

Report

Cloud Infrastructre Lab 1

Fabian Hauser and Michael Wieland

Hochschule für Technik Rapperswil

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2. Informationsbeschaffung

In einem ersten Schritt wurden sämtliche Konfigurationen mit dem Tool Tftpd64 von den Router und Switches kopiert. Diese wurden dann in einem nächsten Schritt auf Fehlkonfigurationen analysiert. Dabei gingen wir nach folgendem Schema vor:

1. Übersicht verschaffen.
2. Kopieren aller benötigten Konfigurationen
3. Ordnen und Analysieren der Konfiguration. Was ist überhaupt vorhanden?
4. Prüfen auf "Common Mistakes" mit besonderem Augenmerk auf die Layer 2 (VLAN, VTP, STP, Frame Relay) und Layer 3 Protokolle (OSPF)
5. Auswerten der gefunden Fehler
6. Feedback und Lösungsvorschläge

2.1. Tools

Für die Analyse wurden folgende Tools verwendet

1. Tftpd64 um Konfigurationen zu dumpen
2. jPerf um den Durchsatz zu messen
3. Putty für die Telnet und Serielle Verbindung zu den Router und Switches

2.2. Terminologie

Damit die Namen mehr an Bedeutung gewinnen, sollen folgend einige Abkürzungen nach besten Wissen ausgeschrieben werden.

HQ Head Quarter

BR Branch

DS Distribution Switch

CS Core Switch

WER WAN Exchange Router

IER Internet Exchange Router

FRR FrameRelayRouter

2.3. Konfiguration kopieren

Für jedes Geräte wurden die Outputs der folgenden Befehle auf die lokalen Notebooks kopiert. Alle Konfiguration sind im Anhang A zu finden:

```
1 copy run tftp und dann [your local ip addr]
2 show ip interface brief
3 show cdp neighbors
4 show interface status
5 show interface trunk
6 show vlan
7 show ip route
8 show spanning
```

2.4. Analyse des Konfigurationen

Folgende Tabellen dienen als Erweiterung zu den graphischen Schemas.

2.5. DHCP

DHCP Pool	Beschreibung	Bemerkung
172.16.1.0/24	HR	
172.16.2.0/24	ENGINEERING	
172.16.3.0/24	PRODUCTION	
172.16.4.0/24	FINANCE	
172.16.16.0/24	IT	DHCP exclude 172.16.16.1, 172.16.16.10 172.16.16.12
172.16.17.0/24	SERVER	DHCP exclude 172.16.17.1, 172.16.17.10 172.16.17.12
172.16.18.0/24	MARKETING	DHCP exclude 172.16.18.250, 172.16.18.254, 172.16.18.10 172.16.18.12
172.16.19.0/24	SALES	DHCP exclude 172.16.19.250, 172.16.19.254, 172.16.19.10 172.16.19.12
172.16.103.0/24	Branch 2	DHCP exclude 172.16.103.1, 172.16.103.10, 172.16.103.12

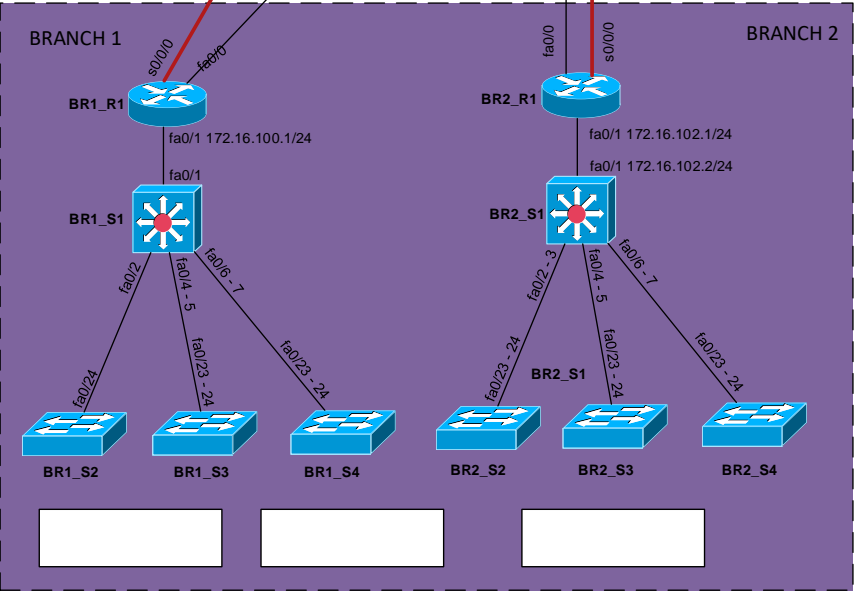
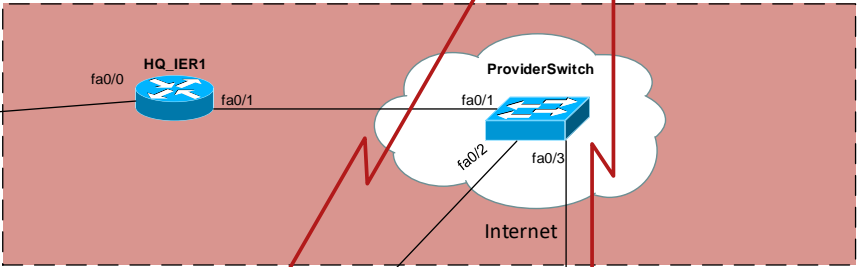
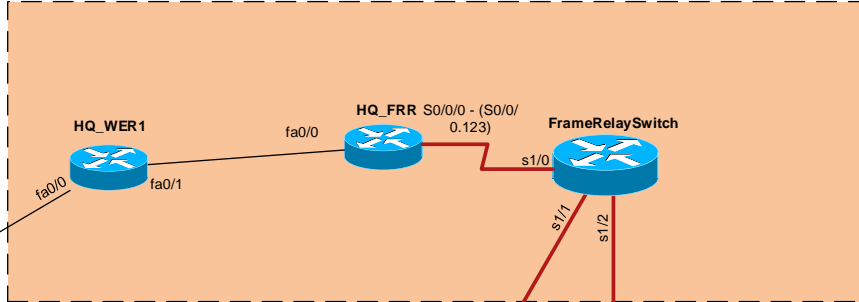
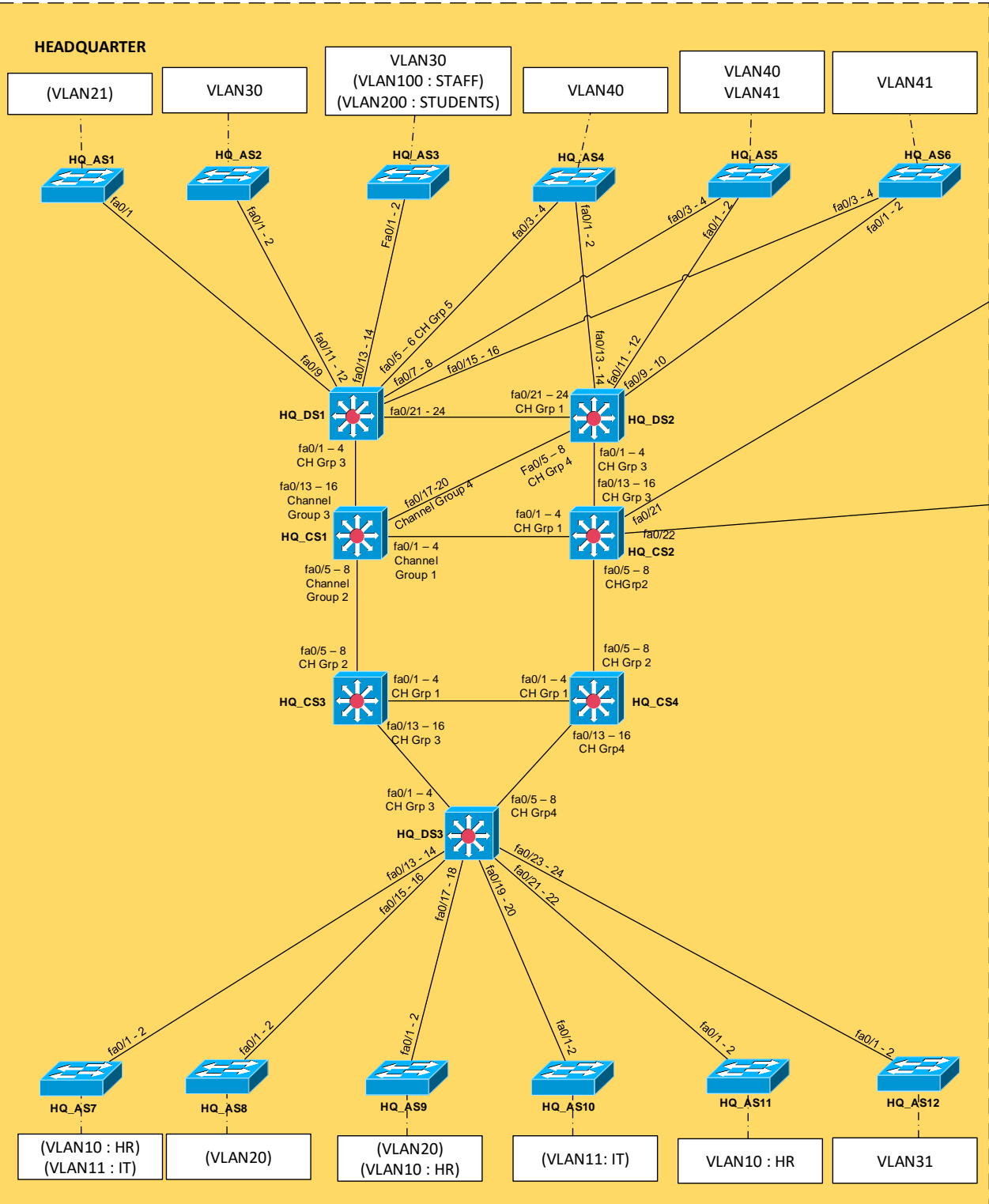
Tabelle 1: DHCP Pools

2.6. VLAN

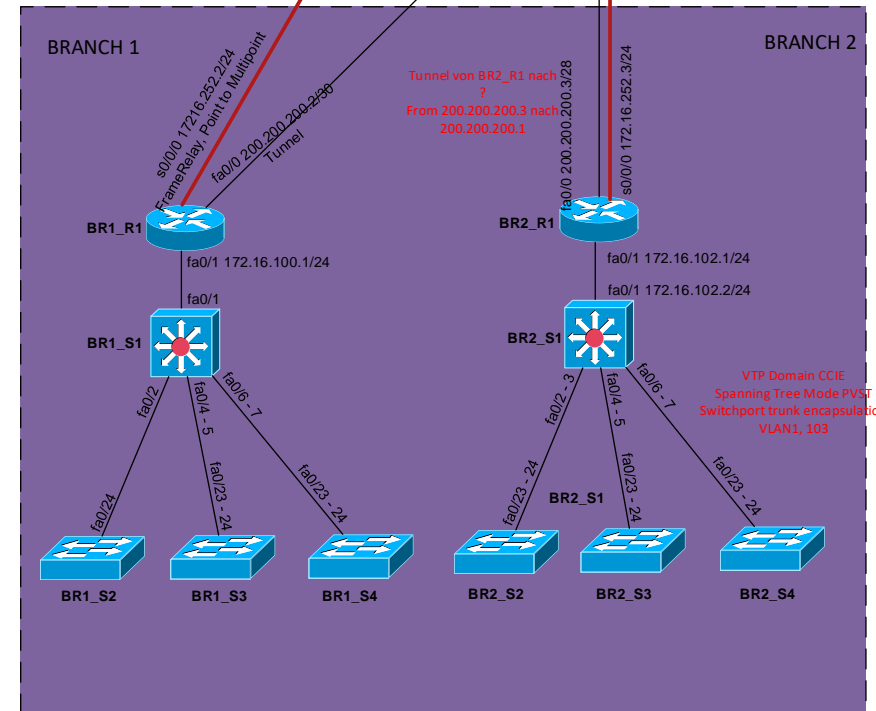
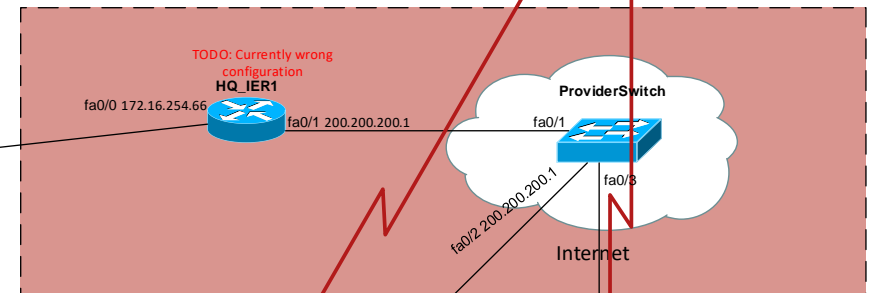
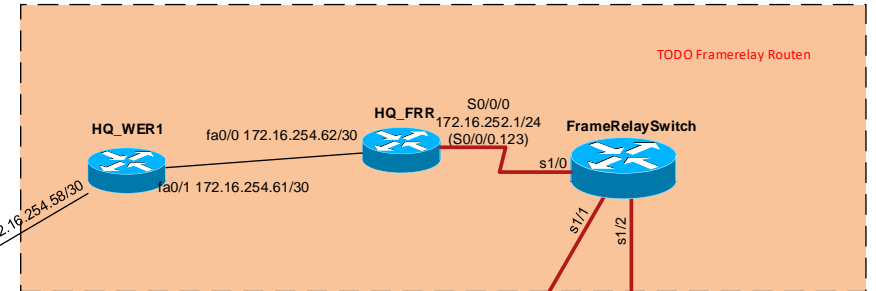
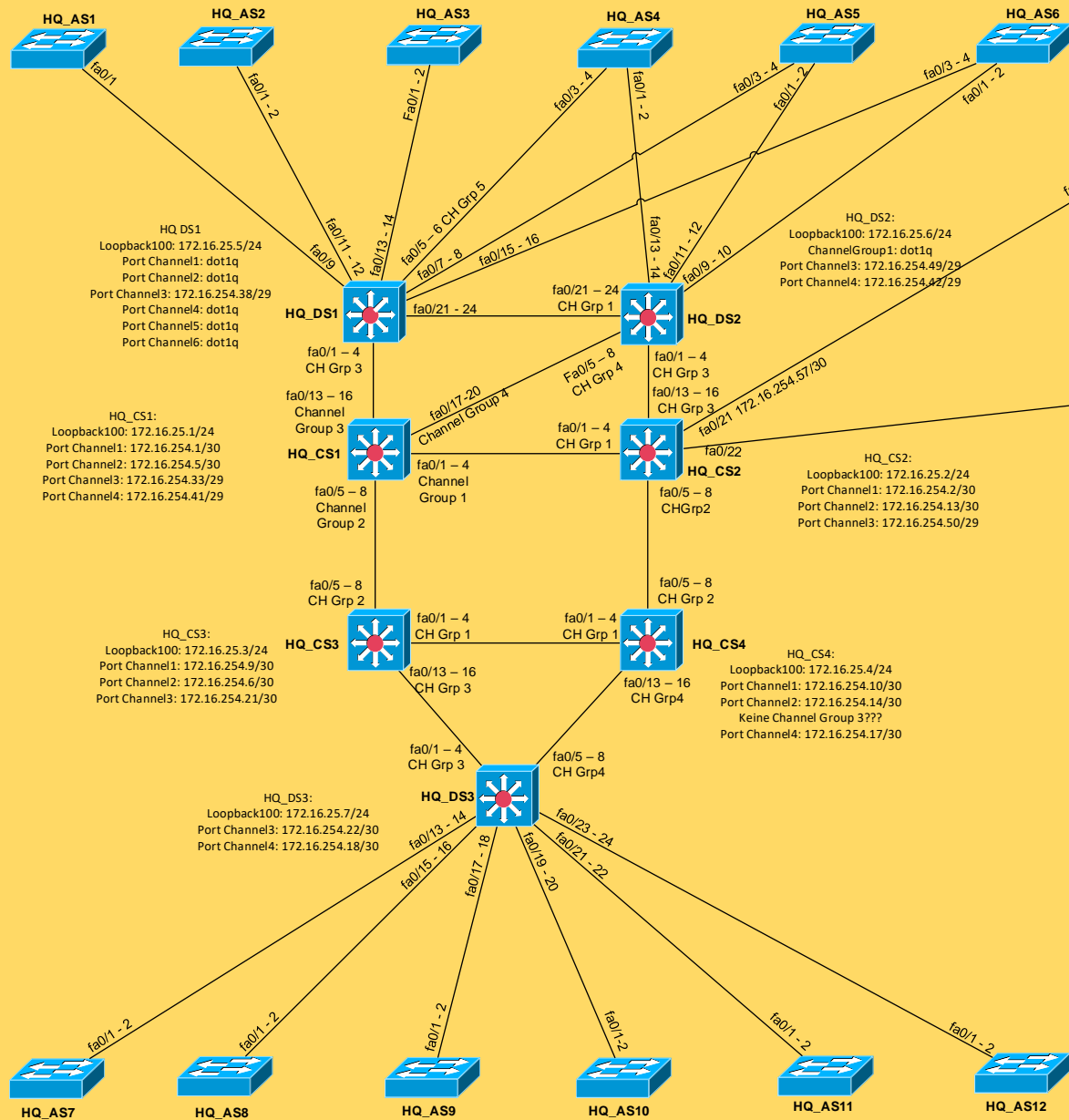
IEEE 802.1Q = Paketbasierte tagged VLAN's

VLAN	Name	Bedeutung
VLAN 10	HR	Personalabteilung
VLAN 11	IT	IT Abteilung
VLAN 99	MGMT	Management
VLAN 100	STAFF	Mitarbeiter
VLAN 150	IWAS	???
VLAN 200	STUDENTS	Studenten

Tabelle 2: VLAN's



HEADQUARTER



VLAN	Subnetz	Bemerkung
VLAN1	172.16.103.0/24	
VLAN10	172.16.1.0/24	
VLAN11	172.16.2.0/24	
VLAN20	no ip addr assigned	(router ospf)
VLAN21	172.16.16.0/24	(mtu-ignore)
VLAN30	172.16.17.0/24	
VLAN40	172.16.18.0/24	(standby)
VLAN41	172.16.19.0/24	(mtu ignore)
VLAN100	172.16.20.0/24	(mtu ignore)
VLAN103	172.16.23.0/24	

Tabelle 3: VLAN Subnetze

3. Gefundene Fehler

Unschön: Bei vertippen im Kommando wird immer nache dem Nameserver gesucht.

3.1. Layer 1

Auf OSI Layer 1 wurden keine Fehler gefunden.

3.2. Layer 2

3.2.1. Design

- HQ_CS2 bildet die einzige Verbindung zu den Branches. Es bildet somit einen Single Point of Failure

3.2.2. Speed

- Die Port Channel Group 4 beim HQ_CS1 ist auf Half Duplex 100Mbit/s eingestellt.
- Die Port Channel Group 2 bei HQ_CS2 ist auf 10Mbit/s eingestellt.

3.2.3. Spanning Tree

3.2.4. VLAN

- VLAN1 auf HQ_AS1 ist Administratively Down
- Nur Fa0/2, Gi0/1, Gi0/2 sind auf HQ_AS1 für VLAN1 konfiguriert
- Die meisten Interfaces auf HQ_AS1 sind im VLAN 21; dies ist in der VLAN Konfiguration nicht eingerichtet.
- Beim HQ_AS7 sind VLAN 10 und 11 auf Ports eingerichtet, aber nicht in der VLAN-Konfiguration
- Beim HQ_AS3 sind VLAN 100 und 200 auf Ports eingerichtet, aber nicht in der VLAN-Konfiguration.
- Beim HQ_AS8 ist VLAN 20 auf Ports eingerichtet, aber nicht in der VLAN-Konfiguration.
- Beim HQ_AS9 VLAN 10 und VLAN 20 auf Ports eingerichtet, aber nicht in der VLAN-Konfiguration.
- Beim HQ_AS10 VLAN 11 auf Ports eingerichtet, aber nicht in der VLAN-Konfiguration.

3.3. Layer 3

3.3.1. Routen

3.4. OSPF

4. Messungen

4.1. Traceroute

Alle Durchgeführten Traceroute Messungen sind im Anhang B zu finden.

4.2. jPerf

5. Empfehlungen

Aufgrund der vorangehenden Erkenntnissen empfehlen wir, an folgenden Punkten anzusetzen:

1. Alle 10 und 100Mbit/s Leitung auf den maximal physisch möglichen Durchsatz aufschrauben.

5.1. Kostenvoranschlag

Für die Umsetzung unserer Empfehlungen würden folgende Kosten anfallen.

Beschreibung	Zeitaufwand in h	Stundenansatz in CHF	Total
Total			<u><u>1 Million</u></u>

Tabelle 4: Kostenvoranschlag

A. Konfigurationen

A.1. BR1-R1

A.1.1. Running Configuration

```
1 BR1_R1#show run
2 Building configuration...
3
4
5 Current configuration : 1829 bytes
6 !
7 ! Last configuration change at 16:09:57 UTC Fri Jul 4 2014
8 version 15.1
9 service timestamps debug datetime msec
10 service timestamps log datetime msec
11 no service password-encryption
12 !
13 hostname BR1_R1
14 !
15 boot-start-marker
16 boot-end-marker
17 !
18 !
19 enable secret 5 $1$iIN0$WQSejQFOMmTy6nGBblqi60
20 !
21 no aaa new-model
22 !
23 memory-size iomem 10
24 !
25 dot11 syslog
26 ip source-route
27 !
28 !
29 ip cef
30 !
31 !
32 !
33 no ipv6 cef
34 !
35 multilink bundle-name authenticated
36 !
37 !
38 !
39 !
40 !
41 !
42 !
43 !
44 !
45 !
46 !
47 voice-card 0
48 !
49 crypto pki token default removal timeout 0
50 !
51 !
52 !
53 !
54 license udi pid CISC02811 sn FCZ14322073
55 archive
```

```
56 log config
57   hidekeys
58 !
59 redundancy
60 !
61 !
62 !
63 !
64 !
65 !
66 !
67 !
68 !
69 !
70 interface Tunnel0
71   ip address 172.16.255.2 255.255.255.252
72   ip ospf 1 area 0
73   tunnel source 200.200.200.2
74   tunnel destination 200.200.200.1
75 !
76 interface FastEthernet0/0
77   ip address 200.200.200.2 255.255.255.240
78   duplex auto
79   speed auto
80 !
81 interface FastEthernet0/1
82   ip address 172.16.100.1 255.255.255.0
83   ip ospf 1 area 0
84   duplex auto
85   speed auto
86 !
87 interface Serial0/0/0
88   ip address 172.16.252.2 255.255.255.0
89   encapsulation frame-relay
90   ip ospf network point-to-multipoint
91   ip ospf 1 area 0
92   no fair-queue
93   frame-relay map ip 172.16.252.1 201 broadcast
94   no frame-relay inverse-arp IP 203
95   frame-relay lmi-type cisco
96 !
97 interface Serial0/0/1
98   no ip address
99   shutdown
100  clock rate 2000000
101 !
102 interface Serial1/0
103   no ip address
104   shutdown
105 !
106 interface Serial1/1
107   no ip address
108   shutdown
109 !
110 interface Serial1/2
111   no ip address
112   shutdown
113 !
114 interface Serial1/3
115   no ip address
116   shutdown
117 !
```

```

118 router ospf 1
119 !
120 ip forward-protocol nd
121 ip http server
122 no ip http secure-server
123 !
124 !
125 !
126 !
127 !
128 !
129 !
130 snmp-server community public R0
131 snmp-server community private RW
132 !
133 !
134 control-plane
135 !
136 !
137 !
138 !
139 mgcp profile default
140 !
141 !
142 !
143 !
144 !
145 !
146 line con 0
147 line aux 0
148 line vty 0 4
149 password ins@lab
150 login
151 transport input all
152 !
153 scheduler allocate 20000 1000
154 end

```

A.1.2. IP Interfaces

```

1 BR1_R1#show ip interface brief
2 Interface IP-Address OK? Method Status Protocol
3 FastEthernet0/0 200.200.200.2 YES manual up up
4 FastEthernet0/1 172.16.100.1 YES manual up up
5 Serial0/0/0 172.16.252.2 YES manual up up
6 Serial0/0/1 unassigned YES unset administratively down down
7 Serial1/0 unassigned YES unset administratively down down
8 Serial1/1 unassigned YES unset administratively down down
9 Serial1/2 unassigned YES unset administratively down down
10 Serial1/3 unassigned YES unset administratively down down
11 Tunnel0 172.16.255.2 YES manual up up

```

A.1.3. Interface Status

```

1 BR1_R1>show interface status

```

A.1.4. Interface Trunk

```
1 BR1_R1>show interface trunk
```

A.1.5. Neighbors

```
1 BR1_R1#show cdp neighbors
2 Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
3                   S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone,
4                   D - Remote, C - CVTA, M - Two-port Mac Relay
5
6 Device ID      Local Intrfce Holdtme Capability Platform Port ID
7 BR1_S1        Fas 0/1      130      R S I WS-C3560- Fas 0/1
8 Switch        Fas 0/0      120      S I WS-C2960- Fas 0/2
9 BR1_R1#
```

A.1.6. IP Route

```
1 BR1_R1#show ip route
2 Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
3         D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
4         N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
5         E1 - OSPF external type 1, E2 - OSPF external type 2
6         i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
7         ia - IS-IS inter area, * - candidate default, U - per-user static route
8         o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
9         + - replicated route, % - next hop override
10
11 Gateway of last resort is not set
12
13      172.16.0.0/16 is variably subnetted, 34 subnets, 4 masks
14 O      172.16.17.0/24 [110/69] via 172.16.252.1, 3d06h, Serial0/0/0
15 O      172.16.18.0/24 [110/68] via 172.16.252.1, 3d07h, Serial0/0/0
16 O      172.16.19.0/24 [110/68] via 172.16.252.1, 3d06h, Serial0/0/0
17 O      172.16.25.1/32 [110/68] via 172.16.252.1, 3d06h, Serial0/0/0
18 O      172.16.25.2/32 [110/67] via 172.16.252.1, 3d07h, Serial0/0/0
19 O      172.16.25.3/32 [110/69] via 172.16.252.1, 3d06h, Serial0/0/0
20 O      172.16.25.4/32 [110/70] via 172.16.252.1, 3d06h, Serial0/0/0
21 O      172.16.25.5/32 [110/69] via 172.16.252.1, 3d06h, Serial0/0/0
22 O      172.16.25.6/32 [110/68] via 172.16.252.1, 3d07h, Serial0/0/0
23 O      172.16.25.7/32 [110/70] via 172.16.252.1, 3d06h, Serial0/0/0
24 C      172.16.100.0/24 is directly connected, FastEthernet0/1
25 L      172.16.100.1/32 is directly connected, FastEthernet0/1
26 O      172.16.101.0/24 [110/2] via 172.16.100.2, 3d06h, FastEthernet0/1
27 O      172.16.102.0/24 [110/1068] via 172.16.252.1, 3d06h, Serial0/0/0
28 C      172.16.252.0/24 is directly connected, Serial0/0/0
29 O      172.16.252.1/32 [110/64] via 172.16.252.1, 3d13h, Serial0/0/0
30 L      172.16.252.2/32 is directly connected, Serial0/0/0
31 O      172.16.252.3/32 [110/1067] via 172.16.252.1, 3d06h, Serial0/0/0
32 O      172.16.254.0/30 [110/67] via 172.16.252.1, 3d06h, Serial0/0/0
33 O      172.16.254.4/30 [110/68] via 172.16.252.1, 3d06h, Serial0/0/0
34 O      172.16.254.8/30 [110/69] via 172.16.252.1, 3d06h, Serial0/0/0
35 O      172.16.254.12/30 [110/76] via 172.16.252.1, 3d07h, Serial0/0/0
36 O      172.16.254.16/30 [110/70] via 172.16.252.1, 3d06h, Serial0/0/0
37 O      172.16.254.20/30 [110/69] via 172.16.252.1, 3d06h, Serial0/0/0
38 O      172.16.254.32/29 [110/70] via 172.16.252.1, 3d06h, Serial0/0/0
39 O      172.16.254.40/29 [110/68] via 172.16.252.1, 3d06h, Serial0/0/0
```

```
40 O      172.16.254.48/29 [110/67] via 172.16.252.1, 3d07h, Serial0/0/0
41 O      172.16.254.56/30 [110/66] via 172.16.252.1, 3d07h, Serial0/0/0
42 O      172.16.254.60/30 [110/65] via 172.16.252.1, 3d13h, Serial0/0/0
43 O      172.16.254.64/30 [110/67] via 172.16.252.1, 3d07h, Serial0/0/0
44 C      172.16.255.0/30 is directly connected, Tunnel0
45 L      172.16.255.2/32 is directly connected, Tunnel0
46 O      172.16.255.4/30 [110/1067] via 172.16.252.1, 3d07h, Serial0/0/0
47 O      172.16.255.8/30 [110/1067] via 172.16.252.1, 3d07h, Serial0/0/0
48      200.200.200.0/24 is variably subnetted, 2 subnets, 2 masks
49 C      200.200.200.0/28 is directly connected, FastEthernet0/0
50 L      200.200.200.2/32 is directly connected, FastEthernet0/0
```

A.1.7. Spanning Tree

```
1 BR1_R1#show spanning
2
3 No spanning tree instances exist.
```

A.1.8. VLAN

```
1 BR1_R1#show vlans
2 No Virtual LANs configured
```

A.2. BR1-S1

A.2.1. Running Configuration

```
1 BR1_S1#show run
2 Building configuration...
3
4 Current configuration : 3888 bytes
5 !
6 version 12.2
7 no service pad
8 service timestamps debug datetime msec
9 service timestamps log datetime msec
10 no service password-encryption
11 !
12 hostname BR1_S1
13 !
14 boot-start-marker
15 boot-end-marker
16 !
17 enable secret 5 $1$dJ4X$aH6RNc09SZ.ooz6ktrrMn1
18 !
19 username ins password 0 ins@lab
20 !
21 !
22 no aaa new-model
23 system mtu routing 1500
24 ip routing
25 ip dhcp excluded-address 172.16.101.1
26 ip dhcp excluded-address 172.16.101.10 172.16.101.12
27 !
28 ip dhcp pool Branch1
29     network 172.16.101.0 255.255.255.0
```

```

30  default-router 172.16.101.1
31  !
32  !
33  !
34  !
35  crypto pki trustpoint TP-self-signed-802432128
36  enrollment selfsigned
37  subject-name cn=IOS-Self-Signed-Certificate-802432128
38  revocation-check none
39  rsakeypair TP-self-signed-802432128
40  !
41  !
42  crypto pki certificate chain TP-self-signed-802432128
43  certificate self-signed 01
44  3082023D 308201A6 A0030201 02020101 300D0609 2A864886 F70D0101 04050030
45  30312E30 2C060355 04031325 494F532D 53656C66 2D536967 6E65642D 43657274
46  69666963 6174652D 38303234 33323132 38301E17 0D393330 33303130 35353230
47  325A170D 32303031 30313030 30303030 5A303031 2E302C06 03550403 1325494F
48  532D5365 6C662D53 69676E65 642D4365 72746966 69636174 652D3830 32343332
49  31323830 819F300D 06092A86 4886F70D 01010105 0003818D 00308189 02818100
50  C6767C8B 74F76A0B E52B17D3 EDB140B1 FB84E668 2060B119 57F18207 C581AB9B
51  5460655A CE5B6D41 839BDA45 F3FBFB4C 13F1AEB2 72BFA93C FB84FB71 18479182
52  E33D9F85 E9ABF67D B7A70443 8E3BA50E 645BA919 2F1F0F95 C273BCA2 3815D92D
53  E0E5A57D 3256CE21 F8A6D722 375884AF 69F71986 37D5CF6D DAF04C43 E43EACD5
54  02030100 01A36730 65300F06 03551D13 0101FF04 05300301 01FF3012 0603551D
55  11040B30 09820742 52315F53 312E301F 0603551D 23041830 16801459 42E114A0
56  B9A79060 D06C6C00 251F1132 38083530 1D060355 1D0E0416 04145942 E114A0B9
57  A79060D0 6C6C0025 1F113238 0835300D 06092A86 4886F70D 01010405 00038181
58  0056383D 463FEB CD 6408EC1B B6FB7509 1137C129 F9BE2DA7 6FAE9C50 C8C9CE12
59  30C0564D 4F64F5CA A531575B F56F6E99 54BE16F4 7763843E 893842ED 33FDE7B2
60  84180226 BEBE83CB 540E557F F07162ED 0AA190B7 4758EB4F EAE4DA1 52F7F9CD
61  7E53365D AA90243F 308A56B4 B99516C2 E1991FFC E203EA4F 821DFF83 EDB2FBA5 72
62  quit
63  !
64  !
65  !
66  spanning-tree mode pvst
67  spanning-tree extend system-id
68  !
69  vlan internal allocation policy ascending
70  !
71  !
72  !
73  !
74  interface FastEthernet0/1
75  no switchport
76  ip address 172.16.100.2 255.255.255.0
77  ip ospf 1 area 0
78  !
79  interface FastEthernet0/2
80  switchport trunk encapsulation dot1q
81  switchport mode trunk
82  !
83  interface FastEthernet0/3
84  switchport trunk encapsulation dot1q
85  switchport mode trunk
86  !
87  interface FastEthernet0/4
88  switchport trunk encapsulation dot1q
89  switchport mode trunk
90  !
91  interface FastEthernet0/5

```

```
92  switchport trunk encapsulation dot1q
93  switchport mode trunk
94  !
95  interface FastEthernet0/6
96  switchport trunk encapsulation dot1q
97  switchport mode trunk
98  !
99  interface FastEthernet0/7
100 switchport trunk encapsulation dot1q
101 switchport mode trunk
102 !
103 interface FastEthernet0/8
104 !
105 interface FastEthernet0/9
106 !
107 interface FastEthernet0/10
108 !
109 interface FastEthernet0/11
110 !
111 interface FastEthernet0/12
112 !
113 interface FastEthernet0/13
114 !
115 interface FastEthernet0/14
116 !
117 interface FastEthernet0/15
118 !
119 interface FastEthernet0/16
120 !
121 interface FastEthernet0/17
122 !
123 interface FastEthernet0/18
124 !
125 interface FastEthernet0/19
126 !
127 interface FastEthernet0/20
128 !
129 interface FastEthernet0/21
130 !
131 interface FastEthernet0/22
132 !
133 interface FastEthernet0/23
134 !
135 interface FastEthernet0/24
136 !
137 interface GigabitEthernet0/1
138 !
139 interface GigabitEthernet0/2
140 !
141 interface Vlan1
142 ip address 172.16.101.1 255.255.255.0
143 ip ospf 1 area 0
144 !
145 interface Vlan102
146 ip address 172.16.22.1 255.255.255.0
147 ip ospf 1 area 0
148 !
149 router ospf 1
150 log-adjacency-changes
151 !
152 ip classless
153 ip http server
```



```

154 ip http secure-server
155 !
156 !
157 ip sla enable reaction-alerts
158 !
159 snmp-server community public R0
160 snmp-server community private RW
161 !
162 !
163 line con 0
164 line vty 0 4
165 password cisco
166 login
167 line vty 5 15
168 password cisco
169 login
170 !
171 end

```

A.2.2. IP Interfaces

```

1 BR1_S1#show interface status
2
3 Port      Name      Status    Vlan    Duplex Speed Type
4 Fa0/1      connected routed    a-full a-100 10/100BaseTX
5 Fa0/2      connected trunk   a-full a-100 10/100BaseTX
6 Fa0/3      notconnect 1         auto  auto 10/100BaseTX
7 Fa0/4      connected trunk   a-full a-100 10/100BaseTX
8 Fa0/5      connected trunk   a-full a-100 10/100BaseTX
9 Fa0/6      connected trunk   a-full a-100 10/100BaseTX
10 Fa0/7      connected trunk   a-full a-100 10/100BaseTX
11 Fa0/8      notconnect 1         auto  auto 10/100BaseTX
12 Fa0/9      notconnect 1         auto  auto 10/100BaseTX
13 Fa0/10     notconnect 1         auto  auto 10/100BaseTX
14 Fa0/11     notconnect 1         auto  auto 10/100BaseTX
15 Fa0/12     connected 1         a-full a-100 10/100BaseTX
16 Fa0/13     notconnect 1         auto  auto 10/100BaseTX
17 Fa0/14     notconnect 1         auto  auto 10/100BaseTX
18 Fa0/15     notconnect 1         auto  auto 10/100BaseTX
19 Fa0/16     notconnect 1         auto  auto 10/100BaseTX
20 Fa0/17     notconnect 1         auto  auto 10/100BaseTX
21 Fa0/18     notconnect 1         auto  auto 10/100BaseTX
22 Fa0/19     notconnect 1         auto  auto 10/100BaseTX
23 Fa0/20     notconnect 1         auto  auto 10/100BaseTX
24 Fa0/21     notconnect 1         auto  auto 10/100BaseTX
25
26 Port      Name      Status    Vlan    Duplex Speed Type
27 Fa0/22     notconnect 1         auto  auto 10/100BaseTX
28 Fa0/23     notconnect 1         auto  auto 10/100BaseTX
29 Fa0/24     notconnect 1         auto  auto 10/100BaseTX
30 Gi0/1      notconnect 1         auto  auto Not Present
31 Gi0/2      notconnect 1         auto  auto Not Present

```

A.2.3. Interface Status

```

1 BR1_S1>show interface status
2
3 Port      Name      Status    Vlan    Duplex Speed Type

```

```

4 Fa0/1          connected routed a-full a-100 10/100BaseTX
5 Fa0/2          connected trunk  a-full a-100 10/100BaseTX
6 Fa0/3          notconnect 1    auto auto 10/100BaseTX
7 Fa0/4          connected trunk  a-full a-100 10/100BaseTX
8 Fa0/5          connected trunk  a-full a-100 10/100BaseTX
9 Fa0/6          connected trunk  a-full a-100 10/100BaseTX
10 Fa0/7          connected trunk  a-full a-100 10/100BaseTX
11 Fa0/8          notconnect 1    auto auto 10/100BaseTX
12 Fa0/9          notconnect 1    auto auto 10/100BaseTX
13 Fa0/10         notconnect 1    auto auto 10/100BaseTX
14 Fa0/11         notconnect 1    auto auto 10/100BaseTX
15 Fa0/12         connected 1      a-full a-100 10/100BaseTX
16 Fa0/13         notconnect 1    auto auto 10/100BaseTX
17 Fa0/14         notconnect 1    auto auto 10/100BaseTX
18 Fa0/15         notconnect 1    auto auto 10/100BaseTX
19 Fa0/16         notconnect 1    auto auto 10/100BaseTX
20 Fa0/17         notconnect 1    auto auto 10/100BaseTX
21 Fa0/18         notconnect 1    auto auto 10/100BaseTX
22 Fa0/19         notconnect 1    auto auto 10/100BaseTX
23 Fa0/20         notconnect 1    auto auto 10/100BaseTX
24 Fa0/21         notconnect 1    auto auto 10/100BaseTX
25
26 Port  Name      Status  Vlan  Duplex Speed Type
27 Fa0/22  notconnect 1      auto  auto 10/100BaseTX
28 Fa0/23  notconnect 1      auto  auto 10/100BaseTX
29 Fa0/24  notconnect 1      auto  auto 10/100BaseTX
30 Gi0/1   notconnect 1      auto  auto Not Present
31 Gi0/2   notconnect 1      auto  auto Not Present

```

A.2.4. Interface Trunk

```

1 BR1-S1> show interface trunk
2
3 Port      Mode      Encapsulation Status  Native vlan
4 Fa0/2     on        802.1q      trunking 1
5 Fa0/4     on        802.1q      trunking 1
6 Fa0/5     on        802.1q      trunking 1
7 Fa0/6     on        802.1q      trunking 1
8 Fa0/7     on        802.1q      trunking 1
9
10 Port      Vlans allowed on trunk
11 Fa0/2     1-4094
12 Fa0/4     1-4094
13 Fa0/5     1-4094
14 Fa0/6     1-4094
15 Fa0/7     1-4094
16
17 Port      Vlans allowed and active in management domain
18 Fa0/2     1
19 Fa0/4     1
20 Fa0/5     1
21 Fa0/6     1
22 Fa0/7     1
23
24 Port      Vlans in spanning tree forwarding state and not pruned
25
26 Port      Vlans in spanning tree forwarding state and not pruned
27 Fa0/2     1
28 Fa0/4     1
29 Fa0/5     1

```

```

30 Fa0/6      1
31 Fa0/7      1

```

A.2.5. Neighbors

```

1 BR1_S1#show cdp neighbors
2 Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
3                   S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone,
4                   D - Remote, C - CVTA, M - Two-port Mac Relay
5
6 Device ID      Local Intrfce Holdtme Capability Platform Port ID
7 BR1_S4         Fas 0/7      143          S I WS-C2960- Fas 0/24
8 BR1_S4         Fas 0/6      143          S I WS-C2960- Fas 0/23
9 BR1_R1         Fas 0/1      151          R S I 2811  Fas 0/1
10 BR1_S3         Fas 0/5      162          S I WS-C2960- Fas 0/24
11 BR1_S3         Fas 0/4      162          S I WS-C2960- Fas 0/23
12 BR1_S2         Fas 0/2      132          S I WS-C2960- Fas 0/24

```

A.2.6. IP Route

```

1 BR1_S1> show ip route
2 Codes: C - connected, S - static, R - RIP, M - mobile, B - BGP
3         D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
4         N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
5         E1 - OSPF external type 1, E2 - OSPF external type 2
6         i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
7         ia - IS-IS inter area, * - candidate default, U - per-user static route
8         o - ODR, P - periodic downloaded static route
9
10 Gateway of last resort is not set
11
12   200.200.200.0/28 is subnetted, 1 subnets
13   O    200.200.200.0 [110/69] via 172.16.100.1, 3d06h, FastEthernet0/1
14   172.16.0.0/16 is variably subnetted, 31 subnets, 4 masks
15   O    172.16.254.64/30 [110/68] via 172.16.100.1, 3d06h, FastEthernet0/1
16   O    172.16.252.1/32 [110/65] via 172.16.100.1, 3d06h, FastEthernet0/1
17   O    172.16.254.0/30 [110/68] via 172.16.100.1, 3d06h, FastEthernet0/1
18   O    172.16.252.2/32 [110/1] via 172.16.100.1, 3d06h, FastEthernet0/1
19   O    172.16.255.0/30 [110/1001] via 172.16.100.1, 3d06h, FastEthernet0/1
20   O    172.16.252.3/32 [110/1068] via 172.16.100.1, 3d06h, FastEthernet0/1
21   O    172.16.254.4/30 [110/69] via 172.16.100.1, 3d06h, FastEthernet0/1
22   O    172.16.255.4/30 [110/1068] via 172.16.100.1, 3d06h, FastEthernet0/1
23   O    172.16.254.8/30 [110/70] via 172.16.100.1, 3d06h, FastEthernet0/1
24   O    172.16.255.8/30 [110/1068] via 172.16.100.1, 3d06h, FastEthernet0/1
25   O    172.16.254.12/30 [110/77] via 172.16.100.1, 3d06h, FastEthernet0/1
26   O    172.16.254.16/30 [110/71] via 172.16.100.1, 3d06h, FastEthernet0/1
27   O    172.16.254.20/30 [110/70] via 172.16.100.1, 3d06h, FastEthernet0/1
28   O    172.16.254.32/29 [110/71] via 172.16.100.1, 3d06h, FastEthernet0/1
29   O    172.16.254.40/29 [110/69] via 172.16.100.1, 3d06h, FastEthernet0/1
30   O    172.16.254.48/29 [110/68] via 172.16.100.1, 3d06h, FastEthernet0/1
31   O    172.16.254.56/30 [110/67] via 172.16.100.1, 3d06h, FastEthernet0/1
32   O    172.16.254.60/30 [110/66] via 172.16.100.1, 3d06h, FastEthernet0/1
33   O    172.16.25.5/32 [110/70] via 172.16.100.1, 3d06h, FastEthernet0/1
34   O    172.16.25.4/32 [110/71] via 172.16.100.1, 3d06h, FastEthernet0/1
35   O    172.16.25.7/32 [110/71] via 172.16.100.1, 3d06h, FastEthernet0/1
36   O    172.16.25.6/32 [110/69] via 172.16.100.1, 3d06h, FastEthernet0/1
37   O    172.16.25.1/32 [110/69] via 172.16.100.1, 3d06h, FastEthernet0/1
38   O    172.16.25.3/32 [110/70] via 172.16.100.1, 3d06h, FastEthernet0/1

```

```

39 0    172.16.25.2/32 [110/68] via 172.16.100.1, 3d06h, FastEthernet0/1
40 0    172.16.17.0/24 [110/70] via 172.16.100.1, 3d06h, FastEthernet0/1
41 0    172.16.18.0/24 [110/69] via 172.16.100.1, 3d06h, FastEthernet0/1
42 0    172.16.19.0/24 [110/69] via 172.16.100.1, 3d06h, FastEthernet0/1
43 C    172.16.100.0/24 is directly connected, FastEthernet0/1
44 C    172.16.101.0/24 is directly connected, Vlan1
45 0    172.16.102.0/24 [110/1069] via 172.16.100.1, 3d06h, FastEthernet0/1

```

A.2.7. Spanning Tree

```

1 BR1_S1>show spanning
2
3 VLAN0001
4   Spanning tree enabled protocol ieee
5   Root ID Priority 32769
6       Address 001a.2fd4.2480
7       This bridge is the root
8       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
9
10  Bridge ID Priority 32769 (priority 32768 sys-id-ext 1)
11      Address 001a.2fd4.2480
12      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
13      Aging Time 300 sec
14
15  Interface      Role Sts Cost Prio.Nbr Type
16  -----
17  Fa0/2          Desg FWD 19   128.4 P2p
18  Fa0/4          Desg FWD 19   128.6 P2p
19  Fa0/5          Desg FWD 19   128.7 P2p
20  Fa0/6          Desg FWD 19   128.8 P2p
21  Fa0/7          Desg FWD 19   128.9 P2p
22  Fa0/12         Desg FWD 19   128.14 P2p

```

A.2.8. VLAN

```

1 BR1_S1> show vlan
2
3 VLAN Name                Status Ports
4 -----
5 1  default                 active Fa0/3, Fa0/8, Fa0/9, Fa0/10
6                                Fa0/11, Fa0/12, Fa0/13, Fa0/14
7                                Fa0/15, Fa0/16, Fa0/17, Fa0/18
8                                Fa0/19, Fa0/20, Fa0/21, Fa0/22
9                                Fa0/23, Fa0/24, Gi0/1, Gi0/2
10 1002 fddi-default         act/unsup
11 1003 token-ring-default   act/unsup
12 1004 fddinet-default      act/unsup
13 1005 trnet-default        act/unsup
14
15 VLAN Type SAID    MTU  Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2
16 -----
17 1  enet 100001 1500 -    -    -    -    0    0
18 1002 fddi 101002 1500 -    -    -    -    0    0
19 1003 tr 101003 1500 -    -    -    -    0    0
20 1004 fdnet 101004 1500 -    -    -    ieee -    0    0
21 1005 trnet 101005 1500 -    -    -    ibm -    0    0
22
23 Remote SPAN VLANs

```

24	-----
25	
26	
27	Primary Secondary Type Ports
28	-----

A.3. BR2-R1

A.3.1. Running Configuration

```

1 BR2_R1#show run
2 Building configuration...
3
4
5 Current configuration : 1595 bytes
6 !
7 ! Last configuration change at 23:56:23 UTC Thu Sep 22 2016
8 version 15.1
9 service timestamps debug datetime msec
10 service timestamps log datetime msec
11 no service password-encryption
12 !
13 hostname BR2_R1
14 !
15 boot-start-marker
16 boot-end-marker
17 !
18 !
19 enable secret 5 $1$tooV$GpQ3VCxj1U3jlmnAZbnQr/
20 !
21 no aaa new-model
22 !
23 memory-size iomem 10
24 !
25 dot11 syslog
26 ip source-route
27 !
28 !
29 ip cef
30 !
31 !
32 !
33 no ipv6 cef
34 !
35 multilink bundle-name authenticated
36 !
37 !
38 !
39 !
40 !
41 !
42 !
43 !
44 !
45 !
46 !
47 voice-card 0
48 !
49 crypto pki token default removal timeout 0
50 !

