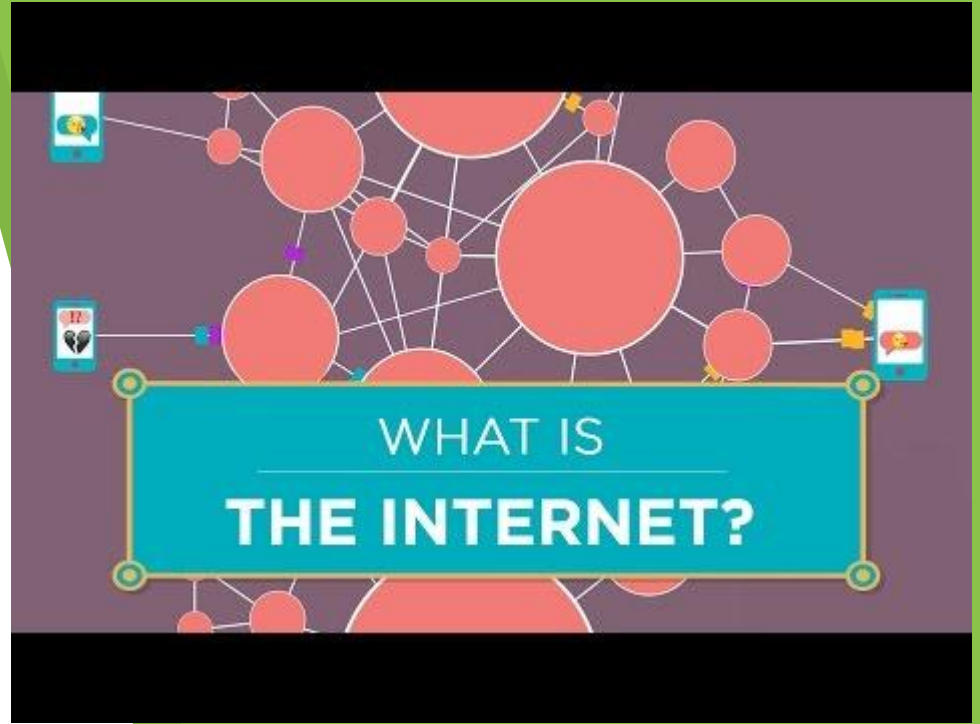




INTRO TO **CISCO** NETWORKING

What is the
INTERNET?!

