



Sample Configurations

This appendix lists sample configurations and contains the following sections:

- [ISC-Generated Configlets, page D-1](#)
- [Device Configurations, page D-7](#)
- [ISC Ethernet QoS Configurations, page D-18](#)

ISC-Generated Configlets

The following are examples of configlets generated by Cisco IP Solution Center (ISC) for the network example shown in [Figure A-1 in Provisioning Process for IP QoS, page 3-1](#).

Device enqospe4:

Configlet #1 (Created: 2003-04-24 16:44:57)

Job #124 Service Request #124

```
ip access-list extended
ISC_IN_QOS_ACL_Customer-A_CustA-QoSPolicy_Management
permit ip any 10.10.10.0 0.0.0.255
!
ip access-list extended
ISC_IN_QOS_ACL_Customer-A_CustA-QoSPolicy_Business-Data-1
permit TCP any any eq www
permit TCP any any eq telnet
permit UDP any any eq tftp
permit TCP any any eq ftp
permit TCP any any eq smtp
!
ip access-list extended
ISC_OUT_QOS_ACL_Customer-A_CustA-QoSPolicy_Routing_Protocol
permit UDP any any eq rip
permit TCP any any eq bgp
permit ospf any any
permit eigrp any any
!
ip access-list extended
ISC_OUT_QOS_ACL_Customer-A_CustA-QoSPolicy_Management
permit ip 10.10.10.0 0.0.0.255 any
!
class-map match-any ISC_IN_Customer-A_CustA-QoSPolicy_VoIP
```

```

match ip rtp 16384 16383
!
class-map match-any ISC_IN_Customer-A_Management
match access-group name
ISC_IN_QOS_ACL_Customer-A_CustA-QoSPolicy_Management
!
class-map match-any ISC_IN_Customer-A_Business-Data-1
match access-group name
ISC_IN_QOS_ACL_Customer-A_CustA-QoSPolicy_Business-Data-1
!
class-map match-any ISC_IN_Customer-A_Best-Effort
match any
!
class-map match-any ISC_OUT_Customer-A_CustA-QoSPolicy_VoIP
match ip dscp 46
!
class-map match-any ISC_OUT_Customer-A_Routing_Protocol
match access-group name
ISC_OUT_QOS_ACL_Customer-A_CustA-QoSPolicy_Routing_Protocol
!
class-map match-any ISC_OUT_Customer-A_Management
match access-group name
ISC_OUT_QOS_ACL_Customer-A_CustA-QoSPolicy_Management
!
class-map match-any ISC_OUT_Customer-A_Business-Data-1
match ip dscp 34
!
class-map match-any ISC_OUT_Customer-A_Best-Effort
match ip dscp 0
!
policy-map ISC_IN_Customer-A_CustA-QoSPolicy
class ISC_IN_Customer-A_CustA-QoSPolicy_VoIP
set ip dscp 46
class ISC_IN_Customer-A_Management
set ip dscp 34
class ISC_IN_Customer-A_Business-Data-1
set ip dscp 34
class ISC_IN_Customer-A_Best-Effort
set ip dscp 0
!
policy-map ISC_OUT_Customer-A_CustA-QoSPolicy
class ISC_OUT_Customer-A_CustA-QoSPolicy_VoIP
priority percent 10
class ISC_OUT_Customer-A_Routing_Protocol
bandwidth percent 1
class ISC_OUT_Customer-A_Management
bandwidth percent 1
class ISC_OUT_Customer-A_Business-Data-1
bandwidth percent 20
class ISC_OUT_Customer-A_Best-Effort
bandwidth percent 25
!
policy-map ISC_OUT_Customer-A_CustA-QoSPolicy_TOP
class class-default
shape average 128000
service-policy ISC_OUT_Customer-A_CustA-QoSPolicy
!
map-class frame-relay ISC_OUT_FR_MAP_CLASS_Customer-A_CustA-QoSPolicy
service-policy input ISC_IN_Customer-A_CustA-QoSPolicy
service-policy output ISC_OUT_Customer-A_CustA-QoSPolicy_TOP
frame-relay fragment
!
interface Hssi2/1/0.41 point-to-point
frame-relay ip rtp header-compression

```

```

frame-relay interface-dlci 41
class ISC_OUT_FR_MAP_CLASS_Customer-A_CustA-QoSPolicy
!

