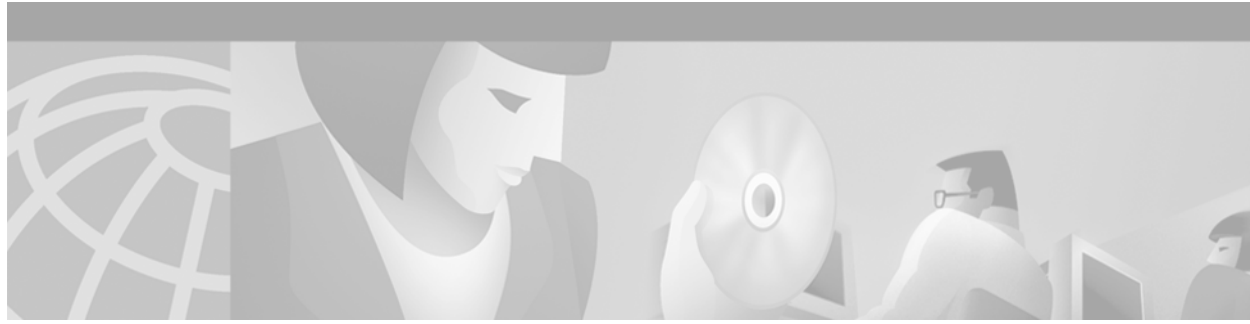




ISP3 and ISP4—Device Characteristics and Complete Configuration Files

This document includes the device characteristics and configuration files for the following host names in ISP3 and ISP4:

- ISP3BB3
- ISP3BB4
- ISP3BB7
- ISP4BB3
- ISP4BB4



Note

The multicast solutions in this document were tested with valid IP addresses. In the example configurations provided in the following sections, the first octet of these reserved IP addresses has been replaced with the letter “J” or the letter “K” for privacy reasons. The letter “J” always represents one unique number, and the letter “K” always represents one unique number that is different from “J.”

The example configurations are intended for illustrative purposes only. The letters “J” and “K” must be replaced with valid numbers when these IP addresses are configured in an actual network.



Note

The example configurations provided in the following sections use boldface text to indicate pertinent configuration commands used for deploying the IP multicast solutions described in this document.

ISP3BB3

Device Characteristics

Table 20 shows the device characteristics for ISP3BB3.

Table 20 *Hardware and Software Device Characteristics for ISP3BB3*

Host name	ISP3BB3
Chassis type	Cisco 7513 router
Physical interfaces	• 4 Ethernet/IEEE 802.3 • 1 Fast Ethernet/IEEE 802.3 • 1 FDDI • 1 ATM • 3 Packet Over SONET (POS)
Hardware components	• Cisco Route/Switch Processor Version 2 (RSP2) (R4700) • 3 Versatile Interface Processor Version 2 (VIP2) controllers (4 Ethernet) (2 POS) • 3 VIP2 R5K controllers (1 Fast Ethernet) (1 FDDI) (1 ATM) (1 POS)
Software loaded	Cisco IOS Release 12.0(11.5)S
Memory	Cisco RSP2 (R4700) processor: 128 MB
IP addresses	• Loopback0: J.3.0.203 255.255.255.255 • Loopback1: J.3.0.124 255.255.255.255 • Ethernet0/0/0: J.3.4.1 255.255.255.0 • Ethernet0/0/2: J.3.6.1 255.255.255.248 • ATM1/0/0.113 point-to-point: J.3.0.6 255.255.255.252 • ATM1/0/0.123 point-to-point: J.3.0.26 255.255.255.252 • ATM1/0/0.134 point-to-point: J.3.0.45 255.255.255.252 • ATM1/0/0.135 point-to-point: J.3.0.49 255.255.255.252 • ATM1/0/0.136 point-to-point: J.3.0.53 255.255.255.252 • ATM1/0/0.137 point-to-point: J.3.0.57 255.255.255.252 • POS5/0/0: J.3.5.1 255.255.255.252 • POS8/0/0: J.3.6.25 255.255.255.248 • Fddi9/0/0: J.3.6.17 255.255.255.248 • FastEthernet9/1/0: J.3.6.9 255.255.255.248 • POS12/0/0: J.3.0.249 255.255.255.252

Configuration File

```
version 12.0
service timestamps debug datetime localtime show-timezone
service timestamps log datetime localtime show-timezone
no service password-encryption
service udp-small-servers
service tcp-small-servers
!
hostname ISP3BB3
!
logging buffered 1000000 debugging
no logging console
enable password lab
!
username cwuser privilege 15 password 0 cwuser
clock timezone PST -8
clock summer-time PST recurring
ip subnet-zero
ip cef distributed
no ip domain-lookup
ip multicast-routing distributed
!
!
clns routing
!
!
!
interface Loopback0
ip address J.3.0.203 255.255.255.255
no ip directed-broadcast
!
interface Loopback1
ip address J.3.0.124 255.255.255.255
no ip directed-broadcast
ip pim sparse-mode
!
interface Ethernet0/0/2
description to ISP3BB3CL1
ip address J.3.6.1 255.255.255.248
no ip directed-broadcast
ip route-cache distributed
no cdp enable
!
interface ATM1/0/0
description TO ISP3BPX2, 2.1
no ip address
no ip directed-broadcast
ip route-cache distributed
atm sonet stm-1
atm pvc 16 0 16 ilmi
no atm enable-ilmi-trap
no atm ilmi-keepalive
!
interface ATM1/0/0.113 point-to-point
description To ISP3BB1
ip address J.3.0.6 255.255.255.252
no ip redirects
no ip directed-broadcast
no ip proxy-arp
ip pim sparse-mode
atm pvc 113 0 113 aal5snap
no atm enable-ilmi-trap
```

```

tag-switching ip
!
interface ATM1/0/0.123 point-to-point
description To ISP3BB2
ip address J.3.0.26 255.255.255.252
no ip redirects
no ip directed-broadcast
no ip proxy-arp
ip pim sparse-mode
atm pvc 123 0 123 aal5snap
no atm enable-ilmi-trap
tag-switching ip
!
interface ATM1/0/0.134 point-to-point
description To ISP3BB4
ip address J.3.0.45 255.255.255.252
no ip redirects
no ip directed-broadcast
no ip proxy-arp
ip pim sparse-mode
atm pvc 134 0 134 aal5snap
no atm enable-ilmi-trap
tag-switching ip
!
interface ATM1/0/0.135 point-to-point
description To ISP3BB5
ip address J.3.0.49 255.255.255.252
no ip redirects
no ip directed-broadcast
no ip proxy-arp
ip pim sparse-mode
atm pvc 135 0 135 aal5snap
no atm enable-ilmi-trap
tag-switching ip
!
interface ATM1/0/0.136 point-to-point
description To ISP3BB6
ip address J.3.0.53 255.255.255.252
no ip redirects
no ip directed-broadcast
no ip proxy-arp
ip pim sparse-mode
atm pvc 136 0 136 aal5snap
no atm enable-ilmi-trap
tag-switching ip
!
interface ATM1/0/0.137 point-to-point
description To ISP3BB7
ip address J.3.0.57 255.255.255.252
no ip redirects
no ip directed-broadcast
no ip proxy-arp
ip pim sparse-mode
atm pvc 137 0 137 aal5snap
no atm enable-ilmi-trap
tag-switching ip
!
interface POS12/0/0
description To ISP4BB3, POS12/0/0
ip address J.3.0.249 255.255.255.252
no ip directed-broadcast
ip pim bsr-border
ip pim sparse-mode
ip multicast boundary 1

