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

Current configuration : 2690 bytes
!
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 Tunnel34
 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
 ntp disable
 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 17179859
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 = 32/33/36 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 = 32/32/32 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 = 64/71/96 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 = 128/129/132
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 = 64/67/76 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 = 64/67/72 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 = 128/130/132
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 = 128/130/132
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 = 192/196/208
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 = 192/194/196
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 = 192/194/196
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 = 192/195/196
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 = 192/250/316
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 = 192/195/196
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 = 192/196/204
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 = 192/194/200
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 = 192/195/200
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, 00:32:19, FastEthernet0/1
                     [90/30720] via 10.1.4.6, 00:32:19, 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, 00:31:50, FastEthernet0/1
                    [90/28416] via 10.1.4.6, 00:31:50, FastEthernet0/0
D       10.2.2.0/24 [90/28416] via 10.1.4.10, 00:32:19, FastEthernet0/1
                    [90/28416] via 10.1.4.6, 00:32:19, 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, 01:19:10, Serial0/1/0.34
R4#
```

```
R4#show processes cpu
CPU utilization for five seconds: 1%/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
Manager
   2           0      1109          0  0.00%  0.01%  0.00%   0 Load Meter
   3          76      1092         69  0.00%  0.00%  0.00%   0 OSPF-1
Hello
   4        3416       564       6056  0.57%  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         736       186       3956  0.00%  0.01%  0.00%   0
Environmental mo
   9           0         1          0  0.00%  0.00%  0.00%   0 Crash
writer
  10          16       187         85  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
  14           0         1          0  0.00%  0.00%  0.00%   0 Policy
Manager
  15           0        15          0  0.00%  0.00%  0.00%   0 DDR Timers
  16           4         2       2000  0.00%  0.00%  0.00%   0 Entity MIB
API
  17          16       299         53  0.00%  0.00%  0.00%   0 EEM ED
Syslog
  18           0      1663          0  0.08%  0.00%  0.00%   0 HC Counter
Timer
  19           0        24          0  0.00%  0.00%  0.00%   0 Serial
Backgroun
  20           0         1          0  0.00%  0.00%  0.00%   0 RO Notify
Timers
  21           0         2          0  0.00%  0.00%  0.00%   0 SMART
  22           4      5541          0  0.00%  0.00%  0.00%   0 GraphIt
  23           0         2          0  0.00%  0.00%  0.00%   0 Dialer
event
  24           0         1          0  0.00%  0.00%  0.00%   0 SERIAL
A'detect
  25           0         2          0  0.00%  0.00%  0.00%   0 XML Proxy
Client
  26         744       176       4227  0.16%  0.84%  0.22%   0 Exec
  27           0         1          0  0.00%  0.00%  0.00%   0 Inode
Table Dest
  28           0         1          0  0.00%  0.00%  0.00%   0 Critical
Bkgnd
  29          24      5724          4  0.00%  0.01%  0.00%   0 Net
Background
  30           0         2          0  0.00%  0.00%  0.00%   0 IDB Work
  31           0       512          0  0.00%  0.00%  0.00%   0 Logger
  32           4      5538          0  0.00%  0.00%  0.00%   0 TTY
Background
  33          92      5545         16  0.00%  0.00%  0.00%   0 Per-Second
Jobs
  34           0         1          0  0.00%  0.00%  0.00%   0 AggMgr
Process
  35           0         1          0  0.00%  0.00%  0.00%   0 Token
Daemon
  36           0         1          0  0.00%  0.00%  0.00%   0 Transport
Port A
  37           0         2          0  0.00%  0.00%  0.00%   0 ESWPPM
  38           0         2          0  0.00%  0.00%  0.00%   0 Eswilp
Storm Con
```

