

# Lab 7.2.2.6– Configuring and Verifying Standard IPv4 ACLs Topology

## Questions

### ***Part 3, step 1:***

**What wildcard mask would you use to allow all hosts on the 192.168.10.0/24 network to access the 192.168.30.0/24 network?**

0.0.0.255

**Following Cisco's recommended best practices, on which router would you place this ACL?**

R3 (destination router).

**On which interface would you place this ACL? In what direction would you apply it?**

On interface g0/1 out.

**To see access list 1 in its entirety with all ACEs, which command would you use?**

show access-list 1

**What command would you use to see where the access list was applied and in what direction?**

show ip int g0/1

**Was the ping successful? Why or why not?**

No. Because we deny it with the access-list.

### ***Part 3, step 2:***

**Following Cisco's recommended best practices, on which router would you place this ACL?**

R1.

**On which interface would you place this ACL? In what direction would you apply it?**

On interface g0/1 out.

**Looking at the first permit ACE in the access list, what is another way to write this?**

permit 192.168.30.3 0.0.0.0

**Is there any difference between this ACL on R1 with the ACL on R3? If so, what is it?**

We did not declare a deny any.

***Part 4, step 1***

**Do you have to apply the BRANCH-OFFICE-POLICY to the G0/1 interface on R1?**

No, because it's already applied.

**Reflexion**

As you can see, standard ACLs are very powerful and work quite well. Why would you ever have the need for using extended ACLs?

**Standard ACLs can only filter based on the source address.**

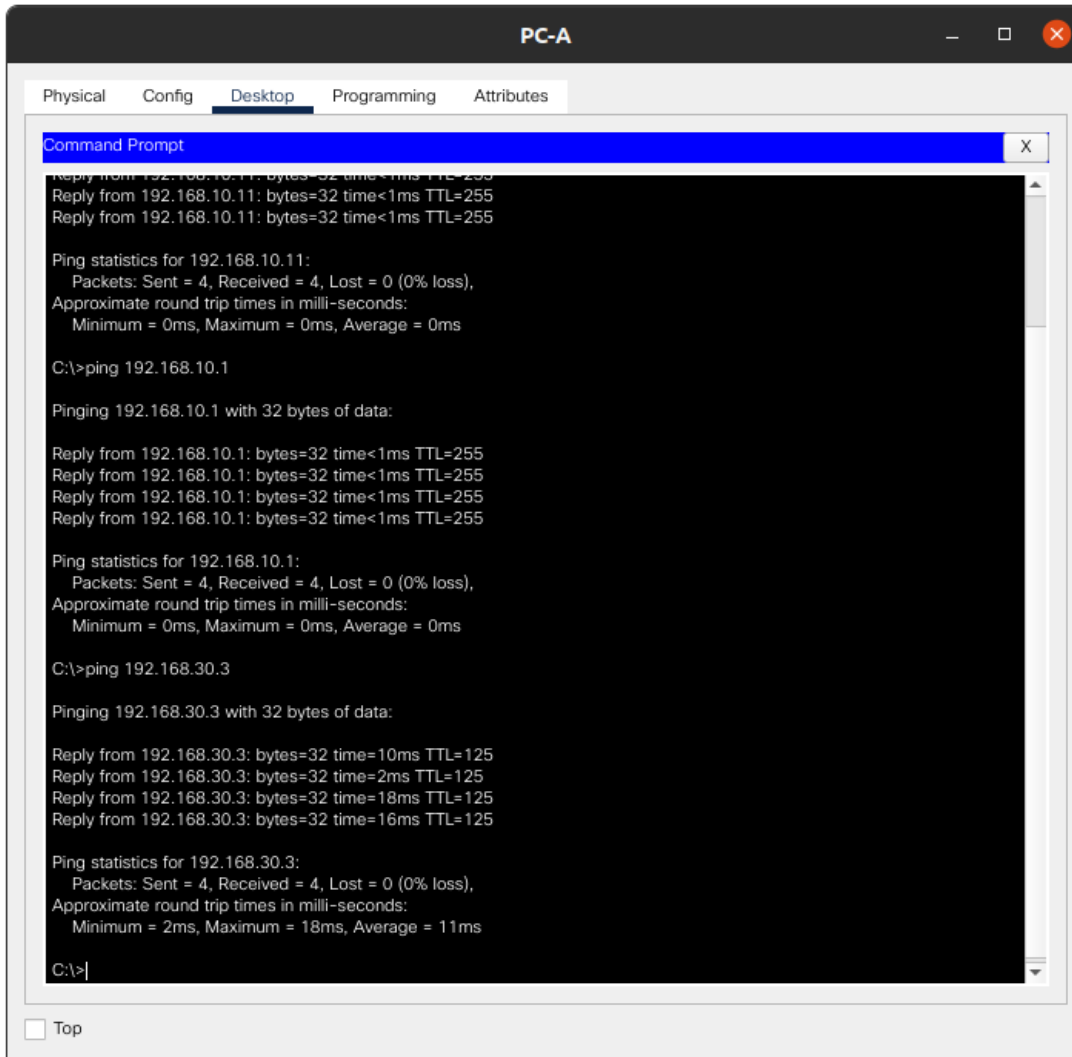
Typically, more typing is required when using a named ACL as opposed to a numbered ACL.

