

```
R1#
R1#show running-config
Building configuration...
```

```
Current configuration : 2616 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 R1
!
boot-start-marker
boot-end-marker
!
logging message-counter syslog
no logging console
enable secret 5 $1$aKZT$RO6SAsRilNacGlsvRsdUg0
!
no aaa new-model
!
dot11 syslog
ip source-route
!
!
ip cef
!
!
ip multicast-routing
ipv6 unicast-routing
ipv6 cef
!
multilink bundle-name authenticated
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
```

```
!  
!  
!  
!  
!  
voice-card 0  
!  
!  
!  
!  
!  
archive  
  log config  
  hidekeys  
!  
!  
!  
!  
!  
!  
!  
!  
!  
interface FastEthernet0/0  
  no ip address  
  shutdown  
  duplex auto  
  speed auto  
!  
interface FastEthernet0/1  
  no ip address  
  shutdown  
  duplex auto  
  speed auto  
!  
interface Serial0/0/0  
  no ip address  
  shutdown  
  no fair-queue  
  clock rate 2000000  
!  
interface Serial0/0/1  
  no ip address  
  shutdown  
!  
interface Serial0/1/0  
  no ip address  
  shutdown  
  clock rate 2000000  
!  
interface Serial0/2/0  
  no ip address  
  encapsulation frame-relay  
!
```

```
interface Serial0/2/0.12 point-to-point
 ip address 10.1.1.1 255.255.255.252
 ip pim sparse-dense-mode
 ip nat inside
 ip virtual-reassembly
 snmp trap link-status
 ipv6 address 2026::12:1/122
 ipv6 enable
 ipv6 ospf 6 area 12
 frame-relay interface-dlci 102
!
interface Serial0/3/0
 ip address 209.65.200.225 255.255.255.252
 ip nat outside
 ip virtual-reassembly
 clock rate 56000
!
router ospf 1
 router-id 10.1.1.1
 log-adjacency-changes
 redistribute connected subnets
 redistribute static subnets
 redistribute bgp 65001 subnets
 network 10.1.1.1 0.0.0.0 area 12
!
router bgp 65001
 no synchronization
 bgp router-id 1.1.1.1
 bgp log-neighbor-changes
 neighbor 209.65.200.226 remote-as 65002
 no auto-summary
!
ip forward-protocol nd
ip http server
no ip http secure-server
!
!
ip nat inside source list 10 interface Serial0/3/0 overload
!
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
!
access-list 10 permit 10.0.0.0 0.255.255.255
ipv6 router ospf 6
 router-id 1.1.1.1
 log-adjacency-changes
!
```

```
!  
!  
!  
!  
!  
!  
control-plane  
!  
!  
!  
ccm-manager fax protocol cisco  
!  
mgcp fax t38 ecm  
mgcp behavior g729-variants static-pt  
!  
!  
!  
!  
!  
line con 0  
  exec-timeout 0 0  
  logging synchronous  
line aux 0  
line vty 0 4  
  password cisco  
  login  
!  
scheduler allocate 20000 1000  
ntp master 5  
ntp peer 10.1.1.2  
ntp peer 10.1.4.6  
ntp peer 10.1.1.6  
ntp peer 10.1.4.10  
ntp peer 10.1.1.10  
ntp peer 10.2.4.13  
ntp peer 10.2.4.14  
end
```

