

```
R4#
R4#show running-config
Building configuration...

Current configuration : 2752 bytes
!
! No configuration change since last restart
!
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname R4
!
boot-start-marker
boot system flash:c1841-advipservicesk9-mz.124-25b.bin
boot-end-marker
!
no logging console
enable secret 5 $1$/jV1$vYpms8yDHgGeGsdSbjts//
!
no aaa new-model
ip cef
!
!
no ip dhcp use vrf connected
ip dhcp excluded-address 10.2.1.1 10.2.1.3
ip dhcp excluded-address 10.2.1.254
!
ip dhcp pool VLAN10
    network 10.2.1.0 255.255.255.0
    default-router 10.2.1.1
    domain-name netlearning.com.mx
    dns-server 209.65.200.243
!
!
ip multicast-routing
ip auth-proxy max-nodata-conns 3
ip admission max-nodata-conns 3
!
ipv6 unicast-routing
!
!
!
!
ip ftp username netlearning
ip ftp password netpass
!
!
!
!
interface Tunnel134
    no ip address
```

```
ipv6 address 2026::34:2/122
ipv6 enable
ipv6 ospf 6 area 34
tunnel source Serial0/1/0.34
tunnel destination 10.1.1.9
tunnel mode ipv6ip
!
interface Tunnel46
no ip address
ipv6 address 2026::2:1/122
ipv6 enable
ipv6 rip RIPNG enable
tunnel source 10.1.4.5
tunnel destination 10.1.4.6
!
interface FastEthernet0/0
ip address 10.1.4.5 255.255.255.252
ip pim sparse-dense-mode
duplex auto
speed auto
!
interface FastEthernet0/1
ip address 10.1.4.9 255.255.255.252
ip pim sparse-dense-mode
duplex auto
speed auto
!
interface Serial0/0/0
no ip address
clock rate 56000
!
interface Serial0/0/1
no ip address
clock rate 56000
!
interface Serial0/1/0
no ip address
encapsulation frame-relay
!
interface Serial0/1/0.34 point-to-point
ip address 10.1.1.10 255.255.255.252
ip pim sparse-dense-mode
frame-relay interface-dlci 403
!
router eigrp 10
redistribute ospf 1 metric 10000 10 255 1 1500
network 10.1.4.5 0.0.0.0
network 10.1.4.9 0.0.0.0
metric weights 0 1 1 1 1 1
no auto-summary
eigrp router-id 4.4.4.4
!
router ospf 1
router-id 4.4.4.4
```

```
log-adjacency-changes
area 34 nssa
redistribute eigrp 10 subnets
network 10.1.1.10 0.0.0.0 area 34
!
ip forward-protocol nd
ip route 0.0.0.0 0.0.0.0 192.168.20.1
!
!
ip http server
no ip http secure-server
!
ip access-list standard DENY_10
deny 10.0.0.0 0.255.255.255
permit any
ip access-list standard DENY_ALL
deny any
ip access-list standard PERMIT_10
permit 10.0.0.0 0.255.255.255
ip access-list standard PERMIT_ALL
permit any
!
ipv6 router ospf 6
router-id 4.4.4.4
log-adjacency-changes
redistribute connected
redistribute rip RIPNG
!
ipv6 router rip RIPNG
redistribute connected metric 5
redistribute ospf 6 metric 5
!
!
!
!
control-plane
!
!
!
line con 0
exec-timeout 0 0
line aux 0
line vty 0 4
exec-timeout 0 0
no login
!
scheduler allocate 20000 1000
ntp clock-period 17178753
ntp server 10.1.1.1
end
```

R4#

```
R4#ping 209.65.200.241
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 209.65.200.241, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 224/226/228  
ms
```

```
R4#
```

```
R4#ping 209.65.200.226
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 209.65.200.226, timeout is 2 seconds:  
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 224/226/228  
ms
```

```
R4#
```

```
R4#ping 209.65.200.225
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 209.65.200.225, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 192/195/196
```

```
ms
```

```
R4#
```

```
R4#ping 10.1.1.1
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.1.1.1, timeout is 2 seconds:
```

```
!!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 192/194/196
```

```
ms
```

```
R4#
```

```
R4#ping 10.1.1.2
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.1.1.2, timeout is 2 seconds:
```

```
!!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 128/129/132
ms
R4#
```

```
R4#ping 10.1.1.5
```

```
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.1.1.5, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 128/131/136
ms
R4#
```



```
R4#ping 10.1.1.6
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.1.1.6, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 64/65/68 ms
```

```
R4#
```

```
R4#ping 10.1.1.9
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.1.1.9, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 64/66/68 ms
```

```
R4#
```

```
R4#ping 10.1.1.10
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.1.1.10, timeout is 2 seconds:
```

```
!!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 128/130/136
```

```
ms
```

```
R4#
```

```
R4#ping 10.1.4.10
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.1.4.10, timeout is 2 seconds:  
!!!!  
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/2/4 ms  
R4#
```

```
R4#ping 10.1.4.9
```

```
Type escape sequence to abort.  
Sending 5, 100-byte ICMP Echos to 10.1.4.9, timeout is 2 seconds:  
!!!!  
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/4 ms  
R4#
```

```
R4#ping 10.1.4.6
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.1.4.6, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/2/4 ms
```

```
R4#
```

```
R4#ping 10.1.4.5
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.1.4.5, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/1 ms
```

```
R4#
```

```
R4#ping 10.2.1.1
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.2.1.1, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/2/4 ms
```

```
R4#
```

```
R4#ping 10.2.2.2
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.2.2.2, timeout is 2 seconds:
```

```
!!!!  
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/2/4 ms  
R4#
```

```
R4#ping 10.2.1.254
```

```
Type escape sequence to abort.  
Sending 5, 100-byte ICMP Echos to 10.2.1.254, timeout is 2 seconds:  
!!!!  
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/2/4 ms  
R4#
```



```
R4#ping 10.2.4.14
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.2.4.14, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/2/4 ms
```

```
R4#
```

```
R4#ping 10.2.4.13
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.2.4.13, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/2/4 ms
```

```
R4#
```

```
R4#ping 10.2.1.2
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.2.1.2, timeout is 2 seconds:
```

```
!!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/2/4 ms
```

```
R4#
```

```
R4#ping 10.2.2.1
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.2.2.1, timeout is 2 seconds:
```

```
!!!!!
```

Success rate is 100 percent (5/5), round-trip min/avg/max = 1/2/4 ms
R4#

R4#ping 10.2.1.4

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 10.2.1.4, timeout is 2 seconds:

!!!!

Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/1 ms

R4#

```
R4#show ip interface brief
```

Interface	IP-Address	OK?	Method	Status
Protocol				
FastEthernet0/0	10.1.4.5	YES	NVRAM	up
up				
FastEthernet0/1	10.1.4.9	YES	NVRAM	up
up				
Serial0/0/0	unassigned	YES	NVRAM	down
down				
Serial0/0/1	unassigned	YES	NVRAM	down
down				
Serial0/1/0	unassigned	YES	NVRAM	up
up				
Serial0/1/0.34	10.1.1.10	YES	NVRAM	up
up				
Tunnel34	unassigned	YES	NVRAM	up
up				
Tunnel46	unassigned	YES	NVRAM	up
up				

```
R4#
```

R4#show ip route

Codes: C - connected, S - static, 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
i - IS-IS, su - IS-IS summary, 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 10.1.1.9 to network 0.0.0.0

10.0.0.0/8 is variably subnetted, 6 subnets, 2 masks
D 10.2.4.12/30 [90/120] via 10.1.4.10, 00:38:52, FastEthernet0/1
[90/120] via 10.1.4.6, 00:38:52, FastEthernet0/0
C 10.1.1.8/30 is directly connected, Serial0/1/0.34
C 10.1.4.8/30 is directly connected, FastEthernet0/1
D 10.2.1.0/24 [90/111] via 10.1.4.10, 00:38:18, FastEthernet0/1
[90/111] via 10.1.4.6, 00:38:18, FastEthernet0/0
D 10.2.2.0/24 [90/111] via 10.1.4.10, 00:38:20, FastEthernet0/1
[90/111] via 10.1.4.6, 00:38:20, FastEthernet0/0
C 10.1.4.4/30 is directly connected, FastEthernet0/0
O*IA 0.0.0.0/0 [110/65] via 10.1.1.9, 00:34:46, Serial0/1/0.34
R4#

R4#show processes cpu

CPU utilization for five seconds: 1%/0%; one minute: 0%; five minutes: 0%

PID	Runtime(ms)	Invoked	uSecs	5Sec	1Min	5Min	TTY	Process
1	0	3	0	0.00%	0.00%	0.00%	0	Chunk
Manager								
2	0	494	0	0.00%	0.01%	0.00%	0	Load Meter
3	24	494	48	0.00%	0.00%	0.00%	0	OSPF-1
Hello								
4	1560	248	6290	0.57%	0.07%	0.06%	0	Check
heaps								
5	0	1	0	0.00%	0.00%	0.00%	0	Pool
Manager								
6	0	2	0	0.00%	0.00%	0.00%	0	Timers
7	0	1	0	0.00%	0.00%	0.00%	0	OIR
Handler								
8	328	84	3904	0.00%	0.00%	0.00%	0	
Environmental mo								

71	0	2	0	0.00%	0.00%	0.00%	0	EAPoUDP
Process								
72	0	2	0	0.00%	0.00%	0.00%	0	IP Host
Track Pr								
73	0	25	0	0.00%	0.00%	0.00%	0	IPv6 RIB
Redistr								
74	0	2	0	0.00%	0.00%	0.00%	0	KRB5 AAA
75	24	124	193	0.00%	0.00%	0.00%	0	IP
Background								
76	4	64	62	0.00%	0.00%	0.00%	0	IP RIB
Update								
77	0	2	0	0.00%	0.00%	0.00%	0	PPP IP
Route								
78	0	2	0	0.00%	0.00%	0.00%	0	PPP IPCP
79	12	3840	3	0.00%	0.01%	0.00%	0	CEF
process								
80	0	1	0	0.00%	0.00%	0.00%	0	Socket
Timers								
81	0	2	0	0.00%	0.00%	0.00%	0	L2MM
82	0	1	0	0.00%	0.00%	0.00%	0	MRD
83	0	1	0	0.00%	0.00%	0.00%	0	IGMPSN
84	0	1	0	0.00%	0.00%	0.00%	0	IP
Traceroute								
85	0	2	0	0.00%	0.00%	0.00%	0	RLM groups
Proce								
86	0	1	0	0.00%	0.00%	0.00%	0	SNMP
Timers								
87	0	2	0	0.00%	0.00%	0.00%	0	SCTP Main
Proces								
88	0	1	0	0.00%	0.00%	0.00%	0	IUA Main
Process								
89	0	2469	0	0.00%	0.00%	0.00%	0	RUDPV1
Main Proc								
90	0	1	0	0.00%	0.00%	0.00%	0	bsm_timers
91	0	2472	0	0.00%	0.00%	0.00%	0	
bsm_xmt_proc								
92	0	1	0	0.00%	0.00%	0.00%	0	CES Client
SVC R								
93	0	1	0	0.00%	0.00%	0.00%	0	TCP Timer
94	0	1	0	0.00%	0.00%	0.00%	0	TCP
Protocols								
95	0	1	0	0.00%	0.00%	0.00%	0	COPS
96	0	2	0	0.00%	0.00%	0.00%	0	Dialer
Forwarder								
97	0	42	0	0.00%	0.00%	0.00%	0	IP Cache
Ager								
98	4	43	93	0.00%	0.00%	0.00%	0	Adj
Manager								
99	4	2	2000	0.00%	0.00%	0.00%	0	ATM OAM
Input								
100	0	2	0	0.00%	0.00%	0.00%	0	ATM OAM
TIMER								
101	0	10	0	0.00%	0.00%	0.00%	0	HTTP CORE
102	0	1	0	0.00%	0.00%	0.00%	0	RARP Input