```
  39         256          4       64000  0.00%  0.00%  0.00%    0 USB
Startup
  40           0          1           0  0.00%  0.00%  0.00%    0
dev_device_inser
  41           0          1           0  0.00%  0.00%  0.00%    0
dev_device_remov
  42           0          2           0  0.00%  0.00%  0.00%    0 SM Monitor
  43           0          1           0  0.00%  0.00%  0.00%    0 IGMP
Snooping Pr
  44           0          1           0  0.00%  0.00%  0.00%    0 IGMP
Snooping Re
  45           0          1           0  0.00%  0.00%  0.00%    0 Platform
Compact
  46           0        186           0  0.00%  0.00%  0.00%    0 Call
Management
  47           4       5542           0  0.00%  0.00%  0.00%    0 PI MATM
Aging Pr
  48           0          2           0  0.00%  0.00%  0.00%    0 DTP
Protocol
  49           0          2           0  0.00%  0.00%  0.00%    0 dot1x
  50           0          2           0  0.00%  0.00%  0.00%    0 AAA
Dictionary R
  51           0          2           0  0.00%  0.00%  0.00%    0 AAA Server
  52           0          1           0  0.00%  0.00%  0.00%    0 AAA ACCT
Proc
  53           0          1           0  0.00%  0.00%  0.00%    0 ACCT
Periodic Pr
  54          68       1083          62  0.00%  0.00%  0.00%    0 CDP
Protocol
  55         764       4486         170  0.08%  0.01%  0.00%    0 IP Input
  56           0          1           0  0.00%  0.00%  0.00%    0 ICMP event
handl
  57           0          4           0  0.00%  0.00%  0.00%    0 TurboACL
  58           0          2           0  0.00%  0.00%  0.00%    0 TurboACL
chunk
  59           4         12         333  0.00%  0.00%  0.00%    0 MOP
Protocols
  60           4          3        1333  0.00%  0.00%  0.00%    0 PPP Hooks
  62           0          1           0  0.00%  0.00%  0.00%    0 SSS
Manager
  63           0        741           0  0.00%  0.00%  0.00%    0 SSS Test
Client
  64           0          1           0  0.00%  0.00%  0.00%    0 SSS
Feature Mana
  65           0      21669           0  0.00%  0.01%  0.00%    0 SSS
Feature Time
  66           0          1           0  0.00%  0.00%  0.00%    0 VPDN call
manage
  67           0          1           0  0.00%  0.00%  0.00%    0 L2X Socket
proce
  68           0          1           0  0.00%  0.00%  0.00%    0 L2X SSS
manager
  69           0          2           0  0.00%  0.00%  0.00%    0 L2TP mgmt
daemon
```

```
  70           0         1           0  0.00%  0.00%  0.00%   0 X.25
Encaps Mana
  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        28           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          56       264         212  0.00%  0.00%  0.00%   0 IP
Background
  76           8       156          51  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           8      5973           1  0.00%  0.00%  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           4      5547           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      5550           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        93           0  0.00%  0.00%  0.00%   0 IP Cache
Ager
  98           0        94           0  0.00%  0.00%  0.00%   0 Adj
Manager
  99           0         2           0  0.00%  0.00%  0.00%   0 ATM OAM
Input
 100           4         2        2000  0.00%  0.00%  0.00%   0 ATM OAM
TIMER
```