```

```
51 |  
52 |  
53 |  
54 | license udi pid CISC02811 sn FCZ1432207G  
55 | archive  
56 |   log config  
57 |     hidekeys  
58 |  
59 | redundancy  
60 |  
61 |  
62 |  
63 |  
64 |  
65 |  
66 |  
67 |  
68 |  
69 |  
70 | interface Tunnel0  
71 |   ip address 172.16.255.6 255.255.255.252  
72 |   ip ospf 1 area 0  
73 |   tunnel source 200.200.200.3  
74 |   tunnel destination 200.200.200.1  
75 |  
76 | interface FastEthernet0/0  
77 |   ip address 200.200.200.3 255.255.255.240  
78 |   duplex auto  
79 |   speed auto  
80 |  
81 | interface FastEthernet0/1  
82 |   ip address 172.16.102.1 255.255.255.0  
83 |   ip ospf 1 area 0  
84 |   duplex auto  
85 |   speed auto  
86 |  
87 | interface Serial0/0/0  
88 |   ip address 172.16.252.3 255.255.255.0  
89 |   encapsulation frame-relay  
90 |   ip ospf network point-to-multipoint  
91 |   ip ospf 1 area 0  
92 |   frame-relay map ip 172.16.252.1 301 broadcast  
93 |   frame-relay lmi-type cisco  
94 |  
95 | interface Serial0/0/1  
96 |   no ip address  
97 |   shutdown  
98 |   clock rate 2000000  
99 |  
100 | router ospf 1  
101 |  
102 | ip forward-protocol nd  
103 | no ip http server  
104 | no ip http secure-server  
105 |  
106 |  
107 |  
108 |  
109 |  
110 |  
111 |  
112 | snmp-server community public R0
```

```

113 snmp-server community private RW
114 !
115 !
116 control-plane
117 !
118 !
119 !
120 !
121 mgcp profile default
122 !
123 !
124 !
125 !
126 !
127 !
128 line con 0
129 line aux 0
130 line vty 0 4
131 password ins@lab
132 login
133 transport input all
134 !
135 scheduler allocate 20000 1000
136 end

```

A.3.2. IP Interfaces

```

1 BR2_R1#show ip interface brief
2 Interface IP-Address OK? Method Status Protocol
3 FastEthernet0/0 200.200.200.3 YES manual up up
4 FastEthernet0/1 172.16.102.1 YES manual up up
5 Serial0/0/0 172.16.252.3 YES manual up up
6 Serial0/0/1 unassigned YES unset administratively down down
7 Tunnel0 172.16.255.6 YES manual up up

```

A.3.3. Interface Status

```

1 BR2_R1>show interface status

```

A.3.4. Interface Trunk

```

1 BR2_R1>show interface trunk

```

A.3.5. Neighbors

```

1 Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
2                   S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone,
3                   D - Remote, C - CVTA, M - Two-port Mac Relay
4
5 Device ID Local Intrfce Holdtme Capability Platform Port ID
6 BR2_S1 Fas 0/1 134 R S I WS-C3560V Fas 0/1
7 Switch Fas 0/0 137 S I WS-C2960- Fas 0/3

```

A.3.6. IP Route

```

1 BR2_R1#show ip route
2 Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
3       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
4       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
5       E1 - OSPF external type 1, E2 - OSPF external type 2
6       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
7       ia - IS-IS inter area, * - candidate default, U - per-user static route
8       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
9       + - replicated route, % - next hop override
10
11 Gateway of last resort is not set
12
13     172.16.0.0/16 is variably subnetted, 34 subnets, 4 masks
14 O     172.16.17.0/24 [110/1004] via 172.16.255.5, 3d06h, Tunnel0
15 O     172.16.18.0/24 [110/1003] via 172.16.255.5, 3d07h, Tunnel0
16 O     172.16.19.0/24 [110/1003] via 172.16.255.5, 3d06h, Tunnel0
17 O     172.16.25.1/32 [110/1003] via 172.16.255.5, 3d06h, Tunnel0
18 O     172.16.25.2/32 [110/1002] via 172.16.255.5, 3d07h, Tunnel0
19 O     172.16.25.3/32 [110/1004] via 172.16.255.5, 3d06h, Tunnel0
20 O     172.16.25.4/32 [110/1005] via 172.16.255.5, 3d06h, Tunnel0
21 O     172.16.25.5/32 [110/1004] via 172.16.255.5, 3d06h, Tunnel0
22 O     172.16.25.6/32 [110/1003] via 172.16.255.5, 3d07h, Tunnel0
23 O     172.16.25.7/32 [110/1005] via 172.16.255.5, 3d06h, Tunnel0
24 O     172.16.100.0/24 [110/1068] via 172.16.255.5, 3d06h, Tunnel0
25 O     172.16.101.0/24 [110/1069] via 172.16.255.5, 3d06h, Tunnel0
26 C     172.16.102.0/24 is directly connected, FastEthernet0/1
27 L     172.16.102.1/32 is directly connected, FastEthernet0/1
28 C     172.16.252.0/24 is directly connected, Serial0/0/0
29 O     172.16.252.1/32 [110/1003] via 172.16.255.5, 3d07h, Tunnel0
30 O     172.16.252.2/32 [110/1067] via 172.16.255.5, 3d07h, Tunnel0
31 L     172.16.252.3/32 is directly connected, Serial0/0/0
32 O     172.16.254.0/30 [110/1002] via 172.16.255.5, 3d06h, Tunnel0
33 O     172.16.254.4/30 [110/1003] via 172.16.255.5, 3d06h, Tunnel0
34 O     172.16.254.8/30 [110/1004] via 172.16.255.5, 3d06h, Tunnel0
35 O     172.16.254.12/30 [110/1011] via 172.16.255.5, 3d07h, Tunnel0
36 O     172.16.254.16/30 [110/1005] via 172.16.255.5, 3d06h, Tunnel0
37 O     172.16.254.20/30 [110/1004] via 172.16.255.5, 3d06h, Tunnel0
38 O     172.16.254.32/29 [110/1005] via 172.16.255.5, 3d06h, Tunnel0
39 O     172.16.254.40/29 [110/1003] via 172.16.255.5, 3d06h, Tunnel0
40 O     172.16.254.48/29 [110/1002] via 172.16.255.5, 3d07h, Tunnel0
41 O     172.16.254.56/30 [110/1002] via 172.16.255.5, 3d07h, Tunnel0
42 O     172.16.254.60/30 [110/1003] via 172.16.255.5, 3d07h, Tunnel0
43 O     172.16.254.64/30 [110/1001] via 172.16.255.5, 3d07h, Tunnel0
44 O     172.16.255.0/30 [110/2000] via 172.16.255.5, 3d13h, Tunnel0
45 C     172.16.255.4/30 is directly connected, Tunnel0
46 L     172.16.255.6/32 is directly connected, Tunnel0
47 O     172.16.255.8/30 [110/2000] via 172.16.255.5, 3d13h, Tunnel0
48     200.200.200.0/24 is variably subnetted, 2 subnets, 2 masks
49 C     200.200.200.0/28 is directly connected, FastEthernet0/0
50 L     200.200.200.3/32 is directly connected, FastEthernet0/0

```

A.3.7. Spanning Tree

```

1 BR2_R1#show spanning
2
3 No spanning tree instances exist.

```


A.3.8. VLAN

```
1 BR2_R1#show vlans
2 No Virtual LANs configured
```

A.4. BR2-S1

A.4.1. Running Configuration

```
1 BR2_S1#show running-config
2 Building configuration...
3
4 Current configuration : 2667 bytes
5 !
6 ! Last configuration change at 13:10:42 UTC Mon Mar 1 1993
7 !
8 version 15.0
9 no service pad
10 service timestamps debug datetime msec
11 service timestamps log datetime msec
12 no service password-encryption
13 !
14 hostname BR2_S1
15 !
16 boot-start-marker
17 boot-end-marker
18 !
19 enable secret 5 $1$51.0$ebtjgur4cQu.x/Jy1FUIA1
20 !
21 username ins password 0 ins@lab
22 no aaa new-model
23 system mtu routing 1500
24 vtp domain CCIE
25 vtp mode transparent
26 ip routing
27 no ip domain-lookup
28 ip dhcp excluded-address 172.16.103.1
29 ip dhcp excluded-address 172.16.103.10 172.16.103.12
30 !
31 ip dhcp pool BRANCH2
32 network 172.16.103.0 255.255.255.0
33 default-router 172.16.103.1
34 !
35 !
36 !
37 !
38 crypto pki trustpoint HTTPS_SS_CERT_KEYPAIR
39 enrollment selfsigned
40 serial-number
41 revocation-check none
42 rsakeypair HTTPS_SS_CERT_KEYPAIR
43 !
44 !
45 crypto pki certificate chain HTTPS_SS_CERT_KEYPAIR
46 certificate self-signed 01
47 quit
48 !
49 !
50 !
```

```
51 |  
52 |  
53 spanning-tree mode pvst  
54 spanning-tree extend system-id  
55 |  
56 vlan internal allocation policy ascending  
57 |  
58 vlan 2-5  
59 |  
60 vlan 10  
61   name HR  
62 |  
63 vlan 11  
64   name IT  
65 |  
66 vlan 17,19,46,1006  
67 |  
68 |  
69 |  
70 |  
71 |  
72 |  
73 |  
74 |  
75 |  
76 |  
77 |  
78 |  
79 |  
80 |  
81 interface FastEthernet0/1  
82   no switchport  
83   ip address 172.16.102.2 255.255.255.0  
84   ip ospf 1 area 0  
85 |  
86 interface FastEthernet0/2  
87   switchport trunk encapsulation dot1q  
88   switchport mode trunk  
89 |  
90 interface FastEthernet0/3  
91   switchport trunk encapsulation dot1q  
92   switchport mode trunk  
93 |  
94 interface FastEthernet0/4  
95   switchport trunk encapsulation dot1q  
96   switchport mode trunk  
97 |  
98 interface FastEthernet0/5  
99   switchport trunk encapsulation dot1q  
100  switchport mode trunk  
101 |  
102 interface FastEthernet0/6  
103   switchport trunk encapsulation dot1q  
104   switchport mode trunk  
105 |  
106 interface FastEthernet0/7  
107   switchport trunk encapsulation dot1q  
108   switchport mode trunk  
109 |  
110 interface FastEthernet0/8  
111 |  
112 interface FastEthernet0/9
```

```
113 | !
114 | interface FastEthernet0/10
115 | !
116 | interface FastEthernet0/11
117 | !
118 | interface FastEthernet0/12
119 | !
120 | interface FastEthernet0/13
121 | !
122 | interface FastEthernet0/14
123 | !
124 | interface FastEthernet0/15
125 | !
126 | interface FastEthernet0/16
127 | !
128 | interface FastEthernet0/17
129 | !
130 | interface FastEthernet0/18
131 | !
132 | interface FastEthernet0/19
133 | !
134 | interface FastEthernet0/20
135 | !
136 | interface FastEthernet0/21
137 | !
138 | interface FastEthernet0/22
139 | !
140 | interface FastEthernet0/23
141 | !
142 | interface FastEthernet0/24
143 | !
144 | interface GigabitEthernet0/1
145 | !
146 | interface GigabitEthernet0/2
147 | !
148 | interface Vlan1
149 | ip address 172.16.103.1 255.255.255.0
150 | ip ospf 1 area 0
151 | shutdown
152 | !
153 | interface Vlan103
154 | ip address 172.16.23.1 255.255.255.0
155 | ip ospf 1 area 0
156 | !
157 | router ospf 1
158 | !
159 | ip http server
160 | ip http secure-server
161 | !
162 | !
163 | ip sla enable reaction-alerts
164 | snmp-server community private RW
165 | snmp-server community public R0
166 | !
167 | !
168 | line con 0
169 | line vty 0 4
170 | password cisco
171 | login
172 | line vty 5 15
173 | password cisco
174 | login
```

```

175 | !
176 | end

```

A.4.2. IP Interfaces

```

1 BR2_S1#show ip interface brief
2 Interface      IP-Address  OK? Method Status      Protocol
3 Vlan1          172.16.103.1 YES manual administratively down down
4 Vlan103        172.16.23.1 YES manual down        down
5 FastEthernet0/1 172.16.102.2 YES manual up          up
6 FastEthernet0/2 unassigned   YES unset up          up
7 FastEthernet0/3 unassigned   YES unset up          up
8 FastEthernet0/4 unassigned   YES unset up          up
9 FastEthernet0/5 unassigned   YES unset up          up
10 FastEthernet0/6 unassigned   YES unset up          up
11 FastEthernet0/7 unassigned   YES unset up          up
12 FastEthernet0/8 unassigned   YES unset down        down
13 FastEthernet0/9 unassigned   YES unset down        down
14 FastEthernet0/10 unassigned   YES unset down        down
15 FastEthernet0/11 unassigned   YES unset down        down
16 FastEthernet0/12 unassigned   YES unset down        down
17 FastEthernet0/13 unassigned   YES unset down        down
18 FastEthernet0/14 unassigned   YES unset down        down
19 FastEthernet0/15 unassigned   YES unset down        down
20 FastEthernet0/16 unassigned   YES unset down        down
21 FastEthernet0/17 unassigned   YES unset down        down
22 FastEthernet0/18 unassigned   YES unset down        down
23 FastEthernet0/19 unassigned   YES unset down        down
24 FastEthernet0/20 unassigned   YES unset down        down
25 FastEthernet0/21 unassigned   YES unset down        down
26 FastEthernet0/22 unassigned   YES unset down        down
27 FastEthernet0/23 unassigned   YES unset down        down
28 FastEthernet0/24 unassigned   YES unset down        down
29 GigabitEthernet0/1 unassigned YES unset down        down
30 GigabitEthernet0/2 unassigned YES unset down        down

```

A.4.3. Interface Status

```

1 BR2_S1>show interface status
2
3 Port    Name      Status    Vlan    Duplex Speed Type
4 Fa0/1    connected routed    a-full  a-100  10/100BaseTX
5 Fa0/2    connected trunk    a-full  a-100  10/100BaseTX
6 Fa0/3    connected trunk    a-full  a-100  10/100BaseTX
7 Fa0/4    connected trunk    a-full  a-100  10/100BaseTX
8 Fa0/5    connected trunk    a-full  a-100  10/100BaseTX
9 Fa0/6    connected trunk    a-full  a-100  10/100BaseTX
10 Fa0/7    connected trunk    a-full  a-100  10/100BaseTX
11 Fa0/8    notconnect 1        auto    auto    10/100BaseTX
12 Fa0/9    notconnect 1        auto    auto    10/100BaseTX
13 Fa0/10   notconnect 1        auto    auto    10/100BaseTX
14 Fa0/11   notconnect 1        auto    auto    10/100BaseTX
15 Fa0/12   notconnect 1        auto    auto    10/100BaseTX
16 Fa0/13   notconnect 1        auto    auto    10/100BaseTX
17 Fa0/14   notconnect 1        auto    auto    10/100BaseTX
18 Fa0/15   notconnect 1        auto    auto    10/100BaseTX
19 Fa0/16   notconnect 1        auto    auto    10/100BaseTX
20 Fa0/17   notconnect 1        auto    auto    10/100BaseTX

```

```

21 Fa0/18          notconnect 1      auto auto 10/100BaseTX
22 Fa0/19          notconnect 1      auto auto 10/100BaseTX
23 Fa0/20          notconnect 1      auto auto 10/100BaseTX
24 Fa0/21          notconnect 1      auto auto 10/100BaseTX
25
26 Port   Name      Status   Vlan    Duplex Speed Type
27 Fa0/22          notconnect 1      auto auto 10/100BaseTX
28 Fa0/23          notconnect 1      auto auto 10/100BaseTX
29 Fa0/24          notconnect 1      auto auto 10/100BaseTX
30 Gi0/1          notconnect 1      auto auto Not Present
31 Gi0/2          notconnect 1      auto auto Not Present

```

A.4.4. Interface Trunk

```

1 BR2_S1> show interface trunk
2
3 Port      Mode      Encapsulation Status Native vlan
4 Fa0/2     on        802.1q      trunking 1
5 Fa0/3     on        802.1q      trunking 1
6 Fa0/4     on        802.1q      trunking 1
7 Fa0/5     on        802.1q      trunking 1
8 Fa0/6     on        802.1q      trunking 1
9 Fa0/7     on        802.1q      trunking 1
10
11 Port      Vlans allowed on trunk
12 Fa0/2     1-4094
13 Fa0/3     1-4094
14 Fa0/4     1-4094
15 Fa0/5     1-4094
16 Fa0/6     1-4094
17 Fa0/7     1-4094
18
19 Port      Vlans allowed and active in management domain
20 Fa0/2     1-5,10-11,17,19,46,1006
21 Fa0/3     1-5,10-11,17,19,46,1006
22 Fa0/4     1-5,10-11,17,19,46,1006
23 Fa0/5     1-5,10-11,17,19,46,1006
24 Fa0/6     1-5,10-11,17,19,46,1006
25
26 Port      Vlans allowed and active in management domain
27 Fa0/7     1-5,10-11,17,19,46,1006
28
29 Port      Vlans in spanning tree forwarding state and not pruned
30 Fa0/2     1-5,10-11,17,19,46,1006
31 Fa0/3     2-5,10-11,17,19,46,1006
32 Fa0/4     1-5,10-11,17,19,46,1006
33 Fa0/5     1-5,10-11,17,19,46,1006
34 Fa0/6     1-5,10-11,17,19,46,1006
35 Fa0/7     1-5,10-11,17,19,46,1006

```

A.4.5. Neighbors

```

1 BR2_S1# show cdp neighbors
2 Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
3                   S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone,
4                   D - Remote, C - CVTA, M - Two-port Mac Relay
5
6 Device ID      Local Intrfce Holdtme Capability Platform Port ID

```

7	BR2_S4	Fas 0/7	150	S I WS-C2960- Fas 0/24
8	BR2_S4	Fas 0/6	150	S I WS-C2960- Fas 0/23
9	BR2_S2	Fas 0/3	143	S I WS-C3560V Fas 0/24
10	BR2_S2	Fas 0/2	143	S I WS-C3560V Fas 0/23
11	BR2_S3	Fas 0/5	175	S I WS-C2960- Fas 0/24
12	BR2_S3	Fas 0/4	175	S I WS-C2960- Fas 0/23
13	BR2_R1	Fas 0/1	131	R S I 2811 Fas 0/1
14	BR2_S1#			

A.4.6. IP Route

```

1 BR2_S1> show ip route
2 Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
3         D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
4         N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
5         E1 - OSPF external type 1, E2 - OSPF external type 2
6         i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
7         ia - IS-IS inter area, * - candidate default, U - per-user static route
8         o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
9         + - replicated route, % - next hop override
10
11 Gateway of last resort is not set
12
13     172.16.0.0/16 is variably subnetted, 32 subnets, 4 masks
14 O    172.16.17.0/24 [110/1005] via 172.16.102.1, 3d07h, FastEthernet0/1
15 O    172.16.18.0/24 [110/1004] via 172.16.102.1, 3d07h, FastEthernet0/1
16 O    172.16.19.0/24 [110/1004] via 172.16.102.1, 3d07h, FastEthernet0/1
17 O    172.16.25.1/32 [110/1004] via 172.16.102.1, 3d07h, FastEthernet0/1
18 O    172.16.25.2/32 [110/1003] via 172.16.102.1, 3d07h, FastEthernet0/1
19 O    172.16.25.3/32 [110/1005] via 172.16.102.1, 3d07h, FastEthernet0/1
20 O    172.16.25.4/32 [110/1006] via 172.16.102.1, 3d07h, FastEthernet0/1
21 O    172.16.25.5/32 [110/1005] via 172.16.102.1, 3d07h, FastEthernet0/1
22 O    172.16.25.6/32 [110/1004] via 172.16.102.1, 3d07h, FastEthernet0/1
23 O    172.16.25.7/32 [110/1006] via 172.16.102.1, 3d07h, FastEthernet0/1
24 O    172.16.100.0/24 [110/1069] via 172.16.102.1, 3d07h, FastEthernet0/1
25 O    172.16.101.0/24 [110/1070] via 172.16.102.1, 3d07h, FastEthernet0/1
26 C    172.16.102.0/24 is directly connected, FastEthernet0/1
27 L    172.16.102.2/32 is directly connected, FastEthernet0/1
28 O    172.16.252.1/32 [110/1004] via 172.16.102.1, 3d07h, FastEthernet0/1
29 O    172.16.252.2/32 [110/1068] via 172.16.102.1, 3d07h, FastEthernet0/1
30 O    172.16.252.3/32 [110/1] via 172.16.102.1, 3d06h, FastEthernet0/1
31 O    172.16.254.0/30 [110/1003] via 172.16.102.1, 3d07h, FastEthernet0/1
32 O    172.16.254.4/30 [110/1004] via 172.16.102.1, 3d07h, FastEthernet0/1
33 O    172.16.254.8/30 [110/1005] via 172.16.102.1, 3d07h, FastEthernet0/1
34 O    172.16.254.12/30 [110/1012] via 172.16.102.1, 3d07h, FastEthernet0/1
35 O    172.16.254.16/30 [110/1006] via 172.16.102.1, 3d07h, FastEthernet0/1
36 O    172.16.254.20/30 [110/1005] via 172.16.102.1, 3d07h, FastEthernet0/1
37 O    172.16.254.32/29 [110/1006] via 172.16.102.1, 3d07h, FastEthernet0/1
38 O    172.16.254.40/29 [110/1004] via 172.16.102.1, 3d07h, FastEthernet0/1
39 O    172.16.254.48/29 [110/1003] via 172.16.102.1, 3d07h, FastEthernet0/1
40 O    172.16.254.56/30 [110/1003] via 172.16.102.1, 3d07h, FastEthernet0/1
41 O    172.16.254.60/30 [110/1004] via 172.16.102.1, 3d07h, FastEthernet0/1
42 O    172.16.254.64/30 [110/1002] via 172.16.102.1, 3d07h, FastEthernet0/1
43 O    172.16.255.0/30 [110/2001] via 172.16.102.1, 3d07h, FastEthernet0/1
44 O    172.16.255.4/30 [110/1001] via 172.16.102.1, 3d07h, FastEthernet0/1
45 O    172.16.255.8/30 [110/2001] via 172.16.102.1, 3d07h, FastEthernet0/1
46 200.200.200.0/28 is subnetted, 1 subnets
47 O    200.200.200.0 [110/1002] via 172.16.102.1, 3d07h, FastEthernet0/1

```

A.4.7. Spanning Tree

```

1 BR2_S1> show spanning
2
3 VLAN0001
4   Spanning tree enabled protocol ieee
5   Root ID Priority 32769
6         Address 24b6.5725.d180
7         Cost    19
8         Port    4 (FastEthernet0/2)
9         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
10
11   Bridge ID Priority 32769 (priority 32768 sys-id-ext 1)
12         Address 24b6.572a.9d80
13         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
14         Aging Time 300 sec
15
16   Interface      Role Sts Cost Prio.Nbr Type
17   -----
18   Fa0/2          Root FWD 19   128.4  P2p
19   Fa0/3          Altn BLK 19   128.5  P2p
20   Fa0/4          Desg FWD 19   128.6  P2p
21   Fa0/5          Desg FWD 19   128.7  P2p
22   Fa0/6          Desg FWD 19   128.8  P2p
23   Fa0/7          Desg FWD 19   128.9  P2p
24
25
26
27 VLAN0002
28   Spanning tree enabled protocol ieee
29   Root ID Priority 32770
30         Address 24b6.5725.d180
31         Cost    19
32         Port    5 (FastEthernet0/3)
33         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
34
35   Bridge ID Priority 32770 (priority 32768 sys-id-ext 2)
36         Address 24b6.572a.9d80
37         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
38         Aging Time 300 sec
39
40   Interface      Role Sts Cost Prio.Nbr Type
41   -----
42   Fa0/2          Desg FWD 19   128.4  P2p
43   Fa0/3          Root FWD 19   128.5  P2p
44   Fa0/4          Desg FWD 19   128.6  P2p
45   Fa0/5          Desg FWD 19   128.7  P2p
46   Fa0/6          Desg FWD 19   128.8  P2p
47   Fa0/7          Desg FWD 19   128.9  P2p
48
49
50
51 VLAN0003
52   Spanning tree enabled protocol ieee
53   Root ID Priority 32771
54         Address 24b6.5725.d180
55         Cost    19
56         Port    5 (FastEthernet0/3)
57         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
58
59   Bridge ID Priority 32771 (priority 32768 sys-id-ext 3)

```

```

60      Address 24b6.572a.9d80
61      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
62      Aging Time 300 sec

```

```

63
64      Interface      Role Sts Cost Prio.Nbr Type
65      -----
66      Fa0/2          Desg FWD 19   128.4 P2p
67      Fa0/3          Root FWD 19   128.5 P2p
68      Fa0/4          Desg FWD 19   128.6 P2p
69      Fa0/5          Desg FWD 19   128.7 P2p
70      Fa0/6          Desg FWD 19   128.8 P2p
71      Fa0/7          Desg FWD 19   128.9 P2p

```

```

72
73
74      VLAN0004
75      Spanning tree enabled protocol ieee
76      Root ID Priority 32772
77      Address 24b6.5725.d180
78      Cost 19
79      Port 5 (FastEthernet0/3)
80      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
81
82      Bridge ID Priority 32772 (priority 32768 sys-id-ext 4)
83      Address 24b6.572a.9d80
84      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
85      Aging Time 300 sec

```

```

86
87      Interface      Role Sts Cost Prio.Nbr Type
88      -----
89      Fa0/2          Desg FWD 19   128.4 P2p
90      Fa0/3          Root FWD 19   128.5 P2p
91      Fa0/4          Desg FWD 19   128.6 P2p
92      Fa0/5          Desg FWD 19   128.7 P2p
93      Fa0/6          Desg FWD 19   128.8 P2p
94      Fa0/7          Desg FWD 19   128.9 P2p

```

```

95
96
97
98      VLAN0005
99      Spanning tree enabled protocol ieee
100     Root ID Priority 32773
101     Address 24b6.5725.d180
102     Cost 19
103     Port 5 (FastEthernet0/3)
104     Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
105
106     Bridge ID Priority 32773 (priority 32768 sys-id-ext 5)
107     Address 24b6.572a.9d80
108     Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
109     Aging Time 300 sec

```

```

110
111     Interface      Role Sts Cost Prio.Nbr Type
112     -----
113     Fa0/2          Desg FWD 19   128.4 P2p
114     Fa0/3          Root FWD 19   128.5 P2p
115     Fa0/4          Desg FWD 19   128.6 P2p
116     Fa0/5          Desg FWD 19   128.7 P2p
117     Fa0/6          Desg FWD 19   128.8 P2p
118     Fa0/7          Desg FWD 19   128.9 P2p

```



```

122 VLAN0010
123   Spanning tree enabled protocol ieee
124   Root ID Priority 32778
125         Address 24b6.5725.d180
126         Cost    19
127         Port    5 (FastEthernet0/3)
128         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
129
130   Bridge ID Priority 32778 (priority 32768 sys-id-ext 10)
131         Address 24b6.572a.9d80
132         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
133         Aging Time 300 sec
134
135

```

Interface	Role	Sts	Cost	Prio.Nbr	Type
Fa0/2	Desg	FWD	19	128.4	P2p
Fa0/3	Root	FWD	19	128.5	P2p
Fa0/4	Desg	FWD	19	128.6	P2p
Fa0/5	Desg	FWD	19	128.7	P2p
Fa0/6	Desg	FWD	19	128.8	P2p
Fa0/7	Desg	FWD	19	128.9	P2p

```

146 VLAN0011
147   Spanning tree enabled protocol ieee
148   Root ID Priority 32779
149         Address 24b6.5725.d180
150         Cost    19
151         Port    5 (FastEthernet0/3)
152         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
153
154   Bridge ID Priority 32779 (priority 32768 sys-id-ext 11)
155         Address 24b6.572a.9d80
156         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
157         Aging Time 300 sec
158
159

```

Interface	Role	Sts	Cost	Prio.Nbr	Type
Fa0/2	Desg	FWD	19	128.4	P2p
Fa0/3	Root	FWD	19	128.5	P2p
Fa0/4	Desg	FWD	19	128.6	P2p
Fa0/5	Desg	FWD	19	128.7	P2p
Fa0/6	Desg	FWD	19	128.8	P2p
Fa0/7	Desg	FWD	19	128.9	P2p

```

170 VLAN0017
171   Spanning tree enabled protocol ieee
172   Root ID Priority 32785
173         Address 24b6.5725.d180
174         Cost    19
175         Port    5 (FastEthernet0/3)
176         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
177
178   Bridge ID Priority 32785 (priority 32768 sys-id-ext 17)
179         Address 24b6.572a.9d80
180         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
181         Aging Time 300 sec
182
183

```

```

184 Interface      Role Sts Cost Prio.Nbr Type
185 -----
186 Fa0/2          Desg FWD 19   128.4 P2p
187 Fa0/3          Root FWD 19   128.5 P2p
188 Fa0/4          Desg FWD 19   128.6 P2p
189 Fa0/5          Desg FWD 19   128.7 P2p
190 Fa0/6          Desg FWD 19   128.8 P2p
191 Fa0/7          Desg FWD 19   128.9 P2p
192
193
194
195 VLAN0019
196   Spanning tree enabled protocol ieee
197   Root ID Priority 32787
198       Address 24b6.5725.d180
199       Cost    19
200       Port    5 (FastEthernet0/3)
201       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
202
203   Bridge ID Priority 32787 (priority 32768 sys-id-ext 19)
204       Address 24b6.572a.9d80
205       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
206       Aging Time 300 sec
207
208 Interface      Role Sts Cost Prio.Nbr Type
209 -----
210 Fa0/2          Desg FWD 19   128.4 P2p
211 Fa0/3          Root FWD 19   128.5 P2p
212 Fa0/4          Desg FWD 19   128.6 P2p
213 Fa0/5          Desg FWD 19   128.7 P2p
214 Fa0/6          Desg FWD 19   128.8 P2p
215 Fa0/7          Desg FWD 19   128.9 P2p
216
217
218
219 VLAN0046
220   Spanning tree enabled protocol ieee
221   Root ID Priority 32814
222       Address 24b6.5725.d180
223       Cost    19
224       Port    5 (FastEthernet0/3)
225       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
226
227   Bridge ID Priority 32814 (priority 32768 sys-id-ext 46)
228       Address 24b6.572a.9d80
229       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
230       Aging Time 300 sec
231
232 Interface      Role Sts Cost Prio.Nbr Type
233 -----
234 Fa0/2          Desg FWD 19   128.4 P2p
235 Fa0/3          Root FWD 19   128.5 P2p
236 Fa0/4          Desg FWD 19   128.6 P2p
237 Fa0/5          Desg FWD 19   128.7 P2p
238 Fa0/6          Desg FWD 19   128.8 P2p
239 Fa0/7          Desg FWD 19   128.9 P2p
240
241
242
243 VLAN1006
244   Spanning tree enabled protocol ieee
245   Root ID Priority 33774

```

```

246      Address 24b6.5725.d180
247      Cost    19
248      Port    5 (FastEthernet0/3)
249      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
250
251      Bridge ID Priority 33774 (priority 32768 sys-id-ext 1006)
252      Address 24b6.572a.9d80
253      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
254      Aging Time 300 sec
255
256      Interface      Role Sts Cost Prio.Nbr Type
257      -----
258      Fa0/2          Desg FWD 19   128.4 P2p
259      Fa0/3          Root FWD 19   128.5 P2p
260      Fa0/4          Desg FWD 19   128.6 P2p
261      Fa0/5          Desg FWD 19   128.7 P2p
262      Fa0/6          Desg FWD 19   128.8 P2p
263      Fa0/7          Desg FWD 19   128.9 P2p

```

A.4.8. VLAN

```

1  BR2_S1> show vlan
2
3  VLAN Name                Status Ports
4  -----
5  1  default                 active Fa0/8, Fa0/9, Fa0/10, Fa0/11
6                                Fa0/12, Fa0/13, Fa0/14, Fa0/15
7                                Fa0/16, Fa0/17, Fa0/18, Fa0/19
8                                Fa0/20, Fa0/21, Fa0/22, Fa0/23
9                                Fa0/24, Gi0/1, Gi0/2
10 2  VLAN0002                active
11 3  VLAN0003                active
12 4  VLAN0004                active
13 5  VLAN0005                active
14 10 HR                     active
15 11 IT                     active
16 17 VLAN0017               active
17 19 VLAN0019               active
18 46 VLAN0046               active
19 1002 fddi-default         act/unsup
20 1003 trcrf-default         act/unsup
21 1004 fddinet-default       act/unsup
22 1005 trbrf-default         act/unsup
23 1006 VLAN1006             active
24
25  VLAN Type SAID    MTU  Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2
26  -----
27 1  enet 100001 1500 - - - - - 0 0
28 2  enet 100002 1500 - - - - - 0 0
29 3  enet 100003 1500 - - - - - 0 0
30 4  enet 100004 1500 - - - - - 0 0
31 5  enet 100005 1500 - - - - - 0 0
32 10 enet 100010 1500 - - - - - 0 0
33 11 enet 100011 1500 - - - - - 0 0
34 17 enet 100017 1500 - - - - - 0 0
35 19 enet 100019 1500 - - - - - 0 0
36 46 enet 100046 1500 - - - - - 0 0
37 1002 fddi 101002 1500 - - - - - 0 0
38 1003 trcrf 101003 4472 1005 3276 - - srb 0 0
39 1004 fdnet 101004 1500 - - - - - ieee - 0 0

```

```

40 1005 trbrf 101005 4472 - - 15 ibm - 0 0
41 1006 enet 101006 1500 - - - - - 0 0
42
43
44 VLAN AREHops STEHops Backup CRF
45 -----
46 1003 7 7 off
47
48 Remote SPAN VLANs
49 -----
50
51
52 Primary Secondary Type Ports
53 -----

```

A.5. CCNA-CCNP-FRSwitch

A.5.1. Running Configuration

```

1 CCNA-CCNP-FRSwitch#show run
2 Building configuration...
3
4 Current configuration : 2648 bytes
5 !
6 version 12.3
7 service timestamps debug datetime msec
8 service timestamps log datetime msec
9 no service password-encryption
10 !
11 hostname CCNA-CCNP-FRSwitch
12 !
13 boot-start-marker
14 boot-end-marker
15 !
16 !
17 memory-size iomem 10
18 no aaa new-model
19 ip subnet-zero
20 !
21 !
22 !
23 ip cef
24 frame-relay switching
25 !
26 !
27 !
28 !
29 !
30 !
31 !
32 !
33 !
34 !
35 !
36 !
37 !
38 !
39 !
40 interface Ethernet0/0
41 no ip address

```

```
42 shutdown
43 half-duplex
44 no cdp enable
45 no clns route-cache
46 !
47 interface Ethernet0/1
48 no ip address
49 shutdown
50 half-duplex
51 no cdp enable
52 no clns route-cache
53 !
54 interface Serial1/0
55 description 102 103 104
56 no ip address
57 encapsulation frame-relay
58 clockrate 64000
59 no fair-queue
60 no clns route-cache
61 frame-relay intf-type dce
62 frame-relay route 102 interface Serial1/1 201
63 frame-relay route 103 interface Serial1/2 301
64 frame-relay route 104 interface Serial1/3 401
65 !
66 interface Serial1/1
67 description 201 203
68 no ip address
69 encapsulation frame-relay
70 clockrate 64000
71 no clns route-cache
72 frame-relay intf-type dce
73 frame-relay route 201 interface Serial1/0 102
74 frame-relay route 203 interface Serial1/2 302
75 !
76 interface Serial1/2
77 description 301 302
78 no ip address
79 encapsulation frame-relay
80 clockrate 64000
81 no clns route-cache
82 frame-relay intf-type dce
83 frame-relay route 301 interface Serial1/0 103
84 frame-relay route 302 interface Serial1/1 203
85 !
86 interface Serial1/3
87 description 301 302
88 no ip address
89 encapsulation frame-relay
90 clockrate 64000
91 no clns route-cache
92 frame-relay intf-type dce
93 frame-relay route 301 interface Serial1/0 103
94 frame-relay route 302 interface Serial1/1 203
95 !
96 interface Serial1/4
97 description 102 103 104
98 no ip address
99 encapsulation frame-relay
100 clockrate 64000
101 no fair-queue
102 no clns route-cache
103 frame-relay intf-type dce
```

```

104 frame-relay route 102 interface Serial1/5 201
105 frame-relay route 103 interface Serial1/6 301
106 frame-relay route 104 interface Serial1/7 401
107 !
108 interface Serial1/5
109 description 201 203
110 no ip address
111 encapsulation frame-relay
112 clockrate 64000
113 no clns route-cache
114 frame-relay intf-type dce
115 frame-relay route 201 interface Serial1/4 102
116 frame-relay route 203 interface Serial1/6 302
117 !
118 interface Serial1/6
119 description 301 302
120 no ip address
121 encapsulation frame-relay
122 clockrate 64000
123 no clns route-cache
124 frame-relay intf-type dce
125 frame-relay route 301 interface Serial1/4 103
126 frame-relay route 302 interface Serial1/5 203
127 !
128 interface Serial1/7
129 description 401
130 no ip address
131 encapsulation frame-relay
132 clockrate 64000
133 no clns route-cache
134 frame-relay intf-type dce
135 frame-relay route 401 interface Serial1/4 104
136 !
137 no ip http server
138 ip classless
139 !
140 !
141 no cdp run
142 !
143 !
144 !
145 !
146 !
147 !
148 line con 0
149 line aux 0
150 line vty 0 4
151 login
152 !
153 !
154 end

```

A.5.2. IP Interfaces

```

1 CCNA-CCNP-FRSwitch#show ip interface brief
2 Interface      IP-Address  OK? Method Status      Protocol
3 Ethernet0/0    unassigned YES NVRAM  administratively down down
4 Ethernet0/1    unassigned YES NVRAM  administratively down down
5 Serial1/0      unassigned YES NVRAM  up          up
6 Serial1/1      unassigned YES NVRAM  up          up

```

7	Serial1/2	unassigned	YES	NVRAM	down	down
8	Serial1/3	unassigned	YES	manual	up	up
9	Serial1/4	unassigned	YES	NVRAM	down	down
10	Serial1/5	unassigned	YES	NVRAM	down	down
11	Serial1/6	unassigned	YES	NVRAM	down	down
12	Serial1/7	unassigned	YES	NVRAM	down	down

A.5.3. Interface Status

```

1 CCNA-CCNP-FRSwitch>show interface status
2                               ^
3 % Invalid input detected at '^' marker.
```

A.5.4. Interface Trunk

```

1 CCNA-CCNP-FRSwitch>show interface trunk
2                               ^
3 % Invalid input detected at '^' marker.
```

A.5.5. Neighbors

```

1 CCNA-CCNP-FRSwitch#show cdp neighbors
2 % CDP is not enabled
3 CCNA-CCNP-FRSwitch#
```

A.5.6. IP Route

```

1 CCNA-CCNP-FRSwitch>show ip route
2 Codes: C - connected, S - static, R - RIP, M - mobile, B - BGP
3       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
4       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
5       E1 - OSPF external type 1, E2 - OSPF external type 2
6       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
7       ia - IS-IS inter area, * - candidate default, U - per-user static route
8       o - ODR, P - periodic downloaded static route
9
10 Gateway of last resort is not set
```

A.5.7. Spanning Tree

```

1 CCNA-CCNP-FRSwitch>show spanning
2
3 No spanning tree instances exist.
```

A.5.8. VLAN

```

1 CCNA-CCNP-FRSwitch>show vlan
2
3 No Virtual LANs configured.
```

A.6. HQ-FRR (HQ FrameRelay Router)

A.6.1. Running Configuration

```
1 HQ_FRR#show run
2
3 Building configuration...
4
5
6 Current configuration : 1810 bytes
7 !
8 ! Last configuration change at 22:56:57 UTC Thu Sep 22 2016
9 version 15.1
10 service timestamps debug datetime msec
11 service timestamps log datetime msec
12 no service password-encryption
13 !
14 hostname HQ_FRR
15 !
16 boot-start-marker
17 boot-end-marker
18 !
19 !
20 enable secret 5 $1$FscR$wXNeNkzJuiZqfM2mESMKM/
21 !
22 no aaa new-model
23 !
24 memory-size iomem 10
25 !
26 dot11 syslog
27 ip source-route
28 !
29 !
30 ip cef
31 !
32 !
33 !
34 no ipv6 cef
35 !
36 multilink bundle-name authenticated
37 !
38 !
39 !
40 !
41 !
42 !
43 !
44 !
45 !
46 !
47 !
48 voice-card 0
49 !
50 crypto pki token default removal timeout 0
51 !
52 !
53 !
54 !
55 license udi pid CISC02811 sn FCZ1432207U
56 archive
57   log config
58   hidekeys
```



```
59 | !
60 | redundancy
61 | !
62 | !
63 | !
64 | !
65 | !
66 | !
67 | !
68 | !
69 | !
70 | !
71 | interface FastEthernet0/0
72 | ip address 172.16.254.62 255.255.255.252
73 | ip ospf 1 area 0
74 | duplex auto
75 | speed auto
76 | !
77 | interface FastEthernet0/1
78 | no ip address
79 | shutdown
80 | duplex auto
81 | speed auto
82 | !
83 | interface Serial0/0/0
84 | no ip address
85 | encapsulation frame-relay
86 | no fair-queue
87 | frame-relay lmi-type cisco
88 | !
89 | interface Serial0/0/0.123 multipoint
90 | ip address 172.16.252.1 255.255.255.0
91 | ip ospf network point-to-multipoint
92 | ip ospf 1 area 0
93 | snmp trap link-status
94 | frame-relay map ip 172.16.252.3 103 broadcast
95 | frame-relay map ip 172.16.252.4 104 broadcast
96 | frame-relay map ip 172.16.252.2 102 broadcast
97 | !
98 | interface Serial0/0/1
99 | no ip address
100 | shutdown
101 | clock rate 2000000
102 | !
103 | interface Serial1/0
104 | no ip address
105 | shutdown
106 | !
107 | interface Serial1/1
108 | no ip address
109 | shutdown
110 | !
111 | interface Serial1/2
112 | no ip address
113 | shutdown
114 | !
115 | interface Serial1/3
116 | no ip address
117 | shutdown
118 | !
119 | router ospf 1
120 | !
```

```

121 ip forward-protocol nd
122 ip http server
123 no ip http secure-server
124 !
125 !
126 !
127 !
128 !
129 !
130 !
131 snmp-server community public R0
132 snmp-server community private RW
133 !
134 !
135 control-plane
136 !
137 !
138 !
139 !
140 mgcp profile default
141 !
142 !
143 !
144 !
145 !
146 !
147 line con 0
148 line aux 0
149 line vty 0 4
150 password ins@lab
151 login
152 transport input all
153 !
154 scheduler allocate 20000 1000
155 end      R S I 2811  Fas 0/1
156 HQ_FRR#

```

A.6.2. IP Interfaces

```

1 HQ_FRR#show ip interface brief
2 Interface      IP-Address  OK? Method Status      Protocol
3 FastEthernet0/0 172.16.254.62 YES manual up         up
4 FastEthernet0/1 unassigned YES unset administratively down down
5 Serial0/0/0     unassigned YES unset up         up
6 Serial0/0/0.123 172.16.252.1 YES manual up         up
7 Serial0/0/1     unassigned YES unset administratively down down
8 Serial1/0       unassigned YES unset administratively down down
9 Serial1/1       unassigned YES unset administratively down down
10 Serial1/2       unassigned YES unset administratively down down
11 Serial1/3       unassigned YES unset administratively down down

```

A.6.3. Interface Status

```

1 HQ_FRR>show interface status

```

A.6.4. Interface Trunk

```
1 HQ_FRR>show interface trunk
```

A.6.5. Neighbors

```
1 HQ_FRR#show cdp neighbors
2 Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
3                   S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone,
4                   D - Remote, C - CVTA, M - Two-port Mac Relay
5
6 Device ID      Local Intrfce Holdtme Capability Platform Port ID
7 HQ_WER1       Fas 0/0      145
```

A.6.6. IP Route

```
1 HQ_FRR>show ip route
2 Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
3         D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
4         N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
5         E1 - OSPF external type 1, E2 - OSPF external type 2
6         i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
7         ia - IS-IS inter area, * - candidate default, U - per-user static route
8         o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
9         + - replicated route, % - next hop override
10
11 Gateway of last resort is not set
12
13     172.16.0.0/16 is variably subnetted, 33 subnets, 4 masks
14 O    172.16.17.0/24 [110/5] via 172.16.254.61, 3d06h, FastEthernet0/0
15 O    172.16.18.0/24 [110/4] via 172.16.254.61, 3d06h, FastEthernet0/0
16 O    172.16.19.0/24 [110/4] via 172.16.254.61, 3d06h, FastEthernet0/0
17 O    172.16.25.1/32 [110/4] via 172.16.254.61, 3d06h, FastEthernet0/0
18 O    172.16.25.2/32 [110/3] via 172.16.254.61, 3d06h, FastEthernet0/0
19 O    172.16.25.3/32 [110/5] via 172.16.254.61, 3d06h, FastEthernet0/0
20 O    172.16.25.4/32 [110/6] via 172.16.254.61, 3d06h, FastEthernet0/0
21 O    172.16.25.5/32 [110/5] via 172.16.254.61, 3d06h, FastEthernet0/0
22 O    172.16.25.6/32 [110/4] via 172.16.254.61, 3d06h, FastEthernet0/0
23 O    172.16.25.7/32 [110/6] via 172.16.254.61, 3d06h, FastEthernet0/0
24 O    172.16.100.0/24 [110/65] via 172.16.252.2, 3d06h, Serial0/0/0.123
25 O    172.16.101.0/24 [110/66] via 172.16.252.2, 3d06h, Serial0/0/0.123
26 O    172.16.102.0/24 [110/1004] via 172.16.254.61, 3d06h, FastEthernet0/0
27 C    172.16.252.0/24 is directly connected, Serial0/0/0.123
28 L    172.16.252.1/32 is directly connected, Serial0/0/0.123
29 O    172.16.252.2/32 [110/64] via 172.16.252.2, 3d13h, Serial0/0/0.123
30 O    172.16.252.3/32 [110/1003] via 172.16.254.61, 3d06h, FastEthernet0/0
31 O    172.16.254.0/30 [110/3] via 172.16.254.61, 3d06h, FastEthernet0/0
32 O    172.16.254.4/30 [110/4] via 172.16.254.61, 3d06h, FastEthernet0/0
33 O    172.16.254.8/30 [110/5] via 172.16.254.61, 3d06h, FastEthernet0/0
34 O    172.16.254.12/30 [110/12] via 172.16.254.61, 3d06h, FastEthernet0/0
35 O    172.16.254.16/30 [110/6] via 172.16.254.61, 3d06h, FastEthernet0/0
36 O    172.16.254.20/30 [110/5] via 172.16.254.61, 3d06h, FastEthernet0/0
37 O    172.16.254.32/29 [110/6] via 172.16.254.61, 3d06h, FastEthernet0/0
38 O    172.16.254.40/29 [110/4] via 172.16.254.61, 3d06h, FastEthernet0/0
39 O    172.16.254.48/29 [110/3] via 172.16.254.61, 3d06h, FastEthernet0/0
40 O    172.16.254.56/30 [110/2] via 172.16.254.61, 3d06h, FastEthernet0/0
41 C    172.16.254.60/30 is directly connected, FastEthernet0/0
```

```

42 L      172.16.254.62/32 is directly connected, FastEthernet0/0
43 O      172.16.254.64/30 [110/3] via 172.16.254.61, 3d06h, FastEthernet0/0
44 O      172.16.255.0/30 [110/1003] via 172.16.254.61, 3d06h, FastEthernet0/0
45 O      172.16.255.4/30 [110/1003] via 172.16.254.61, 3d06h, FastEthernet0/0
46 O      172.16.255.8/30 [110/1003] via 172.16.254.61, 3d06h, FastEthernet0/0
47      200.200.200.0/28 is subnetted, 1 subnets
48 O      200.200.200.0 [110/4] via 172.16.254.61, 3d06h, FastEthernet0/0

```

A.6.7. Spanning Tree

```

1 HQ_FRR>show spanning
2
3 No spanning tree instances exist.

