

```
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 10.2.1.254
    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 17178876
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 0 percent (0/5)
```

```
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 0 percent (0/5)
```

```
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 0 percent (0/5)
```

```
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 0 percent (0/5)
```

```
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 0 percent (0/5)
```

```
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 0 percent (0/5)
```

```
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 0 percent (0/5)
```

```
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 = 64/65/68 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 = 128/130/132  
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 = 1/1/4 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 = 1/1/4 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 = 1/1/4 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 = 1/2/4 ms
```

```
R4#
```

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

Interface	IP-Address	OK?	Method	Status
FastEthernet0/0	10.1.4.5	YES	NVRAM	up
FastEthernet0/1	10.1.4.9	YES	NVRAM	up
Serial0/0/0	unassigned	YES	NVRAM	down
Serial0/0/1	unassigned	YES	NVRAM	down
Serial0/1/0	unassigned	YES	NVRAM	up
Serial0/1/0.34	10.1.1.10	YES	NVRAM	up
Tunnel34	unassigned	YES	NVRAM	up
Tunnel46	unassigned	YES	NVRAM	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 not set

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, 01:21:05, FastEthernet0/1
[90/120] via 10.1.4.6, 01:21:05, 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, 01:20:28, FastEthernet0/1
[90/111] via 10.1.4.6, 01:20:28, FastEthernet0/0
D 10.2.2.0/24 [90/111] via 10.1.4.10, 01:20:28, FastEthernet0/1
[90/111] via 10.1.4.6, 01:20:28, FastEthernet0/0
C 10.1.4.4/30 is directly connected, FastEthernet0/0
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	8	1000	8	0.00%	0.01%	0.00%	0	Load Meter
3	160	949	168	0.00%	0.00%	0.00%	0	OSPF-1
Hello								
4	3080	510	6039	0.32%	0.08%	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	668	168	3976	0.00%	0.01%	0.00%	0	
Environmental mo								
9	0	1	0	0.00%	0.00%	0.00%	0	Crash
writer								
10	8	137	58	0.00%	0.00%	0.00%	0	ARP Input
11	0	2	0	0.00%	0.00%	0.00%	0	ATM Idle
Timer								
12	0	2	0	0.00%	0.00%	0.00%	0	AAA high-
capacit								
13	0	1	0	0.00%	0.00%	0.00%	0	
AAA_SERVER_DEADT								

109	0	1	0	0.00%	0.00%	0.00%	0	Inspect
Timer								
110	52	922	56	0.00%	0.00%	0.00%	0	OSPFv3-6
Hello								
111	0	17	0	0.00%	0.00%	0.00%	0	
Authentication P								
112	0	1	0	0.00%	0.00%	0.00%	0	Auth-proxy
AAA B								
113	0	1	0	0.00%	0.00%	0.00%	0	IPS Timer
114	0	2	0	0.00%	0.00%	0.00%	0	SDEE
Management								
115	0	1	0	0.00%	0.00%	0.00%	0	IPv6
Inspect Tim								
116	4	2	2000	0.00%	0.00%	0.00%	0	URL filter
proc								
117	0	3	0	0.00%	0.00%	0.00%	0	Crypto HW
Proc								
118	0	2	0	0.00%	0.00%	0.00%	0	ENABLE AAA
119	0	1	0	0.00%	0.00%	0.00%	0	EM
Background Pr								
120	0	1	0	0.00%	0.00%	0.00%	0	Key chain
liveke								
121	0	2	0	0.00%	0.00%	0.00%	0	LINE AAA
122	0	2	0	0.00%	0.00%	0.00%	0	LOCAL AAA
123	0	2	0	0.00%	0.00%	0.00%	0	TPLUS
124	0	2	0	0.00%	0.00%	0.00%	0	VSP_MGR
125	0	1	0	0.00%	0.00%	0.00%	0	encrypt
proc								
126	0	3	0	0.00%	0.00%	0.00%	0	Crypto WUI
127	0	2	0	0.00%	0.00%	0.00%	0	Crypto
Support								
128	0	1	0	0.00%	0.00%	0.00%	0	
RPMS_PROC_MAIN								
129	0	1	0	0.00%	0.00%	0.00%	0	crypto
engine pr								
130	32	4	8000	0.00%	0.00%	0.00%	0	Crypto CA
131	0	1	0	0.00%	0.00%	0.00%	0	Crypto
PKI-CRL								
132	0	1	0	0.00%	0.00%	0.00%	0	Crypto SSL
133	0	4	0	0.00%	0.00%	0.00%	0	Crypto ACL
134	0	2	0	0.00%	0.00%	0.00%	0	CRYPTO QoS
proce								
135	0	1	0	0.00%	0.00%	0.00%	0	Crypto INT
136	0	4	0	0.00%	0.00%	0.00%	0	Crypto
IKMP								
137	256	253	1011	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