```

```

ip route-cache distributed
clock source internal
pos scramble-atm
pos flag c2 22
no cdp enable
!
router ospf 3
log-adjacency-changes
network J.3.0.0 0.0.0.255 area 0
network J.3.4.0 0.0.3.255 area 3
maximum-paths 6
!
router bgp 3
no synchronization
redistribute connected route-map connected-bgp
redistribute ospf 3
neighbor ISP3INTERNAL peer-group nlri unicast multicast
neighbor ISP3INTERNAL remote-as 3
neighbor ISP3INTERNAL update-source Loopback0
neighbor ISP3ISP4PEER peer-group nlri unicast multicast
neighbor J.3.0.201 peer-group ISP3INTERNAL
neighbor J.3.0.202 peer-group ISP3INTERNAL
neighbor J.3.0.204 peer-group ISP3INTERNAL
neighbor J.3.0.205 peer-group ISP3INTERNAL
neighbor J.3.0.208 peer-group ISP3INTERNAL
neighbor J.3.0.208 shutdown
neighbor J.3.0.209 peer-group ISP3INTERNAL
neighbor J.3.0.209 shutdown
neighbor J.3.0.240 peer-group ISP3INTERNAL
neighbor J.3.0.241 peer-group ISP3INTERNAL
neighbor J.3.0.250 remote-as 4
neighbor J.3.0.250 peer-group ISP3ISP4PEER
no auto-summary
!
ip classless
ip http server
ip pim rp-address J.3.0.124
ip pim accept-rp J.3.0.124
ip pim send-rp-announce Loopback1 scope 8
ip pim send-rp-discovery Loopback1 scope 8
ip msdp peer J.3.0.250 connect-source Loopback0 remote-as 4
ip msdp sa-filter in J.3.0.250 list 124
ip msdp sa-filter out J.3.0.250 list 124
ip msdp peer J.3.0.204 connect-source Loopback0 remote-as 3
ip msdp cache-sa-state
!
access-list 1 deny 224.0.1.39
access-list 1 deny 224.0.1.40
access-list 1 deny 239.0.0.0 0.255.255.255
access-list 1 permit any
access-list 30 deny 223.255.240.0 0.0.15.255
access-list 30 permit any
access-list 112 permit ip J.3.0.0 0.0.255.255 255.255.0.0 0.0.255.255
access-list 112 deny ip any any
access-list 124 deny ip any host 224.0.2.2
access-list 124 deny ip any host 224.0.1.3
access-list 124 deny ip any host 224.0.1.24
access-list 124 deny ip any host 224.0.1.22
access-list 124 deny ip any host 224.0.1.2
access-list 124 deny ip any host 224.0.1.35
access-list 124 deny ip any host 224.0.1.60
access-list 124 deny ip any host 224.0.1.39
access-list 124 deny ip any host 224.0.1.40
access-list 124 deny ip any 239.0.0.0 0.255.255.255

```

```

access-list 124 deny ip 10.0.0.0 0.255.255.255 any
access-list 124 deny ip 127.0.0.0 0.255.255.255 any
access-list 124 deny ip 172.16.0.0 0.15.255.255 any
access-list 124 deny ip K.168.0.0 0.0.255.255 any
access-list 124 permit ip any any
snmp-server engineID local 0000000902000010F6FB0000
snmp-server community public RO
snmp-server community STSS RW
no snmp-server ifindex persist
snmp-server packetsize 2048
snmp-server contact sysadmin
snmp-server chassis-id ISP3BB3
no cdp run
route-map connected-bgp permit 10
match ip address 112
set ip next-hop J.3.0.203
set origin igp
!
route-map redis-ospf permit 10
match ip address 30
!
!
alias exec int_desc show int | include Description
alias exec cpu show proc cpu | include CPU
alias exec mem show mem free | include Processor
!
line con 0
exec-timeout 0 0
login authentication NOTACACS
transport input none
line aux 0
line vty 0 4
exec-timeout 0 0
password lab
!
end

```

ISP3BB4

Device Characteristics

Table 21 shows the device characteristics for ISP3BB4.