137	252	126	2000	0.00%	0.00%	0.00%	0	IPSEC key engine
138	0	1	0	0.00%	0.00%	0.00%	0	IPSEC manual key
139	0	1	0	0.00%	0.00%	0.00%	0	Crypto PAS Proc
140	0	1	0	0.00%	0.00%	0.00%	0	Crypto Delete Ma
141	0	2	0	0.00%	0.00%	0.00%	0	Key Proc
142	0	2478	0	0.00%	0.00%	0.00%	0	Crypto Device Up
143	0	1	0	0.00%	0.00%	0.00%	0	Crypto Hardware
144	0	2	0	0.00%	0.00%	0.00%	0	Multi-ISA Event
145	0	1	0	0.00%	0.00%	0.00%	0	Multi-ISA Cleanu
146	0	1	0	0.00%	0.00%	0.00%	0	PM Callback
147	0	1	0	0.00%	0.00%	0.00%	0	DATA Transfer Pr
148	0	1	0	0.00%	0.00%	0.00%	0	DATA Collector
149	0	2	0	0.00%	0.00%	0.00%	0	AAA SEND STOP EV
150	4	3	1333	0.00%	0.00%	0.00%	0	EEM ED CLI
151	0	2	0	0.00%	0.00%	0.00%	0	EEM ED Counter
152	0	2	0	0.00%	0.00%	0.00%	0	EEM ED Interface
153	0	3	0	0.00%	0.00%	0.00%	0	EEM ED IOSWD
154	0	2	0	0.00%	0.00%	0.00%	0	EEM ED Memory-th
155	0	2	0	0.00%	0.00%	0.00%	0	EEM ED None
156	0	2	0	0.00%	0.00%	0.00%	0	EM ED OIR
157	0	2	0	0.00%	0.00%	0.00%	0	EEM ED SNMP
158	0	44	0	0.00%	0.00%	0.00%	0	EEM ED Timer
159	0	511	0	0.00%	0.00%	0.00%	0	EEM Server
160	0	249	0	0.00%	0.00%	0.00%	0	RMON Recycle Pro
161	0	2	0	0.00%	0.00%	0.00%	0	RMON Deferred Se
162	0	1	0	0.00%	0.00%	0.00%	0	Syslog Traps
163	8	2	4000	0.00%	0.00%	0.00%	0	VLAN Manager
164	0	21	0	0.00%	0.00%	0.00%	0	DHCPD Timer
165	0	2	0	0.00%	0.00%	0.00%	0	EEM Policy Direc

166	4	112	35	0.00%	0.00%	0.00%	0	Syslog
167	0	1	0	0.00%	0.00%	0.00%	0	VPDN Scal
168	0	42	0	0.00%	0.00%	0.00%	0	DHCPD
Database								
169	0	1	0	0.00%	0.00%	0.00%	0	Net Input
170	0	497	0	0.00%	0.00%	0.00%	0	Compute
load avg								
171	656	42	15619	0.00%	0.02%	0.00%	0	Per-minute
Jobs								
172	0	86	0	0.00%	0.00%	0.00%	0	CEF
Scanner								
173	0	1	0	0.00%	0.00%	0.00%	0	tHUB
175	12	15	800	0.00%	0.00%	0.00%	0	DHCPD
Receive								
176	748	2231	335	0.00%	0.00%	0.00%	0	IPv6 Input
177	0	142	0	0.00%	0.00%	0.00%	0	IPv6 IDB
178	0	10	0	0.00%	0.00%	0.00%	0	IPv6 ND
179	4	9921	0	0.00%	0.02%	0.00%	0	MLD
180	4	2472	1	0.00%	0.00%	0.00%	0	OSPFv3-6
Router								
181	4	302	13	0.00%	0.00%	0.00%	0	IPv6 RIP
182	12	2499	4	0.00%	0.04%	0.05%	0	IGMP Input
183	0	24772	0	0.08%	0.03%	0.02%	0	Mwheel
Process								
184	84	3088	27	0.00%	0.03%	0.02%	0	PIM
Process								
185	324	468	692	0.00%	0.00%	0.00%	0	FR LMI
186	28	24773	1	0.08%	0.03%	0.02%	0	FR
Broadcast Out								
187	0	249	0	0.00%	0.00%	0.00%	0	compute
load per								
188	0	48	0	0.00%	0.00%	0.00%	0	FR ARP
189	0	42	0	0.00%	0.00%	0.00%	0	FR
FRAGMENTATION								
190	0	124	0	0.00%	0.00%	0.00%	0	FR TUNNEL
191	0	1	0	0.00%	0.00%	0.00%	0	FRF9
manager								
192	0	1	0	0.00%	0.00%	0.00%	0	FRF9 timed
event								
194	12	2535	4	0.00%	0.00%	0.00%	0	NTP
195	0	24	0	0.00%	0.00%	0.00%	0	IP-EIGRP
Router								
196	172	1618	106	0.00%	0.00%	0.00%	0	IP-EIGRP:
PDM								
197	32	2522	12	0.00%	0.00%	0.00%	0	OSPF-1
Router								
198	108	2205	48	0.00%	0.00%	0.00%	0	IP-EIGRP:
HELLO								
R4#								

```
R4#show interfaces
FastEthernet0/0 is up, line protocol is up
  Hardware is Gt96k FE, address is 0019.5578.1cb2 (bia 0019.5578.1cb2)
  Internet address is 10.1.4.5/30
  MTU 1500 bytes, BW 100000 Kbit/sec, DLY 100 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Full-duplex, 100Mb/s, 100BaseTX/FX
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:00, output 00:00:01, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 1 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    5426 packets input, 566213 bytes
    Received 691 broadcasts, 0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 watchdog
    0 input packets with dribble condition detected
    3457 packets output, 406086 bytes, 0 underruns
```

```
    0 output errors, 0 collisions, 4 interface resets
    0 unknown protocol drops
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier
    0 output buffer failures, 0 output buffers swapped out
FastEthernet0/1 is up, line protocol is up
  Hardware is Gt96k FE, address is 0019.5578.1cb3 (bia 0019.5578.1cb3)
  Internet address is 10.1.4.9/30
  MTU 1500 bytes, BW 100000 Kbit/sec, DLY 100 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Full-duplex, 100Mb/s, 100BaseTX/FX
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:02, output 00:00:00, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 1 packets/sec
    882 packets input, 90041 bytes
    Received 659 broadcasts, 0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 watchdog
    0 input packets with dribble condition detected
  3388 packets output, 264131 bytes, 0 underruns
  0 output errors, 0 collisions, 5 interface resets
  0 unknown protocol drops
  0 babbles, 0 late collision, 0 deferred
  0 lost carrier, 0 no carrier
  0 output buffer failures, 0 output buffers swapped out
Serial0/0/0 is down, line protocol is down
  Hardware is GT96K Serial
  MTU 1500 bytes, BW 128 Kbit/sec, DLY 20000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation HDLC, loopback not set
  Keepalive set (10 sec)
  Last input never, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: weighted fair
  Output queue: 0/1000/64/0 (size/max total/threshold/drops)
    Conversations 0/0/32 (active/max active/max total)
    Reserved Conversations 0/0 (allocated/max allocated)
    Available Bandwidth 96 kilobits/sec
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    0 packets input, 0 bytes, 0 no buffer
    Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
    0 packets output, 0 bytes, 0 underruns
    0 output errors, 0 collisions, 5 interface resets
    0 unknown protocol drops
```

