. \	PAGE NO DATE:
3.36	Experiment-2
•	Am: configure - 1P address to routers in
	parket tracer Enphore the following messager: ping responses, destination unreachable, request
	timed out, leply
·,	Topology: (single router)
	Fa 1/6
	10.00.10 Rowa 20.0.0.10
	Fad
	PC - PT PC
	Quantification of the second o
	i) select the PC's, set its ip address of then
	set the particular gateway. ii) solut the router of place it, connect the PC's to it through the coffee cross over cable.
	cable.
	(iii) select the router, go to CLI. Run the following
	Router Denable Router # config kining!
	Enter configuration commands, one for the.
	Router (config) # interface fast ethernet 0/0 Nouter (config-if) # ip address 10.00.10 255.00
	Rontin (config-if)# no shot

Router (config-if) # %. UNK-S-CHANGED: Interface Far Etherst %, changed state to up of. LINEPROTO-S-UPDOWN: Line protocol on Intubace Fast Etheret of o, changed state to up Router (configi) # exit Router (config) I interface fast etheret 1/0 Nonth (workig-4) It ip address 20.0.0.10 255.0.0.8 Router (working-if) # no short Nonter (config-it)# 6 LINK - 5 - CHANGED: Entry are Fart Floret Vog changed state to up of LINEPROTO-S-UPPOWNELING protocol on Interface Fast Ethernet 1/0, changed state to up Routh (working - if #exit) Router (config) # exit Ronter H % SYS - S- CONFIG I: configured from conrole by Route # show ip noute codes: (- connected, s-static, I-IGRP, R-RIP, M-mobil, B-BGP n-EIGEPEY-EIGEP enternal, 0-0895 SA-OSP. Finter area NI - OSPF NSSA entinal type 1, N& - OSPF NSS A entral type 2 EI-OSPF enteral type 1, Ez-OSPF entral type 2, E-EAP

i - IS-ES, L1 - IS-IS level-1, L2-Is-Is level -2, ia-Is-Is intera ara

* - conditate default, U-perfector static rome, P - periodic downloaded static youte Gateway of last resort is not sel C 20.0.0.0/8 is directly conected, Fast Etherst you is) to the PC from where the message has to be set sent, which on dishtop of go to command prompt. here 100 Ringing 20.0.0.1 with 32 bytes of data: Regnest timed out Reply from 20.0.0.1: hytu=32 tim=1my TIL=127 Reply from 20.0.0.1 ' higher - 32 time = lms TSL = 12= Riphy from 20 . O. O. 1: hyter = 32 time = 1m TIL= 127 Reply from 20 . 0.0.1: keytes: 33 time - 1ms TIE 123 Parket: sent = 4, Recieved = 3, Lost = 1 (25% LOH), Appropriate roud trip times in milli-seconds: Minimum: oms, Maximum: 12 mg, Average = 4 mg P(>ping 2000.1 Proping 20.0 0.1 with 32 hyter of data

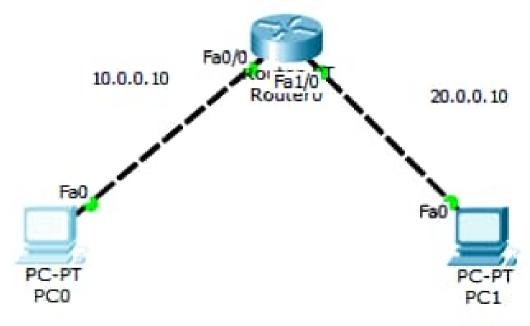
Reply som 20.0.0.1: hytes = 32 die = Im TTL=129 Reply from 20.0.01 19 to= 32 fin=1m TTL=127 Reply from 20 . 0.0.1 byt(1=32 trae=Im TJC=127 20.0.0.1. bytes=32 # NO : 1 M TIL = 127 ling statistics for 20.0.0.1: Pactus: send = a, Recived = a, Lost = o (0% lon),

A phonhate sand trip times in milli-seconds:
Minimum: one, Maximum: one, Average = ons.

observation:

i) At first ping, there is a request timedow and loss of data

ii) This means Frewall is borking connectivity
iii) The second ping leads to full transmission without any loss



