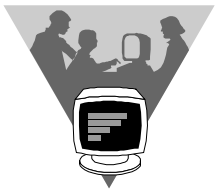
University of Edinburgh



Library Systems Department

TCPIP AND NETWORKING

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Tested by	***Jed Bajai***

1 Document Control

1.1 Amendment History

Version	Date	Description	Initials
1.0	16/11/99	Current and Initial Version (awaiting testing)	KM

1.2 Filename Path

Document can be found at the following path:

\\lib-srv4\images\document\training\train0015.doc

2 Introduction

This document aims to show Systems Staff how to configure the network settings. However, the MHIE settings are to be included at a later date.

3 Pre-Requisites

You require to know the useradmin password.

4 Step by Step Instructions

Networking and TCPIP

What is an IP Address?

Computers communicate with each other on the Internet using a protocol called TCPIP. If you want to connect to another computer, transfer files to or from another computer, or send an e-mail message, you first need to know where the other computer is - you need the computer's "address."

An IP (Internet Protocol) address is an identifier for a particular machine on a particular network; it is part of a scheme to identify computers on the Internet. Every machine has an uniquenumber.

IP addresses are also referred to as IP numbers and Internet addresses.

An IP address consists of four sections separated by periods.

Each section contains a number ranging from 0 to 255.

Example = 129.215.146.52

These four sections represent both the machine itself, or host, and the network that the host is on.

The network portion of the IP address is allocated to Internet Service Providers (ISPs) by the InterNIC, under authority of the Internet Assigned Numbers Authority (IANA).

ISPs then assign the host portion of the IP address to the machines on the networks that they operate.

At the university, we have what's called Class C IP addresses. This means that the first 3 sets of numbers represent the network and the last number represents the machine. See below

129.215.146.52

Red = Host
Pink = Subnet
Blue = Local Machine

The subnet to an area of wiring on the network. For example, LG, GRD, 1st floors of the main library are on the 146 subnet and the 2nd, 3rd, 4th and 5th floors are on the 253 subnet. You can only attach up to 255 machines to each subnet.

IP addresses are meant to be unique and therefore, if two computers are given the same address, they will conflict. This means that when the computer the first computer is switched on, it will reserve the IP address and when the second computer is switched on, it will not be able to use the IP address, causing a conflict. The second computer will be able to connect to the network but will not be able to use any of the following services:

- Netscape
- FTP (Winqvt, Ewan)

Pinging IP Addresses

To check if an IP Address is in use, you can ping the address. To do this, follow the instructions below:

- Login in as install
- Click START and select RUN
- Type Command and click OK
- You now have a DOS box, type: c:>ping 129.215.146.45 (the relevant IP).

If the address is in use, the you will receive a response. If not, you will get the message "Request Timed Out". Ping works by sending a message to the required IP requesting a response.

Warning: Pinging does not confirm for sure if the address is in use because it only works if the computer is switched on.

Database of Ips

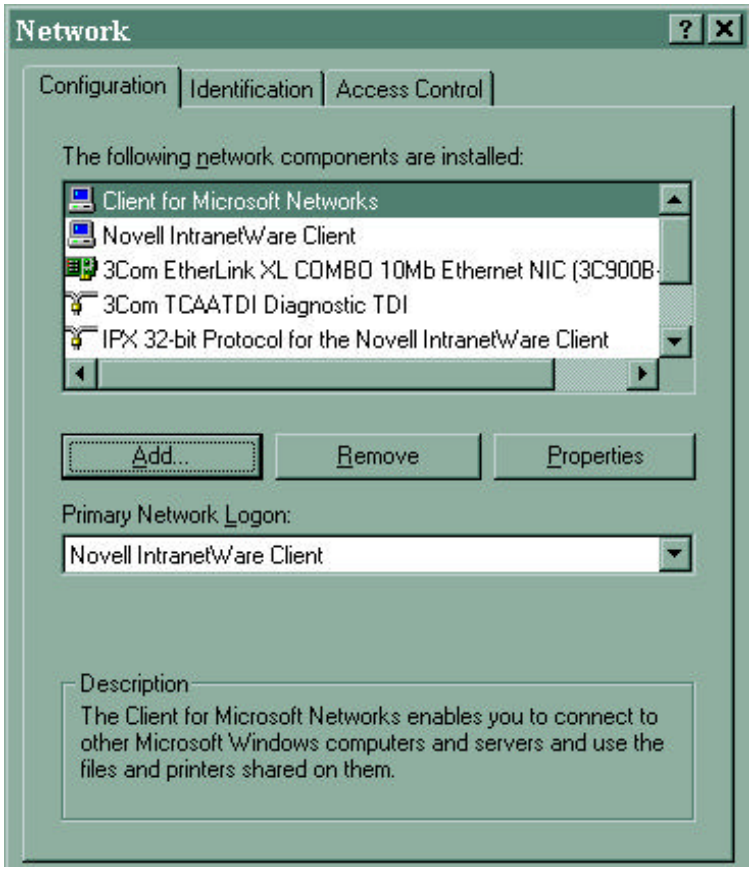
The IP database shows ranges of addresses that are in use. It is extremely important to inform Lisa of a change in IP address so that it is updated.