Table 21 Hardware and Software Device Characteristics for ISP3BB4

Host name	ISP3BB4
Chassis type	Cisco 7513 router
Physical interfaces	• 4 Ethernet/IEEE 802.3 • 1 ATM • 1 Packet Over SONET (POS)
Hardware components	• Cisco RSP8 (R7000) processor • 2 VIP2 controllers (4 Ethernet) (1 POS) • 1 VIP2 R5K controllers (1 ATM)

Table 21 Hardware and Software Device Characteristics for ISP3BB4 (continued)

Software loaded	Cisco IOS Release 12.0(11.5)S
Memory	Cisco RSP8 (R7000) processor: 256 MB
IP addresses	• Loopback0: J.3.0.204 255.255.255.255 • Loopback1: J.3.0.124 255.255.255.255 • Ethernet0/0/0: J.3.8.1 255.255.255.0 • Ethernet0/0/2: J.3.10.1 255.255.255.248 • ATM1/0/0.114 point-to-point: J.3.0.10 255.255.255.252 • ATM1/0/0.124 point-to-point: J.3.0.30 255.255.255.252 • ATM1/0/0.134 point-to-point: J.3.0.46 255.255.255.252 • ATM1/0/0.145 point-to-point: J.3.0.61 255.255.255.252 • ATM1/0/0.146 point-to-point: J.3.0.65 255.255.255.252 • ATM1/0/0.147 point-to-point: J.3.0.69 255.255.255.252 • POS5/0/0: J.3.9.1 255.255.255.252

Configuration File

```

version 12.0
no service pad
service timestamps debug datetime localtime show-timezone
service timestamps log datetime localtime show-timezone
no service password-encryption
service udp-small-servers
service tcp-small-servers
!
hostname ISP3BB4
!
logging buffered 1000000 debugging
no logging console
enable password lab
!
clock timezone PST -8
clock summer-time PST recurring
ip subnet-zero
ip cef distributed
no ip domain-lookup
ip multicast-routing distributed
ip multicast multipath
!
!
clns routing
!
!
!
interface Loopback0
ip address J.3.0.204 255.255.255.255
no ip directed-broadcast
no ip route-cache
no ip mroute-cache
!
interface Loopback1
ip address J.3.0.124 255.255.255.255

```

```

no ip directed-broadcast
ip pim sparse-mode
no ip route-cache
no ip mroute-cache
!
interface Ethernet0/0/2
description To ISP3DC
ip address J.3.10.1 255.255.255.248
no ip redirects
no ip directed-broadcast
ip pim sparse-mode
ip route-cache distributed
!
interface ATM1/0/0
description To ISP3BPX1, 2.4
no ip address
no ip directed-broadcast
ip route-cache distributed
atm sonet stm-1
atm pvc 16 0 16 ilmi
no atm enable-ilmi-trap
no atm ilmi-keepalive
!
interface ATM1/0/0.114 point-to-point
description To ISP3BB1
ip address J.3.0.10 255.255.255.252
no ip redirects
no ip directed-broadcast
no ip proxy-arp
ip pim sparse-mode
atm pvc 114 0 114 aal5snap
no atm enable-ilmi-trap
tag-switching ip
!
interface ATM1/0/0.124 point-to-point
description To ISP3BB2
ip address J.3.0.30 255.255.255.252
no ip redirects
no ip directed-broadcast
no ip proxy-arp
ip pim sparse-mode
atm pvc 124 0 124 aal5snap
no atm enable-ilmi-trap
tag-switching ip
!
interface ATM1/0/0.134 point-to-point
description To ISP3BB3
ip address J.3.0.46 255.255.255.252
no ip redirects
no ip directed-broadcast
no ip proxy-arp
ip pim sparse-mode
atm pvc 134 0 134 aal5snap
no atm enable-ilmi-trap
tag-switching ip
!
interface ATM1/0/0.145 point-to-point
description To ISP3BB5
ip address J.3.0.61 255.255.255.252
no ip redirects
no ip directed-broadcast
no ip proxy-arp
ip pim sparse-mode
atm pvc 145 0 145 aal5snap

```

```

no atm enable-ilmi-trap
tag-switching ip
!
interface ATM1/0/0.146 point-to-point
description To ISP3BB6
ip address J.3.0.65 255.255.255.252
no ip redirects
no ip directed-broadcast
no ip proxy-arp
ip pim sparse-mode
atm pvc 146 0 146 aal5snap
no atm enable-ilmi-trap
tag-switching ip
!
interface ATM1/0/0.147 point-to-point
description To ISP3BB7
ip address J.3.0.69 255.255.255.252
no ip redirects
no ip directed-broadcast
no ip proxy-arp
ip pim sparse-mode
atm pvc 147 0 147 aal5snap
no atm enable-ilmi-trap
tag-switching ip
!
router ospf 3
log-adjacency-changes
network J.3.0.0 0.0.0.255 area 0
network J.3.8.0 0.0.3.255 area 4
!
router isis
!
router bgp 3
no synchronization
bgp cluster-id 3333
redistribute connected route-map connected-bgp
neighbor ISP3INTERNAL peer-group nlri unicast multicast
neighbor ISP3INTERNAL remote-as 3
neighbor ISP3INTERNAL update-source Loopback0
neighbor J.3.0.201 peer-group ISP3INTERNAL
neighbor J.3.0.202 peer-group ISP3INTERNAL
neighbor J.3.0.203 peer-group ISP3INTERNAL
neighbor J.3.0.205 peer-group ISP3INTERNAL
neighbor J.3.0.206 remote-as 3
neighbor J.3.0.206 update-source Loopback0
neighbor J.3.0.206 route-reflector-client
neighbor J.3.0.207 remote-as 3
neighbor J.3.0.207 update-source Loopback0
neighbor J.3.0.207 route-reflector-client
neighbor J.3.0.208 peer-group ISP3INTERNAL
neighbor J.3.0.208 shutdown
neighbor J.3.0.209 peer-group ISP3INTERNAL
neighbor J.3.0.209 shutdown
neighbor J.3.0.240 peer-group ISP3INTERNAL
neighbor J.3.0.241 peer-group ISP3INTERNAL
no auto-summary
!
ip classless
ip pim rp-address J.3.0.124
ip pim accept-rp J.3.0.124
ip pim send-rp-announce Loopback1 scope 8
ip pim send-rp-discovery Loopback1 scope 8
ip msdp peer J.3.0.203 connect-source Loopback0
ip msdp peer J.3.0.207 connect-source Loopback0

