


```
!  
!  
!  
!  
!  
!  
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 = 64/66/68 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 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 = 128/128/132  
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 = 128/129/132
```

```
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 100 percent (5/5), round-trip min/avg/max = 192/195/196  
ms
```

```
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 100 percent (5/5), round-trip min/avg/max = 192/196/200
ms
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 100 percent (5/5), round-trip min/avg/max = 192/195/196  
ms
```

```
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, 00:42:23  
C 209.65.200.224/30 is directly connected, Serial0/3/0  
10.0.0.0/8 is variably subnetted, 8 subnets, 2 masks  
O E2 10.2.4.12/30 [110/20] via 10.1.1.2, 00:39:00, Serial0/2/0.12  
O IA 10.1.1.8/30 [110/192] via 10.1.1.2, 00:39:16, Serial0/2/0.12  
O E2 10.1.4.8/30 [110/20] via 10.1.1.2, 00:39:00, Serial0/2/0.12  
O E2 10.2.1.0/24 [110/20] via 10.1.1.2, 00:39:00, Serial0/2/0.12  
O E2 10.2.2.0/24 [110/20] via 10.1.1.2, 00:39:01, Serial0/2/0.12  
C 10.1.1.0/30 is directly connected, Serial0/2/0.12  
O E2 10.1.4.4/30 [110/20] via 10.1.1.2, 00:39:02, Serial0/2/0.12  
O IA 10.1.1.4/30 [110/128] via 10.1.1.2, 00:39:17, 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	20	81	246	0.00%	0.00%	0.00%	0	Chunk
Manager								
2	4	523	7	0.00%	0.04%	0.03%	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	3672	311	11807	0.79%	0.14%	0.12%	0	Check
heaps								
6	0	2	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	2547	0	0.00%	0.00%	0.00%	0	BGP
Scheduler								
10	0	45	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	2625	0	0.00%	0.00%	0.00%	0	IPC
Periodic Tim								
13	4	2625	1	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	4	88	45	0.00%	0.00%	0.00%	0	
Environmental mo								
19	0	1	0	0.00%	0.00%	0.00%	0	ARP Input
20	0	2743	0	0.00%	0.00%	0.00%	0	ARP
Background								
21	0	2	0	0.00%	0.00%	0.00%	0	ATM Idle
Timer								
22	0	2	0	0.00%	0.00%	0.00%	0	AAA high-
capacit								
23	0	1	0	0.00%	0.00%	0.00%	0	
AAA_SERVER_DEADT								
24	0	1	0	0.00%	0.00%	0.00%	0	Policy
Manager								
25	0	7	0	0.00%	0.00%	0.00%	0	DDR Timers
26	4	2	2000	0.00%	0.00%	0.00%	0	Entity MIB
API								
27	16	34	470	0.00%	0.00%	0.00%	0	EEM ED
Syslog								
28	4	788	5	0.00%	0.00%	0.00%	0	HC Counter
Timer								
29	0	6	0	0.00%	0.00%	0.00%	0	Serial
Backgroun								
30	0	1	0	0.00%	0.00%	0.00%	0	RO Notify
Timers								
31	0	1	0	0.00%	0.00%	0.00%	0	RMI RM
Notify Wa								
32	0	2	0	0.00%	0.00%	0.00%	0	SMART
33	0	2612	0	0.00%	0.00%	0.00%	0	GraphIt
34	0	2	0	0.00%	0.00%	0.00%	0	Dialer
event								
35	0	1	0	0.00%	0.00%	0.00%	0	SERIAL
A'detect								
36	0	2	0	0.00%	0.00%	0.00%	0	XML Proxy
Client								
