

```
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 = 32/32/36 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 = 64/64/68 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 = 64/65/68 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 100 percent (5/5), round-trip min/avg/max = 64/66/68 ms
```

```
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 100 percent (5/5), round-trip min/avg/max = 128/130/132
```

```
ms
```

```
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 100 percent (5/5), round-trip min/avg/max = 128/132/136  
ms
```

```
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				
NV10	unassigned	YES	unset	administratively
down down				

```
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, 00:49:58  
C        209.65.200.224/30 is directly connected, Serial0/3/0  
        10.0.0.0/30 is subnetted, 3 subnets  
O IA    10.1.1.8 [110/192] via 10.1.1.2, 00:25:53, Serial0/2/0.12  
C        10.1.1.0 is directly connected, Serial0/2/0.12  
O IA    10.1.1.4 [110/128] via 10.1.1.2, 00:39:58, 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	28	81	345	0.00%	0.00%	0.00%	0	Chunk
Manager								
2	4	614	6	0.00%	0.04%	0.04%	0	Load Meter
3	0	3	0	0.00%	0.00%	0.00%	0	Collection
proce								
4	0	1	0	0.00%	0.00%	0.00%	0	EDDRI_MAIN
5	4252	360	11811	0.00%	0.16%	0.12%	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	2992	0	0.00%	0.00%	0.00%	0	BGP
Scheduler								
10	0	52	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	3081	0	0.00%	0.00%	0.00%	0	IPC
Periodic Tim								
13	0	3081	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								
15	0	1	0	0.00%	0.00%	0.00%	0	IPC
BackPressure								
16	0	1	0	0.00%	0.00%	0.00%	0	OIR
Handler								
17	0	1	0	0.00%	0.00%	0.00%	0	Crash
writer								
18	0	104	0	0.00%	0.00%	0.00%	0	
Environmental mo								

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	0	2	0	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	0	2	0	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	4	1	4000	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	4	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	1141	3	0.00%	0.00%	0.00%	0 FLEX DSPRM
MAIN							
224	0	1139	0	0.00%	0.00%	0.00%	0 FLEX DSP
KEEPALI							
225	4	104	38	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
228	36	620	58	0.00%	0.00%	0.00%	0 OSPF-1
Hello							
229	0	1	0	0.00%	0.00%	0.00%	0 http
client proc							

290	0	3	0	0.00%	0.00%	0.00%	0	EEM ED
Test								
291	4	3	1333	0.00%	0.00%	0.00%	0	EEM ED
Config								
292	0	3	0	0.00%	0.00%	0.00%	0	EEM ED Env
293	4	29	137	0.00%	0.00%	0.00%	0	Syslog
294	0	1	0	0.00%	0.00%	0.00%	0	VPDN Test
295	4	3	1333	0.00%	0.00%	0.00%	0	EEM ED RPC
296	0	2	0	0.00%	0.00%	0.00%	0	Key Proc
297	0	1	0	0.00%	0.00%	0.00%	0	tHUB
299	8	32	250	0.00%	0.00%	0.00%	0	IPv6 RIB
Event H								
300	4	1552	2	0.00%	0.00%	0.00%	0	CEF: IPv6
proces								
301	388	517	750	0.00%	0.00%	0.00%	0	FR LMI
302	36	56	642	0.00%	0.00%	0.00%	0	FR PVC
event man								
303	4	30988	0	0.07%	0.03%	0.02%	0	FR
Broadcast Out								
304	0	52	0	0.00%	0.00%	0.00%	0	FR ARP
305	0	52	0	0.00%	0.00%	0.00%	0	FR
FRAGMENTATION								
306	0	156	0	0.00%	0.00%	0.00%	0	FR TUNNEL
307	0	1	0	0.00%	0.00%	0.00%	0	FRF9
manager								
308	0	1	0	0.00%	0.00%	0.00%	0	FRF9 timed
event								
309	0	311	0	0.00%	0.00%	0.00%	0	compute
load per								
310	0	3098	0	0.07%	0.00%	0.00%	0	IGMP Input
311	52	61908	0	0.15%	0.14%	0.15%	0	PIM
Process								
312	0	30996	0	0.00%	0.03%	0.02%	0	Mwheel
Process								
313	0	6042	0	0.00%	0.00%	0.00%	0	IP NAT
Ager								
314	0	1	0	0.00%	0.00%	0.00%	0	IP NAT
WLAN								
315	0	1	0	0.00%	0.00%	0.00%	0	IP VFR
proc								
316	4	167	23	0.00%	0.00%	0.00%	0	IPv6 IDB
317	32	337	94	0.00%	0.00%	0.00%	0	IPv6 Input
318	0	11	0	0.00%	0.00%	0.00%	0	IPv6 ND
319	0	1	0	0.00%	0.00%	0.00%	0	IPv6
Address								
320	8	12388	0	0.00%	0.02%	0.02%	0	MLD
321	16	3112	5	0.00%	0.00%	0.00%	0	OSPFv3-6
Router								
322	0	2	0	0.00%	0.00%	0.00%	0	
cpf_process_msg_								
323	0	1	0	0.00%	0.00%	0.00%	0	TCP
Listener								
324	100	3288	30	0.00%	0.01%	0.00%	0	NTP