Network Settings

The network settings should be as follows for library machines. **Note:** This varies for Moray House Machines. To access Network Settings:

- Login in as useradmin
- right-click on the Network Neighbourhood select Properties

You will see the initial network properties display:



Always ensure that the “Client for Microsoft Networks” is installed. This allows the machine to see NT Servers, ie. CD Rom Network.

The only other thing that we are interested in is the TCPIP protocol:

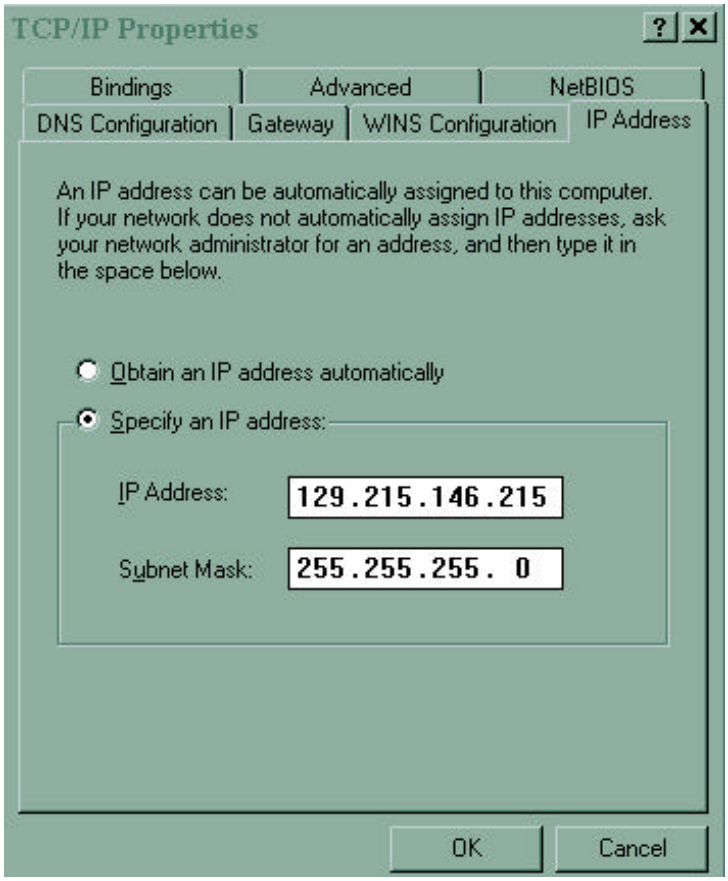
TCP/IP

To modify, the TCPIP settings:

- Highlight TCP/IP
- Click Properties

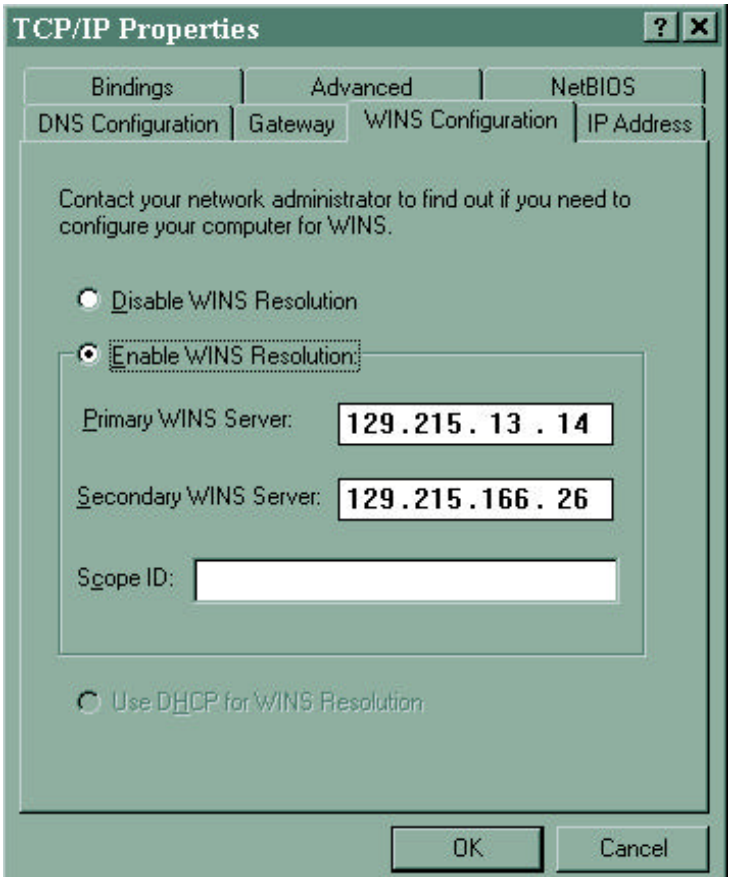
You will see a new display with a set of tabs. The following picture reflect what these settings should be:

IP Address



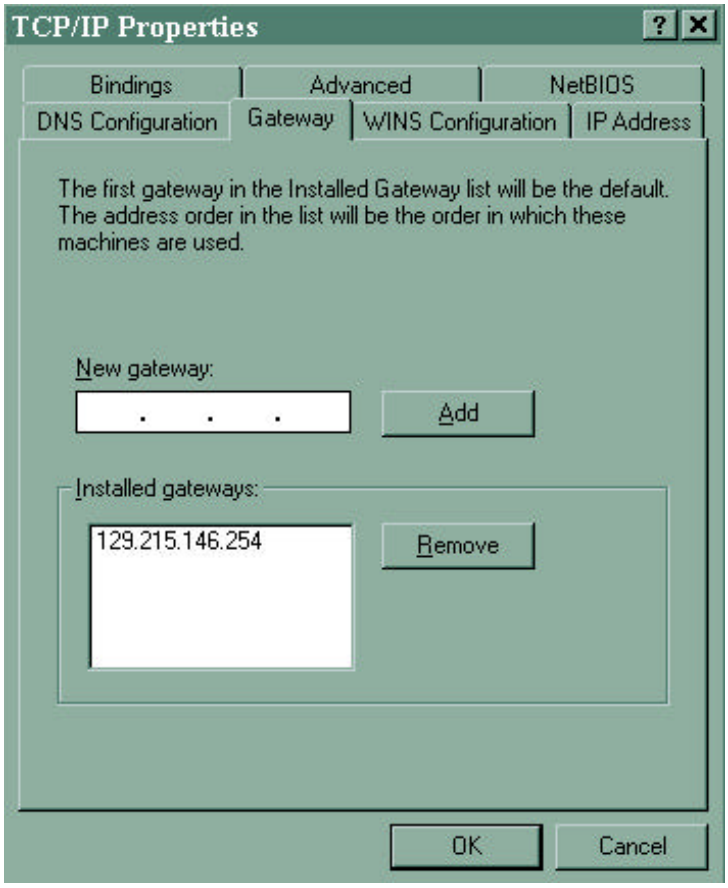
Subnet mask is always 255.255.255.0
IP Address is the required free address

