NetSim®
NETWORK SIMULATOR®

Lab ID: 9.9K714A005.SCI1.1

NetSim® NETWORK SIMULATOR®

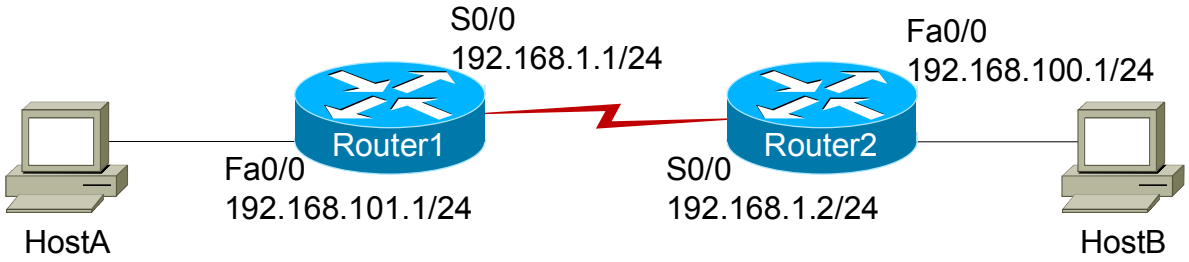
Scenario Lab: IP Addressing

Objective

Learn the commands needed to configure IP addresses on routers and workstations.

Lab Topology

The topology diagram below represents the NetMap in the Simulator.



Command Summary

Command	Description
clock rate *clock-rate*	sets the clock rate for a Data Communications Equipment (DCE) interface
configure terminal	enters global configuration mode from privileged EXEC mode
enable	enters privileged EXEC mode
end	ends and exits configuration mode
hostname *host-name*	sets the device name
interface *type number*	changes from global configuration mode to interface configuration mode
ip address *ip-address subnet-mask*	assigns an IP address to an interface
ipconfig /ip *ip-address subnet-mask*	is used in NetSim to assign an IP address and subnet mask to a workstation interface
ipconfig /dg *ip-address*	is used in NetSim to assign a default gateway IP address to a workstation interface
no shutdown	enables an interface
ping *ip-address*	sends an Internet Control Message Protocol (ICMP) echo request to the specified address
show running-config	displays the active configuration file

The IP addresses and subnet masks used in this lab are shown in the tables below:

IP Addresses

Device	Interface	IP Address	Subnet Mask
Router1	FastEthernet 0/0	192.168.101.1	255.255.255.0
	Serial 0/0	192.168.1.1	255.255.255.0
Router2	FastEthernet 0/0	192.168.100.1	255.255.255.0
	Serial 0/0	192.168.1.2	255.255.255.0

Device	IP Address	Subnet Mask	Default Gateway
HostA	192.168.101.2	255.255.255.0	192.168.101.1
HostB	192.168.100.2	255.255.255.0	192.168.100.1

Lab Tasks

1. Configure Router1 with a host name of **Router1**. Configure the appropriate IP addresses on the interfaces; refer to the IP Addresses table. A DCE cable is connected to Router1. The Serial link should have a speed of 64 kilobits per second (Kbps). Enable the interfaces.

2. Configure Router2 with a host name of **Router2**. Configure the appropriate IP addresses on the interfaces; refer to the IP Addresses table. Enable the interfaces.

3. On HostA and HostB, configure the appropriate IP address and default gateway; refer to the IP Addresses table.

4. Verify your configuration by sending a ping from each workstation to its default gateway. The pings should be successful.

Lab Solutions

1. On Router1, issue the following commands to configure a host name, to configure the appropriate IP addresses on the interfaces, to configure a clock rate on the Serial 0/0 interface, and to enable the interfaces:

```
Router>enable
Router#configure terminal
Router(config)#hostname Router1
Router1(config)#interface fastethernet 0/0
Router1(config-if)#ip address 192.168.101.1 255.255.255.0
Router1(config-if)#no shutdown
Router1(config-if)#interface serial 0/0
Router1(config-if)#ip address 192.168.1.1 255.255.255.0
Router1(config-if)#clock rate 64000
Router1(config-if)#no shutdown
```

2. On Router2, issue the following commands to configure a host name, to configure the appropriate IP addresses on the interfaces, and to enable the interfaces:

```
Router>enable
Router#configure terminal
Router(config)#hostname Router2
Router2(config)#interface fastethernet 0/0
Router2(config-if)#ip address 192.168.100.1 255.255.255.0
Router2(config-if)#no shutdown
Router2(config-if)#interface serial 0/0
Router2(config-if)#ip address 192.168.1.2 255.255.255.0
Router2(config-if)#no shutdown
```

3. On HostA and HostB, issue the following commands to configure the appropriate IP addresses and default gateways:

   On HostA:
```
C:>ipconfig /ip 192.168.101.2 255.255.255.0
C:>ipconfig /dg 192.168.101.1
```

   On HostB:
```
C:>ipconfig /ip 192.168.100.2 255.255.255.0
C:>ipconfig /dg 192.168.100.1
```

4. Verify your configuration by sending a ping from each workstation to its default gateway. The pings should be successful.

   On HostA:
```
C:>ping 192.168.101.1
```

   On HostB:
```
C:>ping 192.168.100.1
```

Sample Configuration Script

Router1

```
Router1#show running-config
Building configuration...
Current configuration : 692 bytes
!
Version 12.3
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname Router1
!
ip subnet-zero
!
ip cef
no ip domain-lookup
!
interface Serial0/0
 ip address 192.168.1.1 255.255.255.0
 no ip directed-broadcast
 clock rate 64000
!
interface Serial0/1
 no ip address
 no ip directed-broadcast
 shutdown
!
interface FastEthernet0/0
 ip address 192.168.101.1 255.255.255.0
 no ip directed-broadcast
!
interface FastEthernet0/1
 no ip address
 no ip directed-broadcast
 shutdown
!
ip classless
no ip http server
!
line con 0
line aux 0
line vty 0 4
!
no scheduler allocate
end
```