



```
!  
!  
!  
!  
!  
voice-card 0  
!  
!  
!  
!  
!  
archive  
  log config  
  hidekeys  
!  
!  
!  
!  
!  
class-map match-all QoS  
  match access-group 2  
!  
!  
policy-map QoS_Policy  
  class QoS  
    drop  
!  
!  
!  
!  
!  
interface Tunnel34  
  no ip address  
  ipv6 address 2026::34:1/122  
  ipv6 enable  
  ipv6 ospf 6 area 34  
  tunnel source 10.1.1.9  
  tunnel destination 10.1.1.10  
  tunnel mode ipv6ip  
!  
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
!
interface Serial0/0/1
no ip address
clock rate 2000000
!
interface Serial0/1/0
no ip address
shutdown
!
interface Serial0/2/0
no ip address
encapsulation frame-relay
!
interface Serial0/2/0.23 point-to-point
ip address 10.1.1.6 255.255.255.252
ip pim sparse-dense-mode
snmp trap link-status
ipv6 address 2026::1:2/122
ipv6 enable
ipv6 ospf 6 area 0
frame-relay interface-dlci 302
!
interface Serial0/2/0.34 point-to-point
ip address 10.1.1.9 255.255.255.252
ip pim sparse-dense-mode
snmp trap link-status
frame-relay interface-dlci 304
service-policy input QoS_Policy
!
interface Serial0/3/0
no ip address
!
router ospf 1
router-id 3.3.3.3
log-adjacency-changes
area 34 nssa no-summary
passive-interface Serial0/2/0
network 10.1.1.2 0.0.0.0 area 0
network 10.1.1.8 0.0.0.3 area 34
network 10.3.3.1 0.0.0.0 area 0
network 10.3.3.3 0.0.0.0 area 0
network 0.0.0.0 255.255.255.255 area 0
!
ip forward-protocol nd
no ip http server
no ip http secure-server
!
!
!
ip access-list standard DENY_10
deny 10.0.0.0 0.255.255.255
permit any
ip access-list standard DENY_ALL
```



```
R3#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 = 32/32/32 ms
```

```
R3#
```

```
R3#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
```

```
R3#
```

```
R3#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
```

```
R3#
```

```
R3#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 = 128/131/140  
ms
```

```
R3#
```



```
R3#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
```

```
R3#
```

```
R3#ping 10.1.1.5
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.1.1.5, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 64/67/72 ms
```

```
R3#
```

```
R3#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 = 128/130/136
```

```
ms
```

```
R3#
```

```
R3#ping 10.1.1.9
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.1.1.9, timeout is 2 seconds:
```

```
!!!!!
```

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

```
R3#
```

```
R3#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 = 192/194/196
```

```
ms
```

```
R3#
```

```
R3#ping 10.1.4.10
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.1.4.10, timeout is 2 seconds:
```

```
!!!!!
```

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

```
R3#
```

```
R3#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 = 196/196/196  
ms  
R3#
```

```
R3#ping 10.1.4.6
```

```
Type escape sequence to abort.  
Sending 5, 100-byte ICMP Echos to 10.1.4.6, timeout is 2 seconds:
```

```
!!!!  
Success rate is 100 percent (5/5), round-trip min/avg/max = 192/195/196  
ms  
R3#
```

```
R3#ping 10.1.4.5
```

```
Type escape sequence to abort.  
Sending 5, 100-byte ICMP Echos to 10.1.4.5, timeout is 2 seconds:  
!!!!  
Success rate is 100 percent (5/5), round-trip min/avg/max = 192/196/204  
ms
```



R3#

R3#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)

R3#

```
R3#ping 10.2.2.2
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.2.2.2, timeout is 2 seconds:
```

```
!!!!
```

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

```
R3#
```

```
R3#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)
```

```
R3#
```

```
R3#ping 10.2.4.14
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.2.4.14, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 192/194/196
```

```
ms
```

```
R3#
```

```
R3#ping 10.2.4.13
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.2.4.13, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 192/194/196  
ms
```

```
R3#
```

```
R3#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)
```

```
R3#
```

```
R3#ping 10.2.2.1
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 10.2.2.1, timeout is 2 seconds:
```

```
!!!!
```

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

```
R3#
```

```
R3#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)
```

```
R3#
```





