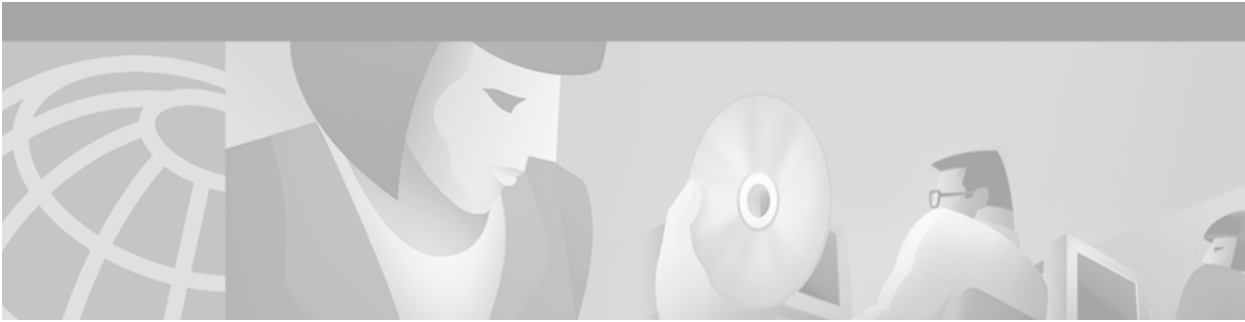




ISP2—Device Characteristics and Complete Configuration Files

This document includes the device characteristics and configuration files for the following host names in ISP2:

- ISP2BB1
- ISP2BB2
- ISP2BB3
- ISP2BB4
- ISP2BB5
- ISP2BB6
- ISP2BB7



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.

ISP2BB1

Device Characteristics

Table 13 shows the device characteristics for ISP2BB1.

Table 13 *Hardware and Software Device Characteristics for ISP2BB1*

Host name	ISP2BB1
Chassis type	Cisco 12008 Gigabit Switch Router (GSR)
Physical interfaces	• 1 Ethernet/IEEE 802.3 • 1 Gigabit Ethernet/IEEE 802.3 • 4 ATM • 3 Packet Over SONET (POS)
Hardware components	• Cisco 12008/GRP (R5000) processor (revision 0x01) • 2 Route Processor cards • 2 clock scheduler cards • 3 switch fabric cards • 1 quad-port OC-3c ATM controller (4 ATM) • 2 OC-12 POS controllers (2 POS) • 1 single-port Gigabit Ethernet/IEEE 802.3z controller (1 Gigabit Ethernet)
Software loaded	Cisco IOS Release 12.0(10)S

Table 13 Hardware and Software Device Characteristics for ISP2BB1 (continued)

Memory	Cisco 12008/GRP (R5000) processor (revision 0x01): 128 MB
IP addresses	• Loopback0: J.2.0.201 255.255.255.255 • ATM0/0.201 point-to-point: J.2.64.1 255.255.255.252 • ATM0/0.203 point-to-point: J.2.64.9 255.255.255.252 • ATM0/0.205 point-to-point: J.2.64.17 255.255.255.252 • ATM0/0.207 point-to-point: J.2.64.25 255.255.255.252 • ATM0/0.202 point-to-point: J.2.64.5 255.255.255.252 • ATM0/0.204 point-to-point: J.2.64.13 255.255.255.252 • ATM0/0.206 point-to-point: J.2.64.21 255.255.255.252 • ATM0/0.208 point-to-point: J.2.64.29 255.255.255.252 • POS1/0: J.2.0.1 255.255.255.252 • POS2/0: J.2.0.1 255.255.255.252 • POS3/0: J.2.0.13 255.255.255.252 • GigabitEthernet6/0.110: J.2.1.1 255.255.255.0 • GigabitEthernet6/0.120: J.2.2.1 255.255.255.248 • GigabitEthernet6/0.121: J.2.2.9 255.255.255.248 • GigabitEthernet6/0.131: J.2.3.9 255.255.255.248 • GigabitEthernet6/0.132: J.2.3.17 255.255.255.248 • GigabitEthernet6/0.140: J.2.4.1 255.255.255.0

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 ISP2BB1
!
enable password lab
!
clock timezone PDT -8
clock summer-time PDT recurring
redundancy
main-cpu
    auto-sync startup-config
!
!
!
!
!
ip subnet-zero

```

```

no ip bootp server
no ip domain-lookup
ip multicast-routing distributed
clns routing
!
!
interface Loopback0
description Needed for BGP and ISIS
ip address J.2.0.201 255.255.255.255
no ip directed-broadcast
ip pim sparse-mode
ip router isis
ip mroute-cache distributed
!
interface ATM0/0
description To ISP2DASW1, 0/0/0
no ip address
no ip directed-broadcast
no ip mroute-cache
atm sonet stm-1
atm pvc 16 0 16 ilmi
no atm enable-ilmi-trap
no atm ilmi-keepalive
!
interface ATM0/0.201 point-to-point
description To ISP2DA1 ATM0/0/0.201
ip address J.2.64.1 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip router isis
atm pvc 201 0 201 aal5snap
no atm enable-ilmi-trap
isis metric 15 level-1
isis hello-multiplier 12 level-1
isis hello-interval 5 level-1
isis retransmit-throttle-interval 250
isis retransmit-interval 140
isis lsp-interval 50
!
interface ATM0/0.203 point-to-point
description To ISP2DA2
ip address J.2.64.9 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip router isis
atm pvc 203 0 203 aal5snap
no atm enable-ilmi-trap
isis metric 5 level-1
isis hello-multiplier 12 level-1
isis hello-interval 5 level-1
isis retransmit-throttle-interval 250
isis retransmit-interval 140
isis lsp-interval 50
!
interface ATM0/0.205 point-to-point
description To ISP2DA3
ip address J.2.64.17 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip router isis
atm pvc 205 0 205 aal5snap
no atm enable-ilmi-trap
isis metric 5 level-1
isis hello-multiplier 12 level-1

```

```
isis hello-interval 5 level-1
isis retransmit-throttle-interval 250
isis retransmit-interval 140
isis lsp-interval 50
!
interface ATM0/0.207 point-to-point
description To ISP2DA4
ip address J.2.64.25 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip router isis
atm pvc 207 0 207 aal5snap
no atm enable-ilmi-trap
isis metric 5 level-1
isis hello-multiplier 12 level-1
isis hello-interval 5 level-1
isis retransmit-throttle-interval 250
isis retransmit-interval 140
isis lsp-interval 50
!
interface ATM0/1
description To ISP2DASW2, 0/0/0
no ip address
no ip directed-broadcast
no ip mroute-cache
atm sonet stm-1
atm pvc 16 0 16 ilmi
no atm enable-ilmi-trap
no atm ilmi-keepalive
!
interface ATM0/1.202 point-to-point
description To ISP2DA1 ATM12/0/0.202
ip address J.2.64.5 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip router isis
atm pvc 202 0 202 aal5snap
no atm enable-ilmi-trap
isis metric 15 level-1
isis hello-multiplier 12 level-1
isis hello-interval 5 level-1
isis retransmit-throttle-interval 250
isis retransmit-interval 140
isis lsp-interval 50
!
interface ATM0/1.204 point-to-point
description To ISP2DA2
ip address J.2.64.13 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip router isis
atm pvc 204 0 204 aal5snap
no atm enable-ilmi-trap
isis metric 5 level-1
isis hello-multiplier 12 level-1
isis hello-interval 5 level-1
isis retransmit-throttle-interval 250
isis retransmit-interval 140
isis lsp-interval 50
!
interface ATM0/1.206 point-to-point
description To ISP2DA3
ip address J.2.64.21 255.255.255.252
no ip directed-broadcast
```

