P09: Networking with Application Layer I (Telnet, FTP, HTTP, Email)

Q1: Understand the Basics of Application Layer Protocols

An application layer is an abstraction layer that specifies the shared communications protocols and interface methods used by hosts in a communications network. The application layer abstraction is used in both of the standard models of computer networking: The Internet Protocol Suite (TCP/IP) and the OSI model. Although both models use the same term for their respective highest-level layer, the detailed definitions and purposes are different.

Telnet

Telnet stands for the TELecomunications NETwork. It helps in terminal emulation. It allows Telnet client to access the resources of the Telnet server. It is used for managing the files on the internet. It is used for initial set up of devices like switches. The telnet command is a command that uses the Telnet protocol to communicate with a remote device or system. Port number of telnet is 23.

FTP

FTP stands for file transfer protocol. It is the protocol that actually lets us transfer files.It can facilitate this between any two machines using it. But FTP is not just a protocol but it is also a program.FTP promotes sharing of files via remote computers with reliable and efficient data transfer. Port number for FTP is 20 for data and 21 for control.

TFTP

The Trivial File Transfer Protocol (TFTP) is the stripped-down, stock version of FTP, but it's the protocol of choice if you know exactly what you want and where to find it. It's a technology for transferring files between network devices and is a simplified version of FTP

HTTP

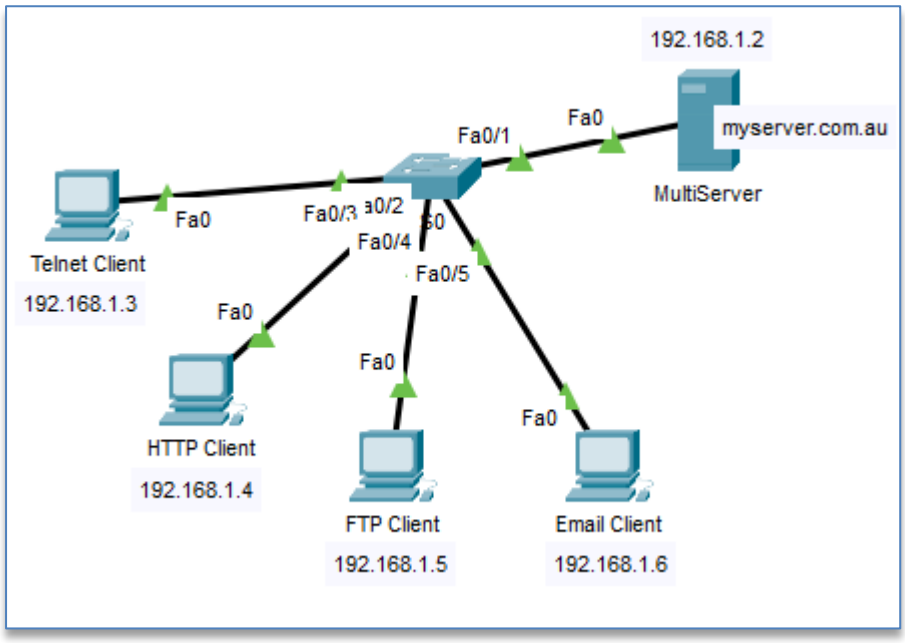
The Hypertext Transfer Protocol (HTTP) is an application protocol for distributed, collaborative, hypermedia information systems. HTTP is the foundation of data communication for the World Wide Web, where hypertext documents include hyperlinks to other resources that the user can easily access, for example by a mouse click or by tapping the screen in a web browser.

SMTP

It stands for Simple Mail Transfer Protocol. It is a part of the TCP/IP protocol. Using a process called "store and forward," SMTP moves your email on and across networks. It works closely with something called the Mail Transfer Agent (MTA) to send your communication to the right computer and email inbox. Port number for SMTP is 25.

Q2: Configuring a MultiServer Environment for Telnet, FTP, HTTP, Email

- Open **PTLab 09.2.pka** and implement the network shown below:



Q3: Try me! Questions

1. Register another email account for the user (euser2) at MultiServer and connect another **Email Client (PC2-Email)**.
    a. Configure euser2@myserver.com.au account on the newly connected PC (**PC2-Email**).
    b. Send an email from euser@myserver.com.au to euser2@myserver.com.au.
    c. Check whether **PC2-Email** has received the email above.
    d. Reply to the email received above and check whether the reply is received by PC (**Email Client**)

Summary

1. Understand the Basics of Application Layer Protocols
2. Configuring a MultiServer Environment for Telnet, FTP, HTTP, Email
3. **Try me! Questions**