```

A.6.8. VLAN

```

1 HQ_FRR>show vlan
2 % Ambiguous command: "show vlan"

```

A.7. HQ-WER1

A.7.1. Running Configuration

```

1 HQ_WER1#show running-config
2 Building configuration...
3
4
5 Current configuration : 1524 bytes
6 !
7 ! Last configuration change at 23:58:14 UTC Thu Sep 22 2016
8 version 15.1
9 service timestamps debug datetime msec
10 service timestamps log datetime msec
11 no service password-encryption
12 !
13 hostname HQ_WER1
14 !
15 boot-start-marker
16 boot-end-marker
17 !
18 !
19 enable secret 5 $1$RJx0$6QppMo5PI1VrlwnDvu//l1
20 !
21 no aaa new-model
22 !
23 memory-size iomem 10
24 !
25 dot11 syslog
26 ip source-route
27 !
28 !
29 ip cef
30 !
31 !
32 !
33 no ipv6 cef

```

```
34 | !
35 | multilink bundle-name authenticated
36 | !
37 | !
38 | !
39 | !
40 | !
41 | !
42 | !
43 | !
44 | !
45 | !
46 | !
47 | voice-card 0
48 | !
49 | crypto pki token default removal timeout 0
50 | !
51 | !
52 | !
53 | !
54 | license udi pid CISC02811 sn FCZ104770XM
55 | archive
56 |   log config
57 |   hidekeys
58 | !
59 | redundancy
60 | !
61 | !
62 | !
63 | !
64 | !
65 | !
66 | !
67 | !
68 | !
69 | !
70 | interface FastEthernet0/0
71 |   ip address 172.16.254.58 255.255.255.252
72 |   ip ospf 1 area 0
73 |   duplex auto
74 |   speed auto
75 | !
76 | interface FastEthernet0/1
77 |   ip address 172.16.254.61 255.255.255.252
78 |   ip ospf 1 area 0
79 |   duplex auto
80 |   speed auto
81 | !
82 | interface Serial0/0/0
83 |   no ip address
84 |   shutdown
85 |   no fair-queue
86 |   clock rate 2000000
87 | !
88 | interface Serial0/0/1
89 |   no ip address
90 |   shutdown
91 |   clock rate 2000000
92 | !
93 | interface Serial1/0
94 |   no ip address
95 |   shutdown
```

```

96  !
97  interface Serial1/1
98  no ip address
99  shutdown
100 !
101 interface Serial1/2
102 no ip address
103 shutdown
104 !
105 interface Serial1/3
106 no ip address
107 shutdown
108 !
109 router ospf 1
110 !
111 ip forward-protocol nd
112 ip http server
113 no ip http secure-server
114 !
115 !
116 !
117 !
118 !
119 !
120 !
121 snmp-server community public R0
122 snmp-server community private RW
123 !
124 !
125 control-plane
126 !
127 !
128 !
129 !
130 mgcp profile default
131 !
132 !
133 !
134 !
135 !
136 !
137 line con 0
138 line aux 0
139 line vty 0 4
140 password ins@lab
141 login
142 transport input all
143 !
144 scheduler allocate 20000 1000
145 end

```

A.7.2. IP Interfaces

```

1 HQ_WER1#show ip interface brief
2 Interface      IP-Address  OK? Method Status  Protocol
3 FastEthernet0/0 172.16.254.58 YES manual up      up
4 FastEthernet0/1 172.16.254.61 YES manual up      up
5 Serial0/0/0     unassigned YES unset administratively down down
6 Serial0/0/1     unassigned YES unset administratively down down
7 Serial1/0       unassigned YES unset administratively down down

```

```

8 Serial1/1          unassigned YES unset administratively down down
9 Serial1/2          unassigned YES unset administratively down down
10 Serial1/3         unassigned YES unset administratively down down

```

A.7.3. Interface Status

```

1 HQ_WER1>show interface status

```

A.7.4. Interface Trunk

```

1 HQ_WER1>show interface trunk

```

A.7.5. Neighbors

```

1 HQ_WER1#show cdp neighbors
2 Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
3                   S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone,
4                   D - Remote, C - CVTA, M - Two-port Mac Relay
5
6 Device ID    Local Intrfce Holdtme Capability Platform Port ID
7 HQ_FRR       Fas 0/1      125          R S I 2811  Fas 0/0
8 HQ_CS2       Fas 0/0      155          R S I WS-C3560V Fas 0/21

```

A.7.6. IP Route

```

1 HQ_WER1>show ip route
2 Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
3         D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
4         N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
5         E1 - OSPF external type 1, E2 - OSPF external type 2
6         i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
7         ia - IS-IS inter area, * - candidate default, U - per-user static route
8         o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
9         + - replicated route, % - next hop override
10
11 Gateway of last resort is not set
12
13     172.16.0.0/16 is variably subnetted, 33 subnets, 4 masks
14 0       172.16.17.0/24 [110/4] via 172.16.254.57, 3d06h, FastEthernet0/0
15 0       172.16.18.0/24 [110/3] via 172.16.254.57, 3d06h, FastEthernet0/0
16 0       172.16.19.0/24 [110/3] via 172.16.254.57, 3d06h, FastEthernet0/0
17 0       172.16.25.1/32 [110/3] via 172.16.254.57, 3d06h, FastEthernet0/0
18 0       172.16.25.2/32 [110/2] via 172.16.254.57, 3d06h, FastEthernet0/0
19 0       172.16.25.3/32 [110/4] via 172.16.254.57, 3d06h, FastEthernet0/0
20 0       172.16.25.4/32 [110/5] via 172.16.254.57, 3d06h, FastEthernet0/0
21 0       172.16.25.5/32 [110/4] via 172.16.254.57, 3d06h, FastEthernet0/0
22 0       172.16.25.6/32 [110/3] via 172.16.254.57, 3d06h, FastEthernet0/0
23 0       172.16.25.7/32 [110/5] via 172.16.254.57, 3d06h, FastEthernet0/0
24 0       172.16.100.0/24 [110/66] via 172.16.254.62, 3d06h, FastEthernet0/1
25 0       172.16.101.0/24 [110/67] via 172.16.254.62, 3d06h, FastEthernet0/1
26 0       172.16.102.0/24 [110/1003] via 172.16.254.57, 3d06h, FastEthernet0/1
27 0       172.16.252.1/32 [110/1] via 172.16.254.62, 3d14h, FastEthernet0/1
28 0       172.16.252.2/32 [110/65] via 172.16.254.62, 3d13h, FastEthernet0/1

```

```

29 0      172.16.252.3/32 [110/1002] via 172.16.254.57, 3d06h, FastEthernet0/0
30 0      172.16.254.0/30 [110/2] via 172.16.254.57, 3d06h, FastEthernet0/0
31 0      172.16.254.4/30 [110/3] via 172.16.254.57, 3d06h, FastEthernet0/0
32 0      172.16.254.8/30 [110/4] via 172.16.254.57, 3d06h, FastEthernet0/0
33 0      172.16.254.12/30 [110/11] via 172.16.254.57, 3d06h, FastEthernet0/0
34 0      172.16.254.16/30 [110/5] via 172.16.254.57, 3d06h, FastEthernet0/0
35 0      172.16.254.20/30 [110/4] via 172.16.254.57, 3d06h, FastEthernet0/0
36 0      172.16.254.32/29 [110/5] via 172.16.254.57, 3d06h, FastEthernet0/0
37 0      172.16.254.40/29 [110/3] via 172.16.254.57, 3d06h, FastEthernet0/0
38 0      172.16.254.48/29 [110/2] via 172.16.254.57, 3d06h, FastEthernet0/0
39 C      172.16.254.56/30 is directly connected, FastEthernet0/0
40 L      172.16.254.58/32 is directly connected, FastEthernet0/0
41 C      172.16.254.60/30 is directly connected, FastEthernet0/1
42 L      172.16.254.61/32 is directly connected, FastEthernet0/1
43 0      172.16.254.64/30 [110/2] via 172.16.254.57, 3d06h, FastEthernet0/0
44 0      172.16.255.0/30 [110/1002] via 172.16.254.57, 3d06h, FastEthernet0/0
45 0      172.16.255.4/30 [110/1002] via 172.16.254.57, 3d06h, FastEthernet0/0
46 0      172.16.255.8/30 [110/1002] via 172.16.254.57, 3d06h, FastEthernet0/0
47      200.200.200.0/28 is subnetted, 1 subnets
48      200.200.200.0 [110/3] via 172.16.254.57, 3d06h, FastEthernet0/0

```

A.7.7. Spanning Tree

```

1 HQ_WER1>show spanning
2
3 No spanning tree instances exist.

```

A.7.8. VLAN

```

1 HQ_WER1>show vlan
2 % Ambiguous command: "show vlan"

```

A.8. HQ-IER1

A.8.1. Running Configuration

```

1 HQ_IER1#show run
2 Building configuration...
3
4
5 Current configuration : 1977 bytes
6 !
7 ! Last configuration change at 17:14:57 UTC Mon Jan 2 2006
8 version 15.1
9 service timestamps debug datetime msec
10 service timestamps log datetime msec
11 no service password-encryption
12 !
13 hostname HQ_IER1
14 !
15 boot-start-marker
16 boot-end-marker
17 !
18 !
19 enable secret 5 $1$59bw$.eTpV8UBqKkJfmSRZCWHH/
20 !

```



```
21 no aaa new-model
22 !
23 memory-size iomem 10
24 !
25 dot11 syslog
26 ip source-route
27 !
28 !
29 ip cef
30 !
31 !
32 !
33 no ipv6 cef
34 !
35 multilink bundle-name authenticated
36 !
37 !
38 !
39 !
40 !
41 !
42 !
43 !
44 !
45 !
46 !
47 voice-card 0
48 !
49 crypto pki token default removal timeout 0
50 !
51 !
52 !
53 !
54 license udi pid CISC02811 sn FGL154811KR
55 archive
56   log config
57   hidekeys
58 !
59 redundancy
60 !
61 !
62 !
63 !
64 !
65 !
66 !
67 !
68 !
69 !
70 interface Tunnel0
71   ip address 172.16.255.1 255.255.255.252
72   ip ospf 1 area 0
73   tunnel source 200.200.200.1
74   tunnel destination 200.200.200.2
75 !
76 interface Tunnel1
77   ip address 172.16.255.5 255.255.255.252
78   ip ospf 1 area 0
79   tunnel source 200.200.200.1
80   tunnel destination 200.200.200.3
81 !
82 interface Tunnel2
```

```
83 ip address 172.16.255.9 255.255.255.252
84 ip ospf 1 area 0
85 tunnel source 200.200.200.1
86 tunnel destination 200.200.200.4
87 !
88 interface FastEthernet0/0
89 ip address 172.16.254.66 255.255.255.252
90 ip ospf 1 area 0
91 duplex auto
92 speed auto
93 !
94 interface FastEthernet0/1
95 ip address 200.200.200.1 255.255.255.240
96 ip ospf 1 area 0
97 duplex auto
98 speed auto
99 !
100 interface Serial0/0/0
101 no ip address
102 shutdown
103 no fair-queue
104 clock rate 2000000
105 !
106 interface Serial0/0/1
107 no ip address
108 shutdown
109 clock rate 2000000
110 !
111 interface Serial0/1/0
112 no ip address
113 shutdown
114 clock rate 2000000
115 !
116 interface Serial0/1/1
117 no ip address
118 shutdown
119 clock rate 2000000
120 !
121 interface FastEthernet1/0
122 no ip address
123 shutdown
124 duplex auto
125 speed auto
126 !
127 router ospf 1
128 !
129 ip forward-protocol nd
130 ip http server
131 no ip http secure-server
132 !
133 !
134 !
135 !
136 !
137 !
138 !
139 snmp-server community public R0
140 snmp-server community private RW
141 !
142 !
143 control-plane
144 !
```

```

145 !
146 !
147 !
148 mgcp profile default
149 !
150 !
151 !
152 !
153 !
154 !
155 line con 0
156 line aux 0
157 line vty 0 4
158 password ins@lab
159 login
160 transport input all
161 !
162 scheduler allocate 20000 1000
163 end

```

A.8.2. IP Interfaces

```

1 HQ_IER1#show ip interface brief
2 Interface IP-Address OK? Method Status Protocol
3 FastEthernet0/0 172.16.254.66 YES manual up up
4 FastEthernet0/1 200.200.200.1 YES manual up up
5 Serial0/0/0 unassigned YES unset administratively down down
6 Serial0/0/1 unassigned YES unset administratively down down
7 Serial0/1/0 unassigned YES unset administratively down down
8 Serial0/1/1 unassigned YES unset administratively down down
9 FastEthernet1/0 unassigned YES unset administratively down down
10 Tunnel0 172.16.255.1 YES manual up up
11 Tunnel1 172.16.255.5 YES manual up up
12 Tunnel2 172.16.255.9 YES manual up up

```

A.8.3. Interface Status

```

1 HQ_IER1#show interface status

```

A.8.4. Interface Trunk

```

1 HQ_IER1#show interface trunk

```

A.8.5. Neighbors

```

1 BR1_R1#show cdp neighbors
2 Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
3 S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone,
4 D - Remote, C - CVTA, M - Two-port Mac Relay
5
6 Device ID Local Intrfce Holdtme Capability Platform Port ID
7 BR1_S1 Fas 0/1 143 R S I WS-C3560- Fas 0/1
8 Switch Fas 0/0 133 S I WS-C2960- Fas 0/2
9 BR1_R1#

```

A.8.6. IP Route

```

1 HQ_IER1#show ip route
2 Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
3       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
4       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
5       E1 - OSPF external type 1, E2 - OSPF external type 2
6       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
7       ia - IS-IS inter area, * - candidate default, U - per-user static route
8       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
9       + - replicated route, % - next hop override
10
11 Gateway of last resort is not set
12
13     172.16.0.0/16 is variably subnetted, 35 subnets, 4 masks
14 O    172.16.17.0/24 [110/4] via 172.16.254.65, 3d07h, FastEthernet0/0
15 O    172.16.18.0/24 [110/3] via 172.16.254.65, 3d07h, FastEthernet0/0
16 O    172.16.19.0/24 [110/3] via 172.16.254.65, 3d07h, FastEthernet0/0
17 O    172.16.25.1/32 [110/3] via 172.16.254.65, 3d07h, FastEthernet0/0
18 O    172.16.25.2/32 [110/2] via 172.16.254.65, 3d07h, FastEthernet0/0
19 O    172.16.25.3/32 [110/4] via 172.16.254.65, 3d07h, FastEthernet0/0
20 O    172.16.25.4/32 [110/5] via 172.16.254.65, 3d07h, FastEthernet0/0
21 O    172.16.25.5/32 [110/4] via 172.16.254.65, 3d07h, FastEthernet0/0
22 O    172.16.25.6/32 [110/3] via 172.16.254.65, 3d07h, FastEthernet0/0
23 O    172.16.25.7/32 [110/5] via 172.16.254.65, 3d07h, FastEthernet0/0
24 O    172.16.100.0/24 [110/68] via 172.16.254.65, 3d07h, FastEthernet0/0
25 O    172.16.101.0/24 [110/69] via 172.16.254.65, 3d07h, FastEthernet0/0
26 O    172.16.102.0/24 [110/1001] via 172.16.255.6, 3d07h, Tunnel1
27 O    172.16.252.1/32 [110/3] via 172.16.254.65, 3d07h, FastEthernet0/0
28 O    172.16.252.2/32 [110/67] via 172.16.254.65, 3d07h, FastEthernet0/0
29 O    172.16.252.3/32 [110/1000] via 172.16.255.6, 3d07h, Tunnel1
30 O    172.16.254.0/30 [110/2] via 172.16.254.65, 3d07h, FastEthernet0/0
31 O    172.16.254.4/30 [110/3] via 172.16.254.65, 3d07h, FastEthernet0/0
32 O    172.16.254.8/30 [110/4] via 172.16.254.65, 3d07h, FastEthernet0/0
33 O    172.16.254.12/30 [110/11] via 172.16.254.65, 3d07h, FastEthernet0/0
34 O    172.16.254.16/30 [110/5] via 172.16.254.65, 3d07h, FastEthernet0/0
35 O    172.16.254.20/30 [110/4] via 172.16.254.65, 3d07h, FastEthernet0/0
36 O    172.16.254.32/29 [110/5] via 172.16.254.65, 3d07h, FastEthernet0/0
37 O    172.16.254.40/29 [110/3] via 172.16.254.65, 3d07h, FastEthernet0/0
38 O    172.16.254.48/29 [110/2] via 172.16.254.65, 3d07h, FastEthernet0/0
39 O    172.16.254.56/30 [110/2] via 172.16.254.65, 3d07h, FastEthernet0/0
40 O    172.16.254.60/30 [110/3] via 172.16.254.65, 3d07h, FastEthernet0/0
41 C    172.16.254.64/30 is directly connected, FastEthernet0/0
42 L    172.16.254.66/32 is directly connected, FastEthernet0/0
43 C    172.16.255.0/30 is directly connected, Tunnel0
44 L    172.16.255.1/32 is directly connected, Tunnel0
45 C    172.16.255.4/30 is directly connected, Tunnel1
46 L    172.16.255.5/32 is directly connected, Tunnel1
47 C    172.16.255.8/30 is directly connected, Tunnel2
48 L    172.16.255.9/32 is directly connected, Tunnel2
49     200.200.200.0/24 is variably subnetted, 2 subnets, 2 masks
50 C    200.200.200.0/28 is directly connected, FastEthernet0/1
51 L    200.200.200.1/32 is directly connected, FastEthernet0/1

```

A.8.7. Spanning Tree

```

1 HQ_IER1#show spanning
2
3 No spanning tree instances exist.

```

A.8.8. VLAN

```
1 HQ_IER1# show vlans
2
3 No Virtual LANs configured.
```

A.9. Provider Switch

A.9.1. Running Configuration

```
1 Switch#show run
2 Building configuration...
3
4 Current configuration : 1222 bytes
5 !
6 version 15.0
7 no service pad
8 service timestamps debug datetime msec
9 service timestamps log datetime msec
10 no service password-encryption
11 !
12 hostname Switch
13 !
14 boot-start-marker
15 boot-end-marker
16 !
17 !
18 no aaa new-model
19 system mtu routing 1500
20 !
21 !
22 !
23 !
24 !
25 !
26 !
27 !
28 !
29 !
30 spanning-tree mode pvst
31 spanning-tree extend system-id
32 !
33 vlan internal allocation policy ascending
34 !
35 !
36 !
37 !
38 !
39 !
40 interface FastEthernet0/1
41 !
42 interface FastEthernet0/2
43 !
44 interface FastEthernet0/3
45 !
46 interface FastEthernet0/4
47 !
48 interface FastEthernet0/5
49 !
```

```

50 interface FastEthernet0/6
51 !
52 interface FastEthernet0/7
53 !
54 interface FastEthernet0/8
55 !
56 interface FastEthernet0/9
57 !
58 interface FastEthernet0/10
59 !
60 interface FastEthernet0/11
61 !
62 interface FastEthernet0/12
63 !
64 interface FastEthernet0/13
65 !
66 interface FastEthernet0/14
67 !
68 interface FastEthernet0/15
69 !
70 interface FastEthernet0/16
71 !
72 interface FastEthernet0/17
73 !
74 interface FastEthernet0/18
75 !
76 interface FastEthernet0/19
77 !
78 interface FastEthernet0/20
79 !
80 interface FastEthernet0/21
81 !
82 interface FastEthernet0/22
83 !
84 interface FastEthernet0/23
85 !
86 interface FastEthernet0/24
87 !
88 interface GigabitEthernet0/1
89 !
90 interface GigabitEthernet0/2
91 !
92 interface Vlan1
93   no ip address
94 !
95 ip http server
96 ip http secure-server
97 !
98 !
99 line con 0
100 line vty 5 15
101 !
102 end

```

A.9.2. IP Interfaces

```

1 Switch#show ip interface brief
2 Interface      IP-Address  OK? Method Status  Protocol
3 Vlan1          unassigned YES unset up      up
4 FastEthernet0/1 unassigned YES unset up      up

```

```

5 FastEthernet0/2 unassigned YES unset up up
6 FastEthernet0/3 unassigned YES unset up up
7 FastEthernet0/4 unassigned YES unset down down
8 FastEthernet0/5 unassigned YES unset down down
9 FastEthernet0/6 unassigned YES unset down down
10 FastEthernet0/7 unassigned YES unset down down
11 FastEthernet0/8 unassigned YES unset down down
12 FastEthernet0/9 unassigned YES unset down down
13 FastEthernet0/10 unassigned YES unset down down
14 FastEthernet0/11 unassigned YES unset down down
15 FastEthernet0/12 unassigned YES unset down down
16 FastEthernet0/13 unassigned YES unset down down
17 FastEthernet0/14 unassigned YES unset down down
18 FastEthernet0/15 unassigned YES unset down down
19 FastEthernet0/16 unassigned YES unset down down
20 FastEthernet0/17 unassigned YES unset down down
21 FastEthernet0/18 unassigned YES unset down down
22 FastEthernet0/19 unassigned YES unset down down
23 FastEthernet0/20 unassigned YES unset down down
24 FastEthernet0/21 unassigned YES unset down down
25 FastEthernet0/22 unassigned YES unset down down
26 FastEthernet0/23 unassigned YES unset down down
27 FastEthernet0/24 unassigned YES unset down down
28 GigabitEthernet0/1 unassigned YES unset down down
29 GigabitEthernet0/2 unassigned YES unset down down

```

A.9.3. Interface Status

```

1 Switch# show interface status
2
3 Port Name Status Vlan Duplex Speed Type
4 Fa0/1 connected 1 a-full a-100 10/100BaseTX
5 Fa0/2 connected 1 a-full a-100 10/100BaseTX
6 Fa0/3 connected 1 a-full a-100 10/100BaseTX
7 Fa0/4 notconnect 1 auto auto 10/100BaseTX
8 Fa0/5 notconnect 1 auto auto 10/100BaseTX
9 Fa0/6 notconnect 1 auto auto 10/100BaseTX
10 Fa0/7 notconnect 1 auto auto 10/100BaseTX
11 Fa0/8 notconnect 1 auto auto 10/100BaseTX
12 Fa0/9 notconnect 1 auto auto 10/100BaseTX
13 Fa0/10 notconnect 1 auto auto 10/100BaseTX
14 Fa0/11 notconnect 1 auto auto 10/100BaseTX
15 Fa0/12 notconnect 1 auto auto 10/100BaseTX
16 Fa0/13 notconnect 1 auto auto 10/100BaseTX
17 Fa0/14 notconnect 1 auto auto 10/100BaseTX
18 Fa0/15 notconnect 1 auto auto 10/100BaseTX
19 Fa0/16 notconnect 1 auto auto 10/100BaseTX
20 Fa0/17 notconnect 1 auto auto 10/100BaseTX
21 Fa0/18 notconnect 1 auto auto 10/100BaseTX
22 Fa0/19 notconnect 1 auto auto 10/100BaseTX
23 Fa0/20 notconnect 1 auto auto 10/100BaseTX
24 Fa0/21 notconnect 1 auto auto 10/100BaseTX
25
26 Port Name Status Vlan Duplex Speed Type
27 Fa0/22 notconnect 1 auto auto 10/100BaseTX
28 Fa0/23 notconnect 1 auto auto 10/100BaseTX
29 Fa0/24 notconnect 1 auto auto 10/100BaseTX
30 Gi0/1 notconnect 1 auto auto Not Present
31 Gi0/2 notconnect 1 auto auto Not Present

```

A.9.4. Interface Trunk

```
1 Switch# show interface trunk
```

A.9.5. Neighbors

```
1 Switch# show cdp neighbors
2 Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
3                   S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone,
4                   D - Remote, C - CVTA, M - Two-port Mac Relay
5
6 Device ID    Local Intrfce Holdtme Capability Platform Port ID
7 BR1_R1      Fas 0/2      129      R S I 2811  Fas 0/0
8 BR2_R1      Fas 0/3      141      R S I 2811  Fas 0/0
9 HQ_IER1     Fas 0/1      142      R S I 2811  Fas 0/1
```

A.9.6. IP Route

```
1 Switch#show ip route
2      ^
3 % Invalid input detected at '^' marker.
```

A.9.7. Spanning Tree

```
1 Switch#show spanning
2
3 VLAN0001
4   Spanning tree enabled protocol ieee
5   Root ID Priority 32769
6       Address f025.72d1.8700
7       This bridge is the root
8       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
9
10  Bridge ID Priority 32769 (priority 32768 sys-id-ext 1)
11      Address f025.72d1.8700
12      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
13      Aging Time 300 sec
14
15 Interface      Role Sts Cost  Prio.Nbr Type
16 -----
17 Fa0/1          Desg FWD 19   128.1 P2p
18 Fa0/2          Desg FWD 19   128.2 P2p
19 Fa0/3          Desg FWD 19   128.3 P2p
```

A.9.8. VLAN

```
1 Switch#show vlan
2
3 VLAN Name                Status Ports
4 -----
5 1 default                 active Fa0/1, Fa0/2, Fa0/3, Fa0/4
6                           Fa0/5, Fa0/6, Fa0/7, Fa0/8
7                           Fa0/9, Fa0/10, Fa0/11, Fa0/12
```



```

8                                     Fa0/13, Fa0/14, Fa0/15, Fa0/16
9                                     Fa0/17, Fa0/18, Fa0/19, Fa0/20
10                                    Fa0/21, Fa0/22, Fa0/23, Fa0/24
11                                    Gi0/1, Gi0/2
12 1002 fddi-default                  act/unsup
13 1003 token-ring-default            act/unsup
14 1004 fddinet-default              act/unsup
15 1005 trnet-default                act/unsup
16
17 VLAN Type SAID    MTU  Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
18 -----
19 1    enet 100001  1500 -    -    -    -    -    0      0
20 1002 fddi 101002  1500 -    -    -    -    -    0      0
21 1003 tr  101003  1500 -    -    -    -    -    0      0
22 1004 fdnet 101004 1500 -    -    -    ieee -    0      0
23 1005 trnet 101005 1500 -    -    -    ibm  -    0      0
24
25 Remote SPAN VLANs
26 -----
27
28
29 Primary Secondary Type      Ports
30 -----

```

A.10. HQ CS1

A.10.1. Running Configuration

```

1
2 !
3 ! Last configuration change at 07:31:17 UTC Mon Mar 1 1993
4 !
5 version 15.0
6 no service pad
7 service timestamps debug datetime msec
8 service timestamps log datetime msec
9 no service password-encryption
10 service sequence-numbers
11 !
12 hostname HQ_CS1
13 !
14 boot-start-marker
15 boot-end-marker
16 !
17 enable secret 5 $1$sMhJ$dd5KAmhu1twZd0/DAD/Lm/
18 !
19 username ins password 0 ins@lab
20 no aaa new-model
21 system mtu routing 1500
22 ip routing
23 no ip domain-lookup
24 !
25 !
26 !
27 !
28 crypto pki trustpoint HTTPS_SS_CERT_KEYPAIR
29 enrollment selfsigned
30 serial-number
31 revocation-check none
32 rsakeypair HTTPS_SS_CERT_KEYPAIR

```

```
33 | !
34 | !
35 | crypto pki certificate chain HTTPS_SS_CERT_KEYPAIR
36 |   certificate self-signed 01
37 |     quit
38 | !
39 | !
40 | !
41 | !
42 | !
43 | spanning-tree mode pvst
44 | spanning-tree extend system-id
45 | !
46 | vlan internal allocation policy ascending
47 | !
48 | !
49 | !
50 | !
51 | !
52 | !
53 | !
54 | !
55 | !
56 | !
57 | !
58 | !
59 | !
60 | !
61 | interface Loopback100
62 |   ip address 172.16.25.1 255.255.255.0
63 |   ip ospf 1 area 0
64 | !
65 | interface Port-channel1
66 |   no switchport
67 |   ip address 172.16.254.1 255.255.255.252
68 |   ip ospf 1 area 0
69 | !
70 | interface Port-channel2
71 |   no switchport
72 |   ip address 172.16.254.5 255.255.255.252
73 |   ip ospf 1 area 0
74 | !
75 | interface Port-channel3
76 |   no switchport
77 |   bandwidth 10000
78 |   ip address 172.16.254.33 255.255.255.248
79 |   ip ospf mtu-ignore
80 |   ip ospf 1 area 0
81 |   speed 10
82 | !
83 | interface Port-channel4
84 |   no switchport
85 |   bandwidth 100000
86 |   ip address 172.16.254.41 255.255.255.248
87 |   ip ospf mtu-ignore
88 |   ip ospf 1 area 0
89 |   speed 100
90 |   duplex half
91 | !
92 | interface FastEthernet0/1
93 |   no switchport
94 |   no ip address
```

```
95 | channel-group 1 mode on
96 | !
97 | interface FastEthernet0/2
98 | no switchport
99 | no ip address
100 | channel-group 1 mode on
101 | !
102 | interface FastEthernet0/3
103 | no switchport
104 | no ip address
105 | channel-group 1 mode on
106 | !
107 | interface FastEthernet0/4
108 | no switchport
109 | no ip address
110 | channel-group 1 mode on
111 | !
112 | interface FastEthernet0/5
113 | no switchport
114 | no ip address
115 | channel-group 2 mode on
116 | !
117 | interface FastEthernet0/6
118 | no switchport
119 | no ip address
120 | channel-group 2 mode on
121 | !
122 | interface FastEthernet0/7
123 | no switchport
124 | no ip address
125 | channel-group 2 mode on
126 | !
127 | interface FastEthernet0/8
128 | no switchport
129 | no ip address
130 | channel-group 2 mode on
131 | !
132 | interface FastEthernet0/9
133 | !
134 | interface FastEthernet0/10
135 | !
136 | interface FastEthernet0/11
137 | !
138 | interface FastEthernet0/12
139 | !
140 | interface FastEthernet0/13
141 | no switchport
142 | no ip address
143 | speed 10
144 | channel-group 3 mode on
145 | !
146 | interface FastEthernet0/14
147 | no switchport
148 | no ip address
149 | speed 10
150 | channel-group 3 mode on
151 | !
152 | interface FastEthernet0/15
153 | no switchport
154 | no ip address
155 | speed 10
156 | channel-group 3 mode on
```

```
157 | !
158 | interface FastEthernet0/16
159 | no switchport
160 | no ip address
161 | speed 10
162 | channel-group 3 mode on
163 | !
164 | interface FastEthernet0/17
165 | no switchport
166 | no ip address
167 | speed 100
168 | duplex half
169 | channel-group 4 mode on
170 | !
171 | interface FastEthernet0/18
172 | no switchport
173 | no ip address
174 | speed 100
175 | duplex half
176 | channel-group 4 mode on
177 | !
178 | interface FastEthernet0/19
179 | no switchport
180 | no ip address
181 | speed 100
182 | duplex half
183 | channel-group 4 mode on
184 | !
185 | interface FastEthernet0/20
186 | no switchport
187 | no ip address
188 | speed 100
189 | duplex half
190 | channel-group 4 mode on
191 | !
192 | interface FastEthernet0/21
193 | !
194 | interface FastEthernet0/22
195 | !
196 | interface FastEthernet0/23
197 | !
198 | interface FastEthernet0/24
199 | !
200 | interface GigabitEthernet0/1
201 | !
202 | interface GigabitEthernet0/2
203 | !
204 | interface Vlan1
205 | no ip address
206 | !
207 | router ospf 1
208 | !
209 | ip http server
210 | ip http secure-server
211 | !
212 | !
213 | ip sla enable reaction-alerts
214 | snmp-server community public R0
215 | snmp-server community private RW
216 | !
217 | !
218 | line con 0
```

```

219 logging synchronous
220 line vty 0 4
221 password cisco
222 login
223 line vty 5 15
224 password cisco
225 login
226 !
227 end

```

A.10.2. IP Interfaces

Interface	IP-Address	OK?	Method	Status	Protocol
Vlan1	unassigned	YES	unset	up	down
FastEthernet0/1	unassigned	YES	manual	up	up
FastEthernet0/2	unassigned	YES	manual	up	up
FastEthernet0/3	unassigned	YES	manual	up	up
FastEthernet0/4	unassigned	YES	manual	up	up
FastEthernet0/5	unassigned	YES	manual	up	up
FastEthernet0/6	unassigned	YES	manual	up	up
FastEthernet0/7	unassigned	YES	manual	up	up
FastEthernet0/8	unassigned	YES	manual	up	up
FastEthernet0/9	unassigned	YES	unset	down	down
FastEthernet0/10	unassigned	YES	unset	down	down
FastEthernet0/11	unassigned	YES	unset	down	down
FastEthernet0/12	unassigned	YES	unset	down	down
FastEthernet0/13	unassigned	YES	manual	up	up
FastEthernet0/14	unassigned	YES	manual	up	up
FastEthernet0/15	unassigned	YES	manual	up	up
FastEthernet0/16	unassigned	YES	manual	up	up
FastEthernet0/17	unassigned	YES	manual	up	up
FastEthernet0/18	unassigned	YES	manual	up	up
FastEthernet0/19	unassigned	YES	manual	up	up
FastEthernet0/20	unassigned	YES	manual	up	up
FastEthernet0/21	unassigned	YES	unset	down	down
FastEthernet0/22	unassigned	YES	unset	down	down
FastEthernet0/23	unassigned	YES	unset	down	down
FastEthernet0/24	unassigned	YES	unset	down	down
GigabitEthernet0/1	unassigned	YES	unset	down	down
GigabitEthernet0/2	unassigned	YES	unset	down	down
Port-channel1	172.16.254.1	YES	manual	up	up
Port-channel2	172.16.254.5	YES	manual	up	up
Port-channel3	172.16.254.33	YES	manual	up	up
Port-channel4	172.16.254.41	YES	manual	up	up
Loopback100	172.16.25.1	YES	manual	up	up

A.10.3. Interface Status

```

1 HQ_CS1#show interface status
2
3 Port      Name      Status    Vlan    Duplex Speed Type
4 Fa0/1     connected routed    a-full  a-100  10/100BaseTX
5 Fa0/2     connected routed    a-full  a-100  10/100BaseTX
6 Fa0/3     connected routed    a-full  a-100  10/100BaseTX
7 Fa0/4     connected routed    a-full  a-100  10/100BaseTX
8 Fa0/5     connected routed    a-full  a-100  10/100BaseTX
9 Fa0/6     connected routed    a-full  a-100  10/100BaseTX
10 Fa0/7     connected routed    a-full  a-100  10/100BaseTX

```

```

11 Fa0/8          connected routed a-full a-100 10/100BaseTX
12 Fa0/9          notconnect 1      auto auto 10/100BaseTX
13 Fa0/10         notconnect 1      auto auto 10/100BaseTX
14 Fa0/11         notconnect 1      auto auto 10/100BaseTX
15 Fa0/12         notconnect 1      auto auto 10/100BaseTX
16 Fa0/13         connected routed a-full 10 10/100BaseTX
17 Fa0/14         connected routed a-full 10 10/100BaseTX
18 Fa0/15         connected routed a-full 10 10/100BaseTX
19 Fa0/16         connected routed a-full 10 10/100BaseTX
20 Fa0/17         connected routed half 100 10/100BaseTX
21 Fa0/18         connected routed half 100 10/100BaseTX
22 Fa0/19         connected routed half 100 10/100BaseTX
23 Fa0/20         connected routed half 100 10/100BaseTX
24 Fa0/21         notconnect 1      auto auto 10/100BaseTX
25
26 Port    Name      Status    Vlan    Duplex Speed Type
27 Fa0/22   notconnect 1         auto auto 10/100BaseTX
28 Fa0/23   notconnect 1         auto auto 10/100BaseTX
29 Fa0/24   notconnect 1         auto auto 10/100BaseTX
30 Gi0/1    notconnect 1         auto auto Not Present
31 Gi0/2    notconnect 1         auto auto Not Present
32 Po1      connected routed a-full a-100
33 Po2      connected routed a-full a-100
34 Po3      connected routed a-full 10
35 Po4      connected routed half 100

```

A.10.4. Interface Trunk

```

1 wurde nichts angezeigt

```

A.10.5. Neighbors

```

1 Device ID      Local Intrfce Holdtme Capability Platform Port ID
2 HQ_DS1        Fas 0/16       175          R S I WS-C3560V Fas 0/4
3 HQ_DS1        Fas 0/15       175          R S I WS-C3560V Fas 0/3
4 HQ_DS1        Fas 0/14       175          R S I WS-C3560V Fas 0/2
5 HQ_DS1        Fas 0/13       160          R S I WS-C3560V Fas 0/1
6 HQ_DS2        Fas 0/20       160          R S I WS-C3560V Fas 0/8
7 HQ_DS2        Fas 0/19       160          R S I WS-C3560V Fas 0/7
8 HQ_DS2        Fas 0/18       160          R S I WS-C3560V Fas 0/6
9 HQ_DS2        Fas 0/17       160          R S I WS-C3560V Fas 0/5
10 HQ_CS2        Fas 0/4        170          R S I WS-C3560V Fas 0/4
11 HQ_CS2        Fas 0/3        159          R S I WS-C3560V Fas 0/3
12 HQ_CS2        Fas 0/2        159          R S I WS-C3560V Fas 0/2
13 HQ_CS2        Fas 0/1        159          R S I WS-C3560V Fas 0/1
14 HQ_CS3        Fas 0/8        178          R S I WS-C3560- Fas 0/8
15 HQ_CS3        Fas 0/6        178          R S I WS-C3560- Fas 0/6
16 HQ_CS3        Fas 0/7        178          R S I WS-C3560- Fas 0/7
17 HQ_CS3        Fas 0/5        178          R S I WS-C3560- Fas 0/5

```

A.10.6. IP Route

```

1 HQ_CS1#show ip route
2 Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
3         D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
4         N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2

```

```

5      E1 - OSPF external type 1, E2 - OSPF external type 2
6      i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
7      ia - IS-IS inter area, * - candidate default, U - per-user static route
8      o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
9      + - replicated route, % - next hop override
10
11 Gateway of last resort is not set
12
13      172.16.0.0/16 is variably subnetted, 36 subnets, 4 masks
14      O      172.16.17.0/24 [110/3] via 172.16.254.42, 3d05h, Port-channel4
15      O      172.16.18.0/24 [110/2] via 172.16.254.42, 3d05h, Port-channel4
16      O      172.16.19.0/24 [110/2] via 172.16.254.42, 3d05h, Port-channel4
17      C      172.16.25.0/24 is directly connected, Loopback100
18      L      172.16.25.1/32 is directly connected, Loopback100
19      O      172.16.25.2/32 [110/2] via 172.16.254.2, 3d05h, Port-channel1
20      O      172.16.25.3/32 [110/2] via 172.16.254.6, 3d13h, Port-channel2
21      O      172.16.25.4/32 [110/3] via 172.16.254.6, 3d13h, Port-channel2
22      O      172.16.25.5/32 [110/3] via 172.16.254.42, 3d05h, Port-channel4
23      O      172.16.25.6/32 [110/2] via 172.16.254.42, 3d05h, Port-channel4
24      O      172.16.25.7/32 [110/3] via 172.16.254.6, 3d13h, Port-channel2
25      O      172.16.100.0/24 [110/68] via 172.16.254.2, 3d05h, Port-channel1
26      O      172.16.101.0/24 [110/69] via 172.16.254.2, 3d05h, Port-channel1
27      O      172.16.102.0/24 [110/1003] via 172.16.254.2, 3d05h, Port-channel1
28      O      172.16.252.1/32 [110/3] via 172.16.254.2, 3d05h, Port-channel1
29      O      172.16.252.2/32 [110/67] via 172.16.254.2, 3d05h, Port-channel1
30      O      172.16.252.3/32 [110/1002] via 172.16.254.2, 3d05h, Port-channel1
31      C      172.16.254.0/30 is directly connected, Port-channel1
32      L      172.16.254.1/32 is directly connected, Port-channel1
33      C      172.16.254.4/30 is directly connected, Port-channel2
34      L      172.16.254.5/32 is directly connected, Port-channel2
35      O      172.16.254.8/30 [110/2] via 172.16.254.6, 3d13h, Port-channel2
36      O      172.16.254.12/30 [110/11] via 172.16.254.2, 3d05h, Port-channel1
37      O      172.16.254.16/30 [110/3] via 172.16.254.6, 3d13h, Port-channel2
38      O      172.16.254.20/30 [110/2] via 172.16.254.6, 3d13h, Port-channel2
39      C      172.16.254.32/29 is directly connected, Port-channel3
40      L      172.16.254.33/32 is directly connected, Port-channel3
41      C      172.16.254.40/29 is directly connected, Port-channel4
42      L      172.16.254.41/32 is directly connected, Port-channel4
43      O      172.16.254.48/29 [110/2] via 172.16.254.42, 3d05h, Port-channel4
44      [110/2] via 172.16.254.2, 3d05h, Port-channel1
45      O      172.16.254.56/30 [110/2] via 172.16.254.2, 3d05h, Port-channel1
46      O      172.16.254.60/30 [110/3] via 172.16.254.2, 3d05h, Port-channel1
47      O      172.16.254.64/30 [110/2] via 172.16.254.2, 3d05h, Port-channel1
48      O      172.16.255.0/30 [110/1002] via 172.16.254.2, 3d05h, Port-channel1
49      O      172.16.255.4/30 [110/1002] via 172.16.254.2, 3d05h, Port-channel1
50      O      172.16.255.8/30 [110/1002] via 172.16.254.2, 3d05h, Port-channel1
51      200.200.200.0/28 is subnetted, 1 subnets
52      O      200.200.200.0 [110/3] via 172.16.254.2, 3d05h, Port-channel1

```

A.10.7. Spanning Tree

```

1 HQ_CS1# show spanning-tree
2
3 No spanning tree instance exists.

```

A.10.8. VLAN

```

1 HQ_CS1#show vlan

```

VLAN Name	Status	Ports
1 default	active	Fa0/9, Fa0/10, Fa0/11, Fa0/12 Fa0/21, Fa0/22, Fa0/23, Fa0/24 Gi0/1, Gi0/2
1002 fddi- default	act/unsup	
1003 token-ring- default	act/unsup	
1004 fddinet- default	act/unsup	
1005 trnet- default	act/unsup	
VLAN Type SAID MTU Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2		
1 enet 100001 1500 - - - - - 0 0		
1002 fddi 101002 1500 - - - - - 0 0		
1003 tr 101003 1500 - - - - - 0 0		
1004 fdnet 101004 1500 - - - ieee - 0 0		
1005 trnet 101005 1500 - - - ibm - 0 0		
Remote SPAN VLANs		
Primary Secondary Type Ports		

A.11. HQ CS2

A.11.1. Running Configuration

```

1  !
2  !
3  ! Last configuration change at 08:38:55 UTC Mon Mar 1 1993
4  !
5  version 15.0
6  no service pad
7  service timestamps debug datetime msec
8  service timestamps log datetime msec
9  no service password-encryption
10 service sequence-numbers
11 !
12 hostname HQ_CS2
13 !
14 boot-start-marker
15 boot-end-marker
16 !
17 enable secret 5 $1$2GLo$vsF1.pg28M8/YjQJtzH.r/
18 !
19 username ins password 0 ins@lab
20 no aaa new-model
21 system mtu routing 1500
22 ip routing
23 no ip domain-lookup
24 !
25 !
26 !
27 !
28 crypto pki trustpoint HTTPS_SS_CERT_KEYPAIR
29 enrollment selfsigned
30 serial-number

```



```
31 revocation-check none
32 rsa-keypair HTTPS_SS_CERT_KEYPAIR
33 !
34 !
35 crypto pki certificate chain HTTPS_SS_CERT_KEYPAIR
36 certificate self-signed 01
37     quit
38 !
39 !
40 !
41 !
42 !
43 spanning-tree mode pvst
44 spanning-tree extend system-id
45 !
46 vlan internal allocation policy ascending
47 !
48 !
49 !
50 !
51 !
52 !
53 !
54 !
55 !
56 !
57 !
58 !
59 !
60 !
61 interface Loopback100
62 ip address 172.16.25.2 255.255.255.0
63 ip ospf 1 area 0
64 !
65 interface Port-channel1
66 no switchport
67 ip address 172.16.254.2 255.255.255.252
68 ip ospf mtu-ignore
69 ip ospf 1 area 0
70 !
71 interface Port-channel2
72 no switchport
73 bandwidth 10000
74 ip address 172.16.254.13 255.255.255.252
75 ip ospf mtu-ignore
76 ip ospf 1 area 0
77 speed 10
78 !
79 interface Port-channel3
80 no switchport
81 ip address 172.16.254.50 255.255.255.248
82 ip ospf mtu-ignore
83 ip ospf 1 area 0
84 !
85 interface FastEthernet0/1
86 no switchport
87 no ip address
88 channel-group 1 mode on
89 !
90 interface FastEthernet0/2
91 no switchport
92 no ip address
```

```
93 | channel-group 1 mode on
94 | !
95 | interface FastEthernet0/3
96 | no switchport
97 | no ip address
98 | channel-group 1 mode on
99 | !
100 | interface FastEthernet0/4
101 | no switchport
102 | no ip address
103 | channel-group 1 mode on
104 | !
105 | interface FastEthernet0/5
106 | no switchport
107 | no ip address
108 | speed 10
109 | channel-group 2 mode on
110 | !
111 | interface FastEthernet0/6
112 | no switchport
113 | no ip address
114 | speed 10
115 | channel-group 2 mode on
116 | !
117 | interface FastEthernet0/7
118 | no switchport
119 | no ip address
120 | speed 10
121 | channel-group 2 mode on
122 | !
123 | interface FastEthernet0/8
124 | no switchport
125 | no ip address
126 | speed 10
127 | channel-group 2 mode on
128 | !
129 | interface FastEthernet0/9
130 | !
131 | interface FastEthernet0/10
132 | !
133 | interface FastEthernet0/11
134 | !
135 | interface FastEthernet0/12
136 | !
137 | interface FastEthernet0/13
138 | no switchport
139 | no ip address
140 | ip ospf mtu-ignore
141 | ip ospf 1 area 0
142 | channel-group 3 mode on
143 | !
144 | interface FastEthernet0/14
145 | no switchport
146 | no ip address
147 | ip ospf mtu-ignore
148 | ip ospf 1 area 0
149 | channel-group 3 mode on
150 | !
151 | interface FastEthernet0/15
152 | no switchport
153 | no ip address
154 | ip ospf mtu-ignore
```

```
155 ip ospf 1 area 0
156 channel-group 3 mode on
157 !
158 interface FastEthernet0/16
159 no switchport
160 no ip address
161 ip ospf mtu-ignore
162 ip ospf 1 area 0
163 channel-group 3 mode on
164 !
165 interface FastEthernet0/17
166 !
167 interface FastEthernet0/18
168 !
169 interface FastEthernet0/19
170 !
171 interface FastEthernet0/20
172 !
173 interface FastEthernet0/21
174 no switchport
175 ip address 172.16.254.57 255.255.255.252
176 ip ospf 1 area 0
177 !
178 interface FastEthernet0/22
179 no switchport
180 ip address 172.16.254.65 255.255.255.252
181 ip ospf 1 area 0
182 !
183 interface FastEthernet0/23
184 !
185 interface FastEthernet0/24
186 !
187 interface GigabitEthernet0/1
188 !
189 interface GigabitEthernet0/2
190 !
191 interface Vlan1
192 no ip address
193 shutdown
194 !
195 router ospf 1
196 !
197 ip http server
198 ip http secure-server
199 !
200 !
201 ip sla enable reaction-alerts
202 snmp-server community public R0
203 snmp-server community private RW
204 !
205 !
206 line con 0
207 logging synchronous
208 line vty 0 4
209 password cisco
210 login
211 line vty 5 15
212 password cisco
213 login
214 !
215 end
```

A.11.2. IP Interfaces

	Interface	IP-Address	OK?	Method	Status	Protocol
1	Vlan1	unassigned	YES	unset	administratively down	down
2						
3	FastEthernet0/1	unassigned	YES	manual	up	up
4	FastEthernet0/2	unassigned	YES	manual	up	up
5	FastEthernet0/3	unassigned	YES	manual	up	up
6	FastEthernet0/4	unassigned	YES	manual	up	up
7	FastEthernet0/5	unassigned	YES	manual	up	up
8	FastEthernet0/6	unassigned	YES	manual	up	up
9	FastEthernet0/7	unassigned	YES	manual	up	up
10	FastEthernet0/8	unassigned	YES	manual	up	up
11	FastEthernet0/9	unassigned	YES	unset	down	down
12	FastEthernet0/10	unassigned	YES	unset	down	down
13	FastEthernet0/11	unassigned	YES	unset	down	down
14	FastEthernet0/12	unassigned	YES	unset	down	down
15	FastEthernet0/13	unassigned	YES	manual	up	up
16	FastEthernet0/14	unassigned	YES	manual	up	up
17	FastEthernet0/15	unassigned	YES	manual	up	up
18	FastEthernet0/16	unassigned	YES	manual	up	up
19	FastEthernet0/17	unassigned	YES	unset	down	down
20	FastEthernet0/18	unassigned	YES	unset	down	down
21	FastEthernet0/19	unassigned	YES	unset	down	down
22	FastEthernet0/20	unassigned	YES	unset	down	down
23	FastEthernet0/21	172.16.254.57	YES	manual	up	up
24	FastEthernet0/22	172.16.254.65	YES	manual	up	up
25	FastEthernet0/23	unassigned	YES	unset	down	down
26	FastEthernet0/24	unassigned	YES	unset	down	down
27	GigabitEthernet0/1	unassigned	YES	unset	down	down
28	GigabitEthernet0/2	unassigned	YES	unset	down	down
29	Port-channel1	172.16.254.2	YES	manual	up	up
30	Port-channel2	172.16.254.13	YES	manual	up	up
31	Port-channel3	172.16.254.50	YES	manual	up	up
32	Loopback100	172.16.25.2	YES	manual	up	up

A.11.3. Interface Status

1	HQ_CS2>show int status						
2							
3	Port	Name	Status	Vlan	Duplex	Speed	Type
4	Fa0/1		connected	routed	a-full	a-100	10/100BaseTX
5	Fa0/2		connected	routed	a-full	a-100	10/100BaseTX
6	Fa0/3		connected	routed	a-full	a-100	10/100BaseTX
7	Fa0/4		connected	routed	a-full	a-100	10/100BaseTX
8	Fa0/5		connected	routed	a-full	10	10/100BaseTX
9	Fa0/6		connected	routed	a-full	10	10/100BaseTX
10	Fa0/7		connected	routed	a-full	10	10/100BaseTX
11	Fa0/8		connected	routed	a-full	10	10/100BaseTX
12	Fa0/9		notconnect	1	auto	auto	10/100BaseTX
13	Fa0/10		notconnect	1	auto	auto	10/100BaseTX
14	Fa0/11		notconnect	1	auto	auto	10/100BaseTX
15	Fa0/12		notconnect	1	auto	auto	10/100BaseTX
16	Fa0/13		connected	routed	a-full	a-100	10/100BaseTX
17	Fa0/14		connected	routed	a-full	a-100	10/100BaseTX
18	Fa0/15		connected	routed	a-full	a-100	10/100BaseTX
19	Fa0/16		connected	routed	a-full	a-100	10/100BaseTX
20	Fa0/17		notconnect	1	auto	auto	10/100BaseTX
21	Fa0/18		notconnect	1	auto	auto	10/100BaseTX
22	Fa0/19		notconnect	1	auto	auto	10/100BaseTX

```

23 Fa0/20          notconnect 1          auto auto 10/100BaseTX
24 Fa0/21          connected routed  a-full a-100 10/100BaseTX
25
26 Port   Name      Status   Vlan    Duplex Speed Type
27 Fa0/22          connected routed  a-full a-100 10/100BaseTX
28 Fa0/23          notconnect 1        auto auto 10/100BaseTX
29 Fa0/24          notconnect 1        auto auto 10/100BaseTX
30 Gi0/1           notconnect 1        auto auto Not Present
31 Gi0/2           notconnect 1        auto auto Not Present
32 Po1            connected routed  a-full a-100
33 Po2            connected routed  a-full 10
34 Po3            connected routed  a-full a-100

```

A.11.4. Interface Trunk

```

1 wurde nichts angezeigt

```

A.11.5. Neighbors

```

1 Device ID      Local Intrfce Holdtme Capability Platform Port ID
2 HQ_IER1        Fas 0/22      130          R S I 2811  Fas 0/0
3 HQ_WER1        Fas 0/21      157          R S I 2811  Fas 0/0
4 HQ_CS4         Fas 0/8       148          R S I WS-C3560- Fas 0/8
5 HQ_CS4         Fas 0/7       148          R S I WS-C3560- Fas 0/7
6 HQ_CS4         Fas 0/6       148          R S I WS-C3560- Fas 0/6
7 HQ_CS4         Fas 0/5       148          R S I WS-C3560- Fas 0/5
8 HQ_DS2         Fas 0/16      159          R S I WS-C3560V Fas 0/4
9 HQ_DS2         Fas 0/15      159          R S I WS-C3560V Fas 0/3
10 HQ_DS2        Fas 0/14      159          R S I WS-C3560V Fas 0/2
11 HQ_DS2        Fas 0/13      159          R S I WS-C3560V Fas 0/1
12 HQ_CS1         Fas 0/3       167          R S I WS-C3560V Fas 0/3
13 HQ_CS1         Fas 0/4       167          R S I WS-C3560V Fas 0/4
14 HQ_CS1         Fas 0/1       167          R S I WS-C3560V Fas 0/1
15 HQ_CS1         Fas 0/2       167          R S I WS-C3560V Fas 0/2

```

A.11.6. IP Route

```

1 HQ_CS2> show ip route
2 Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
3         D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
4         N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
5         E1 - OSPF external type 1, E2 - OSPF external type 2
6         i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
7         ia - IS-IS inter area, * - candidate default, U - per-user static route
8         o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
9         + - replicated route, % - next hop override
10
11 Gateway of last resort is not set
12
13     172.16.0.0/16 is variably subnetted, 37 subnets, 4 masks
14 O       172.16.17.0/24 [110/3] via 172.16.254.49, 3d06h, Port-channel3
15 O       172.16.18.0/24 [110/2] via 172.16.254.49, 3d06h, Port-channel3
16 O       172.16.19.0/24 [110/2] via 172.16.254.49, 3d06h, Port-channel3
17 C       172.16.25.0/24 is directly connected, Loopback100
18 O       172.16.25.1/32 [110/2] via 172.16.254.1, 3d06h, Port-channel1
19 L       172.16.25.2/32 is directly connected, Loopback100

```

```

20 0      172.16.25.3/32 [110/3] via 172.16.254.1, 3d06h, Port-channel1
21 0      172.16.25.4/32 [110/4] via 172.16.254.1, 3d06h, Port-channel1
22 0      172.16.25.5/32 [110/3] via 172.16.254.49, 3d06h, Port-channel3
23 0      172.16.25.6/32 [110/2] via 172.16.254.49, 3d06h, Port-channel3
24 0      172.16.25.7/32 [110/4] via 172.16.254.1, 3d06h, Port-channel1
25 0      172.16.100.0/24 [110/67] via 172.16.254.58, 3d05h, FastEthernet0/21
26 0      172.16.101.0/24 [110/68] via 172.16.254.58, 3d05h, FastEthernet0/21
27 0      172.16.102.0/24 [110/1002] via 172.16.254.66, 3d05h, FastEthernet0/22
28 0      172.16.252.1/32 [110/2] via 172.16.254.58, 3d06h, FastEthernet0/21
29 0      172.16.252.2/32 [110/66] via 172.16.254.58, 3d06h, FastEthernet0/21
30 0      172.16.252.3/32 [110/1001] via 172.16.254.66, 3d05h, FastEthernet0/22
31 C      172.16.254.0/30 is directly connected, Port-channel1
32 L      172.16.254.2/32 is directly connected, Port-channel1
33 0      172.16.254.4/30 [110/2] via 172.16.254.1, 3d06h, Port-channel1
34 0      172.16.254.8/30 [110/3] via 172.16.254.1, 3d06h, Port-channel1
35 C      172.16.254.12/30 is directly connected, Port-channel2
36 L      172.16.254.13/32 is directly connected, Port-channel2
37 0      172.16.254.16/30 [110/4] via 172.16.254.1, 3d06h, Port-channel1
38 0      172.16.254.20/30 [110/3] via 172.16.254.1, 3d06h, Port-channel1
39 0      172.16.254.32/29 [110/4] via 172.16.254.49, 3d06h, Port-channel3
40 0      172.16.254.40/29 [110/2] via 172.16.254.49, 3d06h, Port-channel3
41      [110/2] via 172.16.254.1, 3d06h, Port-channel1
42 C      172.16.254.48/29 is directly connected, Port-channel3
43 L      172.16.254.50/32 is directly connected, Port-channel3
44 C      172.16.254.56/30 is directly connected, FastEthernet0/21
45 L      172.16.254.57/32 is directly connected, FastEthernet0/21
46 0      172.16.254.60/30 [110/2] via 172.16.254.58, 3d06h, FastEthernet0/21
47 C      172.16.254.64/30 is directly connected, FastEthernet0/22
48 L      172.16.254.65/32 is directly connected, FastEthernet0/22
49 0      172.16.255.0/30 [110/1001] via 172.16.254.66, 3d06h, FastEthernet0/22
50 0      172.16.255.4/30 [110/1001] via 172.16.254.66, 3d06h, FastEthernet0/22
51 0      172.16.255.8/30 [110/1001] via 172.16.254.66, 3d06h, FastEthernet0/22
52 200.200.200.0/28 is subnetted, 1 subnets
53 0      200.200.200.0 [110/2] via 172.16.254.66, 3d06h, FastEthernet0/22

```

A.11.7. Spanning Tree

```

1 HQ_CS2# show spanning-tree
2
3 No spanning tree instance exists.

