

CCNA (200-301) Cisco Certified Network Associate

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Lecture 3

جامعة الجميع الذكية

تسعى لتكون الكيان الأول الذي يتبنى مبدأ المجتمع التعليمي
التعاوني ويقدم العلم مقابل العمل لتنمية وبناء المجتمعات.

مزيد من التفاصيل

Basic Router Configuration and Verification



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What is the Roll Over Cable?

A rollover cable is a network cable that connects a computer terminal to a network router's console port. It is also referred to as a Cisco console cable and is normally flat and light blue so as to distinguish it from other network cable types. The pin-outs on one end of the cable are reversed from the opposite end, which is how the cable derived its name. Rollover cables are also known as Yost cables or Yost Serial Device Wiring Standard connectors.

How to Identify a Rollover Cable

A rollover cable is identified by comparing each end of the cable while they are beside each other. The wire that connects the pin on the outside of the plug on the left-hand side is the same color as the wire connecting the pin on the outside of the plug on the right-hand side. If Cisco Systems produced the rollover cable, the first pin will be white on one of the two connectors and pin number 8 will be white on the other.



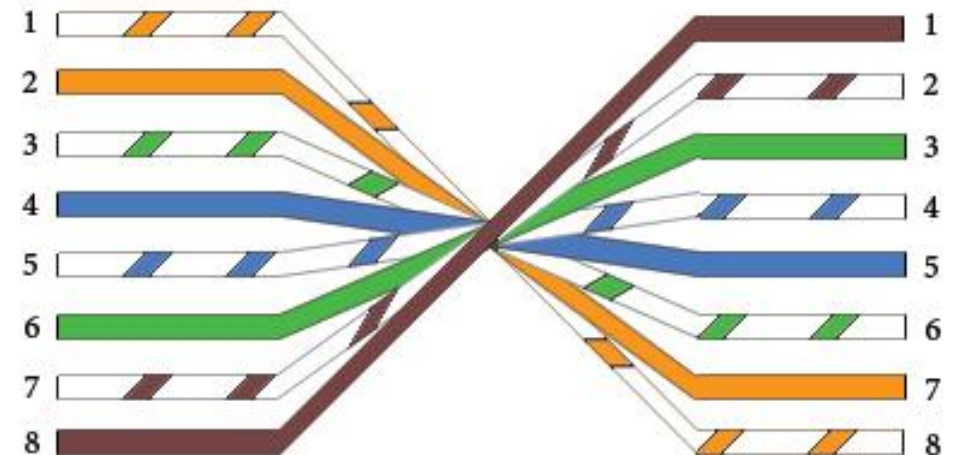
What is the Cisco RJ45 Rollover Cable Pin-out?

The following is the Cisco RJ45 rollover cable pin-out read in five columns:

Router Pin, Router Pin Name, Direction, Workstation Pin, Workstation Pin Name

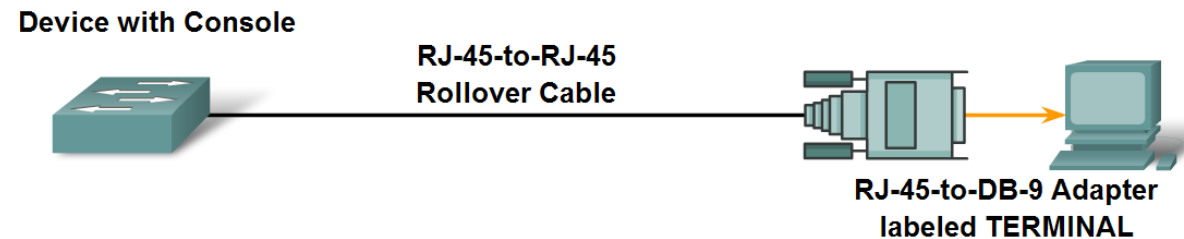
- 1 – white-Orange, bi-directional, 8, brown
- 2 – orange, bi-directional, 7, white-brown
- 3 – white-green, bi-directional, 6, green
- 4 – blue, bi-directional, 5, white-blue
- 5 – white-blue, bi-directional, 4, blue
- 6 – green, bi-directional, 3, white-green
- 7 – white-brown, bi-directional, 2, orange
- 8 – brown, bi-directional, 1, white-orange

Rollover Wiring Guide
568-B



- Define the role of device management connections when using Cisco equipment.