10.0.0.1

```
Press RETURN to get started!
Router>enable
Router#config terminal
Enter configuration commands, one per line. End with CNTL/2.
Router(config) #interface fastethernet0/0
Router(config-if) #ip address 10.0.0.10 255.0.0.0
Router(config-if) #no shut
Router (config-if) #
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
exit
Router(config) #how ip route
§ Invalid input detected at '^' marker.
Router(config) #show ip route
% Invalid input detected at '^' marker.
Router (config) #exit
Router#
SYS-5-CONFIG I: Configured from console by console
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
```

C 10.0.0.0/8 is directly connected, FastEthernet0/0 Router#

Gateway of last resort is not set

```
Router#config terminal
Enter configuration commands, one per line. End with CNTL/2.
Router (config) #interface fastethernet1/0
Router(config-if) #ip address 20.0.0.10 255.0.0.0
Router (config-if) #no shut
Router (config-if) #
%LINK-5-CHANGED: Interface FastEthernet1/0, changed state to up
*LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up
exit
Router (config) #show ip route
5 Invalid input detected at '" marker.
Router (config) #exit
Routerf
*SYS-5-CONFIG I: Configured from console by console
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. Ll - 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
    10.0.0.0/8 is directly connected, FastEthernet0/0
     20.0.0.0/8 is directly connected, FastEthernet1/0
Router#
```

