

Router:

A router is designed to connect multiple networks together.

Internal components:

- **ROM:** Used to store the routers bootstrap details, operating system software.
- **FLASH MEMORY:** Holds the operating system images. The content is retained when router is restarted.
- **RAM:** Used to store routing tables, configuration files, caching and buffering details. Content is lost when router is turned off or restarted.
- **NVRAM:** Stores the routers startup config files. Data is nonvolatile.
- Network interfaces to connect router to network.

External Components:

- **Virtual Terminals:** For accessing routers
- **Network management stations**

Interface

A router may have multiple interfaces for physical layer connections. (Packet transmission in network layer)

Categories:

- **Ethernet:**
 - Ethernet
 - Fastethernet
 - Gigabitethernet
- **Serial:**
 - **HDLC:** HDLC is the default encapsulation method on Cisco routers
 - **PPP:** The most common types of WAN connection. PPP connections are used to connect LANs to service provider WANs.
 - **Frame Relay**

General Format:

- Media type slot#/port#

Example:

- Ethernet 0/0
- Ethernet 0/1

Referencing a Router Interface:

- Interface ethernet 0/0

- Interface fastethernet 0/0 or
- Interface gigabitethernet 0/0
- Interface serial 0/0

Demonstration:

- Router#Show ip interface brief
- Router#show interface ethernet 0/0
- Router#sh int e0/0

Configuring Global Parameters

	Command	Purpose
configure terminal	Example: Router> enable Router# configure terminal	Enters global configuration mode, when using the console port.
hostname name	Example: Router(config)# hostname Router	Specifies the name for the router.
enable secret password	Example: Router(config)# enable secret cr1ny5ho	Specifies an encrypted password to prevent unauthorized access to the router.
no ip domain- lookup	Example: Router(config)# no ip domain-lookup	Disables the router from translating unfamiliar words (typos) into IP addresses.

	Command	Purpose
description	Example: Router> enable Router# show ip int brief	display brief IP configuration information, including the state, IP address, and description of the physical and link layer protocols, for the specified Layer 3 interface or all Layer 3 interfaces
hostname name	Example: Router(config)# hostname Router	Specifies the name for the router.
enable secret password	Example: Router(config)# enable secret cr1ny5ho	Specifies an encrypted password to prevent unauthorized access to the router.
no ip domain-lookup	Example: Router(config)# no ip domain-lookup	Disables the router from translating unfamiliar words (typos) into IP addresses.

```

Router>enable
Router#config terminal
Router(config)#hostname labf01
labf01(config)# enable secret saad9090

labf01(config)#no ip domain lookup
labf01(config)#interface f0/0
labf01(config-if)#ip address 192.186.168.4 255.255.255.0
labf01#exit

labf01>enable
Password:
labf01#show ip int brief
labf01#show int fastethernet0/0

```