LAN Setup Laboratory

V1.1 - Semester 2 2006

Date:_____

Student Name: _____ Id: _____
(**Family Name** , Given Name)

Tutorial Day/Time/Room/Campus_____

Tutor: _____

Overview

This is a team Laboratory Exercise.

This Lab consists of six (6) sections A to F.

Please form teams of 4 members.

Your tutor will walk through this document before you start the Lab.

LAN Setup Kit

The LAN Setup Kit should contain the following items:

One Hub
A copy of the LAN Setup Laboratory Screen Shots document.

Sections Overview

Section A - Use an IP Addressing Scheme for the LAN

Each team is required to use an IP Addressing Scheme for the LAN that they will be setting up, based on a given **Network Address** given..

Section B - Setting Up an IP Network - Using a Hub

Set up an IP network by connecting **four** PC Workstations to the **Hub** using **straight-through** cables (EIA/TIA 568A to 568A).

Section C - Setting up a Microsoft LAN Workgroup

Set up a Microsoft LAN Workgroup and share a file directory on one of the PCs with the other PCs in the network.

Section D – TCP/IP Suite Utilities

Restore to each PC to its initial settings PC - IP address, Computer Name and Workgroup and can access the Monash Home Web Page.

Use TCP/IP Suite Utilities

Section E - Lab Completion Check

Your tutor must check you have completed the Lab.

Section F - Clean Up

Before you leave you MUST clean up any mess made.

Section A - An IP Addressing Scheme for the LAN

In Section A, you are required to use an IP Addressing Scheme based on the given Network Address. You will assign IP addresses to the PCs to create a small Ethernet IP Network, similar to a network you may find in a SOHO environment or Home LAN.

1. Use the following IP Network Address **165.45.0.0** with **24** bits in the subnet mask
This is a Class B Network.

2. The subnet mask for your network is

255.255.255.0	11111111.11111111.11111111.00000000
(Dotted decimal)	(Binary - underline Network, Subnet, Host bits)

3. Subnet (sub-network) 5 in your Network is:

165.45.5.0	10100101.00101101.00000101.00000000
(Dotted decimal)	(Binary - underline Network, Subnet, Host bits)

4. The IP address of the Host 6 in Subnet 5 is:

165.45. 5.6	10100101.00101101.00000101.00000110
(Dotted decimal)	(Binary - underline Network, Subnet, Host bits)

5. The IP address of the Last Usable Host in Subnet 5 is:

165.45.5.254	10100101.00101101.000000101.11111110
(Dotted decimal)	(Binary)

6. The Broadcast Address for Subnet 5:

165.45.5.255	10100101.00101101.00000101.11111111
(Dotted decimal)	(Binary)

Section B - Setting Up an IP Network - Using a Hub

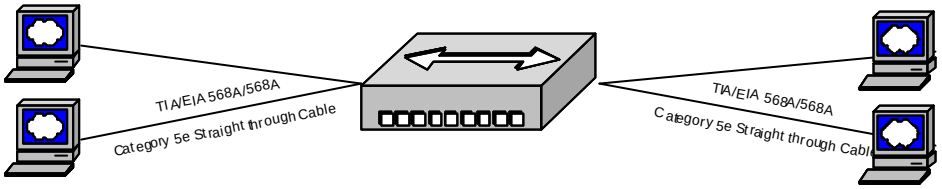
In Section B, set up an Ethernet IP network topology to connect four PC Workstations to a Hub using straight-through cables.

1. Refer to the "LAN Setup Laboratory Screen Shots" document.

2. Record **current** IP settings on your PCs, as they must be restored in **Section E**, it should be "Obtain an IP Address automatically"

Use **ipconfig /all** in DOS Command Window to see the address details.

3. Setting up a Static IP Address



Using the IP Addressing Scheme for **Subnet 5**, each PC is given a static IP address, and Subnet Mask.

4. Set up NEW static IP addresses for the PCs in Subnet 5 below:

PC 1 Details (IP address of Host 3)

IP address: _____ Subnet Mask: _____

MAC address: _____

PC 2 Details (Host 4)

IP address: _____ Subnet Mask: _____

MAC address: _____

Section B - Setting Up an IP Network - Using a Hub

PC 3 Details (Host 5)

IP address: _____ Subnet Mask: _____

MAC address: _____

PC 4 Details (Host 6)

IP address: _____ Subnet Mask: _____

MAC address: _____

5. Try the following Utilities, with their options, in the DOS Window:

a) ARP - to display the ARP Table which contains the MAC address to IP address mappings recorded by the PC

b) IPCONFIG /ALL - to display the IP address details of the PC

c) PING - to test connections between PCs

d) NET SEND – send messages between PCs

You may need to start the messenger service refer [control panel->administrative tools ->services->messenger]

Section C - Setting up a Microsoft LAN Workgroup

In this section you are required to set up a Microsoft LAN Workgroup and share a file directory on one of the PCs with the other PCs in the network.

1. You should to refer to the 'LAN Setup Laboratory Screen Shots" document.

2. Ensure Microsoft File and Print Services have been installed.

3. Record the current details of the PCs, as they must be restored in **Section E:**

Flow: Settings -> Control Panel -> System Icon -> Network Identification

Your PC Details (Every Workstation is different):

Computer Name(s):_____

Workgroup Name: _____

4. Now Change Identification details to the following:

Workgroup: ABC
Computer Names: ABC-PC1, ABC-PC2, ABC-PC3, ABC-PC4

5. You may have to Reboot the PCs for changes to take effect.

6. Microsoft Disk Drive Sharing .

a) Set up a **new share** on the C Drive of PC 4.

b) Configure PCs 1, 2, 3 so that each PC maps to the shared C Drive on PC 4.

c) Create a Word file, ABCWordFile.doc, on PC 4, then demonstrate that PCs 1, 2 and 3 can simultaneously access the file.

Section D – TCP/IP Suite Utilities

1. To use the TCP/IP Suite Utilities each PC must be returned to its original state such that it can successfully attach to the Monash Home Page.

2. The Computer Names and Workgroup Name must be restored.

3. The IP address settings must be restored.

Set to option "Obtain an IP address automatically"

4. All directory and file shares must be deleted

5. The PC must be able to connect to the Monash Home Page - www.monash.edu.au

7. Try the following TCP/IP Utilities, with their options, in the DOS Window:

a) TRACERT

b) NBTSTAT

c) NETSTAT

d) NSLOOKUP

Section E - Lab Completion Check

STOP - Get the tutor to

1. Check the Laboratory Exercise has been completed
2. Confirm the PCs have been restored to initial settings

Tutor Signature: _____

Section F - Clean Up !!

Before

you leave

you

MUST

clean up

any mess made

and

pack all tools

back

into

the Kit Box.