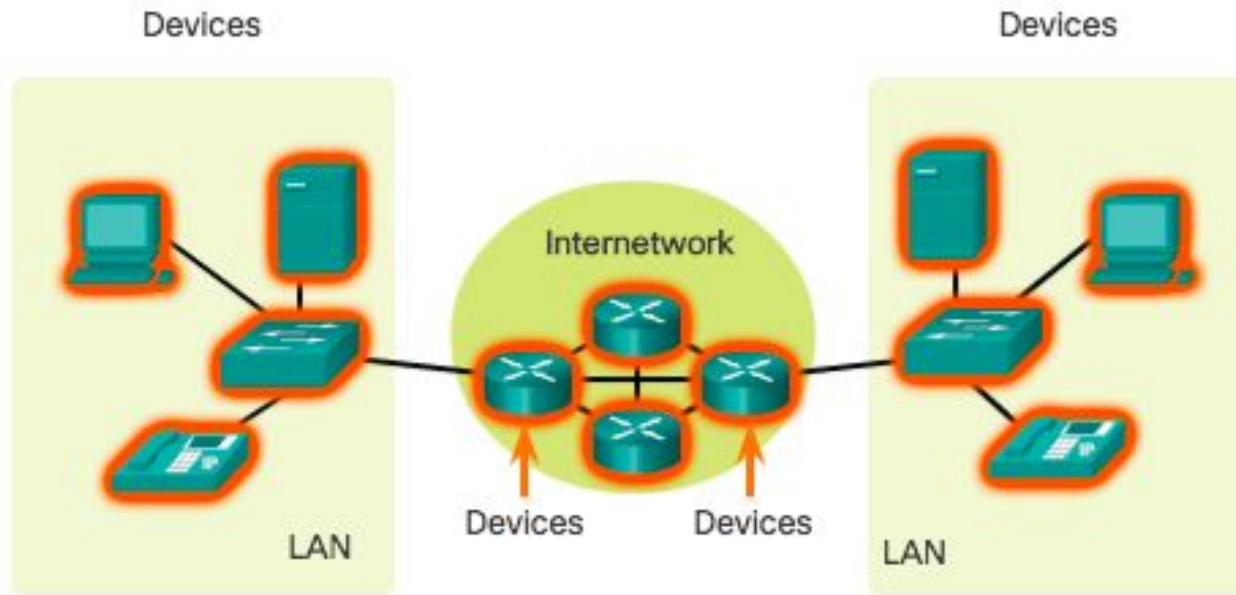


THE INTERNET IS...

- System of interconnected computer networks
- It is a *network of networks* that consists of private, public, academic, business, and government networks
- Use services/protocols to share information
- Different types of networks
 - Small home networks
 - Small office networks
 - Medium networks
 - Worldwide networks



Intro to Networks



Devices

Media

Services



BASIC VOCABULARY

End Devices



Intermediary Devices



Network Media



Wireless Media



LAN Media



WAN Media



BASIC VOCABULARY

INTERFACE a physical port on a device

ROUTER a device that determines the next network point a packet should be forwarded to

SWITCH a device that channels incoming data to a specific output port that will take the data toward its destination

NETWORK DEVICE a component used to connect other devices together

END DEVICE a component that is the initial sender or final receiver of data

MODE a level of access for config/assessment purposes

IP ADDRESS a unique string of numbers separated by periods that identifies each device on the network

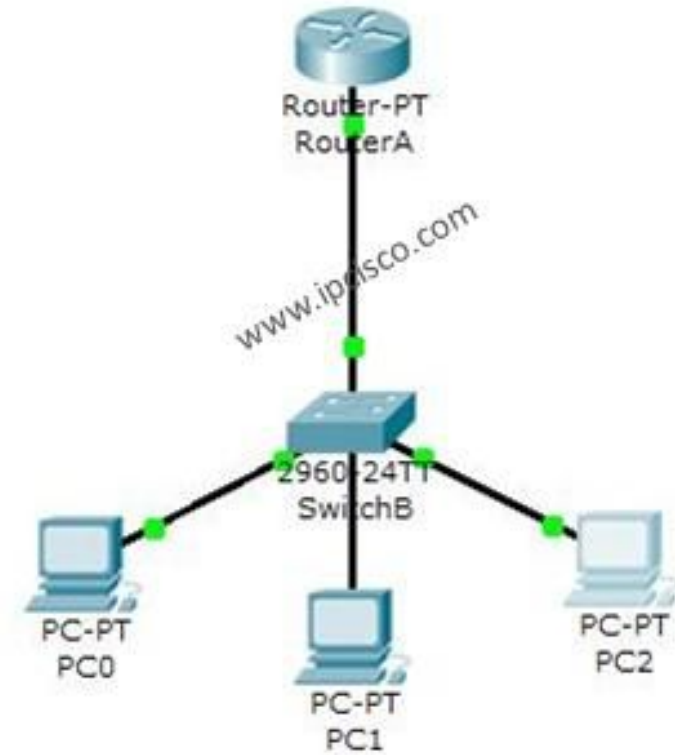
SUBNET MASK a string of numbers used to determine which subnet an IP address belongs to



BASIC VOCABULARY

What is a router?