```

ip pim sparse-mode
ip router isis
atm pvc 206 0 206 aal5snap
no atm enable-ilmi-trap
isis metric 5 level-1
isis hello-multiplier 12 level-1
isis hello-interval 5 level-1
isis retransmit-throttle-interval 250
isis retransmit-interval 140
isis lsp-interval 50
!
interface ATM0/1.208 point-to-point
description To ISP2DA4
ip address J.2.64.29 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip router isis
atm pvc 208 0 208 aal5snap
no atm enable-ilmi-trap
isis metric 5 level-1
isis hello-multiplier 12 level-1
isis hello-interval 5 level-1
isis retransmit-throttle-interval 250
isis retransmit-interval 140
isis lsp-interval 50
!
interface POS1/0
description TO ISP2BB2, POS 2/0
ip address J.2.0.1 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip router isis
ip mroute-cache distributed
crc 32
clock source internal
pos ais-shut
aps revert 1
aps protect 1 J.2.0.201
!
interface POS2/0
description TO ISP2BB2, POS 1/0
ip address J.2.0.1 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip router isis
ip mroute-cache distributed
load-interval 30
crc 32
clock source internal
pos ais-shut
aps working 1
!
interface POS3/0
description TO ISP2BB3, POS 1/0
ip address J.2.0.13 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip router isis
ip mroute-cache distributed
crc 32
clock source internal
!
interface GigabitEthernet6/0
no ip address

```

```

no ip directed-broadcast
load-interval 30
!
interface GigabitEthernet6/0.130
description Client/Server
encapsulation dot1Q 130
ip address J.2.3.1 255.255.255.248
no ip directed-broadcast
ip pim sparse-mode
ip router isis
!
interface GigabitEthernet6/0.140
description OPEN
encapsulation dot1Q 140
ip address J.2.4.1 255.255.255.0
no ip directed-broadcast
ip pim sparse-mode
ip router isis
!
router isis
redistribute static ip metric 0 metric-type internal level-1
net 49.0002.0000.0000.0001.00
is-type level-1
!
router bgp 2
no synchronization
redistribute connected route-map connected-bgp
neighbor ISP2INTERNAL peer-group nlri unicast multicast
neighbor ISP2INTERNAL remote-as 2
neighbor ISP2INTERNAL update-source Loopback0
neighbor J.2.0.202 peer-group ISP2INTERNAL
neighbor J.2.0.203 peer-group ISP2INTERNAL
neighbor J.2.0.204 peer-group ISP2INTERNAL
neighbor J.2.0.205 peer-group ISP2INTERNAL
neighbor J.2.0.206 peer-group ISP2INTERNAL
neighbor J.2.0.207 peer-group ISP2INTERNAL
neighbor J.2.0.208 peer-group ISP2INTERNAL
no auto-summary
!
no ip classless
ip route 191.3.0.0 255.255.0.0 J.2.0.208
ip route 191.4.0.0 255.255.0.0 J.2.0.208
ip http server
ip pim rp-address J.2.0.124
!
logging trap emergencies
access-list 112 permit ip J.2.0.0 0.0.255.255 255.255.0.0 0.0.255.255
access-list 112 deny ip any any
arp J.2.2.10 0010.8001.e228 ARPA
route-map connected-bgp permit 10
match ip address 112
set ip next-hop J.2.0.201
set origin igp
!
snmp-server engineID local 00000009020000101F4530C0
snmp-server community public RO
snmp-server community STSS RW
snmp-server contact sysadmin
snmp-server chassis-id ISP2BB1
!
!
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
length 0
!
end
```

ISP2BB2

Device Characteristics

Table 14 shows the device characteristics for ISP2BB2.

Table 14 *Hardware and Software Device Characteristics for ISP2BB2*

Host name	ISP2BB2
Chassis type	Cisco 12008 Gigabit Switch Router (GSR)
Physical interfaces	• 1 Ethernet/IEEE 802.3 • 1 Gigabit Ethernet/IEEE 802.3 • 4 ATM • 3 Packet Over SONET (POS)
Hardware components	• Cisco 12008/GRP (R5000) processor (revision 0x01) • 2 Route Processor cards • 2 clock scheduler cards • 3 switch fabric cards • 1 quad-port OC-3c ATM controller (4 ATM) • 2 OC-12 POS controllers (2 POS) • 2 OC-48 POS E.D. controllers (2 POS) • 1 single-port Gigabit Ethernet/IEEE 802.3z controller (1 Gigabit Ethernet)
Software loaded	Cisco IOS Release 12.0(10)S

Table 14 Hardware and Software Device Characteristics for ISP2BB2 (continued)

Memory	Cisco 12008/GRP (R5000) processor (revision 0x01): 128 MB
IP addresses	• Loopback0: J.2.0.202 255.255.255.255 • ATM0/0.211 point-to-point: J.2.64.41 255.255.255.252 • ATM0/0.213 point-to-point: J.2.64.49 255.255.255.252 • ATM0/0.215 point-to-point: J.2.64.57 255.255.255.252 • ATM0/0.217 point-to-point: J.2.64.65 255.255.255.252 • ATM0/0.212 point-to-point: J.2.64.45 255.255.255.252 • ATM0/0.214 point-to-point: J.2.64.53 255.255.255.252 • ATM0/0.216 point-to-point: J.2.64.61 255.255.255.252 • ATM0/0.218 point-to-point: J.2.64.69 255.255.255.252 • POS1/0: J.2.0.2 255.255.255.252 • POS2/0: J.2.0.2 255.255.255.252 • POS3/0: J.2.0.21 255.255.255.252 • POS4/0: J.2.0.25 255.255.255.252 • GigabitEthernet6/0.210: J.2.5.1 255.255.255.0 • GigabitEthernet6/0.220: J.2.6.1 255.255.255.248 • GigabitEthernet6/0.221: J.2.6.9 255.255.255.248 • GigabitEthernet6/0.230: J.2.7.1 255.255.255.248 • GigabitEthernet6/0.231: J.2.7.9 255.255.255.248 • GigabitEthernet6/0.232: J.2.7.17 255.255.255.248 • GigabitEthernet6/0.240: J.2.8.1 255.255.255.0

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 ISP2BB2
!
enable password lab
!
clock timezone PDT -8
clock summer-time PDT recurring
redundancy
main-cpu
    auto-sync startup-config
!
!
!
!