37	0	1	0	0.00%	0.00%	0.00%	0	Critical
Bkgnd								
38	32	1099	29	0.00%	0.00%	0.00%	0	Net
Background								
39	0	2	0	0.00%	0.00%	0.00%	0	IDB Work
40	4	31	129	0.00%	0.00%	0.00%	0	Logger

252	0	2	0	0.00%	0.00%	0.00%	0	Multi-ISA
Event								
253	0	1	0	0.00%	0.00%	0.00%	0	Multi-ISA
Cleanu								
254	0	1	0	0.00%	0.00%	0.00%	0	PM
Callback								
255	0	1	0	0.00%	0.00%	0.00%	0	Licensing
MIB pr								
256	0	13225	0	0.00%	0.01%	0.00%	0	Atheros
LED Ctro								
257	0	2	0	0.00%	0.00%	0.00%	0	Control-
plane ho								
258	0	1	0	0.00%	0.00%	0.00%	0	DATA
Transfer Pr								
259	0	1	0	0.00%	0.00%	0.00%	0	DATA
Collector								
260	0	2	0	0.00%	0.00%	0.00%	0	AAA SEND
STOP EV								
261	4	2	2000	0.00%	0.00%	0.00%	0	EEM ED
Resource								
262	0	2	0	0.00%	0.00%	0.00%	0	EEM ED
Routing								
263	0	3	0	0.00%	0.00%	0.00%	0	EEM ED
Track								
264	0	265	0	0.00%	0.00%	0.00%	0	RMON
Recycle Pro								
265	0	2	0	0.00%	0.00%	0.00%	0	RMON
Deferred Se								
266	0	1	0	0.00%	0.00%	0.00%	0	Syslog
Traps								
267	0	83	0	0.00%	0.00%	0.00%	0	Crypto
cTCP proc								
268	8	2	4000	0.00%	0.00%	0.00%	0	VLAN
Manager								
269	36	534	67	0.00%	0.00%	0.00%	0	OSPFv3-6
Hello								
270	0	1	0	0.00%	0.00%	0.00%	0	chkpt
message ha								
271	0	2630	0	0.00%	0.00%	0.00%	0	trunk
conditioni								
272	0	1	0	0.00%	0.00%	0.00%	0	trunk
conditioni								
273	0	2649	0	0.00%	0.00%	0.00%	0	CME
Extension Mo								
274	0	1	0	0.00%	0.00%	0.00%	0	IP SLAs
Ethernet								
275	12	220	54	0.00%	0.00%	0.00%	0	EEM Server
276	0	2	0	0.00%	0.00%	0.00%	0	EEM Policy
Direc								
277	0	3	0	0.00%	0.00%	0.00%	0	EEM ED CLI
278	0	3	0	0.00%	0.00%	0.00%	0	EEM ED
Counter								
279	0	3	0	0.00%	0.00%	0.00%	0	EM ED GOLD

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 00:44:23, output 00:44:23, 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 251, LMI stat recvd 250, 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 725/0, interface
broadcasts 696
Last input 00:00:02, output 00:00:02, output hang never
Last clearing of "show interface" counters 00:44:22

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
1356 packets input, 107237 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
1419 packets output, 112882 bytes, 0 underruns
0 output errors, 0 collisions, 2 interface resets
0 unknown protocol drops
0 output buffer failures, 0 output buffers swapped out
67 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 00:00:01, output 00:00:06, 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
389 packets input, 27260 bytes, 0 no buffer
Received 314 broadcasts, 0 runts, 0 giants, 0 throttles
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
587 packets output, 40618 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 NVI
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	158	R S I	2811	Ser
R5	Ser 0/3/0	158	R S I	2811	Ser

