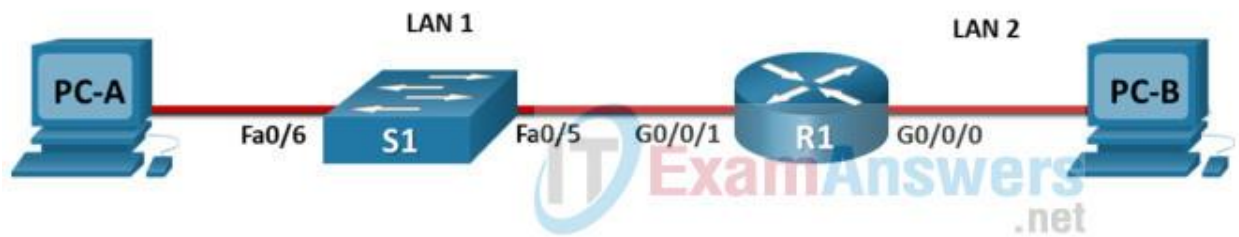


## Answers key → [ITN Final PT Skills Assessment \(PTSA\)](#)

### Topology



### Device Names Table

You will receive one of three possible scenarios. In order to use the logical topology diagram that is provided with the instructions, use the device names in the Device Names Table.

Topology Diagram Name	Your Scenario Name
R1	R1
S1	S1
PC-A	PC-A
PC-B	PC-B

### Addressing Requirements Table

Item	Requirements
Network Address	172.16.1.0/24
LAN 1 subnet host requirements	60
LAN 2 subnet host requirements	20
R1 G0/0/1	First host address in LAN 1 subnet
R1 G0/0/0	First host address in LAN 2 subnet
S1 SVI	Second host address in LAN 1 subnet
PC-A	Last host address in LAN 1 subnet
PC-B	Last host address in LAN 2 subnet

# ITN Final PT Skills Assessment (PTSA)

---

A few things to keep in mind while completing this activity:

1. Do not use the browser **Back** button or close or reload any exam windows during the exam.
2. Do not close Packet Tracer when you are done. It will close automatically.
3. Click the **Submit Assessment** button in the browser window to submit your work.

## Assessment Objectives

**Part 1: Build the Network**

**Part 2: Develop an IP Addressing Scheme**

**Part 3: Configure Basic Device Settings**

**Part 4: Configure Security Settings on R1 and S1**

**Part 5: Configure the Hosts and Verify Connectivity**

## Instructions

In this assessment you will configure the **R1** router and **S1** switch, as you have done in the activities in this course. You will also connect two PCs using a switch and a router that are in the main wiring closet. You will subnet the **172.16.1.0/24** network to provide IPv4 addresses for two subnets that will support the required number of hosts. The larger subnet (LAN 1) requires **60** hosts and the smaller subnet (LAN 2) requires **20** hosts.

No subnet calculators may be used.

### Part 1: Build the Network

- a. Build the network according to the logical topology by placing the required equipment in the wiring closet equipment rack.
- b. Cable the network devices in the closet as shown in the topology diagram.
- c. Connect the hosts as shown in the topology diagram.

### Part 2: Develop an IP Addressing Scheme

In this part of the assessment you will develop an IP addressing scheme. You will subnet an IPv4 network to create two subnets with the required number of hosts. You will also subnet an IPv6 network. You will then assign the addresses according to the requirements below.

Work with the following information:

- ☐ IPv4 Network: **172.16.1.0/24**
- ☐ Required number of hosts in IPv4 LAN 1: **60**
- ☐ Required number of hosts in IPv4 LAN 2: **20**
- a. Record your subnet assignments according to the following requirements.
  - 1) Assign the first IPv4 address of each subnet to a router interface
    - ☐ LAN 1 is hosted on **R1 G0/0/1**
    - ☐ LAN 2 is hosted on **R1 G0/0/0**
  - 2) Assign the last IPv4 address of each subnet to the PC NIC.
  - 3) Assign the second IPv4 address of LAN 1 to **S1 SVI**.
- b. Use the IPv6 address **2001:db8:acad::/48** and create two subnets with a prefix length of **/64** for use in this network. The first subnet is assigned to LAN 1, and the second subnet is assigned to LAN 2.
  - 1) Assign the tenth address in the LAN 1 IPv6 subnet to the LAN 1 PC.
  - 2) Assign the tenth address in the LAN 2 IPv6 subnet to the LAN 2 PC.

**Note:** The router interfaces have been configured for you.

## Part 3: Configure Basic Device Settings

Network devices must be configured over a direct console connection.

### Step 1: Configure Basic Settings

- a. Disable DNS lookup on **R1** and **S1**
- b. Configure router hostname using the name **R1**.
- c. Configure switch hostname using the name **S1**.
- d. Configure an appropriate banner on **R1** and **S1**.

### Step 2: Configure Interfaces

- a. Configure **R1** G0/0/0 and G0/0/1 interfaces using the addressing from the previous part of this assessment:
  - o Interface description
  - o IPv4 address / subnet mask
- b. Configure the **S1** VLAN 1 SVI interface using the addressing from the previous part of this assessment:
  - o Interface description
  - o IPv4 address / subnet mask
  - o The switch should be reachable from devices on other networks.

## Part 4: Configure Security Settings on R1 and S1

### Step 1: Configure enhanced password security

- a. Configure **ThisisaSecret** as the encrypted privileged EXEC password
- b. Encrypt all plaintext passwords
- c. Set minimum password length to **10** on **R1**.

### Step 2: Configure SSH on R1 and S1

- a. Configure **netsec.com** as the domain name
- b. Configure a local user **netadmin** with the encrypted password **Ci\$co12345**
- c. Allow console logins with the password **Ci\$co12345**.
- d. Set login on vty lines to use local database.
- e. Configure the vty lines to accept SSH access only.
- f. Generate an RSA crypto key using 1024 bits modulus.

### Step 3: Secure switch ports on S1

- a. Shut down **all** unused ports on **S1**.
- b. Enter descriptions for all unused switch ports to indicate that they are intentionally shutdown.

## Part 5: Configure the Hosts and Verify Connectivity

- a. Configure both hosts with the IPv4 addresses that were assigned in the Part 2 of this assessment.
- b. The **2001:db8:acad::/48** IPv6 network has been subnetted to provide two equal subnets with a /64 prefix length.
  - 1) Assign the tenth address in the LAN 1 IPv6 subnet to the **PC-A** PC.
  - 2) Assign the tenth address in the LAN 2 IPv6 subnet to the **PC-B** PC.
- c. There should be IPv4 and IPv6 connectivity between all devices and hosts.