```

```

!
!
ip subnet-zero
no ip bootp server
no ip domain-lookup
ip multicast-routing distributed
ip multicast multipath
clns routing
!
!
interface Loopback0
description Needed for BGP and ISIS
ip address J.2.0.202 255.255.255.255
no ip directed-broadcast
ip pim sparse-mode
ip router isis
ip mroute-cache distributed
!
interface ATM0/0
description To ISP2DASW1, 0/0/1
no ip address
no ip directed-broadcast
no ip mroute-cache
atm sonet stm-1
atm pvc 16 0 16 ilmi
no atm enable-ilmi-trap
no atm ilmi-keepalive
!
interface ATM0/0.211 point-to-point
description To ISP2DA1 2/0
ip address J.2.64.41 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip router isis
atm pvc 211 0 211 aal5snap
no atm enable-ilmi-trap
isis metric 15 level-1
isis hello-multiplier 12 level-1
isis hello-interval 5 level-1
isis retransmit-throttle-interval 250
isis retransmit-interval 140
isis lsp-interval 50
!
interface ATM0/0.213 point-to-point
description To ISP2DA2 1/0
ip address J.2.64.49 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip router isis
no atm enable-ilmi-trap
isis metric 5 level-1
isis hello-multiplier 12 level-1
isis hello-interval 5 level-1
isis retransmit-throttle-interval 250
isis retransmit-interval 140
isis lsp-interval 50
!
interface ATM0/0.215 point-to-point
description To ISP2DA3 0
ip address J.2.64.57 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip router isis
atm pvc 215 0 215 aal5snap

```

```
no atm enable-ilmi-trap
isis metric 5 level-1
isis hello-multiplier 12 level-1
isis hello-interval 5 level-1
isis retransmit-throttle-interval 250
isis retransmit-interval 140
isis lsp-interval 50
!
interface ATM0/0.217 point-to-point
description To ISP2DA4 1/0
ip address J.2.64.65 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip router isis
atm pvc 217 0 217 aal5snap
no atm enable-ilmi-trap
isis metric 5 level-1
isis hello-multiplier 12 level-1
isis hello-interval 5 level-1
isis retransmit-throttle-interval 250
isis retransmit-interval 140
isis lsp-interval 50
!
interface ATM0/1
description To ISP2DASW2, 0/0/1
no ip address
no ip directed-broadcast
no ip mroute-cache
atm sonet stm-1
atm pvc 16 0 16 ilmi
no atm enable-ilmi-trap
no atm ilmi-keepalive
!
interface ATM0/1.212 point-to-point
description To ISP2DA1 3/0
ip address J.2.64.45 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip router isis
atm pvc 212 0 212 aal5snap
no atm enable-ilmi-trap
isis metric 15 level-1
isis hello-multiplier 12 level-1
isis hello-interval 5 level-1
isis retransmit-throttle-interval 250
isis retransmit-interval 140
isis lsp-interval 50
!
interface ATM0/1.214 point-to-point
description To ISP2DA2 2/0
ip address J.2.64.53 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip router isis
atm pvc 214 0 214 aal5snap
no atm enable-ilmi-trap
isis metric 5 level-1
isis hello-multiplier 12 level-1
isis hello-interval 5 level-1
isis retransmit-throttle-interval 250
isis retransmit-interval 140
isis lsp-interval 50
!
interface ATM0/1.216 point-to-point
```

```

description To ISP2DA3
ip address J.2.64.61 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip router isis
atm pvc 216 0 216 aal5snap
no atm enable-ilmi-trap
isis metric 5 level-1
isis hello-multiplier 12 level-1
isis hello-interval 5 level-1
isis retransmit-throttle-interval 250
isis retransmit-interval 140
isis lsp-interval 50
!
interface ATM0/1.218 point-to-point
description To ISP2DA4 2/0
ip address J.2.64.69 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip router isis
atm pvc 218 0 218 aal5snap
no atm enable-ilmi-trap
isis metric 5 level-1
isis hello-multiplier 12 level-1
isis hello-interval 5 level-1
isis retransmit-throttle-interval 250
isis retransmit-interval 140
isis lsp-interval 50
!
interface POS1/0
description TO ISP2BB1, POS 2/0
ip address J.2.0.2 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip router isis
ip mroute-cache distributed
load-interval 30
crc 32
clock source internal
pos ais-shut
aps working 1
!
interface POS2/0
description TO ISP2BB1, POS 1/0
ip address J.2.0.2 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip router isis
ip mroute-cache distributed
load-interval 30
crc 32
clock source internal
pos ais-shut
aps revert 1
aps protect 1 J.2.0.202
!
interface POS3/0
description TO ISP2BB3, POS 2/0
ip address J.2.0.21 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip router isis
ip mroute-cache distributed
crc 32

```

```

clock source internal
!
interface POS4/0
description TO ISP2BB4, POS 2/0
ip address J.2.0.25 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip router isis
ip mroute-cache distributed
crc 32
clock source internal
!
interface GigabitEthernet6/0
no ip address
no ip directed-broadcast
load-interval 30
!
interface GigabitEthernet6/0.230
description Client/Server
encapsulation dot1Q 230
ip address J.2.7.1 255.255.255.248
no ip directed-broadcast
ip pim sparse-mode
ip router isis
!
interface GigabitEthernet6/0.240
description OPEN
encapsulation dot1Q 240
ip address J.2.8.1 255.255.255.0
no ip directed-broadcast
ip pim sparse-mode
ip router isis
!
router isis
redistribute static ip metric 0 metric-type internal level-1
net 49.0002.0000.0000.0002.00
is-type level-1
!
router bgp 2
no synchronization
redistribute connected route-map connected-bgp
neighbor ISP2INTERNAL peer-group nlri unicast multicast
neighbor ISP2INTERNAL remote-as 2
neighbor ISP2INTERNAL update-source Loopback0
neighbor J.2.0.201 peer-group ISP2INTERNAL
neighbor J.2.0.203 peer-group ISP2INTERNAL
neighbor J.2.0.204 peer-group ISP2INTERNAL
neighbor J.2.0.205 peer-group ISP2INTERNAL
neighbor J.2.0.206 peer-group ISP2INTERNAL
neighbor J.2.0.207 peer-group ISP2INTERNAL
neighbor J.2.0.208 peer-group ISP2INTERNAL
no auto-summary
!
no ip classless
ip route 191.3.0.0 255.255.0.0 J.2.0.208
ip route 191.4.0.0 255.255.0.0 J.2.0.208
ip pim rp-address J.2.0.124
!
logging trap emergencies
access-list 112 permit ip J.2.0.0 0.0.255.255 255.255.0.0 0.0.255.255
access-list 112 deny ip any any
arp J.2.6.2 0010.8001.e240 ARPA
arp J.2.6.10 0010.8001.e248 ARPA
route-map connected-bgp permit 10

```

```
match ip address 112
set ip next-hop J.2.0.202
set origin igp
!
snmp-server engineID local 00000009020000101F4544C0
snmp-server community public RO
snmp-server community STSS RW
snmp-server contact sysadmin
snmp-server chassis-id ISP2BB2
!
!
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
length 0
!
end
```

ISP2BB3

Device Characteristics

Table 15 shows the device characteristics for ISP2BB3.