0 output buffer failures, 0 output buffers swapped out
0 carrier transitions
DCD=up DSR=up DTR=down RTS=down CTS=up

Serial0/0/1 is down, line protocol is down
Hardware is GT96K Serial
MTU 1500 bytes, BW 128 Kbit/sec, DLY 20000 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation HDLC, loopback not set
Keepalive set (10 sec)
Last input never, output never, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: weighted fair
Output queue: 0/1000/64/0 (size/max total/threshold/drops)
Conversations 0/0/32 (active/max active/max total)
Reserved Conversations 0/0 (allocated/max allocated)
Available Bandwidth 96 kilobits/sec
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
0 packets input, 0 bytes, 0 no buffer
Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
0 packets output, 0 bytes, 0 underruns
0 output errors, 0 collisions, 5 interface resets
0 unknown protocol drops
0 output buffer failures, 0 output buffers swapped out
0 carrier transitions
DCD=up DSR=up DTR=down RTS=down CTS=up

Serial0/1/0 is up, line protocol is up
Hardware is GT96K Serial
MTU 1500 bytes, BW 1544 Kbit/sec, DLY 20000 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation FRAME-RELAY, loopback not set
Keepalive set (10 sec)
LMI enq sent 232, LMI stat recvd 233, LMI upd recvd 0, DTE LMI up
LMI enq recvd 0, LMI stat sent 0, LMI upd sent 0
LMI DLCI 1023 LMI type is CISCO frame relay DTE
FR SVC disabled, LAPF state down
Broadcast queue 0/64, broadcasts sent/dropped 404/0, interface
broadcasts 362
Last input 00:00:07, output 00:00:06, output hang never
Last clearing of "show interface" counters 00:41:29
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: weighted fair
Output queue: 0/1000/64/0 (size/max total/threshold/drops)
Conversations 0/4/256 (active/max active/max total)
Reserved Conversations 0/0 (allocated/max allocated)
Available Bandwidth 1158 kilobits/sec
5 minute input rate 0 bits/sec, 1 packets/sec
5 minute output rate 0 bits/sec, 1 packets/sec
3491 packets input, 255121 bytes, 0 no buffer
Received 0 broadcasts, 0 runts, 0 giants, 0 throttles

0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
3607 packets output, 261306 bytes, 0 underruns
0 output errors, 0 collisions, 5 interface resets
0 unknown protocol drops
0 output buffer failures, 0 output buffers swapped out
76 carrier transitions
DCD=up DSR=up DTR=up RTS=up CTS=up

Serial0/1/0.34 is up, line protocol is up

Hardware is GT96K Serial
Internet address is 10.1.1.10/30
MTU 1500 bytes, BW 1544 Kbit/sec, DLY 20000 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation FRAME-RELAY
Last clearing of "show interface" counters never

Tunnel34 is up, line protocol is up

Hardware is Tunnel
MTU 1514 bytes, BW 9 Kbit/sec, DLY 500000 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation TUNNEL, loopback not set
Keepalive not set
Tunnel source 10.1.1.10 (Serial0/1/0.34), destination 10.1.1.9
Tunnel protocol/transport IPv6/IP
Tunnel TTL 255
Fast tunneling enabled
Tunnel transmit bandwidth 8000 (kbps)
Tunnel receive bandwidth 8000 (kbps)
Last input 00:33:49, output 00:00:00, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 4
Queueing strategy: fifo
Output queue: 0/0 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
56 packets input, 7516 bytes, 0 no buffer
Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
296 packets output, 29652 bytes, 0 underruns
0 output errors, 0 collisions, 0 interface resets
0 unknown protocol drops
0 output buffer failures, 0 output buffers swapped out