```

Device enqosce41:

Configlet #1 (Created: 2003-04-24 16:44:58)

Job #124 Service Request #124

```

ip access-list extended
ISC_OUT_QOS_ACL_Customer-A_CustA-QoSPolicy_Routing_Protocol
permit UDP any any eq rip
permit TCP any any eq bgp
permit ospf any any
permit eigrp any any
!
ip access-list extended
ISC_OUT_QOS_ACL_Customer-A_CustA-QoSPolicy_Management
permit ip any 10.10.10.0 0.0.0.255
!
class-map match-any ISC_IN_Customer-A_CustA-QoSPolicy_VoIP
match ip rtp 16384 16383
!
class-map match-any ISC_IN_Customer-A_Business-Data-1
match protocol http
match protocol telnet
match protocol tftp
match protocol ftp
match protocol smtp
!
class-map match-any ISC_IN_Customer-A_Best-Effort
match any
!
class-map match-any ISC_OUT_Customer-A_CustA-QoSPolicy_VoIP
match ip dscp 46
!
class-map match-any ISC_OUT_Customer-A_Routing_Protocol
match access-group name
ISC_OUT_QOS_ACL_Customer-A_CustA-QoSPolicy_Routing_Protocol
!
class-map match-any ISC_OUT_Customer-A_Management
match access-group name
ISC_OUT_QOS_ACL_Customer-A_CustA-QoSPolicy_Management
!
class-map match-any ISC_OUT_Customer-A_Business-Data-1
match ip dscp 34
!
class-map match-any ISC_OUT_Customer-A_Best-Effort
match ip dscp 0
!
policy-map ISC_IN_Customer-A_CustA-QoSPolicy
class ISC_IN_Customer-A_CustA-QoSPolicy_VoIP
set ip dscp 46
class ISC_IN_Customer-A_Business-Data-1
set ip dscp 34
class ISC_IN_Customer-A_Best-Effort
set ip dscp 0
!
policy-map ISC_OUT_Customer-A_CustA-QoSPolicy
class ISC_OUT_Customer-A_CustA-QoSPolicy_VoIP

```

```

priority percent 10
class ISC_OUT_Customer-A_Routing_Protocol
bandwidth percent 1
class ISC_OUT_Customer-A_Management
set ip dscp 34
bandwidth percent 1
class ISC_OUT_Customer-A_Business-Data-1
bandwidth percent 20
class ISC_OUT_Customer-A_Best-Effort
bandwidth percent 25
!
map-class frame-relay ISC_OUT_FR_MAP_CLASS_Customer-A_CustA-QoSPolicy
service-policy output ISC_OUT_Customer-A_CustA-QoSPolicy
frame-relay cir 128000
frame-relay mincir 64000
!
interface FastEthernet0/0
service-policy input ISC_IN_Customer-A_CustA-QoSPolicy
!
interface Hss1/0
frame-relay traffic-shaping
!
interface Hss1/0.41 point-to-point
frame-relay ip rtp header-compression
frame-relay interface-dlci 41
class ISC_OUT_FR_MAP_CLASS_Customer-A_CustA-QoSPolicy
!

```

Device enqosp5:

Configlet #1 (Created: 2003-04-24 16:44:58)

Job #124 Service Request #124

```

ip access-list extended
ISC_IN_QOS_ACL_Customer-A_CustA-QoSPolicy_Management
permit ip any 10.10.10.0 0.0.0.255
!
ip access-list extended
ISC_OUT_QOS_ACL_Customer-A_CustA-QoSPolicy_Routing_Protocol
permit UDP any any eq rip
permit TCP any any eq bgp
permit ospf any any
permit eigrp any any
!
ip access-list extended
ISC_OUT_QOS_ACL_Customer-A_CustA-QoSPolicy_Management
permit ip 10.10.10.0 0.0.0.255 any
!
class-map match-any ISC_IN_Customer-A_CustA-QoSPolicy_VoIP
match ip rtp 16384 16383
!
class-map match-any ISC_IN_Customer-A_Management
match access-group name
ISC_IN_QOS_ACL_Customer-A_CustA-QoSPolicy_Management
!
class-map match-any ISC_IN_Customer-A_Business-Data-1
match protocol http
match protocol telnet
match protocol tftp
match protocol ftp

```

```

match protocol smtp
!
class-map match-any ISC_IN_Customer-A_Best-Effort
match any
!
class-map match-any ISC_OUT_Customer-A_CustA-QoSPolicy_VoIP
match ip dscp 46
!
class-map match-any ISC_OUT_Customer-A_Routing_Protocol
match access-group name
ISC_OUT_QOS_ACL_Customer-A_CustA-QoSPolicy_Routing_Protocol
!
class-map match-any ISC_OUT_Customer-A_Management
match access-group name
ISC_OUT_QOS_ACL_Customer-A_CustA-QoSPolicy_Management
!
class-map match-any ISC_OUT_Customer-A_Business-Data-1
match ip dscp 34
!
class-map match-any ISC_OUT_Customer-A_Best-Effort
match ip dscp 0
!
policy-map ISC_IN_Customer-A_CustA-QoSPolicy
class ISC_IN_Customer-A_CustA-QoSPolicy_VoIP
set ip dscp 46
class ISC_IN_Customer-A_Management
set ip dscp 34
class ISC_IN_Customer-A_Business-Data-1
set ip dscp 34
class ISC_IN_Customer-A_Best-Effort
set ip dscp 0
!
policy-map ISC_OUT_Customer-A_CustA-QoSPolicy
class ISC_OUT_Customer-A_CustA-QoSPolicy_VoIP
priority percent 10
class ISC_OUT_Customer-A_Routing_Protocol
bandwidth percent 1
class ISC_OUT_Customer-A_Management
bandwidth percent 1
class ISC_OUT_Customer-A_Business-Data-1
bandwidth percent 20
class ISC_OUT_Customer-A_Best-Effort
bandwidth percent 25
!
interface ATM1/0.52 point-to-point
pvc 0/51
vbr-nrt 128 64 2000
service-policy input ISC_IN_Customer-A_CustA-QoSPolicy
service-policy output ISC_OUT_Customer-A_CustA-QoSPolicy
!