Table 15 Hardware and Software Device Characteristics for ISP2BB3

Host name	ISP2BB3
Chassis type	Cisco 12008 Gigabit Switch Router (GSR)
Physical interfaces	• 1 Ethernet/IEEE 802.3 • 1 Gigabit Ethernet/IEEE 802.3 • 7 Packet Over SONET (POS)
Hardware components	• Cisco 12008/GRP (R5000) processor (revision 0x01) • 1 Route Processor card • 1 clock scheduler card • 3 switch fabric cards • 1 four-port OC-3 POS controller (4 POS) • 3 OC-48 POS E.D. controllers (3 POS) • 1 single-port Gigabit Ethernet/IEEE 802.3z controller (1 Gigabit Ethernet)
Software loaded	Cisco IOS Release 12.0(10)S

Table 15 Hardware and Software Device Characteristics for ISP2BB3 (continued)

Memory	Cisco 12008/GRP (R5000) processor (revision 0x01): 128 MB
IP addresses	• Loopback0: J.2.0.203 255.255.255.255 • POS0/0: J.2.0.245 255.255.255.252 • POS0/1: J.2.182.1 255.255.255.240 • POS0/2: J.2.192.1 255.255.255.240 • POS1/0: J.2.0.14 255.255.255.252 • POS2/0: J.2.0.22 255.255.255.252 • POS4/0: J.2.0.33 255.255.255.252 • GigabitEthernet6/0.310: J.2.9.1 255.255.255.0 • GigabitEthernet6/0.320: J.2.10.1 255.255.255.248 • GigabitEthernet6/0.321: J.2.10.9 255.255.255.248 • GigabitEthernet6/0.330: J.2.11.1 255.255.255.248 • GigabitEthernet6/0.331: J.2.11.9 255.255.255.248 • GigabitEthernet6/0.332: J.2.11.17 255.255.255.248 • GigabitEthernet6/0.340: J.2.12.1 255.255.255.0

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 ISP2BB3
!
enable password lab
!
clock timezone PDT -8
clock summer-time PDT recurring
!
!
!
!
!
ip subnet-zero
no ip domain-lookup
ip multicast-routing distributed
clns routing
!
!
interface Loopback0
ip address J.2.0.203 255.255.255.255
no ip directed-broadcast
ip pim sparse-mode
ip router isis
ip mroute-cache distributed

```

```

!
interface POS0/0
description TO ISP3BB7, POS12/0/0
ip address J.2.0.245 255.255.255.252
no ip directed-broadcast
ip pim bsr-border
ip pim sparse-mode
ip multicast boundary 1
ip router isis
ip mroute-cache distributed
crc 16
clock source internal
!
interface POS0/1
ip address J.2.182.17 255.255.255.240 secondary
ip address J.2.182.33 255.255.255.240 secondary
ip address J.2.182.49 255.255.255.240 secondary
ip address J.2.182.65 255.255.255.240 secondary
ip address J.2.182.81 255.255.255.240 secondary
ip address J.2.182.97 255.255.255.240 secondary
ip address J.2.182.113 255.255.255.240 secondary
ip address J.2.182.129 255.255.255.240 secondary
ip address J.2.182.145 255.255.255.240 secondary
ip address J.2.182.161 255.255.255.240 secondary
ip address J.2.182.177 255.255.255.240 secondary
ip address J.2.182.195 255.255.255.240 secondary
ip address J.2.182.209 255.255.255.240 secondary
ip address J.2.182.225 255.255.255.240 secondary
ip address J.2.182.241 255.255.255.240 secondary
ip address J.2.183.1 255.255.255.240 secondary
ip address J.2.183.17 255.255.255.240 secondary
ip address J.2.183.33 255.255.255.240 secondary
ip address J.2.183.49 255.255.255.240 secondary
ip address J.2.183.65 255.255.255.240 secondary
ip address J.2.183.81 255.255.255.240 secondary
ip address J.2.183.97 255.255.255.240 secondary
ip address J.2.183.113 255.255.255.240 secondary
ip address J.2.183.129 255.255.255.240 secondary
ip address J.2.183.145 255.255.255.240 secondary
ip address J.2.183.161 255.255.255.240 secondary
ip address J.2.183.177 255.255.255.240 secondary
ip address J.2.183.193 255.255.255.240 secondary
ip address J.2.183.209 255.255.255.240 secondary
ip address J.2.183.225 255.255.255.240 secondary
ip address J.2.183.241 255.255.255.240 secondary
ip address J.2.184.1 255.255.255.240 secondary
ip address J.2.184.17 255.255.255.240 secondary
ip address J.2.184.33 255.255.255.240 secondary
ip address J.2.184.49 255.255.255.240 secondary
ip address J.2.184.65 255.255.255.240 secondary
ip address J.2.184.81 255.255.255.240 secondary
ip address J.2.184.97 255.255.255.240 secondary
ip address J.2.184.113 255.255.255.240 secondary
ip address J.2.184.129 255.255.255.240 secondary
ip address J.2.184.145 255.255.255.240 secondary
ip address J.2.184.161 255.255.255.240 secondary
ip address J.2.184.177 255.255.255.240 secondary
ip address J.2.182.1 255.255.255.240
no ip directed-broadcast
ip router isis
no ip mroute-cache
no keepalive
crc 16
clock source internal

```

```

!
interface POS0/2
ip address J.2.192.17 255.255.255.240 secondary
ip address J.2.192.33 255.255.255.240 secondary
ip address J.2.192.49 255.255.255.240 secondary
ip address J.2.192.65 255.255.255.240 secondary
ip address J.2.192.81 255.255.255.240 secondary
ip address J.2.192.97 255.255.255.240 secondary
ip address J.2.192.113 255.255.255.240 secondary
ip address J.2.192.129 255.255.255.240 secondary
ip address J.2.192.145 255.255.255.240 secondary
ip address J.2.192.161 255.255.255.240 secondary
ip address J.2.192.177 255.255.255.240 secondary
ip address J.2.192.195 255.255.255.240 secondary
ip address J.2.192.209 255.255.255.240 secondary
ip address J.2.192.225 255.255.255.240 secondary
ip address J.2.192.241 255.255.255.240 secondary
ip address J.2.193.1 255.255.255.240 secondary
ip address J.2.193.17 255.255.255.240 secondary
ip address J.2.193.33 255.255.255.240 secondary
ip address J.2.193.49 255.255.255.240 secondary
ip address J.2.193.65 255.255.255.240 secondary
ip address J.2.193.81 255.255.255.240 secondary
ip address J.2.193.97 255.255.255.240 secondary
ip address J.2.193.113 255.255.255.240 secondary
ip address J.2.193.129 255.255.255.240 secondary
ip address J.2.193.145 255.255.255.240 secondary
ip address J.2.193.161 255.255.255.240 secondary
ip address J.2.193.177 255.255.255.240 secondary
ip address J.2.193.193 255.255.255.240 secondary
ip address J.2.193.209 255.255.255.240 secondary
ip address J.2.193.225 255.255.255.240 secondary
ip address J.2.193.241 255.255.255.240 secondary
ip address J.2.194.1 255.255.255.240 secondary
ip address J.2.194.17 255.255.255.240 secondary
ip address J.2.194.33 255.255.255.240 secondary
ip address J.2.194.49 255.255.255.240 secondary
ip address J.2.194.65 255.255.255.240 secondary
ip address J.2.194.81 255.255.255.240 secondary
ip address J.2.194.97 255.255.255.240 secondary
ip address J.2.194.113 255.255.255.240 secondary
ip address J.2.194.129 255.255.255.240 secondary
ip address J.2.194.145 255.255.255.240 secondary
ip address J.2.194.161 255.255.255.240 secondary
ip address J.2.194.177 255.255.255.240 secondary
ip address J.2.192.1 255.255.255.240
no ip directed-broadcast
ip router isis
no ip mroute-cache
no keepalive
crc 16
clock source internal
!
interface POS1/0
description TO ISP2BB1/0, POS 3/0
ip address J.2.0.14 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip router isis
ip mroute-cache distributed
load-interval 30
crc 32
clock source internal
!

```