```

```

ip msdp cache-sa-state
!
access-list 1 deny 224.0.1.39
access-list 1 deny 224.0.1.40
access-list 1 deny 239.0.0.0 0.255.255.255
access-list 1 permit any
access-list 30 deny 223.255.240.0 0.0.15.255
access-list 30 permit any
access-list 112 permit ip J.3.0.0 0.0.255.255 255.255.0.0 0.0.255.255
access-list 112 permit ip 209.1.0.0 0.0.255.255 255.255.0.0 0.0.255.255
access-list 112 deny ip any any
access-list 124 deny ip any 229.0.0.0 0.255.255.255
access-list 124 deny ip any 239.0.0.0 0.255.255.255
access-list 124 permit ip any any
snmp-server engineID local 0000000902000010F6A40800
snmp-server community public RO
snmp-server community STSS RW
no snmp-server ifindex persist
snmp-server packetsize 2048
snmp-server contact sysadmin
snmp-server chassis-id ISP3BB4
route-map connected-bgp permit 10
match ip address 112
set ip next-hop J.3.0.204
set origin igp
!
route-map redis-ospf permit 10
match ip address 30
!
!
alias exec int_desc show int | include Description
alias exec cpu show proc cpu | include CPU
alias exec mem show mem free | include Processor
!
line con 0
exec-timeout 0 0
login authentication NOTACACS
length 20
transport input none
line aux 0
line vty 0 4
exec-timeout 0 0
password lab
login authentication TACACS+
!
end

```

ISP3BB7

Device Characteristics

Table 22 shows the device characteristics for ISP3BB7.

Table 22 Hardware and Software Device Characteristics for ISP3BB7

Host name	ISP3BB7
Chassis type	Cisco 7513 router

Table 22 Hardware and Software Device Characteristics for ISP3BB7 (continued)

Physical interfaces	• 4 Ethernet/IEEE 802.3 • 2 Fast Ethernet/IEEE 802.3 • 1 ATM • 3 Packet Over SONET (POS)
Hardware components	• Cisco RSP4 (R5000) processor • 5 VIP2 controllers (2 Fast Ethernet) (4 Ethernet) (3 POS) • 2 VIP2 R5K controllers (2 ATM)
Software loaded	Cisco IOS Release 12.0(11.5)S
Memory	Cisco RSP4 (R5000) processor: 128 MB
IP addresses	• Loopback0: J.3.0.207 255.255.255.255 • Ethernet0/0/0: J.3.20.1 255.255.255.0 • Ethernet0/0/2: J.3.22.1 255.255.255.248 • Ethernet0/0/3: J.3.22.25 255.255.255.248 • FastEthernet0/1/0: J.3.22.9 255.255.255.248 • ATM1/0/0.117 point-to-point: J.3.0.22 255.255.255.252 • ATM1/0/0.127 point-to-point: J.3.0.42 255.255.255.252 • ATM1/0/0.137 point-to-point: J.3.0.58 255.255.255.252 • ATM1/0/0.147 point-to-point: J.3.0.70 255.255.255.252 • ATM1/0/0.157 point-to-point: J.3.0.78 255.255.255.252 • ATM1/0/0.167 point-to-point: J.3.0.82 255.255.255.252 • FastEthernet2/0/0: J.3.22.17 255.255.255.248 • POS5/0/0: J.3.21.1 255.255.255.252 • ATM8/0/0.267 point-to-point: J.3.0.86 255.255.255.252 • POS10/0/0: J.3.21.5 255.255.255.252 • POS12/0/0: J.2.0.246 255.255.255.252

Configuration File

```

version 12.0
service timestamps debug datetime localtime show-timezone
service timestamps log datetime localtime show-timezone
no service password-encryption
service udp-small-servers
service tcp-small-servers
!
hostname ISP3BB7
!
logging buffered 1000000 debugging
no logging console
enable password lab
!
clock timezone PST -8

```

```

clock summer-time PST recurring
ip subnet-zero
ip cef distributed
no ip domain-lookup
ip multicast-routing distributed
!
!
clns routing
!
!
!
interface Loopback0
ip address J.3.0.207 255.255.255.255
no ip directed-broadcast
ip pim sparse-mode
!
interface Ethernet0/0/0
description To RVT300, E7
ip address J.3.20.1 255.255.255.0
no ip directed-broadcast
ip route-cache distributed
!
interface Ethernet0/0/2
description To ISP3BB7CL1
ip address J.3.22.1 255.255.255.248
no ip directed-broadcast
ip pim sparse-mode
ip route-cache distributed
!
interface Ethernet0/0/3
description To ISP3LINUX, MGEN
ip address J.3.23.1 255.255.255.0 secondary
ip address J.3.22.25 255.255.255.248
no ip directed-broadcast
ip pim sparse-mode
ip route-cache distributed
ip mroute-cache distributed
!
interface ATM1/0/0
description TO ISP3BPX1, 2.1
no ip address
no ip directed-broadcast
ip route-cache distributed
load-interval 60
atm sonet stm-1
atm pvc 16 0 16 ilmi
no atm enable-ilmi-trap
no atm ilmi-keepalive
!
interface ATM1/0/0.117 point-to-point
description To ISP3BB1
ip address J.3.0.22 255.255.255.252
no ip redirects
no ip directed-broadcast
no ip proxy-arp
ip pim sparse-mode
no atm enable-ilmi-trap
pvc 0/117
    class-vc BackBone-PVCs
!
tag-switching ip
!
interface ATM1/0/0.127 point-to-point
description To ISP3BB2