The Device Management Connection

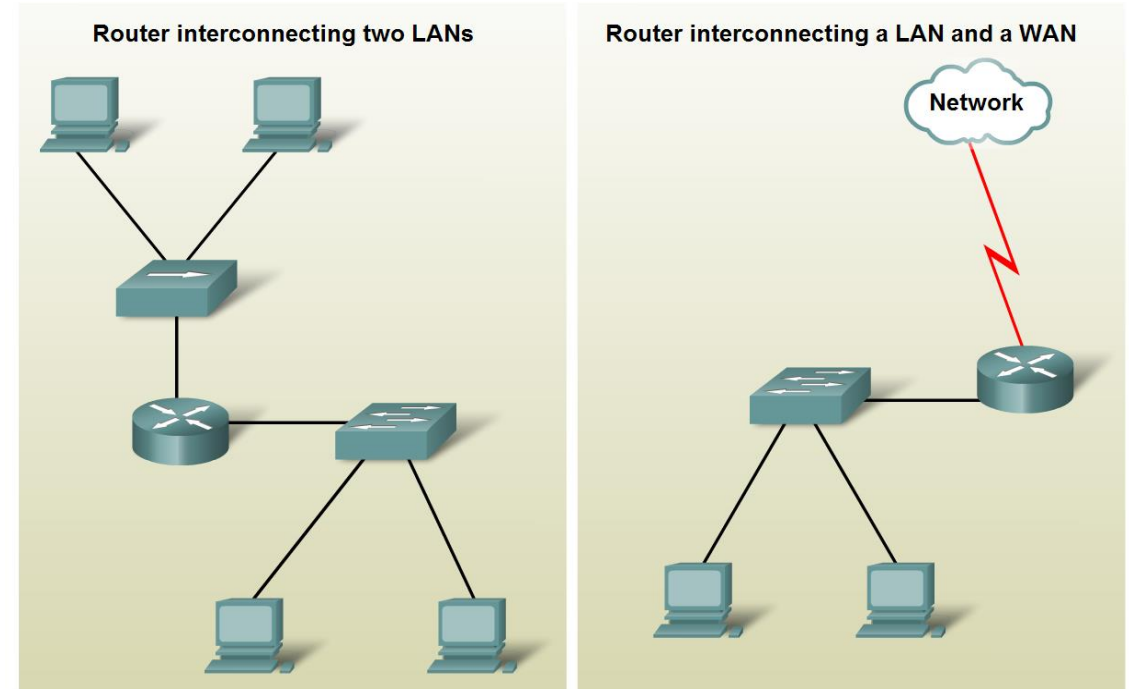


- PCs require an RJ-45 to DB-9 or RJ-45 to DB-25 adapter.
- COM port settings are 9600 bps, 8 data bits, no parity, 1 stop bit, no flow control.
- This provides out-of-band console access.
- AUX switch port may be used for a modem-connected console.

