

LAB 1

Objectives :

- Find your IP Address (Internet protocol Address).
- Discover System Information.
- Setup LAN (Local Area Network).
 - Gather Network Hardware
 - Setup a LAN Network
 - Setup a local DHCP server

Find Your IP

Find your IP:

- cmd → ipconfig
- Network and Sharing Center

**Discover System
Info.**

Discover System Information:

- Control Panel → System

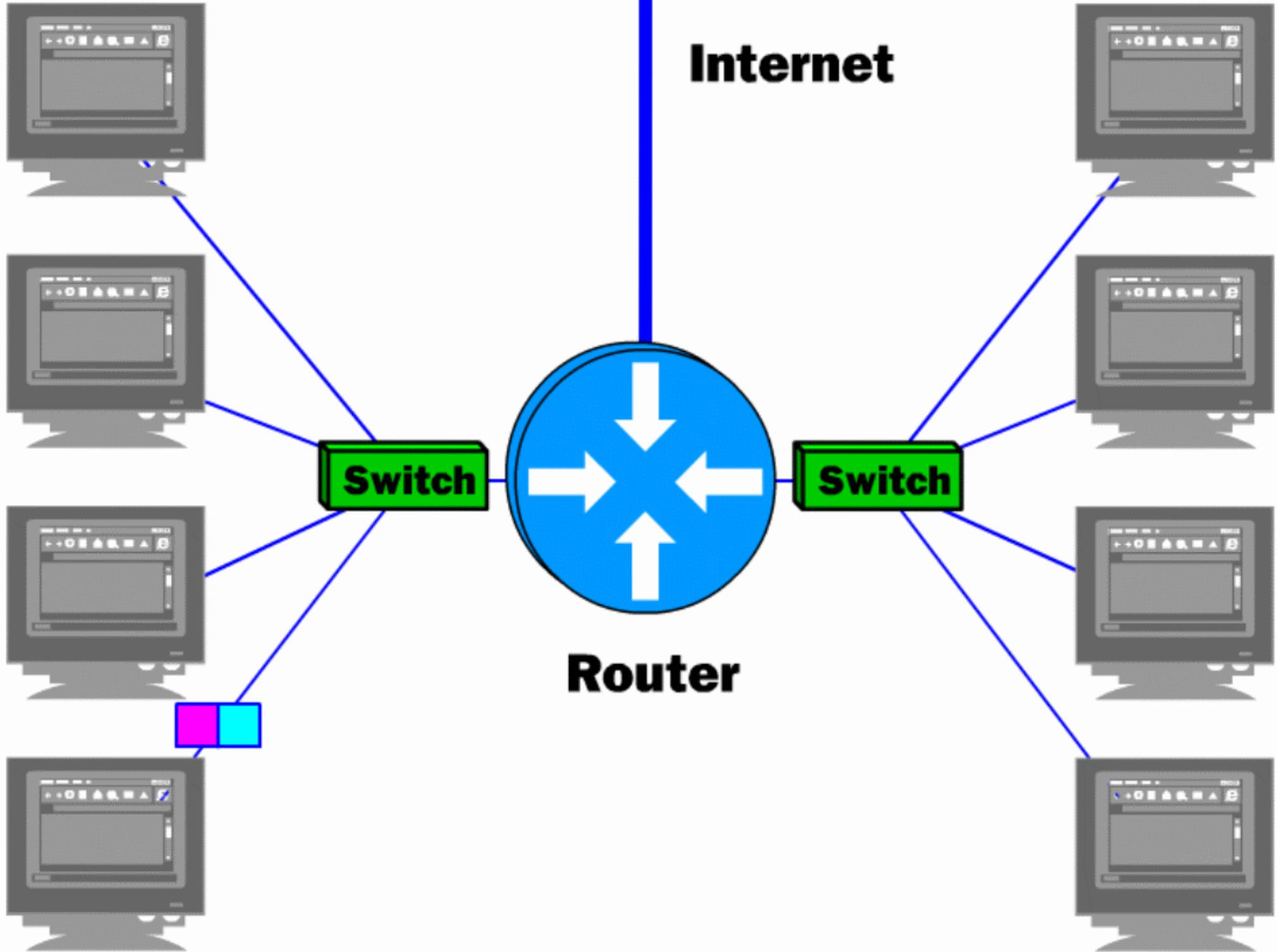
Gather Network Hardware

Internet

Router

Switch

Switch

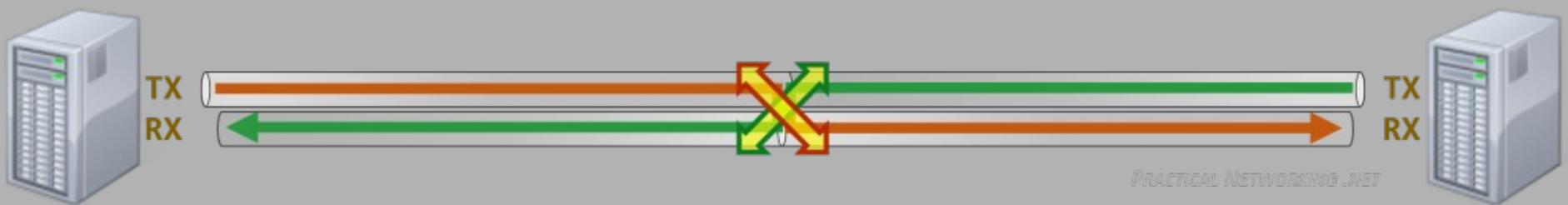


