to you to complete and document four common network tasks. The documentation should be completed in the manner of a journal or workbook.

Restrictions

This assignment is **individual** work. You may consult with fellow students and tutors, but all assignment submissions should be yours and unique. Material from the Internet may be used as a source of knowledge and any of this material must be referenced but all submitted documentation should be your own words.

Requirements

Task 1: Linux Basics

Install the Ubuntu Linux operating system on a VMware virtual machine. When installing the operating system you should use your first and last name concatenated without spaces as the name of your new virtual machine. (e.g if your name is Colin Clancy the name of your linux machine should be ColinClancy). Create a user for your Linux machine. It should be the same as your first name. (e.g if your name is Colin Clancy the name of your user should be Colin.)

Next create a directory in your home directory. The name of your directory should be of the format YYYY-MM-DD, where YYYY is the year of your birth, MM is the numeric month of your birth and DD is the date of your birthday, e.g. 1994-09-21.

Write a script called 'BirthdayCheck' that will append the current date and time to a file called 'birthday.log' that is stored in your birthday directory. Also include in the script a comment containing your name and date of birth. Store the 'BirthdayCheck' script in your home directory.

In your report on this task you should describe in detail the steps taken to complete the task. As well as the installation process, describe the VMplayer software and the types of files that are used to represent the virtual machine. Use screenshots.

Task 2: Windows File Sharing

Create two file shares on a Windows XP or Windows 2003 Server operating system. You can use the Windows 2003 Server or Windows XP Virtual Machine available in the IT laboratories. Map the shared folders to any spare drive letters on your PC. The name of the first share should be the name of the month you were born (e.g. September). The first share should use simple file sharing. Show that you can read and write files to the shared folder from another machine on the network.

The name of the second share should be the first 8 characters of your first and last name concatenated without spaces. (e.g. if your name is Colin Clancy the name of your windows share should be ColinCla.) For the second shared folder should use advanced file sharing. Create a user for your Windows machine. It should be the same as the first 8 letters of your

first name. (e.g if your name is Colin Clancy the name of your user should be Colin.) Allow only this specific user to read and write from this folder. Show that only the specified user can read and write files to the shared folder from another machine on the network.

In your report on this task you should describe in detail the steps taken to complete the task. Describe two methods for viewing windows file shares on a network. Use screenshots.

Task 3: Capture and Analyse Network Traffic

Install the Apache web server on the Ubuntu Linux operating system installed in task 1. Create a basic web page. The web page should contain a heading that is your first and last name. Also include your birthday on the web page. Install the WireShark traffic capture utility. Capture the network traffic as you access the web page from your host machine (Remember the name of your host machine should be your first and last name. This should appear in captured traffic.).

In your report on this task you should describe in detail the steps taken to complete the task. Use screenshots. You should also identify and discuss traffic from the following network protocols:

- Address Resolution Protocol (ARP)
- Domain Name Service (DNS)
- Hypertext Transport Protocol (HTTP)

Task 4: Simulate Network Subnets

Use Packet Tracer to simulate the following subnet.

Your ISP has allocated the following address to you 210.55.116.0/24. You have three routers available to you all connected together in a line. The first router is at your remote warehouse and is also connected to a subnet of 12 PCs and one printer. The second router is at your main office and is connected to your sales office subnet with 25 PCs and two printers. The third router is connected to your server subnet which contains 4 server PCs. To keep things simple, each of the subnets must reserve the same number of IP addresses. (Don't forget the subnets that link your main subnets together.) You only have to model two PCs for each network in the simulation. Addresses for each of the PCs should be for the first IP address and the last IP address in the subnet.

In addition you must create scenarios to show the following:

1. ICMP ping packets being sent from the warehouse subnet and sales subnet to the server subnet.
2. A broadcast packet from one PC that does not leave its originating subnet.

In your report on this task you should describe in detail the steps taken to plan your subnetted network. List the network address, broadcast address and range of host IP addresses for each subnet. Show the routing table for each router.

What to Submit

The following items should be burned into a DVD-ROM. All items must fit onto a single DVD-ROM.

- Task 1: A written report in MS Word or PDF format (strictly no more than 1000 words), A folder containing the installed Linux Virtual Machine.
- Task 2: A written report in MS Word or PDF format (strictly no more than 1000 words)

- Task 3: A written report in MS Word or PDF format (strictly no more than 1500 words), A WireShark capture file. (This file may be located in the installed Linux Virtual Machine. You will also need to include your custom web pages in the Linux VM.)
- Task 4: A written report in MS Word or PDF format (strictly no more than 1000 words), A packet tracer file
- A statement of completion for the entire assignment

Note: Please check that you have burned your data onto the DVD-ROM correctly. Tutors will give **zero** marks if they cannot access the data on your DVD-ROM.

How to Submit

Assignments must be submitted physically via QUT Assignment Minder (http://www.am.qut.edu.au/).