R3#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	down
down				
Serial0/0/1	unassigned	YES	NVRAM	down
down				
Serial0/1/0	unassigned	YES	NVRAM	administratively
down down				
Serial0/2/0	unassigned	YES	NVRAM	up
up				
Serial0/2/0.23	10.1.1.6	YES	NVRAM	up
up				
Serial0/2/0.34	10.1.1.9	YES	NVRAM	up
up				
Serial0/3/0	unassigned	YES	NVRAM	down
down				
Tunnel34	unassigned	YES	NVRAM	up
up				

R3#

R3#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  
O E2 209.65.200.240/29 [110/1] via 10.1.1.5, 00:41:36, Serial0/2/0.23  
O E2 209.65.200.224/30 [110/20] via 10.1.1.5, 00:41:36, Serial0/2/0.23  
10.0.0.0/8 is variably subnetted, 8 subnets, 2 masks  
O N2 10.2.4.12/30 [110/20] via 10.1.1.10, 00:22:46, Serial0/2/0.34  
C 10.1.1.8/30 is directly connected, Serial0/2/0.34  
O N2 10.1.4.8/30 [110/20] via 10.1.1.10, 00:22:46, Serial0/2/0.34  
O N2 10.2.1.0/24 [110/20] via 10.1.1.10, 00:22:48, Serial0/2/0.34  
O N2 10.2.2.0/24 [110/20] via 10.1.1.10, 00:22:48, Serial0/2/0.34  
O IA 10.1.1.0/30 [110/128] via 10.1.1.5, 00:41:37, Serial0/2/0.23  
O N2 10.1.4.4/30 [110/20] via 10.1.1.10, 00:22:48, Serial0/2/0.34  
C 10.1.1.4/30 is directly connected, Serial0/2/0.23  
R3#

R3#show processes cpu

CPU utilization for five seconds: 2%/0%; one minute: 3%; five minutes: 2%

PID	Runtime (ms)	Invoked	uSecs	5Sec	1Min	5Min	TTY	Process
1	16	71	225	0.00%	0.00%	0.00%	0	Chunk
Manager								
2	16	1207	13	0.00%	0.04%	0.02%	0	Load Meter
3	6680	574	11637	0.00%	1.96%	0.92%	0	Exec
4	4	1	4000	0.00%	0.00%	0.00%	0	EDDRI_MAIN
5	7344	722	10171	0.79%	0.18%	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								



38	24	2828	8	0.00%	0.00%	0.00%	0 Net
Background							
39	0	2	0	0.00%	0.00%	0.00%	0 IDB Work
40	0	40	0	0.00%	0.00%	0.00%	0 Logger
41	0	6025	0	0.00%	0.00%	0.00%	0 TTY
Background							
42	12	6035	1	0.00%	0.02%	0.00%	0 Per-Second
Jobs							
43	0	403	0	0.00%	0.00%	0.00%	0 c2800
Periodic							
44	0	1	0	0.00%	0.00%	0.00%	0 Inode
Table Dest							
45	0	1	0	0.00%	0.00%	0.00%	0 IKE HA Mgr
46	0	1	0	0.00%	0.00%	0.00%	0 IPSEC HA
Mgr							
47	4	4	1000	0.00%	0.00%	0.00%	0 rf task
48	0	3	0	0.00%	0.00%	0.00%	0 Net Input
49	0	1208	0	0.00%	0.00%	0.00%	0 Compute
load avg							
50	2424	102	23764	0.55%	0.06%	0.00%	0 Per-minute
Jobs							
51	0	1	0	0.00%	0.00%	0.00%	0 AggMgr
Process							
52	0	1	0	0.00%	0.00%	0.00%	0 Token
Daemon							
53	0	1	0	0.00%	0.00%	0.00%	0 Transport
Port A							
54	4	1	4000	0.00%	0.00%	0.00%	0
dev_device_inser							
55	0	1	0	0.00%	0.00%	0.00%	0
dev_device_remov							
56	0	1	0	0.00%	0.00%	0.00%	0
sal_dpc_process							
57	0	1	0	0.00%	0.00%	0.00%	0 ARL Table
Manage							
58	0	2	0	0.00%	0.00%	0.00%	0 ESWPPM
59	0	2	0	0.00%	0.00%	0.00%	0 Eswilp
Storm Con							
60	0	2	0	0.00%	0.00%	0.00%	0 ESWILPPM
61	0	2	0	0.00%	0.00%	0.00%	0 Eswilp
Storm Con							
62	8	24126	0	0.00%	0.00%	0.00%	0 Netclock
Backgro							
63	0	2	0	0.00%	0.00%	0.00%	0 SM Monitor
64	0	2	0	0.00%	0.00%	0.00%	0 Bryce I2C
CMD Qu							
65	280	4	70000	0.00%	0.00%	0.00%	0 USB
Startup							
66	0	1006	0	0.00%	0.00%	0.00%	0 mxt5100
67	4	2	2000	0.00%	0.00%	0.00%	0 VNM DSPRM
MAIN							
68	0	1	0	0.00%	0.00%	0.00%	0 DSPFARM
DSP READ							