```
 101           0        20           0  0.00%  0.00%  0.00%   0 HTTP CORE
 102           0         1           0  0.00%  0.00%  0.00%   0 RARP Input
 103           0         1           0  0.00%  0.00%  0.00%   0 PAD InCall
 104           0         2           0  0.00%  0.00%  0.00%   0 X.25
Background
 105           0         2           0  0.00%  0.00%  0.00%   0 PPP Bind
 106           0         2           0  0.00%  0.00%  0.00%   0 PPP SSS
 107          12     55473           0  0.00%  0.04%  0.05%   0 RBSCP
Background
 108           0      1111           0  0.00%  0.00%  0.00%   0 L2F
management d
 109           0         1           0  0.00%  0.00%  0.00%   0 Inspect
Timer
 110          40      1024          39  0.00%  0.00%  0.00%   0 OSPFv3-6
Hello
 111           0        19           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           4         2        2000  0.00%  0.00%  0.00%   0 SDEE
Management
 115           0         1           0  0.00%  0.00%  0.00%   0 IPv6
Inspect Tim
 116           0         2           0  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          36         4        9000  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         252       280         900  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      5555           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           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        95           0  0.00%  0.00%  0.00%   0 EEM ED
Timer
 159           0      1127           0  0.00%  0.00%  0.00%   0 EEM Server
 160           0       557           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        47           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       261          15  0.00%  0.00%  0.00%   0 Syslog
 167           0         1           0  0.00%  0.00%  0.00%   0 VPDN Scal
 168           0        93           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      1113           0  0.00%  0.00%  0.00%   0 Compute
load avg
 171        1472        93       15827  0.00%  0.02%  0.00%   0 Per-minute
Jobs
 172           4       192          20  0.00%  0.00%  0.00%   0 CEF
Scanner
 173           0         1           0  0.00%  0.00%  0.00%   0 tHUB
 175          16        26         615  0.00%  0.00%  0.00%   0 DHCPD
Receive
 176          88       815         107  0.00%  0.00%  0.00%   0 IPv6 Input
 177           0       314           0  0.00%  0.00%  0.00%   0 IPv6 IDB
 178           0        13           0  0.00%  0.00%  0.00%   0 IPv6 ND
 179           4     22226           0  0.00%  0.02%  0.00%   0 MLD
 180           4      5503           0  0.00%  0.00%  0.00%   0 OSPFv3-6
Router
 181          40       643          62  0.00%  0.00%  0.00%   0 IPv6 RIP
 182          16      5602           2  0.08%  0.04%  0.06%   0 IGMP Input
 183          16     55548           0  0.08%  0.03%  0.02%   0 Mwheel
Process
 184         188      6936          27  0.08%  0.03%  0.02%   0 PIM
Process
 185         784      1022         767  0.00%  0.00%  0.00%   0 FR LMI
 186           4     55551           0  0.08%  0.02%  0.02%   0 FR
Broadcast Out
 187           4       557           7  0.00%  0.00%  0.00%   0 compute
load per
 188           0       108           0  0.00%  0.00%  0.00%   0 FR ARP
 189           0        93           0  0.00%  0.00%  0.00%   0 FR
FRAGMENTATION
 190           0       278           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           0        55           0  0.00%  0.00%  0.00%   0 IP-EIGRP
Router
 195         336      4257          78  0.08%  0.00%  0.00%   0 IP-EIGRP:
PDM
 196          40      5652           7  0.00%  0.00%  0.00%   0 OSPF-1
Router
 197         256      4983          51  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 00:00:00, 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, 0 packets/sec
     1965 packets input, 205275 bytes
     Received 1465 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
     2777 packets output, 248259 bytes, 0 underruns
     0 output errors, 0 collisions, 16 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 00:00:03, 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
     1953 packets input, 190295 bytes
     Received 1572 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
     2530 packets output, 203826 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  503, LMI stat recvd 509, 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 885/0, interface
broadcasts 791
  Last input 00:00:00, output 00:00:01, output hang never
  Last clearing of "show interface" counters 01:32:47
  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
     1961 packets input, 160372 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
     2193 packets output, 174437 bytes, 0 underruns
     0 output errors, 0 collisions, 12 interface resets
     0 unknown protocol drops
     0 output buffer failures, 0 output buffers swapped out
     192 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 00:00:08, output 00:00:08, 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
     519 packets input, 63228 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
     536 packets output, 54296 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 00:00:01, output 00:00:26, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 34
  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
     209 packets input, 23696 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
     223 packets output, 31800 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       156         R S I      2811      Ser
0/2/0.34
DSW1             Fas 0/0            161         R S I      WS-C3550- Fas
0/1
```