- Networking device that forwards data packets between networks
- Perform traffic directing functions
 - Reads a data packet's destination, then finds the best way to send packet depending on the routing protocols and table
- First line of defense between LAN and Internet
- Operates at Level 3 of OSI Model





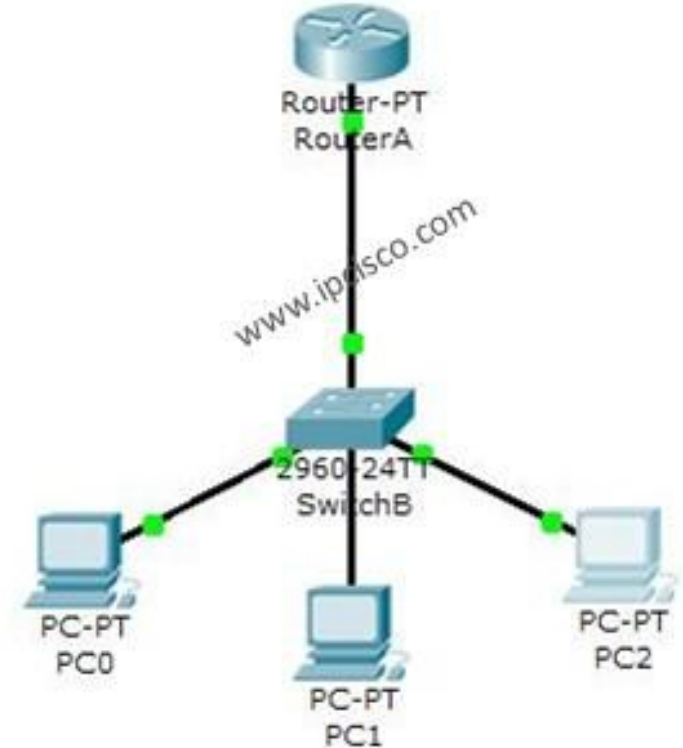
BASIC VOCABULARY

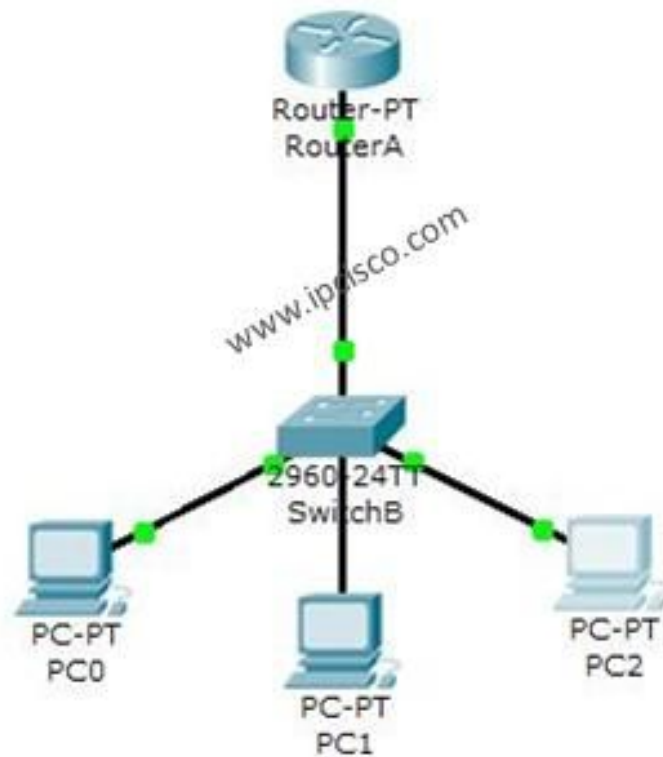
What is a switch?

- Networking device that connects devices together on a network
- Uses packet switching methods
- Operates at Layer 2 of OSI Model (unless it's a multilayer switch)

What is a hub?