R1#

```
R1#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 = 32/32/36 ms
```

```
R1#
```

```
R1#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 = 32/33/36 ms
```

```
R1#
```

```
R1#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 = 64/64/64 ms
```

```
R1#
```

```
R1#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
```

```
R1#
```



```
R1#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
```

```
R1#
```

```
R1#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)  
R1#
```

```
R1#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)  
R1#
```

```
R1#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 0 percent (0/5)
```

```
R1#
```

```
R1#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 0 percent (0/5)
```

```
R1#
```

```
R1#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 0 percent (0/5)
```

```
R1#
```

```
R1#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 0 percent (0/5)
```

```
R1#
```

```
R1#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 0 percent (0/5)
```

```
R1#
```

```
R1#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 0 percent (0/5)
```

```
R1#
```



```
R1#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 0 percent (0/5)
```

```
R1#
```

```
R1#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 0 percent (0/5)  
R1#
```

```
R1#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 0 percent (0/5)  
R1#
```

```
R1#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 0 percent (0/5)
```

```
R1#
```

```
R1#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 0 percent (0/5)
```

```
R1#
```

```
R1#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 0 percent (0/5)
```

```
R1#
```

```
R1#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 0 percent (0/5)
```

```
R1#
```

```
R1#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 0 percent (0/5)
```

```
R1#
```

```
R1#show ip interface brief
```

Interface	IP-Address	OK?	Method	Status
FastEthernet0/0	unassigned	YES	NVRAM	administratively
down down				
FastEthernet0/1	unassigned	YES	NVRAM	administratively
down down				
Serial0/0/0	unassigned	YES	NVRAM	administratively
down down				
Serial0/0/1	unassigned	YES	NVRAM	administratively
down down				
Serial0/1/0	unassigned	YES	NVRAM	administratively
down down				
Serial0/2/0	unassigned	YES	NVRAM	up
up				
Serial0/2/0.12	10.1.1.1	YES	NVRAM	up
up				
Serial0/3/0	209.65.200.225	YES	NVRAM	up
up				
NVI0	10.1.1.1	YES	unset	up
up				

```
R1#
```



```
R1#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
```

```
209.65.200.0/24 is variably subnetted, 2 subnets, 2 masks  
B 209.65.200.240/29 [20/0] via 209.65.200.226, 00:13:13  
C 209.65.200.224/30 is directly connected, Serial0/3/0  
10.0.0.0/30 is subnetted, 1 subnets  
C 10.1.1.0 is directly connected, Serial0/2/0.12  
R1#
```

R1#show processes cpu

CPU utilization for five seconds: 2%/0%; one minute: 1%; five minutes: 1%

PID	Runtime(ms)	Invoked	uSecs	5Sec	1Min	5Min	TTY	Process
1	24	78	307	0.00%	0.00%	0.00%	0	Chunk
Manager								
2	4	173	23	0.07%	0.04%	0.02%	0	Load Meter
3	2108	812	2596	0.79%	0.15%	0.17%	0	Exec
4	4	1	4000	0.00%	0.00%	0.00%	0	EDDRI_MAIN
5	1124	100	11240	0.00%	0.11%	0.11%	0	Check
heaps								
6	0	1	0	0.00%	0.00%	0.00%	0	Pool
Manager								
7	0	2	0	0.00%	0.00%	0.00%	0	Timers
8	0	1	0	0.00%	0.00%	0.00%	0	License
Client N								
9	0	838	0	0.00%	0.00%	0.00%	0	BGP
Scheduler								
10	0	16	0	0.00%	0.00%	0.00%	0	IPC
Dynamic Cach								
11	0	1	0	0.00%	0.00%	0.00%	0	IPC Zone
Manager								
12	0	875	0	0.00%	0.00%	0.00%	0	IPC
Periodic Tim								
13	0	875	0	0.00%	0.00%	0.00%	0	IPC
Deferred Por								
14	0	1	0	0.00%	0.00%	0.00%	0	IPC Seat
Manager								