```

A.11.8. VLAN

```

1 HQ_CS2>show vlan
2
3 VLAN Name                Status Ports
4 -----
5 1  default                active Fa0/9, Fa0/10, Fa0/11, Fa0/12
6                                Fa0/17, Fa0/18, Fa0/19, Fa0/20
7                                Fa0/23, Fa0/24, Gi0/1, Gi0/2
8 1002 fddi-default        act/unsup
9 1003 token-ring-default  act/unsup
10 1004 fddinet-default     act/unsup
11 1005 trnet-default       act/unsup
12
13 VLAN Type SAID    MTU Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2
14 -----
15 1  enet 100001 1500 - - - - - 0 0

```

```

16 1002 fddi 101002 1500 - - - - - 0 0
17 1003 tr 101003 1500 - - - - - 0 0
18 1004 fdnet 101004 1500 - - - ieee - 0 0
19 1005 trnet 101005 1500 - - - ibm - 0 0

```

Remote SPAN VLANs

```

-----
Primary Secondary Type      Ports
-----

```

A.12. HQ CS3

A.12.1. Running Configuration

```

1  !
2  version 12.2
3  no service pad
4  service timestamps debug datetime msec
5  service timestamps log datetime msec
6  no service password-encryption
7  service sequence-numbers
8  !
9  !
10 hostname HQ_CS3
11 !
12 boot-start-marker
13 boot-end-marker
14 !
15 enable secret 5 $1$vTJp$Y2wL0oVslvo0aBBNAr1oX0
16 !
17 username ins password 0 ins@lab
18 !
19 !
20 no aaa new-model
21 system mtu routing 1500
22 vtp mode transparent
23 ip routing
24 !
25 !
26 !
27 !
28 crypto pki trustpoint TP-self-signed-789190400
29   enrollment selfsigned
30   subject-name cn=IOS-Self-Signed-Certificate-789190400
31   revocation-check none
32   rsa-keypair TP-self-signed-789190400
33 !
34 !
35 crypto pki certificate chain TP-self-signed-789190400
36   certificate self-signed 01
37     3082023D 308201A6 A0030201 02020101 300D0609 2A864886 F70D0101 04050030
38     30312E30 2C060355 04031325 494F532D 53656C66 2D536967 6E65642D 43657274
39     69666963 6174652D 37383931 39303430 30301E17 0D393330 33303130 35343835
40     315A170D 32303031 30313030 30303030 5A303031 2E302C06 03550403 1325494F
41     532D5365 6C662D53 69676E65 642D4365 72746966 69636174 652D3738 39313930
42     34303030 819F300D 06092A86 4886F70D 01010105 0003818D 00308189 02818100
43     C6C5446B BBCF34FF 439D0799 2EB637D6 822843B1 3A8D9AE5 4E1BCE76 6BA2FC1D
44     2E4B00FE 98620634 368959FB 97A92D32 9128ED2B A06BAAA8 D597C7A2 83918ECB

```

```
45 0CFBCFA3 C5655F94 530C8875 DF278C94 37D7CDC4 50A60294 170E9EDE 42D9F5AF
46 4BB1C6EC D12E59BD 7B813469 2C2CE6E0 160347A3 B33953FF E1B41BBE 63B967EF
47 02030100 01A36730 65300F06 03551D13 0101FF04 05300301 01FF3012 0603551D
48 11040B30 09820748 515F4353 332E301F 0603551D 23041830 168014C9 52E60A9F
49 D61C6333 B57971FA 63F81D9E 1E6ED830 1D060355 1D0E0416 0414C952 E60A9FD6
50 1C6333B5 7971FA63 F81D9E1E 6ED8300D 06092A86 4886F70D 01010405 00038181
51 005EEE8C 4FD31148 0FDC9155 BFAE63D4 0C28666B 1B9B3504 3E0353AF 124EF810
52 1E13F6D9 5F080222 433F481F 82B2EC7D 564A5EFA 0693404A C1B2F33A 6421460A
53 D05C704A DCA0D681 8A3D3D22 956F4BFC CBEE4EAD 9A51EB53 802FF1E0 81DFCBF6
54 A8AF70AE 785BECB2 3D02114C 43138B7E CC472238 98501F4B 936FED21 C53F0293 D1
55 quit
56 !
57 !
58 !
59 spanning-tree mode pvst
60 spanning-tree extend system-id
61 !
62 vlan internal allocation policy ascending
63 !
64 vlan 99
65   name mgmt
66 !
67 vlan 100
68   name staff
69 !
70 vlan 150
71   name iwas
72 !
73 vlan 200
74   name students
75 !
76 !
77 !
78 !
79 interface Loopback100
80   ip address 172.16.25.3 255.255.255.0
81   ip ospf 1 area 0
82 !
83 interface Port-channel1
84   no switchport
85   ip address 172.16.254.9 255.255.255.252
86   ip ospf mtu-ignore
87   ip ospf 1 area 0
88 !
89 interface Port-channel2
90   no switchport
91   ip address 172.16.254.6 255.255.255.252
92   ip ospf mtu-ignore
93   ip ospf 1 area 0
94 !
95 interface Port-channel3
96   no switchport
97   ip address 172.16.254.21 255.255.255.252
98   ip ospf mtu-ignore
99   ip ospf 1 area 0
100 !
101 interface FastEthernet0/1
102   no switchport
103   no ip address
104   channel-group 1 mode on
105 !
106 interface FastEthernet0/2
```



```
107 no switchport
108 no ip address
109 channel-group 1 mode on
110 !
111 interface FastEthernet0/3
112 no switchport
113 no ip address
114 channel-group 1 mode on
115 !
116 interface FastEthernet0/4
117 no switchport
118 no ip address
119 channel-group 1 mode on
120 !
121 interface FastEthernet0/5
122 no switchport
123 no ip address
124 channel-group 2 mode on
125 !
126 interface FastEthernet0/6
127 no switchport
128 no ip address
129 channel-group 2 mode on
130 !
131 interface FastEthernet0/7
132 no switchport
133 no ip address
134 channel-group 2 mode on
135 !
136 interface FastEthernet0/8
137 no switchport
138 no ip address
139 channel-group 2 mode on
140 !
141 interface FastEthernet0/9
142 !
143 interface FastEthernet0/10
144 !
145 interface FastEthernet0/11
146 !
147 interface FastEthernet0/12
148 !
149 interface FastEthernet0/13
150 no switchport
151 no ip address
152 channel-group 3 mode on
153 !
154 interface FastEthernet0/14
155 no switchport
156 no ip address
157 channel-group 3 mode on
158 !
159 interface FastEthernet0/15
160 no switchport
161 no ip address
162 channel-group 3 mode on
163 !
164 interface FastEthernet0/16
165 no switchport
166 no ip address
167 channel-group 3 mode on
168 !
```

```

169 interface FastEthernet0/17
170 !
171 interface FastEthernet0/18
172 !
173 interface FastEthernet0/19
174 !
175 interface FastEthernet0/20
176 !
177 interface FastEthernet0/21
178 !
179 interface FastEthernet0/22
180 !
181 interface FastEthernet0/23
182 !
183 interface FastEthernet0/24
184 !
185 interface GigabitEthernet0/1
186 !
187 interface GigabitEthernet0/2
188 !
189 interface Vlan1
190   no ip address
191   shutdown
192 !
193 router ospf 1
194   log-adjacency-changes
195 !
196 ip classless
197 ip http server
198 ip http secure-server
199 !
200 !
201 ip sla enable reaction-alerts
202 !
203 snmp-server community public R0
204 snmp-server community private RW
205 !
206 !
207 line con 0
208 line vty 0 4
209   password cisco
210   login
211 line vty 5 15
212   password cisco
213   login
214 !
215 end

```

A.12.2. IP Interfaces

	Interface	IP-Address	OK?	Method	Status	Protocol
1	Vlan1	unassigned	YES	manual	administratively down	down
2	FastEthernet0/1	unassigned	YES	manual	up	up
3	FastEthernet0/2	unassigned	YES	manual	up	up
4	FastEthernet0/3	unassigned	YES	manual	up	up
5	FastEthernet0/4	unassigned	YES	manual	up	up
6	FastEthernet0/5	unassigned	YES	manual	up	up
7	FastEthernet0/6	unassigned	YES	manual	up	up
8	FastEthernet0/7	unassigned	YES	manual	up	up
9	FastEthernet0/8	unassigned	YES	manual	up	up
10	FastEthernet0/8	unassigned	YES	manual	up	up

```

11 FastEthernet0/9  unassigned YES unset down      down
12 FastEthernet0/10 unassigned YES unset down      down
13 FastEthernet0/11 unassigned YES unset down      down
14 FastEthernet0/12 unassigned YES unset down      down
15 FastEthernet0/13 unassigned YES manual up        up
16 FastEthernet0/14 unassigned YES manual up        up
17 FastEthernet0/15 unassigned YES manual up        up
18 FastEthernet0/16 unassigned YES manual up        up
19 FastEthernet0/17 unassigned YES unset down      down
20 FastEthernet0/18 unassigned YES unset down      down
21 FastEthernet0/19 unassigned YES unset down      down
22 FastEthernet0/20 unassigned YES unset down      down
23 FastEthernet0/21 unassigned YES unset down      down
24 FastEthernet0/22 unassigned YES unset down      down
25 FastEthernet0/23 unassigned YES unset down      down
26 FastEthernet0/24 unassigned YES unset down      down
27 GigabitEthernet0/1 unassigned YES unset down    down
28 GigabitEthernet0/2 unassigned YES unset down    down
29 Port-channel1     172.16.254.9 YES manual up        up
30 Port-channel2     172.16.254.6 YES manual up        up
31 Port-channel3     172.16.254.21 YES manual up        up
32 Loopback100       172.16.25.3  YES manual up        up

```

A.12.3. Interface Status

```

1 HQ_CS3>show interface status
2
3
4 Port      Name      Status    Vlan    Duplex Speed Type
5 Fa0/1     connected routed    a-full  a-100  10/100BaseTX
6 Fa0/2     connected routed    a-full  a-100  10/100BaseTX
7 Fa0/3     connected routed    a-full  a-100  10/100BaseTX
8 Fa0/4     connected routed    a-full  a-100  10/100BaseTX
9 Fa0/5     connected routed    a-full  a-100  10/100BaseTX
10 Fa0/6     connected routed    a-full  a-100  10/100BaseTX
11 Fa0/7     connected routed    a-full  a-100  10/100BaseTX
12 Fa0/8     connected routed    a-full  a-100  10/100BaseTX
13 Fa0/9     notconnect 1        auto   auto   10/100BaseTX
14 Fa0/10    notconnect 1        auto   auto   10/100BaseTX
15 Fa0/11    notconnect 1        auto   auto   10/100BaseTX
16 Fa0/12    notconnect 1        auto   auto   10/100BaseTX
17 Fa0/13    connected routed    a-full  a-100  10/100BaseTX
18 Fa0/14    connected routed    a-full  a-100  10/100BaseTX
19 Fa0/15    connected routed    a-full  a-100  10/100BaseTX
20 Fa0/16    connected routed    a-full  a-100  10/100BaseTX
21 Fa0/17    notconnect 1        auto   auto   10/100BaseTX
22 Fa0/18    notconnect 1        auto   auto   10/100BaseTX
23 Fa0/19    notconnect 1        auto   auto   10/100BaseTX
24 Fa0/20    notconnect 1        auto   auto   10/100BaseTX
25 Fa0/21    notconnect 1        auto   auto   10/100BaseTX
26
27 Port      Name      Status    Vlan    Duplex Speed Type
28 Fa0/22    notconnect 1        auto   auto   10/100BaseTX
29 Fa0/23    notconnect 1        auto   auto   10/100BaseTX
30 Fa0/24    notconnect 1        auto   auto   10/100BaseTX
31 Gi0/1     notconnect 1        auto   auto   Not Present
32 Gi0/2     notconnect 1        auto   auto   Not Present
33 Po1       connected routed    a-full  a-100
34 Po2       connected routed    a-full  a-100
35 Po3       connected routed    a-full  a-100

```

A.12.4. Interface Trunk

```
1 wurde nichts angezeigt
```

A.12.5. Neighbors

```
1 Device ID      Local Intfrce Holdtme Capability Platform Port ID
2 HQ_CS4        Fas 0/4        140          R S I WS-C3560- Fas 0/4
3 HQ_CS4        Fas 0/2        170          R S I WS-C3560- Fas 0/2
4 HQ_CS4        Fas 0/1        170          R S I WS-C3560- Fas 0/1
5 HQ_DS3        Fas 0/16       160          R S I WS-C3560- Fas 0/4
6 HQ_DS3        Fas 0/15       160          R S I WS-C3560- Fas 0/3
7 HQ_DS3        Fas 0/14       160          R S I WS-C3560- Fas 0/2
8 HQ_DS3        Fas 0/13       153          R S I WS-C3560- Fas 0/1
9 HQ_CS4        Fas 0/3        153          R S I WS-C3560- Fas 0/3
10 HQ_CS1        Fas 0/5        140          R S I WS-C3560V Fas 0/5
11 HQ_CS1        Fas 0/8        129          R S I WS-C3560V Fas 0/8
12 HQ_CS1        Fas 0/7        129          R S I WS-C3560V Fas 0/7
13 HQ_CS1        Fas 0/6        153          R S I WS-C3560V Fas 0/6
```

A.12.6. IP Route

```
1 HQ_CS3>show ip route
2 Codes: C - connected, S - static, R - RIP, M - mobile, B - BGP
3       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
4       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
5       E1 - OSPF external type 1, E2 - OSPF external type 2
6       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
7       ia - IS-IS inter area, * - candidate default, U - per-user static route
8       o - ODR, P - periodic downloaded static route
9
10 Gateway of last resort is not set
11
12   200.200.200.0/28 is subnetted, 1 subnets
13   O    200.200.200.0 [110/4] via 172.16.254.5, 3d05h, Port-channel2
14   172.16.0.0/16 is variably subnetted, 31 subnets, 4 masks
15   O    172.16.254.64/30 [110/3] via 172.16.254.5, 3d05h, Port-channel2
16   O    172.16.252.1/32 [110/4] via 172.16.254.5, 3d05h, Port-channel2
17   O    172.16.254.0/30 [110/2] via 172.16.254.5, 3d05h, Port-channel2
18   O    172.16.252.2/32 [110/68] via 172.16.254.5, 3d05h, Port-channel2
19   O    172.16.255.0/30 [110/1003] via 172.16.254.5, 3d05h, Port-channel2
20   O    172.16.252.3/32 [110/1003] via 172.16.254.5, 3d05h, Port-channel2
21   C    172.16.254.4/30 is directly connected, Port-channel2
22   O    172.16.255.4/30 [110/1003] via 172.16.254.5, 3d05h, Port-channel2
23   C    172.16.254.8/30 is directly connected, Port-channel1
24   O    172.16.255.8/30 [110/1003] via 172.16.254.5, 3d05h, Port-channel2
25   O    172.16.254.12/30 [110/11] via 172.16.254.10, 3d05h, Port-channel1
26   O    172.16.254.16/30 [110/2] via 172.16.254.22, 3d05h, Port-channel3
27       [110/2] via 172.16.254.10, 3d05h, Port-channel1
28   C    172.16.254.20/30 is directly connected, Port-channel3
29   O    172.16.254.32/29 [110/5] via 172.16.254.5, 3d05h, Port-channel2
30   O    172.16.254.40/29 [110/2] via 172.16.254.5, 3d05h, Port-channel2
31   O    172.16.254.48/29 [110/3] via 172.16.254.5, 3d05h, Port-channel2
32   O    172.16.254.56/30 [110/3] via 172.16.254.5, 3d05h, Port-channel2
33   O    172.16.254.60/30 [110/4] via 172.16.254.5, 3d05h, Port-channel2
34   O    172.16.25.5/32 [110/4] via 172.16.254.5, 3d05h, Port-channel2
35   O    172.16.25.4/32 [110/2] via 172.16.254.10, 3d05h, Port-channel1
```

```

36 0 172.16.25.7/32 [110/2] via 172.16.254.22, 3d05h, Port-channel3
37 0 172.16.25.6/32 [110/3] via 172.16.254.5, 3d05h, Port-channel2
38 0 172.16.25.1/32 [110/2] via 172.16.254.5, 3d05h, Port-channel2
39 C 172.16.25.0/24 is directly connected, Loopback100
40 0 172.16.25.2/32 [110/3] via 172.16.254.5, 3d05h, Port-channel2
41 0 172.16.17.0/24 [110/4] via 172.16.254.5, 3d05h, Port-channel2
42 0 172.16.18.0/24 [110/3] via 172.16.254.5, 3d05h, Port-channel2
43 0 172.16.19.0/24 [110/3] via 172.16.254.5, 3d05h, Port-channel2
44 0 172.16.100.0/24 [110/69] via 172.16.254.5, 3d05h, Port-channel2
45 0 172.16.101.0/24 [110/70] via 172.16.254.5, 3d05h, Port-channel2
46 0 172.16.102.0/24 [110/1004] via 172.16.254.5, 3d05h, Port-channel2

```

A.12.7. Spanning Tree

```

1 HQ_CS3# show spanning-tree
2
3 No spanning tree instance exists.

```

A.12.8. VLAN

```

1 HQ_CS3>show vlan
2
3 VLAN Name                Status Ports
4 -----
5 1  default                active Fa0/9, Fa0/10, Fa0/11, Fa0/12
6                               Fa0/17, Fa0/18, Fa0/19, Fa0/20
7                               Fa0/21, Fa0/22, Fa0/23, Fa0/24
8                               Gi0/1, Gi0/2
9 99 mgmt                  active
10 100 staff                active
11 150 iwas                 active
12 200 students            active
13 1002 fddi-default        act/unsup
14 1003 token-ring-default  act/unsup
15 1004 fddinet-default     act/unsup
16 1005 trnet-default       act/unsup
17
18 VLAN Type SAID    MTU  Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
19 -----
20 1  enet 100001 1500 -  -  -  -  -  0  0
21 99 enet 100099 1500 -  -  -  -  -  0  0
22 100 enet 100100 1500 -  -  -  -  -  0  0
23 150 enet 100150 1500 -  -  -  -  -  0  0
24 200 enet 100200 1500 -  -  -  -  -  0  0
25
26 VLAN Type SAID    MTU  Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
27 -----
28 1002 fddi 101002 1500 -  -  -  -  -  0  0
29 1003 tr 101003 1500 -  -  -  -  -  0  0
30 1004 fdnet 101004 1500 -  -  -  ieee -  0  0
31 1005 trnet 101005 1500 -  -  -  ibm -  0  0
32
33 Remote SPAN VLANs
34 -----
35
36 Primary Secondary Type    Ports
37 -----
38

```

A.13. HQ CS4

A.13.1. Running Configuration

```

1  !
2  !
3  version 12.2
4  no service pad
5  service timestamps debug datetime msec
6  service timestamps log datetime msec
7  no service password-encryption
8  service sequence-numbers
9  !
10 hostname HQ_CS4
11 !
12 boot-start-marker
13 boot-end-marker
14 !
15 enable secret 5 $1$N5nF$HEL..CSYKgf7JWvzQ3nmT.
16 !
17 username ins password 0 ins@lab
18 !
19 !
20 no aaa new-model
21 system mtu routing 1500
22 ip routing
23 !
24 !
25 !
26 !
27 crypto pki trustpoint TP-self-signed-802424960
28   enrollment selfsigned
29   subject-name cn=IOS-Self-Signed-Certificate-802424960
30   revocation-check none
31   rsakeypair TP-self-signed-802424960
32 !
33 crypto pki trustpoint TP-self-signed-802432128
34   enrollment selfsigned
35   subject-name cn=IOS-Self-Signed-Certificate-802432128
36   revocation-check none
37   rsakeypair TP-self-signed-802432128
38 !
39 !
40 crypto pki certificate chain TP-self-signed-802424960
41   certificate self-signed 01
42     3082023D 308201A6 A0030201 02020101 300D0609 2A864886 F70D0101 04050030
43     30312E30 2C060355 04031325 494F532D 53656C66 2D536967 6E65642D 43657274
44     69666963 6174652D 38303234 32343936 30301E17 0D393330 33303130 34333535
45     305A170D 32303031 30313030 30303030 5A303031 2E302C06 03550403 1325494F
46     532D5365 6C662D53 69676E65 642D4365 72746966 69636174 652D3830 32343234
47     39363030 819F300D 06092A86 4886F70D 01010105 0003818D 00308189 02818100
48     A9193D67 CE1F2E8A 7AB17D29 9971816E 22E047F8 2955A0D1 AD5C07B1 0F1E57B8
49     297A57E3 C9FB80F0 F4F23D41 D5BC46A8 89AF0D40 1635CEFC F5E11F87 299918FF
50     0F96B019 93ACF31B 25B150C5 5EAB53F0 896D3798 79654043 2C7D0198 038E1461
51     CF40C791 4672B925 F378404B 82044B68 2736E846 10BACD2B 32B6DA93 4C87F97D
52     02030100 01A36730 65300F06 03551D13 0101FF04 05300301 01FF3012 0603551D
53     11040B30 09820748 515F4353 342E301F 0603551D 23041830 168014E7 AA5F970C
54     25B6B81A 35D4F86C 77D83F5B 9C913330 1D060355 1D0E0416 0414E7AA 5F970C25
55     B6B81A35 D4F86C77 D83F5B9C 9133300D 06092A86 4886F70D 01010405 00038181
56     0077A6C0 DC369CBE 5624731D 5D458961 E5FAC002 CCF40AD5 620A07F6 6CF9AD29
57     0EE5B0B9 4AEA8804 33220FD7 31159C38 2898D38B E236DD1 9ADACEFC 4FCD32D9
58     6A3B8351 8A5BBFA3 BB1DFA0C 63E93422 94290CE6 D8015255 7D7BF9FA AC8D5D4E

```

```
59 67D63E98 B31EA49E 2F79E42D 77F10414 A245B30D 49D95466 9873C600 EED03BBD 5B
60 quit
61 crypto pki certificate chain TP-self-signed-802432128
62 !
63 !
64 !
65 spanning-tree mode pvst
66 spanning-tree extend system-id
67 !
68 vlan internal allocation policy ascending
69 !
70 !
71 !
72 !
73 interface Loopback100
74 ip address 172.16.25.4 255.255.255.0
75 ip ospf 1 area 0
76 !
77 interface Port-channel1
78 no switchport
79 ip address 172.16.254.10 255.255.255.252
80 ip ospf mtu-ignore
81 ip ospf 1 area 0
82 !
83 interface Port-channel2
84 no switchport
85 bandwidth 10000
86 ip address 172.16.254.14 255.255.255.252
87 ip ospf mtu-ignore
88 ip ospf 1 area 0
89 speed 10
90 !
91 interface Port-channel3
92 !
93 interface Port-channel4
94 no switchport
95 ip address 172.16.254.17 255.255.255.252
96 ip ospf mtu-ignore
97 ip ospf 1 area 0
98 !
99 interface FastEthernet0/1
100 no switchport
101 no ip address
102 channel-group 1 mode on
103 !
104 interface FastEthernet0/2
105 no switchport
106 no ip address
107 channel-group 1 mode on
108 !
109 interface FastEthernet0/3
110 no switchport
111 no ip address
112 channel-group 1 mode on
113 !
114 interface FastEthernet0/4
115 no switchport
116 no ip address
117 channel-group 1 mode on
118 !
119 interface FastEthernet0/5
120 no switchport
```

```
121 no ip address
122 speed 10
123 channel-group 2 mode on
124 !
125 interface FastEthernet0/6
126 no switchport
127 no ip address
128 speed 10
129 channel-group 2 mode on
130 !
131 interface FastEthernet0/7
132 no switchport
133 no ip address
134 speed 10
135 channel-group 2 mode on
136 !
137 interface FastEthernet0/8
138 no switchport
139 no ip address
140 speed 10
141 channel-group 2 mode on
142 !
143 interface FastEthernet0/9
144 !
145 interface FastEthernet0/10
146 !
147 interface FastEthernet0/11
148 !
149 interface FastEthernet0/12
150 !
151 interface FastEthernet0/13
152 no switchport
153 no ip address
154 channel-group 4 mode on
155 !
156 interface FastEthernet0/14
157 no switchport
158 no ip address
159 channel-group 4 mode on
160 !
161 interface FastEthernet0/15
162 no switchport
163 no ip address
164 channel-group 4 mode on
165 !
166 interface FastEthernet0/16
167 no switchport
168 no ip address
169 channel-group 4 mode on
170 !
171 interface FastEthernet0/17
172 !
173 interface FastEthernet0/18
174 !
175 interface FastEthernet0/19
176 !
177 interface FastEthernet0/20
178 !
179 interface FastEthernet0/21
180 !
181 interface FastEthernet0/22
182 !
```



```

183 interface FastEthernet0/23
184 !
185 interface FastEthernet0/24
186 !
187 interface GigabitEthernet0/1
188 !
189 interface GigabitEthernet0/2
190 !
191 interface Vlan1
192   no ip address
193   shutdown
194 !
195 router ospf 1
196   log-adjacency-changes
197 !
198 ip classless
199 ip http server
200 ip http secure-server
201 !
202 !
203 ip sla enable reaction-alerts
204 !
205 snmp-server community public R0
206 snmp-server community private RW
207 !
208 !
209 line con 0
210 line vty 0 4
211   password cisco
212   login
213 line vty 5 15
214   password cisco
215   login
216 !
217 end

```

A.13.2. IP Interfaces

	Interface	IP-Address	OK?	Method	Status	Protocol
1	Vlan1	unassigned	YES	manual	administratively down	down
2	FastEthernet0/1	unassigned	YES	manual	up	up
3	FastEthernet0/2	unassigned	YES	manual	up	up
4	FastEthernet0/3	unassigned	YES	manual	up	up
5	FastEthernet0/4	unassigned	YES	manual	up	up
6	FastEthernet0/5	unassigned	YES	manual	up	up
7	FastEthernet0/6	unassigned	YES	manual	up	up
8	FastEthernet0/7	unassigned	YES	manual	up	up
9	FastEthernet0/8	unassigned	YES	manual	up	up
10	FastEthernet0/9	unassigned	YES	unset	down	down
11	FastEthernet0/10	unassigned	YES	unset	down	down
12	FastEthernet0/11	unassigned	YES	unset	down	down
13	FastEthernet0/12	unassigned	YES	unset	down	down
14	FastEthernet0/13	unassigned	YES	manual	up	up
15	FastEthernet0/14	unassigned	YES	manual	up	up
16	FastEthernet0/15	unassigned	YES	manual	up	up
17	FastEthernet0/16	unassigned	YES	manual	up	up
18	FastEthernet0/17	unassigned	YES	unset	down	down
19	FastEthernet0/18	unassigned	YES	unset	down	down
20	FastEthernet0/19	unassigned	YES	unset	down	down
21	FastEthernet0/20	unassigned	YES	unset	down	down
22						

```

23 FastEthernet0/21 unassigned YES unset down down
24 FastEthernet0/22 unassigned YES unset down down
25 FastEthernet0/23 unassigned YES unset down down
26 FastEthernet0/24 unassigned YES unset down down
27 GigabitEthernet0/1 unassigned YES unset down down
28 GigabitEthernet0/2 unassigned YES unset down down
29 Port-channel1 172.16.254.10 YES manual up up
30 Port-channel2 172.16.254.14 YES manual up up
31 Port-channel3 unassigned YES unset down down
32 Port-channel4 172.16.254.17 YES manual up up
33 Loopback100 172.16.25.4 YES manual up up

```

A.13.3. Interface Status

```

1 HQ_CS4>show int status
2
3 Port      Name      Status    Vlan    Duplex Speed Type
4 Fa0/1     connected routed    a-full a-100 10/100BaseTX
5 Fa0/2     connected routed    a-full a-100 10/100BaseTX
6 Fa0/3     connected routed    a-full a-100 10/100BaseTX
7 Fa0/4     connected routed    a-full a-100 10/100BaseTX
8 Fa0/5     connected routed    a-full 10 10/100BaseTX
9 Fa0/6     connected routed    a-full 10 10/100BaseTX
10 Fa0/7     connected routed    a-full 10 10/100BaseTX
11 Fa0/8     connected routed    a-full 10 10/100BaseTX
12 Fa0/9     notconnect 1        auto auto 10/100BaseTX
13 Fa0/10    notconnect 1        auto auto 10/100BaseTX
14 Fa0/11    notconnect 1        auto auto 10/100BaseTX
15 Fa0/12    notconnect 1        auto auto 10/100BaseTX
16 Fa0/13    connected routed    a-full a-100 10/100BaseTX
17 Fa0/14    connected routed    a-full a-100 10/100BaseTX
18 Fa0/15    connected routed    a-full a-100 10/100BaseTX
19 Fa0/16    connected routed    a-full a-100 10/100BaseTX
20 Fa0/17    notconnect 1        auto auto 10/100BaseTX
21 Fa0/18    notconnect 1        auto auto 10/100BaseTX
22 Fa0/19    notconnect 1        auto auto 10/100BaseTX
23 Fa0/20    notconnect 1        auto auto 10/100BaseTX
24 Fa0/21    notconnect 1        auto auto 10/100BaseTX
25
26 Port      Name      Status    Vlan    Duplex Speed Type
27 Fa0/22    notconnect 1        auto auto 10/100BaseTX
28 Fa0/23    notconnect 1        auto auto 10/100BaseTX
29 Fa0/24    notconnect 1        auto auto 10/100BaseTX
30 Gi0/1     notconnect 1        auto auto Not Present
31 Gi0/2     notconnect 1        auto auto Not Present
32 Po1       connected routed    a-full a-100
33 Po2       connected routed    a-full 10
34 Po3       notconnect unassigned auto auto
35 Po4       connected routed    a-full a-100

```

A.13.4. Interface Trunk

```

1 wurde nichts angezeigt

```

A.13.5. Neighbors

Device ID	Local Intrfce	Holdtme	Capability	Platform	Port ID
HQ_DS3	Fas 0/16	156	R S I WS-C3560-	Fas 0/8	
HQ_DS3	Fas 0/15	156	R S I WS-C3560-	Fas 0/7	
HQ_DS3	Fas 0/14	156	R S I WS-C3560-	Fas 0/6	
HQ_DS3	Fas 0/13	156	R S I WS-C3560-	Fas 0/5	
HQ_CS2	Fas 0/8	140	R S I WS-C3560V	Fas 0/8	
HQ_CS2	Fas 0/7	140	R S I WS-C3560V	Fas 0/7	
HQ_CS2	Fas 0/6	140	R S I WS-C3560V	Fas 0/6	
HQ_CS2	Fas 0/5	140	R S I WS-C3560V	Fas 0/5	
HQ_CS3	Fas 0/3	148	R S I WS-C3560-	Fas 0/3	
HQ_CS3	Fas 0/4	148	R S I WS-C3560-	Fas 0/4	
HQ_CS3	Fas 0/2	148	R S I WS-C3560-	Fas 0/2	
HQ_CS3	Fas 0/1	148	R S I WS-C3560-	Fas 0/1	

A.13.6. IP Route

```

1 HQ_CS4>show ip route
2 Codes: C - connected, S - static, R - RIP, M - mobile, B - BGP
3       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
4       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
5       E1 - OSPF external type 1, E2 - OSPF external type 2
6       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
7       ia - IS-IS inter area, * - candidate default, U - per-user static route
8       o - ODR, P - periodic downloaded static route
9
10 Gateway of last resort is not set
11
12   200.200.200.0/28 is subnetted, 1 subnets
13   O    200.200.200.0 [110/5] via 172.16.254.9, 3d06h, Port-channel1
14   172.16.0.0/16 is variably subnetted, 31 subnets, 4 masks
15   O    172.16.254.64/30 [110/4] via 172.16.254.9, 3d06h, Port-channel1
16   O    172.16.252.1/32 [110/5] via 172.16.254.9, 3d06h, Port-channel1
17   O    172.16.254.0/30 [110/3] via 172.16.254.9, 3d06h, Port-channel1
18   O    172.16.252.2/32 [110/69] via 172.16.254.9, 3d06h, Port-channel1
19   O    172.16.255.0/30 [110/1004] via 172.16.254.9, 3d06h, Port-channel1
20   O    172.16.252.3/32 [110/1004] via 172.16.254.9, 3d06h, Port-channel1
21   O    172.16.254.4/30 [110/2] via 172.16.254.9, 3d06h, Port-channel1
22   O    172.16.255.4/30 [110/1004] via 172.16.254.9, 3d06h, Port-channel1
23   C    172.16.254.8/30 is directly connected, Port-channel1
24   O    172.16.255.8/30 [110/1004] via 172.16.254.9, 3d06h, Port-channel1
25   C    172.16.254.12/30 is directly connected, Port-channel2
26   C    172.16.254.16/30 is directly connected, Port-channel4
27   O    172.16.254.20/30 [110/2] via 172.16.254.18, 3d06h, Port-channel4
28       [110/2] via 172.16.254.9, 3d06h, Port-channel1
29   O    172.16.254.32/29 [110/6] via 172.16.254.9, 3d06h, Port-channel1
30   O    172.16.254.40/29 [110/3] via 172.16.254.9, 3d06h, Port-channel1
31   O    172.16.254.48/29 [110/4] via 172.16.254.9, 3d06h, Port-channel1
32   O    172.16.254.56/30 [110/4] via 172.16.254.9, 3d06h, Port-channel1
33   O    172.16.254.60/30 [110/5] via 172.16.254.9, 3d06h, Port-channel1
34   O    172.16.25.5/32 [110/5] via 172.16.254.9, 3d06h, Port-channel1
35   O    172.16.25.7/32 [110/2] via 172.16.254.18, 3d06h, Port-channel4
36   O    172.16.25.6/32 [110/4] via 172.16.254.9, 3d06h, Port-channel1
37   O    172.16.25.1/32 [110/3] via 172.16.254.9, 3d06h, Port-channel1
38   C    172.16.25.0/24 is directly connected, Loopback100
39   O    172.16.25.3/32 [110/2] via 172.16.254.9, 3d06h, Port-channel1
40   O    172.16.25.2/32 [110/4] via 172.16.254.9, 3d06h, Port-channel1
41   O    172.16.17.0/24 [110/5] via 172.16.254.9, 3d06h, Port-channel1
42   O    172.16.18.0/24 [110/4] via 172.16.254.9, 3d06h, Port-channel1
43   O    172.16.19.0/24 [110/4] via 172.16.254.9, 3d06h, Port-channel1

```

```

44 0    172.16.100.0/24 [110/70] via 172.16.254.9, 3d06h, Port-channel1
45 0    172.16.101.0/24 [110/71] via 172.16.254.9, 3d06h, Port-channel1
46 0    172.16.102.0/24 [110/1005] via 172.16.254.9, 3d06h, Port-channel1

```

A.13.7. Spanning Tree

```

1 HQ_CS4# show spanning-tree
2
3 No spanning tree instance exists.

```

A.13.8. VLAN

```

1 HQ_CS4>show vlan
2
3 VLAN Name                Status Ports
4 -----
5 1  default                active Fa0/9, Fa0/10, Fa0/11, Fa0/12
6                                Fa0/17, Fa0/18, Fa0/19, Fa0/20
7                                Fa0/21, Fa0/22, Fa0/23, Fa0/24
8                                Gi0/1, Gi0/2
9 1002 fddi-default        act/unsup
10 1003 token-ring-default  act/unsup
11 1004 fddinet-default     act/unsup
12 1005 trnet-default       act/unsup
13
14 VLAN Type SAID    MTU  Parent RingNo BridgeNo  Stp  BrdgMode Trans1 Trans2
15 -----
16 1  enet 100001 1500 -    -    -    -    -    0    0
17 1002 fddi 101002 1500 -    -    -    -    -    0    0
18 1003 tr 101003 1500 -    -    -    -    -    0    0
19 1004 fdnet 101004 1500 -    -    -    ieee -    0    0
20 1005 trnet 101005 1500 -    -    -    ibm  -    0    0
21
22 Remote SPAN VLANs
23 -----
24
25 Primary Secondary Type      Ports
26 -----
27

```

A.14. HQ DS1

A.14.1. Running Configuration

```

1 !
2 !
3 ! Last configuration change at 07:40:47 UTC Mon Mar 1 1993
4 !
5 version 15.0
6 no service pad
7 service timestamps debug datetime msec
8 service timestamps log datetime msec
9 no service password-encryption
10 service sequence-numbers
11 !
12 hostname HQ_DS1

```

```
13 |  
14 | boot-start-marker  
15 | boot-end-marker  
16 |  
17 | enable secret 5 $1$ajf9$7aDklFhjLgZzrC095VIDm0  
18 |  
19 | username cisco password 0 cisco  
20 | username ins password 0 ins@lab  
21 | aaa new-model  
22 |  
23 |  
24 |  
25 |  
26 |  
27 |  
28 |  
29 |  
30 | aaa session-id common  
31 | system mtu routing 1500  
32 | ip routing  
33 | no ip domain-lookup  
34 | ip dhcp excluded-address 172.16.16.1  
35 | ip dhcp excluded-address 172.16.16.10 172.16.16.12  
36 | ip dhcp excluded-address 172.16.17.1  
37 | ip dhcp excluded-address 172.16.17.10 172.16.17.12  
38 | ip dhcp excluded-address 172.16.18.250 172.16.18.254  
39 | ip dhcp excluded-address 172.16.18.10 172.16.18.12  
40 | ip dhcp excluded-address 172.16.19.250 172.16.19.254  
41 | ip dhcp excluded-address 172.16.19.10 172.16.19.12  
42 |  
43 | ip dhcp pool IT  
44 |   network 172.16.16.0 255.255.255.0  
45 |   default-router 172.16.16.1  
46 |  
47 | ip dhcp pool SERVER  
48 |   network 172.16.17.0 255.255.255.0  
49 |   default-router 172.16.17.1  
50 |  
51 | ip dhcp pool MARKETING  
52 |   network 172.16.18.0 255.255.255.0  
53 |   default-router 172.16.18.254  
54 |  
55 | ip dhcp pool SALES  
56 |   network 172.16.19.0 255.255.255.0  
57 |   default-router 172.16.19.254  
58 |  
59 |  
60 |  
61 |  
62 | crypto pki trustpoint HTTPS_SS_CERT_KEYPAIR  
63 |   enrollment selfsigned  
64 |   serial-number  
65 |   revocation-check none  
66 |   rsa-keypair HTTPS_SS_CERT_KEYPAIR  
67 |  
68 |  
69 | crypto pki certificate chain HTTPS_SS_CERT_KEYPAIR  
70 |   certificate self-signed 01  
71 |   quit  
72 |  
73 |  
74 |
```

```
75 | !
76 | !
77 | spanning-tree mode pvst
78 | spanning-tree extend system-id
79 | !
80 | vlan internal allocation policy ascending
81 | !
82 | !
83 | !
84 | !
85 | !
86 | !
87 | !
88 | !
89 | !
90 | !
91 | !
92 | !
93 | !
94 | !
95 | interface Loopback100
96 |   ip address 172.16.25.5 255.255.255.0
97 |   ip ospf 1 area 0
98 | !
99 | interface Port-channel1
100 |   switchport trunk encapsulation dot1q
101 |   switchport mode trunk
102 | !
103 | interface Port-channel2
104 |   switchport trunk encapsulation dot1q
105 |   switchport mode trunk
106 | !
107 | interface Port-channel3
108 |   no switchport
109 |   ip address 172.16.254.38 255.255.255.248
110 |   ip ospf mtu-ignore
111 |   ip ospf 1 area 0
112 | !
113 | interface Port-channel4
114 |   switchport trunk encapsulation dot1q
115 |   switchport mode trunk
116 | !
117 | interface Port-channel5
118 |   switchport trunk encapsulation dot1q
119 |   switchport mode trunk
120 | !
121 | interface Port-channel6
122 |   switchport trunk encapsulation dot1q
123 |   switchport mode trunk
124 | !
125 | interface FastEthernet0/1
126 |   no switchport
127 |   no ip address
128 |   channel-group 3 mode on
129 | !
130 | interface FastEthernet0/2
131 |   no switchport
132 |   no ip address
133 |   channel-group 3 mode on
134 | !
135 | interface FastEthernet0/3
136 |   no switchport
```

```
137 no ip address
138 channel-group 3 mode on
139 !
140 interface FastEthernet0/4
141 no switchport
142 no ip address
143 channel-group 3 mode on
144 !
145 interface FastEthernet0/5
146 switchport trunk encapsulation dot1q
147 switchport mode trunk
148 channel-group 5 mode on
149 !
150 interface FastEthernet0/6
151 switchport trunk encapsulation dot1q
152 switchport mode trunk
153 channel-group 5 mode on
154 !
155 interface FastEthernet0/7
156 switchport trunk encapsulation dot1q
157 switchport mode trunk
158 !
159 interface FastEthernet0/8
160 switchport trunk encapsulation dot1q
161 switchport mode trunk
162 !
163 interface FastEthernet0/9
164 switchport trunk encapsulation dot1q
165 switchport mode trunk
166 !
167 interface FastEthernet0/10
168 switchport trunk encapsulation dot1q
169 switchport mode trunk
170 !
171 interface FastEthernet0/11
172 switchport trunk encapsulation dot1q
173 switchport mode trunk
174 channel-group 4 mode on
175 !
176 interface FastEthernet0/12
177 switchport trunk encapsulation dot1q
178 switchport mode trunk
179 channel-group 4 mode on
180 !
181 interface FastEthernet0/13
182 switchport trunk encapsulation dot1q
183 switchport mode trunk
184 !
185 interface FastEthernet0/14
186 switchport trunk encapsulation dot1q
187 switchport mode trunk
188 !
189 interface FastEthernet0/15
190 switchport trunk encapsulation dot1q
191 switchport mode trunk
192 channel-group 6 mode on
193 !
194 interface FastEthernet0/16
195 switchport trunk encapsulation dot1q
196 switchport mode trunk
197 channel-group 6 mode on
198 !
```

```
199 interface FastEthernet0/17
200 !
201 interface FastEthernet0/18
202 !
203 interface FastEthernet0/19
204 !
205 interface FastEthernet0/20
206 !
207 interface FastEthernet0/21
208   switchport trunk encapsulation dot1q
209   switchport mode trunk
210   channel-group 1 mode on
211 !
212 interface FastEthernet0/22
213   switchport trunk encapsulation dot1q
214   switchport mode trunk
215   channel-group 1 mode on
216 !
217 interface FastEthernet0/23
218   switchport trunk encapsulation dot1q
219   switchport mode trunk
220   channel-group 1 mode on
221 !
222 interface FastEthernet0/24
223   switchport trunk encapsulation dot1q
224   switchport mode trunk
225   channel-group 1 mode on
226 !
227 interface GigabitEthernet0/1
228 !
229 interface GigabitEthernet0/2
230 !
231 interface Vlan1
232   no ip address
233   shutdown
234 !
235 interface Vlan21
236   ip address 172.16.16.1 255.255.255.0
237   standby 40 preempt
238   ip ospf mtu-ignore
239   ip ospf 1 area 0
240 !
241 interface Vlan30
242   ip address 172.16.17.1 255.255.255.0
243   ip ospf mtu-ignore
244   ip ospf 1 area 0
245 !
246 interface Vlan40
247   ip address 172.16.18.252 255.255.255.0
248   standby 40 ip 172.16.18.254
249   standby 40 priority 150
250   standby 40 preempt
251   ip ospf mtu-ignore
252   ip ospf 1 area 0
253 !
254 interface Vlan41
255   ip address 172.16.19.252 255.255.255.0
256   standby 41 ip 172.16.19.254
257   standby 41 preempt
258   ip ospf mtu-ignore
259   ip ospf 1 area 0
260 !
```



```

261 interface Vlan100
262 ip address 172.16.20.1 255.255.255.0
263 ip ospf mtu-ignore
264 ip ospf 1 area 0
265 !
266 router ospf 1
267 !
268 ip http server
269 ip http secure-server
270 !
271 !
272 ip sla enable reaction-alerts
273 snmp-server community public R0
274 snmp-server community private RW
275 !
276 !
277 !
278 !
279 line con 0
280 line vty 0 4
281 password cisco
282 line vty 5 15
283 password cisco
284 !
285 end