Importance of Network Designs

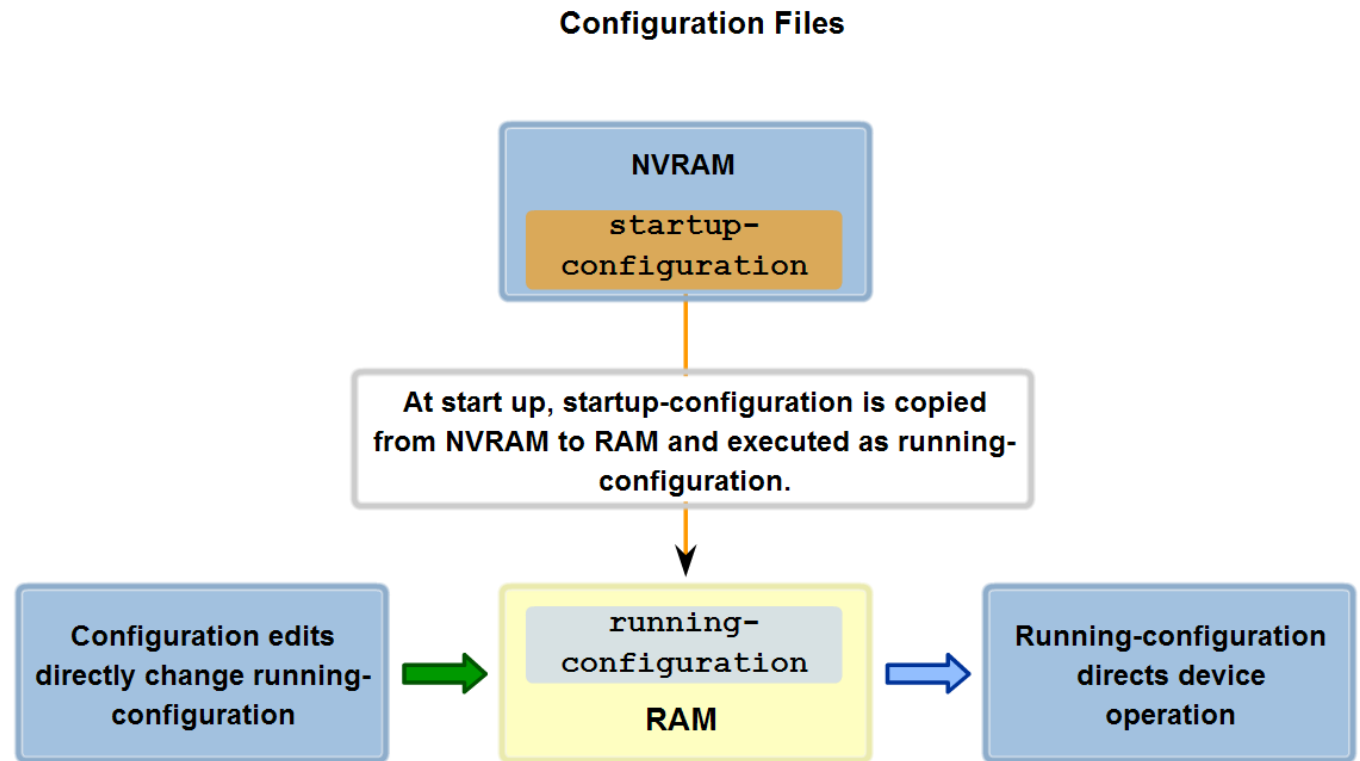
- Given a network requirement, determine the optimum number of sub networks in the larger internetwork.

Internetwork Connections with a Router



Role of Internetwork Operating System (IOS)

- Identify the relationship between IOS and configuration.



Role of Internetwork Operating System (IOS)

- Define the different modes and identify the mode prompts in the CLI

IOS Primary Modes

User EXEC Mode

Limited examination of router.
Remote access.

Switch>
Router>

Global Configuration Mode

Simple configuration commands.

Switch (config) #
Router (config) #

Privileged EXEC Mode

Detailed examination of router,
Debugging and testing. File
manipulation. Remote access.

Switch#
Router#

Other Configuration Modes

Complex and multiple-line
configurations.

Switch (config-mode) #
Router (config-mode) #

- Identify several of the configuration modes, their purpose and their associated prompt