WINs Configuration



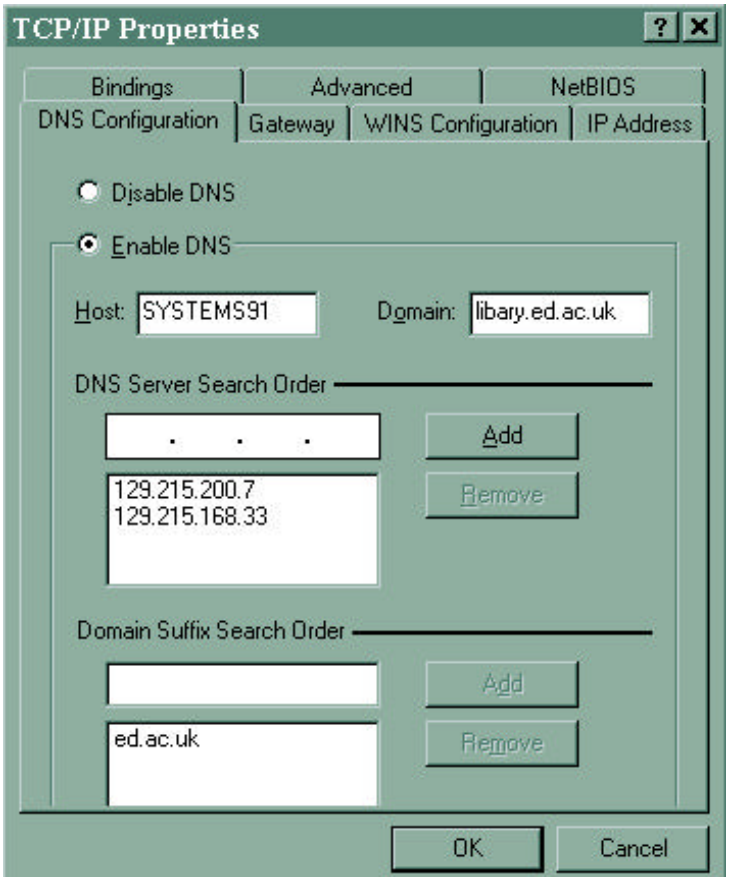
These Primary and Secondary Wins remain the same.

Gateway



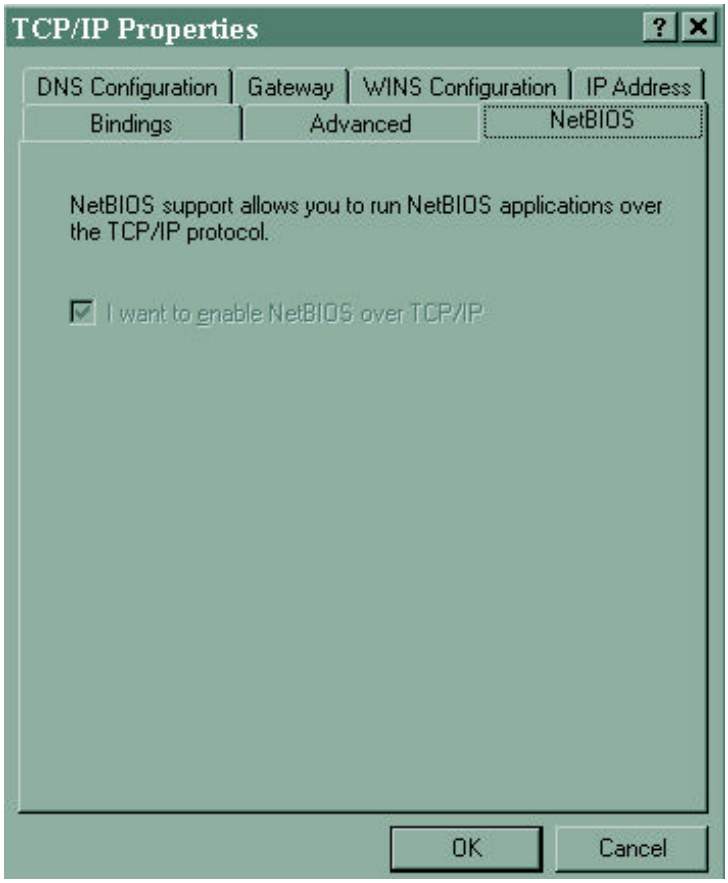
The only change is the subnet (146). This must reflect the area you are in.

