

## Cấu hình relay agent để cấp DHCP từ server 192.168.50.1 với ASDM

The screenshot displays the Cisco ASDM 7.1 for ASA - 192.168.1.1 interface. The main window is titled "Configuration > Device Management > DHCP > DHCP Relay". A dialog box titled "Add Global DHCP Relay Server" is open, prompting the user to add a server to which DHCP requests will be relayed. The dialog shows "DHCP Server: 192.168.50.1" and "Interface: inside".

The background configuration window shows the "DHCP Relay Agent" configuration. It includes a table with the following columns: Interface, IPv4 (DHCP Relay Enabled, Set Route), IPv6 (DHCP Relay Enabled), and Trusted Interface. The "inside" interface is selected.

Interface	IPv4		IPv6		Trusted Interface
	DHCP Relay Enabled	Set Route	DHCP Relay Enabled		
dmz	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
inside	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Global DHCP Relay Servers

Specify up to 10 IPv4 servers and 10 IPv6 servers to which DHCP requests would be relayed.

Server	Interface
--------	-----------

IPv4 Timeout: 60 seconds IPv6 Timeout: 60 seconds

Buttons: Add, Edit, Delete, Apply, Reset

Device configuration refreshed successfully. <admin> 15 1/1/03 3:06:21 AM UTC

Cisco ASDM 7.1 for ASA - 192.168.1.1

File View Tools Wizards Window Help

Home Configuration Monitoring Save Refresh Back Forward Help

Configuration > Device Management > DHCP > DHCP Relay

Device Management

- Management Access
- Licensing
- System Image/Configuration
- High Availability and Scalability
- Logging
- Smart Call-Home
- Cloud Web Security
- Users/AAA
- Certificate Management
- DHCP
  - DHCP Relay
  - DHCP Server
- DNS
- Advanced

Device Setup

Firewall

Remote Access VPN

Site-to-Site VPN

Device Management

DHCP Relay Agent

Interface	IPv4		IPv6		Trusted Interface
	DHCP Relay Enabled	Set Route	DHCP Relay Enabled		
dmz	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
inside	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Global DHCP Relay Servers

Specify up to 10 IPv4 servers and 10 IPv6 servers to which DHCP requests would be relayed.

Server	Interface
192.168.50.1	inside

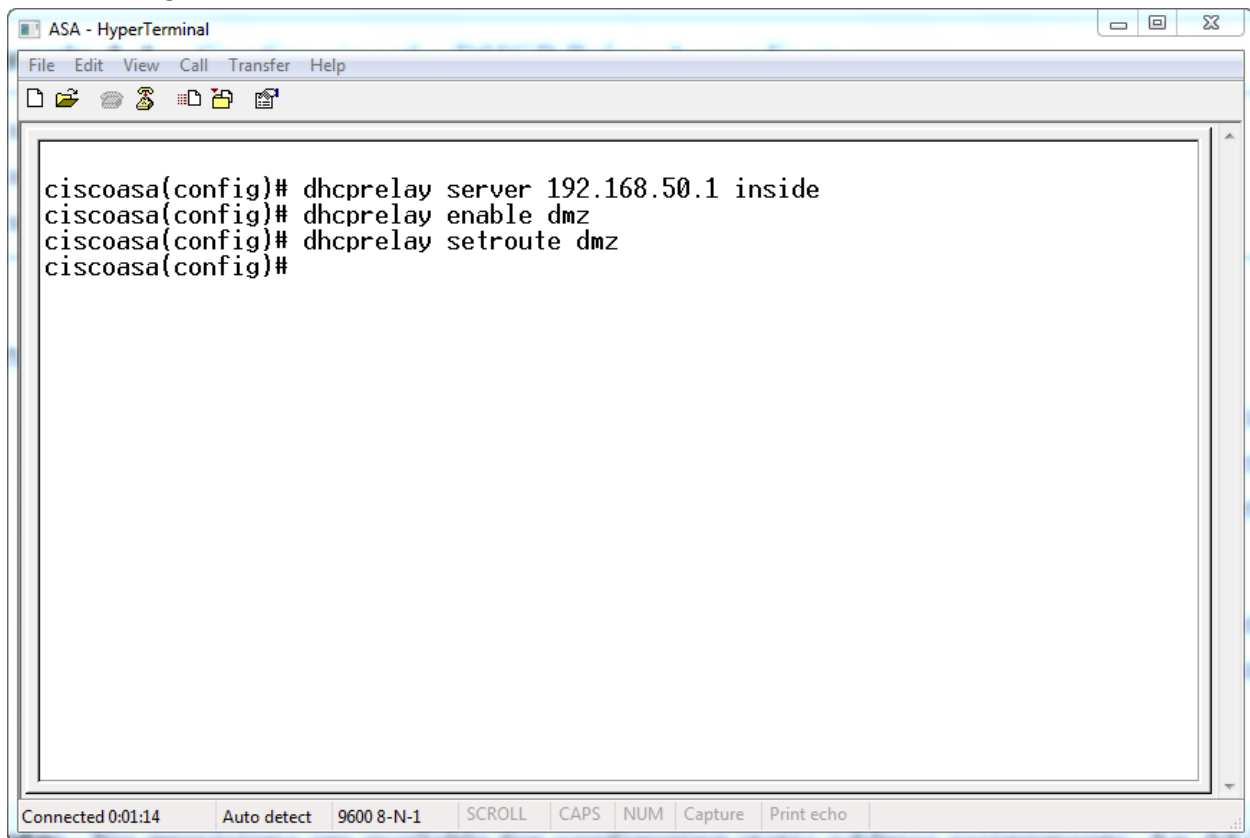
IPv4 Timeout: 60 seconds IPv6 Timeout: 60 seconds

Apply Reset

Configuration changes saved successfully.

<admin> 15 1/1/03 3:08:31 AM UTC

## Cấu hình bằng lệnh



The image shows a HyperTerminal window titled "ASA - HyperTerminal". The window contains a terminal session with the following commands and output:

```
ciscoasa(config)# dhcprelay server 192.168.50.1 inside
ciscoasa(config)# dhcprelay enable dmz
ciscoasa(config)# dhcprelay setroute dmz
ciscoasa(config)#
```

The status bar at the bottom of the window displays: "Connected 0:01:14", "Auto detect", "9600 8-N-1", "SCROLL", "CAPS", "NUM", "Capture", and "Print echo".

# cấu hình DHCP SERVER với ASDM

The screenshot shows the Cisco ASDM 7.1 for ASA configuration interface. The breadcrumb navigation is Configuration > Device Management > DHCP > DHCP Server. The left sidebar shows the configuration tree with 'DHCP Server' selected. The main content area contains a table of DHCP server configurations for three interfaces: dmz, inside, and management. Below the table are sections for 'Global DHCP Options' and 'Dynamic DNS Settings for DHCP Server'. The status bar at the bottom indicates 'Configuration changes saved successfully.' and shows the user is logged in as 'admin'.

Interface	DHCP Enabled	Address Pool	DNS Servers	WINS Servers
dmz	No	-		
inside	Yes	192.168.10.10 - 192.168.10.254		
management	No	192.168.1.2 - 192.168.1.254		

**Global DHCP Options**

Enable auto-configuration from interface: management  Allow VPN override

Enabling auto-configuration causes the DHCP server to automatically configure DNS, WINS and the default domain name. The values in the fields below take precedence over the auto-configured values.