Tunnel46 is up, line protocol is up

Hardware is Tunnel
MTU 1514 bytes, BW 9 Kbit/sec, DLY 500000 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation TUNNEL, loopback not set
Keepalive not set
Tunnel source 10.1.4.5, destination 10.1.4.6
Tunnel protocol/transport GRE/IP
Key disabled, sequencing disabled
Checksumming of packets disabled
Tunnel TTL 255
Fast tunneling enabled
Tunnel transmit bandwidth 8000 (kbps)

```
Tunnel receive bandwidth 8000 (kbps)
Last input 00:00:12, output 00:00:16, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 24
Queueing strategy: fifo
Output queue: 0/0 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
  2135 packets input, 263820 bytes, 0 no buffer
  Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
  2124 packets output, 262736 bytes, 0 underruns
  0 output errors, 0 collisions, 0 interface resets
  0 unknown protocol drops
  0 output buffer failures, 0 output buffers swapped out
```

R4#

R4#show cdp neighbors

Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge

S - Switch, H - Host, I - IGMP, r - Repeater

Device ID	Local Intrfce	Holdtme	Capability	Platform	Port
R3	Ser 0/1/0.34	136	R S I	2811	Ser
DSW1	Fas 0/0	151	R S I	WS-C3550-	Fas
DSW2	Fas 0/1	135	R S I	WS-C3550-	Fas
R4#					

R4#show cdp neighbors detail

Device ID: R3
Entry address(es):
 IP address: 10.1.1.9
Platform: Cisco 2811, Capabilities: Router Switch IGMP
Interface: Serial0/1/0.34, Port ID (outgoing port): Serial0/2/0.34

Holdtime : 128 sec

Version :

Cisco IOS Software, 2800 Software (C2800NM-ADVIPSERVICESK9-M), Version 12.4(22)T2, RELEASE SOFTWARE (fc4)

Technical Support: <http://www.cisco.com/techsupport>

Copyright (c) 1986-2009 by Cisco Systems, Inc.

Compiled Fri 19-Jun-09 15:34 by prod_rel_team

advertisement version: 2

VTP Management Domain: ''

Device ID: DSW1

Entry address(es):

IP address: 10.1.4.6

Platform: Cisco WS-C3550-24, Capabilities: Router Switch IGMP

Interface: FastEthernet0/0, Port ID (outgoing port): FastEthernet0/1

Holdtime : 143 sec

Version :

Cisco IOS Software, C3550 Software (C3550-IPSERVICESK9-M), Version 12.2(44)SE6, RELEASE SOFTWARE (fc1)

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Compiled Mon 09-Mar-09 20:28 by gereddy

advertisement version: 2

Protocol Hello: OUI=0x00000C, Protocol ID=0x0112; payload len=27, value=00000000FFFFFFFF010221FF0000000000000000DBDE36E00FF0000

VTP Management Domain: 'netlearning'

Duplex: full

Device ID: DSW2

Entry address(es):

IP address: 10.1.4.10

Platform: Cisco WS-C3550-24-PWR, Capabilities: Router Switch IGMP

Interface: FastEthernet0/1, Port ID (outgoing port): FastEthernet0/1

Holdtime : 127 sec

Version :

Cisco IOS Software, C3550 Software (C3550-IPSERVICESK9-M), Version 12.2(44)SE6, RELEASE SOFTWARE (fc1)

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Compiled Mon 09-Mar-09 20:28 by gereddy

advertisement version: 2

Protocol Hello: OUI=0x00000C, Protocol ID=0x0112; payload len=27, value=00000000FFFFFFFF010221FF0000000000000000BFD20BA00FF0000

VTP Management Domain: 'netlearning'