```

interface POS2/0
description TO ISP2BB2, POS3/0
ip address J.2.0.22 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip router isis
ip mroute-cache distributed
crc 32
clock source internal
!
interface POS4/0
description TO ISP2BB4, POS3/0
ip address J.2.0.33 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip router isis
ip mroute-cache distributed
crc 32
clock source internal
!
interface GigabitEthernet6/0
no ip address
no ip directed-broadcast
!
interface GigabitEthernet6/0.310
description RVT200
encapsulation dot1Q 310
ip address J.2.9.1 255.255.255.0
no ip directed-broadcast
ip router isis
!
interface GigabitEthernet6/0.330
description To Client/Server
encapsulation dot1Q 330
ip address J.2.11.1 255.255.255.248
no ip directed-broadcast
ip pim sparse-mode
ip router isis
ip mrm test-sender
!
interface GigabitEthernet6/0.340
description OPEN
encapsulation dot1Q 340
ip address J.2.12.1 255.255.255.0
no ip directed-broadcast
ip pim sparse-mode
ip router isis
!
router isis
net 49.0002.0000.0000.0003.00
is-type level-1
!
router bgp 2
no synchronization
redistribute connected route-map connected-bgp
neighbor ISP2INTERNAL peer-group nlri unicast multicast
neighbor ISP2INTERNAL remote-as 2
neighbor ISP2INTERNAL update-source Loopback0
neighbor ISP2ISP3PEER peer-group nlri unicast multicast
neighbor ISP2ISP3PEER remote-as 3
neighbor J.2.0.201 peer-group ISP2INTERNAL
neighbor J.2.0.202 peer-group ISP2INTERNAL
neighbor J.2.0.204 peer-group ISP2INTERNAL
neighbor J.2.0.205 peer-group ISP2INTERNAL

```

```

neighbor J.2.0.206 peer-group ISP2INTERNAL
neighbor J.2.0.207 peer-group ISP2INTERNAL
neighbor J.2.0.208 peer-group ISP2INTERNAL
neighbor J.2.0.246 peer-group ISP2ISP3PEER
no auto-summary
!
no ip classless
ip http server
ip http authentication local
ip pim rp-address J.2.0.124
!
ip mrm manager test1
manager GigabitEthernet6/0.330 group 224.10.10.10
senders 1
senders 10
receivers 20 sender-list 10
!
logging trap emergencies
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 permit J.2.11.1
access-list 20 permit J.2.11.9
access-list 112 permit ip J.2.0.0 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
arp J.2.10.10 0010.8001.e268 ARPA
arp J.2.10.2 0010.8001.e260 ARPA
route-map connected-bgp permit 10
match ip address 112
set ip next-hop J.2.0.203
set origin igp
!
snmp-server engineID local 00000009020000101F453CC0
snmp-server community public RO
snmp-server community STSS RW
snmp-server contact sysadmin
snmp-server chassis-id ISP2BB3
!
!
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

```

ISP2BB4

Device Characteristics

Table 16 shows the device characteristics for ISP2BB4.

Table 16 *Hardware and Software Device Characteristics for ISP2BB4*

Host name	ISP2BB4
Chassis type	Cisco 12008 Gigabit Switch Router (GSR)
Physical interfaces	• 1 Ethernet/IEEE 802.3 • 1 Gigabit Ethernet/IEEE 802.3 • 6 Packet Over SONET (POS)
Hardware components	• Cisco 12008/GRP (R5000) processor (revision 0x01) • 1 Route Processor card • 1 clock scheduler card • 3 switch fabric cards • 4 OC-12 POS controllers (4 POS) • 2 OC-48 POS E.D. controllers (2 POS) • 1 single-port Gigabit Ethernet/IEEE 802.3z controller (1 Gigabit Ethernet)
Software loaded	Cisco IOS Release 12.0(10)S
Memory	Cisco 12008/GRP (R5000) processor (revision 0x01): 128 MB
IP addresses	• Loopback0: J.2.0.204 255.255.255.255 • Loopback1: J.2.0.124 255.255.255.255 • POS0/0: J.2.0.49 255.255.255.252 • POS2/0: J.2.0.26 255.255.255.252 • POS3/0: J.2.0.34 255.255.255.252 • GigabitEthernet4/0.410: J.2.13.1 255.255.255.0 • GigabitEthernet4/0.420: J.2.14.1 255.255.255.248 • GigabitEthernet4/0.421: J.2.14.9 255.255.255.248 • GigabitEthernet4/0.430: J.2.15.1 255.255.255.248 • GigabitEthernet4/0.431: J.2.15.9 255.255.255.248 • GigabitEthernet4/0.432: J.2.15.17 255.255.255.248 • GigabitEthernet4/0.440: J.2.14.1 255.255.255.0 • POS5/0: J.2.0.41 255.255.255.252 • POS6/0: J.2.0.45 255.255.255.252

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 ISP2BB4  
!  
enable password lab  
!  
clock timezone PDT -8  
clock summer-time PDT recurring  
!  
!  
!  
!  
ip subnet-zero  
no ip domain-lookup  
ip multicast-routing distributed  
clns routing  
!  
!  
interface Loopback0  
ip address J.2.0.204 255.255.255.255  
no ip directed-broadcast  
ip pim sparse-mode  
ip router isis  
ip mroute-cache distributed  
!  
interface Loopback1  
ip address J.2.0.124 255.255.255.255  
no ip directed-broadcast  
ip pim sparse-mode  
ip router isis  
ip mroute-cache distributed  
!  
interface POS0/0  
description TO ISP2BB7, POS 4/0  
ip address J.2.0.49 255.255.255.252  
no ip directed-broadcast  
ip pim sparse-mode  
ip router isis  
ip mroute-cache distributed  
crc 32  
clock source internal  
!  
interface POS2/0  
description TO ISP2BB2, POS 4/0  
ip address J.2.0.26 255.255.255.252  
no ip directed-broadcast  
ip pim sparse-mode  
ip router isis  
ip mroute-cache distributed  
crc 32  
clock source internal  
!  
interface POS3/0  
description TO ISP2BB3, POS 4/0  
ip address J.2.0.34 255.255.255.252  
no ip directed-broadcast  
ip pim sparse-mode  
ip router isis  
ip mroute-cache distributed  
crc 32  
clock source internal  
!  
interface GigabitEthernet4/0  
no ip address
```

```

no ip directed-broadcast
!
interface GigabitEthernet4/0.430
description To Client/Server
encapsulation dot1Q 430
ip address J.2.15.1 255.255.255.248
no ip directed-broadcast
ip pim sparse-mode
ip router isis
!
interface GigabitEthernet4/0.440
description OPEN
encapsulation dot1Q 440
ip address J.2.16.1 255.255.255.0
no ip directed-broadcast
ip pim sparse-mode
ip router isis
!
interface POS5/0
description TO ISP2BB5, POS 4/0
ip address J.2.0.41 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip router isis
ip mroute-cache distributed
crc 32
clock source internal
!
interface POS6/0
description TO ISP2BB6, POS 4/0
ip address J.2.0.45 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip router isis
ip mroute-cache distributed
crc 32
clock source internal
!
router isis
net 49.0002.0000.0000.0004.00
is-type level-1
!
router bgp 2
no synchronization
redistribute connected route-map connected-bgp
neighbor ISP2INTERNAL peer-group nlri unicast multicast
neighbor ISP2INTERNAL remote-as 2
neighbor ISP2INTERNAL update-source Loopback0
neighbor J.2.0.201 peer-group ISP2INTERNAL
neighbor J.2.0.202 peer-group ISP2INTERNAL
neighbor J.2.0.203 peer-group ISP2INTERNAL
neighbor J.2.0.205 peer-group ISP2INTERNAL
neighbor J.2.0.206 peer-group ISP2INTERNAL
neighbor J.2.0.207 peer-group ISP2INTERNAL
neighbor J.2.0.208 peer-group ISP2INTERNAL
no auto-summary
!
no ip classless
ip pim rp-address J.2.0.124
ip msdp peer J.1.0.207 connect-source Loopback0 remote-as 1
ip msdp sa-filter in J.1.0.207 list 124
ip msdp sa-filter out J.1.0.207 list 124
ip msdp peer J.4.0.203 connect-source Loopback0 remote-as 4
ip msdp sa-filter in J.4.0.203 list 124

