LAB 05:

Introduction to Router and establishing a console session Using HyperTerminal

Introduction:

What is Router?

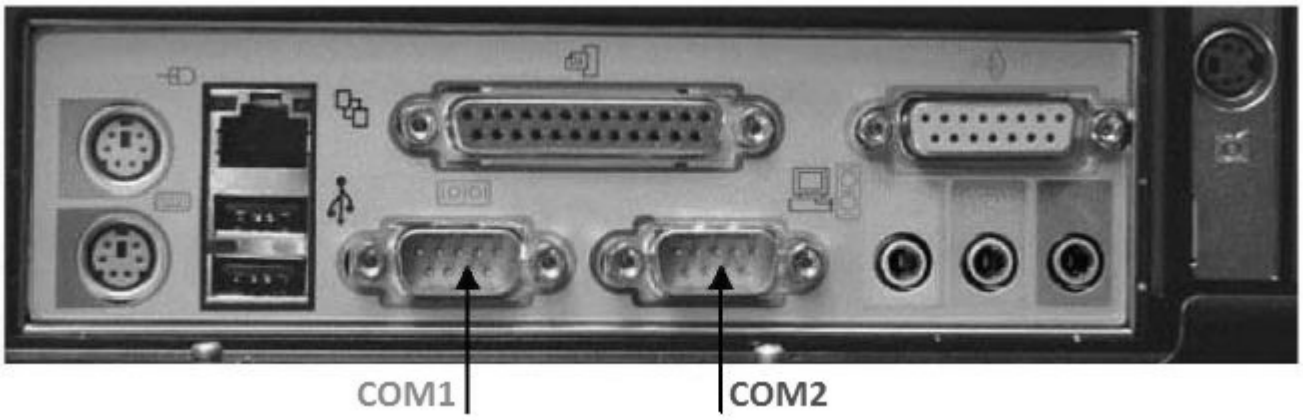
Router is a device that forwards data packets along networks. A router is connected to at least two networks, commonly two LANs or WANs or a LAN and its ISP's network. Routers are located at gateways, the places where two or more networks connect.

What is Routing?

Routing refers to the process of choosing a path over which to send packets.

Computer panel:

You can see the COM ports (DB-9 connector) on the back side of CPU.



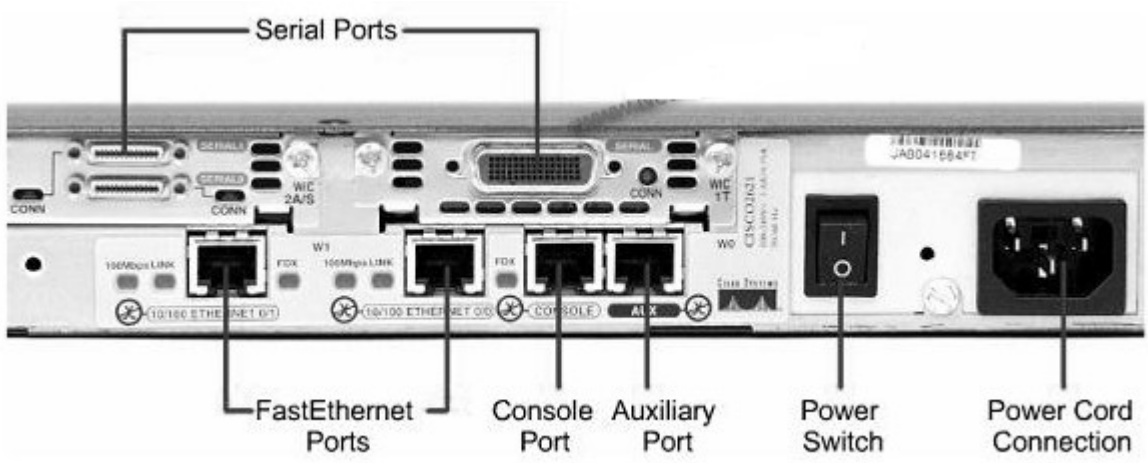
Router Pannel:

Console Port is for direct connection to the router, to be able to configure router.

Serial Port is for WAN connectivity

Ethernet/ Fastethernet Port is for LAN connectivity

Auxiliary Port is for remote connectivity via modem. This port is used to remotely access the router.



Router back panel 1

Roll over cable

The two sides of the Rollover/Console Cable have two different connectors.

1) **DB-9 connector** (9 pin female side of console cable)

2) **RJ-45 connector** (8 pin connector)

Rollover cable (also known as **Cisco console cable** or a **Yost cable**) is a cable that is often used to connect a computer terminal to a Router's console port. The cable normally comes in light blue color to help distinguish it from other types of networking cables.

Procedure:-

STEP 1

Plug DB-9 connector (9 ping female side of console cable) into one of the COM ports of the CPU and plug the RJ-45 connector (8 ping connector) into console port of the Router.