Why would you choose named ACLs over numbered?

**Because it's a good practice because it gives a descriptive name.**

## Screenshots

### PC-A to S1, R1, PC-C



The screenshot shows a desktop window titled "PC-A" with tabs for Physical, Config, Desktop, Programming, and Attributes. The "Desktop" tab is active, displaying a "Command Prompt" window. The Command Prompt shows the results of two ping commands. The first command is "C:\>ping 192.168.10.1", which shows four successful replies with 0% loss and 0ms round trip times. The second command is "C:\>ping 192.168.30.3", which shows four successful replies with 0% loss and an average round trip time of 11ms. A "Top" button is visible at the bottom left of the Command Prompt window.

```
Command Prompt
Reply from 192.168.10.1: bytes=32 time<1ms TTL=255
Reply from 192.168.10.1: bytes=32 time<1ms TTL=255
Reply from 192.168.10.1: bytes=32 time<1ms TTL=255
Reply from 192.168.10.1: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.10.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.10.1

Pinging 192.168.10.1 with 32 bytes of data:

Reply from 192.168.10.1: bytes=32 time<1ms TTL=255
Reply from 192.168.10.1: bytes=32 time<1ms TTL=255
Reply from 192.168.10.1: bytes=32 time<1ms TTL=255
Reply from 192.168.10.1: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.10.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.30.3

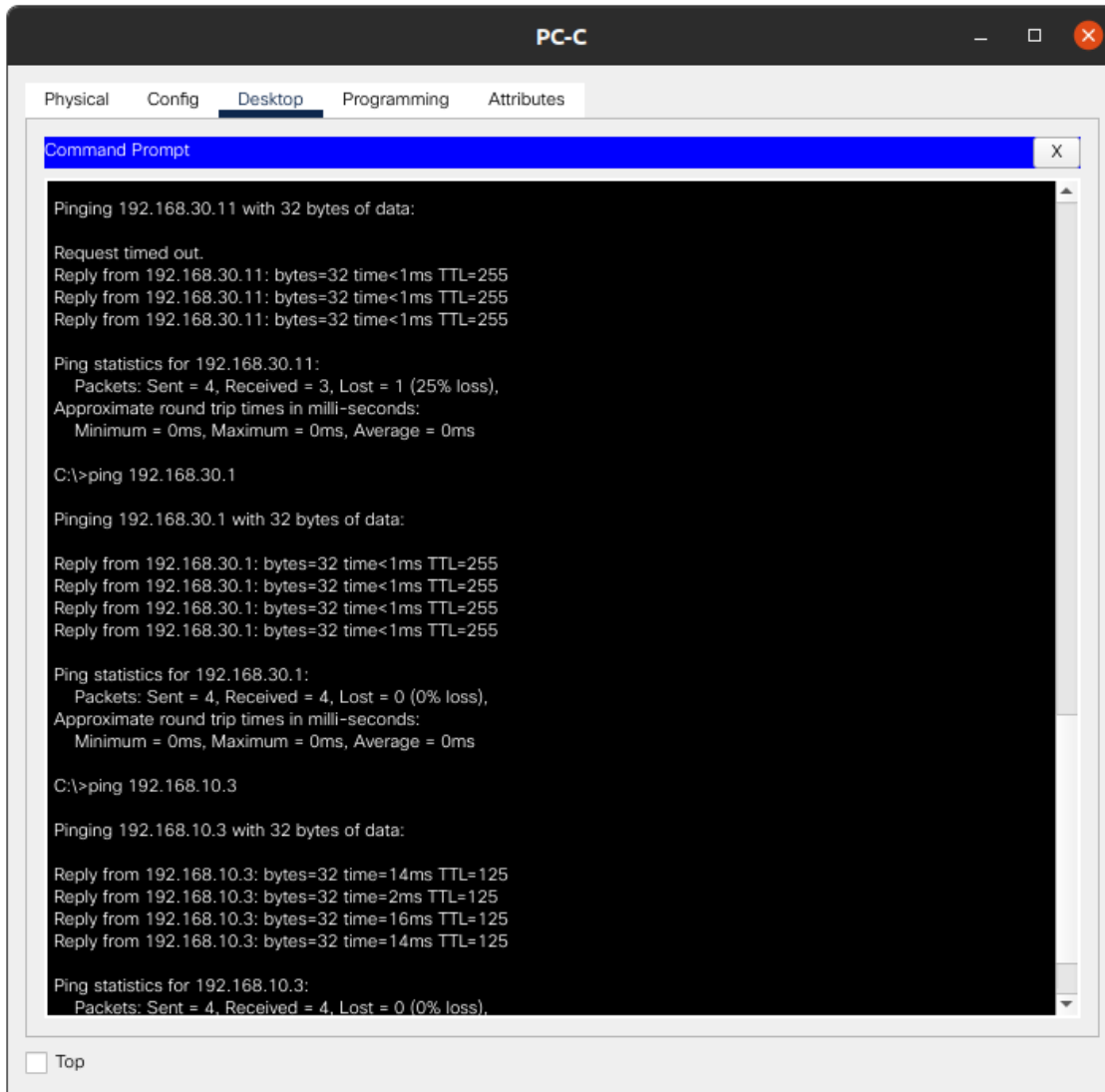
Pinging 192.168.30.3 with 32 bytes of data:

Reply from 192.168.30.3: bytes=32 time=10ms TTL=125
Reply from 192.168.30.3: bytes=32 time=2ms TTL=125
Reply from 192.168.30.3: bytes=32 time=18ms TTL=125
Reply from 192.168.30.3: bytes=32 time=16ms TTL=125

Ping statistics for 192.168.30.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 18ms, Average = 11ms

C:\>
```