```

Device enqosce52:

Configlet #1 (Created: 2003-04-24 16:44:57)

Job #124 Service Request #124

```

ip access-list extended
ISC_OUT_QOS_ACL_Customer-A_CustA-QoSPolicy_Routing_Protocol
permit UDP any any eq rip
permit TCP any any eq bgp

```

```

permit ospf any any
permit eigrp any any
!
ip access-list extended
ISC_OUT_QOS_ACL_Customer-A_CustA-QoSPolicy_Management
permit ip any 10.10.10.0 0.0.0.255
!
class-map match-any ISC_IN_Customer-A_CustA-QoSPolicy_VoIP
match ip rtp 16384 16383
!
class-map match-any ISC_IN_Customer-A_Business-Data-1
match protocol http
match protocol telnet
match protocol tftp
match protocol ftp
match protocol smtp
!
class-map match-any ISC_IN_Customer-A_Best-Effort
match any
!
class-map match-any ISC_OUT_Customer-A_CustA-QoSPolicy_VoIP
match ip dscp 46
!
class-map match-any ISC_OUT_Customer-A_Routing_Protocol
match access-group name
ISC_OUT_QOS_ACL_Customer-A_CustA-QoSPolicy_Routing_Protocol
!
class-map match-any ISC_OUT_Customer-A_Management
match access-group name
ISC_OUT_QOS_ACL_Customer-A_CustA-QoSPolicy_Management
!
class-map match-any ISC_OUT_Customer-A_Business-Data-1
match ip dscp 34
!
class-map match-any ISC_OUT_Customer-A_Best-Effort
match ip dscp 0
!
policy-map ISC_IN_Customer-A_CustA-QoSPolicy
class ISC_IN_Customer-A_CustA-QoSPolicy_VoIP
set ip dscp 46
class ISC_IN_Customer-A_Business-Data-1
set ip dscp 34
class ISC_IN_Customer-A_Best-Effort
set ip dscp 0
!
policy-map ISC_OUT_Customer-A_CustA-QoSPolicy
class ISC_OUT_Customer-A_CustA-QoSPolicy_VoIP
priority percent 10
class ISC_OUT_Customer-A_Routing_Protocol
bandwidth percent 1
class ISC_OUT_Customer-A_Management
set ip dscp 34
bandwidth percent 1
class ISC_OUT_Customer-A_Business-Data-1
bandwidth percent 20
class ISC_OUT_Customer-A_Best-Effort
bandwidth percent 25
!
interface FastEthernet0/0
service-policy input ISC_IN_Customer-A_CustA-QoSPolicy
!
interface ATM1/0.52 point-to-point
pvc 0/52
service-policy output ISC_OUT_Customer-A_CustA-QoSPolicy

```

!

Device Configurations

The following examples are full device configurations after a QoS Service Request deployment. The portions in bold are commands that represent the QoS configlets for the network example in [Chapter 3, “Provisioning Process for IP QoS.”](#)

Device enqospe4:

```

version 12.0
service timestamps debug datetime
service timestamps log datetime
no service password-encryption
no service single-slot-reload-enable
!
hostname enqospe4
!
boot system flash:rsp-pv-mz.120-24.S.bin
boot system flash rsp-pv-mz.122-4.T3.bin
redundancy
  no keepalive-enable
enable password 7 cisco
!
ip subnet-zero
ip cef distributed
ip tftp source-interface Loopback0
no ip domain-lookup
!
class-map match-any ISC_OUT_Customer-A_Best-Effort
  match ip dscp 0
class-map match-any ISC_IN_Customer-A_CustA-QoSPolicy_VoIP
  match ip rtp 16384 16383
class-map match-any ISC_OUT_Customer-A_Business-Data-1
  match ip dscp 34
class-map match-any ISC_OUT_Customer-A_Management
  match access-group name ISC_OUT_QOS_ACL_Customer-A_CustA-QoSPolicy_Management
class-map match-any ISC_OUT_Customer-A_Routing_Protocol
  match access-group name ISC_OUT_QOS_ACL_Customer-A_CustA-QoSPolicy_Routing_Protocol
class-map match-any ISC_IN_Customer-A_Best-Effort
  match any
class-map match-any ISC_IN_Customer-A_Business-Data-1
  match access-group name ISC_IN_QOS_ACL_Customer-A_CustA-QoSPolicy_Business-Data-1
class-map match-any ISC_OUT_Customer-A_CustA-QoSPolicy_VoIP
  match ip dscp 46
class-map match-any ISC_IN_Customer-A_Management
  match access-group name ISC_IN_QOS_ACL_Customer-A_CustA-QoSPolicy_Management
!
!
policy-map ISC_OUT_Customer-A_CustA-QoSPolicy
  class ISC_OUT_Customer-A_CustA-QoSPolicy_VoIP
    priority percent 10
  class ISC_OUT_Customer-A_Routing_Protocol
    bandwidth percent 1
  class ISC_OUT_Customer-A_Management
    bandwidth percent 1
  class ISC_OUT_Customer-A_Business-Data-1