```

```

ip msdp sa-filter out J.4.0.203 list 124
ip msdp peer J.3.0.207 connect-source Loopback0 remote-as 3
ip msdp sa-filter in J.3.0.207 list 124
ip msdp sa-filter out J.3.0.207 list 124
ip msdp cache-sa-state
!
logging trap emergencies
access-list 112 permit ip J.2.0.0 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
arp J.2.14.10 0010.8001.e288 ARPA
arp J.2.14.2 0010.8001.e280 ARPA
route-map connected-bgp permit 10
match ip address 112
set ip next-hop J.2.0.204
set origin igp
!
snmp-server engineID local 00000009020000101F454080
snmp-server community public RO
snmp-server community STSS RW
snmp-server contact sysadmin
snmp-server chassis-id ISP2BB4
!
!
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

```

ISP2BB5

Device Characteristics

Table 17 shows the device characteristics for ISP2BB5.

Table 17 *Hardware and Software Device Characteristics for ISP2BB5*

Host name	ISP2BB5
Chassis type	Cisco 12008 Gigabit Switch Router (GSR)
Physical interfaces	• 1 Ethernet/IEEE 802.3 • 1 Gigabit Ethernet/IEEE 802.3 • 6 Packet Over SONET (POS)
Hardware components	• Cisco 12008/GRP (R5000) processor (revision 0x01) • 1 Route Processor card • 1 clock scheduler card • 3 switch fabric cards • 6 OC-12 POS controllers (6 POS) • 1 single-port Gigabit Ethernet/IEEE 802.3z controller (1 Gigabit Ethernet)
Software loaded	Cisco IOS Release 12.0(10)S
Memory	Cisco 12008/GRP (R5000) processor (revision 0x01): 128 MB
IP addresses	• Loopback0: J.2.0.205 255.255.255.255 • POS0/0: J.2.0.57 255.255.255.252 • POS4/0: J.2.0.42 255.255.255.252 • GigabitEthernet5/0.510: J.2.17.1 255.255.255.0 • GigabitEthernet5/0.520: J.2.18.1 255.255.255.248 • GigabitEthernet5/0.521: J.2.18.9 255.255.255.248 • GigabitEthernet5/0.530: J.2.19.1 255.255.255.248 • GigabitEthernet5/0.531: J.2.19.9 255.255.255.248 • GigabitEthernet5/0.532: J.2.19.17 255.255.255.248 • GigabitEthernet5/0.540: J.2.20.1 255.255.255.0 • POS6/0: J.2.0.53 255.255.255.252

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 ISP2BB5
!
no logging console
enable password lab
!
clock timezone PDT -8

```

```
clock summer-time PDT recurring
!
!
!
!
ip subnet-zero
no ip domain-lookup
ip multicast-routing distributed
clns routing
!
!
interface Loopback0
ip address J.2.0.205 255.255.255.255
no ip directed-broadcast
ip pim sparse-mode
ip router isis
ip mroute-cache distributed
!
interface POS0/0
description TO ISP2BB7, POS 5/0
ip address J.2.0.57 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip router isis
ip mroute-cache distributed
crc 32
clock source internal
!
interface POS4/0
description TO ISP2BB4, POS 5/0
ip address J.2.0.42 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip router isis
ip mroute-cache distributed
crc 32
clock source internal
!
interface GigabitEthernet5/0
no ip address
no ip directed-broadcast
!
interface GigabitEthernet5/0.530
description To Client/Server
encapsulation dot1Q 530
ip address J.2.19.1 255.255.255.248
no ip directed-broadcast
ip pim sparse-mode
ip router isis
!
interface GigabitEthernet5/0.540
description TO BGPTool
encapsulation dot1Q 540
ip address J.2.20.1 255.255.255.0
no ip directed-broadcast
ip pim sparse-mode
ip router isis
!
interface POS6/0
description TO ISP2BB6, POS 5/0
ip address J.2.0.53 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
```