187	0	2	0	0.00%	0.00%	0.00%	0
cpf_process_msg_							
188	0	11797	0	0.00%	0.00%	0.00%	0 FW DP
Inspect pr							
189	0	11797	0	0.00%	0.00%	0.00%	0 CCE DP
URLF cach							
190	0	2	0	0.00%	0.00%	0.00%	0 URL filter
proc							
191	0	1	0	0.00%	0.00%	0.00%	0 Select
Timers							
192	32	2	16000	0.00%	0.00%	0.00%	0 HTTP
Process							
193	0	2	0	0.00%	0.00%	0.00%	0 CIFS API
Process							
194	4	2	2000	0.00%	0.00%	0.00%	0 CIFS Proxy
Proce							
195	8	3	2666	0.00%	0.00%	0.00%	0 Crypto HW
Proc							
196	0	244	0	0.00%	0.00%	0.00%	0
CRM_CALL_UPDATE_							
197	112	2	56000	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
cpf_process_tpQ							
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	5	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



249	0	1	0	0.00%	0.00%	0.00%	0 UNICAST
REKEY							
250	0	1	0	0.00%	0.00%	0.00%	0 UNICAST
REKEY AC							
251	4	6053	0	0.07%	0.00%	0.00%	0 Crypto
Device Up							
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	4	30255	0	0.00%	0.01%	0.00%	0 Atheros
LED Ctro							
257	4	2	2000	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	0	2	0	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	606	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	190	0	0.00%	0.00%	0.00%	0 Crypto
cTCP proc							
268	4	2	2000	0.00%	0.00%	0.00%	0 VLAN
Manager							
269	56	6080	9	0.00%	0.00%	0.00%	0 OSPF-1
Router							
271	0	6025	0	0.00%	0.00%	0.00%	0 trunk
conditioni							
272	0	1	0	0.00%	0.00%	0.00%	0 trunk
conditioni							
273	4	6055	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	8	99	80	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



314	0	1	0	0.00%	0.00%	0.00%	0 FRF9 timed
event							
315	4	607	6	0.07%	0.00%	0.00%	0 compute
load per							
316	0	6062	0	0.00%	0.00%	0.00%	0 IGMP Input
317	108	120973	0	0.15%	0.14%	0.15%	0 PIM
Process							
318	12	60432	0	0.00%	0.03%	0.02%	0 Mwheel
Process							
320	1744	6101	285	0.00%	0.01%	0.01%	0 NTP
R3#							

R3#show interfaces

FastEthernet0/0 is administratively down, line protocol is down

Hardware is MV96340 Ethernet, address is 0016.479a.f6e8 (bia 0016.479a.f6e8)

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 0016.479a.f6e9 (bia 0016.479a.f6e9)

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 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, 4 interface resets
    0 unknown protocol drops
    0 output buffer failures, 0 output buffers swapped out
    0 carrier transitions
    DCD=down DSR=down DTR=up RTS=up CTS=down
```

```
Serial0/0/1 is 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, 5 interface resets
    0 unknown protocol drops
    0 output buffer failures, 0 output buffers swapped out
```

0 carrier transitions  
DCD=up DSR=up DTR=down RTS=down CTS=up

Serial0/1/0 is 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 01:41:07, output 01:41:07, 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  
1 packets input, 24 bytes, 0 no buffer  
Received 1 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  
0 unknown protocol drops  
0 output buffer failures, 0 output buffers swapped out  
1 carrier transitions  
DCD=down DSR=down DTR=down 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 256, LMI stat recvd 257, 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 1200/11, interface  
broadcasts 1128  
Last input 00:00:00, output 00:00:00, output hang never  
Last clearing of "show interface" counters 01:41:06  
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  
3299 packets input, 260562 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  
3264 packets output, 256835 bytes, 0 underruns  
0 output errors, 0 collisions, 1 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

Serial0/2/0.23 is up, line protocol is up  
Hardware is GT96K Serial  
Internet address is 10.1.1.6/30  
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

Serial0/2/0.34 is up, line protocol is up  
Hardware is GT96K Serial  
Internet address is 10.1.1.9/30  
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 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 01:40:35, output 01:40:41, 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  
1 packets input, 24 bytes, 0 no buffer  
Received 1 broadcasts, 0 runts, 0 giants, 0 throttles  
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort  
5 packets output, 999 bytes, 0 underruns  
0 output errors, 0 collisions, 205 interface resets  
0 unknown protocol drops  
0 output buffer failures, 0 output buffers swapped out  
8 carrier transitions  
DCD=down DSR=down DTR=up RTS=up CTS=down

Tunnel34 is up, line protocol is up  
Hardware is Tunnel