- To setup a network you need :
 1. Router
 2. Switch
 3. Devices
 4. Connections

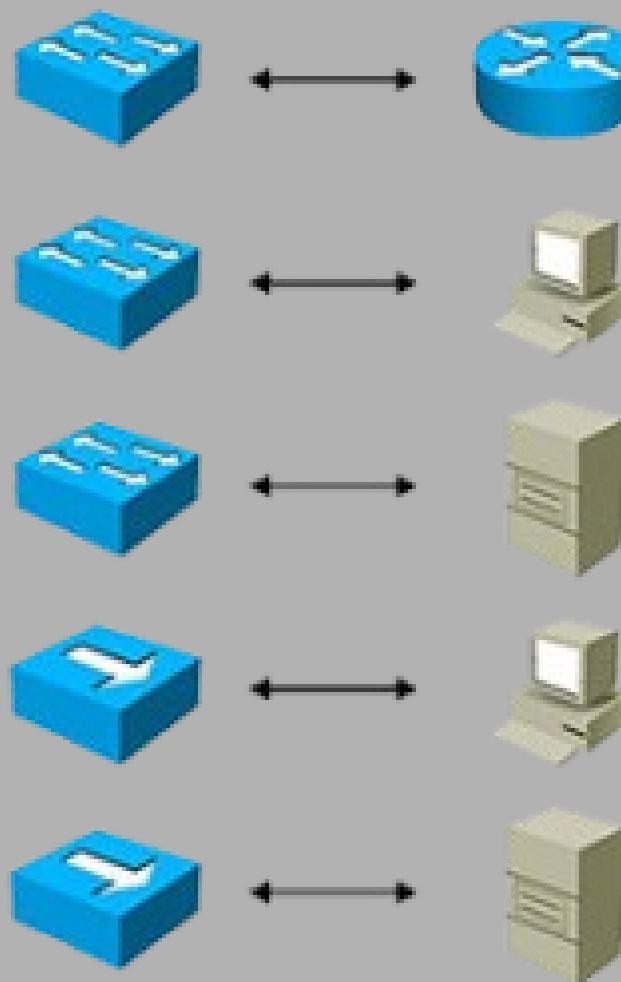
Ethernet Wired Connections

- > Straight-Through Wired Cables :
 - connect a host to client computers, printers and other network client devices to the router or switch
- > Crossover Wired Cables :
 - connect two hosts directly
 - connecting a computer directly to another computer,
 - connecting a switch directly to another switch, or connecting a router to a router
 - TX and RX lines are crossed