326	0	1	0	0.00%	0.00%	0.00%	0	LICENSE
AGENT								
327	52	3136	16	0.00%	0.00%	0.00%	0	OSPF-1
Router								
328	80	373	214	0.00%	0.00%	0.00%	0	BGP Router
329	0	1	0	0.00%	0.00%	0.00%	0	
cpf_process_tpQ								
R1#								

```

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 00:52:00, output 00:51:59, 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, 1026 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 257, LMI stat recvd 254, 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 788/0, interface
broadcasts 766
Last input 00:00:01, output 00:00:00, output hang never
Last clearing of "show interface" counters 00:51:58
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 0/3/256 (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
1240 packets input, 98101 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
1370 packets output, 107387 bytes, 0 underruns
0 output errors, 0 collisions, 12 interface resets
0 unknown protocol drops
0 output buffer failures, 0 output buffers swapped out
167 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 00:00:07, output 00:00:02, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 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
  492 packets input, 33006 bytes, 0 no buffer
  Received 366 broadcasts, 0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
  553 packets output, 37209 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 administratively down, line protocol is down
Hardware is NV1
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
ID					
R2	Ser 0/2/0.12	170	R S I	2811	Ser
0/2/0.12					
R5	Ser 0/3/0	122	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 : 162 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 : 174 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
NVIO is administratively down, line protocol is down
Internet protocol processing 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
10.1.1.4/30    10.1.1.2        Serial0/2/0.12
10.1.1.8/30    10.1.1.2        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: 103 Total, 0 no port

0 checksum error, 0 bad offset, 0 too short

55 packets (1105 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

55 ack packets (1053 bytes)

Sent: 110 Total, 0 urgent packets

1 control packets (including 0 retransmitted)

54 data packets (1052 bytes)

0 data packets (0 bytes) retransmitted

0 data packets (0 bytes) fastretransmitted

55 ack only packets (54 delayed)

0 window probe packets, 0 window update packets

1 Connections initiated, 0 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
  3.3.3.3         110          00:41:43
  2.2.2.2         110          00:27:44
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           00:51:50
  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 (58 matches)
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/ -	00:00:34	10.1.1.2
Serial0/2/0.12				

```
R1#
```

```
R1#show ip ospf interface
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 00:00:07
  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	ADV Router	Age	Seq#	Checksum	Link
count					
2.2.2.2	2.2.2.2	712	0x80000015	0x002734	2
10.1.1.1	10.1.1.1	704	0x8000000C	0x0096C8	2

Summary Net Link States (Area 12)

Link ID	ADV Router	Age	Seq#	Checksum
10.1.1.4	2.2.2.2	712	0x80000002	0x00F9EC
10.1.1.8	2.2.2.2	1699	0x80000003	0x00524F

Type-5 AS External Link States

Link ID	ADV Router	Age	Seq#	Checksum	Tag
209.65.200.224	10.1.1.1	1211	0x80000002	0x004494	0
209.65.200.240	10.1.1.1	1211	0x80000002	0x002FC7	65002

R1#

```
R1#show ip route ospf
    10.0.0.0/30 is subnetted, 3 subnets
O IA    10.1.1.8 [110/192] via 10.1.1.2, 00:28:27, Serial0/2/0.12
O IA    10.1.1.4 [110/128] via 10.1.1.2, 00:42:32, Serial0/2/0.12
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 00:53:35
  Last read 00:00:21, last write 00:00:21, 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:	54	54
Route Refresh:	0	0
Total:	55	56

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 NLRIs 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: 29995

Foreign host: 209.65.200.226, Foreign port: 179

Connection tableid (VRF): 0

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

Event Timers (current time is 0x31ED2C):

Timer	Starts	Wakeups	Next
Retrans	56	0	0x0
TimeWait	0	0	0x0
AckHold	56	55	0x0
SendWnd	0	0	0x0
KeepAlive	0	0	0x0
GiveUp	0	0	0x0
PmtuAger	7413	7412	0x31ED73
DeadWait	0	0	0x0
Linger	0	0	0x0
ProcessQ	0	0	0x0

iss: 1392512764 snduna: 1392513836 sndnxt: 1392513836 sndwnd:
15313

irs: 764385425 rcvnxt: 764386550 rcvwnd: 15260 delrcvwnd:
1124

SRTT: 300 ms, RTTO: 303 ms, RTV: 3 ms, KRTT: 0 ms

minRTT: 20 ms, maxRTT: 300 ms, ACK hold: 200 ms

Status Flags: active open

Option Flags: nagle, path mtu capable

IP Precedence value : 6

Datagrams (max data segment is 1460 bytes):

Rcvd: 104 (out of order: 0), with data: 56, total data bytes: 1124

Sent: 112 (retransmit: 0, fastretransmit: 0, partialack: 0, Second
Congestion: 0), with data: 55, total data bytes: 1071

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     56     55       2    0    0 00:53:44
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, 00:53:06
R1#
```

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

```
R1#
```

```
R1#show ip nat statistics
```

```
Total active translations: 0 (0 static, 0 dynamic; 0 extended)
```

```
Peak translations: 7, occurred 00:35:09 ago
```

```
Outside interfaces:
```

```
Serial0/3/0
```

```
Inside interfaces:
```

```
Serial0/2/0.12
```

```
Hits: 62 Misses: 0
```

```
CEF Translated packets: 8, CEF Punted packets: 54
```

```
Expired translations: 13
```

```
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#
```