Duplex: full

R4#

```
R4#show frame-relay map
Serial0/1/0.34 (up): point-to-point dlci, dlci 403(0x193,0x6430),
broadcast
                status defined, active
R4#
```

```
R4#show ip interface
FastEthernet0/0 is up, line protocol is up
  Internet address is 10.1.4.5/30
  Broadcast address is 255.255.255.255
  Address determined by non-volatile memory
  MTU is 1500 bytes
  Helper address is not set
  Directed broadcast forwarding is disabled
  Multicast reserved groups joined: 224.0.0.1 224.0.0.2 224.0.0.22
  224.0.0.13
    224.0.0.10
  Outgoing access list is not set
  Inbound access list is not set
  Proxy ARP is enabled
  Local Proxy ARP is disabled
  Security level is default
  Split horizon is enabled
  ICMP redirects are always sent
  ICMP unreachable are always sent
  ICMP mask replies are never sent
  IP fast switching is enabled
  IP fast switching on the same interface is disabled
  IP Flow switching is disabled
  IP CEF switching is enabled
  IP CEF Fast switching turbo vector
  IP multicast fast switching is enabled
  IP multicast distributed fast switching is disabled
  IP route-cache flags are Fast, CEF
  Router Discovery is disabled
  IP output packet accounting is disabled
  IP access violation accounting is disabled
  TCP/IP header compression is disabled
```

```
RTP/IP header compression is disabled
Policy routing is disabled
Network address translation is disabled
BGP Policy Mapping is disabled
WCCP Redirect outbound is disabled
WCCP Redirect inbound is disabled
WCCP Redirect exclude is disabled
FastEthernet0/1 is up, line protocol is up
  Internet address is 10.1.4.9/30
  Broadcast address is 255.255.255.255
  Address determined by non-volatile memory
  MTU is 1500 bytes
  Helper address is not set
  Directed broadcast forwarding is disabled
  Multicast reserved groups joined: 224.0.0.1 224.0.0.2 224.0.0.22
  224.0.0.13
    224.0.0.10
  Outgoing access list is not set
  Inbound access list is not set
  Proxy ARP is enabled
  Local Proxy ARP is disabled
  Security level is default
  Split horizon is enabled
  ICMP redirects are always sent
  ICMP unreachable are always sent
  ICMP mask replies are never sent
  IP fast switching is enabled
  IP fast switching on the same interface is disabled
  IP Flow switching is disabled
  IP CEF switching is enabled
  IP CEF Fast switching turbo vector
  IP multicast fast switching is enabled
  IP multicast distributed fast switching is disabled
  IP route-cache flags are Fast, CEF
  Router Discovery is disabled
  IP output packet accounting is disabled
  IP access violation accounting is disabled
  TCP/IP header compression is disabled
  RTP/IP header compression is disabled
  Policy routing is disabled
  Network address translation is disabled
  BGP Policy Mapping is disabled
  WCCP Redirect outbound is disabled
  WCCP Redirect inbound is disabled
  WCCP Redirect exclude is disabled
Serial0/0/0 is down, line protocol is down
  Internet protocol processing disabled
Serial0/0/1 is down, line protocol is down
  Internet protocol processing disabled
Serial0/1/0 is up, line protocol is up
  Internet protocol processing disabled
Serial0/1/0.34 is up, line protocol is up
  Internet address is 10.1.1.10/30
  Broadcast address is 255.255.255.255
```

```
Address determined by non-volatile memory
MTU is 1500 bytes
Helper address is not set
Directed broadcast forwarding is disabled
Multicast reserved groups joined: 224.0.0.1 224.0.0.2 224.0.0.22
224.0.0.13
    224.0.0.5
Outgoing access list is not set
Inbound access list is not set
Proxy ARP is enabled
Local Proxy ARP is disabled
Security level is default
Split horizon is enabled
ICMP redirects are always sent
ICMP unreachable are always sent
ICMP mask replies are never sent
IP fast switching is enabled
IP fast switching on the same interface is enabled
IP Flow switching is disabled
IP CEF switching is enabled
IP CEF Fast switching turbo vector
IP multicast fast switching is enabled
IP multicast distributed fast switching is disabled
IP route-cache flags are Fast, CEF
Router Discovery is disabled
IP output packet accounting is disabled
IP access violation accounting is disabled
TCP/IP header compression is disabled
RTP/IP header compression is disabled
Policy routing is disabled
Network address translation is disabled
BGP Policy Mapping is disabled
WCCP Redirect outbound is disabled
WCCP Redirect inbound is disabled
WCCP Redirect exclude is disabled
Tunnel34 is up, line protocol is up
    Internet protocol processing disabled
Tunnel46 is up, line protocol is up
    Internet protocol processing disabled
R4#
```


R4#show ip cef

Prefix	Next Hop	Interface
0.0.0.0/0	10.1.1.9	Serial0/1/0.34
0.0.0.0/8	drop	
0.0.0.0/32	receive	
10.1.1.8/30	attached	Serial0/1/0.34
10.1.1.8/32	receive	
10.1.1.10/32	receive	
10.1.1.11/32	receive	
10.1.4.4/30	attached	FastEthernet0/0
10.1.4.4/32	receive	
10.1.4.5/32	receive	
10.1.4.6/32	10.1.4.6	FastEthernet0/0
10.1.4.7/32	receive	
10.1.4.8/30	attached	FastEthernet0/1
10.1.4.8/32	receive	
10.1.4.9/32	receive	
10.1.4.10/32	10.1.4.10	FastEthernet0/1
10.1.4.11/32	receive	
10.2.1.0/24	10.1.4.10	FastEthernet0/1
	10.1.4.6	FastEthernet0/0
10.2.2.0/24	10.1.4.10	FastEthernet0/1
	10.1.4.6	FastEthernet0/0
10.2.4.12/30	10.1.4.10	FastEthernet0/1
	10.1.4.6	FastEthernet0/0
127.0.0.0/8	drop	
224.0.0.0/4	0.0.0.0	
224.0.0.0/24	receive	
240.0.0.0/4	drop	
255.255.255.255/32	receive	

R4#

R4#show tcp statistics

Rcvd: 0 Total, 0 no port

0 checksum error, 0 bad offset, 0 too short

0 packets (0 bytes) in sequence

0 dup packets (0 bytes)

0 partially dup packets (0 bytes)

0 out-of-order packets (0 bytes)

0 packets (0 bytes) with data after window

0 packets after close

0 window probe packets, 0 window update packets

0 dup ack packets, 0 ack packets with unsend data

0 ack packets (0 bytes)

Sent: 0 Total, 0 urgent packets

0 control packets (including 0 retransmitted)

0 data packets (0 bytes)

0 data packets (0 bytes) retransmitted

0 data packets (0 bytes) fastretransmitted

0 ack only packets (0 delayed)

0 window probe packets, 0 window update packets

```
0 Connections initiated, 0 connections accepted, 0 connections
established
0 Connections closed (including 0 dropped, 0 embryonic dropped)
0 Total rxmt timeout, 0 connections dropped in rxmt timeout
0 Keepalive timeout, 0 keepalive probe, 0 Connections dropped in
keepalive
R4#
```

```
R4#show ip protocols
Routing Protocol is "eigrp 10"
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Default networks flagged in outgoing updates
  Default networks accepted from incoming updates
  EIGRP metric weight K1=1, K2=1, K3=1, K4=1, K5=1
  EIGRP maximum hopcount 100
  EIGRP maximum metric variance 1
  Redistributing: eigrp 10, ospf 1
  EIGRP NSF-aware route hold timer is 240s
```