105	16	122	131	0.00%	0.00%	0.00%	0	CDP
Protocol								
106	0	2	0	0.00%	0.00%	0.00%	0	Ethernet
OAM Pro								
107	0	2	0	0.00%	0.00%	0.00%	0	CEF
switching ba								
108	0	2	0	0.00%	0.00%	0.00%	0	ADJ
resolve proc								
109	0	1	0	0.00%	0.00%	0.00%	0	IP ARP
Adjacency								
110	0	1	0	0.00%	0.00%	0.00%	0	IP ARP
Retry Age								
111	84	279	301	0.00%	0.00%	0.00%	0	IP Input
112	0	1	0	0.00%	0.00%	0.00%	0	ICMP event
handl								
113	0	5	0	0.00%	0.00%	0.00%	0	TurboACL
114	0	2	0	0.00%	0.00%	0.00%	0	TurboACL
chunk								
115	0	1	0	0.00%	0.00%	0.00%	0	IPv6 Echo
event								
116	0	1	0	0.00%	0.00%	0.00%	0	LSP Tunnel
FRR								
117	0	1	0	0.00%	0.00%	0.00%	0	MPLS Auto-
Tunnel								
118	0	4	0	0.00%	0.00%	0.00%	0	MOP
Protocols								
119	0	3	0	0.00%	0.00%	0.00%	0	PPP Hooks
121	0	1	0	0.00%	0.00%	0.00%	0	SSS
Manager								
122	0	1	0	0.00%	0.00%	0.00%	0	SSS
Feature Mana								
123	0	1	0	0.00%	0.00%	0.00%	0	SSS
Feature Time								
124	0	2	0	0.00%	0.00%	0.00%	0	Spanning
Tree								
125	0	1	0	0.00%	0.00%	0.00%	0	X.25
Encaps Mana								
126	0	4	0	0.00%	0.00%	0.00%	0	SSM
connection m								
127	0	1	0	0.00%	0.00%	0.00%	0	AC Switch
128	0	4	0	0.00%	0.00%	0.00%	0	
Authentication P								
129	0	1	0	0.00%	0.00%	0.00%	0	Auth-proxy
AAA B								
130	100	2	50000	0.00%	0.00%	0.00%	0	EAPoUDP
Process								
131	4	2	2000	0.00%	0.00%	0.00%	0	IP Host
Track Pr								
132	0	2	0	0.00%	0.00%	0.00%	0	KRB5 AAA
133	0	2	0	0.00%	0.00%	0.00%	0	Ethernet
LMI								
134	0	2	0	0.00%	0.00%	0.00%	0	PPP IP
Route								
135	0	2	0	0.00%	0.00%	0.00%	0	PPP IPCP