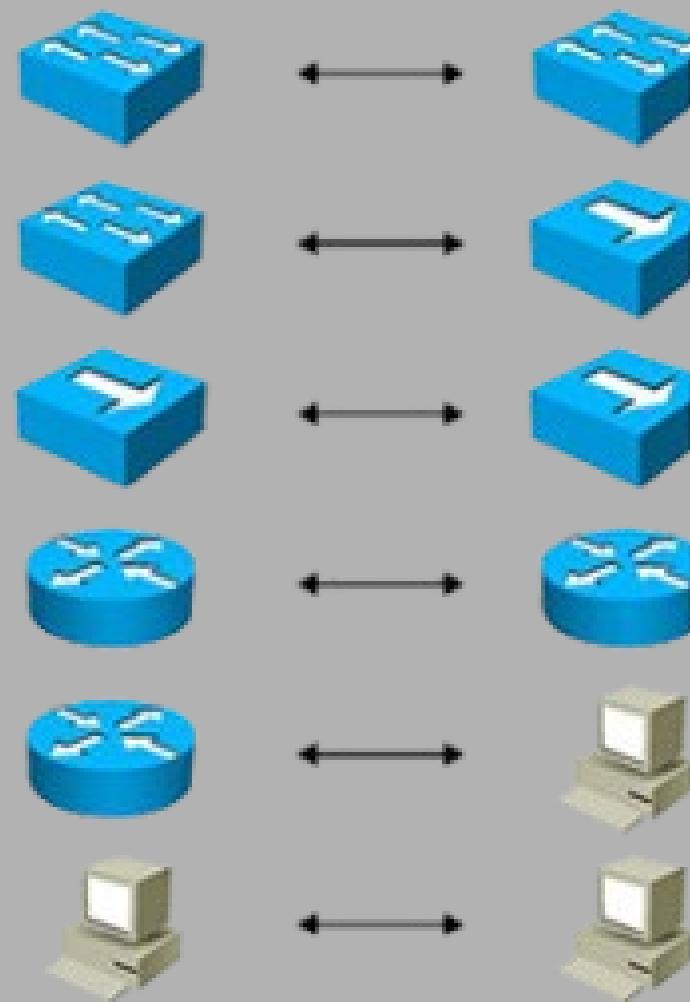
NOTE: Ethernet cables cannot reliably transfer data at lengths larger than 100m