☐ Top

**PC-C to S3, R3, PC-A**

The screenshot shows a Windows window titled "PC-C" with a tabbed interface. The "Desktop" tab is active, displaying a "Command Prompt" window. The Command Prompt shows the results of three ping commands executed from the C:\ directory.

```
Physical  Config  Desktop  Programming  Attributes

Command Prompt

Pinging 192.168.30.11 with 32 bytes of data:

Request timed out.
Reply from 192.168.30.11: bytes=32 time<1ms TTL=255
Reply from 192.168.30.11: bytes=32 time<1ms TTL=255
Reply from 192.168.30.11: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.30.11:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.30.1

Pinging 192.168.30.1 with 32 bytes of data:

Reply from 192.168.30.1: bytes=32 time<1ms TTL=255
Reply from 192.168.30.1: bytes=32 time<1ms TTL=255
Reply from 192.168.30.1: bytes=32 time<1ms TTL=255
Reply from 192.168.30.1: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.30.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.10.3

Pinging 192.168.10.3 with 32 bytes of data:

Reply from 192.168.10.3: bytes=32 time=14ms TTL=125
Reply from 192.168.10.3: bytes=32 time=2ms TTL=125
Reply from 192.168.10.3: bytes=32 time=16ms TTL=125
Reply from 192.168.10.3: bytes=32 time=14ms TTL=125

Ping statistics for 192.168.10.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
```

☐ Top

**Extended ping**

**R1**

Physical Config **CLI** Attributes

IOS Command Line Interface

User Access Verification

Password:

R1>enable

Password:

R1#config

Configuring from terminal, memory, or network [terminal]?

Enter configuration commands, one per line. End with CNTL/Z.

R1(config)#exit

R1#

%SYS-5-CONFIG\_I: Configured from console by console

R1#ping

Protocol [ip]:

Target IP address: 192.168.30.3

Repeat count [5]:

Datagram size [100]:

Timeout in seconds [2]:

Extended commands [n]: y

Source address or interface: 192.168.20.1

Type of service [0]:

Set DF bit in IP header? [no]:

Validate reply data? [no]:

Data pattern [0xABCD]:

Loose, Strict, Record, Timestamp, Verbose[none]:

Sweep range of sizes [n]:

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 192.168.30.3, timeout is 2 seconds:

Packet sent with a source address of 192.168.20.1

!!!!