```
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 : 151 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 : 151 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
10.1.4.4/30          10.1.1.2               Serial0/2/0.12
10.1.4.8/30          10.1.1.2               Serial0/2/0.12
10.2.1.0/24          10.1.1.2               Serial0/2/0.12
10.2.2.0/24          10.1.1.2               Serial0/2/0.12
10.2.4.12/30         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: 52 Total, 0 no port
    0 checksum error, 0 bad offset, 0 too short
    47 packets (953 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
    47 ack packets (901 bytes)
Sent: 96 Total, 0 urgent packets
    3 control packets (including 0 retransmitted)
    46 data packets (900 bytes)
    0 data packets (0 bytes) retransmitted
    0 data packets (0 bytes) fastretransmitted
    47 ack only packets (46 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	00:40:44
2.2.2.2	110	00:40:59

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	00:44:07

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 (159 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/ -	00:00:39	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 00:00:04
  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 4 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	520	0x8000000F	0x00332E	2
10.1.1.1	10.1.1.1	465	0x80000008	0x009EC4	2

Summary Net Link States (Area 12)

Link ID	ADV Router	Age	Seq#	Checksum
10.1.1.4	2.2.2.2	520	0x80000002	0x00F9EC
10.1.1.8	2.2.2.2	520	0x80000002	0x00544E

Summary ASB Link States (Area 12)

Link ID	ADV Router	Age	Seq#	Checksum
3.3.3.3	2.2.2.2	520	0x80000002	0x0035B1

Type-5 AS External Link States

Link ID	ADV Router	Age	Seq#	Checksum	Tag
10.1.4.4	3.3.3.3	526	0x80000002	0x00AAC2	0
10.1.4.8	3.3.3.3	526	0x80000002	0x0082E6	0
10.2.1.0	3.3.3.3	526	0x80000002	0x00F976	0
10.2.2.0	3.3.3.3	527	0x80000002	0x00EE80	0
10.2.4.12	3.3.3.3	527	0x80000002	0x004E16	0
209.65.200.224	10.1.1.1	711	0x80000002	0x004494	0
209.65.200.240	10.1.1.1	711	0x80000002	0x002FC7	65002

R1#

```
R1#show ip route ospf
    10.0.0.0/8 is variably subnetted, 8 subnets, 2 masks
O E2   10.2.4.12/30 [110/20] via 10.1.1.2, 00:41:25, Serial0/2/0.12
O IA   10.1.1.8/30 [110/192] via 10.1.1.2, 00:41:41, Serial0/2/0.12
O E2   10.1.4.8/30 [110/20] via 10.1.1.2, 00:41:25, Serial0/2/0.12
O E2   10.2.1.0/24 [110/20] via 10.1.1.2, 00:41:25, Serial0/2/0.12
O E2   10.2.2.0/24 [110/20] via 10.1.1.2, 00:41:25, Serial0/2/0.12
O E2   10.1.4.4/30 [110/20] via 10.1.1.2, 00:41:25, Serial0/2/0.12
O IA   10.1.1.4/30 [110/128] via 10.1.1.2, 00:41:41, 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 00:45:48
  Last read 00:00:39, last write 00:00:39, 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: 46 46
Route Refresh: 0 0
Total: 47 48

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: 38685

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 0x2AD05C):

Timer	Starts	Wakeups	Next
Retrans	48	0	0x0
TimeWait	0	0	0x0
AckHold	48	47	0x0
SendWnd	0	0	0x0
KeepAlive	0	0	0x0
GiveUp	0	0	0x0
PmtuAger	5884	5883	0x2AD113
DeadWait	0	0	0x0
Linger	0	0	0x0
ProcessQ	0	0	0x0

iss: 3766655703 snduna: 3766656623 sndnxt: 3766656623 sndwnd: 15465

irs: 62105828 rcvnxt: 62106801 rcvwnd: 15412 delrcvwnd:
972

SRTT: 300 ms, RTTO: 307 ms, RTV: 7 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: 50 (out of order: 0), with data: 48, total data bytes: 972
Sent: 96 (retransmit: 0, fastretransmit: 0, partialack: 0, Second
Congestion: 0), with data: 47, total data bytes: 919
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
209.65.200.226	4	65002	48	47	2	0	0	00:45:57

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, 00:45:20
R1#
```



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

```
R1#
```

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

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

```
Peak translations: 13, occurred 00:41:17 ago
```

```
Outside interfaces:
  Serial0/3/0
Inside interfaces:
  Serial0/2/0.12
Hits: 163 Misses: 0
CEF Translated packets: 8, CEF Punted packets: 155
Expired translations: 40
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#
```