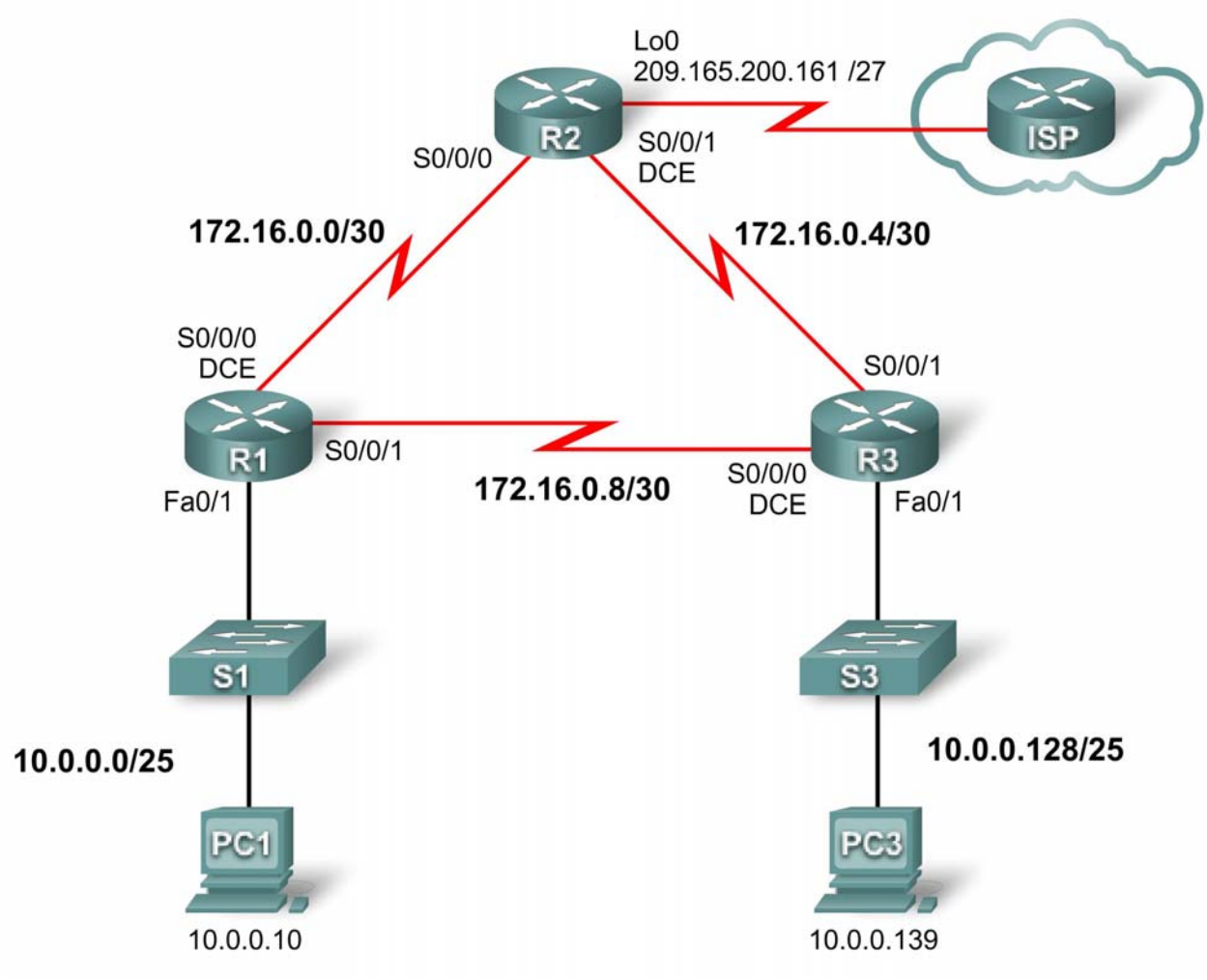
Lab 2.5.3: Troubleshooting PPP Configuration

Topology Diagram



Addressing Table

Device	Interface	IP Address	Subnet Mask	Default Gateway
R1	**Fa0/1**	10.0.0.1	255.255.255.128	N/A
	S0/0/0	172.16.0.1	255.255.255.252	N/A
	S0/0/1	172.16.0.9	255.255.255.252	N/A
R2	**Lo0**	209.165.200.161	255.255.255.224	N/A
	S0/0/0	172.16.0.2	255.255.255.252	N/A
	S0/0/1	172.16.0.5	255.255.255.252	N/A
R3	**Fa0/1**	10.0.0.129	255.255.255.128	N/A

	S0/0/0	172.16.0.10	255.255.255.252	N/A
	S0/0/1	172.16.0.6	255.255.255.252	N/A
PC1	**NIC**	10.0.0.10	255.255.255.128	10.0.0.1
PC3	**NIC**	10.0.0.139	255.255.255.128	10.0.0.129

Learning Objectives

To complete this lab:

- Cable a network according to the topology diagram.
- Erase the startup configuration and reload a router to the default state.
- Load routers with scripts.
- Find and correct network errors.
- Document the corrected network.