```

```
ip address J.3.0.42 255.255.255.252
no ip redirects
no ip directed-broadcast
no ip proxy-arp
ip pim sparse-mode
no atm enable-ilmi-trap
pvc 0/127
    class-vc BackBone-PVCs
!
tag-switching ip
!
interface ATM1/0/0.137 point-to-point
description To ISP3BB3
ip address J.3.0.58 255.255.255.252
no ip redirects
no ip directed-broadcast
no ip proxy-arp
ip pim sparse-mode
no atm enable-ilmi-trap
pvc 0/137
    class-vc BackBone-PVCs
!
tag-switching ip
!
interface ATM1/0/0.147 point-to-point
description To ISP3BB4
ip address J.3.0.70 255.255.255.252
no ip redirects
no ip directed-broadcast
no ip proxy-arp
ip pim sparse-mode
no atm enable-ilmi-trap
pvc 0/147
    class-vc BackBone-PVCs
!
tag-switching ip
!
interface ATM1/0/0.157 point-to-point
description To ISP3BB5
ip address J.3.0.78 255.255.255.252
no ip redirects
no ip directed-broadcast
no ip proxy-arp
ip pim sparse-mode
no atm enable-ilmi-trap
pvc 0/157
    class-vc BackBone-PVCs
!
tag-switching ip
!
interface ATM1/0/0.167 point-to-point
description To ISP3BB6
ip address J.3.0.82 255.255.255.252
no ip redirects
no ip directed-broadcast
no ip proxy-arp
ip pim sparse-mode
no atm enable-ilmi-trap
pvc 0/167
    class-vc BackBone-PVCs
!
tag-switching ip
!
interface ATM8/0/0
```

```

description To ISP3BPX1, 9.1
no ip address
no ip directed-broadcast
ip route-cache distributed
load-interval 60
atm framing cbitplcp
atm pvc 16 0 16 ilmi
no atm enable-ilmi-trap
no atm ilmi-keepalive
!
interface ATM8/0/0.267 point-to-point
description To ISP3BB7
ip address J.3.0.86 255.255.255.252
no ip redirects
no ip directed-broadcast
no ip proxy-arp
ip pim sparse-mode
no atm enable-ilmi-trap
pvc PARISPVC 0/267
    vbr-nrt 34000 1000 1000
    encapsulation aal5snap
!
interface POS12/0/0
description TO ISP2BB3, POS 0/0
ip address J.2.0.246 255.255.255.252
no ip directed-broadcast
ip pim bsr-border
ip pim sparse-mode
ip multicast boundary 1
ip route-cache distributed
ip mroute-cache distributed
clock source internal
!
router ospf 3
log-adjacency-changes
network J.3.0.0 0.0.0.255 area 0
network J.3.20.0 0.0.3.255 area 7
!
router bgp 3
no synchronization
redistribute connected route-map connected-bgp
neighbor ISP3ISP2PEER peer-group nlri unicast multicast
neighbor ISP3ISP2PEER remote-as 2
neighbor J.2.0.245 peer-group ISP3ISP2PEER
neighbor J.3.0.204 remote-as 3 nlri unicast multicast
neighbor J.3.0.204 update-source Loopback0
neighbor J.3.0.205 remote-as 3 nlri unicast multicast
neighbor J.3.0.205 update-source Loopback0
no auto-summary
!
ip classless
ip route J.3.17.4 255.255.255.252 ATM8/0/0.267
ip route J.3.18.8 255.255.255.248 ATM8/0/0.267
ip route J.3.73.8 255.255.255.248 ATM1/0/0.127
ip pim rp-address J.3.0.124
ip msdp peer J.3.0.204 connect-source Loopback0
ip msdp peer J.2.0.204 connect-source Loopback0 remote-as 2
ip msdp sa-filter in J.2.0.204 list 124
ip msdp sa-filter out J.2.0.204 list 124
ip msdp cache-sa-state
ip msdp originator-id Loopback0
!
!
vc-class atm BackBone-PVCs

```

```

abr 49862 24931
encapsulation aal5snap
access-list 1 deny 224.0.1.39
access-list 1 deny 224.0.1.40
access-list 1 deny 239.0.0.0 0.255.255.255
access-list 1 permit any
access-list 30 deny 223.255.240.0 0.0.15.255
access-list 30 permit any
access-list 112 permit ip J.3.0.0 0.0.255.255 255.255.0.0 0.0.255.255
access-list 112 permit ip host J.2.0.245 host 0.0.0.0
access-list 112 deny ip any any
access-list 124 deny ip any host 224.0.2.2
access-list 124 deny ip any host 224.0.1.3
access-list 124 deny ip any host 224.0.1.24
access-list 124 deny ip any host 224.0.1.22
access-list 124 deny ip any host 224.0.1.2
access-list 124 deny ip any host 224.0.1.35
access-list 124 deny ip any host 224.0.1.60
access-list 124 deny ip any host 224.0.1.39
access-list 124 deny ip any host 224.0.1.40
access-list 124 deny ip any 239.0.0.0 0.255.255.255
access-list 124 deny ip 10.0.0.0 0.255.255.255 any
access-list 124 deny ip 127.0.0.0 0.255.255.255 any
access-list 124 deny ip 172.16.0.0 0.15.255.255 any
access-list 124 deny ip K.168.0.0 0.0.255.255 any
access-list 124 permit ip any any
snmp-server engineID local 00000009020000801CACF800
snmp-server community public RO
snmp-server community STSS RW
no snmp-server ifindex persist
snmp-server packetsize 2048
route-map connected-bgp permit 10
match ip address 112
set ip next-hop J.3.0.207
set origin igp
!
route-map redis-ospf permit 10
match ip address 30
!
!
alias exec int_desc show int | include Description
alias exec cpu show proc cpu | include CPU
alias exec mem show mem free | include Processor
!
line con 0
exec-timeout 0 0
login authentication NOTACACS
transport input none
line aux 0
line vty 0 4
exec-timeout 0 0
password lab
!
end

```

ISP4BB3

Device Characteristics

Table 23 shows the device characteristics for ISP4BB3.

Table 23 *Hardware and Software Device Characteristics for ISP4BB3*

Host name	ISP4BB3
Chassis type	Cisco 7513 router
Physical interfaces	• 12 Ethernet/IEEE 802.3 • 1 Fast Ethernet/IEEE 802.3 • 4 High-Speed Serial Interface (HSSI) • 1 FDDI • 3 Packet Over SONET (POS)
Hardware components	• Cisco RSP4 (R5000) processor • 3 VIP2 controllers (3 POS) • 3 VIP2 R5K controllers (1 Fast Ethernet) (12 Ethernet) (4 HSSI) (1 FDDI)
Software loaded	Cisco IOS Release 12.0(11.5)S
Memory	Cisco RSP4 (R5000) processor: 256 MB
IP addresses	• Loopback0: J.4.0.203 255.255.255.255 • Loopback1: J.4.0.124 255.255.255.255 • Ethernet0/0/0: J.4.5.1 255.255.255.248 • Ethernet0/0/2: J.4.6.1 255.255.255.248 • Ethernet0/0/3: J.4.7.129 255.255.255.128 • Ethernet0/0/4: J.5.66.25 255.255.255.248 • Ethernet0/0/5: J.4.7.1 255.255.255.248 • Hssi2/0/0: J.4.0.6 255.255.255.252 • Hssi2/0/1: J.4.0.10 255.255.255.252 • Ethernet2/1/0: J.4.7.9 255.255.255.248 • POS5/0/0: J.2.0.250 255.255.255.252 • POS8/0/0: J.4.4.1 255.255.255.248 • FastEthernet10/0/0: J.4.4.129 255.255.255.128 • Hssi10/1/0: J.4.0.25 255.255.255.252 • Hssi10/1/1: J.4.0.17 255.255.255.252 • POS12/0/0: J.3.0.250 255.255.255.252