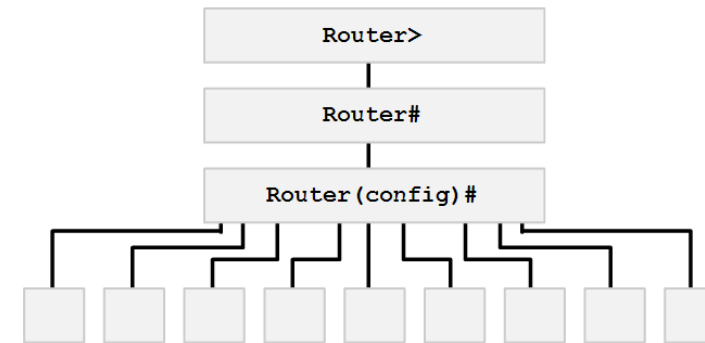
IOS Configuration Modes

User EXEC mode

Privileged EXEC mode

Global configuration mode

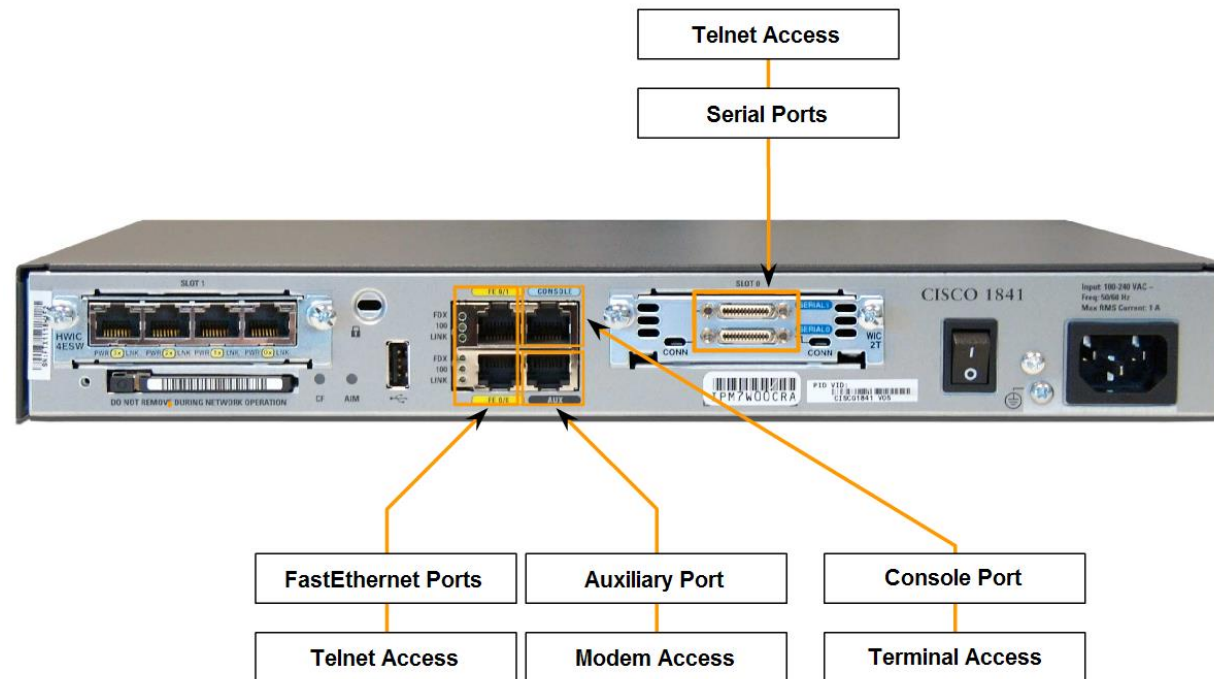
Specific configuration mode



Configuration Mode	Prompt
Interface	Router (config-if) #
Line	Router (config-line) #
Routers	Router (config-router) #

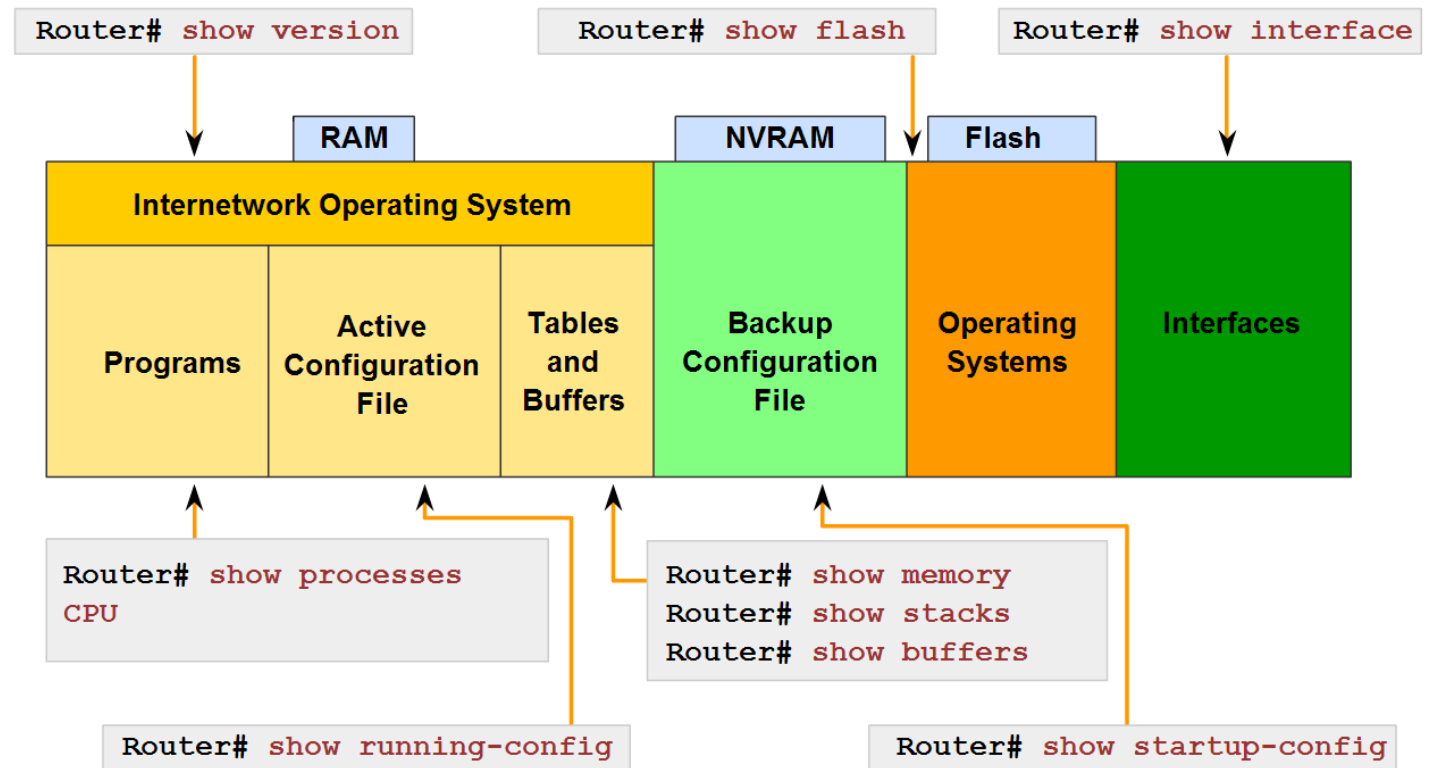
- Use the CLI to access various IOS configuration modes on a device