Scenario

The routers at your company were configured by an inexperienced network engineer. Several errors in the configuration have resulted in connectivity issues. Your boss has asked you to troubleshoot and correct the configuration errors and document your work. Using your knowledge of PPP and standard testing methods, find and correct the errors. Make sure that all of the serial links use PPP CHAP authentication, and that all of the networks are reachable.

Task 1: Load Routers with the Supplied Scripts

R1

```
enable
configure terminal
!
hostname R1
!
enable secret class
!
no ip domain lookup
!
username R2 password 0 cisco
!
interface FastEthernet0/0
 ip address 10.0.0.1 255.255.255.128
 shutdown
 duplex auto
 speed auto
!
interface FastEthernet0/1
 duplex auto
 speed auto
!
interface Serial0/0/0
 ip address 172.16.0.1 255.255.255.248
 no fair-queue
```



```
 clockrate 64000
!
interface Serial0/0/1
 ip address 172.16.0.9 255.255.255.252
 encapsulation ppp
 ppp authentication pap
!
router ospf 1
 log-adjacency-changes
 network 10.0.0.0 0.0.0.127 area 0
 network 172.16.0.4 0.0.0.3 area 0
 network 172.16.0.8 0.0.0.3 area 0
!
ip classless
!
ip http server
!
control-plane
!
banner motd ^CUnauthorized access strictly prohibited and prosecuted to the
full extent of the law^C
!
line con 0
 exec-timeout 0 0
 password cisco
 logging synchronous
 login
line aux 0
line vty 0 4
 password cisco
 login
!
end
```

R2

```
enable
configure terminal
!
hostname R2
!
enable secret class
!
no ip domain lookup
!
username R11 password 0 cisco
username R3 password 0 class
!
interface Loopback0
!
interface FastEthernet0/0
 no ip address
 shutdown
 duplex auto
 speed auto
!
interface FastEthernet0/1
```



```
 ip address 209.165.200.161 255.255.255.224
 shutdown
 duplex auto
 speed auto
!
interface Serial0/0/0
 ip address 172.16.0.2 255.255.255.252
 encapsulation ppp
 no fair-queue
 ppp authentication chap
!
interface Serial0/0/1
 ip address 172.16.0.5 255.255.255.252
!
router ospf 1
 log-adjacency-changes
 network 172.16.0.0 0.0.0.3 area 0
 network 172.16.0.4 0.0.0.3 area 0
 network 209.165.200.128 0.0.0.31 area 0
!
ip classless
!
ip http server
!
control-plane
!
banner motd ^CUnauthorized access strictly prohibited and prosecuted to the
full extent of the law^C
!
line con 0
 exec-timeout 0 0
 password cisco
 logging synchronous
 login
line aux 0
line vty 0 4
 password cisco
 login
!
end
```

R3

```
enable
configure terminal
!
hostname R3
!
enable secret class
!
no ip domain lookup
!
username R1 password 0 cisco
username R3 password 0 ciscco
!
interface FastEthernet0/0
 no ip address
```



```
 shutdown
 duplex auto
 speed auto
!
interface FastEthernet0/1
 ip address 10.0.0.129 255.255.255.0
duplex auto
 speed auto
!
interface Serial0/0/0
 ip address 172.16.0.10 255.255.255.252
 no fair-queue
 clockrate 64000
!
interface Serial0/0/1
 encapsulation ppp
 ppp authentication pap
!
router ospf 1
 log-adjacency-changes
 network 10.0.0.128 0.0.0.127 area 0
 network 192.16.0.4 0.0.0.3 area 0
 network 192.16.0.8 0.0.0.3 area 0
!
ip classless
!
ip http server
!
control-plane
!
banner motd ^CUnauthorized access strictly prohibited and prosecuted to the
full extent of the law^C
!
line con 0
 exec-timeout 0 0
 password cisco
 logging synchronous
 login
line aux 0
line vty 0 4
 password cisco
 login
!
end
```

Task 2: Find and Correct Network Errors

Task 3: Document the Corrected Network

Now that you have corrected all errors and tested connectivity throughout the network, document the final configuration for each device.

Task 4: Clean Up

Erase the configurations and reload the routers. Disconnect and store the cabling. For PC hosts that are normally connected to other networks, such as the school LAN or the Internet, reconnect the appropriate cabling and restore the TCP/IP settings.