```

A.14.2. IP Interfaces

	Interface	IP-Address	OK?	Method	Status	Protocol
1	Vlan1	unassigned	YES	unset	administratively down	down
2	Vlan21	172.16.16.1	YES	manual	down	down
3	Vlan30	172.16.17.1	YES	manual	up	up
4	Vlan40	172.16.18.252	YES	manual	up	up
5	Vlan41	172.16.19.252	YES	manual	up	up
6	Vlan100	172.16.20.1	YES	manual	down	down
7	FastEthernet0/1	unassigned	YES	manual	up	up
8	FastEthernet0/2	unassigned	YES	manual	up	up
9	FastEthernet0/3	unassigned	YES	manual	up	up
10	FastEthernet0/4	unassigned	YES	manual	up	up
11	FastEthernet0/5	unassigned	YES	unset	up	up
12	FastEthernet0/6	unassigned	YES	unset	up	up
13	FastEthernet0/7	unassigned	YES	unset	up	up
14	FastEthernet0/8	unassigned	YES	unset	up	up
15	FastEthernet0/9	unassigned	YES	unset	up	up
16	FastEthernet0/10	unassigned	YES	unset	down	down
17	FastEthernet0/11	unassigned	YES	unset	up	up
18	FastEthernet0/12	unassigned	YES	unset	up	up
19	FastEthernet0/13	unassigned	YES	unset	up	up
20	FastEthernet0/14	unassigned	YES	unset	up	up
21	FastEthernet0/15	unassigned	YES	unset	down	down
22	FastEthernet0/16	unassigned	YES	unset	down	down
23	FastEthernet0/17	unassigned	YES	unset	down	down
24	FastEthernet0/18	unassigned	YES	unset	down	down
25	FastEthernet0/19	unassigned	YES	unset	down	down
26	FastEthernet0/20	unassigned	YES	unset	down	down
27	FastEthernet0/21	unassigned	YES	unset	down	down
28	FastEthernet0/22	unassigned	YES	unset	down	down
29	FastEthernet0/23	unassigned	YES	unset	down	down
30	FastEthernet0/24	unassigned	YES	unset	down	down
31	GigabitEthernet0/1	unassigned	YES	unset	down	down
32						

```

33 GigabitEthernet0/2 unassigned YES unset down down
34 Port-channel1 unassigned YES unset down down
35 Port-channel2 unassigned YES unset down down
36 Port-channel3 172.16.254.38 YES manual up up
37 Port-channel4 unassigned YES unset up up
38 Port-channel5 unassigned YES unset up up
39 Port-channel6 unassigned YES unset down down
40 Loopback100 172.16.25.5 YES manual up up

```

A.14.3. Interface Status

```

1 HQ_DS1>show interface status
2
3 Port      Name      Status    Vlan    Duplex Speed Type
4 Fa0/1     connected routed    a-full a-10  10/100BaseTX
5 Fa0/2     connected routed    a-full a-10  10/100BaseTX
6 Fa0/3     connected routed    a-full a-10  10/100BaseTX
7 Fa0/4     connected routed    a-full a-10  10/100BaseTX
8 Fa0/5     connected trunk   a-full a-100 10/100BaseTX
9 Fa0/6     connected trunk   a-full a-100 10/100BaseTX
10 Fa0/7     connected trunk   a-full a-100 10/100BaseTX
11 Fa0/8     connected trunk   a-full a-100 10/100BaseTX
12 Fa0/9     connected trunk   a-full a-100 10/100BaseTX
13 Fa0/10    notconnect 1         auto  auto 10/100BaseTX
14 Fa0/11    connected trunk   a-full a-100 10/100BaseTX
15 Fa0/12    connected trunk   a-full a-100 10/100BaseTX
16 Fa0/13    connected trunk   a-full a-100 10/100BaseTX
17 Fa0/14    connected trunk   a-full a-100 10/100BaseTX
18 Fa0/15    notconnect 1         auto  auto 10/100BaseTX
19 Fa0/16    notconnect 1         auto  auto 10/100BaseTX
20 Fa0/17    notconnect 1         auto  auto 10/100BaseTX
21 Fa0/18    notconnect 1         auto  auto 10/100BaseTX
22 Fa0/19    notconnect 1         auto  auto 10/100BaseTX
23 Fa0/20    notconnect 1         auto  auto 10/100BaseTX
24 Fa0/21    notconnect 1         auto  auto 10/100BaseTX
25
26 Port      Name      Status    Vlan    Duplex Speed Type
27 Fa0/22    notconnect 1         auto  auto 10/100BaseTX
28 Fa0/23    notconnect 1         auto  auto 10/100BaseTX
29 Fa0/24    notconnect 1         auto  auto 10/100BaseTX
30 Gi0/1     notconnect 1         auto  auto Not Present
31 Gi0/2     notconnect 1         auto  auto Not Present
32 Po1      notconnect unassigned auto  auto
33 Po2      notconnect unassigned auto  auto
34 Po3      connected routed    a-full a-10
35 Po4      connected trunk   a-full a-100
36 Po5      connected trunk   a-full a-100
37 Po6      notconnect unassigned auto  auto

```

A.14.4. Interface Trunk

```

1 HQ_DS1> show interface trunk
2
3 Port      Mode      Encapsulation Status Native vlan
4 Fa0/7     on        802.1q      trunking 1
5 Fa0/8     on        802.1q      trunking 1
6 Fa0/9     on        802.1q      trunking 1
7 Fa0/13    on        802.1q      trunking 1

```

```

8 Fa0/14 on 802.1q trunking 1
9 Po4 on 802.1q trunking 1
10 Po5 on 802.1q trunking 1
11
12 Port Vlans allowed on trunk
13 Fa0/7 1-4094
14 Fa0/8 1-4094
15 Fa0/9 1-4094
16 Fa0/13 1-4094
17 Fa0/14 1-4094
18 Po4 1-4094
19 Po5 1-4094
20
21 Port Vlans allowed and active in management domain
22 Fa0/7 1,10,20,30,40-41,99
23 Fa0/8 1,10,20,30,40-41,99
24 Fa0/9 1,10,20,30,40-41,99
25
26 Port Vlans allowed and active in management domain
27 Fa0/13 1,10,20,30,40-41,99
28 Fa0/14 1,10,20,30,40-41,99
29 Po4 1,10,20,30,40-41,99
30 Po5 1,10,20,30,40-41,99
31
32 Port Vlans in spanning tree forwarding state and not pruned
33 Fa0/7 1,10,20,30,40-41,99
34 Fa0/8 1,10,20,30,40-41,99
35 Fa0/9 1,10,20,30,40-41,99
36 Fa0/13 1,10,20,30,40-41,99
37 Fa0/14 1,10,20,30,40-41,99
38 Po4 1,10,20,30,40-41,99
39 Po5 1,10,20,30,40-41,99

```

A.14.5. Neighbors

```

1 Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
2 S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone,
3 D - Remote, C - CVTA, M - Two-port Mac Relay
4
5 Device ID Local Intrfce Holdtme Capability Platform Port ID
6 HQ_AS4 Fas 0/5 163 S I WS-C2960- Fas 0/3
7 HQ_AS4 Fas 0/6 126 S I WS-C2960- Fas 0/4
8 HQ_AS5 Fas 0/8 126 S I WS-C2960- Fas 0/4
9 HQ_AS5 Fas 0/7 126 S I WS-C2960- Fas 0/3
10 HQ_AS1 Fas 0/9 126 S I WS-C3560- Fas 0/1
11 HQ_AS2 Fas 0/12 127 S I WS-C3560- Fas 0/2
12 HQ_AS2 Fas 0/11 127 S I WS-C3560- Fas 0/1
13 HQ_CS1 Fas 0/4 162 R S I WS-C3560V Fas 0/16
14 HQ_CS1 Fas 0/3 162 R S I WS-C3560V Fas 0/15
15 HQ_CS1 Fas 0/2 162 R S I WS-C3560V Fas 0/14
16 HQ_CS1 Fas 0/1 162 R S I WS-C3560V Fas 0/13
17 HQ_AS3 Fas 0/14 126 S I WS-C2960- Fas 0/2
18 HQ_AS3 Fas 0/13 126 S I WS-C2960- Fas 0/1
19 HQ_DS1#

```

A.14.6. IP Route

```

1 HQ_DS1> show ip route

```

```

2 Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
3       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
4       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
5       E1 - OSPF external type 1, E2 - OSPF external type 2
6       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
7       ia - IS-IS inter area, * - candidate default, U - per-user static route
8       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
9       + - replicated route, % - next hop override
10
11 Gateway of last resort is not set
12
13       172.16.0.0/16 is variably subnetted, 36 subnets, 4 masks
14 C       172.16.17.0/24 is directly connected, Vlan30
15 L       172.16.17.1/32 is directly connected, Vlan30
16 C       172.16.18.0/24 is directly connected, Vlan40
17 L       172.16.18.252/32 is directly connected, Vlan40
18 C       172.16.19.0/24 is directly connected, Vlan41
19 L       172.16.19.252/32 is directly connected, Vlan41
20 C       172.16.25.0/24 is directly connected, Loopback100
21 O       172.16.25.1/32 [110/3] via 172.16.254.33, 3d06h, Port-channel3
22         [110/3] via 172.16.19.253, 3d06h, Vlan41
23         [110/3] via 172.16.18.253, 3d06h, Vlan40
24 O       172.16.25.2/32 [110/3] via 172.16.19.253, 3d06h, Vlan41
25         [110/3] via 172.16.18.253, 3d06h, Vlan40
26 O       172.16.25.3/32 [110/4] via 172.16.254.33, 3d06h, Port-channel3
27         [110/4] via 172.16.19.253, 3d06h, Vlan41
28         [110/4] via 172.16.18.253, 3d06h, Vlan40
29 O       172.16.25.4/32 [110/5] via 172.16.254.33, 3d06h, Port-channel3
30         [110/5] via 172.16.19.253, 3d06h, Vlan41
31         [110/5] via 172.16.18.253, 3d06h, Vlan40
32 L       172.16.25.5/32 is directly connected, Loopback100
33 O       172.16.25.6/32 [110/2] via 172.16.19.253, 3d06h, Vlan41
34         [110/2] via 172.16.18.253, 3d06h, Vlan40
35 O       172.16.25.7/32 [110/5] via 172.16.254.33, 3d06h, Port-channel3
36         [110/5] via 172.16.19.253, 3d06h, Vlan41
37         [110/5] via 172.16.18.253, 3d06h, Vlan40
38 O       172.16.100.0/24 [110/69] via 172.16.19.253, 3d06h, Vlan41
39         [110/69] via 172.16.18.253, 3d06h, Vlan40
40 O       172.16.101.0/24 [110/70] via 172.16.19.253, 3d06h, Vlan41
41         [110/70] via 172.16.18.253, 3d06h, Vlan40
42 O       172.16.102.0/24 [110/1004] via 172.16.19.253, 3d06h, Vlan41
43         [110/1004] via 172.16.18.253, 3d06h, Vlan40
44 O       172.16.252.1/32 [110/4] via 172.16.19.253, 3d06h, Vlan41
45         [110/4] via 172.16.18.253, 3d06h, Vlan40
46 O       172.16.252.2/32 [110/68] via 172.16.19.253, 3d06h, Vlan41
47         [110/68] via 172.16.18.253, 3d06h, Vlan40
48 O       172.16.252.3/32 [110/1003] via 172.16.19.253, 3d06h, Vlan41
49         [110/1003] via 172.16.18.253, 3d06h, Vlan40
50 O       172.16.254.0/30 [110/3] via 172.16.254.33, 3d06h, Port-channel3
51         [110/3] via 172.16.19.253, 3d06h, Vlan41
52         [110/3] via 172.16.18.253, 3d06h, Vlan40
53 O       172.16.254.4/30 [110/3] via 172.16.254.33, 3d06h, Port-channel3
54         [110/3] via 172.16.19.253, 3d06h, Vlan41
55         [110/3] via 172.16.18.253, 3d06h, Vlan40
56 O       172.16.254.8/30 [110/4] via 172.16.254.33, 3d06h, Port-channel3
57         [110/4] via 172.16.19.253, 3d06h, Vlan41
58         [110/4] via 172.16.18.253, 3d06h, Vlan40
59 O       172.16.254.12/30 [110/12] via 172.16.19.253, 3d06h, Vlan41
60         [110/12] via 172.16.18.253, 3d06h, Vlan40
61 O       172.16.254.16/30 [110/5] via 172.16.254.33, 3d06h, Port-channel3
62         [110/5] via 172.16.19.253, 3d06h, Vlan41
63         [110/5] via 172.16.18.253, 3d06h, Vlan40

```

```

64 0      172.16.254.20/30 [110/4] via 172.16.254.33, 3d06h, Port-channel3
65      [110/4] via 172.16.19.253, 3d06h, Vlan41
66      [110/4] via 172.16.18.253, 3d06h, Vlan40
67 C      172.16.254.32/29 is directly connected, Port-channel3
68 L      172.16.254.38/32 is directly connected, Port-channel3
69 0      172.16.254.40/29 [110/2] via 172.16.19.253, 3d06h, Vlan41
70      [110/2] via 172.16.18.253, 3d06h, Vlan40
71 0      172.16.254.48/29 [110/2] via 172.16.19.253, 3d06h, Vlan41
72      [110/2] via 172.16.18.253, 3d06h, Vlan40
73 0      172.16.254.56/30 [110/3] via 172.16.19.253, 3d06h, Vlan41
74      [110/3] via 172.16.18.253, 3d06h, Vlan40
75 0      172.16.254.60/30 [110/4] via 172.16.19.253, 3d06h, Vlan41
76      [110/4] via 172.16.18.253, 3d06h, Vlan40
77 0      172.16.254.64/30 [110/3] via 172.16.19.253, 3d06h, Vlan41
78      [110/3] via 172.16.18.253, 3d06h, Vlan40
79 0      172.16.255.0/30 [110/1003] via 172.16.19.253, 3d06h, Vlan41
80      [110/1003] via 172.16.18.253, 3d06h, Vlan40
81 0      172.16.255.4/30 [110/1003] via 172.16.19.253, 3d06h, Vlan41
82      [110/1003] via 172.16.18.253, 3d06h, Vlan40
83 0      172.16.255.8/30 [110/1003] via 172.16.19.253, 3d06h, Vlan41
84      [110/1003] via 172.16.18.253, 3d06h, Vlan40
85      200.200.200.0/28 is subnetted, 1 subnets
86 0      200.200.200.0 [110/4] via 172.16.19.253, 3d06h, Vlan41
87      [110/4] via 172.16.18.253, 3d06h, Vlan40

```

A.14.7. Spanning Tree

```

1  HQ_DS1>show spanning
2
3  VLAN0001
4    Spanning tree enabled protocol ieee
5    Root ID Priority 32769
6        Address 001a.2fa8.ea80
7        Cost    19
8        Port    11 (FastEthernet0/9)
9        Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
10
11   Bridge ID Priority 32769 (priority 32768 sys-id-ext 1)
12       Address 24b6.572a.da00
13       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
14       Aging Time 300 sec
15
16  Interface      Role Sts Cost Prio.Nbr Type
17  -----
18  Fa0/7          Desg FWD 19   128.9  P2p
19  Fa0/8          Desg FWD 19   128.10 P2p
20  Fa0/9          Root FWD 19   128.11 P2p
21  Fa0/13         Desg FWD 19   128.15 P2p
22  Fa0/14         Desg FWD 19   128.16 P2p
23  Po4            Desg FWD 12   128.88 P2p
24  Po5            Desg FWD 12   128.96 P2p
25
26
27
28  VLAN0010
29    Spanning tree enabled protocol ieee
30    Root ID Priority 32778
31        Address 001a.2fa8.ea80
32        Cost    19
33        Port    11 (FastEthernet0/9)

```

```

34         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
35
36     Bridge ID Priority 32778 (priority 32768 sys-id-ext 10)
37         Address 24b6.572a.da00
38         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
39         Aging Time 300 sec

```

```

40
41 Interface      Role Sts Cost Prio.Nbr Type
42 -----
43 Fa0/7          Desg FWD 19   128.9  P2p
44 Fa0/8          Desg FWD 19   128.10 P2p
45 Fa0/9          Root FWD 19   128.11 P2p
46 Fa0/13         Desg FWD 19   128.15 P2p
47 Fa0/14         Desg FWD 19   128.16 P2p
48 Po4           Desg FWD 12   128.88 P2p
49 Po5           Desg FWD 12   128.96 P2p

```

```

50
51
52
53 VLAN0020
54     Spanning tree enabled protocol ieee
55     Root ID Priority 32788
56         Address 001a.2fa8.ea80
57         Cost 19
58         Port 11 (FastEthernet0/9)
59         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
60
61     Bridge ID Priority 32788 (priority 32768 sys-id-ext 20)
62         Address 24b6.572a.da00
63         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
64         Aging Time 300 sec

```

```

65
66 Interface      Role Sts Cost Prio.Nbr Type
67 -----
68 Fa0/7          Desg FWD 19   128.9  P2p
69 Fa0/8          Desg FWD 19   128.10 P2p
70 Fa0/9          Root FWD 19   128.11 P2p
71 Fa0/13         Desg FWD 19   128.15 P2p
72 Fa0/14         Desg FWD 19   128.16 P2p
73 Po4           Desg FWD 12   128.88 P2p
74 Po5           Desg FWD 12   128.96 P2p

```

```

75
76
77
78 VLAN0030
79     Spanning tree enabled protocol ieee
80     Root ID Priority 32798
81         Address 001a.2fa8.ea80
82         Cost 19
83         Port 11 (FastEthernet0/9)
84         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
85
86     Bridge ID Priority 32798 (priority 32768 sys-id-ext 30)
87         Address 24b6.572a.da00
88         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
89         Aging Time 300 sec

```

```

90
91 Interface      Role Sts Cost Prio.Nbr Type
92 -----
93 Fa0/7          Desg FWD 19   128.9  P2p
94 Fa0/8          Desg FWD 19   128.10 P2p
95 Fa0/9          Root FWD 19   128.11 P2p

```

```

96 Fa0/13      Desg FWD 19   128.15 P2p
97 Fa0/14      Desg FWD 19   128.16 P2p
98 Po4        Desg FWD 12   128.88 P2p
99 Po5        Desg FWD 12   128.96 P2p
100
101
102
103 VLAN0040
104   Spanning tree enabled protocol ieee
105   Root ID Priority 32808
106       Address 001a.2fa8.ea80
107       Cost     19
108       Port     11 (FastEthernet0/9)
109       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
110
111   Bridge ID Priority 32808 (priority 32768 sys-id-ext 40)
112       Address 24b6.572a.da00
113       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
114       Aging Time 300 sec
115
116 Interface      Role Sts Cost Prio.Nbr Type
117 -----
118 Fa0/7           Desg FWD 19   128.9  P2p
119 Fa0/8           Desg FWD 19   128.10 P2p
120 Fa0/9           Root FWD 19   128.11 P2p
121 Fa0/13          Desg FWD 19   128.15 P2p
122 Fa0/14          Desg FWD 19   128.16 P2p
123 Po4            Desg FWD 12   128.88 P2p
124 Po5            Desg FWD 12   128.96 P2p
125
126
127
128 VLAN0041
129   Spanning tree enabled protocol ieee
130   Root ID Priority 32809
131       Address 001a.2fa8.ea80
132       Cost     19
133       Port     11 (FastEthernet0/9)
134       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
135
136   Bridge ID Priority 32809 (priority 32768 sys-id-ext 41)
137       Address 24b6.572a.da00
138       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
139       Aging Time 300 sec
140
141 Interface      Role Sts Cost Prio.Nbr Type
142 -----
143 Fa0/7           Desg FWD 19   128.9  P2p
144 Fa0/8           Desg FWD 19   128.10 P2p
145 Fa0/9           Root FWD 19   128.11 P2p
146 Fa0/13          Desg FWD 19   128.15 P2p
147 Fa0/14          Desg FWD 19   128.16 P2p
148 Po4            Desg FWD 12   128.88 P2p
149 Po5            Desg FWD 12   128.96 P2p
150
151
152
153 VLAN0099
154   Spanning tree enabled protocol ieee
155   Root ID Priority 32867
156       Address 001a.2fa8.ea80
157       Cost     19

```

```

158      Port      11 (FastEthernet0/9)
159      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
160
161      Bridge ID Priority 32867 (priority 32768 sys-id-ext 99)
162      Address 24b6.572a.da00
163      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
164      Aging Time 300 sec
165
166      Interface      Role Sts Cost  Prio.Nbr Type
167      -----
168      Fa0/7          Desg FWD 19   128.9  P2p
169      Fa0/8          Desg FWD 19   128.10 P2p
170      Fa0/9          Root FWD 19   128.11 P2p
171      Fa0/13         Desg FWD 19   128.15 P2p
172      Fa0/14         Desg FWD 19   128.16 P2p
173      Po4            Desg FWD 12   128.88 P2p
174      Po5            Desg FWD 12   128.96 P2p

```

A.14.8. VLAN

```

1  HQ_DS1>show vlan
2
3  VLAN Name                Status Ports
4  -----
5  1  default                 active Fa0/10, Fa0/15, Fa0/16, Fa0/17
6                                Fa0/18, Fa0/19, Fa0/20, Fa0/21
7                                Fa0/22, Fa0/23, Fa0/24, Gi0/1
8                                Gi0/2
9  10 VLAN0010               active
10 20 VLAN0020               active
11 30 VLAN0030               active
12 40 VLAN0040               active
13 41 VLAN0041               active
14 99 Management             active
15 1002 fddi-default         act/unsup
16 1003 trcrf-default        act/unsup
17 1004 fdnet-default        act/unsup
18 1005 trbrf-default        act/unsup
19
20 VLAN Type SAID    MTU  Parent RingNo BridgeNo  Stp  BrdgMode Trans1 Trans2
21 -----
22 1  enet 100001 1500 -  -  -  -  -  0  0
23 10 enet 100010 1500 -  -  -  -  -  0  0
24 20 enet 100020 1500 -  -  -  -  -  0  0
25
26 VLAN Type SAID    MTU  Parent RingNo BridgeNo  Stp  BrdgMode Trans1 Trans2
27 -----
28 30 enet 100030 1500 -  -  -  -  -  0  0
29 40 enet 100040 1500 -  -  -  -  -  0  0
30 41 enet 100041 1500 -  -  -  -  -  0  0
31 99 enet 100099 1500 -  -  -  -  -  0  0
32 1002 fddi 101002 1500 -  -  -  -  -  0  0
33 1003 trcrf 101003 4472 1005 3276 -  -  srb  0  0
34 1004 fdnet 101004 1500 -  -  -  -  ieee -  0  0
35 1005 trbrf 101005 4472 -  -  15  -  ibm  -  0  0
36
37
38 VLAN AREHops STEHops Backup CRF
39 -----
40 1003 7 7 off

```


41	Remote SPAN VLANs		
42	-----		
43			
44			
45			
46	Primary	Secondary	Type Ports
47	-----	-----	-----

A.15. HQ DS2

A.15.1. Running Configuration

```

1  !
2  !
3  ! Last configuration change at 08:47:52 UTC Mon Mar 1 1993
4  !
5  version 15.0
6  no service pad
7  service timestamps debug datetime msec
8  service timestamps log datetime msec
9  no service password-encryption
10 service sequence-numbers
11 !
12 hostname HQ_DS2
13 !
14 boot-start-marker
15 boot-end-marker
16 !
17 enable secret 5 $1$Gfma$G0lb8g0YFbxMJ8FjtkmpF/
18 !
19 username ins password 0 ins@lab
20 no aaa new-model
21 system mtu routing 1504
22 ip routing
23 no ip domain-lookup
24 ip dhcp excluded-address 172.16.18.250 172.16.18.254
25 ip dhcp excluded-address 172.16.18.10 172.16.18.12
26 ip dhcp excluded-address 172.16.19.250 172.16.19.254
27 ip dhcp excluded-address 172.16.19.10 172.16.19.12
28 !
29 ip dhcp pool MARKETING
30 network 172.16.18.0 255.255.255.0
31 default-router 172.16.18.254
32 !
33 ip dhcp pool SALES
34 network 172.16.19.0 255.255.255.0
35 default-router 172.16.19.254
36 !
37 !
38 !
39 !
40 crypto pki trustpoint HTTPS_SS_CERT_KEYPAIR
41 enrollment selfsigned
42 serial-number
43 revocation-check none
44 rsa-keypair HTTPS_SS_CERT_KEYPAIR
45 !
46 !
47 crypto pki certificate chain HTTPS_SS_CERT_KEYPAIR
48 certificate self-signed 01

```

```
49      quit
50      !
51      !
52      !
53      !
54      !
55      spanning-tree mode pvst
56      spanning-tree extend system-id
57      !
58      vlan internal allocation policy ascending
59      !
60      !
61      !
62      !
63      !
64      !
65      !
66      !
67      !
68      !
69      !
70      !
71      !
72      !
73      interface Loopback100
74      ip address 172.16.25.6 255.255.255.0
75      ip ospf 1 area 0
76      !
77      interface Port-channel1
78      switchport trunk encapsulation dot1q
79      switchport mode trunk
80      !
81      interface Port-channel3
82      no switchport
83      ip address 172.16.254.49 255.255.255.248
84      ip ospf mtu-ignore
85      ip ospf 1 area 0
86      !
87      interface Port-channel4
88      no switchport
89      ip address 172.16.254.42 255.255.255.248
90      ip ospf mtu-ignore
91      ip ospf 1 area 0
92      !
93      interface FastEthernet0/1
94      no switchport
95      no ip address
96      channel-group 3 mode on
97      !
98      interface FastEthernet0/2
99      no switchport
100     no ip address
101     channel-group 3 mode on
102     !
103     interface FastEthernet0/3
104     no switchport
105     no ip address
106     channel-group 3 mode on
107     !
108     interface FastEthernet0/4
109     no switchport
110     no ip address
```

```
111 | channel-group 3 mode on
112 | !
113 | interface FastEthernet0/5
114 | no switchport
115 | no ip address
116 | channel-group 4 mode on
117 | !
118 | interface FastEthernet0/6
119 | no switchport
120 | no ip address
121 | channel-group 4 mode on
122 | !
123 | interface FastEthernet0/7
124 | no switchport
125 | no ip address
126 | channel-group 4 mode on
127 | !
128 | interface FastEthernet0/8
129 | no switchport
130 | no ip address
131 | channel-group 4 mode on
132 | !
133 | interface FastEthernet0/9
134 | !
135 | interface FastEthernet0/10
136 | !
137 | interface FastEthernet0/11
138 | !
139 | interface FastEthernet0/12
140 | !
141 | interface FastEthernet0/13
142 | !
143 | interface FastEthernet0/14
144 | !
145 | interface FastEthernet0/15
146 | !
147 | interface FastEthernet0/16
148 | !
149 | interface FastEthernet0/17
150 | !
151 | interface FastEthernet0/18
152 | !
153 | interface FastEthernet0/19
154 | !
155 | interface FastEthernet0/20
156 | !
157 | interface FastEthernet0/21
158 | switchport trunk encapsulation dot1q
159 | switchport mode trunk
160 | channel-group 1 mode on
161 | !
162 | interface FastEthernet0/22
163 | switchport trunk encapsulation dot1q
164 | switchport mode trunk
165 | channel-group 1 mode on
166 | !
167 | interface FastEthernet0/23
168 | switchport trunk encapsulation dot1q
169 | switchport mode trunk
170 | channel-group 1 mode on
171 | !
172 | interface FastEthernet0/24
```

```
173 switchport trunk encapsulation dot1q
174 switchport mode trunk
175 channel-group 1 mode on
176 !
177 interface GigabitEthernet0/1
178 !
179 interface GigabitEthernet0/2
180 !
181 interface Vlan1
182 no ip address
183 shutdown
184 !
185 interface Vlan21
186 no ip address
187 ip ospf mtu-ignore
188 !
189 interface Vlan30
190 no ip address
191 ip ospf mtu-ignore
192 !
193 interface Vlan40
194 ip address 172.16.18.253 255.255.255.0
195 standby 40 ip 172.16.18.254
196 standby 40 preempt
197 ip ospf mtu-ignore
198 ip ospf 1 area 0
199 !
200 interface Vlan41
201 ip address 172.16.19.253 255.255.255.0
202 standby 41 ip 172.16.19.254
203 standby 41 priority 150
204 standby 41 preempt
205 ip ospf 1 area 0
206 !
207 interface Vlan100
208 ip address 172.16.20.2 255.255.255.0
209 ip ospf mtu-ignore
210 ip ospf 1 area 0
211 !
212 router ospf 1
213 !
214 ip http server
215 ip http secure-server
216 !
217 !
218 ip sla enable reaction-alerts
219 snmp-server community public R0
220 snmp-server community private RW
221 !
222 !
223 line con 0
224 line vty 0 4
225 password cisco
226 login
227 line vty 5 15
228 password cisco
229 login
230 !
231 end
```

A.15.2. IP Interfaces

	Interface	IP-Address	OK?	Method	Status	Protocol
1	Vlan1	unassigned	YES	unset	administratively down	down
2	Vlan21	unassigned	YES	unset	down	down
3	Vlan30	unassigned	YES	unset	up	up
4	Vlan40	172.16.18.253	YES	manual	up	up
5	Vlan41	172.16.19.253	YES	manual	up	up
6	Vlan100	172.16.20.2	YES	manual	down	down
7	FastEthernet0/1	unassigned	YES	manual	up	up
8	FastEthernet0/2	unassigned	YES	manual	up	up
9	FastEthernet0/3	unassigned	YES	manual	up	up
10	FastEthernet0/4	unassigned	YES	manual	up	up
11	FastEthernet0/5	unassigned	YES	manual	up	up
12	FastEthernet0/6	unassigned	YES	manual	up	up
13	FastEthernet0/7	unassigned	YES	manual	up	up
14	FastEthernet0/8	unassigned	YES	manual	up	up
15	FastEthernet0/9	unassigned	YES	unset	up	up
16	FastEthernet0/10	unassigned	YES	unset	up	up
17	FastEthernet0/11	unassigned	YES	unset	up	up
18	FastEthernet0/12	unassigned	YES	unset	up	up
19	FastEthernet0/13	unassigned	YES	unset	up	up
20	FastEthernet0/14	unassigned	YES	unset	up	up
21	FastEthernet0/15	unassigned	YES	unset	down	down
22	FastEthernet0/16	unassigned	YES	unset	down	down
23	FastEthernet0/17	unassigned	YES	unset	down	down
24	FastEthernet0/18	unassigned	YES	unset	down	down
25	FastEthernet0/19	unassigned	YES	unset	down	down
26	FastEthernet0/20	unassigned	YES	unset	down	down
27	FastEthernet0/21	unassigned	YES	unset	down	down
28	FastEthernet0/22	unassigned	YES	unset	down	down
29	FastEthernet0/23	unassigned	YES	unset	down	down
30	FastEthernet0/24	unassigned	YES	unset	down	down
31	GigabitEthernet0/1	unassigned	YES	unset	down	down
32	GigabitEthernet0/2	unassigned	YES	unset	down	down
33	Port-channel1	unassigned	YES	unset	down	down
34	Port-channel3	172.16.254.49	YES	manual	up	up
35	Port-channel4	172.16.254.42	YES	manual	up	up
36	Loopback100	172.16.25.6	YES	manual	up	up
37						

A.15.3. Interface Status

1	HQ_DS2>show interface status						
2							
3	Port	Name	Status	Vlan	Duplex	Speed	Type
4	Fa0/1		connected	routed	a-full	a-100	10/100BaseTX
5	Fa0/2		connected	routed	a-full	a-100	10/100BaseTX
6	Fa0/3		connected	routed	a-full	a-100	10/100BaseTX
7	Fa0/4		connected	routed	a-full	a-100	10/100BaseTX
8	Fa0/5		connected	routed	a-half	a-100	10/100BaseTX
9	Fa0/6		connected	routed	a-half	a-100	10/100BaseTX
10	Fa0/7		connected	routed	a-half	a-100	10/100BaseTX
11	Fa0/8		connected	routed	a-half	a-100	10/100BaseTX
12	Fa0/9		connected	trunk	a-full	a-100	10/100BaseTX
13	Fa0/10		connected	trunk	a-full	a-100	10/100BaseTX
14	Fa0/11		connected	trunk	a-full	a-100	10/100BaseTX
15	Fa0/12		connected	trunk	a-full	a-100	10/100BaseTX
16	Fa0/13		connected	trunk	a-full	a-100	10/100BaseTX
17	Fa0/14		connected	trunk	a-full	a-100	10/100BaseTX

```

18 Fa0/15          notconnect 1      auto auto 10/100BaseTX
19 Fa0/16          notconnect 1      auto auto 10/100BaseTX
20 Fa0/17          notconnect 1      auto auto 10/100BaseTX
21 Fa0/18          notconnect 1      auto auto 10/100BaseTX
22 Fa0/19          notconnect 1      auto auto 10/100BaseTX
23 Fa0/20          notconnect 1      auto auto 10/100BaseTX
24 Fa0/21          err-disabled 1    auto auto 10/100BaseTX
25
26 Port   Name      Status   Vlan    Duplex Speed Type
27 Fa0/22          err-disabled 1      auto auto 10/100BaseTX
28 Fa0/23          err-disabled 1      auto auto 10/100BaseTX
29 Fa0/24          err-disabled 1      auto auto 10/100BaseTX
30 Gi0/1          notconnect 1      auto auto Not Present
31 Gi0/2          notconnect 1      auto auto Not Present
32 Po1           err-disabled 1      auto auto
33 Po3           connected routed a-full a-100
34 Po4           connected routed a-half a-100

```

A.15.4. Interface Trunk

```

1 HQ_DS2>show interface trunk
2
3 Port      Mode      Encapsulation Status Native vlan
4 Fa0/9     auto      n-802.1q    trunking 1
5 Fa0/10    auto      n-802.1q    trunking 1
6 Fa0/11    auto      n-802.1q    trunking 1
7 Fa0/12    auto      n-802.1q    trunking 1
8 Fa0/13    auto      n-802.1q    trunking 1
9 Fa0/14    auto      n-802.1q    trunking 1
10
11 Port      Vlans allowed on trunk
12 Fa0/9     1-4094
13 Fa0/10    1-4094
14 Fa0/11    1-4094
15 Fa0/12    1-4094
16 Fa0/13    1-4094
17 Fa0/14    1-4094
18
19 Port      Vlans allowed and active in management domain
20 Fa0/9     1,10,20,30,40-41,99
21 Fa0/10    1,10,20,30,40-41,99
22 Fa0/11    1,10,20,30,40-41,99
23 Fa0/12    1,10,20,30,40-41,99
24 Fa0/13    1,10,20,30,40-41,99
25
26 Port      Vlans allowed and active in management domain
27 Fa0/14    1,10,20,30,40-41,99
28
29 Port      Vlans in spanning tree forwarding state and not pruned
30 Fa0/9     1,10,20,30,40-41,99
31 Fa0/10    1,10,20,30,40-41,99
32 Fa0/11    none
33 Fa0/12    none
34 Fa0/13    1,10,20,30,40-41,99
35 Fa0/14    none

```

A.15.5. Neighbors

Device ID	Local Intrfce	Holdtme	Capability	Platform	Port ID
HQ_AS4	Fas 0/13	166	S I	WS-C2960-	Fas 0/1
HQ_AS4	Fas 0/14	166	S I	WS-C2960-	Fas 0/2
HQ_AS5	Fas 0/11	158	S I	WS-C2960-	Fas 0/1
HQ_AS5	Fas 0/12	158	S I	WS-C2960-	Fas 0/2
HQ_AS6	Fas 0/9	133	S I	WS-C2960-	Fas 0/1
HQ_AS6	Fas 0/10	133	S I	WS-C2960-	Fas 0/2
HQ_CS2	Fas 0/1	123	R S I	WS-C3560V	Fas 0/13
HQ_CS2	Fas 0/4	123	R S I	WS-C3560V	Fas 0/16
HQ_CS2	Fas 0/3	123	R S I	WS-C3560V	Fas 0/15
HQ_CS2	Fas 0/2	123	R S I	WS-C3560V	Fas 0/14
HQ_CS1	Fas 0/8	169	R S I	WS-C3560V	Fas 0/20
HQ_CS1	Fas 0/7	169	R S I	WS-C3560V	Fas 0/19
HQ_CS1	Fas 0/6	169	R S I	WS-C3560V	Fas 0/18
HQ_CS1	Fas 0/5	169	R S I	WS-C3560V	Fas 0/17

A.15.6. IP Route

```

1 HQ_DS2>show ip route
2 Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
3         D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
4         N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
5         E1 - OSPF external type 1, E2 - OSPF external type 2
6         i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
7         ia - IS-IS inter area, * - candidate default, U - per-user static route
8         o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
9         + - replicated route, % - next hop override
10
11 Gateway of last resort is not set
12
13     172.16.0.0/16 is variably subnetted, 36 subnets, 4 masks
14 O    172.16.17.0/24 [110/2] via 172.16.19.252, 3d06h, Vlan41
15     [110/2] via 172.16.18.252, 3d06h, Vlan40
16 C    172.16.18.0/24 is directly connected, Vlan40
17 L    172.16.18.253/32 is directly connected, Vlan40
18 C    172.16.19.0/24 is directly connected, Vlan41
19 L    172.16.19.253/32 is directly connected, Vlan41
20 C    172.16.25.0/24 is directly connected, Loopback100
21 O    172.16.25.1/32 [110/2] via 172.16.254.41, 3d06h, Port-channel4
22 O    172.16.25.2/32 [110/2] via 172.16.254.50, 3d06h, Port-channel3
23 O    172.16.25.3/32 [110/3] via 172.16.254.41, 3d06h, Port-channel4
24 O    172.16.25.4/32 [110/4] via 172.16.254.41, 3d06h, Port-channel4
25 O    172.16.25.5/32 [110/2] via 172.16.19.252, 3d06h, Vlan41
26     [110/2] via 172.16.18.252, 3d06h, Vlan40
27 L    172.16.25.6/32 is directly connected, Loopback100
28 O    172.16.25.7/32 [110/4] via 172.16.254.41, 3d06h, Port-channel4
29 O    172.16.100.0/24 [110/68] via 172.16.254.50, 3d06h, Port-channel3
30 O    172.16.101.0/24 [110/69] via 172.16.254.50, 3d06h, Port-channel3
31 O    172.16.102.0/24 [110/1003] via 172.16.254.50, 3d06h, Port-channel3
32 O    172.16.252.1/32 [110/3] via 172.16.254.50, 3d06h, Port-channel3
33 O    172.16.252.2/32 [110/67] via 172.16.254.50, 3d06h, Port-channel3
34 O    172.16.252.3/32 [110/1002] via 172.16.254.50, 3d06h, Port-channel3
35 O    172.16.254.0/30 [110/2] via 172.16.254.50, 3d06h, Port-channel3
36     [110/2] via 172.16.254.41, 3d06h, Port-channel4
37 O    172.16.254.4/30 [110/2] via 172.16.254.41, 3d06h, Port-channel4
38 O    172.16.254.8/30 [110/3] via 172.16.254.41, 3d06h, Port-channel4
39 O    172.16.254.12/30 [110/11] via 172.16.254.50, 3d06h, Port-channel3
40 O    172.16.254.16/30 [110/4] via 172.16.254.41, 3d06h, Port-channel4
41 O    172.16.254.20/30 [110/3] via 172.16.254.41, 3d06h, Port-channel4

```

```

42 O      172.16.254.32/29 [110/3] via 172.16.19.252, 3d06h, Vlan41
43      [110/3] via 172.16.18.252, 3d06h, Vlan40
44 C      172.16.254.40/29 is directly connected, Port-channel4
45 L      172.16.254.42/32 is directly connected, Port-channel4
46 C      172.16.254.48/29 is directly connected, Port-channel3
47 L      172.16.254.49/32 is directly connected, Port-channel3
48 O      172.16.254.56/30 [110/2] via 172.16.254.50, 3d06h, Port-channel3
49 O      172.16.254.60/30 [110/3] via 172.16.254.50, 3d06h, Port-channel3
50 O      172.16.254.64/30 [110/2] via 172.16.254.50, 3d06h, Port-channel3
51 O      172.16.255.0/30 [110/1002] via 172.16.254.50, 3d06h, Port-channel3
52 O      172.16.255.4/30 [110/1002] via 172.16.254.50, 3d06h, Port-channel3
53 O      172.16.255.8/30 [110/1002] via 172.16.254.50, 3d06h, Port-channel3
54      200.200.200.0/28 is subnetted, 1 subnets
55 O      200.200.200.0 [110/3] via 172.16.254.50, 3d06h, Port-channel3

```

A.15.7. Spanning Tree

```

1 HQ_DS2> show spanning
2
3
4 VLAN0001
5   Spanning tree enabled protocol ieee
6   Root ID Priority 32769
7       Address 001a.2fa8.ea80
8       Cost    50
9       Port    15 (FastEthernet0/13)
10      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
11
12      Bridge ID Priority 32769 (priority 32768 sys-id-ext 1)
13      Address 24b6.5725.d200
14      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
15      Aging Time 300 sec
16
17 Interface      Role Sts Cost Prio.Nbr Type
18 -----
19 Fa0/9          Desg FWD 19   128.11 P2p
20 Fa0/10         Desg FWD 19   128.12 P2p
21 Fa0/11         Altn BLK 19   128.13 P2p
22 Fa0/12         Altn BLK 19   128.14 P2p
23 Fa0/13         Root FWD 19   128.15 P2p
24 Fa0/14         Altn BLK 19   128.16 P2p
25
26
27
28 VLAN0010
29   Spanning tree enabled protocol ieee
30   Root ID Priority 32778
31       Address 001a.2fa8.ea80
32       Cost    50
33       Port    15 (FastEthernet0/13)
34      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
35
36      Bridge ID Priority 32778 (priority 32768 sys-id-ext 10)
37      Address 24b6.5725.d200
38      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
39      Aging Time 300 sec
40
41 Interface      Role Sts Cost Prio.Nbr Type
42 -----
43 Fa0/9          Desg FWD 19   128.11 P2p

```



```

44 Fa0/10      Desg FWD 19   128.12 P2p
45 Fa0/11      Altn BLK 19   128.13 P2p
46 Fa0/12      Altn BLK 19   128.14 P2p
47 Fa0/13      Root FWD 19   128.15 P2p
48 Fa0/14      Altn BLK 19   128.16 P2p
49
50
51
52 VLAN0020
53   Spanning tree enabled protocol ieee
54   Root ID Priority 32788
55       Address 001a.2fa8.ea80
56       Cost    50
57       Port    15 (FastEthernet0/13)
58       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
59
60   Bridge ID Priority 32788 (priority 32768 sys-id-ext 20)
61       Address 24b6.5725.d200
62       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
63       Aging Time 300 sec
64
65   Interface      Role Sts Cost Prio.Nbr Type
66   -----
67   Fa0/9          Desg FWD 19   128.11 P2p
68   Fa0/10         Desg FWD 19   128.12 P2p
69   Fa0/11         Altn BLK 19   128.13 P2p
70   Fa0/12         Altn BLK 19   128.14 P2p
71   Fa0/13         Root FWD 19   128.15 P2p
72   Fa0/14         Altn BLK 19   128.16 P2p
73
74
75
76 VLAN0030
77   Spanning tree enabled protocol ieee
78   Root ID Priority 32798
79       Address 001a.2fa8.ea80
80       Cost    50
81       Port    15 (FastEthernet0/13)
82       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
83
84   Bridge ID Priority 32798 (priority 32768 sys-id-ext 30)
85       Address 24b6.5725.d200
86       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
87       Aging Time 300 sec
88
89   Interface      Role Sts Cost Prio.Nbr Type
90   -----
91   Fa0/9          Desg FWD 19   128.11 P2p
92   Fa0/10         Desg FWD 19   128.12 P2p
93   Fa0/11         Altn BLK 19   128.13 P2p
94   Fa0/12         Altn BLK 19   128.14 P2p
95   Fa0/13         Root FWD 19   128.15 P2p
96   Fa0/14         Altn BLK 19   128.16 P2p
97
98
99
100 VLAN0040
101   Spanning tree enabled protocol ieee
102   Root ID Priority 32808
103       Address 001a.2fa8.ea80
104       Cost    50
105       Port    15 (FastEthernet0/13)

```

```

106         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
107
108     Bridge ID Priority 32808 (priority 32768 sys-id-ext 40)
109         Address 24b6.5725.d200
110         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
111         Aging Time 300 sec

```

```

112
113 Interface      Role Sts Cost Prio.Nbr Type
114 -----
115 Fa0/9          Desg FWD 19   128.11 P2p
116 Fa0/10         Desg FWD 19   128.12 P2p
117 Fa0/11         Altn BLK 19   128.13 P2p
118 Fa0/12         Altn BLK 19   128.14 P2p
119 Fa0/13         Root FWD 19   128.15 P2p
120 Fa0/14         Altn BLK 19   128.16 P2p

```

```

121
122
123
124 VLAN0041
125     Spanning tree enabled protocol ieee
126     Root ID Priority 32809
127         Address 001a.2fa8.ea80
128         Cost 50
129         Port 15 (FastEthernet0/13)
130         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

```

```

131
132     Bridge ID Priority 32809 (priority 32768 sys-id-ext 41)
133         Address 24b6.5725.d200
134         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
135         Aging Time 300 sec

```

```

136
137 Interface      Role Sts Cost Prio.Nbr Type
138 -----
139 Fa0/9          Desg FWD 19   128.11 P2p
140 Fa0/10         Desg FWD 19   128.12 P2p
141 Fa0/11         Altn BLK 19   128.13 P2p
142 Fa0/12         Altn BLK 19   128.14 P2p
143 Fa0/13         Root FWD 19   128.15 P2p
144 Fa0/14         Altn BLK 19   128.16 P2p

```

```

145
146
147
148 VLAN0099
149     Spanning tree enabled protocol ieee
150     Root ID Priority 32867
151         Address 001a.2fa8.ea80
152         Cost 50
153         Port 15 (FastEthernet0/13)
154         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

```

```

155
156     Bridge ID Priority 32867 (priority 32768 sys-id-ext 99)
157         Address 24b6.5725.d200
158         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
159         Aging Time 300 sec

```

```

160
161 Interface      Role Sts Cost Prio.Nbr Type
162 -----
163 Fa0/9          Desg FWD 19   128.11 P2p
164 Fa0/10         Desg FWD 19   128.12 P2p
165 Fa0/11         Altn BLK 19   128.13 P2p
166 Fa0/12         Altn BLK 19   128.14 P2p
167 Fa0/13         Root FWD 19   128.15 P2p

```

168 Fa0/14 Altn BLK 19 128.16 P2p

A.15.8. VLAN

```

1 HQ_DS2>show vlan
2
3 VLAN Name                Status Ports
4 -----
5 1  default                active Fa0/15, Fa0/16, Fa0/17, Fa0/18
6                                Fa0/19, Fa0/20, Fa0/21, Fa0/22
7                                Fa0/23, Fa0/24, Gi0/1, Gi0/2
8 10 VLAN0010              active
9 20 VLAN0020              active
10 30 VLAN0030              active
11 40 VLAN0040              active
12 41 VLAN0041              active
13 99 Management            active
14 1002 fddi-default        act/unsup
15 1003 trcrf-default       act/unsup
16 1004 fddinet-default     act/unsup
17 1005 trbrf-default       act/unsup
18
19 VLAN Type SAID    MTU  Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2
20 -----
21 1  enet 100001 1500 - - - - - 0 0
22 10 enet 100010 1500 - - - - - 0 0
23 20 enet 100020 1500 - - - - - 0 0
24 30 enet 100030 1500 - - - - - 0 0
25
26 VLAN Type SAID    MTU  Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2
27 -----
28 40 enet 100040 1500 - - - - - 0 0
29 41 enet 100041 1500 - - - - - 0 0
30 99 enet 100099 1500 - - - - - 0 0
31 1002 fddi 101002 1500 - - - - - 0 0
32 1003 trcrf 101003 4472 1005 3276 - - srb 0 0
33 1004 fdnet 101004 1500 - - - - - ieee - 0 0
34 1005 trbrf 101005 4472 - - 15 - - - 0 0
35
36
37 VLAN AREHops STEHops Backup CRF
38 -----
39 1003 7 7 off
40
41 Remote SPAN VLANs
42 -----
43
44
45 Primary Secondary Type Ports
46 -----