DNS Server 1:  Primary WINS Server:

DNS Server 2:  Secondary WINS Server:

Domain Name:

Lease Length:  secs

Ping Timeout:  ms

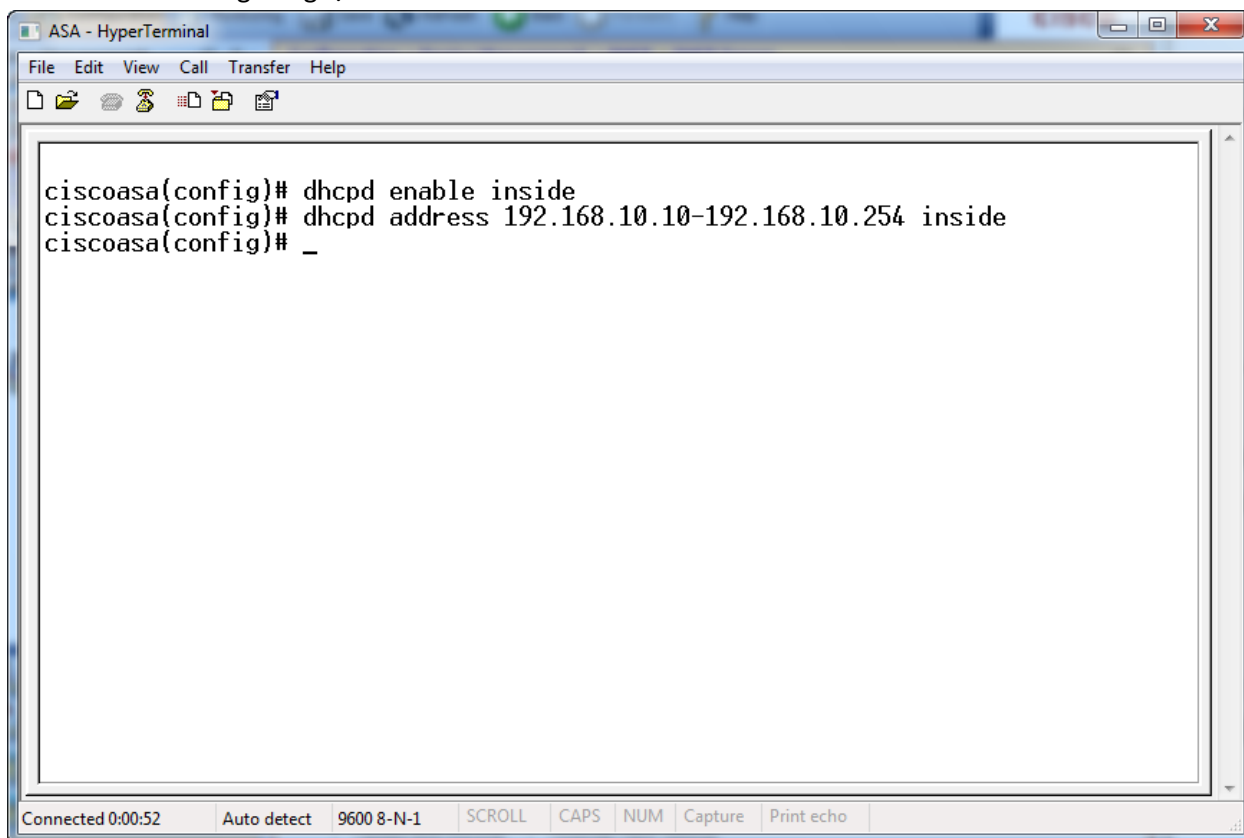
**Dynamic DNS Settings for DHCP Server**

Update DNS Server

Update Both Records  Override Client Settings

Configuration changes saved successfully. | <admin> | 15 | 1/1/03 3:14:41 AM UTC

## Cấu hình DHCP bằng dòng lệnh

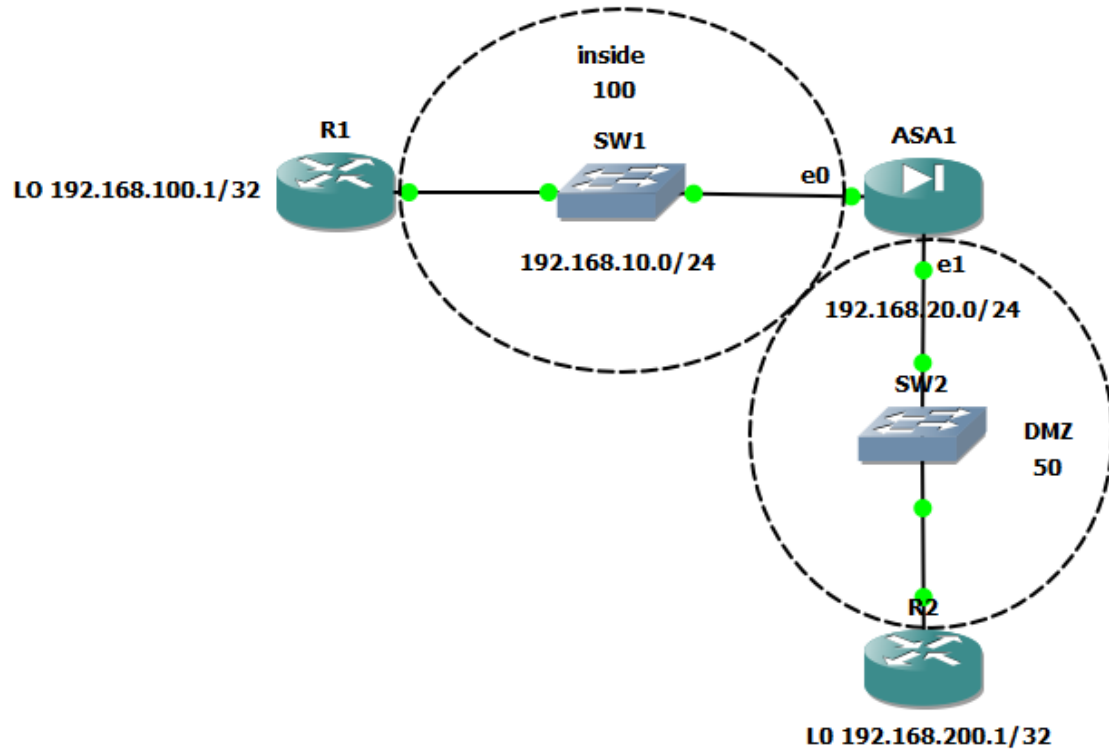


The image shows a HyperTerminal window titled "ASA - HyperTerminal". The window contains a terminal session with the following commands and output:

```
ciscoasa(config)# dhcpd enable inside
ciscoasa(config)# dhcpd address 192.168.10.10-192.168.10.254 inside
ciscoasa(config)# _
```

The status bar at the bottom of the window displays: "Connected 0:00:52", "Auto detect", "9600 8-N-1", "SCROLL", "CAPS", "NUM", "Capture", and "Print echo".

Mô hình mạng



## Cấu hình static route với ASDM

The screenshot displays the Cisco ASDM 7.1 for ASA configuration interface. The main window is titled "Cisco ASDM 7.1 for ASA - 192.168.1.1". The navigation pane on the left shows the "Device Setup" tree with "Static Routes" selected. The main content area shows the "Configuration > Device Setup > Routing > Static Routes" page. A dialog box titled "Add Static Route" is open, allowing the user to specify static routes. The dialog box includes the following fields and options:

- IP Address Type:  IPv4  IPv6
- Interface:
- Network:
- Gateway IP:  Metric:
- Options:
  - None
  - Tunneled (Default tunnel gateway for VPN traffic)
  - Tracked
    - Track ID:
    - Track IP Address:
    - SLA ID:
    - Target Interface:

Below the options, there is a "Monitoring Options" button and a note: "Enabling the tracked option starts a job for monitoring the state of the route, by pinging the track address provided." The dialog box has "OK", "Cancel", and "Help" buttons. The main window also has "Add", "Edit", and "Delete" buttons. The status bar at the bottom shows "Data Refreshed Successfully.", "<admin>", "15", and "1/1/03 2:16:07 AM UTC".

Cisco ASDM 7.1 for ASA - 192.168.1.1

File View Tools Wizards Window Help

Home Configuration Monitoring Save Refresh Back Forward Help

Configuration > Device Setup > Routing > Static Routes

Specify static routes.  
Filter:  Both  IPv4 only  IPv6 only

**Add Static Route**

IP Address Type:  IPv4  IPv6

Interface:

Network:

Gateway IP:  Metric:

Options

None

Tunneled (Default tunnel gateway for VPN traffic)

Tracked

Track ID:  Track IP Address:

SLA ID:  Target Interface:

Monitoring Options

Enabling the tracked option starts a job for monitoring the state of the route, by pinging the track address provided.

OK Cancel Help

Apply Reset

Configuration changes saved successfully.

<admin> 15 1/1/03 2:16:47 AM UTC



Cisco ASDM 7.1 for ASA - 192.168.1.1

File View Tools Wizards Window Help

Home Configuration Monitoring Save Refresh Back Forward Help

Device Setup

- Startup Wizard
- Interfaces
  - Routing
    - Static Routes
    - Route Maps
    - Prefix Rules
  - OSPF
  - OSPFv3
  - RIP
  - EIGRP
  - Multicast
  - Proxy ARP/Neighbor Discover
- Device Name/Password
- System Time
- EtherChannel

Configuration > Device Setup > Routing > Static Routes

Specify static routes.