Automatic network summarization is not in effect

Maximum path: 4

Routing for Networks:

10.1.4.5/32

10.1.4.9/32

Routing Information Sources:

Gateway	Distance	Last Update
---------	----------	-------------

10.1.4.10	90	00:39:53
-----------	----	----------

10.1.4.6	90	00:39:53
----------	----	----------

Distance: internal 90 external 170

Routing Protocol is "ospf 1"

Outgoing update filter list for all interfaces is not set

Incoming update filter list for all interfaces is not set

Router ID 4.4.4.4

It is an autonomous system boundary router

Redistributing External Routes from,

eigrp 10, includes subnets in redistribution

Number of areas in this router is 1. 0 normal 0 stub 1 nssa

Maximum path: 4

Routing for Networks:

10.1.1.10 0.0.0.0 area 34

Reference bandwidth unit is 100 mbps

Routing Information Sources:

Gateway	Distance	Last Update
---------	----------	-------------

3.3.3.3	110	00:36:21
---------	-----	----------

Distance: (default is 110)

R4#

```
R4#show access-lists
Standard IP access list DENY_10
 10 deny 10.0.0.0, wildcard bits 0.255.255.255
 20 permit any
Standard IP access list DENY_ALL
 10 deny any
Standard IP access list PERMIT_10
 10 permit 10.0.0.0, wildcard bits 0.255.255.255
Standard IP access list PERMIT_ALL
 10 permit any
R4#
```

```
R4#show ip route eigrp
 10.0.0.0/8 is variably subnetted, 6 subnets, 2 masks
D    10.2.4.12/30 [90/120] via 10.1.4.10, 00:40:46, FastEthernet0/1
      [90/120] via 10.1.4.6, 00:40:46, FastEthernet0/0
D    10.2.1.0/24 [90/111] via 10.1.4.10, 00:40:12, FastEthernet0/1
      [90/111] via 10.1.4.6, 00:40:12, FastEthernet0/0
D    10.2.2.0/24 [90/111] via 10.1.4.10, 00:40:14, FastEthernet0/1
      [90/111] via 10.1.4.6, 00:40:14, FastEthernet0/0
R4#
```

```
R4#show ip eigrp neighbors
IP-EIGRP neighbors for process 10
H   Address                Interface           Hold Uptime   SRTT   RTO   Q
Seq
```

Num			(sec)	(ms)	Cnt	
1	10.1.4.10	Fa0/1	12 00:41:05	1	200	0
88						
0	10.1.4.6	Fa0/0	10 00:41:39	1	200	0
96						

R4#

```
R4#show ip eigrp interfaces
IP-EIGRP interfaces for process 10
```

Pending Interface	Peers	Xmit Queue Un/Reliable	Mean SRTT	Pacing Time Un/Reliable	Multicast Flow Timer
Fa0/0	1	0/0	1	0/1	50
Fa0/1	1	0/0	1	0/1	50

R4#

```
R4#show ip ospf neighbor
```

Neighbor ID	Pri	State	Dead Time	Address
Interface				
3.3.3.3	0	FULL/ -	00:00:39	10.1.1.9
Serial0/1/0.34				

```
R4#
```



```
R4#show ip ospf interface
Serial0/1/0.34 is up, line protocol is up
  Internet Address 10.1.1.10/30, Area 34
  Process ID 1, Router ID 4.4.4.4, Network Type POINT_TO_POINT, Cost: 64
  Transmit Delay is 1 sec, State POINT_TO_POINT
  Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
    oob-resync timeout 40
    Hello due in 00:00:01
  Supports Link-local Signaling (LLS)
  Index 1/1, flood queue length 0
  Next 0x0(0)/0x0(0)
  Last flood scan length is 5, maximum is 5
  Last flood scan time is 0 msec, maximum is 0 msec
  Neighbor Count is 1, Adjacent neighbor count is 1
    Adjacent with neighbor 3.3.3.3
  Suppress hello for 0 neighbor(s)
R4#
```

R4#show ip ospf database

OSPF Router with ID (4.4.4.4) (Process ID 1)

Router Link States (Area 34)

Link ID count	ADV Router	Age	Seq#	Checksum	Link
3.3.3.3	3.3.3.3	287	0x8000000E	0x00CE71	2
4.4.4.4	4.4.4.4	341	0x80000010	0x0067D2	2

Summary Net Link States (Area 34)

Link ID	ADV Router	Age	Seq#	Checksum
0.0.0.0	3.3.3.3	287	0x80000002	0x00DC4C

Type-7 AS External Link States (Area 34)

Link ID	ADV Router	Age	Seq#	Checksum	Tag
10.1.4.4	4.4.4.4	341	0x80000005	0x00F16A	0
10.1.4.8	4.4.4.4	341	0x80000005	0x00C98E	0
10.2.1.0	4.4.4.4	341	0x80000003	0x00451C	0
10.2.2.0	4.4.4.4	341	0x80000003	0x003A26	0
10.2.4.12	4.4.4.4	341	0x80000003	0x0099BB	0

R4#

```
R4#show ip route ospf
O*IA 0.0.0.0/0 [110/65] via 10.1.1.9, 00:37:33, Serial0/1/0.34
R4#
```

R4#show ip dhcp binding

Bindings from all pools not associated with VRF:

IP address	Client-ID/ Hardware address/ User name	Lease expiration	Type
10.2.1.4	0100.1c23.8edb.bc	Jun 08 2010 07:29 PM	

Automatic
R4#

```
R4#show ip dhcp conflict
IP address      Detection method  Detection time    VRF
R4#
```

```
R4#show ip dhcp pool
```

```
Pool VLAN10 :
Utilization mark (high/low) : 100 / 0
Subnet size (first/next)    : 0 / 0
Total addresses              : 254
Leased addresses             : 1
Pending event                : none
1 subnet is currently in the pool :
```