```

A.16. HQ DS3

A.16.1. Running Configuration

```

1 !
2 version 12.2
3

```

```

4 no service pad
5 service timestamps debug datetime msec
6 service timestamps log datetime msec
7 no service password-encryption
8 service sequence-numbers
9 !
10 hostname HQ_DS3
11 !
12 boot-start-marker
13 boot-end-marker
14 !
15 enable secret 5 $1$ys7e$..Pxw.v7DcwVg.V9ngdUH0
16 !
17 username ins password 0 ins@lab
18 !
19 !
20 no aaa new-model
21 system mtu routing 1500
22 ip routing
23 ip dhcp excluded-address 172.16.1.1
24 ip dhcp excluded-address 172.16.1.10 172.16.1.12
25 ip dhcp excluded-address 172.16.2.1
26 ip dhcp excluded-address 172.16.2.10 172.16.2.12
27 ip dhcp excluded-address 172.16.3.1
28 ip dhcp excluded-address 172.16.3.10 172.16.3.12
29 ip dhcp excluded-address 172.16.4.1
30 ip dhcp excluded-address 172.16.4.10 172.16.4.12
31 !
32 ip dhcp pool HR
33     network 172.16.1.0 255.255.255.0
34     default-router 172.16.1.1
35 !
36 ip dhcp pool Engineering
37     network 172.16.2.0 255.255.255.0
38     default-router 172.16.2.1
39 !
40 ip dhcp pool Production
41     network 172.16.3.0 255.255.255.0
42     default-router 172.16.3.1
43 !
44 ip dhcp pool Finance
45     network 172.16.4.0 255.255.255.0
46     default-router 172.16.4.1
47 !
48 !
49 !
50 !
51 crypto pki trustpoint TP-self-signed-802439168
52     enrollment selfsigned
53     subject-name cn=IOS-Self-Signed-Certificate-802439168
54     revocation-check none
55     rsa-keypair TP-self-signed-802439168
56 !
57 !
58 crypto pki certificate chain TP-self-signed-802439168
59     certificate self-signed 01
60         3082023D 308201A6 A0030201 02020101 300D0609 2A864886 F70D0101 04050030
61         30312E30 2C060355 04031325 494F532D 53656C66 2D536967 6E65642D 43657274
62         69666963 6174652D 38303234 33393136 38301E17 0D393330 33303130 34333931
63         305A170D 32303031 30313030 30303030 5A303031 2E302C06 03550403 1325494F
64         532D5365 6C662D53 69676E65 642D4365 72746966 69636174 652D3830 32343339
65         31363830 819F300D 06092A86 4886F70D 01010105 0003818D 00308189 02818100

```

```

66 9AA9B98F 41CCCEEB 5C4D40C1 79B15141 B62D29CC DF4C1A50 645C0DB0 12FE530C
67 B7A75864 117CD82B 55B196FC 7A5F0245 EF5C9DEF 107AA59A 19F235E7 B9E879B0
68 FFEC9A80 BB1C4716 46290B09 3215925B A19F9254 F8FE1C44 91E394BC 536F7626
69 30954CBD 01B12522 9AD8BDFB 9D4F1BB3 DDA34F1C 703C2F5C B0BD9E5E 01D9CD23
70 02030100 01A36730 65300F06 03551D13 0101FF04 05300301 01FF3012 0603551D
71 11040B30 09820748 515F4453 332E301F 0603551D 23041830 168014E0 7465A734
72 D841B9DA 9031A687 77121B5B D3CB4D30 1D060355 1D0E0416 0414E074 65A734D8
73 41B9DA90 31A68777 121B5BD3 CB4D300D 06092A86 4886F70D 01010405 00038181
74 006E1C1B 5B43389D 40C1A70A DCE625B9 613DC29A D7E8FF96 CAA00071 3CFDBA11
75 2907ED48 2473DFE1 85F93637 ED4E9468 2A7D70B8 4998FA1F 8B1F3FBA 42FC454B
76 A4311370 F188DD94 C70C2B12 D183FF82 CA18C95C 5362ADB2 EAB29A82 99CD4A9C
77 F21FFE7B 8581E8DE 53517CD2 B428193D BD936ADB 9DD0147B E02773BE E2577379 26
78 quit
79 !
80 !
81 !
82 spanning-tree mode pvst
83 spanning-tree extend system-id
84 !
85 vlan internal allocation policy ascending
86 !
87 !
88 !
89 !
90 interface Loopback100
91 ip address 172.16.25.7 255.255.255.0
92 ip ospf 1 area 0
93 !
94 interface Port-channel1
95 switchport trunk encapsulation dot1q
96 switchport mode trunk
97 !
98 interface Port-channel2
99 switchport trunk encapsulation dot1q
100 switchport mode trunk
101 !
102 interface Port-channel3
103 no switchport
104 ip address 172.16.254.22 255.255.255.252
105 ip ospf mtu-ignore
106 ip ospf 1 area 0
107 !
108 interface Port-channel4
109 no switchport
110 ip address 172.16.254.18 255.255.255.252
111 ip ospf mtu-ignore
112 ip ospf 1 area 0
113 !
114 interface Port-channel5
115 switchport trunk encapsulation dot1q
116 switchport mode trunk
117 !
118 interface Port-channel15
119 switchport trunk encapsulation dot1q
120 switchport mode trunk
121 !
122 interface FastEthernet0/1
123 no switchport
124 no ip address
125 channel-group 3 mode on
126 !
127 interface FastEthernet0/2

```

```
128 | no switchport
129 | no ip address
130 | channel-group 3 mode on
131 | !
132 | interface FastEthernet0/3
133 | no switchport
134 | no ip address
135 | channel-group 3 mode on
136 | !
137 | interface FastEthernet0/4
138 | no switchport
139 | no ip address
140 | channel-group 3 mode on
141 | !
142 | interface FastEthernet0/5
143 | no switchport
144 | no ip address
145 | channel-group 4 mode on
146 | !
147 | interface FastEthernet0/6
148 | no switchport
149 | no ip address
150 | channel-group 4 mode on
151 | !
152 | interface FastEthernet0/7
153 | no switchport
154 | no ip address
155 | channel-group 4 mode on
156 | !
157 | interface FastEthernet0/8
158 | no switchport
159 | no ip address
160 | channel-group 4 mode on
161 | !
162 | interface FastEthernet0/9
163 | !
164 | interface FastEthernet0/10
165 | !
166 | interface FastEthernet0/11
167 | !
168 | interface FastEthernet0/12
169 | !
170 | interface FastEthernet0/13
171 | switchport trunk encapsulation dot1q
172 | switchport mode trunk
173 | !
174 | interface FastEthernet0/14
175 | switchport trunk encapsulation dot1q
176 | switchport mode trunk
177 | !
178 | interface FastEthernet0/15
179 | switchport trunk encapsulation dot1q
180 | switchport mode trunk
181 | channel-group 1 mode on
182 | !
183 | interface FastEthernet0/16
184 | switchport trunk encapsulation dot1q
185 | switchport mode trunk
186 | channel-group 1 mode on
187 | !
188 | interface FastEthernet0/17
189 | switchport trunk encapsulation dot1q
```

```
190 | switchport mode trunk
191 | !
192 | interface FastEthernet0/18
193 | switchport trunk encapsulation dot1q
194 | switchport mode trunk
195 | !
196 | interface FastEthernet0/19
197 | switchport trunk encapsulation dot1q
198 | switchport mode trunk
199 | channel-group 2 mode on
200 | !
201 | interface FastEthernet0/20
202 | switchport trunk encapsulation dot1q
203 | switchport mode trunk
204 | channel-group 2 mode on
205 | !
206 | interface FastEthernet0/21
207 | switchport trunk encapsulation dot1q
208 | switchport mode trunk
209 | !
210 | interface FastEthernet0/22
211 | switchport trunk encapsulation dot1q
212 | switchport mode trunk
213 | channel-group 5 mode on
214 | !
215 | interface FastEthernet0/23
216 | switchport trunk encapsulation dot1q
217 | switchport mode trunk
218 | channel-group 5 mode on
219 | !
220 | interface FastEthernet0/24
221 | switchport trunk encapsulation dot1q
222 | switchport mode trunk
223 | !
224 | interface GigabitEthernet0/1
225 | !
226 | interface GigabitEthernet0/2
227 | !
228 | interface Vlan1
229 | no ip address
230 | shutdown
231 | !
232 | interface Vlan10
233 | ip address 172.16.1.1 255.255.255.0
234 | ip ospf 1 area 0
235 | !
236 | interface Vlan11
237 | ip address 172.16.2.1 255.255.255.0
238 | ip ospf 1 area 0
239 | !
240 | interface Vlan20
241 | no ip address
242 | !
243 | router ospf 1
244 | log-adjacency-changes
245 | !
246 | ip classless
247 | ip http server
248 | ip http secure-server
249 | !
250 | !
251 | ip sla enable reaction-alerts
```

```

252 !
253 snmp-server community public R0
254 snmp-server community private RW
255 !
256 !
257 line con 0
258 line vty 0 4
259 password cisco
260 login
261 line vty 5 15
262 password cisco
263 login
264 !
265 end

```

A.16.2. IP Interfaces

Interface	IP-Address	OK?	Method	Status	Protocol
Vlan1	unassigned	YES	manual	administratively down	down
Vlan10	172.16.1.1	YES	manual	down	down
Vlan11	172.16.2.1	YES	manual	down	down
Vlan20	unassigned	YES	unset	down	down
FastEthernet0/1	unassigned	YES	manual	up	up
FastEthernet0/2	unassigned	YES	manual	up	up
FastEthernet0/3	unassigned	YES	manual	up	up
FastEthernet0/4	unassigned	YES	manual	up	up
FastEthernet0/5	unassigned	YES	manual	up	up
FastEthernet0/6	unassigned	YES	manual	up	up
FastEthernet0/7	unassigned	YES	manual	up	up
FastEthernet0/8	unassigned	YES	manual	up	up
FastEthernet0/9	unassigned	YES	unset	down	down
FastEthernet0/10	unassigned	YES	unset	down	down
FastEthernet0/11	unassigned	YES	unset	down	down
FastEthernet0/12	unassigned	YES	unset	down	down
FastEthernet0/13	unassigned	YES	unset	up	up
FastEthernet0/14	unassigned	YES	unset	up	up
FastEthernet0/15	unassigned	YES	unset	up	up
FastEthernet0/16	unassigned	YES	unset	up	up
FastEthernet0/17	unassigned	YES	unset	up	up
FastEthernet0/18	unassigned	YES	unset	up	up
FastEthernet0/19	unassigned	YES	unset	up	up
FastEthernet0/20	unassigned	YES	unset	up	up
FastEthernet0/21	unassigned	YES	unset	up	up
FastEthernet0/22	unassigned	YES	unset	up	up
FastEthernet0/23	unassigned	YES	unset	up	up
FastEthernet0/24	unassigned	YES	unset	up	up
GigabitEthernet0/1	unassigned	YES	unset	down	down
GigabitEthernet0/2	unassigned	YES	unset	down	down
Port-channel1	unassigned	YES	unset	up	up
Port-channel2	unassigned	YES	unset	up	up
Port-channel3	172.16.254.22	YES	manual	up	up
Port-channel4	172.16.254.18	YES	manual	up	up
Port-channel5	unassigned	YES	unset	up	up
Port-channel15	unassigned	YES	unset	down	down
Loopback100	172.16.25.7	YES	manual	up	up

A.16.3. Interface Status


```

1 HQ_DS3>show interface status
2
3 Port      Name      Status    Vlan    Duplex  Speed  Type
4 Fa0/1     connected routed    a-full  a-100  10/100BaseTX
5 Fa0/2     connected routed    a-full  a-100  10/100BaseTX
6 Fa0/3     connected routed    a-full  a-100  10/100BaseTX
7 Fa0/4     connected routed    a-full  a-100  10/100BaseTX
8 Fa0/5     connected routed    a-full  a-100  10/100BaseTX
9 Fa0/6     connected routed    a-full  a-100  10/100BaseTX
10 Fa0/7     connected routed    a-full  a-100  10/100BaseTX
11 Fa0/8     connected routed    a-full  a-100  10/100BaseTX
12 Fa0/9     notconnect 1        auto    auto    10/100BaseTX
13 Fa0/10    notconnect 1        auto    auto    10/100BaseTX
14 Fa0/11    notconnect 1        auto    auto    10/100BaseTX
15 Fa0/12    notconnect 1        auto    auto    10/100BaseTX
16 Fa0/13    connected trunk    a-full  a-100  10/100BaseTX
17 Fa0/14    connected trunk    a-full  a-100  10/100BaseTX
18 Fa0/15    connected trunk    a-full  a-100  10/100BaseTX
19 Fa0/16    connected trunk    a-full  a-100  10/100BaseTX
20 Fa0/17    connected trunk    a-full  a-100  10/100BaseTX
21 Fa0/18    connected trunk    a-full  a-100  10/100BaseTX
22 Fa0/19    connected trunk    a-full  a-100  10/100BaseTX
23 Fa0/20    connected trunk    a-full  a-100  10/100BaseTX
24 Fa0/21    connected trunk    a-full  a-100  10/100BaseTX
25
26 Port      Name      Status    Vlan    Duplex  Speed  Type
27 Fa0/22    connected trunk    a-full  a-100  10/100BaseTX
28 Fa0/23    connected trunk    a-full  a-100  10/100BaseTX
29 Fa0/24    connected trunk    a-full  a-100  10/100BaseTX
30 Gi0/1     notconnect 1        auto    auto    Not Present
31 Gi0/2     notconnect 1        auto    auto    Not Present
32 Po1       connected trunk    a-full  a-100
33 Po2       connected trunk    a-full  a-100
34 Po3       connected routed    a-full  a-100
35 Po4       connected routed    a-full  a-100
36 Po5       connected trunk    a-full  a-100
37 Po15      notconnect unassigned auto    auto

```

A.16.4. Interface Trunk

```

1 HQ_DS3> show interface trunk
2
3 Port      Mode      Encapsulation Status  Native vlan
4 Fa0/13    on        802.1q   trunking 1
5 Fa0/14    on        802.1q   trunking 1
6 Fa0/17    on        802.1q   trunking 1
7 Fa0/18    on        802.1q   trunking 1
8 Fa0/21    on        802.1q   trunking 1
9 Fa0/24    on        802.1q   trunking 1
10 Po1       on        802.1q   trunking 1
11 Po2       on        802.1q   trunking 1
12 Po5       on        802.1q   trunking 1
13
14 Port      Vlans allowed on trunk
15 Fa0/13    1-4094
16 Fa0/14    1-4094
17 Fa0/17    1-4094
18 Fa0/18    1-4094
19 Fa0/21    1-4094

```

```

20 Fa0/24    1-4094
21 Po1      1-4094
22 Po2      1-4094
23 Po5      1-4094
24
25 Port      Vlans allowed and active in management domain
26 Fa0/13    1,31
27 Fa0/14    1,31
28 Fa0/17    1,31
29 Fa0/18    1,31
30 Fa0/21    1,31
31 Fa0/24    1,31
32 Po1      1,31
33 Po2      1,31
34 Po5      1,31
35
36 Port      Vlans in spanning tree forwarding state and not pruned
37 Fa0/13    1,31
38 Fa0/14    1,31
39 Fa0/17    1,31
40 Fa0/18    1,31
41 Fa0/21    1,31
42 Fa0/24    1,31
43 Po1      1,31
44 Po2      1,31
45 Po5      1,31

```

A.16.5. Neighbors

```

1 Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
2                   S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone,
3                   D - Remote, C - CVTA, M - Two-port Mac Relay
4
5 Device ID      Local Intrfce Holdtme Capability Platform Port ID
6 HQ_AS11        Fas 0/22      132          S I WS-C2960- Fas 0/2
7 HQ_AS11        Fas 0/21      132          S I WS-C2960- Fas 0/1
8 HQ_AS10        Fas 0/20      142          S I WS-C3560V Fas 0/2
9 HQ_AS10        Fas 0/19      142          S I WS-C3560V Fas 0/1
10 HQ_AS12        Fas 0/24      159          S I WS-C2960- Fas 0/2
11 HQ_AS12        Fas 0/23      159          S I WS-C2960- Fas 0/1
12 HQ_CS4         Fas 0/6       172          R S I WS-C3560- Fas 0/14
13 HQ_CS4         Fas 0/7       172          R S I WS-C3560- Fas 0/15
14 HQ_CS4         Fas 0/8       172          R S I WS-C3560- Fas 0/16
15 HQ_CS4         Fas 0/5       172          R S I WS-C3560- Fas 0/13
16 HQ_AS7         Fas 0/14      145          S I WS-C2960- Fas 0/2
17 HQ_AS7         Fas 0/13      145          S I WS-C2960- Fas 0/1
18 HQ_CS3         Fas 0/1       155          R S I WS-C3560- Fas 0/13
19 HQ_CS3         Fas 0/4       155          R S I WS-C3560- Fas 0/16
20 HQ_CS3         Fas 0/3       155          R S I WS-C3560- Fas 0/15
21 HQ_CS3         Fas 0/2       155          R S I WS-C3560- Fas 0/14
22 HQ_AS8         Fas 0/16      166          S I WS-C2960- Fas 0/2
23 HQ_AS8         Fas 0/15      166          S I WS-C2960- Fas 0/1
24 HQ_AS9         Fas 0/18      150          S I WS-C3560V Fas 0/2
25 HQ_AS9         Fas 0/17      150          S I WS-C3560V Fas 0/1

```

A.16.6. IP Route

```

1 HQ_DS3>show ip route

```

```

2 Codes: C - connected, S - static, R - RIP, M - mobile, B - BGP
3       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
4       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
5       E1 - OSPF external type 1, E2 - OSPF external type 2
6       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
7       ia - IS-IS inter area, * - candidate default, U - per-user static route
8       o - ODR, P - periodic downloaded static route
9
10 Gateway of last resort is not set
11
12     200.200.200.0/28 is subnetted, 1 subnets
13     O    200.200.200.0 [110/5] via 172.16.254.21, 3d06h, Port-channel3
14     172.16.0.0/16 is variably subnetted, 31 subnets, 4 masks
15     O    172.16.254.64/30 [110/4] via 172.16.254.21, 3d06h, Port-channel3
16     O    172.16.252.1/32 [110/5] via 172.16.254.21, 3d06h, Port-channel3
17     O    172.16.254.0/30 [110/3] via 172.16.254.21, 3d06h, Port-channel3
18     O    172.16.252.2/32 [110/69] via 172.16.254.21, 3d06h, Port-channel3
19     O    172.16.255.0/30 [110/1004] via 172.16.254.21, 3d06h, Port-channel3
20     O    172.16.252.3/32 [110/1004] via 172.16.254.21, 3d06h, Port-channel3
21     O    172.16.254.4/30 [110/2] via 172.16.254.21, 3d06h, Port-channel3
22     O    172.16.255.4/30 [110/1004] via 172.16.254.21, 3d06h, Port-channel3
23     O    172.16.254.8/30 [110/2] via 172.16.254.21, 3d06h, Port-channel3
24         [110/2] via 172.16.254.17, 3d06h, Port-channel4
25     O    172.16.255.8/30 [110/1004] via 172.16.254.21, 3d06h, Port-channel3
26     O    172.16.254.12/30 [110/11] via 172.16.254.17, 3d06h, Port-channel4
27     C    172.16.254.16/30 is directly connected, Port-channel4
28     C    172.16.254.20/30 is directly connected, Port-channel3
29     O    172.16.254.32/29 [110/6] via 172.16.254.21, 3d06h, Port-channel3
30     O    172.16.254.40/29 [110/3] via 172.16.254.21, 3d06h, Port-channel3
31     O    172.16.254.48/29 [110/4] via 172.16.254.21, 3d06h, Port-channel3
32     O    172.16.254.56/30 [110/4] via 172.16.254.21, 3d06h, Port-channel3
33     O    172.16.254.60/30 [110/5] via 172.16.254.21, 3d06h, Port-channel3
34     O    172.16.25.5/32 [110/5] via 172.16.254.21, 3d06h, Port-channel3
35     O    172.16.25.4/32 [110/2] via 172.16.254.17, 3d06h, Port-channel4
36     O    172.16.25.6/32 [110/4] via 172.16.254.21, 3d06h, Port-channel3
37     O    172.16.25.1/32 [110/3] via 172.16.254.21, 3d06h, Port-channel3
38     C    172.16.25.0/24 is directly connected, Loopback100
39     O    172.16.25.3/32 [110/2] via 172.16.254.21, 3d06h, Port-channel3
40     O    172.16.25.2/32 [110/4] via 172.16.254.21, 3d06h, Port-channel3
41     O    172.16.17.0/24 [110/5] via 172.16.254.21, 3d06h, Port-channel3
42     O    172.16.18.0/24 [110/4] via 172.16.254.21, 3d06h, Port-channel3
43     O    172.16.19.0/24 [110/4] via 172.16.254.21, 3d06h, Port-channel3
44     O    172.16.100.0/24 [110/70] via 172.16.254.21, 3d06h, Port-channel3
45     O    172.16.101.0/24 [110/71] via 172.16.254.21, 3d06h, Port-channel3
46     O    172.16.102.0/24 [110/1005] via 172.16.254.21, 3d06h, Port-channel3

```

A.16.7. Spanning Tree

```

1 HQ_DS3> show spanning
2
3 VLAN0001
4   Spanning tree enabled protocol ieee
5   Root ID Priority 32769
6       Address 001a.2fd4.4000
7       This bridge is the root
8       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
9
10  Bridge ID Priority 32769 (priority 32768 sys-id-ext 1)
11      Address 001a.2fd4.4000
12      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

```

13	Aging Time 300 sec						
14							
15	Interface	Role	Sts	Cost	Prio.Nbr	Type	
16	-----						
17	Fa0/13	Desg	FWD	19	128.15	P2p	
18	Fa0/14	Desg	FWD	19	128.16	P2p	
19	Fa0/17	Desg	FWD	19	128.19	P2p	
20	Fa0/18	Desg	FWD	19	128.20	P2p	
21	Fa0/21	Desg	FWD	19	128.23	P2p	
22	Fa0/24	Desg	FWD	19	128.26	P2p	
23	Po1	Desg	FWD	12	128.56	P2p	
24	Po2	Desg	FWD	12	128.64	P2p	
25							
26	Interface	Role	Sts	Cost	Prio.Nbr	Type	
27	-----						
28							
29	Po5	Desg	FWD	12	128.88	P2p	
30							
31							
32	VLAN0031						
33	Spanning tree enabled protocol ieee						
34	Root ID Priority 32799						
35	Address 001a.2fd4.4000						
36	This bridge is the root						
37	Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec						
38							
39							
40	Bridge ID Priority 32799 (priority 32768 sys-id-ext 31)						
41	Address 001a.2fd4.4000						
42	Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec						
43	Aging Time 300 sec						
44							
45	Interface	Role	Sts	Cost	Prio.Nbr	Type	
46	-----						
47	Fa0/13	Desg	FWD	19	128.15	P2p	
48	Fa0/14	Desg	FWD	19	128.16	P2p	
49	Fa0/17	Desg	FWD	19	128.19	P2p	
50	Fa0/18	Desg	FWD	19	128.20	P2p	
51	Fa0/21	Desg	FWD	19	128.23	P2p	
52	Fa0/24	Desg	FWD	19	128.26	P2p	
53	Po1	Desg	FWD	12	128.56	P2p	
54	Po2	Desg	FWD	12	128.64	P2p	
55							
56	Interface	Role	Sts	Cost	Prio.Nbr	Type	
57	-----						
58							
59	Po5	Desg	FWD	12	128.88	P2p	

A.16.8. VLAN

1	HQ_DS3> show vlan		
2			
3	VLAN Name	Status	Ports
4	-----		
5	1 default	active	Fa0/9, Fa0/10, Fa0/11, Fa0/12
6			Gi0/1, Gi0/2
7	31 VLAN0031	active	
8	1002 fddi-default	act/unsup	
9	1003 token-ring-default	act/unsup	
10	1004 fddinet-default	act/unsup	

```

11 1005 trnet-default          act/unsup
12
13 VLAN Type SAID  MTU  Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
14 -----
15 1   etnet 100001 1500 -    -    -    -    -    0    0
16 31  etnet 100031 1500 -    -    -    -    -    0    0
17 1002 fddi 101002 1500 -    -    -    -    -    0    0
18 1003 tr 101003 1500 -    -    -    -    srb  0    0
19 1004 fdnet 101004 1500 -    -    -    ieee -    0    0
20 1005 trnet 101005 1500 -    -    -    ibm  -    0    0
21
22 Remote SPAN VLANs
23 -----
24
25 Primary Secondary Type      Ports
26 -----
27

```

A.17. HQ-AS1

A.17.1. Running Configuration

```

1 HQ_AS1#show run
2 Building configuration...
3
4 Current configuration : 4824 bytes
5 !
6 version 12.2
7 no service pad
8 service timestamps debug datetime msec
9 service timestamps log datetime msec
10 no service password-encryption
11 service sequence-numbers
12 !
13 hostname HQ_AS1
14 !
15 boot-start-marker
16 boot-end-marker
17 !
18 enable secret 5 $1$KrNA$mpj78GUcsy3K00M98AA50.
19 !
20 username ins password 0 ins@lab
21 !
22 !
23 no aaa new-model
24 system mtu routing 1500
25 !
26 !
27 !
28 !
29 crypto pki trustpoint TP-self-signed-799599232
30 enrollment selfsigned
31 subject-name cn=IOS-Self-Signed-Certificate-799599232
32 revocation-check none
33 rsa-keypair TP-self-signed-799599232
34 !
35 !
36 crypto pki certificate chain TP-self-signed-799599232
37 certificate self-signed 01
38 3082023D 308201A6 A0030201 02020101 300D0609 2A864886 F70D0101 04050030

```

```

39 30312E30 2C060355 04031325 494F532D 53656C66 2D536967 6E65642D 43657274
40 69666963 6174652D 37393935 39393233 32301E17 0D393330 33303130 33343431
41 375A170D 32303031 30313030 30303030 5A303031 2E302C06 03550403 1325494F
42 532D5365 6C662D53 69676E65 642D4365 72746966 69636174 652D3739 39353939
43 32333230 819F300D 06092A86 4886F70D 01010105 0003818D 00308189 02818100
44 A28CC657 AF63376B BA45B194 DE31FA4F C44D271B 6D474C07 7F2F70AF CF63CCC9
45 BBC49C67 A2A38B73 34A844AD FEA198F5 01E0DC70 6522CD20 07E538AC EAE66721
46 3BC7704B C385EB67 50F71747 129C1662 EDE4FA06 694FFB46 E15820D4 64234421
47 F692432F A110C868 D6ABE713 3080457B BFE58EBB B976F9F5 D020D1DA 9EF7A493
48 02030100 01A36730 65300F06 03551D13 0101FF04 05300301 01FF3012 0603551D
49 11040B30 09820748 515F4153 312E301F 0603551D 23041830 168014EB AA5BAC4C
50 140652A3 BDB8E922 AAB26DA6 3C8E8130 1D060355 1D0E0416 0414EBAA 5BAC4C14
51 0652A3BD B8E922AA B26DA63C 8E81300D 06092A86 4886F70D 01010405 00038181
52 007D330D 0413906D 80596209 3F9DE46D DE69628D 2FC5E331 3DE8BE27 D878C7D5
53 7A59B082 424660E5 286D4F15 72355FD6 215579F1 14690EB1 7B28D7F7 8BE79F82
54 C6B2D348 CE7695FD B525CAF0 9384605B F8C2309D D1A4AB84 1D1DAD50 E971E57A
55 2F6DC0DC 9F61A2E0 BD9802F2 21D9B4FA 686E8EEB 93584804 02264231 6AACA45D 25
56 quit
57 !
58 !
59 !
60 spanning-tree mode pvst
61 spanning-tree extend system-id
62 !
63 vlan internal allocation policy ascending
64 !
65 !
66 !
67 !
68 interface FastEthernet0/1
69 !
70 interface FastEthernet0/2
71 !
72 interface FastEthernet0/3
73 switchport access vlan 21
74 switchport mode access
75 spanning-tree portfast
76 !
77 interface FastEthernet0/4
78 switchport access vlan 21
79 switchport mode access
80 spanning-tree portfast
81 !
82 interface FastEthernet0/5
83 switchport access vlan 21
84 switchport mode access
85 spanning-tree portfast
86 !
87 interface FastEthernet0/6
88 switchport access vlan 21
89 switchport mode access
90 spanning-tree portfast
91 !
92 interface FastEthernet0/7
93 switchport access vlan 21
94 switchport mode access
95 spanning-tree portfast
96 !
97 interface FastEthernet0/8
98 switchport access vlan 21
99 switchport mode access
100 spanning-tree portfast

```

```
101 | !
102 | interface FastEthernet0/9
103 |   switchport access vlan 21
104 |   switchport mode access
105 |   spanning-tree portfast
106 | !
107 | interface FastEthernet0/10
108 |   switchport access vlan 21
109 |   switchport mode access
110 |   spanning-tree portfast
111 | !
112 | interface FastEthernet0/11
113 |   switchport access vlan 21
114 |   switchport mode access
115 |   spanning-tree portfast
116 | !
117 | interface FastEthernet0/12
118 |   switchport access vlan 21
119 |   switchport mode access
120 |   spanning-tree portfast
121 | !
122 | interface FastEthernet0/13
123 |   switchport access vlan 21
124 |   switchport mode access
125 |   spanning-tree portfast
126 | !
127 | interface FastEthernet0/14
128 |   switchport access vlan 21
129 |   switchport mode access
130 |   spanning-tree portfast
131 | !
132 | interface FastEthernet0/15
133 |   switchport access vlan 21
134 |   switchport mode access
135 |   spanning-tree portfast
136 | !
137 | interface FastEthernet0/16
138 |   switchport access vlan 21
139 |   switchport mode access
140 |   spanning-tree portfast
141 | !
142 | interface FastEthernet0/17
143 |   switchport access vlan 21
144 |   switchport mode access
145 |   spanning-tree portfast
146 | !
147 | interface FastEthernet0/18
148 |   switchport access vlan 21
149 |   switchport mode access
150 |   spanning-tree portfast
151 | !
152 | interface FastEthernet0/19
153 |   switchport access vlan 21
154 |   switchport mode access
155 |   spanning-tree portfast
156 | !
157 | interface FastEthernet0/20
158 |   switchport access vlan 21
159 |   switchport mode access
160 |   spanning-tree portfast
161 | !
162 | interface FastEthernet0/21
```

```

163 switchport access vlan 21
164 switchport mode access
165 spanning-tree portfast
166 !
167 interface FastEthernet0/22
168 switchport access vlan 21
169 switchport mode access
170 spanning-tree portfast
171 !
172 interface FastEthernet0/23
173 switchport access vlan 21
174 !
175 interface FastEthernet0/24
176 switchport access vlan 21
177 switchport mode access
178 spanning-tree portfast
179 !
180 interface GigabitEthernet0/1
181 !
182 interface GigabitEthernet0/2
183 !
184 interface Vlan1
185 no ip address
186 shutdown
187 !
188 interface Vlan100
189 ip address 172.16.20.3 255.255.255.0
190 !
191 ip default-gateway 172.16.20.1
192 ip classless
193 ip http server
194 ip http secure-server
195 !
196 !
197 ip sla enable reaction-alerts
198 !
199 snmp-server community public R0
200 snmp-server community private RW
201 !
202 !
203 line con 0
204 line vty 0 4
205 password cisco
206 login
207 line vty 5 15
208 password cisco
209 login
210 !
211 end

```

A.17.2. IP Interfaces

```

1 HQ_AS1#show ip interface brief
2 Interface      IP-Address  OK? Method Status      Protocol
3 Vlan1          unassigned YES manual  administratively down down
4 Vlan100        172.16.20.3 YES manual  down        down
5 FastEthernet0/1 unassigned YES unset   up          up
6 FastEthernet0/2 unassigned YES unset   down        down
7 FastEthernet0/3 unassigned YES unset   down        down
8 FastEthernet0/4 unassigned YES unset   down        down

```


9	FastEthernet0/5	unassigned	YES	unset	down	down
10	FastEthernet0/6	unassigned	YES	unset	down	down
11	FastEthernet0/7	unassigned	YES	unset	down	down
12	FastEthernet0/8	unassigned	YES	unset	down	down
13	FastEthernet0/9	unassigned	YES	unset	down	down
14	FastEthernet0/10	unassigned	YES	unset	down	down
15	FastEthernet0/11	unassigned	YES	unset	down	down
16	FastEthernet0/12	unassigned	YES	unset	down	down
17	FastEthernet0/13	unassigned	YES	unset	down	down
18	FastEthernet0/14	unassigned	YES	unset	down	down
19	FastEthernet0/15	unassigned	YES	unset	down	down
20	FastEthernet0/16	unassigned	YES	unset	down	down
21	FastEthernet0/17	unassigned	YES	unset	down	down
22	FastEthernet0/18	unassigned	YES	unset	down	down
23	FastEthernet0/19	unassigned	YES	unset	down	down
24	FastEthernet0/20	unassigned	YES	unset	down	down
25	FastEthernet0/21	unassigned	YES	unset	down	down
26	FastEthernet0/22	unassigned	YES	unset	down	down
27	FastEthernet0/23	unassigned	YES	unset	down	down
28	FastEthernet0/24	unassigned	YES	unset	down	down
29	GigabitEthernet0/1	unassigned	YES	unset	down	down
30	GigabitEthernet0/2	unassigned	YES	unset	down	down

A.17.3. Interface Status

1	HQ_AS1# show interface status						
2							
3	Port	Name	Status	Vlan	Duplex	Speed	Type
4	Fa0/1		connected	trunk	a-full	a-100	10/100BaseTX
5	Fa0/2		notconnect	1	auto	auto	10/100BaseTX
6	Fa0/3		notconnect	21	auto	auto	10/100BaseTX
7	Fa0/4		notconnect	21	auto	auto	10/100BaseTX
8	Fa0/5		notconnect	21	auto	auto	10/100BaseTX
9	Fa0/6		notconnect	21	auto	auto	10/100BaseTX
10	Fa0/7		notconnect	21	auto	auto	10/100BaseTX
11	Fa0/8		notconnect	21	auto	auto	10/100BaseTX
12	Fa0/9		notconnect	21	auto	auto	10/100BaseTX
13	Fa0/10		notconnect	21	auto	auto	10/100BaseTX
14	Fa0/11		notconnect	21	auto	auto	10/100BaseTX
15	Fa0/12		notconnect	21	auto	auto	10/100BaseTX
16	Fa0/13		notconnect	21	auto	auto	10/100BaseTX
17	Fa0/14		notconnect	21	auto	auto	10/100BaseTX
18	Fa0/15		notconnect	21	auto	auto	10/100BaseTX
19	Fa0/16		notconnect	21	auto	auto	10/100BaseTX
20	Fa0/17		notconnect	21	auto	auto	10/100BaseTX
21	Fa0/18		notconnect	21	auto	auto	10/100BaseTX
22	Fa0/19		notconnect	21	auto	auto	10/100BaseTX
23	Fa0/20		notconnect	21	auto	auto	10/100BaseTX
24	Fa0/21		notconnect	21	auto	auto	10/100BaseTX
25							
26	Port	Name	Status	Vlan	Duplex	Speed	Type
27	Fa0/22		notconnect	21	auto	auto	10/100BaseTX
28	Fa0/23		notconnect	21	auto	auto	10/100BaseTX
29	Fa0/24		notconnect	21	auto	auto	10/100BaseTX
30	Gi0/1		notconnect	1	auto	auto	Not Present
31	Gi0/2		notconnect	1	auto	auto	Not Present

A.17.4. Interface Trunk

```

1 HQ_AS1#show interface trunk
2
3 Port      Mode      Encapsulation Status Native vlan
4 Fa0/1     auto      n-802.1q    trunking  1
5
6 Port      Vlans allowed on trunk
7 Fa0/1     1-4094
8
9 Port      Vlans allowed and active in management domain
10 Fa0/1     1,10,20,30,40-41,99
11
12 Port      Vlans in spanning tree forwarding state and not pruned
13 Fa0/1     1,10,20,30,40-41,99

```

A.17.5. Neighbors

```

1 HQ_AS1#show cdp neighbors
2 Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
3                   S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone,
4                   D - Remote, C - CVTA, M - Two-port Mac Relay
5
6 Device ID    Local Intrfce Holdtme Capability Platform Port ID
7 HQ_DS1      Fas 0/1      167          R S I WS-C3560V Fas 0/9

```

A.17.6. IP Route

```

1 HQ_AS1#show ip route
2 Default gateway is 172.16.20.1
3
4 Host          Gateway      Last Use Total Uses Interface
5 ICMP redirect cache is empty

```

A.17.7. Spanning Tree

```

1 HQ_AS1#show spanning
2
3 VLAN0001
4   Spanning tree enabled protocol ieee
5   Root ID Priority 32769
6       Address 001a.2fa8.ea80
7       This bridge is the root
8       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
9
10  Bridge ID Priority 32769 (priority 32768 sys-id-ext 1)
11      Address 001a.2fa8.ea80
12      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
13      Aging Time 300 sec
14
15 Interface      Role Sts Cost Prio.Nbr Type
16 -----
17 Fa0/1          Desg FWD 19   128.3 P2p
18
19
20
21 VLAN0010

```

```

22 Spanning tree enabled protocol ieee
23 Root ID Priority 32778
24     Address 001a.2fa8.ea80
25     This bridge is the root
26     Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
27
28 Bridge ID Priority 32778 (priority 32768 sys-id-ext 10)
29     Address 001a.2fa8.ea80
30     Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
31     Aging Time 300 sec
32
33 Interface      Role Sts Cost Prio.Nbr Type
34 -----
35 Fa0/1          Desg FWD 19   128.3 P2p
36
37
38
39 VLAN0020
40 Spanning tree enabled protocol ieee
41 Root ID Priority 32788
42     Address 001a.2fa8.ea80
43     This bridge is the root
44     Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
45
46 Bridge ID Priority 32788 (priority 32768 sys-id-ext 20)
47     Address 001a.2fa8.ea80
48     Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
49     Aging Time 300 sec
50
51 Interface      Role Sts Cost Prio.Nbr Type
52 -----
53 Fa0/1          Desg FWD 19   128.3 P2p
54
55
56
57 VLAN0030
58 Spanning tree enabled protocol ieee
59 Root ID Priority 32798
60     Address 001a.2fa8.ea80
61     This bridge is the root
62     Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
63
64 Bridge ID Priority 32798 (priority 32768 sys-id-ext 30)
65     Address 001a.2fa8.ea80
66     Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
67     Aging Time 300 sec
68
69 Interface      Role Sts Cost Prio.Nbr Type
70 -----
71 Fa0/1          Desg FWD 19   128.3 P2p
72
73
74
75 VLAN0040
76 Spanning tree enabled protocol ieee
77 Root ID Priority 32808
78     Address 001a.2fa8.ea80
79     This bridge is the root
80     Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
81
82 Bridge ID Priority 32808 (priority 32768 sys-id-ext 40)
83     Address 001a.2fa8.ea80

```

```

84         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
85         Aging Time 300 sec
86
87 Interface          Role Sts Cost  Prio.Nbr Type
88 -----
89 Fa0/1              Desg FWD 19   128.3  P2p
90
91
92
93 VLAN0041
94   Spanning tree enabled protocol ieee
95   Root ID Priority 32809
96     Address 001a.2fa8.ea80
97     This bridge is the root
98     Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
99
100   Bridge ID Priority 32809 (priority 32768 sys-id-ext 41)
101     Address 001a.2fa8.ea80
102     Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
103     Aging Time 300 sec
104
105 Interface          Role Sts Cost  Prio.Nbr Type
106 -----
107 Fa0/1              Desg FWD 19   128.3  P2p
108
109
110
111 VLAN0099
112   Spanning tree enabled protocol ieee
113   Root ID Priority 32867
114     Address 001a.2fa8.ea80
115     This bridge is the root
116     Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
117
118   Bridge ID Priority 32867 (priority 32768 sys-id-ext 99)
119     Address 001a.2fa8.ea80
120     Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
121     Aging Time 300 sec
122
123 Interface          Role Sts Cost  Prio.Nbr Type
124 -----
125 Fa0/1              Desg FWD 19   128.3  P2p

```

A.17.8. VLAN

```

1 HQ_AS1#show vlan
2
3 VLAN Name                Status Ports
4 -----
5 1  default                active Fa0/2, Gi0/1, Gi0/2
6 10 VLAN0010              active
7 20 VLAN0020              active
8 30 VLAN0030              active
9 40 VLAN0040              active
10 41 VLAN0041              active
11 99 Management            active
12 1002 fddi-default        act/unsup
13 1003 trcrf-default       act/unsup
14 1004 fddinet-default     act/unsup
15 1005 trbrf-default       act/unsup

```

```

16 VLAN Type SAID  MTU  Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
17 -----
18
19 1   enet 100001  1500 -   -   -   -   -   0    0
20 10  enet 100010  1500 -   -   -   -   -   0    0
21 20  enet 100020  1500 -   -   -   -   -   0    0
22 30  enet 100030  1500 -   -   -   -   -   0    0
23 40  enet 100040  1500 -   -   -   -   -   0    0
24 41  enet 100041  1500 -   -   -   -   -   0    0
25
26 VLAN Type SAID  MTU  Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
27 -----
28 99  enet 100099  1500 -   -   -   -   -   0    0
29 1002 fddi 101002  1500 -   -   -   -   -   0    0
30 1003 trcrf 101003  4472 1005 3276 -   -   srb   0    0
31 1004 fdnet 101004  1500 -   -   -   ieee -   0    0
32 1005 trbrf 101005  4472 -   -   15   ibm  -   0    0
33
34
35 VLAN AREHops STEHops Backup CRF
36 -----
37 1003 7      7      off
38
39 Remote SPAN VLANs
40 -----
41
42
43 Primary Secondary Type      Ports
44 -----

```

A.18. HQ-AS2

A.18.1. Running Configuration

```

1 HQ_AS2#show run
2 Building configuration...
3
4 Current configuration : 5008 bytes
5 !
6 version 12.2
7 no service pad
8 service timestamps debug datetime msec
9 service timestamps log datetime msec
10 no service password-encryption
11 service sequence-numbers
12 !
13 hostname HQ_AS2
14 !
15 boot-start-marker
16 boot-end-marker
17 !
18 enable secret 5 $1$cikQ$RVyoWc8CS2uVCZHzaIEX0
19 !
20 username ins password 0 ins@lab
21 !
22 !
23 no aaa new-model
24 system mtu routing 1500
25 !
26 !

```

```
27 | !
28 | !
29 | crypto pki trustpoint TP-self-signed-802423424
30 |   enrollment selfsigned
31 |   subject-name cn=IOS-Self-Signed-Certificate-802423424
32 |   revocation-check none
33 |   rsa-keypair TP-self-signed-802423424
34 | !
35 | !
36 | crypto pki certificate chain TP-self-signed-802423424
37 |   certificate self-signed 01
38 |     3082023D 308201A6 A0030201 02020101 300D0609 2A864886 F70D0101 04050030
39 |     30312E30 2C060355 04031325 494F532D 53656C66 2D536967 6E65642D 43657274
40 |     69666963 6174652D 38303234 32333432 34301E17 0D393330 33303130 30303235
41 |     365A170D 32303031 30313030 30303030 5A303031 2E302C06 03550403 1325494F
42 |     532D5365 6C662D53 69676E65 642D4365 72746966 69636174 652D3830 32343233
43 |     34323430 819F300D 06092A86 4886F70D 01010105 0003818D 00308189 02818100
44 |     BE1B450F BC9D4578 5902864B 08DCDFA1 8FA43928 01677B9F F529AC2A 035F8238
45 |     112C3F1E 844E546E A5E5D24F 73CB611D F433617B 04E2BB98 847F34D7 64F0185A
46 |     9E3D7D30 0EBF756E A6EA5868 636CBE31 5A23699A 278D32E2 65B251AC 39B3CD28
47 |     8EDF19B7 D5084B51 485A4572 314A2C9B F23D80D2 40E7E09C 6D0E6796 09C33371
48 |     02030100 01A36730 65300F06 03551D13 0101FF04 05300301 01FF3012 0603551D
49 |     11040B30 09820748 515F4153 322E301F 0603551D 23041830 168014FE B90A34C9
50 |     E95C0849 11FD0D1F 308776C8 69EEE430 1D060355 1D0E0416 0414FEB9 0A34C9E9
51 |     5C084911 FD0D1F30 8776C869 EEE4300D 06092A86 4886F70D 01010405 00038181
52 |     00B5F49A 6D5DF4AB F1A5FFE8 7B93CF69 2CAE6976 63ADAFB2 2CCE90AD B38873E0
53 |     4D33668E 0A0D8F9E EE68A92B 9DFC2A7C DE600517 05A87DAF 777CCC0E 644ADB56
54 |     25140224 285A180D 29D42CAE B528196A D5930E32 AA316AC5 AA03F645 1B62F85D
55 |     533A42A0 AA79AA10 AA5F16B3 6D865614 15C2EE7F 341B0097 09FC6EE6 AEDA6E14 86
56 |   quit
57 | !
58 | !
59 | !
60 | spanning-tree mode pvst
61 | spanning-tree extend system-id
62 | !
63 | vlan internal allocation policy ascending
64 | !
65 | !
66 | !
67 | !
68 | interface Port-channel4
69 |   switchport trunk encapsulation dot1q
70 |   switchport mode trunk
71 | !
72 | interface FastEthernet0/1
73 |   switchport trunk encapsulation dot1q
74 |   switchport mode trunk
75 |   channel-group 4 mode on
76 | !
77 | interface FastEthernet0/2
78 |   switchport trunk encapsulation dot1q
79 |   switchport mode trunk
80 |   channel-group 4 mode on
81 | !
82 | interface FastEthernet0/3
83 |   switchport access vlan 30
84 |   switchport mode access
85 |   spanning-tree portfast
86 | !
87 | interface FastEthernet0/4
88 |   switchport access vlan 30
```

```
89 | switchport mode access
90 | spanning-tree portfast
91 | !
92 | interface FastEthernet0/5
93 | switchport access vlan 30
94 | switchport mode access
95 | spanning-tree portfast
96 | !
97 | interface FastEthernet0/6
98 | switchport access vlan 30
99 | switchport mode access
100 | spanning-tree portfast
101 | !
102 | interface FastEthernet0/7
103 | switchport access vlan 30
104 | switchport mode access
105 | spanning-tree portfast
106 | !
107 | interface FastEthernet0/8
108 | switchport access vlan 30
109 | switchport mode access
110 | spanning-tree portfast
111 | !
112 | interface FastEthernet0/9
113 | switchport access vlan 30
114 | switchport mode access
115 | spanning-tree portfast
116 | !
117 | interface FastEthernet0/10
118 | switchport access vlan 30
119 | switchport mode access
120 | spanning-tree portfast
121 | !
122 | interface FastEthernet0/11
123 | switchport access vlan 30
124 | spanning-tree portfast
125 | !
126 | interface FastEthernet0/12
127 | switchport access vlan 30
128 | spanning-tree portfast
129 | !
130 | interface FastEthernet0/13
131 | switchport access vlan 30
132 | switchport mode access
133 | spanning-tree portfast
134 | !
135 | interface FastEthernet0/14
136 | switchport access vlan 30
137 | switchport mode access
138 | spanning-tree portfast
139 | !
140 | interface FastEthernet0/15
141 | switchport access vlan 30
142 | switchport mode access
143 | spanning-tree portfast
144 | !
145 | interface FastEthernet0/16
146 | switchport access vlan 30
147 | switchport mode access
148 | spanning-tree portfast
149 | !
150 | interface FastEthernet0/17
```

```
151 switchport access vlan 30
152 switchport mode access
153 spanning-tree portfast
154 !
155 interface FastEthernet0/18
156 switchport access vlan 30
157 switchport mode access
158 spanning-tree portfast
159 !
160 interface FastEthernet0/19
161 switchport access vlan 30
162 switchport mode access
163 spanning-tree portfast
164 !
165 interface FastEthernet0/20
166 switchport access vlan 30
167 switchport mode access
168 spanning-tree portfast
169 !
170 interface FastEthernet0/21
171 switchport access vlan 30
172 switchport mode access
173 spanning-tree portfast
174 !
175 interface FastEthernet0/22
176 switchport access vlan 30
177 switchport mode access
178 spanning-tree portfast
179 !
180 interface FastEthernet0/23
181 !
182 interface FastEthernet0/24
183 switchport access vlan 30
184 switchport mode access
185 spanning-tree portfast
186 !
187 interface GigabitEthernet0/1
188 !
189 interface GigabitEthernet0/2
190 !
191 interface Vlan1
192 no ip address
193 shutdown
194 !
195 interface Vlan100
196 ip address 172.16.20.4 255.255.255.0
197 !
198 ip default-gateway 172.16.20.1
199 ip classless
200 ip http server
201 ip http secure-server
202 !
203 !
204 ip sla enable reaction-alerts
205 !
206 snmp-server community public R0
207 snmp-server community private RW
208 !
209 !
210 line con 0
211 line vty 0 4
212 password cisco
```



```

213 login
214 line vty 5 15
215 password cisco
216 login
217 !
218 end

```

A.18.2. IP Interfaces

```

1 HQ_AS2#show ip interface brief
2 Interface      IP-Address  OK? Method Status      Protocol
3 Vlan1          unassigned YES manual  administratively down down
4 Vlan100        172.16.20.4 YES manual  down        down
5 FastEthernet0/1 unassigned YES unset   up          up
6 FastEthernet0/2 unassigned YES unset   up          up
7 FastEthernet0/3 unassigned YES unset   down        down
8 FastEthernet0/4 unassigned YES unset   down        down
9 FastEthernet0/5 unassigned YES unset   down        down
10 FastEthernet0/6 unassigned YES unset   down        down
11 FastEthernet0/7 unassigned YES unset   down        down
12 FastEthernet0/8 unassigned YES unset   down        down
13 FastEthernet0/9 unassigned YES unset   down        down
14 FastEthernet0/10 unassigned YES unset   down        down
15 FastEthernet0/11 unassigned YES unset   down        down
16 FastEthernet0/12 unassigned YES unset   down        down
17 FastEthernet0/13 unassigned YES unset   down        down
18 FastEthernet0/14 unassigned YES unset   down        down
19 FastEthernet0/15 unassigned YES unset   down        down
20 FastEthernet0/16 unassigned YES unset   down        down
21 FastEthernet0/17 unassigned YES unset   down        down
22 FastEthernet0/18 unassigned YES unset   down        down
23 FastEthernet0/19 unassigned YES unset   down        down
24 FastEthernet0/20 unassigned YES unset   down        down
25 FastEthernet0/21 unassigned YES unset   down        down
26 FastEthernet0/22 unassigned YES unset   down        down
27 FastEthernet0/23 unassigned YES unset   down        down
28 FastEthernet0/24 unassigned YES unset   down        down
29 GigabitEthernet0/1 unassigned YES unset   down        down
30 GigabitEthernet0/2 unassigned YES unset   down        down
31 Port-channel4   unassigned YES unset   up          up