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 00:00:02, output 00:00:03, 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, 0 packets/sec

1863 packets input, 186852 bytes

Received 1383 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

2463 packets output, 218476 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 00:00:03, output 00:00:03, 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, 0 packets/sec
    1516 packets input, 150691 bytes
    Received 1336 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
    2187 packets output, 178663 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 445, LMI stat recvd 449, 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 755/0, interface
broadcasts 670

Last input 00:00:01, output 00:00:00, output hang never
Last clearing of "show interface" counters 01:23:41
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, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
 1778 packets input, 144020 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
 1848 packets output, 146762 bytes, 0 underruns
 0 output errors, 0 collisions, 15 interface resets
 0 unknown protocol drops
 0 output buffer failures, 0 output buffers swapped out
 176 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 00:00:05, output 00:00:02, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 5
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
  478 packets input, 58136 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
  486 packets output, 49196 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 00:00:14, 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: 29
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
  178 packets input, 20648 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
204 packets output, 28876 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#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	176	R S I	2811	Ser
DSW1	Fas 0/0	137	R S I	WS-C3550-	Fas
DSW2	Fas 0/1	122	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 : 131 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 : 153 sec

Version :
Cisco IOS Software, C3550 Software (C3550-IPSERVICESK9-M), Version
12.2(44)SE6, RELEASE SOFTWARE (fc1)
Copyright (c) 1986-2009 by Cisco Systems, Inc.
Compiled Mon 09-Mar-09 20:28 by gereddy

advertisement version: 2
Protocol Hello: OUI=0x00000C, Protocol ID=0x0112; payload len=27,
value=00000000FFFFFFFFF010221FF0000000000000000DBDE36E00FF0000
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 : 138 sec

Version :
Cisco IOS Software, C3550 Software (C3550-IPSERVICESK9-M), Version
12.2(44)SE6, RELEASE SOFTWARE (fc1)
Copyright (c) 1986-2009 by Cisco Systems, Inc.
Compiled Mon 09-Mar-09 20:28 by gereddy

advertisement version: 2
Protocol Hello: OUI=0x00000C, Protocol ID=0x0112; payload len=27,
value=00000000FFFFFFFFF010221FF0000000000000000BFD20BA00FF0000
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      drop             Null0 (default route handler
entry)
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            01:23:46
    10.1.4.6         90            01:23:46
```

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	01:13:23

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, 01:24:39, FastEthernet0/1
    [90/120] via 10.1.4.6, 01:24:39, FastEthernet0/0
D    10.2.1.0/24 [90/111] via 10.1.4.10, 01:24:02, FastEthernet0/1
```

```
D          [90/111] via 10.1.4.6, 01:24:02, FastEthernet0/0
10.2.2.0/24 [90/111] via 10.1.4.10, 01:24:02, FastEthernet0/1
R4#        [90/111] via 10.1.4.6, 01:24:02, FastEthernet0/0
```

```
R4#show ip eigrp neighbors
IP-EIGRP neighbors for process 10
H   Address                Interface          Hold Uptime    SRTT    RTO    Q
Seq                                     (sec)          (ms)          Cnt
Num
1   10.1.4.10               Fa0/1             13 01:24:57    1    200    0
143
0   10.1.4.6                 Fa0/0             11 01:25:31    1    200    0
151
R4#
```

```

R4#show ip eigrp interfaces
IP-EIGRP interfaces for process 10
      Xmit Queue   Mean   Pacing Time   Multicast
Pending
Interface      Peers  Un/Reliable  SRTT   Un/Reliable   Flow Timer
Routes
Fa0/0          1      0/0          1      0/1           50
0
Fa0/1          1      0/0          1      0/1           50
0
R4#

```

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

```
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 1, maximum is 3
  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 ip ospf database

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

Router Link States (Area 34)

Link ID	ADV Router	Age	Seq#	Checksum	Link
count					
4.4.4.4	4.4.4.4	1745	0x80000019	0x00356C	1

Type-7 AS External Link States (Area 34)

Link ID	ADV Router	Age	Seq#	Checksum	Tag
10.1.4.4	4.4.4.4	480	0x80000006	0x00EF6B	0
10.1.4.8	4.4.4.4	480	0x80000006	0x00C78F	0
10.2.1.0	4.4.4.4	480	0x80000004	0x00431D	0
10.2.2.0	4.4.4.4	480	0x80000004	0x003827	0
10.2.4.12	4.4.4.4	480	0x80000004	0x0097BC	0

R4#

```
R4#show ip route ospf
```

```
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
Automatic
R4#

0100.1c23.8edb.bc

Jun 08 2010 02:10 PM

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	IP address range	Leased
addresses		
10.2.1.5	10.2.1.1 - 10.2.1.254	1

R4#