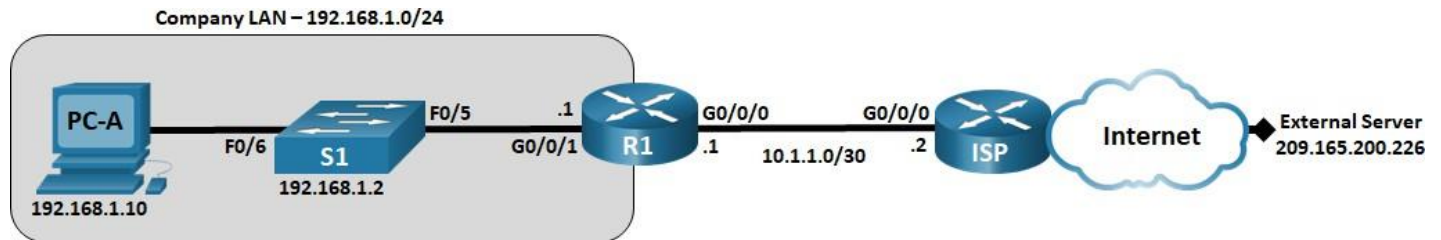


Packet Tracer-Troubleshoot Connectivity Issues-Physical Mode

Topology



Addressing Table

Device	Interface	IPAddress	SubnetMask	DefaultGateway
R1	G0/0/0/1	192.168.1.1	255.255.255.0	N/A
	G0/0/0	10.1.1.1	255.255.255.252	N/A
ISP	G0/0/0	10.1.1.2	255.255.255.252	N/A
	Lo0	209.165.200.226	255.255.255.255	N/A
S1	VLAN1	192.168.1.2	255.255.255.0	192.168.1.1
PC-A	NIC	192.168.1.10	255.255.255.0	192.168.1.1

Objectives

Part 1: Identify the Problem

Part 2: Implement Network/ Changes

Part 3: Verify Full Functionality

Part 4: Document Findings and Configuration Changes

Background / Scenario

In this Packet Tracer Physical Mode (PTPM) activity, the company that you work for is experiencing problems with their LAN. You have been asked to troubleshoot and resolve the network issues. In Part 1, you will connect to devices on the LAN and use troubleshooting tools to identify the network issues, establish a theory of probable cause, and test that theory. In Part 2, you will establish a plan of action to resolve and implement a solution. In Part 3, you will verify that full functionality has been restored. Part 4 provides space for you to document your troubleshooting findings along with the configuration changes that you made to the LAN devices.

Instructions

Part 1: Identify the Problem

The only available information about the network problem is that the users are experiencing slow response times and that they are not able to reach an external device on the internet at IP address 209.165.200.226.

To determine probable cause(s) for these network issues, you will need to utilize network commands and tools on the LAN equipment.

Note: The username **admin01** with a password of **cisco12345** will be required to log onto the network equipment.

Step 1: Troubleshoot the network.

Use the tools available to you to trouble shoot the network, keeping in mind that the requirement is to restore connectivity to the external server and the eliminate slow response times.

Step 2: Document the probable causes.

List the probable causes for the network problems that employees are experiencing.

1. The default Gateway is not set on the PC.
2. S1 Interface F0/5 is set to half duplex and speed set to 10.
3. S1 default-gateway is set to 192.168.1.0
4. R1 G0/0/1 is set to half-duplex and the speed is set to 10.
5. The gateway of last resort is not set on R1.

Part 2 : Implement Network Changes

You have communicated the problems that you discovered in Part1 to your supervisor. She has approved these changes and has requested that you implement them.

Part 3: Verify Full Functionality

Verify that full functionality has been restored. PC-A , S1, and R1 should be able to reach the external server, and ping replies from PC-A to the external server should exhibit no significant variation in response times.

Part 4: Document Findings and Configuration Changes

Use the space provided below to document the issues found during your trouble shooting and the configurations changes made to resolve those issues.

Documentation will vary but should include the date when troubleshooting was conducted, devices that were tested, commands used along with the output generated by those commands, issues found, and configuration changes made to resolve those issues.

Reflection Question

This Packet Tracer Lab Companion had you troubleshoot all devices before making any changes. Is there another way to apply the troubleshooting methodology?

Another way the troubleshooting methodology could be applied would be to complete all 6 steps on a device before moving on to another device. For example, after you determined that the default gateway was not set on the PC, you would add the default gateway setting and verify functionality. If network issues still exist, you would then move on the next devices, S1 in this example. When the troubleshooting process had been completed on S1 and issues still existed, you would then move on to R1. This process would continue until full network functionality was achieved.

