Internetwork Communication via Router

Objective:

When any two or more users (belongs to different networks) want to communicate with each other, then their data/packets only can be delievered to the particular destination via Router. If all those users belong to the same network then they can directly send packets/frames via ethernet or wifi (Though in case of wifi they have to send the frames to the actual mac address of their wifi NIC / wlan interface -> that can be found in linux by “ifconfig”). But for different network they have to send those frames to the router and it is the responcibiity of router to route the packet to the particular destination mac address . In this project we have implemented internetwork communication as well as within network communication.

Environment Set-up:

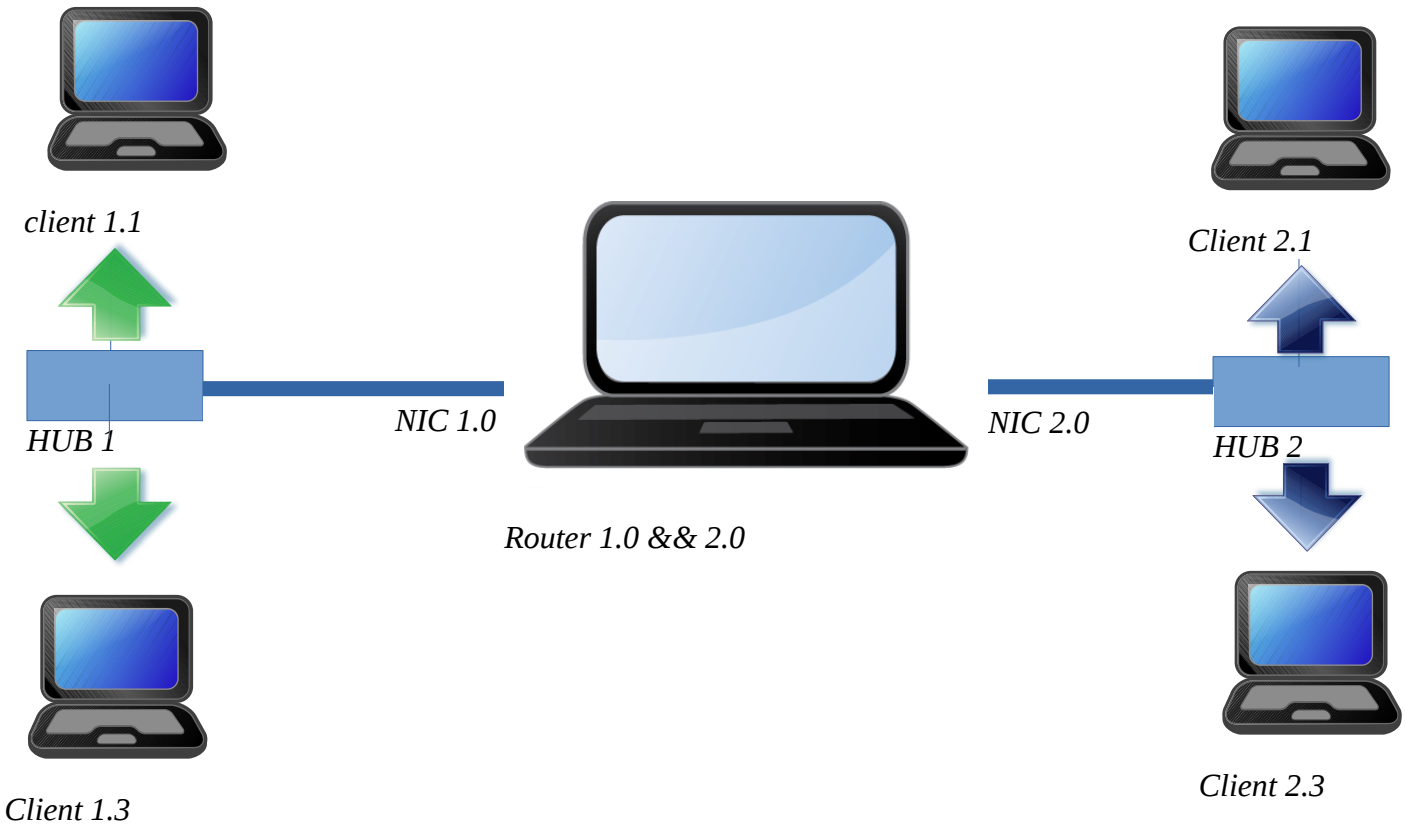
For this assignment first we have to setup the total environment properly ,so that any device can communicate with other (different network or same network) devices. So the **required equipments are:**

1. One laptop having two NIC (both ethernet interface) -> In our case we have used an “**USB to LAN Clip**” converter for making two interface. So those interfaces are **PCI ethernet and USB ethernet.**

2. **Four laptops** -> (We have two networks and each network will have two devivces).

3. **Two HUBs** -> Each network has a hub and all devices within that network communicates through the hub and one interface of the router is connected with the hub so that all those devices can send their data to the router if they want to communicate with diferent networks.

4. **Lan Cables** -> Three pairs of lan cable is used to make these above mentoned interface with the hub.



Software Setup: In the software part we have used the followings (**Host machine- LINUX 16.04 LTS**):

1. Oracle Virtual Box (Virtualization platform Download Link)

2. MS-DOS (Operating System)

3. Turbo C++ compiler (For compiling C programmes in DOS)

4. Packet driver (In our case we have used Pcnet Fast-III as network adapter and its corresponding packet driver is “pcntpk.com” Download Link)

5. MTCP software package (It includes FTP,DHCP, all those network application. Among them FTP can be used to transfer files between host machine and Vms).