Configuration File

```

version 12.0
service timestamps debug uptime
service timestamps log datetime localtime show-timezone
no service password-encryption
service udp-small-servers
service tcp-small-servers
!
hostname ISP4BB3
!
logging buffered 1000000 debugging
no logging console
enable password lab
!
clock timezone PDT -8
ip subnet-zero
ip cef distributed
no ip domain-lookup
ip multicast-routing distributed
!
!
!
!
!
interface Loopback0
description ISP4BB3 LOOPBACK 0
ip address J.4.0.203 255.255.255.255
no ip directed-broadcast
ip pim sparse-mode
!
interface Loopback1
description ISP4BB4 LOOPBACK1 FOR MULTICAST
ip address J.4.0.124 255.255.255.255
no ip directed-broadcast
ip pim sparse-mode
!
interface Ethernet0/0/2
description To ISP4BB3CL-1 & IPTV-SRVR 1
ip address J.4.6.1 255.255.255.248
no ip directed-broadcast
ip pim sparse-mode
ip route-cache distributed
ip ospf cost 19
ip mroute-cache distributed
no cdp enable
!
interface Ethernet0/0/3
description TO I4EBGP1
ip address J.4.7.129 255.255.255.128
no ip directed-broadcast
ip route-cache distributed
ip ospf cost 19
no cdp enable
!
interface Hssi2/0/0
description To ISP4BB1, HSSI 2/0/0
ip address J.4.0.6 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip mrm test-sender
ip route-cache distributed
ip ospf cost 13

```

```

ip mroute-cache distributed
hssi internal-clock
no cdp enable
!
interface Hssi2/0/1
description To ISP4BB1, HSSI 2/0/1
ip address J.4.0.10 255.255.255.252
no ip directed-broadcast
ip route-cache distributed
ip ospf cost 13
hssi internal-clock
no cdp enable
!
interface POS5/0/0
description TO ISP2BB6, POS 0/0
ip address J.2.0.250 255.255.255.252
no ip directed-broadcast
ip pim bsr-border
ip pim sparse-mode
ip multicast ttl-threshold 16
ip multicast boundary 1
ip route-cache distributed
clock source internal
no cdp enable
!
interface Hssi10/1/0
description To ISP4BB4, HSSI 4/0/0
ip address J.4.0.25 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip route-cache distributed
ip ospf cost 13
ip mroute-cache distributed
hssi internal-clock
no cdp enable
!
interface Hssi10/1/1
description To ISP4BB4, HSSI 2/1/0
ip address J.4.0.17 255.255.255.252
no ip directed-broadcast
ip route-cache distributed
ip ospf cost 13
hssi internal-clock
no cdp enable
!
interface POS12/0/0
description To ISP3BB3, POS 12/0/0
ip address J.3.0.250 255.255.255.252
no ip directed-broadcast
ip pim bsr-border
ip multicast ttl-threshold 16
ip multicast boundary 1
ip route-cache distributed
ip ospf cost 7
clock source internal
pos scramble-atm
pos flag c2 22
no cdp enable
!
autonomous-system 4
!
router ospf 4
log-adjacency-changes
redistribute connected subnets route-map redis-ospf

```

```

redistribute static subnets
passive-interface Ethernet0/0/1
passive-interface POS5/0/0
passive-interface POS8/0/0
passive-interface FastEthernet10/0/0
passive-interface POS12/0/0
network J.4.0.203 0.0.0.0 area 0
network J.4.0.0 0.0.0.255 area 0
network J.4.4.0 0.0.0.255 area 3
network J.4.5.0 0.0.0.255 area 3
network J.4.6.0 0.0.0.255 area 3
network J.4.7.0 0.0.0.255 area 3
maximum-paths 6
default-information originate always
!
router bgp 4
no synchronization
network K.255.0.0 mask 255.255.0.0 route-map connected-bgp
redistribute connected route-map connected-bgp
neighbor ISP3ISP4PEER peer-group nlri unicast multicast
neighbor I4EBGP1 peer-group
neighbor ISP4ISP2PEER peer-group nlri unicast multicast
neighbor ISP4ISP2PEER remote-as 2
neighbor ISP4INTERNAL peer-group nlri unicast multicast
neighbor ISP4INTERNAL remote-as 4
neighbor ISP4INTERNAL update-source Loopback0
neighbor J.2.0.249 peer-group ISP4ISP2PEER
neighbor J.3.0.249 remote-as 3
neighbor J.3.0.249 peer-group ISP3ISP4PEER
neighbor J.4.0.201 peer-group ISP4INTERNAL
neighbor J.4.0.202 peer-group ISP4INTERNAL
neighbor J.4.0.204 peer-group ISP4INTERNAL
neighbor J.4.7.130 remote-as 400
neighbor J.4.7.130 peer-group I4EBGP1
neighbor J.4.7.131 remote-as 401
neighbor J.4.7.131 peer-group I4EBGP1
neighbor J.4.7.132 remote-as 402
neighbor J.4.7.132 peer-group I4EBGP1
neighbor J.4.7.133 remote-as 403
neighbor J.4.7.133 peer-group I4EBGP1
neighbor J.4.7.134 remote-as 404
neighbor J.4.7.134 peer-group I4EBGP1
neighbor J.4.7.135 remote-as 405
neighbor J.4.7.135 peer-group I4EBGP1
neighbor J.4.7.136 remote-as 406
neighbor J.4.7.136 peer-group I4EBGP1
neighbor J.4.7.137 remote-as 407
neighbor J.4.7.137 peer-group I4EBGP1
neighbor J.4.7.138 remote-as 408
neighbor J.4.7.138 peer-group I4EBGP1
neighbor J.4.7.139 remote-as 409
neighbor J.4.7.139 peer-group I4EBGP1
neighbor J.4.7.140 remote-as 410
neighbor J.4.7.140 peer-group I4EBGP1
neighbor J.4.7.141 remote-as 411
neighbor J.4.7.141 peer-group I4EBGP1
neighbor J.4.7.142 remote-as 412
neighbor J.4.7.142 peer-group I4EBGP1
neighbor J.4.7.143 remote-as 413
neighbor J.4.7.143 peer-group I4EBGP1
neighbor J.4.7.144 remote-as 414
neighbor J.4.7.144 peer-group I4EBGP1
neighbor J.4.7.145 remote-as 415
neighbor J.4.7.145 peer-group I4EBGP1