Filter:  Both  IPv4 only  IPv6 only

Interface	IP Address	Netmask/ Prefix Length	Gateway IP	Metric/ Distance	Options
dmz	192.168.200.0	255.255.255.255	192.168.20.1	1	None
inside	192.168.100.0	255.255.255.255	192.168.10.1	1	None

Apply Reset

<admin> 15 1/1/03 2:19:47 AM UTC

## Kiểm tra static route

Cisco ASDM 7.1 for ASA - 192.168.1.1

File View Tools Wizards Window Help

Home Configuration Monitoring Save Refresh Back Forward Help

Monitoring > Routing > Routes

Routes

Each row represents one route. AD is the administrative distance.

Filter:  Both  IPv4 only  IPv6 only

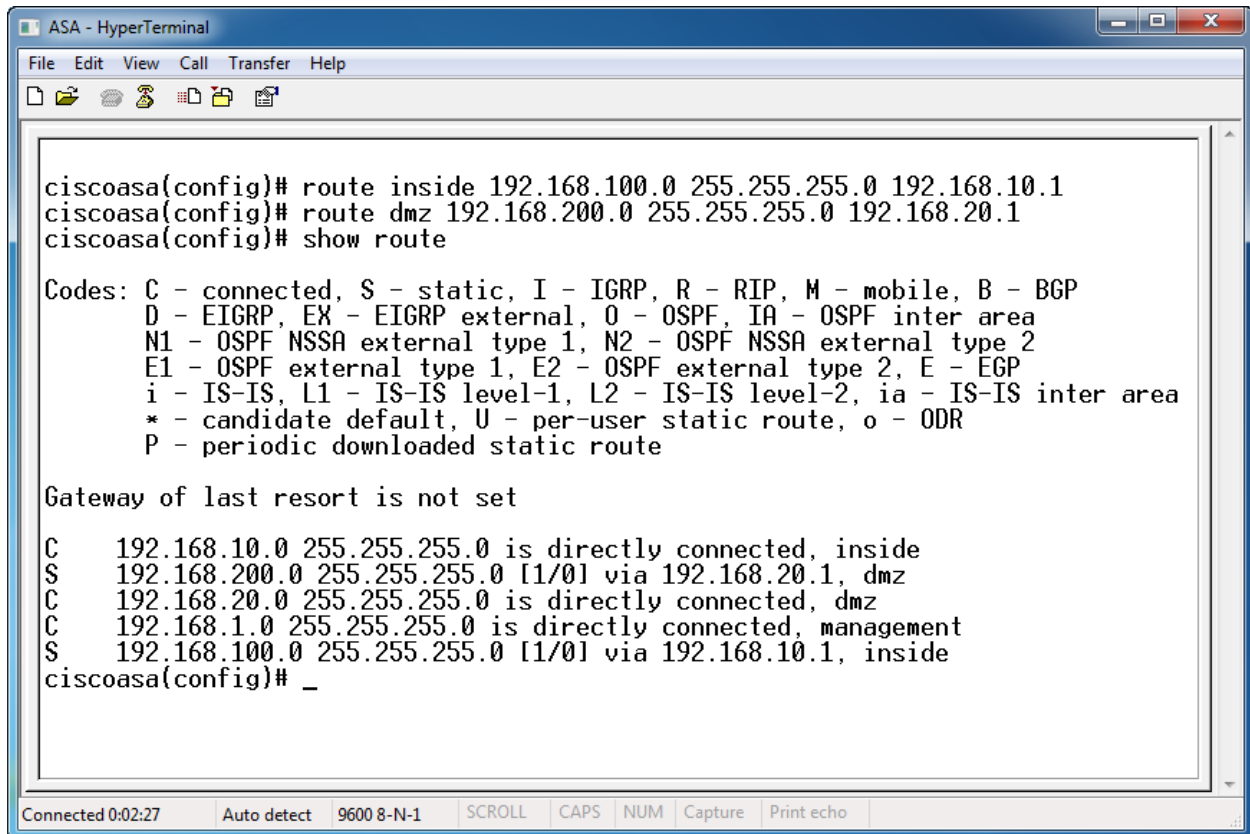
Protocol	Type	Destination IP	Netmask/ Prefix Length	Gateway	Interface	[AD/Metric]
CONNECTED		192.168.10.0	255.255.255.0		inside	
STATIC		192.168.200.0	255.255.255.255	192.168.20.1	dmz	[1/0]
CONNECTED		192.168.20.0	255.255.255.0		dmz	
CONNECTED		192.168.1.0	255.255.255.0		management	
STATIC		192.168.100.0	255.255.255.255	192.168.10.1	inside	[1/0]

Refresh

Last Updated: 3/26/14 10:54:38 AM

Data Refreshed Successfully. <admin> 15 1/1/03 2:20:07 AM UTC

## cấu hình và kiểm tra static route bằng dòng lệnh



```
ASA - HyperTerminal
File Edit View Call Transfer Help
ciscoasa(config)# route inside 192.168.100.0 255.255.255.0 192.168.10.1
ciscoasa(config)# route dmz 192.168.200.0 255.255.255.0 192.168.20.1
ciscoasa(config)# show route

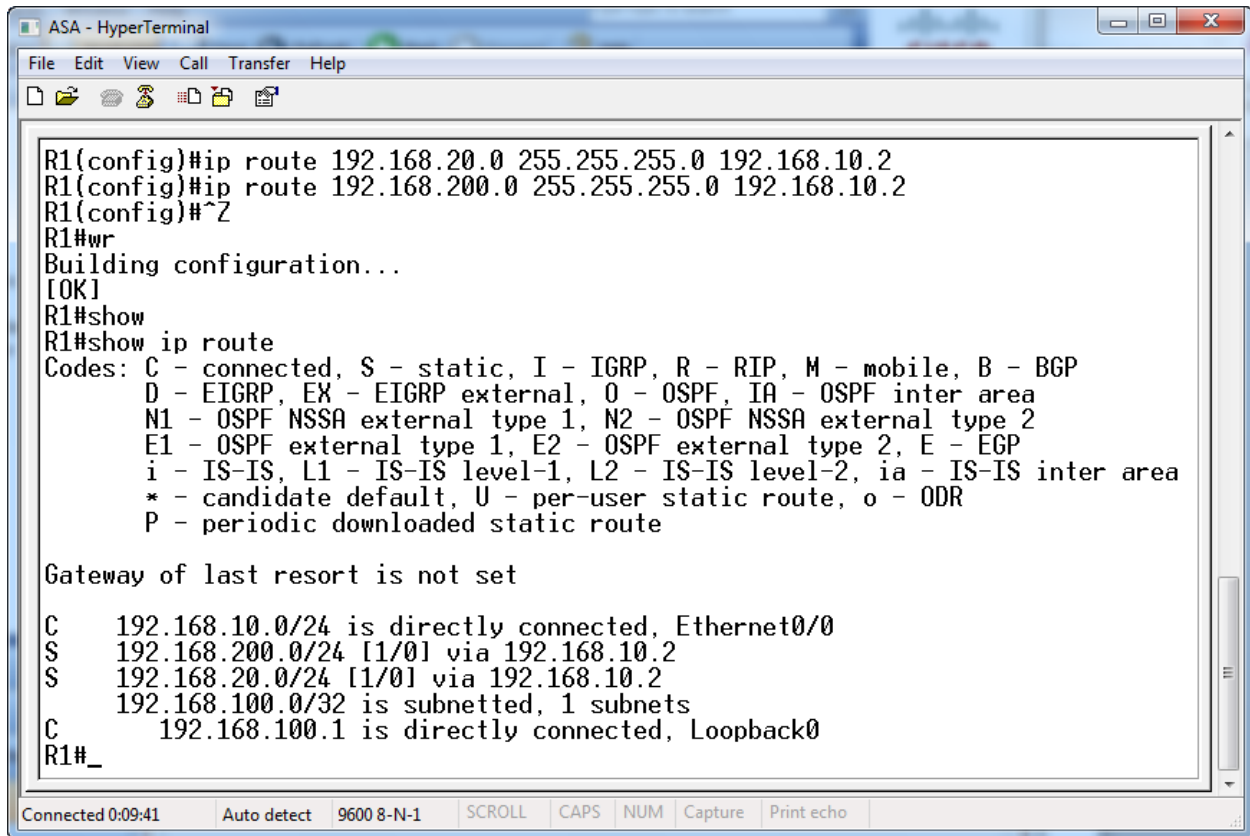
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

C    192.168.10.0 255.255.255.0 is directly connected, inside
S    192.168.200.0 255.255.255.0 [1/0] via 192.168.20.1, dmz
C    192.168.20.0 255.255.255.0 is directly connected, dmz
C    192.168.1.0 255.255.255.0 is directly connected, management
S    192.168.100.0 255.255.255.0 [1/0] via 192.168.10.1, inside
ciscoasa(config)# _

Connected 0:02:27  Auto detect  9600 8-N-1  SCROLL  CAPS  NUM  Capture  Print echo
```