```

```

    bandwidth percent 20
  class ISC_OUT_Customer-A_Best-Effort
    bandwidth percent 25
policy-map ISC_OUT_Customer-A_CustA-QoSPolicy_TOP
  class class-default
    shape average 128000 512 512
    service-policy ISC_OUT_Customer-A_CustA-QoSPolicy
policy-map ISC_IN_Customer-A_CustA-QoSPolicy
  class ISC_IN_Customer-A_CustA-QoSPolicy_VoIP
    set ip dscp 46
  class ISC_IN_Customer-A_Management
    set ip dscp 34
  class ISC_IN_Customer-A_Business-Data-1
    set ip dscp 34
  class ISC_IN_Customer-A_Best-Effort
    set ip dscp 0
!
mpls ldp logging neighbor-changes
no mpls traffic-eng auto-bw timers frequency 0
!
!
controller T1 1/1/0
  clock source internal
  channel-group 1 timeslots 1-24
!
controller T1 1/1/1
  clock source internal
  channel-group 1 timeslots 1-24
!
!
interface Loopback0
  description DNS entry for enqospe4 ! DON'T MODIFY or REMOVE !
  ip address 192.168.114.4 255.255.255.255
  no ip directed-broadcast
!
interface ATM0/0/0
  no ip address
  no ip directed-broadcast
  no atm enable-ilmi-trap
  no atm ilmi-keepalive
!
interface ATM0/0/0.4 point-to-point
  description Link to enqospel ! DON'T MODIFY OR REMOVE !
  ip address 12.12.12.14 255.255.255.252
  no ip directed-broadcast
  no atm enable-ilmi-trap
  pvc 0/6
    encapsulation aal5snap
!
!
interface FastEthernet0/1/0
  description Access Link to enqossw1 ! DON'T MODIFY or REMOVE !
  ip address 11.11.11.7 255.255.255.0
  no ip directed-broadcast
  speed auto
!
interface Serial1/1/0:1
  no ip address
  no ip directed-broadcast
  encapsulation frame-relay
  no keepalive
!
interface Serial1/1/1:1
  no ip address

```



```

no ip directed-broadcast
encapsulation frame-relay
no keepalive
!
interface Hssi2/1/0
no ip address
no ip directed-broadcast
encapsulation frame-relay
no ip mroute-cache
no keepalive
hssi internal-clock
!
interface Hssi2/1/0.41 point-to-point
description QoS Link to engosce41 ! DON'T MODIFY or REMOVE !
ip address 141.141.141.1 255.255.255.252
no ip directed-broadcast
no ip mroute-cache
no cdp enable
frame-relay interface-dlci 41
  class ISC_OUT_FR_MAP_CLASS_Customer-A_CustA-QoSPolicy
frame-relay ip rtp header-compression
!
router ospf 1
log-adjacency-changes
network 11.11.11.7 0.0.0.0 area 0
network 192.168.114.4 0.0.0.0 area 0
!
no ip classless
!
ip pim bidir-enable
!
!
ip access-list extended ISC_IN_QOS_ACL_Customer-A_CustA-QoSPolicy_Business-Data-1
permit tcp any any eq www
permit tcp any any eq telnet
permit udp any any eq tftp
permit tcp any any eq ftp
permit tcp any any eq smtp
ip access-list extended ISC_IN_QOS_ACL_Customer-A_CustA-QoSPolicy_Management
permit ip any 10.10.10.0 0.0.0.255
ip access-list extended ISC_OUT_QOS_ACL_Customer-A_CustA-QoSPolicy_Management
permit ip 10.10.10.0 0.0.0.255 any
ip access-list extended ISC_OUT_QOS_ACL_Customer-A_CustA-QoSPolicy_Routing_Protocol
permit udp any any eq rip
permit tcp any any eq bgp
permit ospf any any
permit eigrp any any
!
!
map-class frame-relay ISC_OUT_FR_MAP_CLASS_Customer-A_CustA-QoSPolicy
no frame-relay adaptive-shaping
service-policy input ISC_IN_Customer-A_CustA-QoSPolicy
service-policy output ISC_OUT_Customer-A_CustA-QoSPolicy_TOP
frame-relay fragment 53
snmp-server community public RO
snmp-server community private RW
!
!
line con 0
exec-timeout 30 0
password 7 cisco
login
line aux 0
exec-timeout 30 0

```

```

password 7 cisco
login
line vty 0 4
exec-timeout 60 0
password 7 cisco
login
!
end