Routerfenable

```
PC>ping 20.0.0.1
Pinging 20.0.0.1 with 32 bytes of data:
Request timed out.
Reply from 20.0.0.1: bytes=32 time=1ms TTL=127
Reply from 20.0.0.1: bytes=32 time=12ms TTL=127
Reply from 20.0.0.1: bytes=32 time=0ms TTL=127
Ping statistics for 20.0.0.1:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss).
Approximate round trip times in milli-seconds:
   Minimum = 0ms, Maximum = 12ms, Average = 4ms
PC>ping 20.0.0.1
Pinging 20.0.0.1 with 32 bytes of data:
Reply from 20.0.0.1: bytes=32 time=0ms TTL=127
Ping statistics for 20.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
   Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

(three routers) 6.10 20.0.0.20/ 30.0.0.10 se2/0 8e2/0 30.0.0.20 se 3/0 se2/0 Fado Routero (Zouten) Routerz 10.0.0.10 40.0.0.10 P (0 PCI 10.0.0.1 10.0.0.1 Perocedure: i) Select the PC's, set it ip address of their particular gatury i) Select 3 routers, place them, corrent 2 to the PC's using copper cross over cable of Connect the router to each other using serial DIE

PAGE NO DAFE	
iii) select the nonters one by one and we the folling commands on their CLI	er.
CK BLOKET O)	_
Hower Senate	
Router # config t	
Enter configuration commonds, one per live.	
and with CNTL/2	
Router (config) # , stepace fastetherset &. Router (config - if) # 16 address \$0.0.0.10 2550.	00.
1. to (continued) to use shut	
Router (config-id) # sw slut	
fonter(config-if)#"	
1. LINK-S-CHANGED: Interface Part Etherstofo,	
changed a fact toule	
ist Etheret of o, changed & take to up	ufer
first Etheret of o, changed & take to up	0
Monter (corpy-if) Henit	
Router (config) I interface serial 2/s.	
Renter (config)# interface served 2/0.	0
Rowler (config-if) # no shut	
1/06/NIC-5-CHANGED: Interface Serial2/0, change	حا
soul to down	
Renter (conf. if) # essit	
Contraction of themit	
Ranter F	
1/345-5. content FIG-I: configured from concol	by
comple	
Anathr ticl	
Renter II show if route	
Trades: (- 1000 41 C 2000 0000	
M-mobil B-PGP	RIP

D-EIGRP, EX- EIGRPENTEND, O-OSPF, IA - OS PF inter area NI - OSPF NSSA enteral type 1, N2-USPF NSSA enternal type 2 type 2, E-EGP i - IS-IS, LI - IS-IS Level -1, L2-IS-IS level - 2, ja - IS-IS inter area - candidate default, U- per-uner sotation 10nt , 0 - ODR p - periodic downloaded Static route Crateway of last resort is not set Fare Ethersto/o (Nonter 1) Montes > enable Router # config + Enter configuration commads, one pier line End with (NIL/Z Menter (config) # interface serial 2/0 Nower (conf.g-if) # ip address 20.0.0.20 285.0.0.0 Monter (config-i) # no shut Monter (config-1)#

% LINK-5- (HANGED: Interfore serially, changel state to up LINEPROTO-5-UP DOWN: Line protocol on Interface serial 2/0, Chaqued state to y

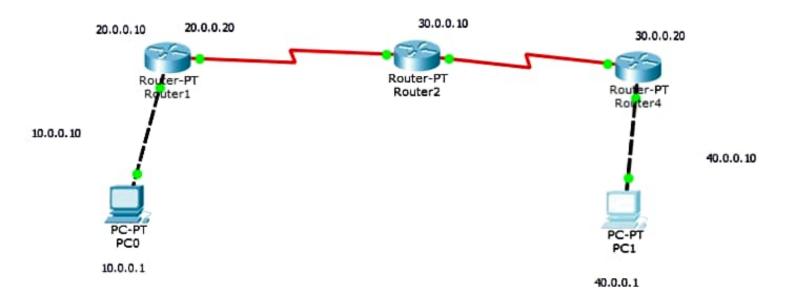
Router (config-if)# enit Router (config)# interface serial3/0.

	DATE
Router (config-if) # ip adobres Router (config-if) # no shut	1 30.0 0 10 255.0
Router (contin-il) # no shut	0.
, or or or or of the	
1. LINK-S- CHANGED: IN	tufac scriul3/s,
chaged state to down	
Shouter (config-is) to enit	-
Router (config) of emit	
(Nonter 2)	
lanter > enable	
Nonter 7) working t	
Enter configuration commands, or	ue per line. End with
CN71/2.	
Monter (config) # interface Ser.	
Nonter (config-if) # i p address 30	.0.0.20 255.0.0.0
Monter (config.) 7) 1 padding 2	no shut
Ponter (config-if) #	
1/: LINIX - 5- CHANGED: Interfa	ce serial 2/0, Chazed
State to up	
% LINEPROTO-S-UPPOUN: Lin	motoca on interface
serval 2/0, changed state.	10 4
Router (config-if) # exit	,
Route (config) to interface fart	ethered 0/0
Router (config) to interface fart Router (config -if) # ip addess as	0.0.10 255 0.0.0
Parter (ronfig if) # no Shut	
	14
Ronter (wafig-if) IF	E 19
13 EIN12-3- CHANGED: Entyles	fartethingt of
3-16-17 6-3 1/6	
Enterface Fact Etheret of	a paratocal on
Enterface Taut Ethernet ofi	changed state to up
(,

	PAGE ND DATE:
	Router (config-if)# exit
	Result:
	P(>Ping 40.00.1
	Pining 40.00.1 with 32 bytes of data:
	Reply from 10.0.0.10: Destination light urreachable
	Reply from 10.0000 Perknation host wrichable
	Reply from 10.0010: Restraction lost urreachable
	Robby from 10.0.0.10: Perknation hort uneachable
	fing statistics for 400.0.1:
	Pachets: sent = 4, Recieved =0, (03+=4 (100%, loss)
	PC>
	Powadore
	(v) Navine the Destinations are unreachable,
	go back to the CLI's to connect the routes
-	(lowter€D)
	Router# config t
	Enter configuration commands, on his line. End with
	CNTL/Z.
	Nonter (config)# ip route 30.0.0.0 255.0.0.0 20.0.0.20
	Nowth (config) # ip house 40.0.0.0 255.0.0.0 20.0.0.20
	Nonth (wording) # exit
	Lower #
	3/0545-5-CONFIG-I: configured from which by would
	Rowlett show ip south
	codes:
	Contenses of last report is not set
	(10.0.0.0/8 is divertly coneded, Fast Horstofo

c 20.0.0.0/g is directly corrected, sex 12/0 S 30.0.0.0/8 (1/0) via 20.0.0.20 ad 3.0.0/8 [1/0] via 20.0.0.20 (louter) Router # config t pointer (longing) # exert Router (config) # ip route 10.0.0.0.255:00.0 Pouta (config)# 1/2 route 40.0.0.0 255.0.0.0 300.00 Monter (config) # eni + Route & show if rante wdes: 4 Gataway of last report is not set 5 10.0.0.0/8 [1/0] Va 20.0.0.10 20:0.0.0/8 is directly wrected, serials/o C 30.00.0/8 is directly corrected serial yo 5 40.0.06/8 [1/0] va 30.0.0.20 lower II (Router 2) Rower # config f Nonter (config) # if nont 20.0.0.0 255.00.0 30.0.0.10 Router (config) # 1/ route 20-0.0.0 255.0.0 0 30.0.0.10 Nonter A Router # show ip howse G ateway of last renord is not set 5 10.0.0.0/8 [1/0] Na 30.0.0.10 20,0.0.0/8 (1/6) Wa \$0.0.0.10 c 30.0.0.018 is directly comecled, serid2/0 c 40.0.0.018 is livertly comeded fourt plantort

Result (From P(1) P(>Ping 10.0.0.1 pining 10.0.0.1 with 32 bytes of date: Reply from 10.0.0.1 hytes=32 tim= Im TTL=126
Reply from 10.0.0.1 hytes=32 tim= Im TTL=126
Reply from 10.0.0.1 bytes=32 tim= Im TTL=126 Reply from 10.0.0.1 bytes=32 time=1 ms 110-128 ling stadistics for 10.0.01: Parkets: sat = a, Recived = 4, Lost = 0 (0% LON), Approximate road tip on is villiseconds. Minimum: 1 ns , Manfor " ons Meray: ans Observation. After setting the routes, the host becomes yearchatte of the message is sent without any loss. golf lany loss.