- OLD and OBSOLETE
- Used in place of a switch in the old days
- When it receives a packet, just sends it to everyone





KEY SYMBOLS



Router



LAN Switch



LAN Hub



Server



Desktop Computer



Laptop



Firewall



IP Phone



Wireless Access Point



Wireless Router



WAN Media



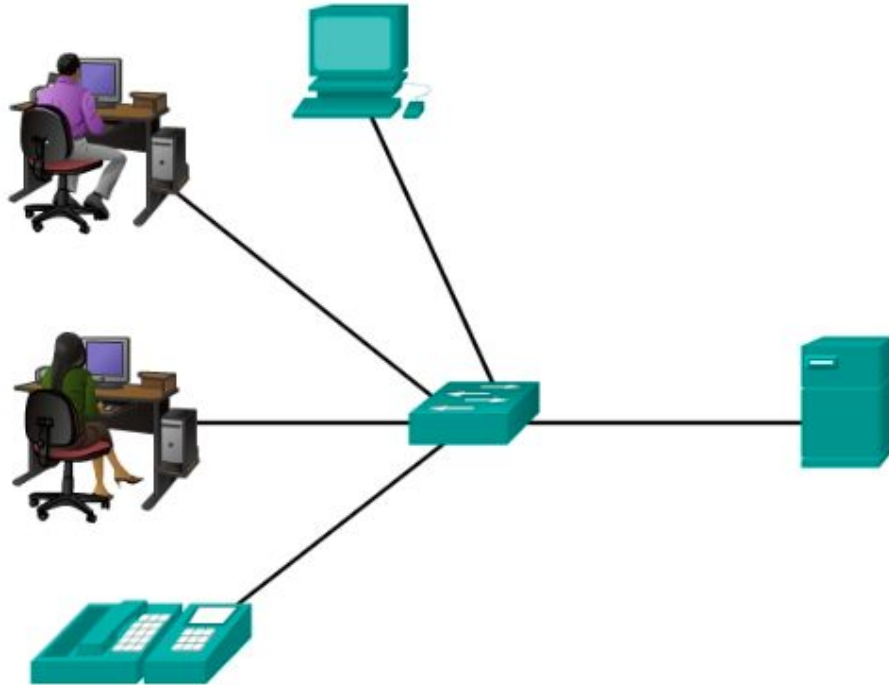
LAN Media



Wireless Media

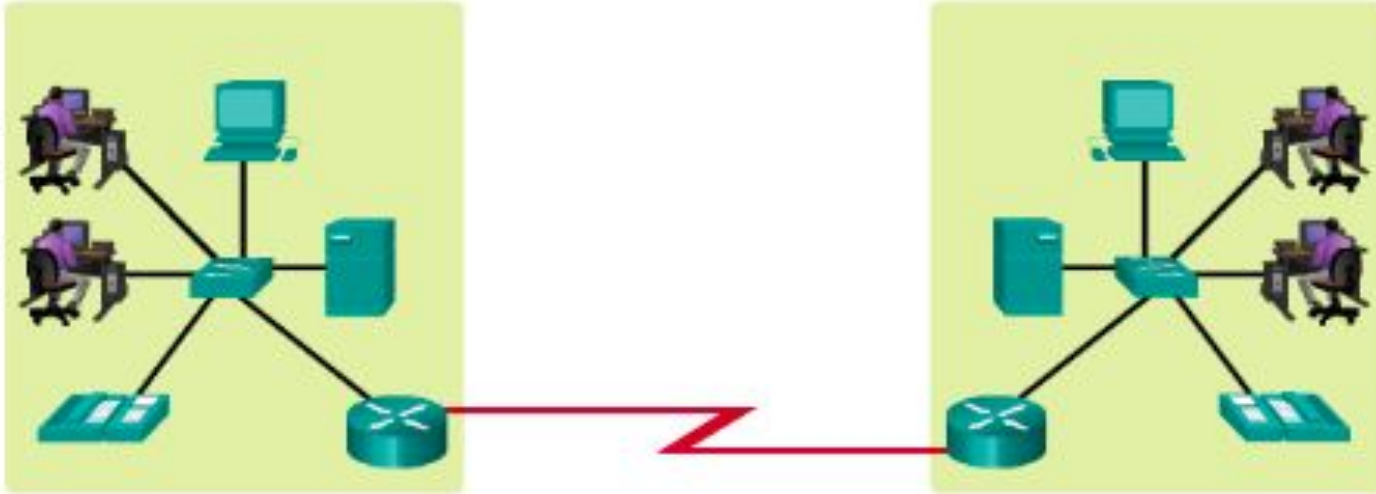
TYPES OF NETWORKS

Local Area Network (LAN)



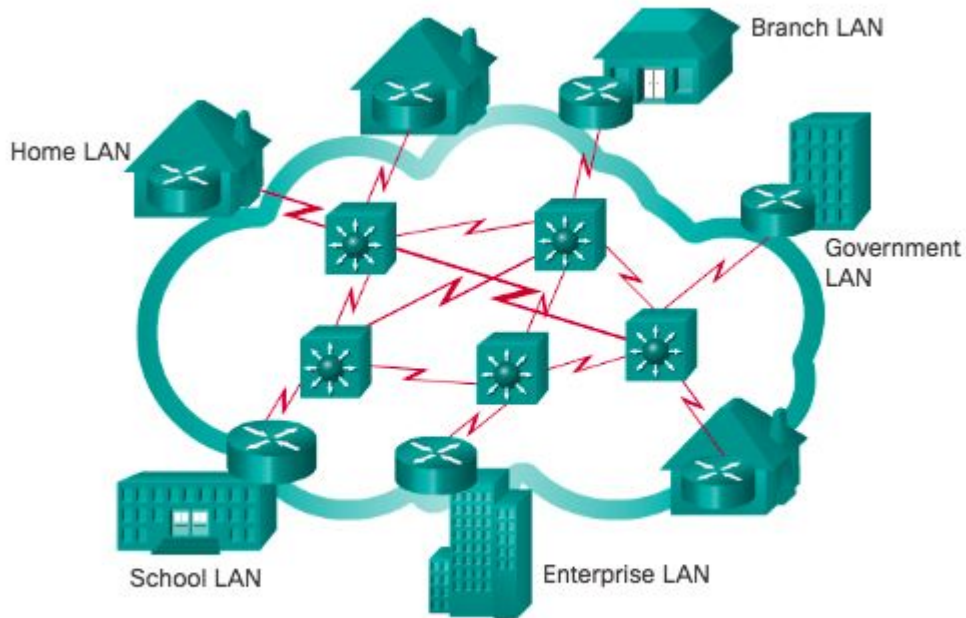
TYPES OF NETWORKS

Wide Area Network (WAN)