Straight-Through Cable

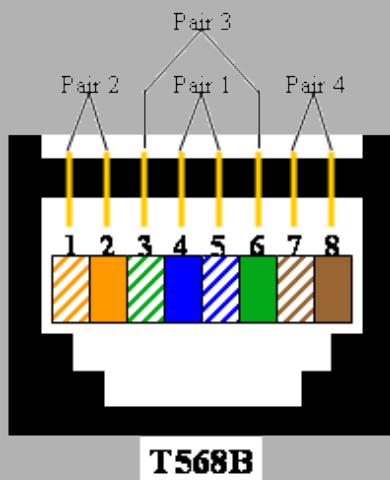


Crossover Cable



RJ-45 Pinouts

Straight Through Cable

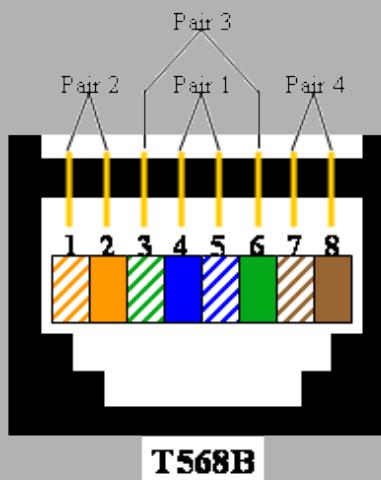


T568B

FLUKES	
1	2
3	4
5	6
7	8

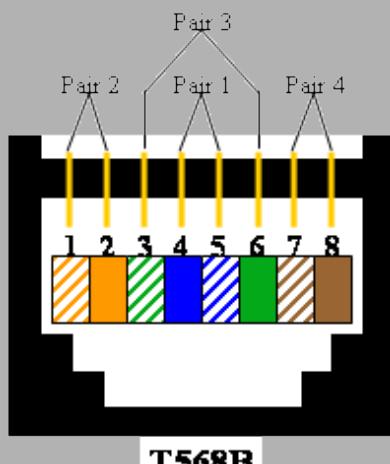
Graphic Map

1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8



T568B

Crossover Cable

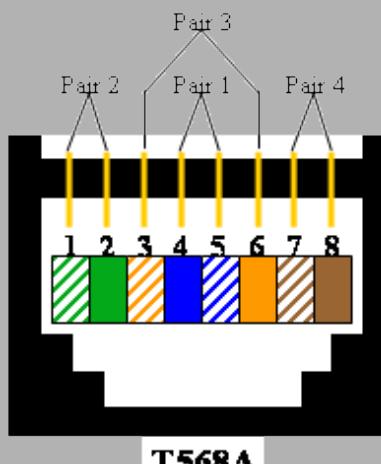


T568B

FLUKES	
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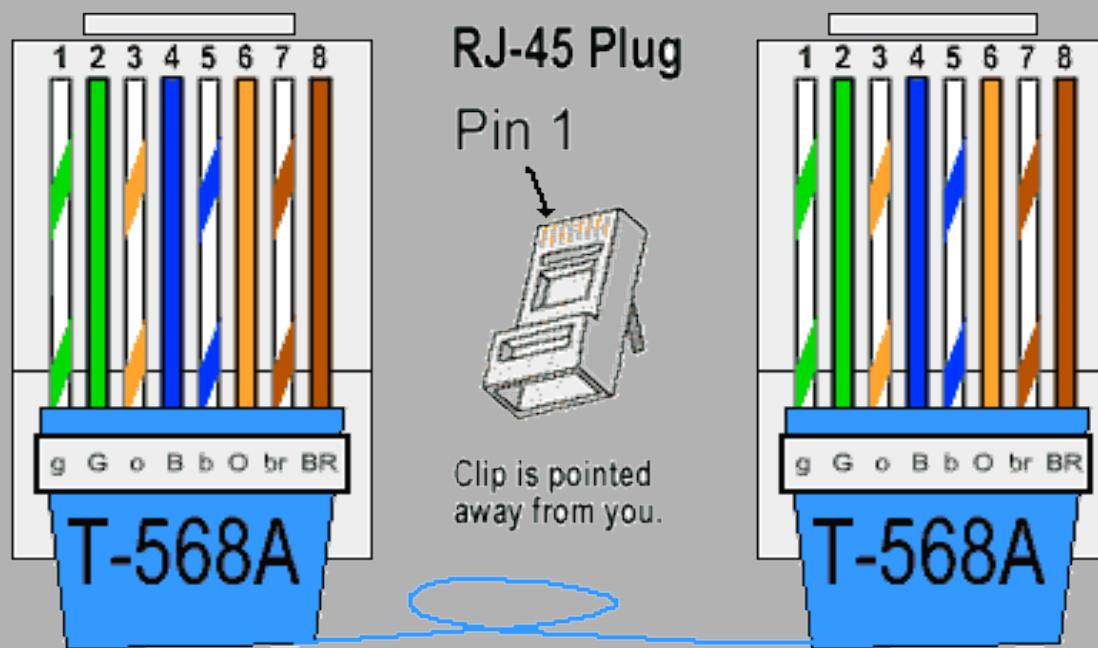
Graphic Map

1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8



T568A

Straight-Through Wiring



Setup LAN Network

Setup LAN Network

1. Make sure that all computers with same Workgroup name

- Control Panel → System and Security → System
- workgroup setting → change setting → Computer Name → change

2. Connect to the Network

- Control Panel → Network and Internet → Network and Sharing Center
- connect to network and change the connection status to set a static IP
(EX: 192.168.10.x) OR use a third Party Utility to assign IP automatically

Setup LAN Network:

3. Change sharing options

- Control Panel → Network and Internet → Network and Sharing Center
→ Advanced sharing setting

4. Share Files and Resources

- right click → Properties → Sharing → Advanced Sharing → share this folder
- right click → Properties → Sharing → Advanced Sharing → Permissions

5. Access Sharing Resources

- Computer → Network

Setup Local DHCP Server

Setup Local DHCP :

- Setting up one computer as a DHCP (Dynamic Host Configuration Protocol) server will allow all of the connected computers to easily obtain IP
- You can create a DHCP server on one of your computers by installing a third-party utility :
<http://tftpd32.jounin.net/>

NEXT LAB :

- Linux Operating system.
- Network Analyzer.
- Wireshark
- Try to install Wireshark on your
NEW Ubuntu :D !