## Kiểm tra static route trên R1

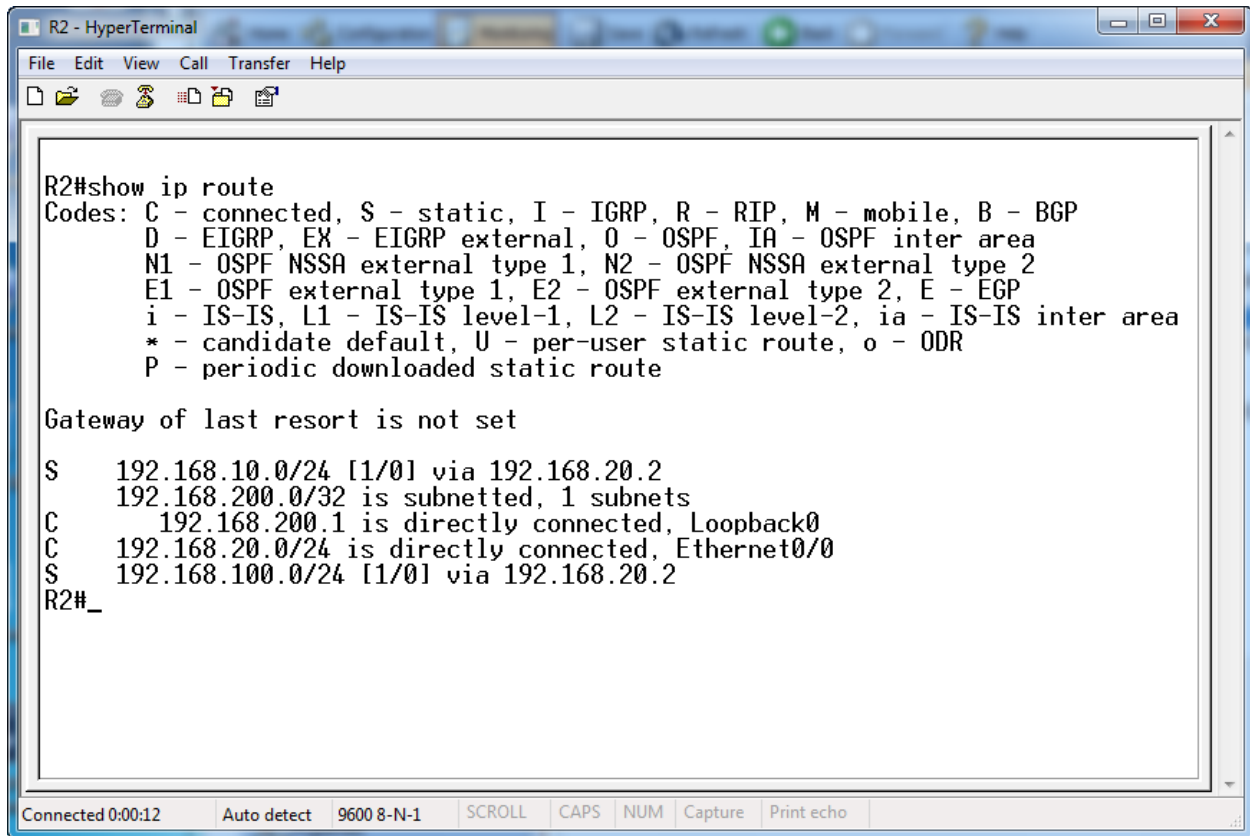


```
ASA - HyperTerminal
File Edit View Call Transfer Help
R1(config)#ip route 192.168.20.0 255.255.255.0 192.168.10.2
R1(config)#ip route 192.168.200.0 255.255.255.0 192.168.10.2
R1(config)#^Z
R1#wr
Building configuration...
[OK]
R1#show
R1#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

C    192.168.10.0/24 is directly connected, Ethernet0/0
S    192.168.200.0/24 [1/0] via 192.168.10.2
S    192.168.20.0/24 [1/0] via 192.168.10.2
    192.168.100.0/32 is subnetted, 1 subnets
C    192.168.100.1 is directly connected, Loopback0
R1#_
Connected 0:09:41  Auto detect  9600 8-N-1  SCROLL  CAPS  NUM  Capture  Print echo
```

## Kiểm tra static route trên R2



```
R2#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

S    192.168.10.0/24 [1/0] via 192.168.20.2
     192.168.200.0/32 is subnetted, 1 subnets
C     192.168.200.1 is directly connected, Loopback0
C     192.168.20.0/24 is directly connected, Ethernet0/0
S     192.168.100.0/24 [1/0] via 192.168.20.2
R2#_
```

Connected 0:00:12    Auto detect    9600 8-N-1    SCROLL    CAPS    NUM    Capture    Print echo

# Cấu hình RIP với ASDM

The screenshot shows the Cisco ASDM 7.1 for ASA - 192.168.1.1 interface. The main window displays the configuration page for RIP routing, titled "Configuration > Device Setup > Routing > RIP > Setup".

**Configuration > Device Setup > Routing > RIP > Setup**

Configure the global Routing Information Protocol (RIP) parameters. You can configure the RIP routing process.

- Enable RIP routing**
  - Enable auto-summarization
  - Enable RIP version  Version 1  Version 2

If version is not configured then device sends Version 1 and receives Version 1

- Enable default information originate

Route Map:

**Networks**

IP Network to Add:

192.168.10.0
192.168.20.0

**Passive Interfaces**

- Global passive: Configure all the interfaces as passive globally. This setting will override the individual interface's passive setting.

Interface	Passive
dmz	
inside	
management	

At the bottom of the window, the status bar shows: <admin> | 15 | [Icons] | 1/1/03 1:35:49 AM UTC

# Kiểm tra route

Cisco ASDM 7.1 for ASA - 192.168.1.1

File View Tools Wizards Window Help

Home Configuration Monitoring Save Refresh Back Forward Help

Monitoring > Routing > Routes

Routes

Each row represents one route. AD is the administrative distance.

Filter:  Both  IPv4 only  IPv6 only

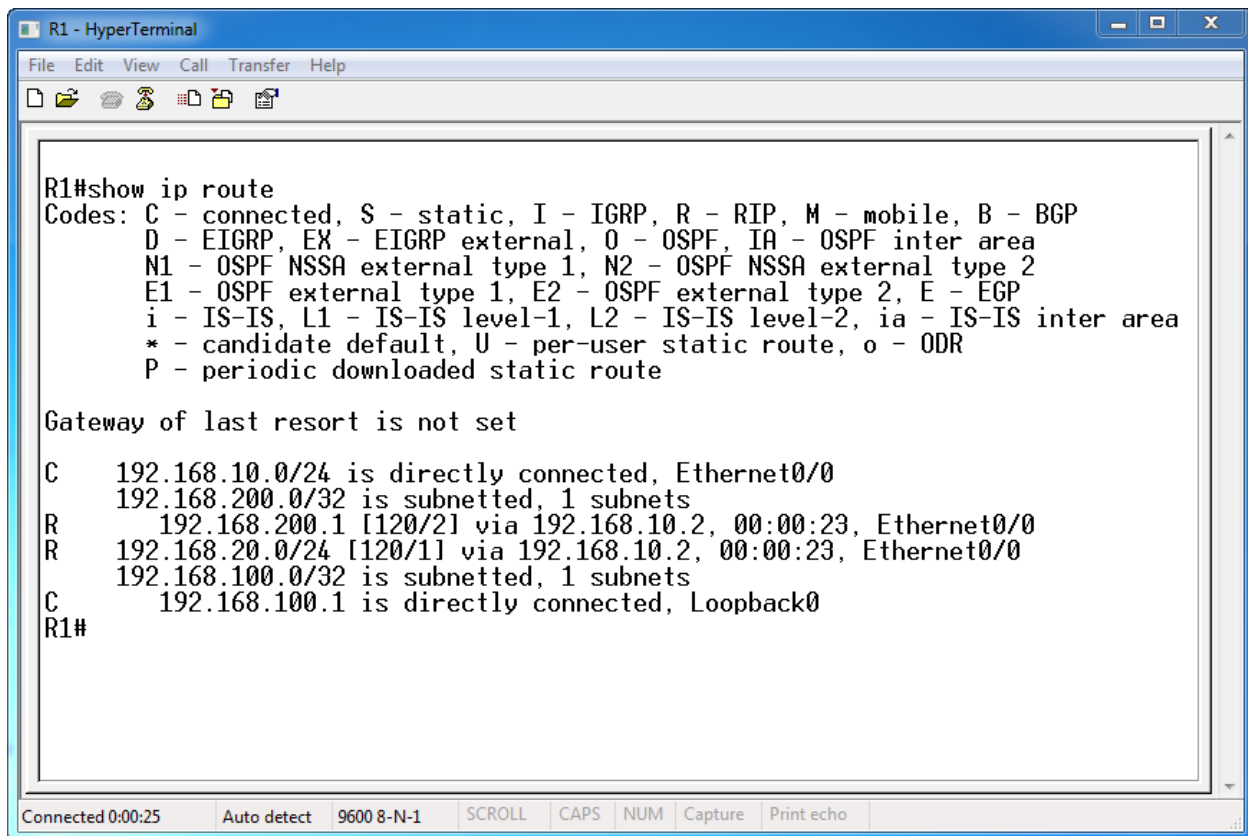
Protocol	Type	Destination IP	Netmask/ Prefix Length	Gateway	Interface	[AD/Metric]
CONNECTED		192.168.10.0	255.255.255.0		inside	
RIP		192.168.200.1	255.255.255.255	192.168.20.1	dmz	[120/1]
CONNECTED		192.168.20.0	255.255.255.0		dmz	
CONNECTED		192.168.1.0	255.255.255.0		management	
RIP		192.168.100.1	255.255.255.255	192.168.10.1	inside	[120/1]