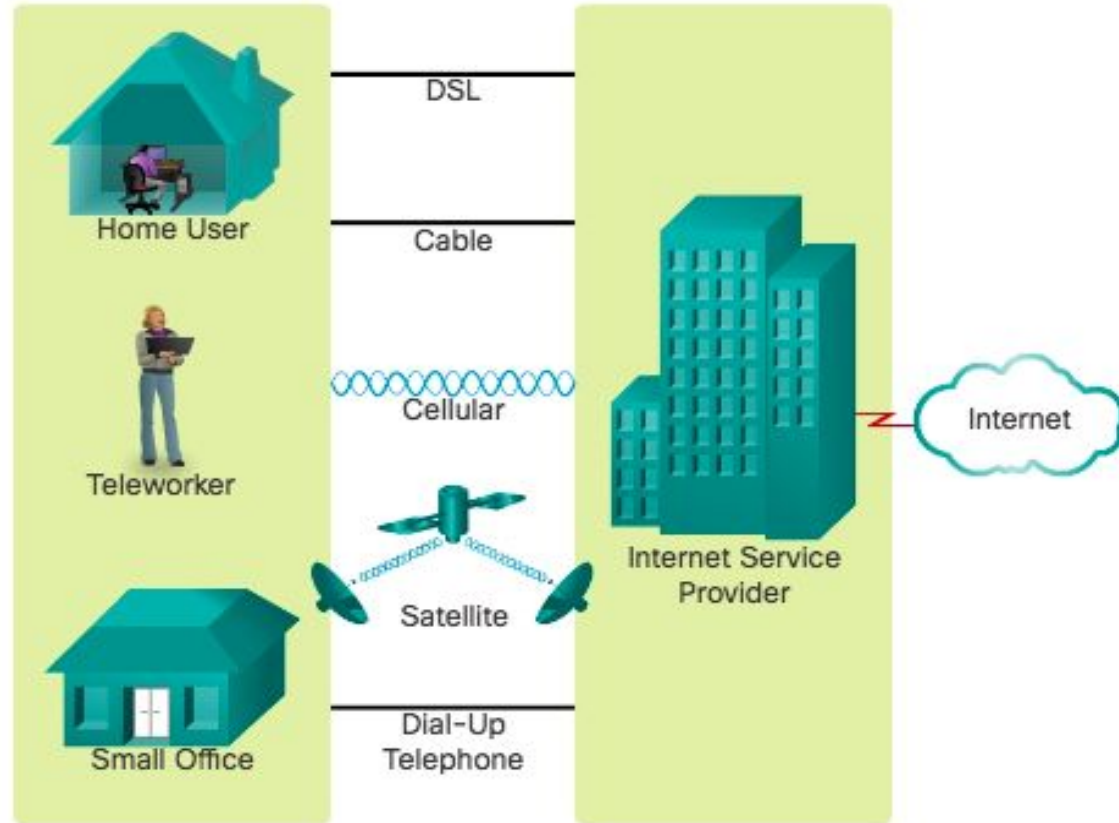
TYPES OF NETWORKS

The Internet!