Accessing the Cisco IOS on a Device



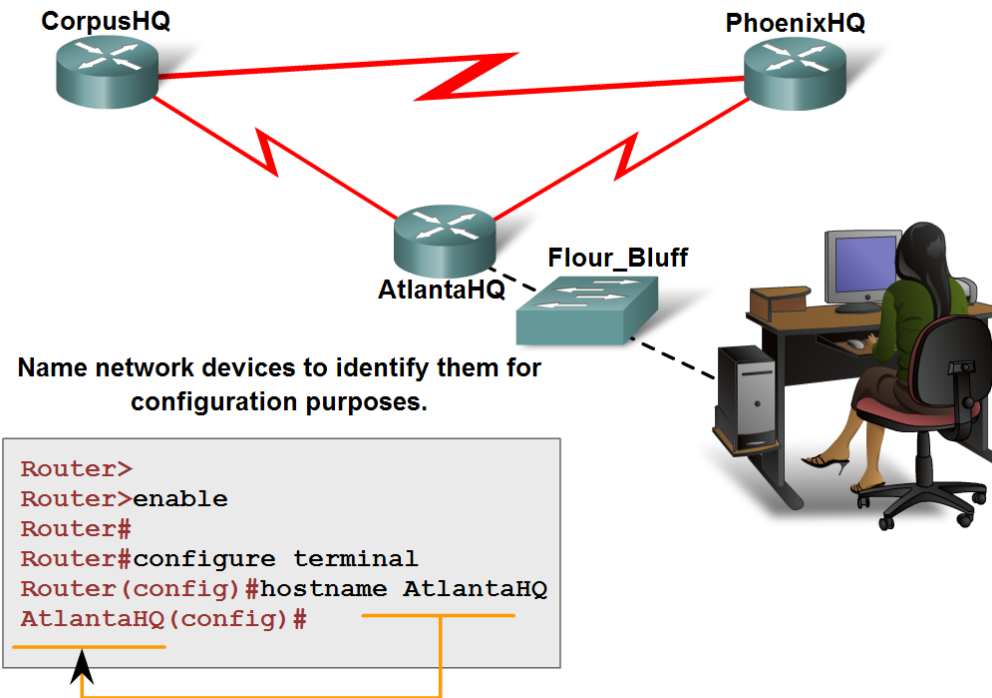
- Identify the purpose of the show command and several of its variations

IOS show commands can provide information about the configuration, operation and status of parts of a Cisco router.