```

```

neighbor J.4.7.146 remote-as 416
neighbor J.4.7.146 peer-group I4EBGP1
neighbor J.4.7.147 remote-as 417
neighbor J.4.7.147 peer-group I4EBGP1
neighbor J.4.7.148 remote-as 418
neighbor J.4.7.148 peer-group I4EBGP1
neighbor J.4.7.149 remote-as 419
neighbor J.4.7.149 peer-group I4EBGP1
neighbor J.4.7.150 remote-as 420
neighbor J.4.7.150 peer-group I4EBGP1
neighbor J.4.7.151 remote-as 421
neighbor J.4.7.151 peer-group I4EBGP1
neighbor J.4.7.152 remote-as 422
neighbor J.4.7.152 peer-group I4EBGP1
neighbor J.4.7.153 remote-as 423
neighbor J.4.7.153 peer-group I4EBGP1
neighbor J.4.7.154 remote-as 424
neighbor J.4.7.154 peer-group I4EBGP1
neighbor J.4.7.155 remote-as 425
neighbor J.4.7.155 peer-group I4EBGP1
neighbor J.4.7.156 remote-as 426
neighbor J.4.7.156 peer-group I4EBGP1
neighbor J.4.7.157 remote-as 427
neighbor J.4.7.157 peer-group I4EBGP1
neighbor J.4.7.158 remote-as 428
neighbor J.4.7.158 peer-group I4EBGP1
neighbor J.4.7.159 remote-as 429
neighbor J.4.7.159 peer-group I4EBGP1
neighbor J.4.7.160 remote-as 430
neighbor J.4.7.160 peer-group I4EBGP1
neighbor J.4.7.161 remote-as 431
neighbor J.4.7.161 peer-group I4EBGP1
neighbor J.4.7.228 remote-as 490
neighbor J.4.7.228 peer-group I4EBGP1
neighbor J.4.7.229 remote-as 491
neighbor J.4.7.229 peer-group I4EBGP1
neighbor J.4.7.230 remote-as 492
neighbor J.4.7.230 peer-group I4EBGP1
no auto-summary
!
no ip classless
ip pim rp-address J.4.0.124
ip msdp peer J.3.0.249 connect-source Loopback0 remote-as 3
ip msdp sa-filter in J.3.0.249 list 124
ip msdp sa-filter out J.3.0.249 list 124
ip msdp peer J.2.0.204 connect-source Loopback0 remote-as 2
ip msdp sa-filter in J.2.0.204 list 124
ip msdp sa-filter out J.2.0.204 list 124
ip msdp peer J.1.0.203 connect-source Loopback0 remote-as 1
ip msdp sa-filter in J.1.0.203 list 124
ip msdp sa-filter out J.1.0.203 list 124
ip msdp cache-sa-state
!
!
ip prefix-list local-routes seq 5 permit 229.0.0.0/8
ip prefix-list local-routes seq 15 deny 0.0.0.0/0 le 32
access-list 1 deny 224.0.1.39
access-list 1 deny 224.0.1.40
access-list 1 deny 239.0.0.0 0.255.255.255
access-list 1 permit any
access-list 10 deny 224.0.1.39
access-list 10 deny 224.0.1.40
access-list 10 deny 239.0.0.0 0.255.255.255
access-list 10 permit 224.0.0.0 15.255.255.255

```

```
access-list 30 deny 223.255.240.0 0.0.15.255
access-list 30 permit any
access-list 112 permit ip J.4.0.0 0.0.255.255 255.255.0.0 0.0.255.255
access-list 112 permit ip K.255.0.0 0.0.255.255 255.255.0.0 0.0.255.255
access-list 112 deny ip any any
access-list 124 deny ip any host 224.0.2.2
access-list 124 deny ip any host 224.0.1.3
access-list 124 deny ip any host 224.0.1.24
access-list 124 deny ip any host 224.0.1.22
access-list 124 deny ip any host 224.0.1.2
access-list 124 deny ip any host 224.0.1.35
access-list 124 deny ip any host 224.0.1.60
access-list 124 deny ip any host 224.0.1.39
access-list 124 deny ip any host 224.0.1.40
access-list 124 deny ip any 239.0.0.0 0.255.255.255
access-list 124 deny ip 10.0.0.0 0.255.255.255 any
access-list 124 deny ip 127.0.0.0 0.255.255.255 any
access-list 124 deny ip 172.16.0.0 0.15.255.255 any
access-list 124 deny ip K.168.0.0 0.0.255.255 any
access-list 124 permit ip any any
snmp-server engineID local 00000009020000801CF87800
snmp-server community public RO
snmp-server community STSS RW
no snmp-server ifindex persist
snmp-server packetsize 2048
no cdp run
route-map connected-bgp permit 10
match ip address 112
set ip next-hop J.4.0.203
set origin igp
!
route-map local-routes permit 20
match ip address prefix-list local-routes
!
route-map redis-ospf permit 10
match ip address 30
!
!
!
line con 0
exec-timeout 0 0
login authentication NOTACACS
length 30
transport input none
line aux 0
line vty 0 4
exec-timeout 0 0
password lab
login authentication NOTACACS
!
end
```

ISP4BB4

Device Characteristics

Table 24 shows the device characteristics for ISP4BB4.