```

A.18.3. Interface Status

```

1 HQ_AS2# show interface status
2
3 Port      Name      Status      Vlan      Duplex Speed Type
4 Fa0/1     Fa0/1     connected   trunk     a-full a-100 10/100BaseTX
5 Fa0/2     Fa0/2     connected   trunk     a-full a-100 10/100BaseTX
6 Fa0/3     Fa0/3     notconnect  30        auto  auto  10/100BaseTX
7 Fa0/4     Fa0/4     notconnect  30        auto  auto  10/100BaseTX
8 Fa0/5     Fa0/5     notconnect  30        auto  auto  10/100BaseTX
9 Fa0/6     Fa0/6     notconnect  30        auto  auto  10/100BaseTX
10 Fa0/7     Fa0/7     notconnect  30        auto  auto  10/100BaseTX
11 Fa0/8     Fa0/8     notconnect  30        auto  auto  10/100BaseTX
12 Fa0/9     Fa0/9     notconnect  30        auto  auto  10/100BaseTX
13 Fa0/10    Fa0/10    notconnect  30        auto  auto  10/100BaseTX
14 Fa0/11    Fa0/11    notconnect  30        auto  auto  10/100BaseTX
15 Fa0/12    Fa0/12    notconnect  30        auto  auto  10/100BaseTX

```

```

16 Fa0/13          notconnect 30      auto auto 10/100BaseTX
17 Fa0/14          notconnect 30      auto auto 10/100BaseTX
18 Fa0/15          notconnect 30      auto auto 10/100BaseTX
19 Fa0/16          notconnect 30      auto auto 10/100BaseTX
20 Fa0/17          notconnect 30      auto auto 10/100BaseTX
21 Fa0/18          notconnect 30      auto auto 10/100BaseTX
22 Fa0/19          notconnect 30      auto auto 10/100BaseTX
23 Fa0/20          notconnect 30      auto auto 10/100BaseTX
24 Fa0/21          notconnect 30      auto auto 10/100BaseTX
25
26 Port   Name      Status   Vlan    Duplex Speed Type
27 Fa0/22          notconnect 30      auto auto 10/100BaseTX
28 Fa0/23          notconnect 1       auto auto 10/100BaseTX
29 Fa0/24          notconnect 30      auto auto 10/100BaseTX
30 Gi0/1          notconnect 1       auto auto Not Present
31 Gi0/2          notconnect 1       auto auto Not Present
32 Po4           connected trunk  a-full a-100

```

A.18.4. Interface Trunk

```

1 HQ_AS2#show interface trunk
2
3 Port      Mode      Encapsulation Status Native vlan
4 Po4       on        802.1q      trunking  1
5
6 Port      Vlans allowed on trunk
7 Po4       1-4094
8
9 Port      Vlans allowed and active in management domain
10 Po4       1,10,20,30,40-41,99
11
12 Port      Vlans in spanning tree forwarding state and not pruned
13 Po4       1,10,20,30,40-41,99

```

A.18.5. Neighbors

```

1 HQ_AS2#show cdp neighbors
2 Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
3                   S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone,
4                   D - Remote, C - CVTA, M - Two-port Mac Relay
5
6 Device ID    Local Intrfce Holdtme Capability Platform Port ID
7 HQ_DS1      Fas 0/2      163      R S I WS-C3560V Fas 0/12
8 HQ_DS1      Fas 0/1      163      R S I WS-C3560V Fas 0/11

```

A.18.6. IP Route

```

1 HQ_AS2#show ip route
2 Default gateway is 172.16.20.1
3
4 Host          Gateway      Last Use Total Uses Interface
5 ICMP redirect cache is empty

```

A.18.7. Spanning Tree

```

1 HQ_AS2#show spanning
2
3 VLAN0001
4   Spanning tree enabled protocol ieee
5   Root ID Priority 32769
6           Address 001a.2fa8.ea80
7           Cost     31
8           Port     80 (Port-channel4)
9           Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
10
11   Bridge ID Priority 32769 (priority 32768 sys-id-ext 1)
12           Address 001a.2fd4.0280
13           Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
14           Aging Time 300 sec
15
16   Interface      Role Sts Cost Prio.Nbr Type
17   -----
18   Po4            Root FWD 12   128.80 P2p
19
20
21
22 VLAN0010
23   Spanning tree enabled protocol ieee
24   Root ID Priority 32778
25           Address 001a.2fa8.ea80
26           Cost     31
27           Port     80 (Port-channel4)
28           Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
29
30   Bridge ID Priority 32778 (priority 32768 sys-id-ext 10)
31           Address 001a.2fd4.0280
32           Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
33           Aging Time 300 sec
34
35   Interface      Role Sts Cost Prio.Nbr Type
36   -----
37   Po4            Root FWD 12   128.80 P2p
38
39
40
41 VLAN0020
42   Spanning tree enabled protocol ieee
43   Root ID Priority 32788
44           Address 001a.2fa8.ea80
45           Cost     31
46           Port     80 (Port-channel4)
47           Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
48
49   Bridge ID Priority 32788 (priority 32768 sys-id-ext 20)
50           Address 001a.2fd4.0280
51           Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
52           Aging Time 300 sec
53
54   Interface      Role Sts Cost Prio.Nbr Type
55   -----
56   Po4            Root FWD 12   128.80 P2p
57
58
59

```

```

60 VLAN0030
61   Spanning tree enabled protocol ieee
62   Root ID Priority 32798
63       Address 001a.2fa8.ea80
64       Cost    31
65       Port    80 (Port-channel4)
66       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
67
68   Bridge ID Priority 32798 (priority 32768 sys-id-ext 30)
69       Address 001a.2fd4.0280
70       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
71       Aging Time 300 sec
72
73   Interface      Role Sts Cost Prio.Nbr Type
74   -----
75   Po4            Root FWD 12   128.80 P2p
76
77
78
79 VLAN0040
80   Spanning tree enabled protocol ieee
81   Root ID Priority 32808
82       Address 001a.2fa8.ea80
83       Cost    31
84       Port    80 (Port-channel4)
85       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
86
87   Bridge ID Priority 32808 (priority 32768 sys-id-ext 40)
88       Address 001a.2fd4.0280
89       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
90       Aging Time 300 sec
91
92   Interface      Role Sts Cost Prio.Nbr Type
93   -----
94   Po4            Root FWD 12   128.80 P2p
95
96
97
98 VLAN0041
99   Spanning tree enabled protocol ieee
100  Root ID Priority 32809
101      Address 001a.2fa8.ea80
102      Cost    31
103      Port    80 (Port-channel4)
104      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
105
106  Bridge ID Priority 32809 (priority 32768 sys-id-ext 41)
107      Address 001a.2fd4.0280
108      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
109      Aging Time 300 sec
110
111  Interface      Role Sts Cost Prio.Nbr Type
112  -----
113  Po4            Root FWD 12   128.80 P2p
114
115
116
117 VLAN0099
118   Spanning tree enabled protocol ieee
119   Root ID Priority 32867
120       Address 001a.2fa8.ea80
121       Cost    31

```

```

122      Port      80 (Port-channel4)
123      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
124
125      Bridge ID Priority 32867 (priority 32768 sys-id-ext 99)
126      Address 001a.2fd4.0280
127      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
128      Aging Time 300 sec
129
130      Interface      Role Sts Cost Prio.Nbr Type
131      -----
132      Po4            Root FWD 12   128.80 P2p

```

A.18.8. VLAN

```

1  HQ_AS2#show vlan
2
3  VLAN Name                Status Ports
4  -----
5  1  default                 active Fa0/23, Gi0/1, Gi0/2
6  10 VLAN0010               active
7  20 VLAN0020               active
8  30 VLAN0030               active Fa0/3, Fa0/4, Fa0/5, Fa0/6
9                                Fa0/7, Fa0/8, Fa0/9, Fa0/10
10                               Fa0/11, Fa0/12, Fa0/13, Fa0/14
11                               Fa0/15, Fa0/16, Fa0/17, Fa0/18
12                               Fa0/19, Fa0/20, Fa0/21, Fa0/22
13                               Fa0/24
14  40 VLAN0040               active
15  41 VLAN0041               active
16  99 Management             active
17  1002 fddi-default         act/unsup
18  1003 trcrf-default        act/unsup
19  1004 fddinet-default      act/unsup
20  1005 trbrf-default        act/unsup
21
22  VLAN Type SAID    MTU  Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2
23  -----
24  1  enet 100001  1500 -   -   -   -   -   0   0
25
26  VLAN Type SAID    MTU  Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2
27  -----
28  10  enet 100010  1500 -   -   -   -   -   0   0
29  20  enet 100020  1500 -   -   -   -   -   0   0
30  30  enet 100030  1500 -   -   -   -   -   0   0
31  40  enet 100040  1500 -   -   -   -   -   0   0
32  41  enet 100041  1500 -   -   -   -   -   0   0
33  99  enet 100099  1500 -   -   -   -   -   0   0
34  1002 fddi 101002 1500 -   -   -   -   -   0   0
35  1003 trcrf 101003 4472 1005 3276 -   -   srb   0   0
36  1004 fdnet 101004 1500 -   -   -   -   ieee -   0   0
37  1005 trbrf 101005 4472 -   -   15   -   ibm -   0   0
38
39
40  VLAN AREHops STEHops Backup CRF
41  -----
42  1003 7      7      off
43
44  Remote SPAN VLANs
45  -----
46

```

47	
48	Primary Secondary Type Ports
49	-----

A.19. HQ-AS3

A.19.1. Running Configuration

```

1 HQ_AS3#show run
2 Building configuration...
3
4 Current configuration : 3597 bytes
5 !
6 ! Last configuration change at 09:00:57 UTC Mon Mar 1 1993
7 !
8 version 15.0
9 no service pad
10 service timestamps debug datetime msec
11 service timestamps log datetime msec
12 no service password-encryption
13 service sequence-numbers
14 !
15 hostname HQ_AS3
16 !
17 boot-start-marker
18 boot-end-marker
19 !
20 enable secret 5 $1$0Xwg$9bKCNodBhSE/KAC6BioIY.
21 !
22 username ins password 0 ins@lab
23 no aaa new-model
24 system mtu routing 1500
25 vtp domain CISCO
26 vtp mode transparent
27 !
28 !
29 !
30 !
31 crypto pki trustpoint TP-self-signed-1928982528
32 enrollment selfsigned
33 subject-name cn=IOS-Self-Signed-Certificate-1928982528
34 revocation-check none
35 rsa-keypair TP-self-signed-1928982528
36 !
37 !
38 crypto pki certificate chain TP-self-signed-1928982528
39 certificate self-signed 01
40     quit
41 !
42 !
43 !
44 !
45 !
46 spanning-tree mode pvst
47 spanning-tree extend system-id
48 !
49 vlan internal allocation policy ascending
50 !
51 vlan 30
52     name Server

```

```
53 | !
54 | vlan 100
55 |   name MGMT
56 | !
57 | vlan 200
58 |   name staff
59 | !
60 | !
61 | !
62 | !
63 | !
64 | !
65 | interface FastEthernet0/1
66 |   switchport mode trunk
67 | !
68 | interface FastEthernet0/2
69 |   switchport mode trunk
70 | !
71 | interface FastEthernet0/3
72 |   switchport access vlan 30
73 |   switchport mode access
74 |   spanning-tree portfast
75 | !
76 | interface FastEthernet0/4
77 |   switchport access vlan 30
78 |   switchport mode access
79 |   spanning-tree portfast
80 | !
81 | interface FastEthernet0/5
82 |   switchport access vlan 30
83 |   switchport mode access
84 |   spanning-tree portfast
85 | !
86 | interface FastEthernet0/6
87 |   switchport access vlan 30
88 |   switchport mode access
89 |   spanning-tree portfast
90 | !
91 | interface FastEthernet0/7
92 |   switchport access vlan 30
93 |   switchport mode access
94 |   spanning-tree portfast
95 | !
96 | interface FastEthernet0/8
97 |   switchport access vlan 30
98 |   switchport mode access
99 |   spanning-tree portfast
100 | !
101 | interface FastEthernet0/9
102 |   switchport access vlan 30
103 |   switchport mode access
104 |   spanning-tree portfast
105 | !
106 | interface FastEthernet0/10
107 |   switchport access vlan 30
108 |   switchport mode access
109 |   spanning-tree portfast
110 | !
111 | interface FastEthernet0/11
112 |   switchport access vlan 30
113 |   switchport mode access
114 |   spanning-tree portfast
```

```
115 | !
116 | interface FastEthernet0/12
117 |   switchport access vlan 30
118 |   switchport mode access
119 |   spanning-tree portfast
120 | !
121 | interface FastEthernet0/13
122 |   switchport access vlan 30
123 |   switchport mode access
124 |   spanning-tree portfast
125 | !
126 | interface FastEthernet0/14
127 |   switchport access vlan 30
128 |   switchport mode access
129 |   spanning-tree portfast
130 | !
131 | interface FastEthernet0/15
132 |   switchport access vlan 30
133 |   switchport mode access
134 |   spanning-tree portfast
135 | !
136 | interface FastEthernet0/16
137 |   switchport access vlan 30
138 |   switchport mode access
139 |   spanning-tree portfast
140 | !
141 | interface FastEthernet0/17
142 |   switchport access vlan 30
143 |   switchport mode access
144 |   spanning-tree portfast
145 | !
146 | interface FastEthernet0/18
147 |   switchport access vlan 30
148 |   switchport mode access
149 |   spanning-tree portfast
150 | !
151 | interface FastEthernet0/19
152 |   switchport access vlan 30
153 |   switchport mode access
154 |   spanning-tree portfast
155 | !
156 | interface FastEthernet0/20
157 |   switchport access vlan 30
158 |   switchport mode access
159 |   spanning-tree portfast
160 | !
161 | interface FastEthernet0/21
162 |   switchport access vlan 30
163 |   switchport mode access
164 |   spanning-tree portfast
165 | !
166 | interface FastEthernet0/22
167 |   switchport access vlan 30
168 |   switchport mode access
169 |   spanning-tree portfast
170 | !
171 | interface FastEthernet0/23
172 |   switchport access vlan 30
173 |   switchport mode access
174 |   spanning-tree portfast
175 | !
176 | interface FastEthernet0/24
```



```

177 switchport access vlan 30
178 switchport mode access
179 spanning-tree portfast
180 !
181 interface GigabitEthernet0/1
182 !
183 interface GigabitEthernet0/2
184 !
185 interface Vlan1
186 no ip address
187 shutdown
188 !
189 interface Vlan100
190 ip address 172.16.20.5 255.255.255.0
191 !
192 ip http server
193 ip http secure-server
194 !
195 !
196 line con 0
197 line vty 0 4
198 password cisco
199 login
200 line vty 5 15
201 password cisco
202 login
203 !
204 end

```

A.19.2. IP Interfaces

```

1 HQ_AS3#show ip interface brief
2 Interface      IP-Address  OK? Method Status      Protocol
3 Vlan1          unassigned YES unset administratively down down
4 Vlan100        172.16.20.5 YES manual up          up
5 FastEthernet0/1 unassigned YES unset up          up
6 FastEthernet0/2 unassigned YES unset up          up
7 FastEthernet0/3 unassigned YES unset down        down
8 FastEthernet0/4 unassigned YES unset down        down
9 FastEthernet0/5 unassigned YES unset down        down
10 FastEthernet0/6 unassigned YES unset down        down
11 FastEthernet0/7 unassigned YES unset down        down
12 FastEthernet0/8 unassigned YES unset down        down
13 FastEthernet0/9 unassigned YES unset down        down
14 FastEthernet0/10 unassigned YES unset down        down
15 FastEthernet0/11 unassigned YES unset down        down
16 FastEthernet0/12 unassigned YES unset down        down
17 FastEthernet0/13 unassigned YES unset down        down
18 FastEthernet0/14 unassigned YES unset down        down
19 FastEthernet0/15 unassigned YES unset down        down
20 FastEthernet0/16 unassigned YES unset down        down
21 FastEthernet0/17 unassigned YES unset down        down
22 FastEthernet0/18 unassigned YES unset down        down
23 FastEthernet0/19 unassigned YES unset down        down
24 FastEthernet0/20 unassigned YES unset down        down
25 FastEthernet0/21 unassigned YES unset down        down
26 FastEthernet0/22 unassigned YES unset down        down
27 FastEthernet0/23 unassigned YES unset down        down
28 FastEthernet0/24 unassigned YES unset down        down
29 GigabitEthernet0/1 unassigned YES unset down        down

```

```
30 GigabitEthernet0/2 unassigned YES unset down down
```

A.19.3. Interface Status

```
1 HQ_AS3# show interface status
2
3 Port      Name      Status    Vlan    Duplex  Speed  Type
4 Fa0/1      Name      connected trunk  a-full  a-100  10/100BaseTX
5 Fa0/2      Name      connected trunk  a-full  a-100  10/100BaseTX
6 Fa0/3      Name      notconnect 30      auto    auto   10/100BaseTX
7 Fa0/4      Name      notconnect 30      auto    auto   10/100BaseTX
8 Fa0/5      Name      notconnect 30      auto    auto   10/100BaseTX
9 Fa0/6      Name      notconnect 30      auto    auto   10/100BaseTX
10 Fa0/7      Name      notconnect 30      auto    auto   10/100BaseTX
11 Fa0/8      Name      notconnect 30      auto    auto   10/100BaseTX
12 Fa0/9      Name      notconnect 30      auto    auto   10/100BaseTX
13 Fa0/10     Name      notconnect 30      auto    auto   10/100BaseTX
14 Fa0/11     Name      notconnect 30      auto    auto   10/100BaseTX
15 Fa0/12     Name      notconnect 30      auto    auto   10/100BaseTX
16 Fa0/13     Name      notconnect 30      auto    auto   10/100BaseTX
17 Fa0/14     Name      notconnect 30      auto    auto   10/100BaseTX
18 Fa0/15     Name      notconnect 30      auto    auto   10/100BaseTX
19 Fa0/16     Name      notconnect 30      auto    auto   10/100BaseTX
20 Fa0/17     Name      notconnect 30      auto    auto   10/100BaseTX
21 Fa0/18     Name      notconnect 30      auto    auto   10/100BaseTX
22 Fa0/19     Name      notconnect 30      auto    auto   10/100BaseTX
23 Fa0/20     Name      notconnect 30      auto    auto   10/100BaseTX
24 Fa0/21     Name      notconnect 30      auto    auto   10/100BaseTX
25
26 Port      Name      Status    Vlan    Duplex  Speed  Type
27 Fa0/22     Name      notconnect 30      auto    auto   10/100BaseTX
28 Fa0/23     Name      notconnect 30      auto    auto   10/100BaseTX
29 Fa0/24     Name      notconnect 30      auto    auto   10/100BaseTX
30 Gi0/1      Name      notconnect 1       auto    auto   Not Present
31 Gi0/2      Name      notconnect 1       auto    auto   Not Present
```

A.19.4. Interface Trunk

```
1 HQ_AS3#show interface trunk
2
3 Port      Mode      Encapsulation Status  Native vlan
4 Fa0/1     on        802.1q   trunking 1
5 Fa0/2     on        802.1q   trunking 1
6
7 Port      Vlans allowed on trunk
8 Fa0/1     1-4094
9 Fa0/2     1-4094
10
11 Port      Vlans allowed and active in management domain
12 Fa0/1     1,30,100,200
13 Fa0/2     1,30,100,200
14
15 Port      Vlans in spanning tree forwarding state and not pruned
16 Fa0/1     1,30,100,200
17 Fa0/2     100,200
```

A.19.5. Neighbors

```

1 HQ_AS3#show cdp neighbors
2 Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
3                   S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone,
4                   D - Remote, C - CVTA, M - Two-port Mac Relay
5
6 Device ID    Local Intrfce Holdtme Capability Platform Port ID
7 HQ_DS1      Fas 0/2      151          R S I WS-C3560V Fas 0/14
8 HQ_DS1      Fas 0/1      151          R S I WS-C3560V Fas 0/13

```

A.19.6. IP Route

```

1 HQ_AS3#show ip route
2 ^
3 % Invalid input detected at '^' marker.

```

A.19.7. Spanning Tree

```

1 HQ_AS3#show spanning
2
3 VLAN0001
4   Spanning tree enabled protocol ieee
5   Root ID Priority 32769
6       Address 001a.2fa8.ea80
7       Cost    38
8       Port    1 (FastEthernet0/1)
9       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
10
11   Bridge ID Priority 32769 (priority 32768 sys-id-ext 1)
12       Address f025.72f9.d980
13       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
14       Aging Time 300 sec
15
16   Interface      Role Sts Cost Prio.Nbr Type
17   -----
18   Fa0/1          Root FWD 19   128.1 P2p
19   Fa0/2          Altn BLK 19   128.2 P2p
20
21
22
23 VLAN0030
24   Spanning tree enabled protocol ieee
25   Root ID Priority 32798
26       Address 001a.2fa8.ea80
27       Cost    38
28       Port    1 (FastEthernet0/1)
29       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
30
31   Bridge ID Priority 32798 (priority 32768 sys-id-ext 30)
32       Address f025.72f9.d980
33       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
34       Aging Time 300 sec
35
36   Interface      Role Sts Cost Prio.Nbr Type
37   -----
38   Fa0/1          Root FWD 19   128.1 P2p

```

```

39 Fa0/2          Altn BLK 19   128.2  P2p
40
41
42
43 VLAN0100
44   Spanning tree enabled protocol ieee
45   Root ID Priority 32868
46       Address f025.72f9.d980
47       This bridge is the root
48       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
49
50   Bridge ID Priority 32868 (priority 32768 sys-id-ext 100)
51       Address f025.72f9.d980
52       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
53       Aging Time 300 sec
54
55 Interface      Role Sts Cost Prio.Nbr Type
56 -----
57 Fa0/1          Desg FWD 19   128.1  P2p
58 Fa0/2          Desg FWD 19   128.2  P2p
59
60
61
62 VLAN0200
63   Spanning tree enabled protocol ieee
64   Root ID Priority 32968
65       Address f025.72f9.d980
66       This bridge is the root
67       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
68
69   Bridge ID Priority 32968 (priority 32768 sys-id-ext 200)
70       Address f025.72f9.d980
71       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
72       Aging Time 300 sec
73
74 Interface      Role Sts Cost Prio.Nbr Type
75 -----
76 Fa0/1          Desg FWD 19   128.1  P2p
77 Fa0/2          Desg FWD 19   128.2  P2p

```

A.19.8. VLAN

```

1 HQ_AS3#show vlan
2
3 VLAN Name                Status Ports
4 -----
5 1  default                active Gi0/1, Gi0/2
6 30 Server                 active Fa0/3, Fa0/4, Fa0/5, Fa0/6
7                           Fa0/7, Fa0/8, Fa0/9, Fa0/10
8                           Fa0/11, Fa0/12, Fa0/13, Fa0/14
9                           Fa0/15, Fa0/16, Fa0/17, Fa0/18
10                          Fa0/19, Fa0/20, Fa0/21, Fa0/22
11                          Fa0/23, Fa0/24
12 100 MGMT                  active
13 200 staff                 active
14 1002 fddi-default         act/unsup
15 1003 token-ring-default  act/unsup
16 1004 fddinet-default      act/unsup
17 1005 trnet-default        act/unsup
18

```

VLAN	Type	SAID	MTU	Parent	RingNo	BridgeNo	Stp	BrdgMode	Trans1	Trans2
1	enet	100001	1500	-	-	-	-	0	0	
30	enet	100030	1500	-	-	-	-	0	0	
100	enet	100100	1500	-	-	-	-	0	0	
200	enet	100200	1500	-	-	-	-	0	0	
VLAN	Type	SAID	MTU	Parent	RingNo	BridgeNo	Stp	BrdgMode	Trans1	Trans2
1002	fddi	101002	1500	-	-	-	-	0	0	
1003	tr	101003	1500	-	-	-	-	0	0	
1004	fdnet	101004	1500	-	-	ieee	-	0	0	
1005	trnet	101005	1500	-	-	ibm	-	0	0	
Remote SPAN VLANs										
Primary	Secondary	Type	Ports							

A.20. HQ-AS4

A.20.1. Running Configuration

```

1 HQ_AS4#show run
2 Building configuration...
3
4 Current configuration : 3723 bytes
5 !
6 ! Last configuration change at 08:53:18 UTC Mon Mar 1 1993
7 !
8 version 15.0
9 no service pad
10 service timestamps debug datetime msec
11 service timestamps log datetime msec
12 no service password-encryption
13 service sequence-numbers
14 !
15 hostname HQ_AS4
16 !
17 boot-start-marker
18 boot-end-marker
19 !
20 enable secret 5 $1$0jJT$.jKMDhjTGYdL6S.YcE/lx0
21 !
22 username ins password 0 ins@lab
23 no aaa new-model
24 system mtu routing 1500
25 !
26 !
27 !
28 !
29 crypto pki trustpoint HTTPS_SS_CERT_KEYPAIR
30 enrollment selfsigned
31 serial-number
32 revocation-check none
33 rsakeypair HTTPS_SS_CERT_KEYPAIR
34 !
35 !

```

```
36 crypto pki certificate chain HTTPS_SS_CERT_KEYPAIR
37 certificate self-signed 01
38     quit
39 !
40 !
41 !
42 !
43 !
44 spanning-tree mode pvst
45 spanning-tree extend system-id
46 !
47 vlan internal allocation policy ascending
48 !
49 !
50 !
51 !
52 !
53 !
54 interface Port-channel5
55     switchport access vlan 40
56     switchport mode trunk
57 !
58 interface FastEthernet0/1
59     switchport mode trunk
60 !
61 interface FastEthernet0/2
62     switchport mode trunk
63 !
64 interface FastEthernet0/3
65     switchport access vlan 40
66     switchport mode trunk
67     channel-group 5 mode on
68     spanning-tree portfast
69 !
70 interface FastEthernet0/4
71     switchport access vlan 40
72     switchport mode trunk
73     channel-group 5 mode on
74     spanning-tree portfast
75 !
76 interface FastEthernet0/5
77     switchport access vlan 40
78     switchport mode access
79     spanning-tree portfast
80 !
81 interface FastEthernet0/6
82     switchport access vlan 40
83     switchport mode access
84     spanning-tree portfast
85 !
86 interface FastEthernet0/7
87     switchport access vlan 40
88     switchport mode access
89     spanning-tree portfast
90 !
91 interface FastEthernet0/8
92     switchport access vlan 40
93     switchport mode access
94     spanning-tree portfast
95 !
96 interface FastEthernet0/9
97     switchport access vlan 40
```

```
98 | switchport mode access
99 | spanning-tree portfast
100 | !
101 | interface FastEthernet0/10
102 | switchport access vlan 40
103 | switchport mode access
104 | spanning-tree portfast
105 | !
106 | interface FastEthernet0/11
107 | switchport access vlan 40
108 | switchport mode access
109 | spanning-tree portfast
110 | !
111 | interface FastEthernet0/12
112 | switchport access vlan 40
113 | switchport mode access
114 | spanning-tree portfast
115 | !
116 | interface FastEthernet0/13
117 | switchport access vlan 40
118 | switchport mode access
119 | spanning-tree portfast
120 | !
121 | interface FastEthernet0/14
122 | switchport access vlan 40
123 | switchport mode access
124 | spanning-tree portfast
125 | !
126 | interface FastEthernet0/15
127 | switchport access vlan 40
128 | switchport mode access
129 | spanning-tree portfast
130 | !
131 | interface FastEthernet0/16
132 | switchport access vlan 40
133 | switchport mode access
134 | spanning-tree portfast
135 | !
136 | interface FastEthernet0/17
137 | switchport access vlan 40
138 | switchport mode access
139 | spanning-tree portfast
140 | !
141 | interface FastEthernet0/18
142 | switchport access vlan 40
143 | switchport mode access
144 | spanning-tree portfast
145 | !
146 | interface FastEthernet0/19
147 | switchport access vlan 40
148 | switchport mode access
149 | spanning-tree portfast
150 | !
151 | interface FastEthernet0/20
152 | switchport access vlan 40
153 | switchport mode access
154 | spanning-tree portfast
155 | !
156 | interface FastEthernet0/21
157 | switchport access vlan 40
158 | switchport mode access
159 | spanning-tree portfast
```

```

160 !
161 interface FastEthernet0/22
162   switchport access vlan 40
163   switchport mode access
164   spanning-tree portfast
165 !
166 interface FastEthernet0/23
167   switchport access vlan 40
168   switchport mode access
169   spanning-tree portfast
170 !
171 interface FastEthernet0/24
172   switchport access vlan 40
173   switchport mode access
174   spanning-tree portfast
175 !
176 interface GigabitEthernet0/1
177 !
178 interface GigabitEthernet0/2
179 !
180 interface Vlan1
181   no ip address
182   shutdown
183 !
184 interface Vlan40
185   no ip address
186 !
187 interface Vlan100
188   ip address 172.16.20.6 255.255.255.0
189 !
190 ip default-gateway 172.16.20.1
191 ip http server
192 ip http secure-server
193 snmp-server community publi R0
194 snmp-server community public R0
195 snmp-server community private RW
196 !
197 !
198 line con 0
199 line vty 0 4
200   password cisco
201   login
202 line vty 5 15
203   password cisco
204   login
205 !
206 end

```

A.20.2. IP Interfaces

```

1 HQ_AS4#show ip interface brief
2 Interface      IP-Address  OK? Method Status      Protocol
3 Vlan1          unassigned YES unset administratively down down
4 Vlan40         unassigned YES unset up          up
5 Vlan100        172.16.20.6 YES manual down        down
6 FastEthernet0/1 unassigned YES unset up          up
7 FastEthernet0/2 unassigned YES unset up          up
8 FastEthernet0/3 unassigned YES unset up          up
9 FastEthernet0/4 unassigned YES unset up          up
10 FastEthernet0/5 unassigned YES unset down        down

```



```

11 FastEthernet0/6 unassigned YES unset down down
12 FastEthernet0/7 unassigned YES unset down down
13 FastEthernet0/8 unassigned YES unset down down
14 FastEthernet0/9 unassigned YES unset down down
15 FastEthernet0/10 unassigned YES unset down down
16 FastEthernet0/11 unassigned YES unset down down
17 FastEthernet0/12 unassigned YES unset down down
18 FastEthernet0/13 unassigned YES unset down down
19 FastEthernet0/14 unassigned YES unset down down
20 FastEthernet0/15 unassigned YES unset down down
21 FastEthernet0/16 unassigned YES unset down down
22 FastEthernet0/17 unassigned YES unset down down
23 FastEthernet0/18 unassigned YES unset down down
24 FastEthernet0/19 unassigned YES unset down down
25 FastEthernet0/20 unassigned YES unset down down
26 FastEthernet0/21 unassigned YES unset down down
27 FastEthernet0/22 unassigned YES unset down down
28 FastEthernet0/23 unassigned YES unset down down
29 FastEthernet0/24 unassigned YES unset down down
30 GigabitEthernet0/1 unassigned YES unset down down
31 GigabitEthernet0/2 unassigned YES unset down down
32 Port-channel5 unassigned YES unset up up

```

A.20.3. Interface Status

```

1 HQ_AS4#show interface status
2
3 Port Name Status Vlan Duplex Speed Type
4 Fa0/1 connected trunk a-full a-100 10/100BaseTX
5 Fa0/2 connected trunk a-full a-100 10/100BaseTX
6 Fa0/3 connected trunk a-full a-100 10/100BaseTX
7 Fa0/4 connected trunk a-full a-100 10/100BaseTX
8 Fa0/5 notconnect 40 auto auto 10/100BaseTX
9 Fa0/6 notconnect 40 auto auto 10/100BaseTX
10 Fa0/7 notconnect 40 auto auto 10/100BaseTX
11 Fa0/8 notconnect 40 auto auto 10/100BaseTX
12 Fa0/9 notconnect 40 auto auto 10/100BaseTX
13 Fa0/10 notconnect 40 auto auto 10/100BaseTX
14 Fa0/11 notconnect 40 auto auto 10/100BaseTX
15 Fa0/12 notconnect 40 auto auto 10/100BaseTX
16 Fa0/13 notconnect 40 auto auto 10/100BaseTX
17 Fa0/14 notconnect 40 auto auto 10/100BaseTX
18 Fa0/15 notconnect 40 auto auto 10/100BaseTX
19 Fa0/16 notconnect 40 auto auto 10/100BaseTX
20 Fa0/17 notconnect 40 auto auto 10/100BaseTX
21 Fa0/18 notconnect 40 auto auto 10/100BaseTX
22 Fa0/19 notconnect 40 auto auto 10/100BaseTX
23 Fa0/20 notconnect 40 auto auto 10/100BaseTX
24 Fa0/21 notconnect 40 auto auto 10/100BaseTX
25
26 Port Name Status Vlan Duplex Speed Type
27 Fa0/22 notconnect 40 auto auto 10/100BaseTX
28 Fa0/23 notconnect 40 auto auto 10/100BaseTX
29 Fa0/24 notconnect 40 auto auto 10/100BaseTX
30 Gi0/1 notconnect 1 auto auto Not Present
31 Gi0/2 notconnect 1 auto auto Not Present
32 Po5 connected trunk a-full a-100

```

A.20.4. Interface Trunk

```

1 HQ_AS4#show interface trunk
2
3 Port      Mode      Encapsulation Status Native vlan
4 Fa0/1     on        802.1q      trunking  1
5 Fa0/2     on        802.1q      trunking  1
6 Po5       on        802.1q      trunking  1
7
8 Port      Vlans allowed on trunk
9 Fa0/1     1-4094
10 Fa0/2     1-4094
11 Po5       1-4094
12
13 Port      Vlans allowed and active in management domain
14 Fa0/1     1,10,20,30,40-41,99
15 Fa0/2     1,10,20,30,40-41,99
16 Po5       1,10,20,30,40-41,99
17
18 Port      Vlans in spanning tree forwarding state and not pruned
19 Fa0/1     1,10,20,30,40-41,99
20 Fa0/2     1,10,20,30,40-41,99
21 Po5       1,10,20,30,40-41,99

```

A.20.5. Neighbors

```

1 HQ_AS4#show cdp neighbors
2 Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
3                   S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone,
4                   D - Remote, C - CVTA, M - Two-port Mac Relay
5
6 Device ID    Local Intrfce Holdtme Capability Platform Port ID
7 HQ_DS1       Fas 0/3      125      R S I WS-C3560V Fas 0/5
8 HQ_DS1       Fas 0/4      125      R S I WS-C3560V Fas 0/6
9 HQ_DS2       Fas 0/2      154      R S I WS-C3560V Fas 0/14
10 HQ_DS2       Fas 0/1      154      R S I WS-C3560V Fas 0/13

```

A.20.6. IP Route

```

1 HQ_AS4#show ip route
2 ^
3 % Invalid input detected at '^' marker.

```

A.20.7. Spanning Tree

```

1 HQ_AS4#show spanning
2
3 VLAN0001
4 Spanning tree enabled protocol ieee
5 Root ID Priority 32769
6 Address 001a.2fa8.ea80
7 Cost 31
8 Port 96 (Port-channel5)
9 Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
10

```

```

11 Bridge ID Priority 32769 (priority 32768 sys-id-ext 1)
12 Address f025.72f7.fc80
13 Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
14 Aging Time 300 sec
15

```

```

16 Interface      Role Sts Cost Prio.Nbr Type
17 -----

```

```

18 Fa0/1          Desg FWD 19   128.1  P2p
19 Fa0/2          Desg FWD 19   128.2  P2p
20 Po5            Root FWD 12   128.96 P2p
21
22
23

```

VLAN0010

```

25 Spanning tree enabled protocol ieee
26 Root ID Priority 32778
27 Address 001a.2fa8.ea80
28 Cost 31
29 Port 96 (Port-channel5)
30 Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
31

```

```

32 Bridge ID Priority 32778 (priority 32768 sys-id-ext 10)
33 Address f025.72f7.fc80
34 Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
35 Aging Time 300 sec
36

```

```

37 Interface      Role Sts Cost Prio.Nbr Type
38 -----

```

```

39 Fa0/1          Desg FWD 19   128.1  P2p
40 Fa0/2          Desg FWD 19   128.2  P2p
41 Po5            Root FWD 12   128.96 P2p
42
43
44

```

VLAN0020

```

46 Spanning tree enabled protocol ieee
47 Root ID Priority 32788
48 Address 001a.2fa8.ea80
49 Cost 31
50 Port 96 (Port-channel5)
51 Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
52

```

```

53 Bridge ID Priority 32788 (priority 32768 sys-id-ext 20)
54 Address f025.72f7.fc80
55 Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
56 Aging Time 300 sec
57

```

```

58 Interface      Role Sts Cost Prio.Nbr Type
59 -----

```

```

60 Fa0/1          Desg FWD 19   128.1  P2p
61 Fa0/2          Desg FWD 19   128.2  P2p
62 Po5            Root FWD 12   128.96 P2p
63
64
65

```

VLAN0030

```

67 Spanning tree enabled protocol ieee
68 Root ID Priority 32798
69 Address 001a.2fa8.ea80
70 Cost 31
71 Port 96 (Port-channel5)
72 Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

```

```

73
74 Bridge ID Priority 32798 (priority 32768 sys-id-ext 30)
75 Address f025.72f7.fc80
76 Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
77 Aging Time 300 sec
78
79 Interface      Role Sts Cost Prio.Nbr Type
80 -----
81 Fa0/1          Desg FWD 19   128.1  P2p
82 Fa0/2          Desg FWD 19   128.2  P2p
83 Po5           Root FWD 12   128.96 P2p
84
85
86
87 VLAN0040
88 Spanning tree enabled protocol ieee
89 Root ID Priority 32808
90 Address 001a.2fa8.ea80
91 Cost 31
92 Port 96 (Port-channel5)
93 Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
94
95 Bridge ID Priority 32808 (priority 32768 sys-id-ext 40)
96 Address f025.72f7.fc80
97 Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
98 Aging Time 300 sec
99
100 Interface      Role Sts Cost Prio.Nbr Type
101 -----
102 Fa0/1          Desg FWD 19   128.1  P2p
103 Fa0/2          Desg FWD 19   128.2  P2p
104 Po5           Root FWD 12   128.96 P2p
105
106
107
108 VLAN0041
109 Spanning tree enabled protocol ieee
110 Root ID Priority 32809
111 Address 001a.2fa8.ea80
112 Cost 31
113 Port 96 (Port-channel5)
114 Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
115
116 Bridge ID Priority 32809 (priority 32768 sys-id-ext 41)
117 Address f025.72f7.fc80
118 Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
119 Aging Time 300 sec
120
121 Interface      Role Sts Cost Prio.Nbr Type
122 -----
123 Fa0/1          Desg FWD 19   128.1  P2p
124 Fa0/2          Desg FWD 19   128.2  P2p
125 Po5           Root FWD 12   128.96 P2p
126
127
128
129 VLAN0099
130 Spanning tree enabled protocol ieee
131 Root ID Priority 32867
132 Address 001a.2fa8.ea80
133 Cost 31
134 Port 96 (Port-channel5)

```

```

135         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
136
137     Bridge ID Priority 32867 (priority 32768 sys-id-ext 99)
138         Address f025.72f7.fc80
139         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
140         Aging Time 300 sec
141
142     Interface      Role Sts Cost Prio.Nbr Type
143     -----
144     Fa0/1          Desg FWD 19   128.1 P2p
145     Fa0/2          Desg FWD 19   128.2 P2p
146     Po5            Root FWD 12   128.96 P2p

```

A.20.8. VLAN

```

1 HQ_AS4#show vlan
2
3 VLAN Name                Status Ports
4 -----
5 1  default                active Gi0/1, Gi0/2
6 10 VLAN0010              active
7 20 VLAN0020              active
8 30 VLAN0030              active
9 40 VLAN0040              active Fa0/5, Fa0/6, Fa0/7, Fa0/8
10                               Fa0/9, Fa0/10, Fa0/11, Fa0/12
11                               Fa0/13, Fa0/14, Fa0/15, Fa0/16
12                               Fa0/17, Fa0/18, Fa0/19, Fa0/20
13                               Fa0/21, Fa0/22, Fa0/23, Fa0/24
14 41 VLAN0041              active
15 99 Management            active
16 1002 fddi-default        act/unsup
17 1003 trcrf-default       act/unsup
18 1004 fddinet-default     act/unsup
19 1005 trbrf-default       act/unsup
20
21 VLAN Type SAID    MTU  Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2
22 -----
23 1  enet 100001 1500 -  -  -  -  -  0  0
24 10 enet 100010 1500 -  -  -  -  -  0  0
25
26 VLAN Type SAID    MTU  Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2
27 -----
28 20 enet 100020 1500 -  -  -  -  -  0  0
29 30 enet 100030 1500 -  -  -  -  -  0  0
30 40 enet 100040 1500 -  -  -  -  -  0  0
31 41 enet 100041 1500 -  -  -  -  -  0  0
32 99 enet 100099 1500 -  -  -  -  -  0  0
33 1002 fddi 101002 1500 -  -  -  -  -  0  0
34 1003 trcrf 101003 4472 1005 3276 -  -  srb  0  0
35 1004 fdnet 101004 1500 -  -  -  -  -  ieee -  0  0
36 1005 trbrf 101005 4472 -  -  15  -  -  ibm  -  0  0
37
38
39 VLAN AREHops STEHops Backup CRF
40 -----
41 1003 7 7 off
42
43 Remote SPAN VLANs
44 -----
45

```

46	
47	Primary Secondary Type Ports
48	-----

A.21. HQ-AS5

A.21.1. Running Configuration

```

1 HQ_AS5#show run
2 Building configuration...
3
4 Current configuration : 3430 bytes
5 !
6 ! Last configuration change at 08:34:42 UTC Mon Mar 1 1993
7 !
8 version 15.0
9 no service pad
10 service timestamps debug datetime msec
11 service timestamps log datetime msec
12 no service password-encryption
13 service sequence-numbers
14 !
15 hostname HQ_AS5
16 !
17 boot-start-marker
18 boot-end-marker
19 !
20 enable secret 5 $1$tyUg$pgPx2FXCZWpABw0N/eyfz.
21 !
22 username ins password 0 ins@lab
23 no aaa new-model
24 system mtu routing 1500
25 !
26 !
27 !
28 !
29 crypto pki trustpoint HTTPS_SS_CERT_KEYPAIR
30 enrollment selfsigned
31 serial-number
32 revocation-check none
33 rsa-keypair HTTPS_SS_CERT_KEYPAIR
34 !
35 !
36 crypto pki certificate chain HTTPS_SS_CERT_KEYPAIR
37 certificate self-signed 01
38 quit
39 !
40 !
41 !
42 !
43 !
44 spanning-tree mode pvst
45 spanning-tree extend system-id
46 !
47 vlan internal allocation policy ascending
48 !
49 !
50 !
51 !
52 !

```

```
53 | !
54 | interface FastEthernet0/1
55 |   switchport mode trunk
56 | !
57 | interface FastEthernet0/2
58 |   switchport mode trunk
59 | !
60 | interface FastEthernet0/3
61 |   switchport mode trunk
62 | !
63 | interface FastEthernet0/4
64 |   switchport mode trunk
65 | !
66 | interface FastEthernet0/5
67 |   switchport access vlan 40
68 |   switchport mode access
69 |   spanning-tree portfast
70 | !
71 | interface FastEthernet0/6
72 |   switchport access vlan 40
73 |   switchport mode access
74 |   spanning-tree portfast
75 | !
76 | interface FastEthernet0/7
77 |   switchport access vlan 40
78 |   switchport mode access
79 |   spanning-tree portfast
80 | !
81 | interface FastEthernet0/8
82 |   switchport access vlan 40
83 |   switchport mode access
84 |   spanning-tree portfast
85 | !
86 | interface FastEthernet0/9
87 |   switchport access vlan 40
88 |   switchport mode access
89 |   spanning-tree portfast
90 | !
91 | interface FastEthernet0/10
92 |   switchport access vlan 40
93 |   switchport mode access
94 |   spanning-tree portfast
95 | !
96 | interface FastEthernet0/11
97 |   switchport access vlan 40
98 |   switchport mode access
99 |   spanning-tree portfast
100 | !
101 | interface FastEthernet0/12
102 |   switchport access vlan 40
103 |   switchport mode access
104 |   spanning-tree portfast
105 | !
106 | interface FastEthernet0/13
107 |   switchport access vlan 40
108 |   switchport mode access
109 |   spanning-tree portfast
110 | !
111 | interface FastEthernet0/14
112 |   switchport access vlan 40
113 |   switchport mode access
114 |   spanning-tree portfast
```

```
115 | !
116 | interface FastEthernet0/15
117 |   switchport access vlan 40
118 |   switchport mode access
119 |   spanning-tree portfast
120 | !
121 | interface FastEthernet0/16
122 |   switchport access vlan 40
123 |   switchport mode access
124 |   spanning-tree portfast
125 | !
126 | interface FastEthernet0/17
127 |   switchport access vlan 40
128 |   switchport mode access
129 |   spanning-tree portfast
130 | !
131 | interface FastEthernet0/18
132 |   switchport access vlan 41
133 |   switchport mode access
134 |   spanning-tree portfast
135 | !
136 | interface FastEthernet0/19
137 |   switchport access vlan 41
138 |   switchport mode access
139 |   spanning-tree portfast
140 | !
141 | interface FastEthernet0/20
142 |   switchport access vlan 41
143 |   switchport mode access
144 |   spanning-tree portfast
145 | !
146 | interface FastEthernet0/21
147 |   switchport access vlan 41
148 |   switchport mode access
149 |   spanning-tree portfast
150 | !
151 | interface FastEthernet0/22
152 |   switchport access vlan 41
153 |   switchport mode access
154 |   spanning-tree portfast
155 | !
156 | interface FastEthernet0/23
157 |   switchport access vlan 41
158 |   switchport mode access
159 |   spanning-tree portfast
160 | !
161 | interface FastEthernet0/24
162 |   switchport access vlan 41
163 |   switchport mode access
164 |   spanning-tree portfast
165 | !
166 | interface GigabitEthernet0/1
167 | !
168 | interface GigabitEthernet0/2
169 | !
170 | interface Vlan1
171 |   no ip address
172 |   shutdown
173 | !
174 | interface Vlan100
175 |   ip address 172.16.20.7 255.255.255.0
176 | !
```



```

177 ip default-gateway 172.16.20.1
178 ip http server
179 ip http secure-server
180 snmp-server community public R0
181 snmp-server community private RW
182 !
183 !
184 line con 0
185 line vty 0 4
186 password cisco
187 login
188 line vty 5 15
189 password cisco
190 login
191 !
192 end

```

A.21.2. IP Interfaces

```

1 HQ_AS5#show ip interface brief
2 Interface      IP-Address  OK? Method Status      Protocol
3 Vlan1          unassigned YES manual down      down
4 Vlan100        172.16.20.7 YES manual down      down
5 FastEthernet0/1 unassigned YES unset up        up
6 FastEthernet0/2 unassigned YES unset up        up
7 FastEthernet0/3 unassigned YES unset up        up
8 FastEthernet0/4 unassigned YES unset up        up
9 FastEthernet0/5 unassigned YES unset down      down
10 FastEthernet0/6 unassigned YES unset down      down
11 FastEthernet0/7 unassigned YES unset down      down
12 FastEthernet0/8 unassigned YES unset down      down
13 FastEthernet0/9 unassigned YES unset down      down
14 FastEthernet0/10 unassigned YES unset down      down
15 FastEthernet0/11 unassigned YES unset down      down
16 FastEthernet0/12 unassigned YES unset down      down
17 FastEthernet0/13 unassigned YES unset down      down
18 FastEthernet0/14 unassigned YES unset down      down
19 FastEthernet0/15 unassigned YES unset down      down
20 FastEthernet0/16 unassigned YES unset down      down
21 FastEthernet0/17 unassigned YES unset down      down
22 FastEthernet0/18 unassigned YES unset down      down
23 FastEthernet0/19 unassigned YES unset down      down
24 FastEthernet0/20 unassigned YES unset down      down
25 FastEthernet0/21 unassigned YES unset down      down
26 FastEthernet0/22 unassigned YES unset down      down
27 FastEthernet0/23 unassigned YES unset down      down
28 FastEthernet0/24 unassigned YES unset down      down
29 GigabitEthernet0/1 unassigned YES unset down      down
30 GigabitEthernet0/2 unassigned YES unset down      down

```

A.21.3. Interface Status

```

1 HQ_AS5# show interface status
2
3 Port    Name          Status    Vlan    Duplex Speed Type
4 Fa0/1   connected trunk    a-full  a-100  10/100BaseTX
5 Fa0/2   connected trunk    a-full  a-100  10/100BaseTX
6 Fa0/3   connected trunk    a-full  a-100  10/100BaseTX

```

```

7 Fa0/4          connected trunk  a-full a-100 10/100BaseTX
8 Fa0/5          notconnect 40    auto auto 10/100BaseTX
9 Fa0/6          notconnect 40    auto auto 10/100BaseTX
10 Fa0/7          notconnect 40    auto auto 10/100BaseTX
11 Fa0/8          notconnect 40    auto auto 10/100BaseTX
12 Fa0/9          notconnect 40    auto auto 10/100BaseTX
13 Fa0/10         notconnect 40    auto auto 10/100BaseTX
14 Fa0/11         notconnect 40    auto auto 10/100BaseTX
15 Fa0/12         notconnect 40    auto auto 10/100BaseTX
16 Fa0/13         notconnect 40    auto auto 10/100BaseTX
17 Fa0/14         notconnect 40    auto auto 10/100BaseTX
18 Fa0/15         notconnect 40    auto auto 10/100BaseTX
19 Fa0/16         notconnect 40    auto auto 10/100BaseTX
20 Fa0/17         notconnect 40    auto auto 10/100BaseTX
21 Fa0/18         notconnect 41    auto auto 10/100BaseTX
22 Fa0/19         notconnect 41    auto auto 10/100BaseTX
23 Fa0/20         notconnect 41    auto auto 10/100BaseTX
24 Fa0/21         notconnect 41    auto auto 10/100BaseTX
25
26 Port  Name      Status  Vlan  Duplex Speed Type
27 Fa0/22          notconnect 41    auto auto 10/100BaseTX
28 Fa0/23          notconnect 41    auto auto 10/100BaseTX
29 Fa0/24          notconnect 41    auto auto 10/100BaseTX
30 Gi0/1           notconnect 1      auto auto Not Present
31 Gi0/2           notconnect 1      auto auto Not Present

```

A.21.4. Interface Trunk

```

1 HQ-AS5# show interface trunk
2
3 Port      Mode      Encapsulation Status Native vlan
4 Fa0/1     on        802.1q      trunking  1
5 Fa0/2     on        802.1q      trunking  1
6 Fa0/3     on        802.1q      trunking  1
7 Fa0/4     on        802.1q      trunking  1
8
9 Port      Vlans allowed on trunk
10 Fa0/1     1-4094
11 Fa0/2     1-4094
12 Fa0/3     1-4094
13 Fa0/4     1-4094
14
15 Port      Vlans allowed and active in management domain
16 Fa0/1     1,10,20,30,40-41,99
17 Fa0/2     1,10,20,30,40-41,99
18 Fa0/3     1,10,20,30,40-41,99
19 Fa0/4     1,10,20,30,40-41,99
20
21 Port      Vlans in spanning tree forwarding state and not pruned
22 Fa0/1     1,10,20,30,40-41,99
23 Fa0/2     1,10,20,30,40-41,99
24 Fa0/3     1,10,20,30,40-41,99
25
26 Port      Vlans in spanning tree forwarding state and not pruned
27 Fa0/4     none

```

A.21.5. Neighbors

```

1 HQ_AS5#show cdp neighbors
2 Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
3                   S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone,
4                   D - Remote, C - CVTA, M - Two-port Mac Relay
5
6 Device ID    Local Intrfce Holdtme Capability Platform Port ID
7 HQ_DS1      Fas 0/4      176          R S I WS-C3560V Fas 0/8
8 HQ_DS1      Fas 0/3      176          R S I WS-C3560V Fas 0/7
9 HQ_DS2      Fas 0/1      144          R S I WS-C3560V Fas 0/11
10 HQ_DS2      Fas 0/2      144          R S I WS-C3560V Fas 0/12

```

A.21.6. IP Route

```

1 HQ_AS5#show ip route
2 ^
3 % Invalid input detected at '^' marker.

