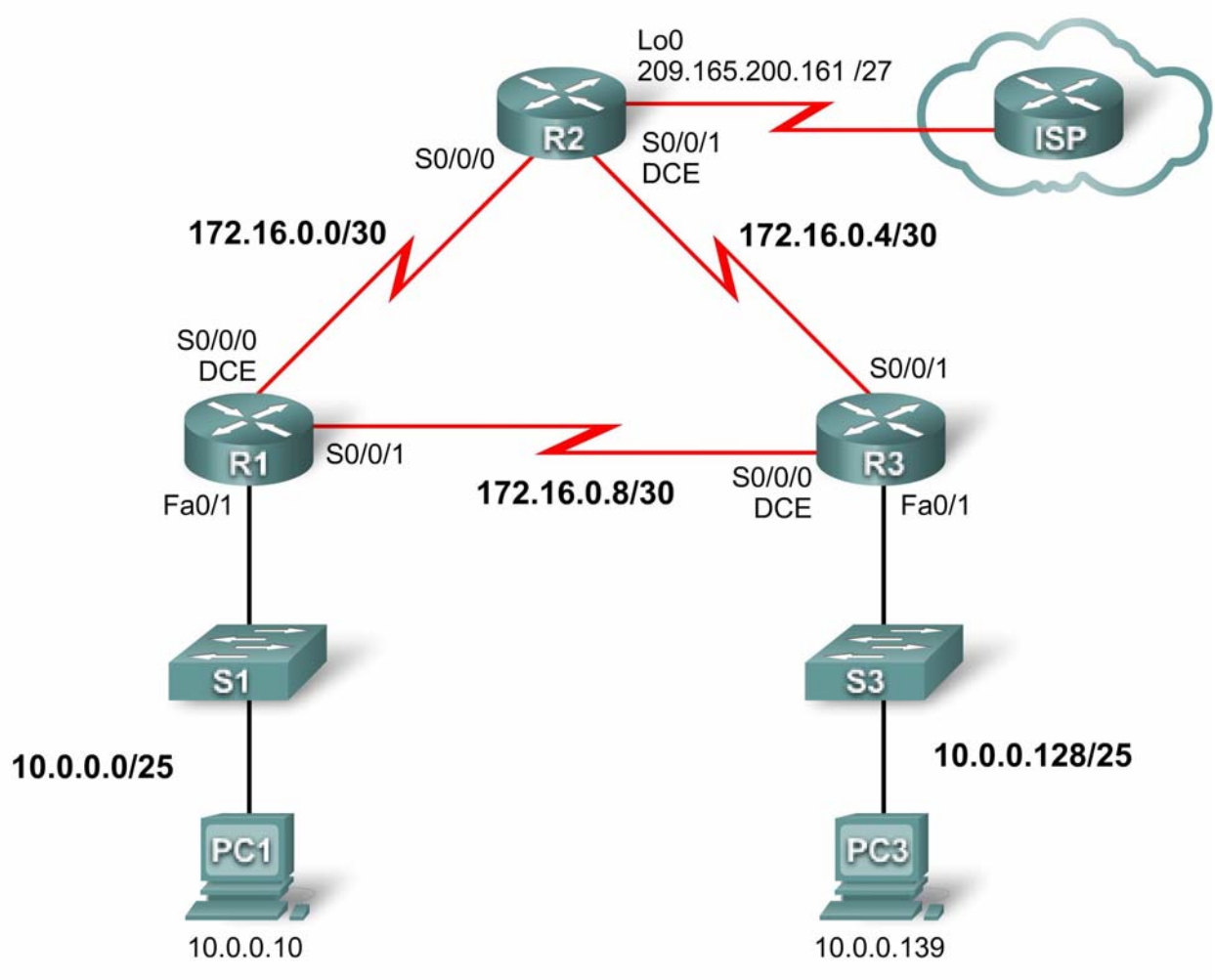
# 实验 2.5.3：PPP 配置故障排除

## 拓扑图



## 地址表

| 设备 | 接口 | IP 地址 | 子网掩码 | 默认网关 |
|---|---|---|---|---|
| R1 | Fa0/1 | 10.0.0.1 | 255.255.255.128 | 不适用 |
| | S0/0/0 | 172.16.0.1 | 255.255.255.252 | 不适用 |
| | S0/0/1 | 172.16.0.9 | 255.255.255.252 | 不适用 |
| R2 | Lo0 | 209.165.200.161 | 255.255.255.224 | 不适用 |
| | S0/0/0 | 172.16.0.2 | 255.255.255.252 | 不适用 |
| | S0/0/1 | 172.16.0.5 | 255.255.255.252 | 不适用 |
| R3 | Fa0/1 | 10.0.0.129 | 255.255.255.128 | 不适用 |
| | S0/0/0 | 172.16.0.10 | 255.255.255.252 | 不适用 |
| | S0/0/1 | 172.16.0.6 | 255.255.255.252 | 不适用 |
| PC1 | 网卡 | 10.0.0.10 | 255.255.255.128 | 10.0.0.1 |
| PC3 | 网卡 | 10.0.0.139 | 255.255.255.128 | 10.0.0.129 |

## 学习目标

完成本实验需要：

- 根据拓扑图完成网络电缆连接
- 清除启动配置，重新启动路由器使其处于默认状态
- 使用脚本加载路由器
- 查找并纠正网络错误
- 记录纠正后的网络

## 场景

配置贵公司路由器的网络工程师缺乏经验，因此，若干配置错误导致了连通性问题。上级要求您排除故障并纠正配置错误，然后记录纠正后的网络。请运用您掌握的 PPP 知识和标准测试方法查找并纠正错误。您要确保所有串行链路均采用 PPP CHAP 身份验证，而且所有网络都可连通。

## 任务 1：使用所提供的脚本加载路由器

R1

```
enable
configure terminal
!
hostname R1
!
!
enable secret class
!
!
!
no ip domain lookup
!
username R2 password 0 cisco
!
!
!
interface FastEthernet0/0
 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
!
router ospf 1
 log-adjacency-changes
 network 10.0.0.0 0.0.0.127 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 R1 password 0 cisco
username R3 password 0 class
!
!
!
interface Loopback0
!
interface FastEthernet0/0
 no ip address
 shutdown
 duplex auto
 speed auto
!
interface FastEthernet0/1
 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
```

```
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
!
!
interface FastEthernet0/0
 no ip address
 shutdown
 duplex auto
 speed auto
!
interface FastEthernet0/1
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
!
```

```
router ospf 1
 log-adjacency-changes
 network 10.0.0.128 0.0.0.127 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
```

### 任务 2：查找并纠正网络错误

### 任务 3：记录纠正后的网络

### 任务 4：课后清理

清除配置，然后重新启动路由器。拆下电缆并妥善保管。对于通常连接到其它网络（例如学校 LAN 或 Internet）的 PC 主机，请重新连接相应的电缆并恢复原有的 TCP/IP 设置。