```

ip router isis
ip mroute-cache distributed
crc 32
clock source internal
!
router isis
net 49.0002.0000.0000.0005.00
is-type level-1
!
router bgp 2
no synchronization
redistribute connected route-map connected-bgp
neighbor ISP2INTERNAL peer-group nlri unicast multicast
neighbor ISP2INTERNAL remote-as 2
neighbor ISP2INTERNAL update-source Loopback0
neighbor I2EBGP1 peer-group
neighbor J.2.0.201 peer-group ISP2INTERNAL
neighbor J.2.0.202 peer-group ISP2INTERNAL
neighbor J.2.0.203 peer-group ISP2INTERNAL
neighbor J.2.0.204 peer-group ISP2INTERNAL
neighbor J.2.0.206 peer-group ISP2INTERNAL
neighbor J.2.0.207 peer-group ISP2INTERNAL
neighbor J.2.0.208 peer-group ISP2INTERNAL
neighbor J.2.20.2 remote-as 200
neighbor J.2.20.2 peer-group I2EBGP1
neighbor J.2.20.3 remote-as 201
neighbor J.2.20.3 peer-group I2EBGP1
neighbor J.2.20.4 remote-as 202
neighbor J.2.20.4 peer-group I2EBGP1
neighbor J.2.20.5 remote-as 203
neighbor J.2.20.5 peer-group I2EBGP1
neighbor J.2.20.6 remote-as 204
neighbor J.2.20.6 peer-group I2EBGP1
neighbor J.2.20.7 remote-as 205
neighbor J.2.20.7 peer-group I2EBGP1
neighbor J.2.20.8 remote-as 206
neighbor J.2.20.8 peer-group I2EBGP1
neighbor J.2.20.9 remote-as 207
neighbor J.2.20.9 peer-group I2EBGP1
neighbor J.2.20.10 remote-as 208
neighbor J.2.20.10 peer-group I2EBGP1
neighbor J.2.20.11 remote-as 209
neighbor J.2.20.11 peer-group I2EBGP1
neighbor J.2.20.12 remote-as 210
neighbor J.2.20.12 peer-group I2EBGP1
neighbor J.2.20.13 remote-as 211
neighbor J.2.20.13 peer-group I2EBGP1
neighbor J.2.20.14 remote-as 212
neighbor J.2.20.14 peer-group I2EBGP1
neighbor J.2.20.15 remote-as 213
neighbor J.2.20.15 peer-group I2EBGP1
neighbor J.2.20.16 remote-as 214
neighbor J.2.20.16 peer-group I2EBGP1
neighbor J.2.20.17 remote-as 215
neighbor J.2.20.17 peer-group I2EBGP1
neighbor J.2.20.18 remote-as 216
neighbor J.2.20.18 peer-group I2EBGP1
neighbor J.2.20.19 remote-as 217
neighbor J.2.20.19 peer-group I2EBGP1
neighbor J.2.20.20 remote-as 218
neighbor J.2.20.20 peer-group I2EBGP1
neighbor J.2.20.21 remote-as 219
neighbor J.2.20.21 peer-group I2EBGP1
neighbor J.2.20.22 remote-as 220

```

```
neighbor J.2.20.22 peer-group I2EBGP1
neighbor J.2.20.23 remote-as 221
neighbor J.2.20.23 peer-group I2EBGP1
neighbor J.2.20.24 remote-as 222
neighbor J.2.20.24 peer-group I2EBGP1
neighbor J.2.20.25 remote-as 223
neighbor J.2.20.25 peer-group I2EBGP1
neighbor J.2.20.26 remote-as 224
neighbor J.2.20.26 peer-group I2EBGP1
neighbor J.2.20.27 remote-as 225
neighbor J.2.20.27 peer-group I2EBGP1
neighbor J.2.20.28 remote-as 226
neighbor J.2.20.28 peer-group I2EBGP1
neighbor J.2.20.29 remote-as 227
neighbor J.2.20.29 peer-group I2EBGP1
neighbor J.2.20.30 remote-as 228
neighbor J.2.20.30 peer-group I2EBGP1
neighbor J.2.20.31 remote-as 229
neighbor J.2.20.31 peer-group I2EBGP1
neighbor J.2.20.32 remote-as 230
neighbor J.2.20.32 peer-group I2EBGP1
neighbor J.2.20.33 remote-as 231
neighbor J.2.20.33 peer-group I2EBGP1
neighbor J.2.20.100 remote-as 290
neighbor J.2.20.100 peer-group I2EBGP1
neighbor J.2.20.101 remote-as 291
neighbor J.2.20.101 peer-group I2EBGP1
no auto-summary
!
no ip classless
ip pim rp-address J.2.0.124
!
logging trap emergencies
access-list 112 permit ip J.2.0.0 0.0.255.255 255.255.0.0 0.0.255.255
access-list 112 deny ip any any
arp J.2.18.2 0010.8001.e2a0 ARPA
arp J.2.18.10 0010.8001.e2a8 ARPA
route-map connected-bgp permit 10
match ip address 112
set ip next-hop J.2.0.205
set origin igp
!
snmp-server engineID local 00000009020000101F4534A0
snmp-server community public RO
snmp-server community STSS RW
snmp-server contact sysadmin
snmp-server chassis-id ISP2BB5
!
!
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
```

ISP2BB6

Device Characteristics

Table 18 shows the device characteristics for ISP2BB6.

Table 18 *Hardware and Software Device Characteristics for ISP2BB6*

Host name	ISP2BB6
Chassis type	Cisco 12008 Gigabit Switch Router (GSR)
Physical interfaces	• 1 Ethernet/IEEE 802.3 • 1 Gigabit Ethernet/IEEE 802.3 • 7 Packet Over SONET (POS)
Hardware components	• Cisco 12008/GRP (R5000) processor (revision 0x01) • 1 Route Processor card • 1 clock scheduler card • 3 switch fabric cards • 1 four-port OC-3 POS controller (4 POS) • 3 OC-12 POS controllers (3 POS) • 1 single-port Gigabit Ethernet/IEEE 802.3z controller (1 Gigabit Ethernet)
Software loaded	Cisco IOS Release 12.0(10)S
Memory	Cisco 12008/GRP (R5000) processor (revision 0x01): 128 MB
IP addresses	• Loopback0: J.2.0.206 255.255.255.255 • POS0/0: J.2.0.249 255.255.255.252 • POS4/0: J.2.0.46 255.255.255.252 • POS5/0: J.2.0.54 255.255.255.252 • GigabitEthernet6/0.610: J.2.21.1 255.255.255.0 • GigabitEthernet6/0.620: J.2.22.1 255.255.255.248 • GigabitEthernet6/0.621: J.2.22.9 255.255.255.248 • GigabitEthernet6/0.630: J.2.23.1 255.255.255.248 • GigabitEthernet6/0.631: J.2.23.9 255.255.255.248 • GigabitEthernet6/0.632: J.2.23.17 255.255.255.248 • GigabitEthernet6/0.640: J.2.24.1 255.255.255.0

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 ISP2BB6
!
no logging console
enable password lab
!
clock timezone PDT -8
clock summer-time PDT recurring
!
!
!
!
ip subnet-zero
no ip domain-lookup
ip multicast-routing distributed
clns routing
!
!
interface Loopback0
ip address J.2.0.206 255.255.255.255
no ip directed-broadcast
ip pim sparse-mode
ip router isis
ip mroute-cache distributed
!
interface POS0/0
description TO ISP4BB3, POS5/0/0
ip address J.2.0.249 255.255.255.252
no ip directed-broadcast
ip pim bsr-border
ip pim sparse-mode
ip multicast boundary 1
ip router isis
ip mroute-cache distributed
crc 16
clock source internal
!
interface POS4/0
description TO ISP2BB4, POS 6/0
ip address J.2.0.46 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip router isis
ip mroute-cache distributed
crc 32
clock source internal
!
interface POS5/0
description TO ISP2BB5, POS6/0
ip address J.2.0.54 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip router isis
ip mroute-cache distributed
crc 32
clock source internal
!
interface GigabitEthernet6/0
no ip address
```

```

no ip directed-broadcast
!
interface GigabitEthernet6/0.630
description Client/Server
encapsulation dot1Q 630
ip address J.2.23.1 255.255.255.248
no ip directed-broadcast
ip pim sparse-mode
ip router isis
!
interface GigabitEthernet6/0.640
description OPEN
encapsulation dot1Q 640
ip address J.2.24.1 255.255.255.0
no ip directed-broadcast
ip pim sparse-mode
ip router isis
!
router isis
net 49.0002.0000.0000.0006.00
is-type level-1
!
router bgp 2
no synchronization
redistribute connected route-map connected-bgp
neighbor ISP2INTERNAL peer-group nlri unicast multicast
neighbor ISP2INTERNAL remote-as 2
neighbor ISP2INTERNAL update-source Loopback0
neighbor ISP2ISP4PEER peer-group nlri unicast multicast
neighbor ISP2ISP4PEER remote-as 4
neighbor J.2.0.201 peer-group ISP2INTERNAL
neighbor J.2.0.202 peer-group ISP2INTERNAL
neighbor J.2.0.203 peer-group ISP2INTERNAL
neighbor J.2.0.204 peer-group ISP2INTERNAL
neighbor J.2.0.205 peer-group ISP2INTERNAL
neighbor J.2.0.207 peer-group ISP2INTERNAL
neighbor J.2.0.208 peer-group ISP2INTERNAL
neighbor J.2.0.250 peer-group ISP2ISP4PEER
no auto-summary
!
no ip classless
ip http server
ip http authentication local
ip pim rp-address J.2.0.124
!
logging trap emergencies
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 112 permit ip J.2.0.0 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
arp J.2.22.2 0010.8001.e300 ARPA
arp J.2.22.10 0010.8001.e308 ARPA
route-map connected-bgp permit 10
match ip address 112
set ip next-hop J.2.0.206
set origin igp
!
snmp-server engineID local 00000009020000101F4548C0
snmp-server community public RO