```

Device enqosce41:

```

version 12.2
service timestamps debug datetime
service timestamps log datetime
no service password-encryption
!
hostname enqosce41
!
enable password 7 cisco
!
!
!
ip subnet-zero
!
!
ip tftp source-interface Loopback0
no ip domain-lookup
!
ip cef
!
class-map match-any ISC_OUT_Customer-A_Best-Effort
  match ip dscp 0
class-map match-any ISC_IN_Customer-A_CustA-QoSPolicy_VoIP
  match ip rtp 16384 16383
class-map match-any ISC_OUT_Customer-A_Business-Data-1
  match ip dscp 34
class-map match-any ISC_OUT_Customer-A_Management
  match access-group name ISC_OUT_QOS_ACL_Customer-A_CustA-QoSPolicy_Management
class-map match-any ISC_OUT_Customer-A_Routing_Protocol
  match access-group name ISC_OUT_QOS_ACL_Customer-A_CustA-QoSPolicy_Routing_Protocol
class-map match-any ISC_IN_Customer-A_Best-Effort
  match any
class-map match-any ISC_IN_Customer-A_Business-Data-1
  match protocol http
  match protocol telnet
  match protocol tftp
  match protocol ftp
  match protocol smtp
class-map match-any ISC_OUT_Customer-A_CustA-QoSPolicy_VoIP
  match ip dscp 46
!
!
policy-map ISC_OUT_Customer-A_CustA-QoSPolicy
  class ISC_OUT_Customer-A_CustA-QoSPolicy_VoIP
    priority percent 10
  class ISC_OUT_Customer-A_Routing_Protocol
    bandwidth percent 1
  class ISC_OUT_Customer-A_Management
    set ip dscp 34
    bandwidth percent 1
  class ISC_OUT_Customer-A_Business-Data-1
    bandwidth percent 20

```

```

class ISC_OUT_Customer-A_Best-Effort
  bandwidth percent 25
policy-map ISC_IN_Customer-A_CustA-QoSPolicy
  class ISC_IN_Customer-A_CustA-QoSPolicy_VoIP
    set ip dscp 46
  class ISC_IN_Customer-A_Business-Data-1
    set ip dscp 34
  class ISC_IN_Customer-A_Best-Effort
    set ip dscp 0
!
!
!
interface Loopback0
  description DNS entry for enqosce41 ! DON'T MODIFY or REMOVE !
  ip address 192.168.114.9 255.255.255.255
!
interface FastEthernet0/0
  description Access Link to enqossw1 ! DON'T MODIFY or REMOVE !
  ip address 11.11.11.9 255.255.255.0
  duplex auto
  speed auto
  service-policy input ISC_IN_Customer-A_CustA-QoSPolicy
!
interface FastEthernet0/1
  no ip address
  shutdown
  duplex auto
  speed auto
!
interface Hssi1/0
  description QoS Link to enqospe4 ! DON'T MODIFY or REMOVE !
  no ip address
  encapsulation frame-relay
  no keepalive
  hssi internal-clock
  clockrate 64158
  frame-relay traffic-shaping
!
interface Hssi1/0.41 point-to-point
  description QoS Link to enqospe4 ! DON'T MODIFY or REMOVE !
  ip address 141.141.141.2 255.255.255.252
  frame-relay interface-dlci 41
  class ISC_OUT_FR_MAP_CLASS_Customer-A_CustA-QoSPolicy
  frame-relay ip rtp header-compression
!
router ospf 1
  log-adjacency-changes
  network 11.11.11.9 0.0.0.0 area 0
  network 192.168.114.9 0.0.0.0 area 0
!
!
no ip classless
ip http server
ip pim bidir-enable
!
!
ip access-list extended ISC_OUT_QOS_ACL_Customer-A_CustA-QoSPolicy_Management
  permit ip any 10.10.10.0 0.0.0.255
ip access-list extended ISC_OUT_QOS_ACL_Customer-A_CustA-QoSPolicy_Routing_Protocol
  permit udp any any eq rip
  permit tcp any any eq bgp
  permit ospf any any
  permit eigrp any any
!

```

```

map-class frame-relay ISC_OUT_FR_MAP_CLASS_Customer-A_CustA-QoSPolicy
frame-relay cir 128000
frame-relay mincir 64000
no frame-relay adaptive-shaping
service-policy output ISC_OUT_Customer-A_CustA-QoSPolicy
!
!
snmp-server community public RO
snmp-server community private RW
call rsvp-sync
!
!
mgcp profile default
!
dial-peer cor custom
!
!
!
!
line con 0
exec-timeout 30 0
password 7 cisco
login
line aux 0
exec-timeout 30 0
password 7 cisco
login
line vty 0 4
exec-timeout 30 0
password 7 cisco
login
!
!
end