Refresh

Last Updated: 3/26/14 10:10:34 AM

Data Refreshed Successfully. <admin> 15 1/1/03 1:36:19 AM UTC

## Kiểm tra route trên R1



```
R1#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

C    192.168.10.0/24 is directly connected, Ethernet0/0
     192.168.200.0/32 is subnetted, 1 subnets
R    192.168.200.1 [120/2] via 192.168.10.2, 00:00:23, Ethernet0/0
R    192.168.20.0/24 [120/1] via 192.168.10.2, 00:00:23, Ethernet0/0
     192.168.100.0/32 is subnetted, 1 subnets
C    192.168.100.1 is directly connected, Loopback0
R1#
```

Connected 0:00:25    Auto detect    9600 8-N-1    SCROLL    CAPS    NUM    Capture    Print echo



## Kiểm tra route trên R2

```
R2 - HyperTerminal
File Edit View Call Transfer Help
R2#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

R    192.168.10.0/24 [120/1] via 192.168.20.2, 00:00:16, Ethernet0/0
     192.168.200.0/32 is subnetted, 1 subnets
C    192.168.200.1 is directly connected, Loopback0
C    192.168.20.0/24 is directly connected, Ethernet0/0
     192.168.100.0/32 is subnetted, 1 subnets
R    192.168.100.1 [120/2] via 192.168.20.2, 00:00:16, Ethernet0/0
R2#_

Connected 0:00:08  Auto detect  9600 8-N-1  SCROLL  CAPS  NUM  Capture  Print echo
```

## Cấu hình EIGRP với ASDM

The screenshot displays the Cisco ASDM 7.1 for ASA configuration interface. The main window is titled "Configuration > Device Setup > Routing > EIGRP > Setup". The left sidebar shows a tree view of configuration options, with "EIGRP" expanded and "Setup" selected. The main content area contains the following text and controls:

Enable at least one EIGRP Process Instance and define networks.

Process Instances | Networks | Passive Interfaces

A maximum of one EIGRP process can be configured. To remove an EIGRP process, disable the checkbox.

EIGRP Process \_\_\_\_\_

Enable this EIGRP Process

EIGRP Process

The status bar at the bottom shows the user is logged in as <admin> on page 15, with a timestamp of 1/1/03 1:41:19 AM UTC.

Cisco ASDM 7.1 for ASA - 192.168.1.1

File View Tools Wizards Window Help

Home Configuration Monitoring Save Refresh Back Forward Help

Configuration > Device Setup > Routing > EIGRP > Setup

Enable at least one EIGRP Process Instance and define networks.

Process Instances Networks Passive Interfaces

Configure the networks for an EIGRP Process

EIGRP Process	Networks	
		Add
		Delete

Add EIGRP Network

EIGRP AS: 1

IP address: 192.168.10.0

Netmask: 255.255.255.0

OK Cancel Help

Apply Reset

<admin> 15 1/1/03 1:41:59 AM UTC

Cisco ASDM 7.1 for ASA - 192.168.1.1

File View Tools Wizards Window Help

Home Configuration Monitoring Save Refresh Back Forward Help

Configuration > Device Setup > Routing > EIGRP > Setup

Enable at least one EIGRP Process Instance and define networks.

Process Instances Networks Passive Interfaces

Configure the networks for an EIGRP Process

EIGRP Process	Networks
1	192.168.10.0 / 255.255.255.0

Add Delete

Add EIGRP Network

EIGRP AS: 1

IP address: 192.168.20.0

Netmask: 255.255.255.0

OK Cancel Help

Apply Reset

<admin> 15 1/1/03 1:42:29 AM UTC

Cisco ASDM 7.1 for ASA - 192.168.1.1

File View Tools Wizards Window Help

Home Configuration Monitoring Save Refresh Back Forward Help

Configuration > Device Setup > Routing > EIGRP > Setup

Enable at least one EIGRP Process Instance and define networks.

Process Instances Networks Passive Interfaces

Configure the networks for an EIGRP Process

EIGRP Process	Networks
1	192.168.20.0 / 255.255.255.0
1	192.168.10.0 / 255.255.255.0

Apply Reset

Configuration changes saved successfully.

<admin> 15 1/1/03 1:42:49 AM UTC

## Kiểm tra route

Cisco ASDM 7.1 for ASA - 192.168.1.1

File View Tools Wizards Window Help

Home Configuration Monitoring Save Refresh Back Forward Help

Monitoring > Routing > Routes

Routes

Each row represents one route. AD is the administrative distance.

Filter:  Both  IPv4 only  IPv6 only

Protocol	Type	Destination IP	Netmask/ Prefix Length	Gateway	Interface	[AD/Metric]
CONNECTED		192.168.10.0	255.255.255.0		inside	
EIGRP		192.168.200.1	255.255.255.255	192.168.20.1	dmz	[90/130816]
CONNECTED		192.168.20.0	255.255.255.0		dmz	
CONNECTED		192.168.1.0	255.255.255.0		management	
EIGRP		192.168.100.1	255.255.255.255	192.168.10.1	inside	[90/130816]

Refresh

Last Updated: 3/26/14 10:19:28 AM

Data Refreshed Successfully. <admin> 15 1/1/03 1:45:09 AM UTC

# Kiểm tra láng giềng

Cisco ASDM 7.1 for ASA - 192.168.1.1

File View Tools Wizards Window Help

Home Configuration Monitoring Save Refresh Back Forward Help

Monitoring > Routing > EIGRP Neighbor

EIGRP Neighbors

Each row represents one EIGRP Neighbor. Please click the help button for a description of the states.