195	4	3	1333	0.00%	0.00%	0.00%	0	Crypto HW
Proc								
196	0	37	0	0.00%	0.00%	0.00%	0	
CRM_CALL_UPDATE_								
197	116	2	58000	0.00%	0.00%	0.00%	0	
CCVPM_HDSPRM								
198	0	4	0	0.00%	0.00%	0.00%	0	HDA DSPRM
MAIN								
199	4	2	2000	0.00%	0.00%	0.00%	0	STUN_APP
200	0	1	0	0.00%	0.00%	0.00%	0	STUN_TEST
201	0	1	0	0.00%	0.00%	0.00%	0	BGP Event
202	4	2	2000	0.00%	0.00%	0.00%	0	AAA Cached
Serve								
203	0	2	0	0.00%	0.00%	0.00%	0	ENABLE AAA
204	0	1	0	0.00%	0.00%	0.00%	0	EM
Background Pr								
205	0	1	0	0.00%	0.00%	0.00%	0	Key chain
liveke								
206	0	2	0	0.00%	0.00%	0.00%	0	LINE AAA
207	0	2	0	0.00%	0.00%	0.00%	0	LOCAL AAA
208	0	4	0	0.00%	0.00%	0.00%	0	MPLS Auto
Mesh P								
209	0	2	0	0.00%	0.00%	0.00%	0	TPLUS
210	0	2	0	0.00%	0.00%	0.00%	0	VSP_MGR
211	0	1	0	0.00%	0.00%	0.00%	0	
FW_TEST_TRP								
212	0	1	0	0.00%	0.00%	0.00%	0	EPM MAIN
PROCESS								
213	0	3	0	0.00%	0.00%	0.00%	0	Crypto WUI
214	0	2	0	0.00%	0.00%	0.00%	0	Crypto
Support								
215	0	1	0	0.00%	0.00%	0.00%	0	IPSECv6 PS
Proc								
216	0	1	0	0.00%	0.00%	0.00%	0	CCVPM_HTSP
217	0	2	0	0.00%	0.00%	0.00%	0	
VPM_MWI_BACKGROU								
218	0	1	0	0.00%	0.00%	0.00%	0	CCVPM_R2
219	0	1	0	0.00%	0.00%	0.00%	0	EPHONE MWI
Refre								
220	0	1	0	0.00%	0.00%	0.00%	0	FB/KS Log
HouseK								
221	0	2	0	0.00%	0.00%	0.00%	0	EPHONE MWI
BG Pr								
222	0	1	0	0.00%	0.00%	0.00%	0	Skinny HW
confer								
223	4	327	12	0.00%	0.00%	0.00%	0	FLEX DSPRM
MAIN								
224	0	325	0	0.00%	0.00%	0.00%	0	FLEX DSP
KEEPALI								
225	0	31	0	0.00%	0.00%	0.00%	0	VOICE REG
BG Pro								
226	0	1	0	0.00%	0.00%	0.00%	0	Presence
Process								
227	0	1	0	0.00%	0.00%	0.00%	0	CCSWVOICE


```
R1#show interfaces
FastEthernet0/0 is administratively down, line protocol is down
  Hardware is MV96340 Ethernet, address is 001d.70a0.c690 (bia
001d.70a0.c690)
  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)
  Auto-duplex, Auto Speed, 100BaseTX/FX
  ARP type: ARPA, ARP Timeout 04:00:00
  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: 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
    0 packets input, 0 bytes
    Received 0 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
    0 packets output, 0 bytes, 0 underruns
    0 output errors, 0 collisions, 0 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 administratively down, line protocol is down
  Hardware is MV96340 Ethernet, address is 001d.70a0.c691 (bia
001d.70a0.c691)
  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)
  Auto-duplex, Auto Speed, 100BaseTX/FX
  ARP type: ARPA, ARP Timeout 04:00:00
  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: 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
    0 packets input, 0 bytes
    Received 0 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
    0 packets output, 0 bytes, 0 underruns
    0 output errors, 0 collisions, 0 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 administratively down, line protocol is down
Hardware is GT96K Serial
MTU 1500 bytes, BW 1544 Kbit/sec, DLY 20000 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation HDLC, loopback not set
Keepalive set (10 sec)
CRC checking enabled
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: 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
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, 3 interface resets
0 unknown protocol drops
0 output buffer failures, 0 output buffers swapped out
0 carrier transitions
DCD=down DSR=down DTR=down RTS=down CTS=down

Serial0/0/1 is administratively down, line protocol is down
Hardware is GT96K Serial
MTU 1500 bytes, BW 1544 Kbit/sec, DLY 20000 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation HDLC, loopback not set
Keepalive set (10 sec)
CRC checking enabled
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 0/0/256 (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
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, 3 interface resets
0 unknown protocol drops
0 output buffer failures, 0 output buffers swapped out
0 carrier transitions
DCD=down DSR=down DTR=down RTS=down CTS=down

Serial0/1/0 is administratively down, line protocol is down
Hardware is GT96K Serial

MTU 1500 bytes, BW 1544 Kbit/sec, DLY 20000 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation HDLC, loopback not set
Keepalive set (10 sec)
CRC checking enabled
Last input 00:15:13, output 00:15:12, 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 0/1/256 (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
5 packets input, 999 bytes, 0 no buffer
Received 5 broadcasts, 0 runts, 0 giants, 0 throttles
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
1 packets output, 24 bytes, 0 underruns
0 output errors, 0 collisions, 3 interface resets
3 unknown protocol drops
0 output buffer failures, 0 output buffers swapped out
0 carrier transitions
DCD=down DSR=down DTR=up RTS=down CTS=down

Serial0/2/0 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)
CRC checking enabled
LMI enq sent 91, LMI stat recvd 90, 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 268/0, interface
broadcasts 254
Last input 00:00:01, output 00:00:01, output hang never
Last clearing of "show interface" counters 00:15:11
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 0/1/256 (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
417 packets input, 34268 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
416 packets output, 33587 bytes, 0 underruns
0 output errors, 0 collisions, 2 interface resets
0 unknown protocol drops

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

Serial0/2/0.12 is up, line protocol is up

Hardware is GT96K Serial
Internet address is 10.1.1.1/30
MTU 1500 bytes, BW 1544 Kbit/sec, DLY 20000 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation FRAME-RELAY
CRC checking enabled
Last clearing of "show interface" counters never

Serial0/3/0 is up, line protocol is up

Hardware is GT96K Serial
Internet address is 209.65.200.225/30
MTU 1500 bytes, BW 1544 Kbit/sec, DLY 20000 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation HDLC, loopback not set
Keepalive set (10 sec)
CRC checking enabled
Last input 00:00:02, output 00:00:00, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: weighted fair
Output queue: 0/1000/64/0 (size/max total/threshold/drops)
Conversations 0/1/256 (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
184 packets input, 14119 bytes, 0 no buffer
Received 110 broadcasts, 0 runts, 0 giants, 0 throttles
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
183 packets output, 13759 bytes, 0 underruns
0 output errors, 0 collisions, 5 interface resets
3 unknown protocol drops
0 output buffer failures, 0 output buffers swapped out
5 carrier transitions
DCD=up DSR=up DTR=up RTS=up CTS=up

NV10 is up, line protocol is up

Hardware is NVI
Interface is unnumbered. Using address of Serial0/2/0.12 (10.1.1.1)
MTU 1514 bytes, BW 56 Kbit/sec, DLY 5000 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation UNKNOWN, loopback not set
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
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, 0 interface resets
0 unknown protocol drops
0 output buffer failures, 0 output buffers swapped out
R1#
```

```
R1#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
R2	Ser 0/2/0.12	141	R S I	2811	Ser
0/2/0.12					