```
MTU 17920 bytes, BW 100 Kbit/sec, DLY 50000 usec,  
    reliability 255/255, txload 1/255, rxload 1/255  
Encapsulation TUNNEL, loopback not set  
Keepalive not set  
Tunnel source 10.1.1.9, destination 10.1.1.10  
Tunnel protocol/transport IPv6/IP  
Tunnel TTL 255  
Tunnel transport MTU 1480 bytes  
Tunnel transmit bandwidth 8000 (kbps)  
Tunnel receive bandwidth 8000 (kbps)  
Last input 00:00:04, output 00:00:03, output hang never  
Last clearing of "show interface" counters never  
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0  
Queueing strategy: fifo  
Output queue: 0/0 (size/max)  
5 minute input rate 0 bits/sec, 0 packets/sec  
5 minute output rate 0 bits/sec, 0 packets/sec  
    281 packets input, 41224 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  
    301 packets output, 30796 bytes, 0 underruns  
    0 output errors, 0 collisions, 0 interface resets  
    0 unknown protocol drops  
    0 output buffer failures, 0 output buffers swapped out
```

R3#

```
R3#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 0/2/0.23	138	R S I	2811	Ser
0/2/0.23					
R4	Ser 0/2/0.34	145	R S I	1841	Ser
0/1/0.34					

```
R3#
```

```
R3#show cdp neighbors detail
```

```
-----
```

```
Device ID: R2
```

```
Entry address(es):
```

```
  IP address: 10.1.1.5
```

```
  IPv6 address: 2026::1:1 (global unicast)
```

```
  IPv6 address: FE80::216:9DFF:FEFA:CAB0 (link-local)
```

```
Platform: Cisco 2811, Capabilities: Router Switch IGMP
```

```
Interface: Serial0/2/0.23, Port ID (outgoing port): Serial0/2/0.23
```

```
Holdtime : 131 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: R4
```

```
Entry address(es):
```

```
  IP address: 10.1.1.10
```

```
Platform: Cisco 1841, Capabilities: Router Switch IGMP
```

```
Interface: Serial0/2/0.34, Port ID (outgoing port): Serial0/1/0.34
```

```
Holdtime : 137 sec
```

```
Version :
```

```
Cisco IOS Software, 1841 Software (C1841-ADVIPSERVICESK9-M), Version  
12.4(25b), RELEASE SOFTWARE (fc1)
```

```
Technical Support: http://www.cisco.com/techsupport
```

```
Copyright (c) 1986-2009 by Cisco Systems, Inc.
```

```
Compiled Wed 12-Aug-09 10:49 by prod_rel_team
```

```
advertisement version: 2
VTP Management Domain: ''
```

```
R3#
```

```
R3#show frame-relay map
Serial0/2/0.23 (up): point-to-point dlci, dlci 302(0x12E,0x48E0),
broadcast
        status defined, active
```

```
Serial0/2/0.34 (up): point-to-point dlci, dlci 304(0x130,0x4C00),  
broadcast  
        status defined, active  
R3#
```

```
R3#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 down, line protocol is down
  Internet protocol processing disabled
Serial0/0/1 is down, line protocol is down
  Internet protocol processing disabled
Serial0/1/0 is administratively down, line protocol is down
  Internet protocol processing disabled
Serial0/2/0 is up, line protocol is up
  Internet protocol processing disabled
Serial0/2/0.23 is up, line protocol is up
  Internet address is 10.1.1.6/30
  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 disabled
  BGP Policy Mapping is disabled
  Input features: MCI Check
  WCCP Redirect outbound is disabled
  WCCP Redirect inbound is disabled
  WCCP Redirect exclude is disabled
Serial0/2/0.34 is up, line protocol is up
  Internet address is 10.1.1.9/30
  Broadcast address is 255.255.255.255
  Address determined by non-volatile memory
  MTU is 1500 bytes
  Helper address is not set
  Directed broadcast forwarding is disabled
```

```
Multicast reserved groups joined: 224.0.0.1 224.0.0.2 224.0.0.22
224.0.0.13
    224.0.0.5
    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 disabled
    BGP Policy Mapping is disabled
    Input features: CCE Input Classification, QoS Drop, MCI Check
    WCCP Redirect outbound is disabled
    WCCP Redirect inbound is disabled
    WCCP Redirect exclude is disabled
Serial0/3/0 is down, line protocol is down
    Internet protocol processing disabled
Tunnel34 is up, line protocol is up
    Internet protocol processing disabled
R3#
```