Address	Interface	Holdtime	UpTime	Queue Length	Sequence	SRTT	RTO
192.168.10.1	Et0/0	13	00:00:43	0	4	828	4,968
192.168.20.1	Et0/1	11	00:01:31	0	6	726	4,356

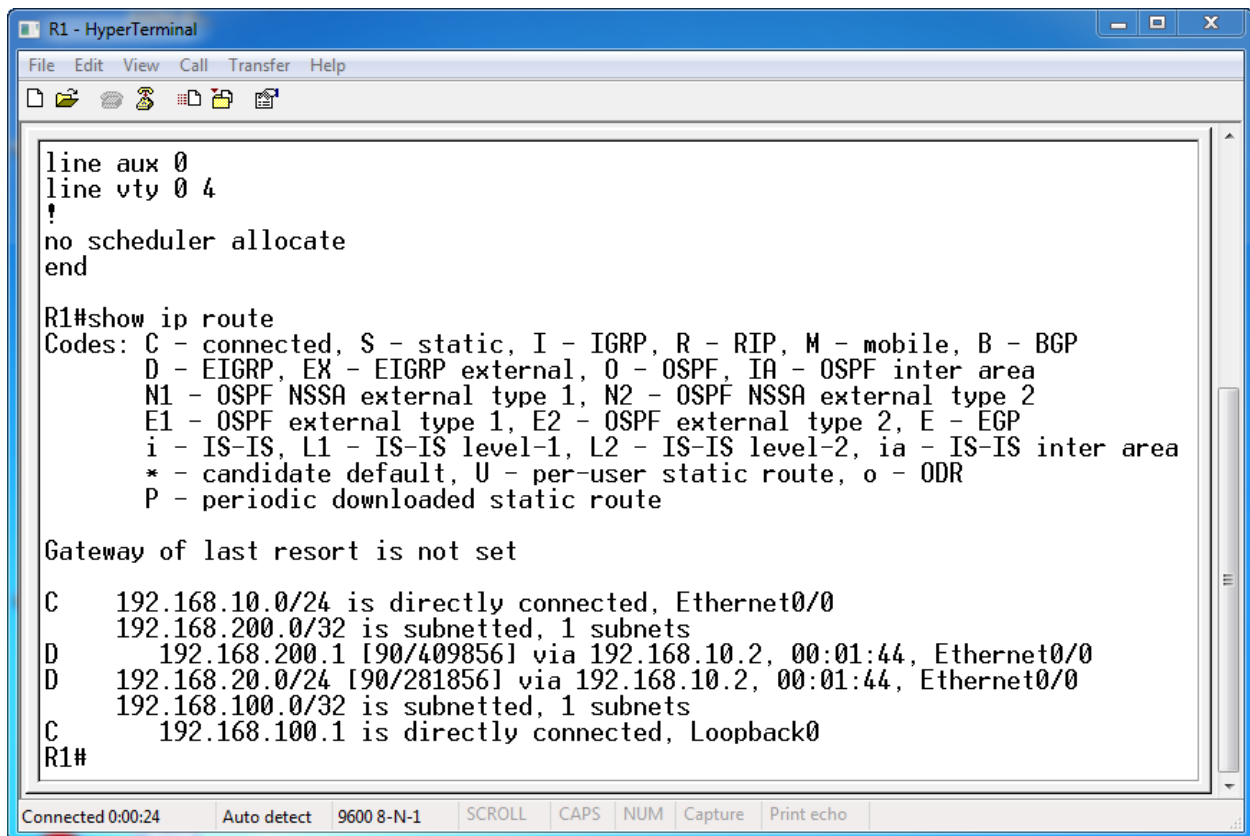
Clear Neighbors

Refresh

Last Updated: 3/26/14 10:19:46 AM

Data Refreshed Successfully. <admin> 15 1/1/03 1:45:19 AM UTC

## Kiểm tra route trên R1



```
R1 - HyperTerminal
File Edit View Call Transfer Help
line aux 0
line vty 0 4
↓
no scheduler allocate
end
R1#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

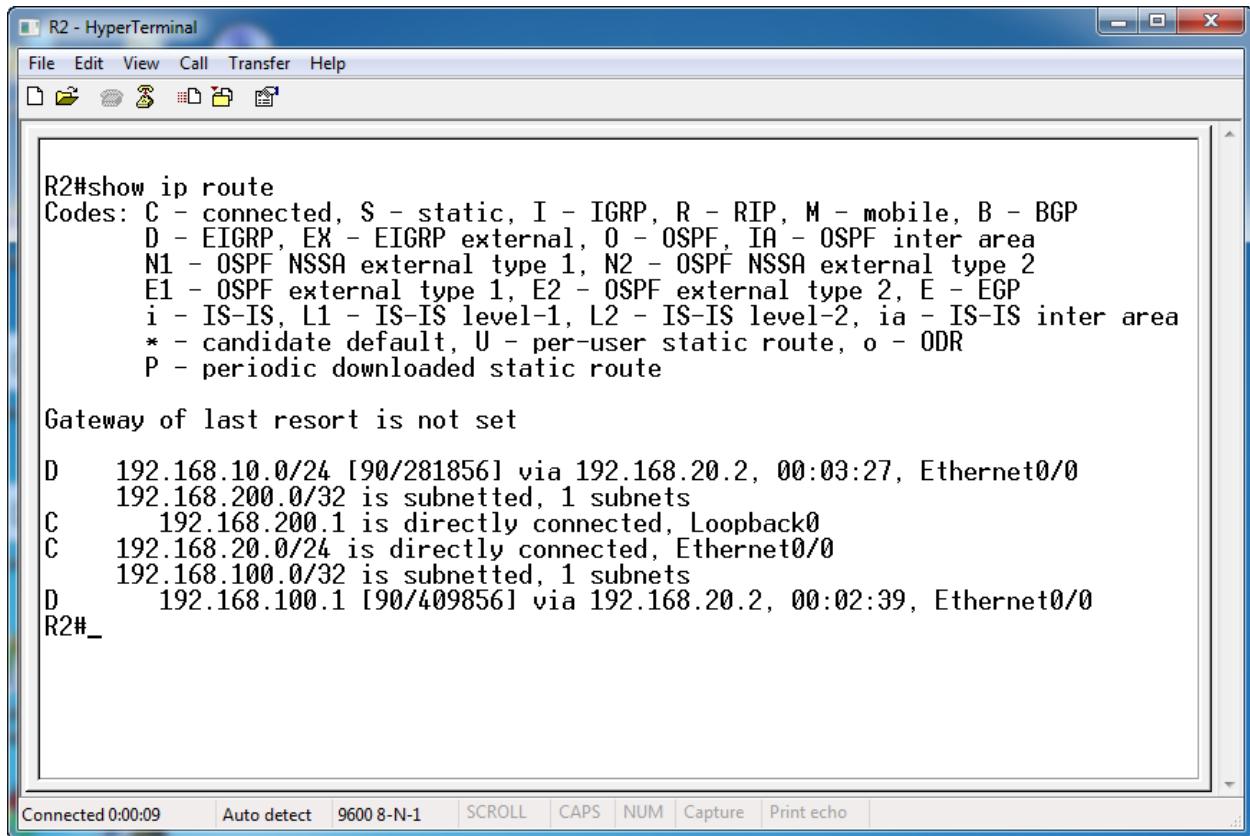
Gateway of last resort is not set

C    192.168.10.0/24 is directly connected, Ethernet0/0
     192.168.200.0/32 is subnetted, 1 subnets
D    192.168.200.1 [90/409856] via 192.168.10.2, 00:01:44, Ethernet0/0
D    192.168.20.0/24 [90/281856] via 192.168.10.2, 00:01:44, Ethernet0/0
     192.168.100.0/32 is subnetted, 1 subnets
C    192.168.100.1 is directly connected, Loopback0
R1#
```

Connected 0:00:24    Auto detect    9600 8-N-1    SCROLL    CAPS    NUM    Capture    Print echo



## Kiểm tra route trên R2



```
R2 - HyperTerminal
File Edit View Call Transfer Help
R2#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

D    192.168.10.0/24 [90/281856] via 192.168.20.2, 00:03:27, Ethernet0/0
     192.168.200.0/32 is subnetted, 1 subnets
C    192.168.200.1 is directly connected, Loopback0
C    192.168.20.0/24 is directly connected, Ethernet0/0
     192.168.100.0/32 is subnetted, 1 subnets
D    192.168.100.1 [90/409856] via 192.168.20.2, 00:02:39, Ethernet0/0
R2#_

Connected 0:00:09  Auto detect  9600 8-N-1  SCROLL  CAPS  NUM  Capture  Print echo
```

## Cấu hình OSPF với ASDM

The screenshot displays the Cisco ASDM 7.1 for ASA - 192.168.1.1 interface. The main window is titled "Configuration > Device Setup > Routing > OSPF > Setup". The left sidebar shows a "Device List" tree with "OSPF" selected under "Routing". The main content area contains the following text and controls:

Enable at least one OSPF Process Instance and define areas and area networks.

Process Instances | Area / Networks | Route Summarization

A maximum of two OSPF processes can be configured. To remove an OSPF process, disable the checkbox.