- Describe two common approaches to establishing naming conventions

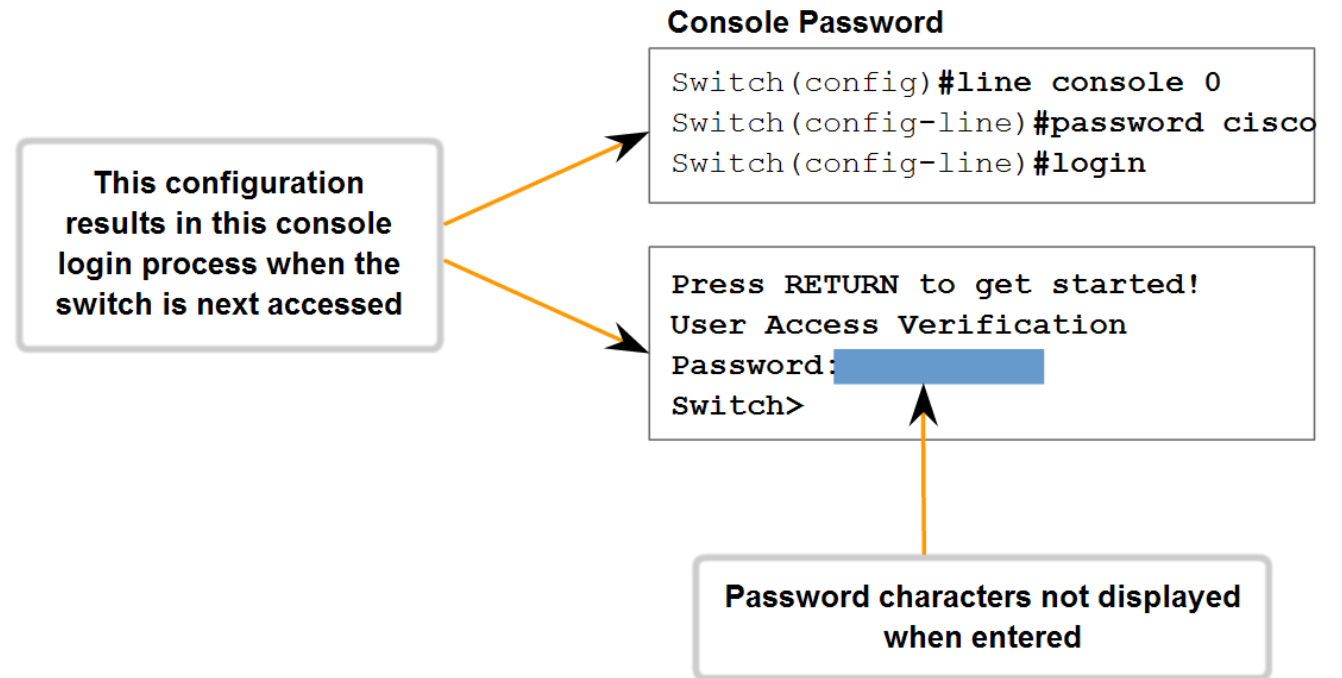
Configuring Device Names



Use Cisco CLI Commands to Perform Basic Router & Switch Configuration and Verification

Limiting Device Access - Configuring Console Passwords

- Describe the role of passwords in limiting access to device configurations



Limiting Device Access Configuring Telnet and Password Encryption

- Describe several ways in which access to a device configuration can be limited

Virtual Terminal Password

```
Router(config)#line vty 0 4
Router(config-line)#password cisco
Router(config-line)#login
```

Enable Password

```
Router(config)#enable password san fran
```

Enable Secret Password

```
Router(config)#enable secret cisco
```

Strongly encrypted password

- Use the CLI to set passwords and add banners to a device

Limiting Device Access – Login Banner

```
LAB_A(config)#banner motd # This is a secure system. Authorized Access ONLY!!! #
```

Delimiting characters not included in message

This configuration
results in this message
of the day banner

```
Router
LAB_A con0 is now available
Press RETURN to get started.
This is a secure system. Authorized Access ONLY!!!
User Access Verification
password:
LAB_A>enable
Password:
LAB_A#
```

- Trace the steps used to examine the startup configuration, make changes to configuration, and replace the startup configuration with the running configuration.

Checking Configuration Files

```
Router# show running-configuration
```

Lists the complete configuration currently active in RAM.