```

Device enqospe5:

```

version 12.2
service timestamps debug datetime
service timestamps log datetime
no service password-encryption
!
hostname enqospe5
!
enable password 7 cisco
!
ip subnet-zero
ip cef
!
!
ip tftp source-interface Loopback0
no ip domain-lookup
!
class-map match-any ISC_OUT_Customer-A_Best-Effort
match ip dscp 0
class-map match-any ISC_IN_Customer-A_CustA-QoSPolicy_VoIP
match ip rtp 16384 16383
class-map match-any ISC_OUT_Customer-A_Business-Data-1
match ip dscp 34
class-map match-any ISC_OUT_Customer-A_Management
match access-group name ISC_OUT_QOS_ACL_Customer-A_CustA-QoSPolicy_Management
class-map match-any ISC_OUT_Customer-A_Routing_Protocol

```

```

    match access-group name ISC_OUT_QOS_ACL_Customer-A_CustA-QoSPolicy_Routing_Protocol
class-map match-any ISC_IN_Customer-A_Best-Effort
    match any
class-map match-any ISC_IN_Customer-A_Business-Data-1
    match protocol http
    match protocol telnet
    match protocol tftp
    match protocol ftp
    match protocol smtp
class-map match-any ISC_OUT_Customer-A_CustA-QoSPolicy_VoIP
    match ip dscp 46
class-map match-any ISC_IN_Customer-A_Management
    match access-group name ISC_IN_QOS_ACL_Customer-A_CustA-QoSPolicy_Management
!
!
policy-map ISC_OUT_Customer-A_CustA-QoSPolicy
    class ISC_OUT_Customer-A_CustA-QoSPolicy_VoIP
        priority percent 10
    class ISC_OUT_Customer-A_Routing_Protocol
        bandwidth percent 1
    class ISC_OUT_Customer-A_Management
        bandwidth percent 1
    class ISC_OUT_Customer-A_Business-Data-1
        bandwidth percent 20
    class ISC_OUT_Customer-A_Best-Effort
        bandwidth percent 25
policy-map ISC_IN_Customer-A_CustA-QoSPolicy
    class ISC_IN_Customer-A_CustA-QoSPolicy_VoIP
        set ip dscp 46
    class ISC_IN_Customer-A_Management
        set ip dscp 34
    class ISC_IN_Customer-A_Business-Data-1
        set ip dscp 34
    class ISC_IN_Customer-A_Best-Effort
        set ip dscp 0
!
!
!
!
interface Loopback0
    description DNS entry for engospe5 ! DON'T MODIFY or REMOVE !
    ip address 192.168.114.5 255.255.255.255
!
interface Multilink100
    ip address 192.168.0.14 255.255.255.252
    no ip redirects
    no ip proxy-arp
    ip authentication mode eigrp 100 md5
    ip authentication key-chain eigrp 100 CE-5
    ip pim sparse-dense-mode
    no ip mroute-cache
    load-interval 30
    no cdp enable
    ppp multilink
    multilink-group 100
!
interface FastEthernet0/0
    description Access Link to engossw1 ! DON'T MODIFY or REMOVE !
    ip address 11.11.11.8 255.255.255.0
    duplex half
    speed 100
!
interface FastEthernet0/1
    no ip address

```

```

shutdown
duplex half
speed 100
!
interface ATM1/0
no ip address
no atm ilmi-keepalive
atm voice aal2 aggregate-svc upspeed-number 0
!
!
interface ATM1/0.52 point-to-point
description QoS Link to enqosce52 ! DON'T MODIFY or REMOVE !
ip address 152.152.152.1 255.255.255.252
pvc 0/51
vbr-nrt 128 64 2000
encapsulation aal5snap
service-policy input ISC_IN_Customer-A_CustA-QoSPolicy
service-policy output ISC_OUT_Customer-A_CustA-QoSPolicy
!
interface ATM2/0
no ip address
no atm ilmi-keepalive
atm voice aal2 aggregate-svc upspeed-number 0
!
interface ATM2/0.5 point-to-point
description Link to enqospel ! DON'T MODIFY OR REMOVE !
ip address 12.12.12.10 255.255.255.252
pvc 0/5
encapsulation aal5snap
protocol ppp Virtual-Template173
!
!
interface GigabitEthernet4/0
no ip address
shutdown
negotiation auto
!
router ospf 1
log-adjacency-changes
network 11.11.11.8 0.0.0.0 area 0
network 192.168.114.5 0.0.0.0 area 0
!
!
no ip classless
no ip http server
ip pim bidir-enable
!
!
ip access-list extended ISC_IN_QOS_ACL_Customer-A_CustA-QoSPolicy_Management
permit ip any 10.10.10.0 0.0.0.255
ip access-list extended ISC_OUT_QOS_ACL_Customer-A_CustA-QoSPolicy_Management
permit ip 10.10.10.0 0.0.0.255 any
ip access-list extended ISC_OUT_QOS_ACL_Customer-A_CustA-QoSPolicy_Routing_Protocol
permit udp any any eq rip
permit tcp any any eq bgp
permit ospf any any
permit eigrp any any
!
snmp-server community public RO
snmp-server community private RW
!
!
call rsvp-sync
!