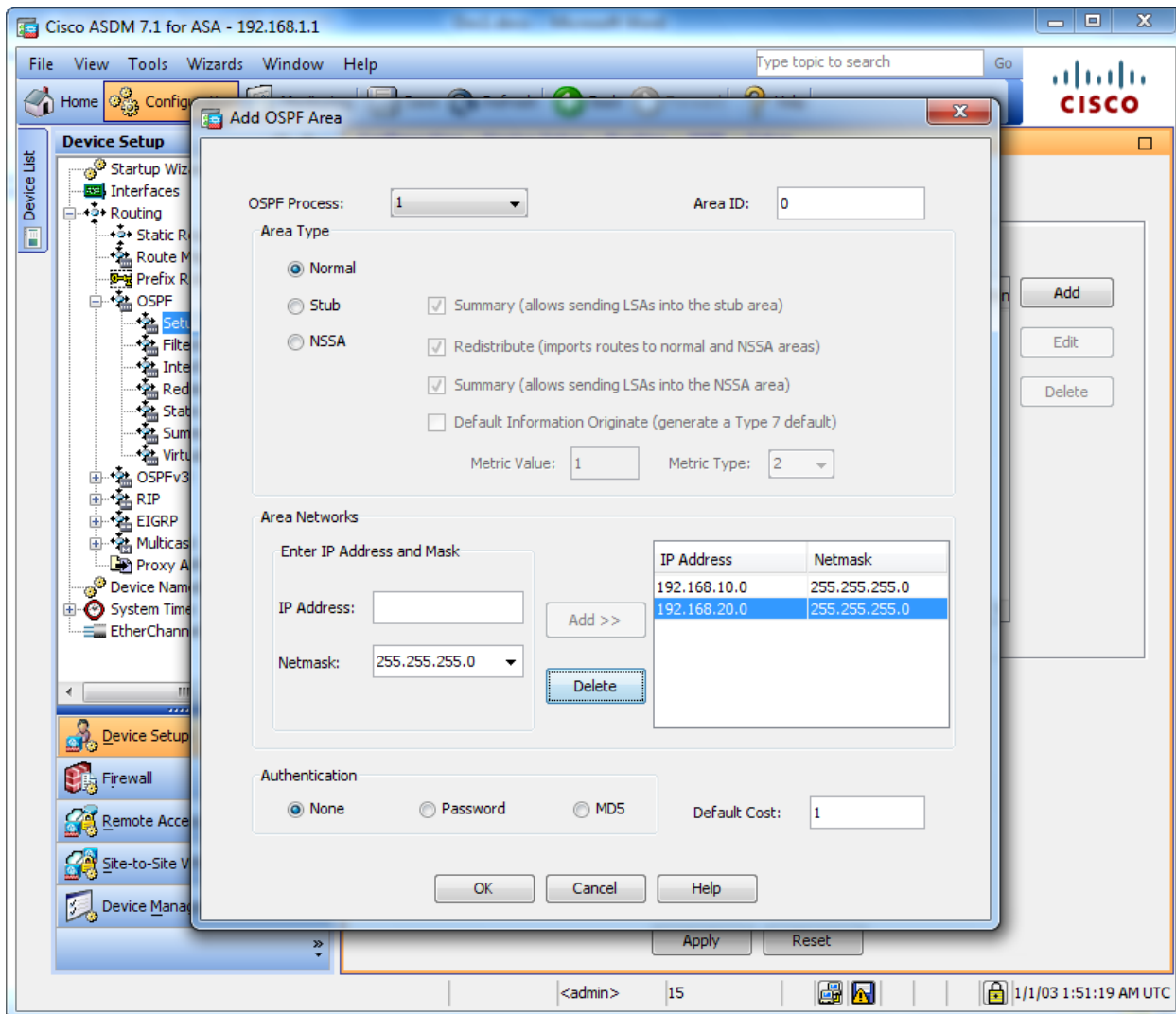
**OSPF Process 1**

- Enable this OSPF Process
- OSPF Process ID:  Advanced...

**OSPF Process 2**

- Enable this OSPF Process
- OSPF Process ID:  Advanced...

At the bottom of the configuration area are "Apply" and "Reset" buttons. The status bar at the bottom shows "<admin> 15" and a timestamp of "1/1/03 1:50:39 AM UTC".



OSPF Process: 1 Area ID: 0

Area Type

Normal

Stub  Summary (allows sending LSAs into the stub area)

NSSA  Redistribute (imports routes to normal and NSSA areas)

Summary (allows sending LSAs into the NSSA area)

Default Information Originate (generate a Type 7 default)

Metric Value: 1 Metric Type: 2

Area Networks

Enter IP Address and Mask

IP Address:  Add >>

Netmask: 255.255.255.0 Delete

IP Address	Netmask
192.168.10.0	255.255.255.0
192.168.20.0	255.255.255.0

Authentication

None  Password  MD5 Default Cost: 1

OK Cancel Help

Add

Edit

Delete

Apply Reset

Cisco ASDM 7.1 for ASA - 192.168.1.1

File View Tools Wizards Window Help

Home Configuration Monitoring Save Refresh Back Forward Help

Configuration > Device Setup > Routing > OSPF > Setup

Enable at least one OSPF Process Instance and define areas and area networks.

Process Instances Area / Networks Route Summarization

Configure the area properties and area networks for OSPF Process

OSPF Process	Area ID	Area Type	Networks	Authentication	... Cost	
1	0	Normal	192.168.20.0 / 255.25...	None		Add
			192.168.10.0 / 255.25...		1	Edit
						Delete

Apply Reset

Configuration changes saved successfully.

<admin> 15 1/1/03 1:53:09 AM UTC

# Kiểm tra route

The screenshot shows the Cisco ASDM 7.1 for ASA - 192.168.1.1 interface. The main content area displays the Routing table with the following data:

Protocol	Type	Destination IP	Netmask/ Prefix Length	Gateway	Interface	[AD/Metric]
CONNECTED		192.168.10.0	255.255.255.0		inside	
OSPF		192.168.200.1	255.255.255.255	192.168.20.1	dmz	[110/11]
CONNECTED		192.168.20.0	255.255.255.0		dmz	
CONNECTED		192.168.1.0	255.255.255.0		management	
OSPF		192.168.100.1	255.255.255.255	192.168.10.1	inside	[110/11]

Additional interface details include a navigation pane on the left with 'Routing' selected, a 'Refresh' button, and a status bar at the bottom showing 'Device configuration refreshed successfully.', '<admin>', '15', and the time '11/03 1:57:39 AM UTC'.

## Kiểm tra các type của LSAs

The screenshot shows the Cisco ASDM 7.1 for ASA - 192.168.1.1 interface. The left sidebar contains a 'Device List' and a 'Routing' tree with 'OSPF LSAs > Type 1' selected. The main content area is titled 'Monitoring > Routing > OSPF LSAs > Type 1' and displays the following information:

OSPF LSA - Type 1

Each row represents one type 1 link state advertisement (LSA). Type 1 LSAs represent the routers in an area under a process.

Process	Area	Router ID	Advertiser	Age	Sequence #	Checksum
1	0	192.168.20.2	192.168.20.2	61	0x80000003	0x2501
1	0	192.168.100.1	192.168.100.1	61	0x80000002	0x6a57
1	0	192.168.200.1	192.168.200.1	126	0x80000003	0xaed0

Refresh

Last Updated: 3/26/14 10:32:21 AM

Data Refreshed Successfully. | <admin> | 15 | 1/1/03 1:57:59 AM UTC

Cisco ASDM 7.1 for ASA - 192.168.1.1

File View Tools Wizards Window Help

Home Configuration **Monitoring** Save Refresh Back Forward Help

Monitoring > Routing > OSPF LSAs > Type 2

OSPF LSA - Type 2

Each row represents one type 2 link state advertisement (LSA). The table displays the IP address of the Designated Router that advertises the routers.

Process	Area	Designated Router	Advertiser	Age	Sequence #	Checksum
1	0	192.168.10.2	192.168.20.2	86	0x80000001	0x718
1	0	192.168.20.2	192.168.20.2	166	0x80000001	0x1c6

Refresh

Last Updated: 3/26/14 10:32:47 AM

Data Refreshed Successfully.