Current index addresses	IP address range	Leased
10.2.1.5	10.2.1.1 - 10.2.1.254	1

R4#

```
R4#show ipv6 interface brief
FastEthernet0/0      [up/up]
FastEthernet0/1     [up/up]
Serial0/0/0         [down/down]
Serial0/0/1         [down/down]
Serial0/1/0         [up/up]
Serial0/1/0.34      [up/up]
Tunnel134           [up/up]
    FE80::A01:10A
    2026::34:2
Tunnel146           [up/up]
    FE80::219:55FF:FE78:1CB2
    2026::2:1
R4#
```

```
R4#ping ipv6 2026::12:1
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 2026::12:1, timeout is 2 seconds:
```

```
.....
```

```
Success rate is 0 percent (0/5)
```

```
R4#
```

```
R4#ping ipv6 2026::12:2
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 2026::12:2, timeout is 2 seconds:
```

```
.....
```

```
Success rate is 0 percent (0/5)
```

```
R4#
```



```
R4#ping ipv6 2026::1:1
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 2026::1:1, timeout is 2 seconds:
```

```
.....
```

```
Success rate is 0 percent (0/5)
```

```
R4#
```

```
R4#ping ipv6 2026::1:2
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 2026::1:2, timeout is 2 seconds:
```

```
.....
```

```
Success rate is 0 percent (0/5)
```

```
R4#
```

```
R4#ping ipv6 2026::34:1
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 2026::34:1, timeout is 2 seconds:
```

```
.....
```

```
Success rate is 0 percent (0/5)
```

```
R4#
```

```
R4#ping ipv6 2026::34:2
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 2026::34:2, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/0/0 ms
```

```
R4#
```

```
R4#ping ipv6 2026::2:1
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 2026::2:1, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/0/0 ms
```

```
R4#
```

```
R4#ping ipv6 2026::2:2
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 2026::2:2, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/1/4 ms
```

```
R4#
```

```
R4#ping ipv6 2026::3:1
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 2026::3:1, timeout is 2 seconds:
```

```
!!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/2/4 ms
```

```
R4#
```

```
R4#ping ipv6 2026::3:2
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 2026::3:2, timeout is 2 seconds:
```

```
!!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/3/4 ms
```

```
R4#
```

```
R4#show ipv6 route
IPv6 Routing Table - 7 entries
Codes: C - Connected, L - Local, S - Static, R - RIP, B - BGP
        U - Per-user Static route
        I1 - ISIS L1, I2 - ISIS L2, IA - ISIS interarea, IS - ISIS summary
        O - OSPF intra, OI - OSPF inter, OE1 - OSPF ext 1, OE2 - OSPF ext
2
        ON1 - OSPF NSSA ext 1, ON2 - OSPF NSSA ext 2
C  2026::2:0/122 [0/0]
    via ::, Tunnel46
L  2026::2:1/128 [0/0]
    via ::, Tunnel46
R  2026::3:0/122 [120/2]
    via FE80::20D:BDFF:FEE3:6E00, Tunnel46
C  2026::34:0/122 [0/0]
    via ::, Tunnel34
L  2026::34:2/128 [0/0]
    via ::, Tunnel34
L  FE80::/10 [0/0]
    via ::, Null0
```

```
L   FF00::/8 [0/0]
    via ::, Null0
R4#
```

```
R4#show ipv6 ospf
Routing Process "ospfv3 6" with ID 4.4.4.4
It is an autonomous system boundary router
Redistributing External Routes from,
    connected
    rip
SPF schedule delay 5 secs, Hold time between two SPFs 10 secs
Minimum LSA interval 5 secs. Minimum LSA arrival 1 secs
LSA group pacing timer 240 secs
Interface flood pacing timer 33 msec
Retransmission pacing timer 66 msec
Number of external LSA 2. Checksum Sum 0x011529
Number of areas in this router is 1. 1 normal 0 stub 0 nssa
Reference bandwidth unit is 100 mbps
    Area 34
```



```
Number of interfaces in this area is 1
SPF algorithm executed 7 times
Number of LSA 8. Checksum Sum 0x037F05
Number of DCbitless LSA 0
Number of indication LSA 0
Number of DoNotAge LSA 0
Flood list length 0
```

R4#

```
R4#show ipv6 ospf interface
Tunnel34 is up, line protocol is up
  Link Local Address FE80::A01:10A, Interface ID 13
  Area 34, Process ID 6, Instance ID 0, Router ID 4.4.4.4
  Network Type POINT_TO_POINT, Cost: 11111
  Transmit Delay is 1 sec, State POINT_TO_POINT,
  Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
  Hello due in 00:00:07
  Index 1/1/1, flood queue length 0
```

```
Next 0x0(0)/0x0(0)/0x0(0)
Last flood scan length is 1, maximum is 1
Last flood scan time is 0 msec, maximum is 0 msec
Neighbor Count is 0, Adjacent neighbor count is 0
Suppress hello for 0 neighbor(s)
R4#
```

```
R4#show ipv6 ospf neighbor
```

```
R4#
```

```
R4#show ipv6 rip RIPNG
RIP process "RIPNG", port 521, multicast-group FF02::9, pid 181
  Administrative distance is 120. Maximum paths is 16
  Updates every 30 seconds, expire after 180
  Holddown lasts 0 seconds, garbage collect after 120
  Split horizon is on; poison reverse is off
  Default routes are not generated
  Periodic updates 102, trigger updates 8
Interfaces:
  Tunnel46
Redistribution:
  Redistributing protocol connected with metric 5
  Redistributing protocol ospf 6 with metric 5
R4#
```