```

```

!
mgcp profile default
!
dial-peer cor custom
!
!
!
!
line con 0
  exec-timeout 30 0
  password 7 cisco
  login
line aux 0
  exec-timeout 30 0
  password 7 cisco
  login
line vty 0 4
  exec-timeout 60 0
  password 7 cisco
  login
!
!
end

```

Device enqosce52:

```

version 12.2
service timestamps debug datetime
service timestamps log datetime
no service password-encryption
!
hostname enqosce52
!
enable password 7 cisco
!
ip subnet-zero
ip cef
!
!
ip tftp source-interface Loopback0
no ip domain-lookup
!
!
class-map match-any ISC_OUT_Customer-A_Best-Effort
  match ip dscp 0
class-map match-any ISC_IN_Customer-A_CustA-QoSPolicy_VoIP
  match ip rtp 16384 16383
class-map match-any ISC_OUT_Customer-A_Business-Data-1
  match ip dscp 34
class-map match-any ISC_OUT_Customer-A_Management
  match access-group name ISC_OUT_QOS_ACL_Customer-A_CustA-QoSPolicy_Management
class-map match-any ISC_OUT_Customer-A_Routing_Protocol
  match access-group name ISC_OUT_QOS_ACL_Customer-A_CustA-QoSPolicy_Routing_Protocol
class-map match-any ISC_IN_Customer-A_Best-Effort
  match any
class-map match-any ISC_IN_Customer-A_Business-Data-1
  match protocol http
  match protocol telnet
  match protocol tftp
  match protocol ftp
  match protocol smtp
class-map match-any ISC_OUT_Customer-A_CustA-QoSPolicy_VoIP

```

```

    match ip dscp 46
    !
    !
policy-map ISC_OUT_Customer-A_CustA-QoSPolicy
  class ISC_OUT_Customer-A_CustA-QoSPolicy_VoIP
    priority percent 10
  class ISC_OUT_Customer-A_Routing_Protocol
    bandwidth percent 1
  class ISC_OUT_Customer-A_Management
    set ip dscp 34
    bandwidth percent 1
  class ISC_OUT_Customer-A_Business-Data-1
    bandwidth percent 20
  class ISC_OUT_Customer-A_Best-Effort
    bandwidth percent 25
policy-map ISC_IN_Customer-A_CustA-QoSPolicy
  class ISC_IN_Customer-A_CustA-QoSPolicy_VoIP
    set ip dscp 46
  class ISC_IN_Customer-A_Business-Data-1
    set ip dscp 34
  class ISC_IN_Customer-A_Best-Effort
    set ip dscp 0
    !
    !
    !
fax interface-type fax-mail
mta receive maximum-recipients 0
!
controller T1 0/0
  framing sf
  linecode ami
  channel-group 0 timeslots 1-24
!
!
!
!
interface Loopback0
  description DNS entry for enqosce52 ! DON'T MODIFY or REMOVE !
  ip address 192.168.114.12 255.255.255.255
!
interface FastEthernet0/0
  description Access Link to enqossw1 ! DON'T MODIFY or REMOVE !
  ip address 11.11.11.13 255.255.255.0
  duplex auto
  speed auto
  service-policy input ISC_IN_Customer-A_CustA-QoSPolicy
!
interface Serial0/0:0
  no ip address
!
interface FastEthernet0/1
  no ip address
  shutdown
  duplex auto
  speed auto
!
interface ATM1/0
  description QoS Link to enqospe5 ! DON'T MODIFY or REMOVE !
  no ip address
  no atm ilmi-keepalive
!
interface ATM1/0.52 point-to-point
  description QoS Link to enqospe5 ! DON'T MODIFY or REMOVE !
  ip address 152.152.152.2 255.255.255.252

```



```
pvc 0/52
 encapsulation aal5snap
  service-policy output ISC_OUT_Customer-A_CustA-QoSPolicy
!
!
router ospf 1
 log-adjacency-changes
 network 11.11.11.13 0.0.0.0 area 0
 network 192.168.114.12 0.0.0.0 area 0
!
no ip classless
ip http server
ip pim bidir-enable
!
!
ip access-list extended ISC_OUT_QOS_ACL_Customer-A_CustA-QoSPolicy_Management
 permit ip any 10.10.10.0 0.0.0.255
ip access-list extended ISC_OUT_QOS_ACL_Customer-A_CustA-QoSPolicy_Routing_Protocol
 permit udp any any eq rip
 permit tcp any any eq bgp
 permit ospf any any
 permit eigrp any any
!
!
snmp-server community public RO
snmp-server community private RW
call rsvp-sync
!
!
mgcp profile default
!
dial-peer cor custom
!
!
!
!
line con 0
 exec-timeout 30 0
 password 7 cisco
 login
line aux 0
 exec-timeout 30 0
 password 7 cisco
 login
line vty 0 4
 exec-timeout 60 0
 password 7 cisco
 login
line vty 5 15
 login
!
!
end
```

ISC Ethernet QoS Configurations

In this section, four Ethernet QoS sample configurations are depicted:

- 3550-DSCP
- 3750-DSCP with Inner VLAN
- 7600-CoS

3550-DSCP

```

mls qos cos policy-map
!
ip access-list extended isc_in_ip_acl
 permit ip any any
!
mac access-list extended isc_in_mac_acl
 permit any any
!
class-map match-all isc_in_ip_cmap
 match access-group name isc_in_ip_acl
!
class-map match-all isc_in_mac_cmap
 match access-group name isc_in_mac_acl
!
mls qos aggregate-policer isc_in_Cust_3550-DSCP_RT_FastEthernet0/5.106_vlan106 10000000
312500 exceed-action drop
!
mls qos aggregate-policer isc_in_Cust_3550-DSCP_BC_FastEthernet0/5.106_vlan106 10000000
312500 exceed-action drop
!
class-map match-all 3550-DSCPRTFA0/5.106vlan106
 match ip DSCP 46
!
class-map match-all 3550-DSCPRTFA0/5.106vlan106V
 match vlan 106
 match class-map 3550-DSCPRTFA0/5.106vlan106
!
class-map match-all 3550-DSCPBCFA0/5.106vlan106
 match ip DSCP 16
!
class-map match-all 3550-DSCPBCFA0/5.106vlan106V
 match vlan 106
 match class-map 3550-DSCPBCFA0/5.106vlan106
!
class-map match-all 3550-DSCPBEFA0/5.106vlan106V
 match vlan 106
 match class-map isc_in_ip_cmap
!
class-map match-all 3550-DSCPBEFA0/5.106vlan106VL2
 match vlan 106
 match class-map isc_in_mac_cmap
!
policy-map isc_in_FA0/5
 class 3550-DSCPRTFA0/5.106vlan106V
 police aggregate isc_in_Cust_3550-DSCP_RT_FastEthernet0/5.106_vlan106
 trust dscp
 class 3550-DSCPBCFA0/5.106vlan106V
 police aggregate isc_in_Cust_3550-DSCP_BC_FastEthernet0/5.106_vlan106
 set cos 2
 trust dscp

```

```

class 3550-DSCPBEFA0/5.106vlan106V
  set cos 0
trust dscp

```

3750-DSCP with Inner VLAN

```

mls qos
!
no mls qos rewrite ip dscp
!
class-map match-all ISC_OUT_VLAN103_INNERVLAN3
match vlan 103
match vlan inner 3
!
class-map match-any ISC_OUT_RT_3750-DSCP
match ip dscp 46
!
class-map match-any ISC_OUT_BC_3750-DSCP
match ip dscp 16
!
policy-map ISC_OUT_3750-DSCP
class ISC_OUT_RT_3750-DSCP
police cir 25000000 bc 64000 pir 25000000 be 64000 conform-action set-cos-transmit 5
exceed-action drop violate-action drop
priority
class ISC_OUT_BC_3750-DSCP
police cir 25000000 bc 64000 pir 45000000 be 64000 conform-action set-cos-transmit 2
exceed-action set-cos-transmit 1 violate-action drop
bandwidth 45000
queue-limit 550
class class-default
bandwidth 30000
set cos 0
!
policy-map ISC_OUT_GigabitEthernet1/1/1_VLAN
class ISC_OUT_VLAN103_INNERVLAN3
bandwidth 100000
service-policy ISC_OUT_3750-DSCP
!
policy-map ISC_OUT_GigabitEthernet1/1/1
class class-default
service-policy ISC_OUT_GigabitEthernet1/1/1_VLAN
!
interface GigabitEthernet1/1/1
service-policy output ISC_OUT_GigabitEthernet1/1/1

```

7600-CoS

```

interface Vlan150
no shutdown
!
mac access-list extended isc_in_RT_7600-COS_VLAN150
permit any any cos 5 vlan 150
!
mac access-list extended isc_in_BC_7600-COS_VLAN150
permit any any cos 2 vlan 150
!
mac access-list extended isc_in_BE_7600-COS_VLAN150
permit any any cos 0 vlan 150
!
mac access-list extended isc_in_Default_7600-COS_VLAN150

```

```
permit any any vlan 150
!
class-map match-any isc_in_RT_7600-COS_VLAN150
match access-group name isc_in_RT_7600-COS_VLAN150
!
class-map match-any isc_in_BC_7600-COS_VLAN150
match access-group name isc_in_BC_7600-COS_VLAN150
!
class-map match-any isc_in_BE_7600-COS_VLAN150
match access-group name isc_in_BE_7600-COS_VLAN150
!
class-map match-any isc_in_Default_7600-COS_VLAN150
match access-group name isc_in_Default_7600-COS_VLAN150
!
policy-map isc_in_GigabitEthernet3/11
class isc_in_RT_7600-COS_VLAN150
police 20000000 3125000 3125000 conform-action transmit exceed-action drop
trust cos
class isc_in_BC_7600-COS_VLAN150
police cir 100000000 bc 3125000 pir 200000000 be 3125000 conform-action transmit
exceed-action policed-dscp-transmit violate-action drop
trust cos
class isc_in_BE_7600-COS_VLAN150
trust cos
class isc_in_Default_7600-COS_VLAN150
police 100000000 312500 312500 conform-action drop exceed-action drop
!
interface Vlan150
mac packet-classify
!
```