<admin> 15

1/1/03 1:58:19 AM UTC

# Kiểm tra láng giềng

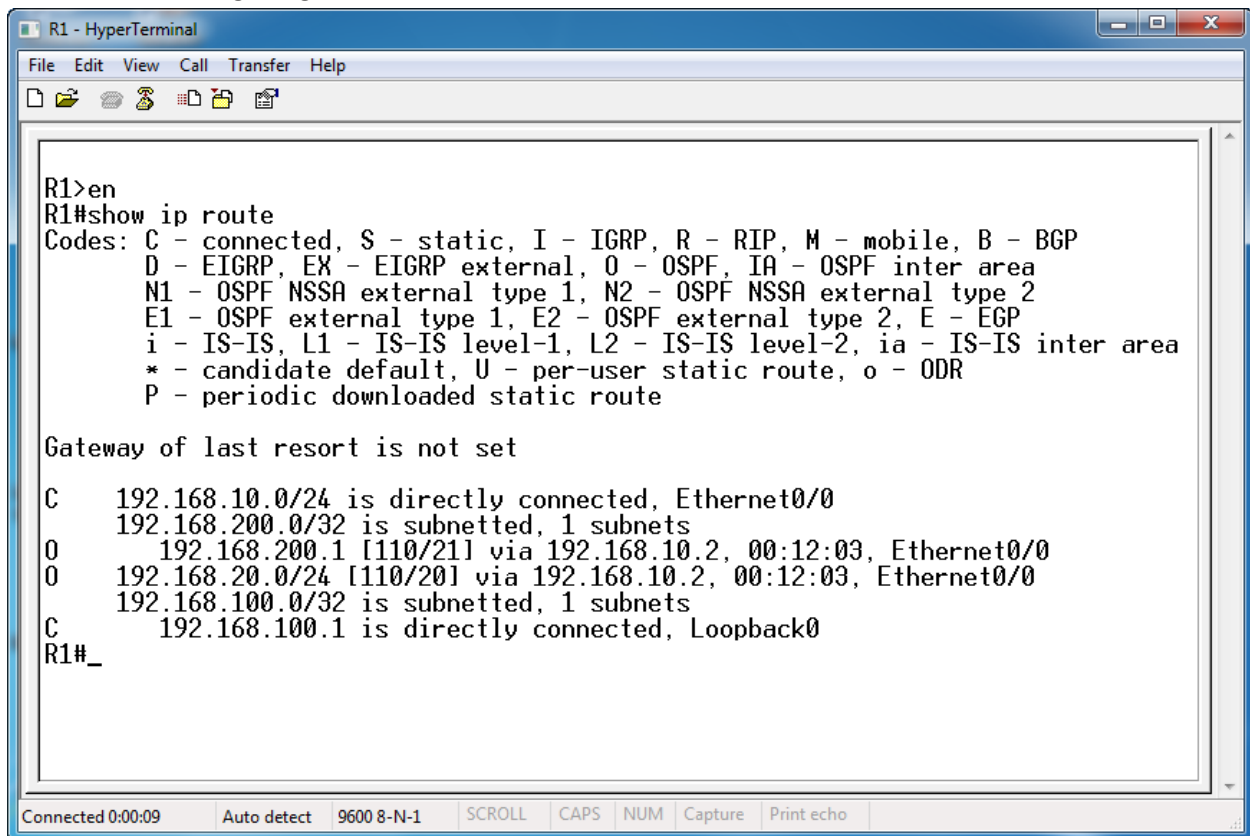
The screenshot shows the Cisco ASDM 7.1 for ASA - 192.168.1.1 interface. The main window displays the 'Monitoring > Routing > OSPF Neighbors' page. The left sidebar shows a tree view under 'Routing' with 'OSPF Neighbors' selected. The main content area shows a table of OSPF neighbors with the following data:

Neighbor	Priority	State	Dead Time	Address	Interface
192.168.100.1	1	FULL/BDR	0:00:37	192.168.10.1	inside
192.168.200.1	1	FULL/BDR	0:00:33	192.168.20.1	dmz

Below the table is a 'Refresh' button. At the bottom right of the main content area, it says 'Last Updated: 3/26/14 10:33:07 AM'. The status bar at the bottom shows 'Data Refreshed Successfully.', '<admin>', '15', and the system time '1/1/03 1:58:39 AM UTC'.



Kiểm tra route bằng dòng lệnh trên R1



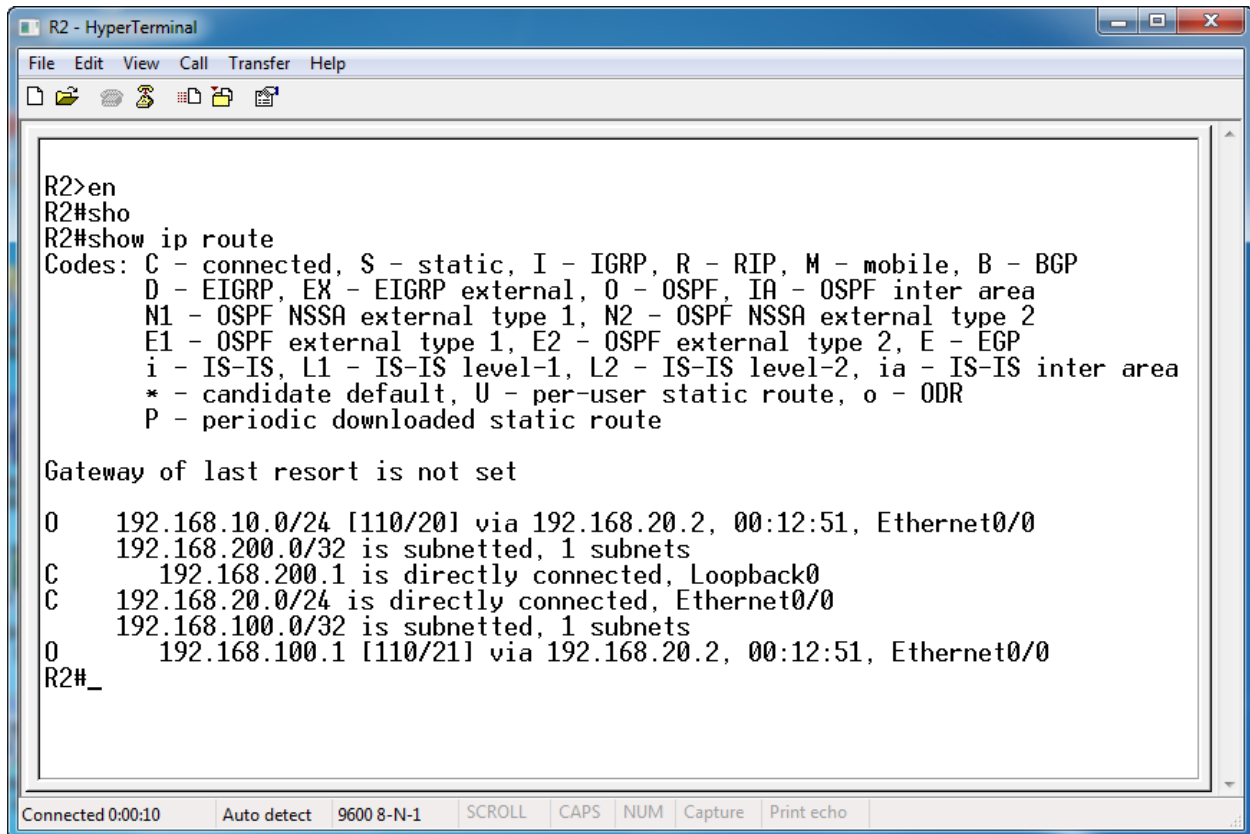
```
R1>en
R1#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

C    192.168.10.0/24 is directly connected, Ethernet0/0
     192.168.200.0/32 is subnetted, 1 subnets
O    192.168.200.1 [110/21] via 192.168.10.2, 00:12:03, Ethernet0/0
O    192.168.20.0/24 [110/20] via 192.168.10.2, 00:12:03, Ethernet0/0
     192.168.100.0/32 is subnetted, 1 subnets
C    192.168.100.1 is directly connected, Loopback0
R1#_
```

Connected 0:00:09    Auto detect    9600 8-N-1    SCROLL    CAPS    NUM    Capture    Print echo

kiểm tra route trên R2



```
R2 - HyperTerminal
File Edit View Call Transfer Help
R2>en
R2#sho
R2#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

O    192.168.10.0/24 [110/20] via 192.168.20.2, 00:12:51, Ethernet0/0
     192.168.200.0/32 is subnetted, 1 subnets
C    192.168.200.1 is directly connected, Loopback0
C    192.168.20.0/24 is directly connected, Ethernet0/0
     192.168.100.0/32 is subnetted, 1 subnets
O    192.168.100.1 [110/21] via 192.168.20.2, 00:12:51, Ethernet0/0
R2#_

Connected 0:00:10  Auto detect  9600 8-N-1  SCROLL  CAPS  NUM  Capture  Print echo
```