Table 24 *Hardware and Software Device Characteristics for ISP4BB4*

Host name	ISP4BB4
Chassis type	Cisco 7513 router
Physical interfaces	• 12 Ethernet/IEEE 802.3 • 2 Fast Ethernet/IEEE 802.3 • 4 High-Speed Serial Interface (HSSI) • 1 FDDI • 3 Packet Over SONET (POS)
Hardware components	• Cisco RSP2 (R4600) processor • 1 Ethernet Interface Processor (EIP) controller (4 Ethernet) • 4 VIP2 controllers (1 Fast Ethernet) (8 Ethernet) (1 FDDI) (2 POS) • 3 VIP2 R5K controllers (1 Fast Ethernet) (4 HSSI) (1 POS)
Software loaded	Cisco IOS Release 12.0(11.5)S
Memory	Cisco RSP2 (R4600) processor: 128 MB
IP addresses	• Loopback0: J.4.0.204 255.255.255.255 • Loopback1: J.4.0.124 255.255.255.255 • Ethernet0/0/0: J.4.9.1 255.255.255.248 • Ethernet0/0/2: J.4.16.1 255.255.255.0 • Ethernet0/0/3: J.4.10.1 255.255.255.248 • Ethernet1/0: J.4.10.9 255.255.255.248 • Hssi2/0/0: J.4.0.14 255.255.255.252 • Hssi2/0/1: J.4.0.22 255.255.255.252 • Hssi2/1/0: J.4.0.18 255.255.255.252 • Hssi4/0/0: J.4.0.26 255.255.255.252 • FastEthernet4/1/0: J.4.11.1 255.255.255.128 • POS9/0/0: J.4.8.1 255.255.255.128 • FastEthernet10/0/0: J.4.8.129 255.255.255.128 • POS11/0/0: J.4.0.30 255.255.255.252 • POS12/0/0: J.4.0.33 255.255.255.252

Configuration File

```
version 12.0
service timestamps debug uptime
service timestamps log datetime localtime show-timezone
no service password-encryption
service udp-small-servers
service tcp-small-servers
!
hostname ISP4BB4
!
logging buffered 1000000 debugging
aaa new-model
aaa authentication login NOTACACS enable
enable password lab
!
clock timezone PDT -8
ip subnet-zero
ip cef distributed
no ip domain-lookup
ip multicast-routing distributed
!
interface Loopback0
description ISP4BB4 LOOPBACK 0
ip address J.4.0.204 255.255.255.255
ip directed-broadcast
ip pim sparse-mode
!
interface Ethernet0/0/3
description To ISP4BB4CL-1
ip address J.4.10.1 255.255.255.248
no ip directed-broadcast
ip pim sparse-mode
ip route-cache distributed
ip ospf cost 19
ip mroute-cache distributed
no cdp enable
!
interface Ethernet1/0
description To IPTV RCVR-5
ip address J.4.10.9 255.255.255.248
no ip directed-broadcast
ip pim sparse-mode
ip ospf cost 19
no cdp enable
!
interface Hssi4/0/0
description To ISP4BB3, HSSI 10/1/0
ip address J.4.0.26 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip route-cache distributed
ip ospf cost 13
ip mroute-cache distributed
hssi internal-clock
no cdp enable
!
interface FastEthernet4/1/0
ip address J.4.11.1 255.255.255.128
no ip directed-broadcast
ip pim sparse-mode
ip route-cache distributed
ip ospf cost 11
```

```

ip mroute-cache distributed
full-duplex
no cdp enable
!
interface POS11/0/0
description To ISP4BB2, POS 2/0/0
ip address J.4.0.30 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip route-cache distributed
ip ospf cost 7
ip mroute-cache distributed
clock source internal
no cdp enable
!
interface POS12/0/0
description To ISP1BB3, POS 9/0/0
ip address J.4.0.33 255.255.255.252
no ip directed-broadcast
ip pim bsr-border
ip pim sparse-mode
ip multicast boundary 10
ip route-cache distributed
ip ospf cost 7
clock source internal
no cdp enable
!
autonomous-system 4
!
router ospf 4
log-adjacency-changes
redistribute connected subnets route-map redis-ospf
passive-interface Ethernet0/0/1
passive-interface FastEthernet10/0/0
network J.4.0.204 0.0.0.0 area 0
network J.4.0.0 0.0.0.255 area 0
network J.4.8.0 0.0.0.255 area 4
network J.4.9.0 0.0.0.255 area 4
network J.4.10.0 0.0.0.255 area 4
network J.4.11.0 0.0.0.255 area 4
network J.4.16.0 0.0.0.255 area 7
maximum-paths 6
!
router bgp 4
no synchronization
network K.255.0.0 mask 255.255.0.0 route-map connected-bgp
redistribute connected route-map connected-bgp
neighbor ISP4INTERNAL peer-group nlri unicast multicast
neighbor ISP4INTERNAL remote-as 4
neighbor ISP4INTERNAL update-source Loopback0
neighbor ISP4ISP1PEER peer-group nlri unicast multicast
neighbor ISP4ISP1PEER remote-as 1
neighbor J.4.0.34 peer-group ISP4ISP1PEER
neighbor J.4.0.201 peer-group ISP4INTERNAL
neighbor J.4.0.202 peer-group ISP4INTERNAL
neighbor J.4.0.203 peer-group ISP4INTERNAL
no auto-summary
!
no ip classless
ip pim rp-address J.4.0.124
!
access-list 10 deny 224.0.1.39
access-list 10 deny 224.0.1.40
access-list 10 deny 239.0.0.0 0.255.255.255

```

```
access-list 10 permit any
access-list 30 deny 223.255.240.0 0.0.15.255
access-list 30 permit any
access-list 112 permit ip J.4.0.0 0.0.255.255 255.255.0.0 0.0.255.255
access-list 112 permit ip K.255.0.0 0.0.255.255 255.255.0.0 0.0.255.255
access-list 112 deny ip any any
snmp-server engineID local 00000009020000602FAA4D00
snmp-server community public RO
snmp-server community STSS RW
no snmp-server ifindex persist
snmp-server packetsize 2048
route-map connected-bgp permit 10
match ip address 112
set ip next-hop J.4.0.204
set origin igp
!
route-map redis-ospf permit 10
match ip address 30
!
line con 0
exec-timeout 0 0
login authentication NOTACACS
length 30
transport input none
line aux 0
line vty 0 4
exec-timeout 0 0
password lab
login authentication NOTACACS
!
end
```