```
Router1
Physical Config CLI
```

Router#

10.0.0.0/8 is directly connected, FastEthernet0/0

IOS Command Line Interface

```
Press RETURN to get started!
Router>enable
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config) #interface fastethernet0/0
Router(config-if) #ip address 10.0.0.10 255.0.0.0
Router(config-if) #no shut
Router(config-if) #
*LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
*LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
Router(config-if) #exit
Router(config) #interface serial 2/0
Router(config-if) ip address 20.0.0.10 255.0.0.0
Router(config-if) #no shut
$LINK-5-CHANGED: Interface Serial2/0, changed state to down
Router (config-if) fexit
Router (config) #exit
Routers
*SYS-5-CONFIG I: Configured from console by console
Router#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
```

```
Router2
Physical Config CLI
```

Router#

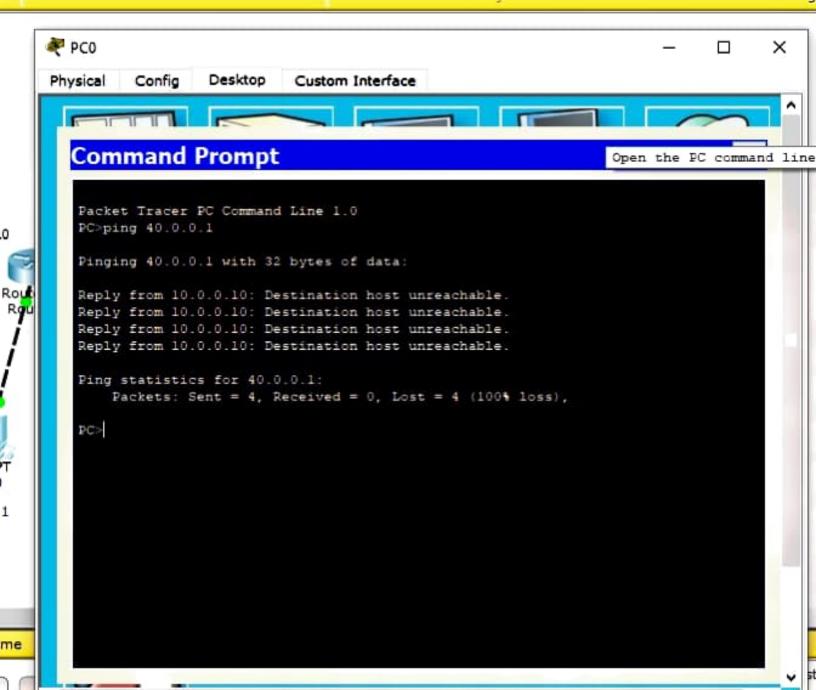
IOS Command Line Interface

