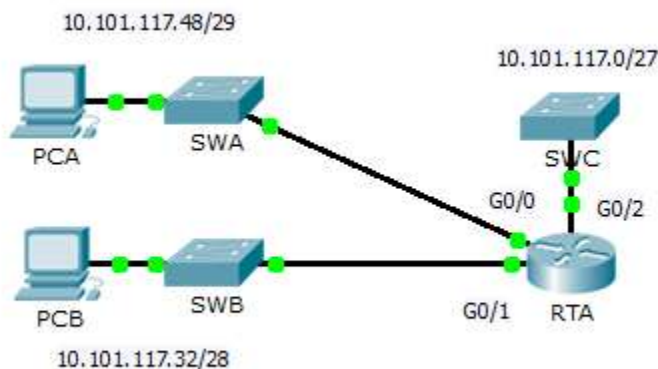


## Packet Tracer - Configuring Extended ACLs - Scenario 2

### Topology



### Addressing Table

| Device | Interface | IP Address    | Subnet Mask     | Default Gateway |
|--------|-----------|---------------|-----------------|-----------------|
| RTA    | G0/0      | 10.101.117.49 | 255.255.255.248 | N/A             |
|        | G0/1      | 10.101.117.33 | 255.255.255.240 | N/A             |
|        | G0/2      | 10.101.117.1  | 255.255.255.224 | N/A             |
| PCA    | NIC       | 10.101.117.51 | 255.255.255.248 | 10.101.117.49   |
| PCB    | NIC       | 10.101.117.35 | 255.255.255.240 | 10.101.117.33   |
| SWC    | VLAN1     | 10.101.117.2  | 255.255.255.224 | 10.101.117.1    |

### Objectives

**Part 1: Configure, Apply and Verify an Extended Numbered ACL**

**Part 2: Reflection Questions**

### Background / Scenario

In this scenario, devices on one LAN are allowed to remotely access devices in another LAN using the Telnet protocol. Besides ICMP, all traffic from other networks is denied.

### Part 1: Configure, Apply and Verify an Extended Numbered ACL

Configure, apply and verify an ACL to satisfy the following policy:

- Telnet traffic from devices on the 10.101.117.32/28 network is allowed to devices on the 10.101.117.0/27 networks.
- ICMP traffic is allowed from any source to any destination
- All other traffic to 10.101.117.0/27 is blocked.

### Step 1: Configure the extended ACL.

- a. From the appropriate configuration mode on **RTA**, use the last valid extended access list number to configure the ACL. Use the following steps to construct the first ACL statement:

- 1) The last extended list number is 199.
- 2) The protocol is TCP.
- 3) The source network is 10.101.117.32.
- 4) The wildcard can be determined by subtracting 255.255.255.240 from 255.255.255.255.
- 5) The destination network is 10.101.117.0.
- 6) The wildcard can be determined by subtracting 255.255.255.224 from 255.255.255.255.
- 7) The protocol is Telnet.

What is the first ACL statement?

- b. ICMP is allowed, and a second ACL statement is needed. Use the same access list number to permit all ICMP traffic, regardless of the source or destination address. What is the second ACL statement? (Hint: Use the any keywords)

- c. All other IP traffic is denied, by default.

### Step 2: Apply the extended ACL.

The general rule is to place extended ACLs close to the source. However, since access list 199 affects traffic originating from both networks 10.101.117.48/29 and 10.101.117.32/28, the best placement for this ACL might be on interface Gigabit Ethernet 0/2 in the outbound direction. What is the command to apply ACL 199 to the Gigabit Ethernet 0/2 interface?

### Step 3: Verify the extended ACL implementation.

- a. Ping from **PCB** to all of the other IP addresses in the network. If the pings are unsuccessful, verify the IP addresses before continuing.
- b. Telnet from **PCB** to **SWC**. The password is **cisco**.
- c. Exit the Telnet service of the **SWC**.
- d. Ping from **PCA** to all of the other IP addresses in the network. If the pings are unsuccessful, verify the IP addresses before continuing.
- e. Telnet from **PCA** to **SWC**. The access list causes the router to reject the connection.
- f. Telnet from **PCA** to **SWB**. The access list is placed on **G0/2** and does not affect this connection.
- g. After logging into **SWB**, do not log out. Telnet to **SWC**.

## Part 2: Reflection Questions

1. How was PCA able to bypass access list 199 and Telnet to SWC?

2. What could have been done to prevent PCA from accessing SWC indirectly, while allowing PCB Telnet access to SWC?

**Suggested Scoring Rubric**

| Activity Section                                             | Question Location | Possible Points | Earned Points |
|--------------------------------------------------------------|-------------------|-----------------|---------------|
| Part 1: Configure, Apply and Verify an Extended Numbered ACL | Step 1a           | 4               |               |
|                                                              | Step 1b           | 4               |               |
|                                                              | Step 2            | 4               |               |
| <b>Part 1 Total</b>                                          |                   | <b>12</b>       |               |
| Part 2: Reflection Questions                                 | Question 1        | 4               |               |
|                                                              | Question 2        | 4               |               |
| <b>Part 2 Total</b>                                          |                   | <b>8</b>        |               |
| <b>Packet Tracer Score</b>                                   |                   | <b>80</b>       |               |
| <b>Total Score</b>                                           |                   | <b>100</b>      |               |