

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

Current configuration : 2724 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
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 17179563
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 100 percent (5/5), round-trip min/avg/max = 128/130/132  
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 = 64/66/68 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 = 64/65/68 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 = 128/132/140  
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 = 128/132/136  
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 = 192/196/204  
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 = 192/197/208  
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 = 192/194/196  
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 = 192/194/196  
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 = 192/196/200  
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 = 192/194/196  
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 = 192/195/196
```

```
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 = 192/194/196  
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 = 192/194/196  
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 = 192/196/204  
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 = 192/194/196
```

```
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 = 192/194/196  
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 = 192/194/196
```

```
ms
```

```
R4#
```



```
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 [90/30720] via 10.1.4.10, 00:42:32, FastEthernet0/1
[90/30720] via 10.1.4.6, 00:42:32, 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 [90/28416] via 10.1.4.10, 00:41:55, FastEthernet0/1
[90/28416] via 10.1.4.6, 00:41:55, FastEthernet0/0
D 10.2.2.0/24 [90/28416] via 10.1.4.10, 00:42:00, FastEthernet0/1
[90/28416] via 10.1.4.6, 00:42:00, 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, 00:39:11, Serial0/1/0.34
R4#

R4#show processes cpu

CPU utilization for five seconds: 0%/0%; one minute: 1%; 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
2	0	538	0	0.00%	0.01%	0.00%	0	Load Meter
3	24	542	44	0.00%	0.00%	0.00%	0	OSPF-1

Hello

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	137	1868	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	2698	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	0	3	0	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	4	2	2000	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	48	0	0.00%	0.00%	0.00%	0 EEM ED
Timer							
159	0	555	0	0.00%	0.00%	0.00%	0 EEM Server
160	0	271	0	0.00%	0.00%	0.00%	0 RMON
Recycle Pro							


```
197          24          2730          8  0.00%  0.00%  0.00%  0 OSPF-1
Router
198          92          2376         38  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, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
  1319 packets input, 129962 bytes
  Received 748 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
  1676 packets output, 146448 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 00:00:04, 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, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    913 packets input, 92847 bytes
    Received 717 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
    1316 packets output, 108515 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 259, LMI stat recvd 261, 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 431/0, interface
broadcasts 388
Last input 00:00:03, output 00:00:02, output hang never
Last clearing of "show interface" counters 00:45:09
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
  1450 packets input, 115626 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
  1423 packets output, 114176 bytes, 0 underruns
  0 output errors, 0 collisions, 4 interface resets
  0 unknown protocol drops
  0 output buffer failures, 0 output buffers swapped out
  60 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 00:00:01, 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: 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
    262 packets input, 32148 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
292 packets output, 29644 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 00:00:25, output 00:00:24, 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
  96 packets input, 11116 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
121 packets output, 16888 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 interfaces counters errors
```

```
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
ID					
R3	Ser 0/1/0.34	154	R S I	2811	Ser
0/2/0.34					
DSW1	Fas 0/0	163	R S I	WS-C3550-	Fas
0/1					
DSW2	Fas 0/1	147	R S I	WS-C3550-	Fas
0/1					
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 : 146 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 : 155 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=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 : 139 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 arp

Protocol	Address	Age (min)	Hardware Addr	Type	Interface
Internet	10.1.4.10	43	000b.fd20.ba00	ARPA	
FastEthernet0/1					
Internet	10.1.4.9	-	0019.5578.1cb3	ARPA	
FastEthernet0/1					
Internet	10.1.4.6	44	000d.bde3.6e00	ARPA	
FastEthernet0/0					
Internet	10.1.4.5	-	0019.5578.1cb2	ARPA	
FastEthernet0/0					

R4#

```
R4#show ip arp
Protocol Address           Age (min)  Hardware Addr   Type   Interface
Internet 10.1.4.10             44         000b.fd20.ba00  ARPA   FastEthernet0/1
Internet 10.1.4.9               -          0019.5578.1cb3  ARPA   FastEthernet0/1
Internet 10.1.4.6               44         000d.bde3.6e00  ARPA   FastEthernet0/0
Internet 10.1.4.5               -          0019.5578.1cb2  ARPA   FastEthernet0/0
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

```
127.0.0.0/8          10.1.4.6          FastEthernet0/0
224.0.0.0/4          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=0, K3=1, K4=0, K5=0
  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           00:43:49
    10.1.4.6          90           00:43:49
  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          00:41:05
  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 [90/30720] via 10.1.4.10, 00:44:41, FastEthernet0/1
      [90/30720] via 10.1.4.6, 00:44:41, FastEthernet0/0
D    10.2.1.0/24 [90/28416] via 10.1.4.10, 00:44:04, FastEthernet0/1
      [90/28416] via 10.1.4.6, 00:44:04, FastEthernet0/0
```



```
1 10.1.4.10 Fa0/1 12 00:44:58 1 200 0
81
0 10.1.4.6 Fa0/0 10 00:45:33 1 200 0
85
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

Neighbor ID	Pri	State	Dead Time	Address
Interface				
3.3.3.3	0	FULL/ -	00:00:32	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 00:00:04
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	499	0x8000000D	0x00D070	2
4.4.4.4	4.4.4.4	584	0x8000000E	0x006BD0	2

Summary Net Link States (Area 34)

Link ID	ADV Router	Age	Seq#	Checksum
0.0.0.0	3.3.3.3	499	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	584	0x80000005	0x00F16A	0
10.1.4.8	4.4.4.4	584	0x80000005	0x00C98E	0
10.2.1.0	4.4.4.4	584	0x80000005	0x00411E	0
10.2.2.0	4.4.4.4	584	0x80000003	0x003A26	0
10.2.4.12	4.4.4.4	584	0x80000003	0x0099BB	0

R4#

```
R4#show ip route ospf
O*IA 0.0.0.0/0 [110/65] via 10.1.1.9, 00:42:06, 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 04 2010 02:06 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	IP address range	Leased
addresses		
10.2.1.1	10.2.1.1 - 10.2.1.254	1

R4#