```
R5                Ser 0/3/0                169                R S I                2811                Ser
0/3/0
R1#
```

```
R1#show cdp neighbors detail
```

```
-----
Device ID: R2
Entry address(es):
  IP address: 10.1.1.2
  IPv6 address: 2026::12:2 (global unicast)
  IPv6 address: FE80::216:9DFF:FEFA:CAB0 (link-local)
Platform: Cisco 2811, Capabilities: Router Switch IGMP
Interface: Serial0/2/0.12, Port ID (outgoing port): Serial0/2/0.12
Holdtime : 132 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: R5
Entry address(es):
 IP address: 209.65.200.226
Platform: Cisco 2811, Capabilities: Router Switch IGMP
Interface: Serial0/3/0, Port ID (outgoing port): Serial0/3/0
Holdtime : 160 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: ''

R1#

```
R1#show frame-relay map
Serial0/2/0.12 (up): point-to-point dlci, dlci 102(0x66,0x1860),
broadcast
                status defined, active
R1#
```

```
R1#show ip interface
FastEthernet0/0 is administratively down, line protocol is down
  Internet protocol processing disabled
FastEthernet0/1 is administratively down, line protocol is down
  Internet protocol processing disabled
Serial0/0/0 is administratively down, line protocol is down
  Internet protocol processing disabled
Serial0/0/1 is administratively down, line protocol is down
  Internet protocol processing disabled
Serial0/1/0 is administratively down, line protocol is down
  Internet protocol processing disabled
Serial0/2/0 is up, line protocol is up
  Internet protocol processing disabled
Serial0/2/0.12 is up, line protocol is up
  Internet address is 10.1.1.1/30
  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 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 enabled, interface in domain inside
BGP Policy Mapping is disabled
Input features: Stateful Inspection, Virtual Fragment Reassembly,
Virtual Fragment Reassembly After IPsec Decryption, MCI Check
Output features: NAT Inside, Stateful Inspection
WCCP Redirect outbound is disabled
WCCP Redirect inbound is disabled
WCCP Redirect exclude is disabled
Serial0/3/0 is up, line protocol is up
Internet address is 209.65.200.225/30
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
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 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 enabled, interface in domain outside
BGP Policy Mapping is disabled
Input features: Stateful Inspection, Virtual Fragment Reassembly,
Virtual Fragment Reassembly After IPsec Decryption, NAT Outside, MCI
Check
Output features: CCE Output Classification, Post-routing NAT Outside,
Stateful Inspection
WCCP Redirect outbound is disabled
WCCP Redirect inbound is disabled
WCCP Redirect exclude is disabled
NV10 is up, line protocol is up
Interface is unnumbered. Using address of Serial0/2/0.12 (10.1.1.1)
Broadcast address is 255.255.255.255
MTU is 1514 bytes
Helper address is not set