DNS Configuration



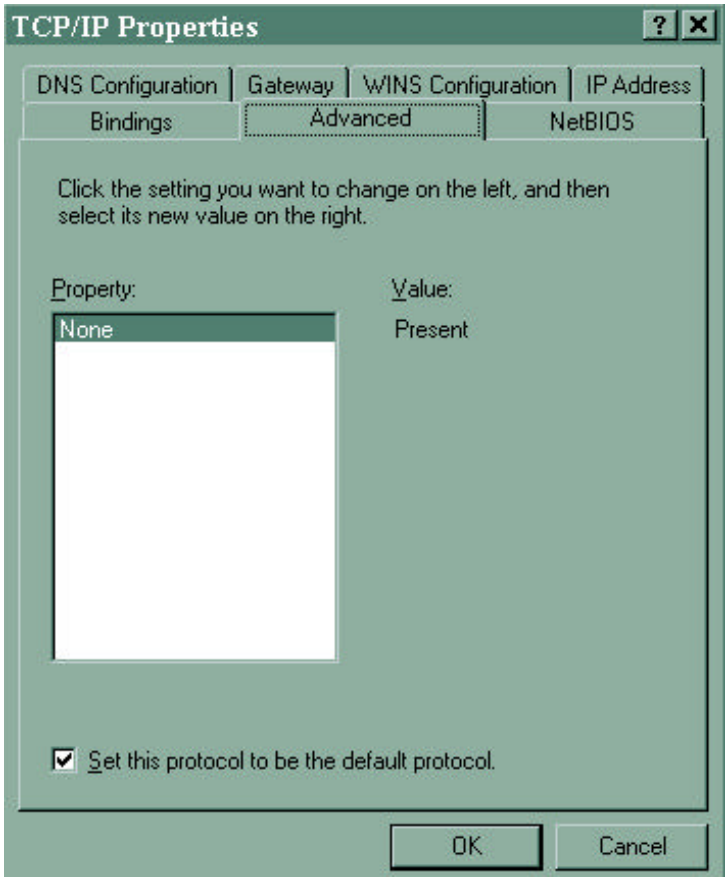
The host is normally the blue label number.
Everything else is always the same.

NetBIOS



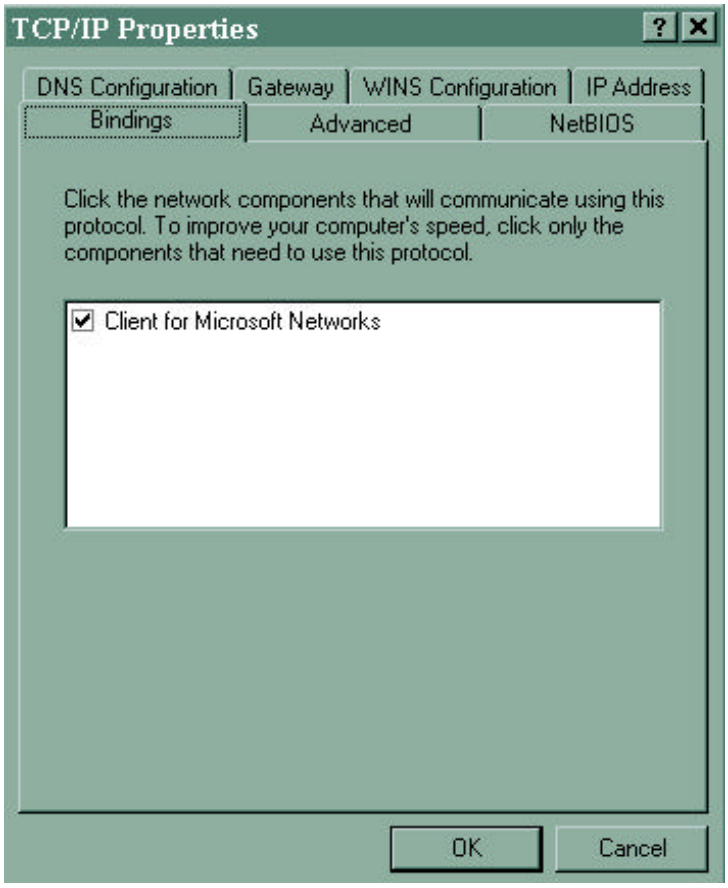
This is always as above.

Advanced



This is always as above.

Bindings



This is always as above.

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