Success rate is 100 percent (5/5), round-trip min/avg/max = 9/19/26 ms

R1#s|

Ctrl+F6 to exit CLI focus

Copy Paste

☐ Top

**Extended ping ISP**

ISP

Physical

Config

CLI

Attributes

IOS Command Line Interface

```
ISP#
ISP#
ISP#
ISP#
ISP#
ISP#
ISP#
ISP#ping
Protocol [ip]:
Target IP address: 192.168.10.3
Repeat count [5]:
Datagram size [100]:
Timeout in seconds [2]:
Extended commands [n]: y
Source address or interface: 209.165.200.225
Type of service [0]:
Set DF bit in IP header? [no]:
Validate reply data? [no]:
Data pattern [0xABCD]:
Loose, Strict, Record, Timestamp, Verbose[none]:
Sweep range of sizes [n]:
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.10.3, timeout is 2 seconds:
Packet sent with a source address of 209.165.200.225
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 9/14/25 ms

ISP#ping 192.168.10.3

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.10.3, timeout is 2 seconds:
UUUUU
Success rate is 0 percent (0/5)

ISP#
```

Ctrl+F6 to exit CLI focus

CopyPaste

☐ Top

## Configurations

### **R1**

```
enable  
config t
```

```
hostname R1
```

```
service password  
no ip domain-lookup
```

```
line con 0  
password cisco  
login  
loggin sync
```

```
line vty 0 15  
password cisco  
login  
loggin sync
```

```
enable password class
```

```
int g0/1  
ip add 192.168.10.1 255.255.255.0  
ip access-group BRANCH-OFFICE-POLICY out  
no shut
```

```
int lo0  
ip add 192.168.20.1 255.255.255.0  
no shut
```

```
int s0/1/0  
ip add 10.1.1.1 255.255.255.252  
clock rate 128000  
no shut
```

```
router rip  
version 2  
network 192.168.10.0  
network 192.168.20.0  
network 10.1.1.0
```

```
ip access-list standard BRANCH-OFFICE-POLICY  
permit host 192.168.30.3  
permit 192.168.40.0 0.0.0.255  
30 permit 209.165.200.224 0.0.0.31  
40 deny any
```

### **ISP**

```
enable
```

```
config t
hostname ISP
```

```
service password
no ip domain-lookup
```

```
line con 0
password cisco
login
loggin sync
```

```
line vty 0 15
password cisco
login
loggin sync
```

```
enable password class
```

```
int s0/1/0
ip add 10.1.1.2 255.255.255.252
no shut
```

```
int s0/1/1
ip add 10.2.2.2 255.255.255.252
clock rate 1280000
no shut
```

```
int lo0
ip add 209.165.200.225 255.255.255.224
no shut
```

```
router rip
version 2
network 209.165.200.224
network 10.1.1.0
network 10.2.2.0
```

### **R3**

```
enable
config t
```

```
hostname R3
```

```
service password
no ip domain-lookup
```

```
line con 0
password cisco
login
loggin sync
```

```
line vty 0 15
password cisco
login
```



```
login sync
```

```
enable password class
```

```
int g0/1
```

```
ip add 192.168.30.1 255.255.255.0
```

```
ip access-group 1 out
```

```
no shut
```

```
int lo0
```

```
ip add 192.168.40.1 255.255.255.0
```

```
no shut
```

```
int s0/1/1
```

```
ip add 10.2.2.1 255.255.255.252
```

```
no shut
```

```
router rip
```

```
version 2
```

```
network 192.168.30.0
```

```
network 192.168.40.0
```

```
network 10.2.2.0
```

```
access-list 1 remark Allow R1 LANs Access
```

```
access-list 1 permit 192.168.10.0 0.0.0.255
```

```
access-list 1 permit 192.168.20.0 0.0.0.255
```

```
access-list 1 deny any
```

## **S1**

```
enable
```

```
config t
```

```
hostname S1
```

```
service password
```

```
no ip domain-lookup
```

```
line con 0
```

```
password cisco
```

```
login
```

```
login sync
```

```
line vty 0 15
```

```
password cisco
```

```
login
```

```
login sync
```

```
enable password class
```

```
ip default-gateway 192.168.10.1
```

```
int vlan 1
```

```
ip add 192.168.10.11 255.255.255.0
```

```
no shut
```

**S3**

enable  
config t

hostname S1

service password  
no ip domain-lookup

line con 0  
password cisco  
login  
loggin sync

line vty 0 15  
password cisco  
login  
loggin sync

enable password class

ip default-gateway 192.168.30.1

int vlan 1  
ip add 192.168.30.11 255.255.255.0  
no shut