```
Press RETURN to get started!
Router>enable
Routersconfig t
Enter configuration commands, one per line. End with CNTL/2.
Router(config) #interface serial 2/0
Router(config-if) sip address 20.0.0.20 255.0.0.0
Router (config-if) #no shut
Router(config-if) #
*LINK-5-CHANGED: Interface Serial2/0, changed state to up
Router(config-if) #
*LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up
Router(config-if) #exit
Router(config) #interface serial 3/0
Router(config-if) #ip address 30.0.0.10 255.0.0.0
Router(config-if) #no shut
*LINK-5-CHANGED: Interface Serial3/0, changed state to down
Router (config-if) fexit
Router (config) #exit
Router#
*SYS-5-CONFIG I: Configured from console by console
Router#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
     20.0.0.0/8 is directly connected, Serial2/0
```

```
Router4
 Physical
           Confia
                    CLI
                                                                                IOS Command Line Interface
 Enter configuration commands, one per line. End with CNTL/2.
  Router(config) #interface serial 2/0
  Router(config-if) tip address 30.0.0.20 255.0.0.0
  Router(config-if) #no shut
  Router(config-if) #
  %LINK-5-CHANGED: Interface Serial2/0, changed state to up
  Router (config-if) #exit
  $LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up
  Router(config) #interface fastethernet0/0
  Router(config-if) #ip address 40.0.0.10 255.0.0.0
  Router(config-if) #no shut
  Router(config-if) #
  $LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
  *LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
  Router (config-if) sexit
  Router (config) # show ip route
  Invalid input detected at '~' marker.
  Router (config) sexit
  Routers
  *SYS-5-CONFIG I: Configured from console by console
  Router#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
       30.0.0.0/8 is directly connected, Serial2/0
  C
       40.0.0.0/8 is directly connected, FastEthernet0/0
```



```
Router1
 Physical
                    CLI
           Config
  Router>enable
  Router#config t
  Enter configuration commands, one per line. End with CNTL/Z.
  Router(config) #ip route 30.0.0.0 255.0.0.0 20.0.0.20
  Router(config) $ip route 40.0.0.0 255.0.0.0 20.0.0.20
  Router (config) #exit
  Routers
  *SYS-5-CONFIG I: Configured from console by console
```

```
Router#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
     10.0.0.0/8 is directly connected, FastEthernet0/0
     20.0.0.0/8 is directly connected, Serial2/0
     30.0.0.0/8 [1/0] via 20.0.0.20
     40.0.0.0/8 [1/0] via 20.0.0.20
Routers
```

```
Router>enable
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config) #ip route 10.0.0.0 255.0.0.0 20.0.0.0
Router(config) #ip route 40.0.0.0 255.0.0.0 30.0.0.20
Router(config) #ip route 10.0.0.0 255.0.0.0 20.0.0.10
Router (config) #exit
Routers
*SYS-5-CONFIG I: Configured from console by console
Router#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
     10.0.0.0/8 [1/0] via 20.0.0.0
                [1/0] via 20.0.0.10
     20.0.0.0/8 is directly connected, Serial2/0
     30.0.0.0/8 is directly connected, Serial3/0
     40.0.0.0/8 [1/0] via 30.0.0.20
```

Router#

```
Router#config t Rowten 4
Enter configuration commands, one per line. End with CNTL/Z.
Router(config) ip route 10.0.0.0 255.0.0.0 30.0.0.10
Router(config) ip route 20.0.0.0 255.0.0.0 30.0.0.10
Router(config) #exit
Router#
%SYS-5-CONFIG I: Configured from console by console
Router#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
    10.0.0.0/8 [1/0] via 30.0.0.10
    20.0.0.0/8 [1/0] via 30.0.0.10
    30.0.0.0/8 is directly connected, Serial2/0
    40.0.0.0/8 is directly connected, FastEthernet0/0
Router#
```

40.0.0.0/0 is directly connected, rastrineinett/o