The active configuration can be copied to NVRAM.

```
version 12.2

hostname Router

!interface FastEthernet0/0

no ip address
duplex auto
speed auto
shutdown

interface Serial0/0
no ip address
shutdown
!
interface Serial0/1
no ip address
shutdown
```

```
Router# copy running-configuration startup-configuration
```



Configuring Router Ethernet Interfaces



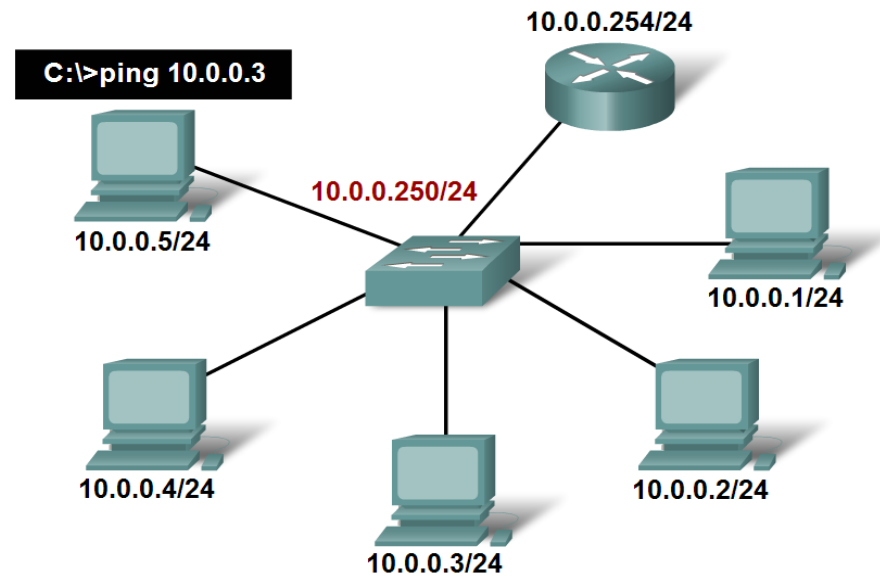
```
Router(config)#interface FastEthernet 0/0
Router(config-if)#ip address 192.168.10.1 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#
```

Configure Router Ethernet Interfaces

- Use the ping command to determine if a host can actively communicate across the local network

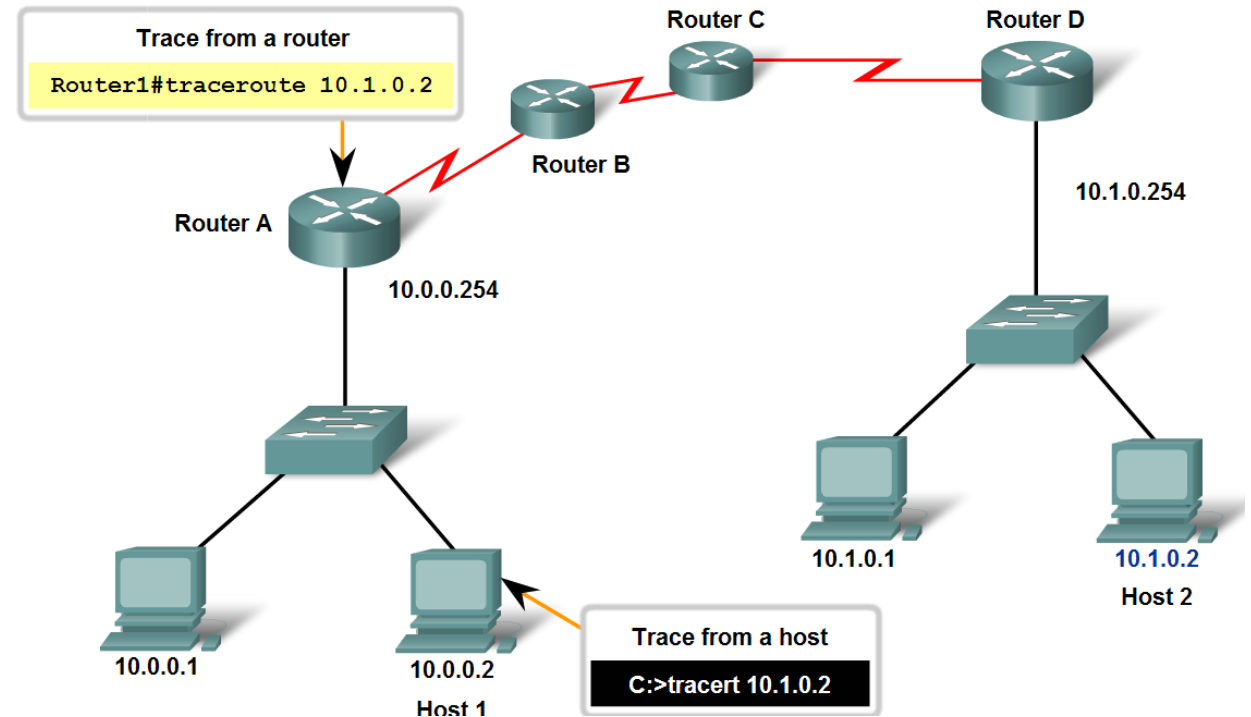
Testing Local Network

Successfully pinging the other host's IPv4 addresses will verify that not only the local host is configured properly but the other hosts are configured correctly as well.