```
Directed broadcast forwarding is disabled
Multicast reserved groups joined: 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 disabled
IP fast switching on the same interface is disabled
IP Flow switching is disabled
IP CEF switching is disabled
IP Null turbo vector
IP Null turbo vector
IP multicast fast switching is disabled
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
Input features: MCI Check
Output features: Post-routing NAT NVI Output
WCCP Redirect outbound is disabled
WCCP Redirect inbound is disabled
WCCP Redirect exclude is disabled
R1#
```



```
R1#show ip cef
```

Prefix	Next Hop	Interface
0.0.0.0/0	no route	
0.0.0.0/8	drop	
0.0.0.0/32	receive	
10.1.1.0/30	attached	Serial0/2/0.12
10.1.1.0/32	receive	Serial0/2/0.12
10.1.1.1/32	receive	Serial0/2/0.12
10.1.1.3/32	receive	Serial0/2/0.12
127.0.0.0/8	drop	
209.65.200.224/30	attached	Serial0/3/0
209.65.200.224/32	receive	Serial0/3/0
209.65.200.225/32	receive	Serial0/3/0
209.65.200.227/32	receive	Serial0/3/0
209.65.200.240/29	209.65.200.226	Serial0/3/0
224.0.0.0/4	multicast	
224.0.0.0/24	receive	
240.0.0.0/4	drop	
255.255.255.255/32	receive	

```
R1#
```

```
R1#show tcp statistics
Rcvd: 36 Total, 0 no port
      0 checksum error, 0 bad offset, 0 too short
      18 packets (402 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
      18 ack packets (350 bytes)
Sent: 35 Total, 0 urgent packets
      1 control packets (including 0 retransmitted)
      17 data packets (349 bytes)
      0 data packets (0 bytes) retransmitted
      0 data packets (0 bytes) fastretransmitted
      17 ack only packets (17 delayed)
      0 window probe packets, 0 window update packets
0 Connections initiated, 1 connections accepted, 1 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
R1#
```

```
R1#show ip protocols
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 10.1.1.1
  It is an autonomous system boundary router
  Redistributing External Routes from,
    connected, includes subnets in redistribution
    static, includes subnets in redistribution
    bgp 65001, includes subnets in redistribution
  Number of areas in this router is 1. 1 normal 0 stub 0 nssa
  Maximum path: 4
  Routing for Networks:
```

```
10.1.1.1 0.0.0.0 area 12
Reference bandwidth unit is 100 mbps
Routing Information Sources:
  Gateway          Distance      Last Update
Distance: (default is 110)
```

Routing Protocol is "bgp 65001"

```
Outgoing update filter list for all interfaces is not set
Incoming update filter list for all interfaces is not set
IGP synchronization is disabled
Automatic route summarization is disabled
```

Neighbor(s):

```
  Address          FiltIn FiltOut DistIn DistOut Weight RouteMap
  209.65.200.226
Maximum path: 1
Routing Information Sources:
  Gateway          Distance      Last Update
  209.65.200.226      20          00:15:07
Distance: external 20 internal 200 local 200
```

R1#