Device Configs

Router R1

```
R1# show run
```

```
Building configuration...
```

```
Current configuration : 889 bytes
```

```
!
```

```
version 15.4
```

```
no service timestamps log datetime msec
```

```
no service timestamps debug datetime msec
```

```
no service password-encryption
```

```
!
```

```
hostname R1
```

```
!
```

```
ip cef
```

```
no ipv6 cef
```

```
!
```

```
username admin01 privilege 15 secret 5 $1$mERr$WvpW0n5HghRrqnrxXCUU1.
```

```
!
```

```
no ip domain-lookup
```

```
ip domain-name ccna-lab.com
```

```
!
```

```
!
```

```
spanning-tree mode pvst
```

```
!
```

```
interface Loopback0
```

```
no ip address
```

```
!
```

```
interface Loopback1
```

```
no ip address
```

```
!
```

```
interface GigabitEthernet0/0/0
```

```
ip address 10.1.1.1 255.255.255.252
```

```
duplex auto
```

```
speed auto
```

```
!
```

```
interface GigabitEthernet0/0/1
```

```
ip address 192.168.1.1 255.255.255.0
duplex full
speed 100
!
interface Vlan1
no ip address
shutdown
!
ip classless
ip route 0.0.0.0 0.0.0.0 10.1.1.2
!
ip flow-export version 9
!
!
!
no cdp run
!
banner motd ^C Authorized Users Only! ^C
!
!
!
!
line con 0
!
line aux 0
!
line vty 0 4
login local
transport input ssh
!
!
!
End
```

Switch S1

```
S1# show run
```

```
Building configuration...
```

```
Current configuration : 1395 bytes
```

```
!
```

```
version 12.2
```

```
no service timestamps log datetime msec
```

```
no service timestamps debug datetime msec
```

```
no service password-encryption
```

```
!
```

```
hostname S1
```

```
!
```

```
!
```

```
!
```

```
no ip domain-lookup
```

```
ip domain-name ccna-lab.com
```

```
!
```

```
username admin01 secret 5 $1$mERr$WvpW0n5HghRrqnrxXCUU1.
```

```
!
```

```
!
```

```
!
```

```
spanning-tree mode pvst
```

```
spanning-tree extend system-id
```

```
!
```

```
interface FastEthernet0/1
```

```
shutdown
```

```
!
```

```
interface FastEthernet0/2
```

```
shutdown
```

```
!
```

```
interface FastEthernet0/3
```

```
shutdown
```

```
!
```

```
interface FastEthernet0/4
```

```
shutdown
```

```
!
```

```
interface FastEthernet0/5
```

```
duplex full
```

```
    speed 10
!
interface FastEthernet0/6
!
interface FastEthernet0/7
!
interface FastEthernet0/8
!
interface FastEthernet0/9
!
interface FastEthernet0/10
!
interface FastEthernet0/11
!
interface FastEthernet0/12
!
interface FastEthernet0/13
!
interface FastEthernet0/14
!
interface FastEthernet0/15
!
interface FastEthernet0/16
!
interface FastEthernet0/17
!
interface FastEthernet0/18
!
interface FastEthernet0/19
!
interface FastEthernet0/20
!
interface FastEthernet0/21
!
interface FastEthernet0/22
!
interface FastEthernet0/23
!
interface FastEthernet0/24
!
```

```

interface GigabitEthernet0/1
!
interface GigabitEthernet0/2
!
interface Vlan1
  ip address 192.168.1.2 255.255.255.0
  shutdown
!
ip default-gateway 192.168.1.1
!
banner motd ^C Authorized Users Only! ^C
!
!
!
line con 0
!
line vty 0 4
  login local
  transport input ssh
line vty 5 15
  login local
  transport input ssh
!
!
!
!
End

```

Router ISP

```

ISP# show run
version 16.9
service timestamps debug datetime msec
service timestamps log datetime msec
platform qfp utilization monitor load 80
no platform punt-keepalive disable-kernel-core
!
hostname ISP
!
boot-start-marker

```

```
boot-end-marker
no aaa new-model
!
no ip domain lookup
login on-success log
!
subscriber templating
!
multilink bundle-name authenticated
!
spanning-tree extend system-id
!
redundancy
mode none
!
interface Loopback0
ip address 209.165.200.226 255.255.255.255
!
interface GigabitEthernet0/0/0
ip address 10.1.1.2 255.255.255.252
negotiation auto
!
ip forward-protocol nd
no ip http server
ip http secure-server
ip route 0.0.0.0 0.0.0.0 10.1.1.1
!
control-plane
!
line con 0
logging synchronous
transport input none
stopbits 1
line aux 0
stopbits 1
line vty 0 4
login local
end
```