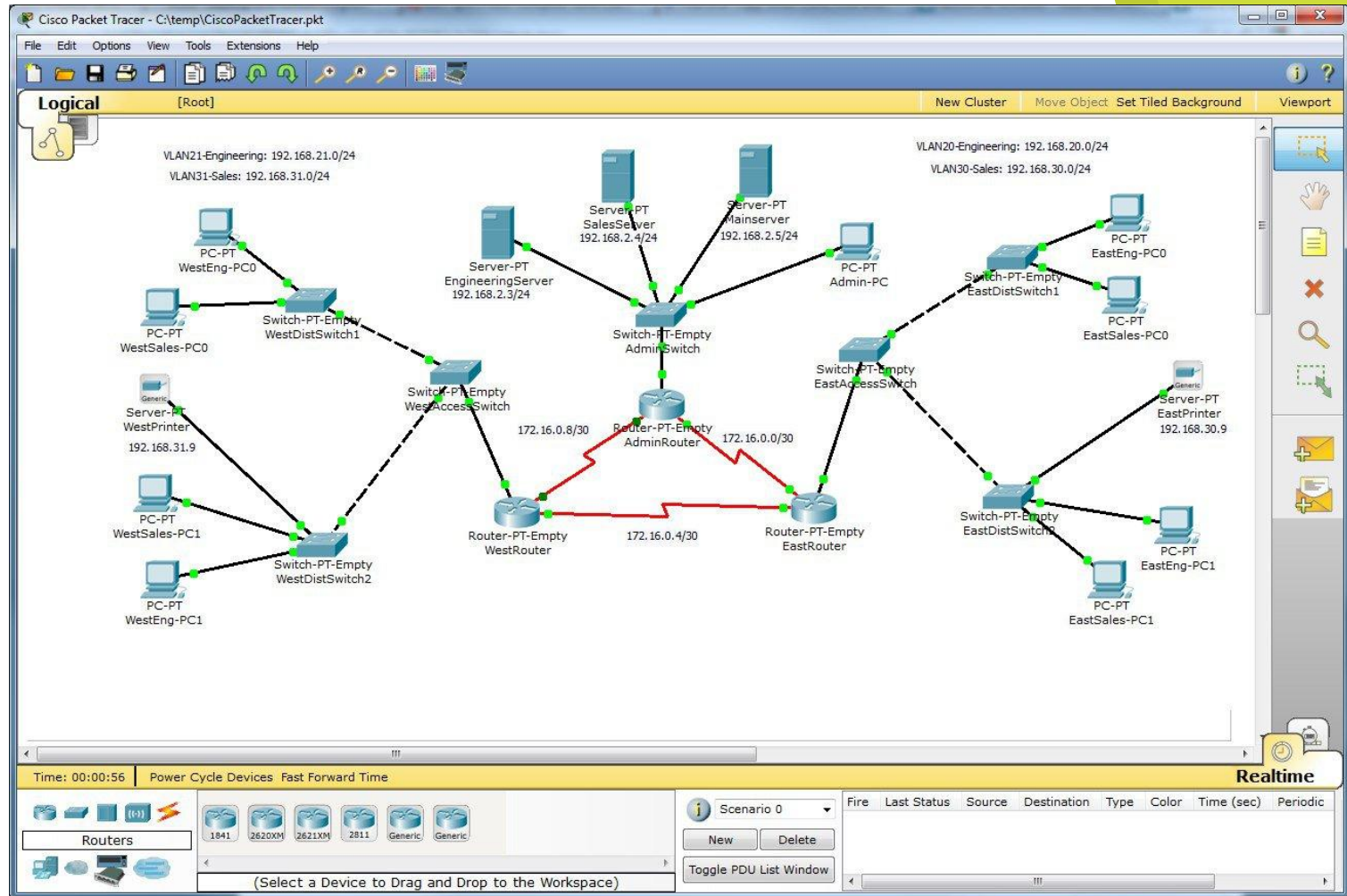


LANs use WAN services to interconnect.

Accessing the Internet



PACKET TRACER



MODES

```
User EXEC Command-Router>  
ping  
show (limited)  
enable  
etc...
```

```
Privileged EXEC Commands-Router#  
all User EXEC Commands  
debug commands  
reload  
configure  
etc..
```

```
Global Configuration Commands-Router(config)#  
hostname  
enable secret  
ip route
```

```
interface ethernet  
serial  
bri  
etc.
```

```
Interface Commands-Router(config-if)#  
ip address  
ipx network  
encapsulation  
shutdown/ no shutdown  
etc..
```

```
router rip  
ospf  
eigrp  
etc..
```

```
Routing Engine Commands-Router(config-router)#  
network  
version  
auto summary  
etc...
```

```
line vty
```

```
Line Commands-Router(config-line)#
```




BASIC COMMANDS

? Shows available subcommands



Autocompletes command



MORE COMMANDS

- `enable` Elevates privilege from USER to EXEC mode
- `configure terminal` Enters global config mode
- `do show run` Displays current configuration
- `exit` Returns to previous config mode
- `interface [interface]` Enters interface config mode
- `line con 0` Enters console line config mode
- `line vty 0 15` Enters vty line config mode
- `no ip domain-lookup` Saves time if you make a typo
- `no shutdown` Turns on an interface
- `do write` Saves current configuration

do write
?
exit
line console 0
login local
Pass InSecT!
login
enable>conf t
do show run (do sh r)
enable > conf t > no ip domain-l > do
show run
user ____ pass ____
Serv password-encryption
Enable secret InSecT!

Int f0/1

Int range f0/1-f0/24

des

banner motd "____"

ip add _____

Line con 0

Hostname

shutdown

ip add 192.168.1.1 255.255.255.0

ip default-gateway 172.17.99.1



CREDITS

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