```
R1#show access-lists
Standard IP access list 10
  10 permit 10.0.0.0, wildcard bits 0.255.255.255
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
R1#
```

```
R1#show ip ospf neighbor
```

Neighbor ID	Pri	State	Dead Time	Address
Interface				
2.2.2.2	0	FULL/ -	00:00:35	10.1.1.2
Serial0/2/0.12				

```
R1#
```

```
R1#show ip ospf interface
NV10 is up, line protocol is up
  Interface is unnumbered. Using address of Serial0/2/0.12 (10.1.1.1),
  Area 12
  Process ID 1, Router ID 10.1.1.1, Network Type POINT_TO_POINT, Cost:
  1785
  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 00:00:08
  Supports Link-local Signaling (LLS)
  Cisco NSF helper support enabled
  IETF NSF helper support enabled
  Index 2/2, flood queue length 0
  Next 0x0(0)/0x0(0)
  Last flood scan length is 0, maximum is 0
  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)
Serial0/2/0.12 is up, line protocol is up
  Internet Address 10.1.1.1/30, Area 12
  Process ID 1, Router ID 10.1.1.1, 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 00:00:06
  Supports Link-local Signaling (LLS)
  Cisco NSF helper support enabled
  IETF NSF helper support enabled
  Index 1/1, flood queue length 0
  Next 0x0(0)/0x0(0)
  Last flood scan length is 1, maximum is 1
  Last flood scan time is 0 msec, maximum is 0 msec
  Neighbor Count is 1, Adjacent neighbor count is 1
    Adjacent with neighbor 2.2.2.2
  Suppress hello for 0 neighbor(s)
R1#
```

R1#show ip ospf database

OSPF Router with ID (10.1.1.1) (Process ID 1)

Router Link States (Area 12)

Link ID count	ADV Router	Age	Seq#	Checksum	Link
2.2.2.2	2.2.2.2	973	0x80000006	0x004229	2
10.1.1.1	10.1.1.1	976	0x80000002	0x00AABE	2

Type-5 AS External Link States

Link ID	ADV Router	Age	Seq#	Checksum	Tag
209.65.200.224	10.1.1.1	999	0x80000001	0x004693	0
209.65.200.240	10.1.1.1	943	0x80000001	0x0031C6	65002

R1#


```
R1#show ip route ospf
```

```
R1#
```

```
R1#show ip bgp neighbors
BGP neighbor is 209.65.200.226, remote AS 65002, external link
  BGP version 4, remote router ID 5.5.5.5
  BGP state = Established, up for 00:16:49
  Last read 00:00:51, last write 00:00:53, hold time is 180, keepalive
interval is 60 seconds
```

Neighbor capabilities:

```
  Route refresh: advertised and received(new)
  Address family IPv4 Unicast: advertised and received
```

Message statistics:

```
  InQ depth is 0
  OutQ depth is 0
```

	Sent	Rcvd
Opens:	1	1
Notifications:	0	0
Updates:	0	1
Keepalives:	17	17
Route Refresh:	0	0
Total:	18	19

Default minimum time between advertisement runs is 30 seconds

For address family: IPv4 Unicast

BGP table version 2, neighbor version 2/0

Output queue size : 0

Index 1, Offset 0, Mask 0x2

1 update-group member

	Sent	Rcvd
Prefix activity:	----	----
Prefixes Current:	0	1 (Consumes 52 bytes)
Prefixes Total:	0	1
Implicit Withdraw:	0	0
Explicit Withdraw:	0	0
Used as bestpath:	n/a	1

Used as multipath: n/a 0

	Outbound	Inbound
Local Policy Denied Prefixes:	-----	-----
Bestpath from this peer:	1	n/a
Total:	1	0

Number of NLRI in the update sent: max 0, min 0

Address tracking is enabled, the RIB does have a route to 209.65.200.226

Connections established 1; dropped 0

Last reset never

Transport(tcp) path-mtu-discovery is enabled

Connection state is ESTAB, I/O status: 1, unread input bytes: 0

Connection is ECN Disabled, Minimum incoming TTL 0, Outgoing TTL 1

Local host: 209.65.200.225, Local port: 179

Foreign host: 209.65.200.226, Foreign port: 51427

Connection tableid (VRF): 0

Enqueued packets for retransmit: 0, input: 0 mis-ordered: 0 (0 bytes)

Event Timers (current time is 0x1043B8):

Timer	Starts	Wakeups	Next
Retrans	19	0	0x0
TimeWait	0	0	0x0
AckHold	19	18	0x0
SendWnd	0	0	0x0
KeepAlive	0	0	0x0
GiveUp	0	0	0x0
PmtuAger	0	0	0x0
DeadWait	0	0	0x0
Linger	0	0	0x0
ProcessQ	0	0	0x0

iss: 4187204781 snduna: 4187205150 sndnxt: 4187205150 sndwnd: 16016

irs: 2050562213 rcvnxt: 2050562635 rcvwnd: 15963 delrcvwnd: 421

SRTT: 276 ms, RTTO: 466 ms, RTV: 190 ms, KRTT: 0 ms

minRTT: 16 ms, maxRTT: 300 ms, ACK hold: 200 ms

Status Flags: passive open, gen tcbs

Option Flags: nagle, path mtu capable

IP Precedence value : 6

Datagrams (max data segment is 1460 bytes):

Rcvd: 38 (out of order: 0), with data: 19, total data bytes: 421

Sent: 37 (retransmit: 0, fastretransmit: 0, partialack: 0, Second

Congestion: 0), with data: 18, total data bytes: 368

Packets received in fast path: 0, fast processed: 0, slow path: 0

fast lock acquisition failures: 0, slow path: 0

R1#

```
R1#show ip bgp summary
BGP router identifier 1.1.1.1, local AS number 65001
BGP table version is 2, main routing table version 2
1 network entries using 132 bytes of memory
1 path entries using 52 bytes of memory
2/1 BGP path/bestpath attribute entries using 296 bytes of memory
1 BGP AS-PATH entries using 24 bytes of memory
0 BGP route-map cache entries using 0 bytes of memory
0 BGP filter-list cache entries using 0 bytes of memory
BGP using 504 total bytes of memory
BGP activity 1/0 prefixes, 1/0 paths, scan interval 60 secs

Neighbor          V    AS MsgRcvd MsgSent   TblVer  InQ  OutQ  Up/Down
State/PfxRcd
```

```
209.65.200.226 4 65002      20      19      2      0      0 00:17:00
1
R1#
```

```
R1#show ip bgp
BGP table version is 2, local router ID is 1.1.1.1
Status codes: s suppressed, d damped, h history, * valid, > best, i -
internal,
                r RIB-failure, S Stale
Origin codes: i - IGP, e - EGP, ? - incomplete
```

Network	Next Hop	Metric	LocPrf	Weight	Path
*> 209.65.200.240/29	209.65.200.226	0		0	65002 i

R1#

```
R1#show ip route bgp
      209.65.200.0/24 is variably subnetted, 2 subnets, 2 masks
B       209.65.200.240/29 [20/0] via 209.65.200.226, 00:16:24
R1#
```

```
R1#show ip nat translations
```

```
R1#
```

```
R1#show ip nat statistics
Total active translations: 0 (0 static, 0 dynamic; 0 extended)
Peak translations: 0, occurred 00:18:24 ago
Outside interfaces:
  Serial0/3/0
Inside interfaces:
  Serial0/2/0.12
Hits: 0 Misses: 0
CEF Translated packets: 0, CEF Punted packets: 0
Expired translations: 0
Dynamic mappings:
-- Inside Source
  [Id: 1] access-list 10 interface Serial0/3/0 refcount 0
Appl doors: 0
Normal doors: 0
Queued Packets: 0
R1#
```