```

```

snmp-server community STSS RW
snmp-server contact sysadmin
snmp-server chassis-id ISP2BB6
!
!
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

```

ISP2BB7

Device Characteristics

Table 19 shows the device characteristics for ISP2BB7.

Table 19 *Hardware and Software Device Characteristics for ISP2BB7*

Host name	ISP2BB7
Chassis type	Cisco 12008 Gigabit Switch Router (GSR)
Physical interfaces	• 1 Ethernet/IEEE 802.3 • 1 Gigabit Ethernet/IEEE 802.3 • 7 Packet Over SONET (POS)
Hardware components	• Cisco 12008/GRP (R5000) processor (revision 0x01) • 1 Route Processor card • 1 clock scheduler card • 3 switch fabric cards • 1 four-port OC-3 POS controller (4 POS) • 3 OC-12 POS controllers (3 POS) • 1 single-port Gigabit Ethernet/IEEE 802.3z controller (1 Gigabit Ethernet)
Software loaded	Cisco IOS Release 12.0(10)S

Table 19 *Hardware and Software Device Characteristics for ISP2BB7 (continued)*

Memory	Cisco 12008/GRP (R5000) processor (revision 0x01): 128 MB
IP addresses	• Loopback0: J.2.0.207 255.255.255.255 • POS0/0: J.2.0.253 255.255.255.252 • POS4/0: J.2.0.50 255.255.255.252 • POS5/0: J.2.0.58 255.255.255.252 • GigabitEthernet6/0.710: J.2.25.1 255.255.255.248 • GigabitEthernet6/0.720: J.2.26.1 255.255.255.248 • GigabitEthernet6/0.721: J.2.26.9 255.255.255.248 • GigabitEthernet6/0.730: J.2.27.1 255.255.255.248 • GigabitEthernet6/0.731: J.2.27.9 255.255.255.248 • GigabitEthernet6/0.732: J.2.27.17 255.255.255.248 • GigabitEthernet6/0.740: J.2.28.1 255.255.255.0

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 ISP2BB7
!
no logging console
enable password lab
!
clock timezone PDT -8
clock summer-time PDT recurring
!
!
!
!
!
ip subnet-zero
no ip domain-lookup
ip multicast-routing distributed
cns routing
!
!
interface Loopback0
ip address J.2.0.207 255.255.255.255
no ip directed-broadcast
ip pim sparse-mode
ip router isis
ip mroute-cache distributed
!
interface POS0/0
description TO ISP1BB7, POS9/0/0
ip address J.2.0.253 255.255.255.252

```

```
no ip directed-broadcast
ip pim bsr-border
ip pim sparse-mode
ip multicast boundary 1
ip router isis
ip mroute-cache distributed
crc 16
clock source internal
!
interface POS4/0
description TO ISP2BB4, POS 0/0
ip address J.2.0.50 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip router isis
ip mroute-cache distributed
crc 32
clock source internal
!
interface POS5/0
description TO ISP2BB5, POS 0/0
ip address J.2.0.58 255.255.255.252
no ip directed-broadcast
ip pim sparse-mode
ip router isis
ip mroute-cache distributed
crc 32
clock source internal
!
interface GigabitEthernet6/0
no ip address
no ip directed-broadcast
load-interval 30
!
interface GigabitEthernet6/0.730
description Client/Server
encapsulation dot1Q 730
ip address J.2.27.1 255.255.255.248
no ip directed-broadcast
ip pim sparse-mode
ip router isis
!
interface GigabitEthernet6/0.740
description OPEN
encapsulation dot1Q 740
ip address J.2.28.1 255.255.255.0
no ip directed-broadcast
ip pim sparse-mode
ip router isis
!
router isis
net 49.0002.0000.0000.0007.00
is-type level-1
!
router bgp 2
no synchronization
redistribute connected route-map connected-bgp
neighbor ISP2INTERNAL peer-group nlri unicast multicast
neighbor ISP2INTERNAL remote-as 2
neighbor ISP2INTERNAL update-source Loopback0
neighbor J.2.0.201 peer-group ISP2INTERNAL
neighbor J.2.0.202 peer-group ISP2INTERNAL
neighbor J.2.0.203 peer-group ISP2INTERNAL
neighbor J.2.0.204 peer-group ISP2INTERNAL
```

```

neighbor J.2.0.205 peer-group ISP2INTERNAL
neighbor J.2.0.206 peer-group ISP2INTERNAL
neighbor J.2.0.208 peer-group ISP2INTERNAL
neighbor J.2.0.254 remote-as 1 nlri unicast multicast
!
no ip classless
ip pim rp-address J.2.0.124
!
logging trap emergencies
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 112 permit ip J.2.0.0 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
arp J.2.26.10 0010.8001.e328 ARPA
arp J.2.26.2 0010.8001.e320 ARPA
route-map connected-bgp permit 10
match ip address 112
set ip next-hop J.2.0.207
set origin igp
!
snmp-server engineID local 00000009020000101F4538C0
snmp-server community public RO
snmp-server community STSS RW
snmp-server contact sysadmin
snmp-server chassis-id ISP2BB7
!
!
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

```