```
DSW2             Fas 0/1           170        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 : 148 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=00000000FFFFFFFF010221FF000000000000000DBDE36E00FF0000
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 : 163 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=00000000FFFFFFFF010221FF000000000000000BFD20BA00FF0000
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              91   000b.fd20.ba00  ARPA
FastEthernet0/1
Internet  10.1.4.9                -   0019.5578.1cb3  ARPA
FastEthernet0/1
Internet  10.1.4.6               33   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              91   000b.fd20.ba00  ARPA
FastEthernet0/1
Internet  10.1.4.9                -   0019.5578.1cb3  ARPA
FastEthernet0/1
Internet  10.1.4.6               33   000d.bde3.6e00  ARPA
FastEthernet0/0
Internet  10.1.4.5                -   0019.5578.1cb2  ARPA
FastEthernet0/0
R4#
```

```
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 unreachables 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
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  ICMP redirects are always sent
  ICMP unreachables are always sent
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  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 unreachables 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=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      00:33:42
    10.1.4.6              90      00:33:42
  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      01:21:07
  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, 00:34:32, FastEthernet0/1
                     [90/30720] via 10.1.4.6, 00:34:32, FastEthernet0/0
D       10.2.1.0/24 [90/28416] via 10.1.4.10, 00:34:02, FastEthernet0/1
                    [90/28416] via 10.1.4.6, 00:34:02, FastEthernet0/0
D       10.2.2.0/24 [90/28416] via 10.1.4.10, 00:34:32, FastEthernet0/1
                    [90/28416] via 10.1.4.6, 00:34:32, FastEthernet0/0
R4#
```

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

```
                                          (sec)          (ms)       Cnt
Num
0   10.1.4.6                Fa0/0              11 00:34:39    1   200  0
37
1   10.1.4.10               Fa0/1              12 01:32:40    1   200  0
359
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 00:00:00
  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 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         ADV Router      Age         Seq#       Checksum Link
count
3.3.3.3         3.3.3.3         1132        0x8000001B 0x00B47E 2
4.4.4.4         4.4.4.4         915         0x8000001F 0x0049E1 2

                Summary Net Link States (Area 34)

Link ID         ADV Router      Age         Seq#       Checksum
0.0.0.0         3.3.3.3         1132        0x80000003 0x00DA4D

                Type-7 AS External Link States (Area 34)

Link ID         ADV Router      Age         Seq#       Checksum Tag
10.1.4.4        4.4.4.4         174         0x80000002 0x00F767 0
10.1.4.8        4.4.4.4         915         0x80000006 0x00C78F 0
```

```
10.2.1.0        4.4.4.4         915         0x80000004 0x00431D 0
10.2.2.0        4.4.4.4         915         0x80000004 0x003827 0
10.2.4.12       4.4.4.4         174         0x80000002 0x009BBA 0
R4#
```

```
R4#show ip route ospf
O*IA 0.0.0.0/0 [110/65] via 10.1.1.9, 01:22:11, Serial0/1/0.34
R4#
```

```
R4#show ip dhcp binding
Bindings from all pools not associated with VRF:
IP address          Client-ID/              Lease expiration        Type
                    Hardware address/
                    User name
10.2.1.4            0100.1c23.8edb.bc       Jun 02 2010 03:01 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
 10.2.1.5             10.2.1.1         - 10.2.1.254        1
R4#
```

```
R4#show ntp status
Clock is unsynchronized, stratum 16, no reference clock
nominal freq is 250.0000 Hz, actual freq is 250.0001 Hz, precision is
2**18
reference time is 00000000.00000000 (00:00:00.000 UTC Mon Jan 1 1900)
clock offset is 0.0000 msec, root delay is 0.00 msec
root dispersion is 0.00 msec, peer dispersion is 0.00 msec
R4#
```

```
R4#show ntp associations

      address         ref clock     st  when  poll reach  delay  offset
disp
 ~10.1.1.1         0.0.0.0          16     -    64    0     0.0    0.00
16000.
```

```
 * master (synced), # master (unsynced), + selected, - candidate, ~
configured
R4#
R4#
```