STEP 2

You need to open HYPERTERMINAL Program by clicking on

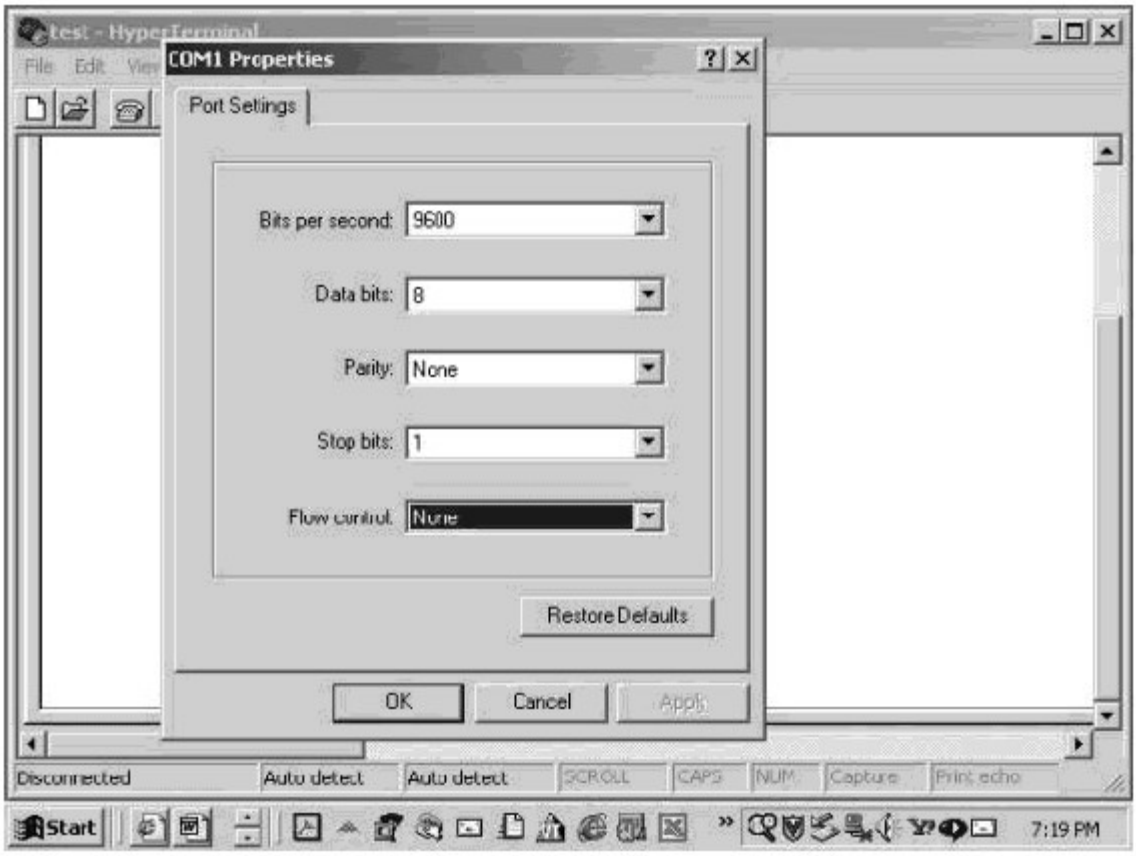
Start –> Programs –> Accessories –> Communications –> HyperTerminal

In “Location Information” windows, input necessary details and click on OK button. You may put dummy information.

In “Connection Description” window, type any name for the connection and click on OK button.

In the “Connect To” window, select appropriate COM port (the COM port number of the PC where you have plugged the Router’s console cable) and Click “OK” to continue.

In the “COM Properties” window, Click on “Restore Defaults” button and then click “OK” to continue.



Press Enter to get access to the Router's CLI.

NOTE: You will not find this Program in Windows 7. So you should either copy the HyperTerminal Program from windows XP **or** use other programs to get access to the Router. Other famous programs are **TeraTerm, Putty, SecureCRT.**

Very Important Router Parts

ROM (Read Only Memory)

This is a form of permanent memory used by the Router to store:

- The "Power-On Self Test" that checks the Router on boot up.
- The "Bootstrap Startup Program" that gets the Router going.
- A very basic form of the Cisco IOS software (to change the ROM you have to remove and replace chips).

Flash Memory

- An Electronically Erasable and Re-Programmable memory chip.
- The "Flash" contains the full Operating System, or "Image". This allows you to upgrade the OS without removing chips.

NVRAM (Non-Volatile RAM)

This stores your Router's "Startup Configuration File". Similar to Flash memory, this retains data even when power is lost.

RAM (Random Access Memory)

This is a regular computer memory chips. These are the working memory of the Router, and provide Caching, Packet Buffering, and hold Routing Tables. The RAM is also where the Running Operating System lives when the Router is on. RAM loses all its data when reset or powered off.

Interfaces

Interfaces - Where the Router meets the Outside World. Basically your Router will have **Serial** interfaces, which are mostly used to connect long-distance as in a WAN (Wide- Area Network)