R3#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	10.1.1.5	Serial0/2/0.23
10.1.1.4/30	attached	Serial0/2/0.23
10.1.1.4/32	receive	Serial0/2/0.23
10.1.1.6/32	receive	Serial0/2/0.23
10.1.1.7/32	receive	Serial0/2/0.23
10.1.1.8/30	attached	Serial0/2/0.34
10.1.1.8/32	receive	Serial0/2/0.34
10.1.1.9/32	receive	Serial0/2/0.34
10.1.1.11/32	receive	Serial0/2/0.34
10.1.4.4/30	10.1.1.10	Serial0/2/0.34
10.1.4.8/30	10.1.1.10	Serial0/2/0.34
10.2.1.0/24	10.1.1.10	Serial0/2/0.34
10.2.2.0/24	10.1.1.10	Serial0/2/0.34
10.2.4.12/30	10.1.1.10	Serial0/2/0.34
127.0.0.0/8	drop	
209.65.200.224/30	10.1.1.5	Serial0/2/0.23
209.65.200.240/29	10.1.1.5	Serial0/2/0.23
224.0.0.0/4	multicast	
224.0.0.0/24	receive	
240.0.0.0/4	drop	
255.255.255.255/32	receive	

R3#

R3#show tcp statistics

```
Rcvd: 0 Total, 0 no port
      0 checksum error, 0 bad offset, 0 too short
      0 packets (0 bytes) in sequence
      0 dup packets (0 bytes)
      0 partially dup packets (0 bytes)
      0 out-of-order packets (0 bytes)
      0 packets (0 bytes) with data after window
```

0 packets after close  
0 window probe packets, 0 window update packets  
0 dup ack packets, 0 ack packets with unsend data  
0 ack packets (0 bytes)  
Sent: 0 Total, 0 urgent packets  
0 control packets (including 0 retransmitted)  
0 data packets (0 bytes)  
0 data packets (0 bytes) retransmitted  
0 data packets (0 bytes) fastretransmitted  
0 ack only packets (0 delayed)  
0 window probe packets, 0 window update packets  
0 Connections initiated, 0 connections accepted, 0 connections  
established  
0 Connections closed (including 0 dropped, 0 embryonic dropped)  
0 Total rxmt timeout, 0 connections dropped in rxmt timeout  
0 Keepalive timeout, 0 keepalive probe, 0 Connections dropped in  
keepalive  
R3#

```
R3#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 3.3.3.3
  It is an area border and autonomous system boundary router
  Redistributing External Routes from,
  Number of areas in this router is 2. 1 normal 0 stub 1 nssa
  Maximum path: 4
  Routing for Networks:
    10.1.1.2 0.0.0.0 area 0
    10.1.1.8 0.0.0.3 area 34
    10.3.3.1 0.0.0.0 area 0
    10.3.3.3 0.0.0.0 area 0
    0.0.0.0 255.255.255.255 area 0
Reference bandwidth unit is 100 mbps
Passive Interface(s):
  Serial0/2/0
Routing Information Sources:
  Gateway          Distance      Last Update
  4.4.4.4          110          00:24:31
  2.2.2.2          110          00:43:20
  10.1.1.1         110          00:43:20
Distance: (default is 110)
```

```
R3#
```

```
R3#show access-lists
Standard IP access list 1
  10 deny 10.2.1.0, wildcard bits 0.0.0.255 (46 matches)
  20 permit any (61 matches)
Standard IP access list 2
  10 permit 10.2.1.0, wildcard bits 0.0.0.255 (87 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
R3#
```

```
R3#show ip ospf neighbor
```