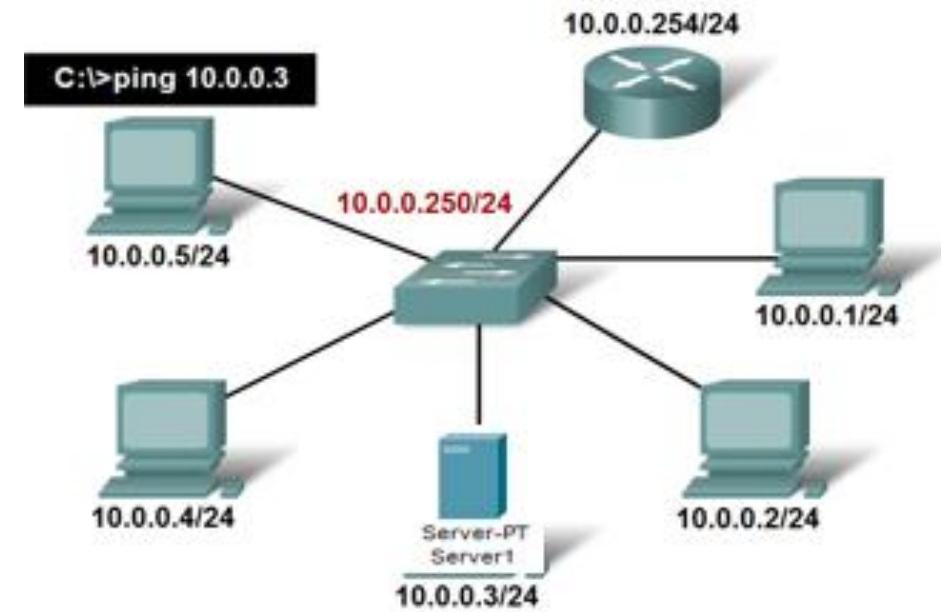
- Use the ping command to verify that the local host can communicate across the internetwork to a given remote host.

Testing the Path to a Remote Host



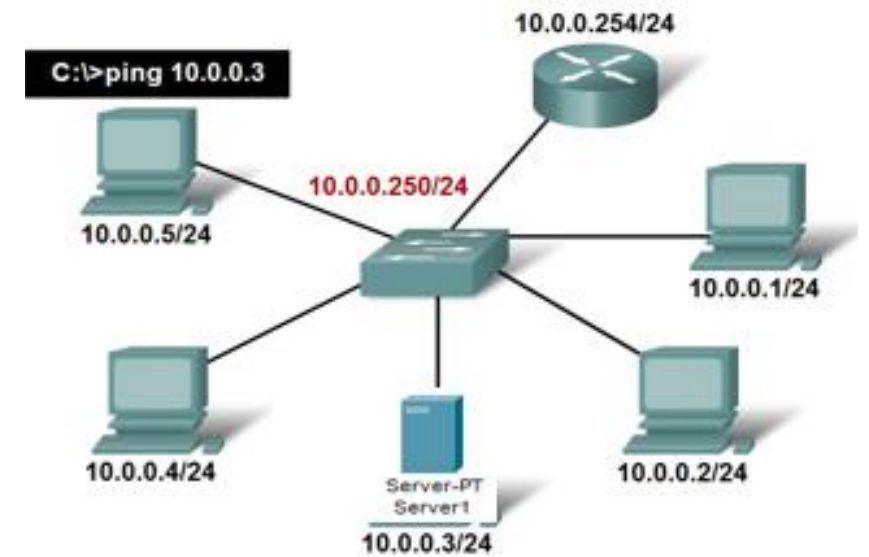
- Backup configuration files on server to store it in Tftp server

```
R1#copy ru
R1#copy running-config tftp
Address or name of remote host []? 10.0.0.3
Destination filename [R1-config]? conf1-a
```



- Backup configuration files :to restore configuration files from Tftp

```
R1#copy tftp: running-config  
Address or name of remote host []? 10.0.0.3  
Source filename []? c1841-advipservicesk9-mz.124-15.T1.bin  
Destination filename [running-config]?
```





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