Neighbor ID	Pri	State	Dead Time	Address
Interface				
2.2.2.2	0	FULL/ -	00:00:31	10.1.1.5
Serial0/2/0.23				
4.4.4.4	0	FULL/ -	00:00:35	10.1.1.10
Serial0/2/0.34				

```
R3#
```



```
R3#show ip ospf interface
Serial0/2/0.23 is up, line protocol is up
  Internet Address 10.1.1.6/30, Area 0
  Process ID 1, Router ID 3.3.3.3, 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 00:00:02
  Supports Link-local Signaling (LLS)
  Cisco NSF helper support enabled
  IETF NSF helper support enabled
  Index 1/2, flood queue length 0
  Next 0x0(0)/0x0(0)
  Last flood scan length is 1, maximum is 4
  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)
Serial0/2/0.34 is up, line protocol is up
  Internet Address 10.1.1.9/30, Area 34
  Process ID 1, Router ID 3.3.3.3, 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 00:00:08
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 4.4.4.4
Suppress hello for 0 neighbor(s)
R3#
```

R3#show ip ospf database

OSPF Router with ID (3.3.3.3) (Process ID 1)

Router Link States (Area 0)

Link ID	ADV Router	Age	Seq#	Checksum	Link
count					
2.2.2.2	2.2.2.2	619	0x80000006	0x00CC97	2
3.3.3.3	3.3.3.3	600	0x80000005	0x0074E9	2

Summary Net Link States (Area 0)

Link ID	ADV Router	Age	Seq#	Checksum
10.1.1.0	2.2.2.2	619	0x80000002	0x0022C8
10.1.1.8	3.3.3.3	600	0x80000002	0x00B32B

Summary ASB Link States (Area 0)

Link ID	ADV Router	Age	Seq#	Checksum
10.1.1.1	2.2.2.2	619	0x80000002	0x001CC9

Router Link States (Area 34)

Link ID	ADV Router	Age	Seq#	Checksum	Link
count					
3.3.3.3	3.3.3.3	1507	0x80000006	0x00DE69	2
4.4.4.4	4.4.4.4	1508	0x80000008	0x0077CA	2

Summary Net Link States (Area 34)

Link ID	ADV Router	Age	Seq#	Checksum
0.0.0.0	3.3.3.3	600	0x80000003	0x00DA4D

Type-7 AS External Link States (Area 34)

Link ID	ADV Router	Age	Seq#	Checksum	Tag
10.1.4.4	4.4.4.4	245	0x80000005	0x00F16A	0
10.1.4.8	4.4.4.4	245	0x80000005	0x00C98E	0
10.2.1.0	4.4.4.4	245	0x80000005	0x00411E	0
10.2.2.0	4.4.4.4	245	0x80000005	0x003628	0
10.2.4.12	4.4.4.4	245	0x80000005	0x0095BD	0

Type-5 AS External Link States

Link ID	ADV Router	Age	Seq#	Checksum	Tag
10.1.4.4	3.3.3.3	1503	0x80000001	0x00ACC1	0
10.1.4.8	3.3.3.3	1503	0x80000001	0x0084E5	0

```
10.2.1.0      3.3.3.3      1503      0x80000001 0x00FB75 0
10.2.2.0      3.3.3.3      1503      0x80000001 0x00F07F 0
10.2.4.12     3.3.3.3      1503      0x80000001 0x005015 0
209.65.200.224 10.1.1.1     282       0x80000004 0x004096 0
209.65.200.240 10.1.1.1     282       0x80000004 0x002BC9 65002
R3#
```

```
R3#show ip route ospf
    209.65.200.0/24 is variably subnetted, 2 subnets, 2 masks
O E2    209.65.200.240/29 [110/1] via 10.1.1.5, 00:44:01, Serial0/2/0.23
```

O E2 209.65.200.224/30 [110/20] via 10.1.1.5, 00:44:01, Serial0/2/0.23  
10.0.0.0/8 is variably subnetted, 8 subnets, 2 masks  
O N2 10.2.4.12/30 [110/20] via 10.1.1.10, 00:25:11, Serial0/2/0.34  
O N2 10.1.4.8/30 [110/20] via 10.1.1.10, 00:25:11, Serial0/2/0.34  
O N2 10.2.1.0/24 [110/20] via 10.1.1.10, 00:25:11, Serial0/2/0.34  
O N2 10.2.2.0/24 [110/20] via 10.1.1.10, 00:25:11, Serial0/2/0.34  
O IA 10.1.1.0/30 [110/128] via 10.1.1.5, 00:44:01, Serial0/2/0.23  
O N2 10.1.4.4/30 [110/20] via 10.1.1.10, 00:25:11, Serial0/2/0.34  
R3#