```

A.21.7. Spanning Tree

```

1 HQ_AS5#show spanning
2
3 VLAN0001
4   Spanning tree enabled protocol ieee
5   Root ID Priority 32769
6       Address 001a.2fa8.ea80
7       Cost    38
8       Port    3 (FastEthernet0/3)
9       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
10
11   Bridge ID Priority 32769 (priority 32768 sys-id-ext 1)
12       Address 0817.3508.6380
13       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
14       Aging Time 300 sec
15
16 Interface      Role Sts Cost Prio.Nbr Type
17 -----
18 Fa0/1          Desg FWD 19   128.1 P2p
19 Fa0/2          Desg FWD 19   128.2 P2p
20 Fa0/3          Root FWD 19   128.3 P2p
21 Fa0/4          Altn BLK 19   128.4 P2p
22
23
24
25 VLAN0010
26   Spanning tree enabled protocol ieee
27   Root ID Priority 32778
28       Address 001a.2fa8.ea80
29       Cost    38
30       Port    3 (FastEthernet0/3)
31       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
32
33   Bridge ID Priority 32778 (priority 32768 sys-id-ext 10)
34       Address 0817.3508.6380
35       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
36       Aging Time 300 sec
37
38 Interface      Role Sts Cost Prio.Nbr Type

```

```

39 -----
40 Fa0/1          Desg FWD 19   128.1 P2p
41 Fa0/2          Desg FWD 19   128.2 P2p
42 Fa0/3          Root FWD 19   128.3 P2p
43 Fa0/4          Altn BLK 19   128.4 P2p
44
45
46
47 VLAN0020
48   Spanning tree enabled protocol ieee
49   Root ID Priority 32788
50       Address 001a.2fa8.ea80
51       Cost    38
52       Port    3 (FastEthernet0/3)
53       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
54
55   Bridge ID Priority 32788 (priority 32768 sys-id-ext 20)
56       Address 0817.3508.6380
57       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
58       Aging Time 300 sec
59
60 Interface      Role Sts Cost Prio.Nbr Type
61 -----
62 Fa0/1          Desg FWD 19   128.1 P2p
63 Fa0/2          Desg FWD 19   128.2 P2p
64 Fa0/3          Root FWD 19   128.3 P2p
65 Fa0/4          Altn BLK 19   128.4 P2p
66
67
68
69 VLAN0030
70   Spanning tree enabled protocol ieee
71   Root ID Priority 32798
72       Address 001a.2fa8.ea80
73       Cost    38
74       Port    3 (FastEthernet0/3)
75       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
76
77   Bridge ID Priority 32798 (priority 32768 sys-id-ext 30)
78       Address 0817.3508.6380
79       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
80       Aging Time 300 sec
81
82 Interface      Role Sts Cost Prio.Nbr Type
83 -----
84 Fa0/1          Desg FWD 19   128.1 P2p
85 Fa0/2          Desg FWD 19   128.2 P2p
86 Fa0/3          Root FWD 19   128.3 P2p
87 Fa0/4          Altn BLK 19   128.4 P2p
88
89
90
91 VLAN0040
92   Spanning tree enabled protocol ieee
93   Root ID Priority 32808
94       Address 001a.2fa8.ea80
95       Cost    38
96       Port    3 (FastEthernet0/3)
97       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
98
99   Bridge ID Priority 32808 (priority 32768 sys-id-ext 40)
100      Address 0817.3508.6380

```

```

101 Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
102 Aging Time 300 sec
103

```

```

104 Interface      Role Sts Cost Prio.Nbr Type
105 -----

```

```

106 Fa0/1          Desg FWD 19   128.1 P2p
107 Fa0/2          Desg FWD 19   128.2 P2p
108 Fa0/3          Root FWD 19   128.3 P2p
109 Fa0/4          Altn BLK 19   128.4 P2p
110

```

```

111
112
113 VLAN0041

```

```

114 Spanning tree enabled protocol ieee
115 Root ID Priority 32809
116 Address 001a.2fa8.ea80
117 Cost 38
118 Port 3 (FastEthernet0/3)
119 Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
120

```

```

121 Bridge ID Priority 32809 (priority 32768 sys-id-ext 41)
122 Address 0817.3508.6380
123 Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
124 Aging Time 300 sec
125

```

```

126 Interface      Role Sts Cost Prio.Nbr Type
127 -----

```

```

128 Fa0/1          Desg FWD 19   128.1 P2p
129 Fa0/2          Desg FWD 19   128.2 P2p
130 Fa0/3          Root FWD 19   128.3 P2p
131 Fa0/4          Altn BLK 19   128.4 P2p
132

```

```

133
134
135 VLAN0099

```

```

136 Spanning tree enabled protocol ieee
137 Root ID Priority 32867
138 Address 001a.2fa8.ea80
139 Cost 38
140 Port 3 (FastEthernet0/3)
141 Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
142

```

```

143 Bridge ID Priority 32867 (priority 32768 sys-id-ext 99)
144 Address 0817.3508.6380
145 Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
146 Aging Time 300 sec
147

```

```

148 Interface      Role Sts Cost Prio.Nbr Type
149 -----

```

```

150 Fa0/1          Desg FWD 19   128.1 P2p
151 Fa0/2          Desg FWD 19   128.2 P2p
152 Fa0/3          Root FWD 19   128.3 P2p
153 Fa0/4          Altn BLK 19   128.4 P2p

```

A.21.8. VLAN

```

1 HQ_AS5# show vlan
2

```

```

3 VLAN Name                Status Ports
4 -----

```

```

5 1 default active Gi0/1, Gi0/2
6 10 VLAN0010 active
7 20 VLAN0020 active
8 30 VLAN0030 active
9 40 VLAN0040 active Fa0/5, Fa0/6, Fa0/7, Fa0/8
10 Fa0/9, Fa0/10, Fa0/11, Fa0/12
11 Fa0/13, Fa0/14, Fa0/15, Fa0/16
12 Fa0/17
13 41 VLAN0041 active Fa0/18, Fa0/19, Fa0/20, Fa0/21
14 Fa0/22, Fa0/23, Fa0/24
15 99 Management active
16 1002 fddi-default act/unsup
17 1003 trcrf-default act/unsup
18 1004 fddinet-default act/unsup
19 1005 trbrf-default act/unsup
20
21 VLAN Type SAID MTU Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2
22 -----
23 1 enet 100001 1500 - - - - - 0 0
24 10 enet 100010 1500 - - - - - 0 0
25
26 VLAN Type SAID MTU Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2
27 -----
28 20 enet 100020 1500 - - - - - 0 0
29 30 enet 100030 1500 - - - - - 0 0
30 40 enet 100040 1500 - - - - - 0 0
31 41 enet 100041 1500 - - - - - 0 0
32 99 enet 100099 1500 - - - - - 0 0
33 1002 fddi 101002 1500 - - - - - 0 0
34 1003 trcrf 101003 4472 1005 3276 - - srb 0 0
35 1004 fdnet 101004 1500 - - - - - ieee - 0 0
36 1005 trbrf 101005 4472 - - 15 ibm - 0 0
37
38
39 VLAN AREHops STEHops Backup CRF
40 -----
41 1003 7 7 off
42
43 Remote SPAN VLANs
44 -----
45
46
47 Primary Secondary Type Ports
48 -----

```

A.22. HQ-AS6

A.22.1. Running Configuration

```

1 HQ_AS6#show run
2 Building configuration...
3
4 Current configuration : 3582 bytes
5 !
6 ! Last configuration change at 08:49:24 UTC Mon Mar 1 1993
7 !
8 version 15.0
9 no service pad
10 service timestamps debug datetime msec
11 service timestamps log datetime msec

```

```
12 no service password-encryption
13 service sequence-numbers
14 !
15 hostname HQ_AS6
16 !
17 boot-start-marker
18 boot-end-marker
19 !
20 enable secret 5 $1$WLn$skcqaB3lt.gaHzXtnN1Xb0
21 !
22 username ins password 0 ins@lab
23 no aaa new-model
24 system mtu routing 1500
25 !
26 !
27 !
28 !
29 crypto pki trustpoint TP-self-signed-1926334208
30 enrollment selfsigned
31 subject-name cn=IOS-Self-Signed-Certificate-1926334208
32 revocation-check none
33 rsakeypair TP-self-signed-1926334208
34 !
35 !
36 crypto pki certificate chain TP-self-signed-1926334208
37 certificate self-signed 01
38     quit
39 !
40 !
41 !
42 !
43 !
44 spanning-tree mode pvst
45 spanning-tree extend system-id
46 !
47 vlan internal allocation policy ascending
48 !
49 !
50 !
51 !
52 !
53 !
54 interface Port-channel6
55     switchport mode trunk
56 !
57 interface FastEthernet0/1
58     switchport mode trunk
59 !
60 interface FastEthernet0/2
61     switchport mode trunk
62 !
63 interface FastEthernet0/3
64     switchport mode trunk
65     channel-group 6 mode on
66 !
67 interface FastEthernet0/4
68     switchport mode trunk
69     channel-group 6 mode on
70 !
71 interface FastEthernet0/5
72     switchport access vlan 41
73     switchport mode access
```

```
74 spanning-tree portfast
75 !
76 interface FastEthernet0/6
77 switchport access vlan 41
78 switchport mode access
79 spanning-tree portfast
80 !
81 interface FastEthernet0/7
82 switchport access vlan 41
83 switchport mode access
84 spanning-tree portfast
85 !
86 interface FastEthernet0/8
87 switchport access vlan 41
88 switchport mode access
89 spanning-tree portfast
90 !
91 interface FastEthernet0/9
92 switchport access vlan 41
93 switchport mode access
94 spanning-tree portfast
95 !
96 interface FastEthernet0/10
97 switchport access vlan 41
98 switchport mode access
99 spanning-tree portfast
100 !
101 interface FastEthernet0/11
102 switchport access vlan 41
103 switchport mode access
104 spanning-tree portfast
105 !
106 interface FastEthernet0/12
107 switchport access vlan 41
108 switchport mode access
109 spanning-tree portfast
110 !
111 interface FastEthernet0/13
112 switchport access vlan 41
113 switchport mode access
114 spanning-tree portfast
115 !
116 interface FastEthernet0/14
117 switchport access vlan 41
118 switchport mode access
119 spanning-tree portfast
120 !
121 interface FastEthernet0/15
122 switchport access vlan 41
123 switchport mode access
124 spanning-tree portfast
125 !
126 interface FastEthernet0/16
127 switchport access vlan 41
128 switchport mode access
129 spanning-tree portfast
130 !
131 interface FastEthernet0/17
132 switchport access vlan 41
133 switchport mode access
134 spanning-tree portfast
135 !
```



```
136 interface FastEthernet0/18
137   switchport access vlan 41
138   switchport mode access
139   spanning-tree portfast
140   !
141 interface FastEthernet0/19
142   switchport access vlan 41
143   switchport mode access
144   spanning-tree portfast
145   !
146 interface FastEthernet0/20
147   switchport access vlan 41
148   switchport mode access
149   spanning-tree portfast
150   !
151 interface FastEthernet0/21
152   switchport access vlan 41
153   switchport mode access
154   spanning-tree portfast
155   !
156 interface FastEthernet0/22
157   switchport access vlan 41
158   switchport mode access
159   spanning-tree portfast
160   !
161 interface FastEthernet0/23
162   switchport access vlan 41
163   switchport mode access
164   spanning-tree portfast
165   !
166 interface FastEthernet0/24
167   switchport access vlan 41
168   switchport mode access
169   spanning-tree portfast
170   !
171 interface GigabitEthernet0/1
172   !
173 interface GigabitEthernet0/2
174   !
175 interface Vlan1
176   no ip address
177   shutdown
178   !
179 interface Vlan100
180   ip address 172.16.20.8 255.255.255.0
181   !
182 ip default-gateway 172.16.20.1
183 ip http server
184 ip http secure-server
185 snmp-server community public R0
186 snmp-server community private RW
187   !
188   !
189 line con 0
190 line vty 0 4
191   password cisco
192   login
193 line vty 5 15
194   password cisco
195   login
196   !
197 end
```

A.22.2. IP Interfaces

```

1 HQ_AS6#show ip interface brief
2 Interface      IP-Address  OK? Method Status      Protocol
3 Vlan1          unassigned YES  unset administratively down down
4 Vlan100       172.16.20.8 YES  manual down        down
5 FastEthernet0/1 unassigned YES  unset up          up
6 FastEthernet0/2 unassigned YES  unset up          up
7 FastEthernet0/3 unassigned YES  unset down        down
8 FastEthernet0/4 unassigned YES  unset down        down
9 FastEthernet0/5 unassigned YES  unset up          up
10 FastEthernet0/6 unassigned YES  unset down        down
11 FastEthernet0/7 unassigned YES  unset down        down
12 FastEthernet0/8 unassigned YES  unset down        down
13 FastEthernet0/9 unassigned YES  unset down        down
14 FastEthernet0/10 unassigned YES  unset down        down
15 FastEthernet0/11 unassigned YES  unset down        down
16 FastEthernet0/12 unassigned YES  unset down        down
17 FastEthernet0/13 unassigned YES  unset down        down
18 FastEthernet0/14 unassigned YES  unset down        down
19 FastEthernet0/15 unassigned YES  unset down        down
20 FastEthernet0/16 unassigned YES  unset down        down
21 FastEthernet0/17 unassigned YES  unset down        down
22 FastEthernet0/18 unassigned YES  unset down        down
23 FastEthernet0/19 unassigned YES  unset down        down
24 FastEthernet0/20 unassigned YES  unset down        down
25 FastEthernet0/21 unassigned YES  unset down        down
26 FastEthernet0/22 unassigned YES  unset down        down
27 FastEthernet0/23 unassigned YES  unset down        down
28 FastEthernet0/24 unassigned YES  unset down        down
29 GigabitEthernet0/1 unassigned YES  unset down        down
30 GigabitEthernet0/2 unassigned YES  unset down        down
31 Port-channel6  unassigned YES  unset down        down

```

A.22.3. Interface Status

```

1 HQ_AS6# show interface status
2
3 Port    Name          Status    Vlan    Duplex Speed Type
4 Fa0/1   Name          connected trunk a-full a-100 10/100BaseTX
5 Fa0/2   Name          connected trunk a-full a-100 10/100BaseTX
6 Fa0/3   Name          err-disabled 1      auto  auto 10/100BaseTX
7 Fa0/4   Name          err-disabled 1      auto  auto 10/100BaseTX
8 Fa0/5   Name          connected 41      a-full a-100 10/100BaseTX
9 Fa0/6   Name          notconnect 41      auto  auto 10/100BaseTX
10 Fa0/7   Name          notconnect 41      auto  auto 10/100BaseTX
11 Fa0/8   Name          notconnect 41      auto  auto 10/100BaseTX
12 Fa0/9   Name          notconnect 41      auto  auto 10/100BaseTX
13 Fa0/10  Name          notconnect 41      auto  auto 10/100BaseTX
14 Fa0/11  Name          notconnect 41      auto  auto 10/100BaseTX
15 Fa0/12  Name          notconnect 41      auto  auto 10/100BaseTX
16 Fa0/13  Name          notconnect 41      auto  auto 10/100BaseTX
17 Fa0/14  Name          notconnect 41      auto  auto 10/100BaseTX
18 Fa0/15  Name          notconnect 41      auto  auto 10/100BaseTX
19 Fa0/16  Name          notconnect 41      auto  auto 10/100BaseTX
20 Fa0/17  Name          notconnect 41      auto  auto 10/100BaseTX

```

```

21 Fa0/18          notconnect 41      auto auto 10/100BaseTX
22 Fa0/19          notconnect 41      auto auto 10/100BaseTX
23 Fa0/20          notconnect 41      auto auto 10/100BaseTX
24 Fa0/21          notconnect 41      auto auto 10/100BaseTX
25
26 Port   Name      Status   Vlan    Duplex Speed Type
27 Fa0/22          notconnect 41      auto auto 10/100BaseTX
28 Fa0/23          notconnect 41      auto auto 10/100BaseTX
29 Fa0/24          notconnect 41      auto auto 10/100BaseTX
30 Gi0/1          notconnect 1       auto auto Not Present
31 Gi0/2          notconnect 1       auto auto Not Present
32 Po6           err-disabled 1      auto auto

```

A.22.4. Interface Trunk

```

1 HQ_AS6# show interface trunk
2
3 Port      Mode      Encapsulation Status Native vlan
4 Fa0/1     on        802.1q      trunking 1
5 Fa0/2     on        802.1q      trunking 1
6
7 Port      Vlans allowed on trunk
8 Fa0/1     1-4094
9 Fa0/2     1-4094
10
11 Port      Vlans allowed and active in management domain
12 Fa0/1     1,10,20,30,40-41,99
13 Fa0/2     1,10,20,30,40-41,99
14
15 Port      Vlans in spanning tree forwarding state and not pruned
16 Fa0/1     1,10,20,30,40-41,99
17 Fa0/2     none

```

A.22.5. Neighbors

```

1 HQ_AS6#show cdp neighbors
2 Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
3                   S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone,
4                   D - Remote, C - CVTA, M - Two-port Mac Relay
5
6 Device ID    Local Intrfce Holdtme Capability Platform Port ID
7 HQ_DS2      Fas 0/1      123          R S I WS-C3560V Fas 0/9
8 HQ_DS2      Fas 0/2      123          R S I WS-C3560V Fas 0/10

```

A.22.6. IP Route

```

1 HQ_AS6#show ip route
2 ^
3 % Invalid input detected at '^' marker.

```

A.22.7. Spanning Tree

```

1 HQ_AS6#show spanning
2
3 VLAN0001
4   Spanning tree enabled protocol ieee
5   Root ID Priority 32769
6           Address 001a.2fa8.ea80
7           Cost    69
8           Port    1 (FastEthernet0/1)
9           Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
10
11   Bridge ID Priority 32769 (priority 32768 sys-id-ext 1)
12           Address f025.7226.5a80
13           Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
14           Aging Time 300 sec
15
16   Interface      Role Sts Cost Prio.Nbr Type
17   -----
18   Fa0/1          Root FWD 19   128.1 P2p
19   Fa0/2          Altn BLK 19   128.2 P2p
20
21
22
23 VLAN0010
24   Spanning tree enabled protocol ieee
25   Root ID Priority 32778
26           Address 001a.2fa8.ea80
27           Cost    69
28           Port    1 (FastEthernet0/1)
29           Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
30
31   Bridge ID Priority 32778 (priority 32768 sys-id-ext 10)
32           Address f025.7226.5a80
33           Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
34           Aging Time 300 sec
35
36   Interface      Role Sts Cost Prio.Nbr Type
37   -----
38   Fa0/1          Root FWD 19   128.1 P2p
39   Fa0/2          Altn BLK 19   128.2 P2p
40
41
42
43 VLAN0020
44   Spanning tree enabled protocol ieee
45   Root ID Priority 32788
46           Address 001a.2fa8.ea80
47           Cost    69
48           Port    1 (FastEthernet0/1)
49           Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
50
51   Bridge ID Priority 32788 (priority 32768 sys-id-ext 20)
52           Address f025.7226.5a80
53           Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
54           Aging Time 300 sec
55
56   Interface      Role Sts Cost Prio.Nbr Type
57   -----
58   Fa0/1          Root FWD 19   128.1 P2p
59   Fa0/2          Altn BLK 19   128.2 P2p
60
61

```

```

62
63 VLAN0030
64   Spanning tree enabled protocol ieee
65   Root ID Priority 32798
66       Address 001a.2fa8.ea80
67       Cost    69
68       Port    1 (FastEthernet0/1)
69       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
70
71   Bridge ID Priority 32798 (priority 32768 sys-id-ext 30)
72       Address f025.7226.5a80
73       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
74       Aging Time 300 sec
75

```

Interface	Role	Sts	Cost	Prio.	Nbr	Type
-----------	------	-----	------	-------	-----	------

Fa0/1	Root	FWD	19	128.1	P2p	
Fa0/2	Altn	BLK	19	128.2	P2p	

```

80
81
82
83 VLAN0040
84   Spanning tree enabled protocol ieee
85   Root ID Priority 32808
86       Address 001a.2fa8.ea80
87       Cost    69
88       Port    1 (FastEthernet0/1)
89       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
90
91   Bridge ID Priority 32808 (priority 32768 sys-id-ext 40)
92       Address f025.7226.5a80
93       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
94       Aging Time 300 sec
95

```

Interface	Role	Sts	Cost	Prio.	Nbr	Type
-----------	------	-----	------	-------	-----	------

Fa0/1	Root	FWD	19	128.1	P2p	
Fa0/2	Altn	BLK	19	128.2	P2p	

```

100
101
102
103 VLAN0041
104   Spanning tree enabled protocol ieee
105   Root ID Priority 32809
106       Address 001a.2fa8.ea80
107       Cost    69
108       Port    1 (FastEthernet0/1)
109       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
110
111   Bridge ID Priority 32809 (priority 32768 sys-id-ext 41)
112       Address f025.7226.5a80
113       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
114       Aging Time 300 sec
115

```

Interface	Role	Sts	Cost	Prio.	Nbr	Type
-----------	------	-----	------	-------	-----	------

Fa0/1	Root	FWD	19	128.1	P2p	
Fa0/2	Altn	BLK	19	128.2	P2p	
Fa0/5	Desg	FWD	19	128.5	P2p	Edge

```

124 VLAN0099
125   Spanning tree enabled protocol ieee
126   Root ID Priority 32867
127         Address 001a.2fa8.ea80
128         Cost 69
129         Port 1 (FastEthernet0/1)
130         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
131
132   Bridge ID Priority 32867 (priority 32768 sys-id-ext 99)
133         Address f025.7226.5a80
134         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
135         Aging Time 300 sec
136
137   Interface      Role Sts Cost Prio.Nbr Type
138   -----
139   Fa0/1          Root FWD 19   128.1 P2p
140   Fa0/2          Altn BLK 19   128.2 P2p

```

A.22.8. VLAN

```

1 HQ_AS6#show vlan
2
3 VLAN Name                Status Ports
4 -----
5 1  default                active Fa0/3, Fa0/4, Gi0/1, Gi0/2
6 10 VLAN0010              active
7 20 VLAN0020              active
8 30 VLAN0030              active
9 40 VLAN0040              active
10 41 VLAN0041              active Fa0/5, Fa0/6, Fa0/7, Fa0/8
11                                Fa0/9, Fa0/10, Fa0/11, Fa0/12
12                                Fa0/13, Fa0/14, Fa0/15, Fa0/16
13                                Fa0/17, Fa0/18, Fa0/19, Fa0/20
14                                Fa0/21, Fa0/22, Fa0/23, Fa0/24
15 99 Management            active
16 1002 fddi-default         act/unsup
17 1003 trcrf-default        act/unsup
18 1004 fddinet-default      act/unsup
19 1005 trbrf-default        act/unsup
20
21 VLAN Type SAID    MTU  Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2
22 -----
23 1  enet 100001 1500 -  -  -  -  -  0  0
24 10 enet 100010 1500 -  -  -  -  -  0  0
25
26 VLAN Type SAID    MTU  Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2
27 -----
28 20 enet 100020 1500 -  -  -  -  -  0  0
29 30 enet 100030 1500 -  -  -  -  -  0  0
30 40 enet 100040 1500 -  -  -  -  -  0  0
31 41 enet 100041 1500 -  -  -  -  -  0  0
32 99 enet 100099 1500 -  -  -  -  -  0  0
33 1002 fddi 101002 1500 -  -  -  -  -  0  0
34 1003 trcrf 101003 4472 1005 3276 -  -  srb  0  0
35 1004 fdnet 101004 1500 -  -  -  -  -  0  0
36 1005 trbrf 101005 4472 -  -  15  -  -  0  0
37
38
39 VLAN AREHops STEHops Backup CRF
40 -----

```

```
41 1003 7 7 off
```

```
42 Remote SPAN VLANs
```

```
43 -----
```

```
44
```

```
45 Primary Secondary Type Ports
```

```
46 -----
```

```
47
```

A.23. HQ-AS7

A.23.1. Running Configuration

```
1 HQ_AS7#show run
2 Building configuration...
3
4 Current configuration : 3583 bytes
5 !
6 ! Last configuration change at 13:03:02 UTC Mon Mar 1 1993
7 !
8 version 15.0
9 no service pad
10 service timestamps debug datetime msec
11 service timestamps log datetime msec
12 no service password-encryption
13 service sequence-numbers
14 !
15 hostname HQ_AS7
16 !
17 boot-start-marker
18 boot-end-marker
19 !
20 enable secret 5 $1$SAhN$GoZyjaeqMXu3/3IKDMSpI.
21 !
22 username ins password 0 ins@lab
23 no aaa new-model
24 system mtu routing 1500
25 !
26 !
27 !
28 !
29 crypto pki trustpoint TP-self-signed-889599104
30 enrollment selfsigned
31 subject-name cn=IOS-Self-Signed-Certificate-889599104
32 revocation-check none
33 rsa-keypair TP-self-signed-889599104
34 !
35 !
36 crypto pki certificate chain TP-self-signed-889599104
37 certificate self-signed 01
38 quit
39 !
40 !
41 !
42 !
43 !
44 spanning-tree mode pvst
45 spanning-tree extend system-id
46 !
47 vlan internal allocation policy ascending
```

```
48 | !
49 | !
50 | !
51 | !
52 | !
53 | !
54 | interface FastEthernet0/1
55 |   switchport mode trunk
56 | !
57 | interface FastEthernet0/2
58 |   switchport mode trunk
59 | !
60 | interface FastEthernet0/3
61 |   switchport access vlan 10
62 |   switchport mode access
63 |   spanning-tree portfast
64 | !
65 | interface FastEthernet0/4
66 |   switchport access vlan 10
67 |   switchport mode access
68 |   spanning-tree portfast
69 | !
70 | interface FastEthernet0/5
71 |   switchport access vlan 10
72 |   switchport mode access
73 |   spanning-tree portfast
74 | !
75 | interface FastEthernet0/6
76 |   switchport access vlan 10
77 |   switchport mode access
78 |   spanning-tree portfast
79 | !
80 | interface FastEthernet0/7
81 |   switchport access vlan 10
82 |   switchport mode access
83 |   spanning-tree portfast
84 | !
85 | interface FastEthernet0/8
86 |   switchport access vlan 10
87 |   switchport mode access
88 |   spanning-tree portfast
89 | !
90 | interface FastEthernet0/9
91 |   switchport access vlan 10
92 |   switchport mode access
93 |   spanning-tree portfast
94 | !
95 | interface FastEthernet0/10
96 |   switchport access vlan 10
97 |   switchport mode access
98 |   spanning-tree portfast
99 | !
100 | interface FastEthernet0/11
101 |   switchport access vlan 10
102 |   switchport mode access
103 |   spanning-tree portfast
104 | !
105 | interface FastEthernet0/12
106 |   switchport access vlan 10
107 |   switchport mode access
108 |   spanning-tree portfast
109 | !
```



```
110 interface FastEthernet0/13
111   switchport access vlan 10
112   switchport mode access
113   spanning-tree portfast
114   !
115 interface FastEthernet0/14
116   switchport access vlan 10
117   switchport mode access
118   spanning-tree portfast
119   !
120 interface FastEthernet0/15
121   switchport access vlan 10
122   switchport mode access
123   spanning-tree portfast
124   !
125 interface FastEthernet0/16
126   switchport access vlan 10
127   switchport mode access
128   spanning-tree portfast
129   !
130 interface FastEthernet0/17
131   switchport access vlan 10
132   switchport mode access
133   spanning-tree portfast
134   !
135 interface FastEthernet0/18
136   switchport access vlan 10
137   switchport mode access
138   spanning-tree portfast
139   !
140 interface FastEthernet0/19
141   switchport access vlan 10
142   switchport mode access
143   spanning-tree portfast
144   !
145 interface FastEthernet0/20
146   switchport access vlan 10
147   switchport mode access
148   spanning-tree portfast
149   !
150 interface FastEthernet0/21
151   switchport access vlan 11
152   switchport mode access
153   spanning-tree portfast
154   !
155 interface FastEthernet0/22
156   switchport access vlan 11
157   switchport mode access
158   spanning-tree portfast
159   !
160 interface FastEthernet0/23
161   switchport access vlan 11
162   switchport mode access
163   spanning-tree portfast
164   !
165 interface FastEthernet0/24
166   switchport access vlan 11
167   switchport mode access
168   spanning-tree portfast
169   !
170 interface GigabitEthernet0/1
171   !
```

```

172 interface GigabitEthernet0/2
173 !
174 interface Vlan1
175   no ip address
176   shutdown
177 !
178 interface Vlan101
179   ip address 172.16.21.2 255.255.255.0
180 !
181 ip default-gateway 172.16.21.1
182 ip http server
183 ip http secure-server
184 snmp-server community public RO
185 snmp-server community private RW
186 !
187 !
188 line con 0
189 line vty 0 4
190   password cisco
191   login
192 line vty 5 15
193   password cisco
194   login
195 !
196 end

```

A.23.2. IP Interfaces

```

1 HQ-AS7#show ip interface brief
2 Interface      IP-Address  OK? Method Status      Protocol
3 Vlan1          unassigned YES unset administratively down down
4 Vlan101        172.16.21.2 YES manual down        down
5 FastEthernet0/1 unassigned YES unset up          up
6 FastEthernet0/2 unassigned YES unset up          up
7 FastEthernet0/3 unassigned YES unset down        down
8 FastEthernet0/4 unassigned YES unset down        down
9 FastEthernet0/5 unassigned YES unset down        down
10 FastEthernet0/6 unassigned YES unset down        down
11 FastEthernet0/7 unassigned YES unset down        down
12 FastEthernet0/8 unassigned YES unset down        down
13 FastEthernet0/9 unassigned YES unset down        down
14 FastEthernet0/10 unassigned YES unset down        down
15 FastEthernet0/11 unassigned YES unset down        down
16 FastEthernet0/12 unassigned YES unset down        down
17 FastEthernet0/13 unassigned YES unset down        down
18 FastEthernet0/14 unassigned YES unset down        down
19 FastEthernet0/15 unassigned YES unset down        down
20 FastEthernet0/16 unassigned YES unset down        down
21 FastEthernet0/17 unassigned YES unset down        down
22 FastEthernet0/18 unassigned YES unset down        down
23 FastEthernet0/19 unassigned YES unset down        down
24 FastEthernet0/20 unassigned YES unset down        down
25 FastEthernet0/21 unassigned YES unset down        down
26 FastEthernet0/22 unassigned YES unset down        down
27 FastEthernet0/23 unassigned YES unset down        down
28 FastEthernet0/24 unassigned YES unset down        down
29 GigabitEthernet0/1 unassigned YES unset down        down
30 GigabitEthernet0/2 unassigned YES unset down        down

```

A.23.3. Interface Status

```

1 HQ_AS7# show interface status
2
3 Port      Name      Status    Vlan    Duplex Speed Type
4 Fa0/1     connected trunk    a-full a-100 10/100BaseTX
5 Fa0/2     connected trunk    a-full a-100 10/100BaseTX
6 Fa0/3     notconnect 10       auto  auto 10/100BaseTX
7 Fa0/4     notconnect 10       auto  auto 10/100BaseTX
8 Fa0/5     notconnect 10       auto  auto 10/100BaseTX
9 Fa0/6     notconnect 10       auto  auto 10/100BaseTX
10 Fa0/7     notconnect 10       auto  auto 10/100BaseTX
11 Fa0/8     notconnect 10       auto  auto 10/100BaseTX
12 Fa0/9     notconnect 10       auto  auto 10/100BaseTX
13 Fa0/10    notconnect 10       auto  auto 10/100BaseTX
14 Fa0/11    notconnect 10       auto  auto 10/100BaseTX
15 Fa0/12    notconnect 10       auto  auto 10/100BaseTX
16 Fa0/13    notconnect 10       auto  auto 10/100BaseTX
17 Fa0/14    notconnect 10       auto  auto 10/100BaseTX
18 Fa0/15    notconnect 10       auto  auto 10/100BaseTX
19 Fa0/16    notconnect 10       auto  auto 10/100BaseTX
20 Fa0/17    notconnect 10       auto  auto 10/100BaseTX
21 Fa0/18    notconnect 10       auto  auto 10/100BaseTX
22 Fa0/19    notconnect 10       auto  auto 10/100BaseTX
23 Fa0/20    notconnect 10       auto  auto 10/100BaseTX
24 Fa0/21    notconnect 11       auto  auto 10/100BaseTX
25
26 Port      Name      Status    Vlan    Duplex Speed Type
27 Fa0/22    notconnect 11       auto  auto 10/100BaseTX
28 Fa0/23    notconnect 11       auto  auto 10/100BaseTX
29 Fa0/24    notconnect 11       auto  auto 10/100BaseTX
30 Gi0/1     notconnect 1        auto  auto Not Present
31 Gi0/2     notconnect 1        auto  auto Not Present

```

A.23.4. Interface Trunk

```

1 HQ_AS7# show interface trunk
2
3 Port      Mode      Encapsulation Status Native vlan
4 Fa0/1     on        802.1q      trunking  1
5 Fa0/2     on        802.1q      trunking  1
6
7 Port      Vlans allowed on trunk
8 Fa0/1     1-4094
9 Fa0/2     1-4094
10
11 Port      Vlans allowed and active in management domain
12 Fa0/1     1,31
13 Fa0/2     1,31
14
15 Port      Vlans in spanning tree forwarding state and not pruned
16 Fa0/1     1,31
17 Fa0/2     none

```

A.23.5. Neighbors

```

1 HQ_AS7#show cdp neighbors

```

```

2 Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
3                   S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone,
4                   D - Remote, C - CVTA, M - Two-port Mac Relay
5
6 Device ID      Local Intrfce Holdtme Capability Platform Port ID
7 HQ_DS3         Fas 0/2      142          R S I WS-C3560- Fas 0/14
8 HQ_DS3         Fas 0/1      142          R S I WS-C3560- Fas 0/13

```

A.23.6. IP Route

```

1 HQ_AS7#show ip route
2   ^
3 % Invalid input detected at '^' marker.

```

A.23.7. Spanning Tree

```

1 HQ_AS7#show spanning
2
3 VLAN0001
4   Spanning tree enabled protocol ieee
5   Root ID Priority 32769
6       Address 001a.2fd4.4000
7       Cost    19
8       Port    1 (FastEthernet0/1)
9       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
10
11   Bridge ID Priority 32769 (priority 32768 sys-id-ext 1)
12       Address 0817.3508.4080
13       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
14       Aging Time 300 sec
15
16 Interface      Role Sts Cost Prio.Nbr Type
17 -----
18 Fa0/1          Root FWD 19   128.1 P2p
19 Fa0/2          Altn BLK 19   128.2 P2p
20
21
22
23 VLAN0031
24   Spanning tree enabled protocol ieee
25   Root ID Priority 32799
26       Address 001a.2fd4.4000
27       Cost    19
28       Port    1 (FastEthernet0/1)
29       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
30
31   Bridge ID Priority 32799 (priority 32768 sys-id-ext 31)
32       Address 0817.3508.4080
33       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
34       Aging Time 300 sec
35
36 Interface      Role Sts Cost Prio.Nbr Type
37 -----
38 Fa0/1          Root FWD 19   128.1 P2p
39 Fa0/2          Altn BLK 19   128.2 P2p

```

A.23.8. VLAN

```

1 HQ_AS7#show vlan
2
3 VLAN Name                Status Ports
4 -----
5 1  default                active Gi0/1, Gi0/2
6 31 VLAN0031              active
7 1002 fddi-default        act/unsup
8 1003 token-ring-default  act/unsup
9 1004 fddinet-default      act/unsup
10 1005 trnet-default        act/unsup
11
12 VLAN Type SAID    MTU  Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
13 -----
14 1  enet 100001 1500 -    -    -    -    -    0      0
15 31 enet 100031 1500 -    -    -    -    -    0      0
16 1002 fddi 101002 1500 -    -    -    -    -    0      0
17 1003 tr 101003 1500 -    -    -    -    srb  0      0
18 1004 fdnet 101004 1500 -    -    -    ieee -    0      0
19 1005 trnet 101005 1500 -    -    -    ibm  -    0      0
20
21 Remote SPAN VLANs
22 -----
23
24
25 Primary Secondary Type    Ports
26 -----

```

A.24. HQ-AS8

A.24.1. Running Configuration

```

1 HQ_AS8#show run
2 Building configuration...
3
4 Current configuration : 3633 bytes
5 !
6 ! Last configuration change at 13:03:28 UTC Mon Mar 1 1993
7 !
8 version 15.0
9 no service pad
10 service timestamps debug datetime msec
11 service timestamps log datetime msec
12 no service password-encryption
13 service sequence-numbers
14 !
15 hostname HQ_AS8
16 !
17 boot-start-marker
18 boot-end-marker
19 !
20 enable secret 5 $1$Y608$1fI5zZPwJGbQqIs6KgndA1
21 !
22 username ins password 0 ins@lab
23 no aaa new-model
24 system mtu routing 1500
25 !
26 !

```

```
27 | !
28 | !
29 | crypto pki trustpoint HTTPS_SS_CERT_KEYPAIR
30 |   enrollment selfsigned
31 |   serial-number
32 |   revocation-check none
33 |   rsakeypair HTTPS_SS_CERT_KEYPAIR
34 | !
35 | !
36 | crypto pki certificate chain HTTPS_SS_CERT_KEYPAIR
37 |   certificate self-signed 01
38 |   quit
39 | !
40 | !
41 | !
42 | !
43 | !
44 | spanning-tree mode pvst
45 | spanning-tree extend system-id
46 | !
47 | vlan internal allocation policy ascending
48 | !
49 | !
50 | !
51 | !
52 | !
53 | !
54 | interface Port-channel1
55 |   switchport mode trunk
56 | !
57 | interface FastEthernet0/1
58 |   switchport mode trunk
59 |   channel-group 1 mode on
60 | !
61 | interface FastEthernet0/2
62 |   switchport mode trunk
63 |   channel-group 1 mode on
64 | !
65 | interface FastEthernet0/3
66 |   switchport access vlan 20
67 |   switchport mode access
68 |   spanning-tree portfast
69 | !
70 | interface FastEthernet0/4
71 |   switchport access vlan 20
72 |   switchport mode access
73 |   spanning-tree portfast
74 | !
75 | interface FastEthernet0/5
76 |   switchport access vlan 20
77 |   switchport mode access
78 |   spanning-tree portfast
79 | !
80 | interface FastEthernet0/6
81 |   switchport access vlan 20
82 |   switchport mode access
83 |   spanning-tree portfast
84 | !
85 | interface FastEthernet0/7
86 |   switchport access vlan 20
87 |   switchport mode access
88 |   spanning-tree portfast
```

```
89 | !
90 | interface FastEthernet0/8
91 |   switchport access vlan 20
92 |   switchport mode access
93 |   spanning-tree portfast
94 | !
95 | interface FastEthernet0/9
96 |   switchport access vlan 20
97 |   switchport mode access
98 |   spanning-tree portfast
99 | !
100 | interface FastEthernet0/10
101 |   switchport access vlan 20
102 |   switchport mode access
103 |   spanning-tree portfast
104 | !
105 | interface FastEthernet0/11
106 |   switchport access vlan 20
107 |   switchport mode access
108 |   spanning-tree portfast
109 | !
110 | interface FastEthernet0/12
111 |   switchport access vlan 20
112 |   switchport mode access
113 |   spanning-tree portfast
114 | !
115 | interface FastEthernet0/13
116 |   switchport access vlan 20
117 |   switchport mode access
118 |   spanning-tree portfast
119 | !
120 | interface FastEthernet0/14
121 |   switchport access vlan 20
122 |   switchport mode access
123 |   spanning-tree portfast
124 | !
125 | interface FastEthernet0/15
126 |   switchport access vlan 20
127 |   switchport mode access
128 |   spanning-tree portfast
129 | !
130 | interface FastEthernet0/16
131 |   switchport access vlan 20
132 |   switchport mode access
133 |   spanning-tree portfast
134 | !
135 | interface FastEthernet0/17
136 |   switchport access vlan 20
137 |   switchport mode access
138 |   spanning-tree portfast
139 | !
140 | interface FastEthernet0/18
141 |   switchport access vlan 20
142 |   switchport mode access
143 |   spanning-tree portfast
144 | !
145 | interface FastEthernet0/19
146 |   switchport access vlan 20
147 |   switchport mode access
148 |   spanning-tree portfast
149 | !
150 | interface FastEthernet0/20
```

```

151 switchport access vlan 20
152 switchport mode access
153 spanning-tree portfast
154 !
155 interface FastEthernet0/21
156 switchport access vlan 20
157 switchport mode access
158 spanning-tree portfast
159 !
160 interface FastEthernet0/22
161 switchport access vlan 20
162 switchport mode access
163 spanning-tree portfast
164 !
165 interface FastEthernet0/23
166 switchport access vlan 20
167 switchport mode access
168 spanning-tree portfast
169 !
170 interface FastEthernet0/24
171 switchport access vlan 20
172 switchport mode access
173 spanning-tree portfast
174 !
175 interface GigabitEthernet0/1
176 !
177 interface GigabitEthernet0/2
178 !
179 interface Vlan1
180 no ip address
181 shutdown
182 !
183 interface Vlan101
184 ip address 172.16.21.3 255.255.255.0
185 !
186 ip default-gateway 172.16.21.1
187 ip http server
188 ip http secure-server
189 snmp-server community public R0
190 snmp-server community private RW
191 !
192 !
193 line con 0
194 line vty 0 4
195 password cisco
196 login
197 line vty 5 15
198 password cisco
199 login
200 !
201 end

```

A.24.2. IP Interfaces

```

1 HQ_AS8#show ip interface brief
2 Interface      IP-Address  OK? Method Status      Protocol
3 Vlan1          unassigned YES unset administratively down down
4 Vlan101        172.16.21.3 YES manual down        down
5 FastEthernet0/1 unassigned YES unset up          up
6 FastEthernet0/2 unassigned YES unset up          up

```



```

7 FastEthernet0/3 unassigned YES unset down down
8 FastEthernet0/4 unassigned YES unset down down
9 FastEthernet0/5 unassigned YES unset down down
10 FastEthernet0/6 unassigned YES unset down down
11 FastEthernet0/7 unassigned YES unset down down
12 FastEthernet0/8 unassigned YES unset down down
13 FastEthernet0/9 unassigned YES unset down down
14 FastEthernet0/10 unassigned YES unset down down
15 FastEthernet0/11 unassigned YES unset down down
16 FastEthernet0/12 unassigned YES unset down down
17 FastEthernet0/13 unassigned YES unset down down
18 FastEthernet0/14 unassigned YES unset down down
19 FastEthernet0/15 unassigned YES unset down down
20 FastEthernet0/16 unassigned YES unset down down
21 FastEthernet0/17 unassigned YES unset down down
22 FastEthernet0/18 unassigned YES unset down down
23 FastEthernet0/19 unassigned YES unset down down
24 FastEthernet0/20 unassigned YES unset down down
25 FastEthernet0/21 unassigned YES unset down down
26 FastEthernet0/22 unassigned YES unset down down
27 FastEthernet0/23 unassigned YES unset down down
28 FastEthernet0/24 unassigned YES unset down down
29 GigabitEthernet0/1 unassigned YES unset down down
30 GigabitEthernet0/2 unassigned YES unset down down
31 Port-channel1 unassigned YES unset up up

```

A.24.3. Interface Status

```

1 HQ_AS8# show interface status
2
3 Port Name Status Vlan Duplex Speed Type
4 Fa0/1 connected trunk a-full a-100 10/100BaseTX
5 Fa0/2 connected trunk a-full a-100 10/100BaseTX
6 Fa0/3 notconnect 20 auto auto 10/100BaseTX
7 Fa0/4 notconnect 20 auto auto 10/100BaseTX
8 Fa0/5 notconnect 20 auto auto 10/100BaseTX
9 Fa0/6 notconnect 20 auto auto 10/100BaseTX
10 Fa0/7 notconnect 20 auto auto 10/100BaseTX
11 Fa0/8 notconnect 20 auto auto 10/100BaseTX
12 Fa0/9 notconnect 20 auto auto 10/100BaseTX
13 Fa0/10 notconnect 20 auto auto 10/100BaseTX
14 Fa0/11 notconnect 20 auto auto 10/100BaseTX
15 Fa0/12 notconnect 20 auto auto 10/100BaseTX
16 Fa0/13 notconnect 20 auto auto 10/100BaseTX
17 Fa0/14 notconnect 20 auto auto 10/100BaseTX
18 Fa0/15 notconnect 20 auto auto 10/100BaseTX
19 Fa0/16 notconnect 20 auto auto 10/100BaseTX
20 Fa0/17 notconnect 20 auto auto 10/100BaseTX
21 Fa0/18 notconnect 20 auto auto 10/100BaseTX
22 Fa0/19 notconnect 20 auto auto 10/100BaseTX
23 Fa0/20 notconnect 20 auto auto 10/100BaseTX
24 Fa0/21 notconnect 20 auto auto 10/100BaseTX
25
26 Port Name Status Vlan Duplex Speed Type
27 Fa0/22 notconnect 20 auto auto 10/100BaseTX
28 Fa0/23 notconnect 20 auto auto 10/100BaseTX
29 Fa0/24 notconnect 20 auto auto 10/100BaseTX
30 Gi0/1 notconnect 1 auto auto Not Present
31 Gi0/2 notconnect 1 auto auto Not Present
32 Po1 connected trunk a-full a-100

```

A.24.4. Interface Trunk

```

1 HQ_AS8#show interface trunk
2
3 Port      Mode      Encapsulation Status Native vlan
4 Po1       on        802.1q      trunking  1
5
6 Port      Vlans allowed on trunk
7 Po1       1-4094
8
9 Port      Vlans allowed and active in management domain
10 Po1       1,31
11
12 Port      Vlans in spanning tree forwarding state and not pruned
13 Po1       1,31

```

A.24.5. Neighbors

```

1 HQ_AS8#show cdp neighbors
2 Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
3                   S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone,
4                   D - Remote, C - CVTA, M - Two-port Mac Relay
5
6 Device ID    Local Intrfce Holdtme Capability Platform Port ID
7 HQ_DS3       Fas 0/2      175          R S I WS-C3560- Fas 0/16
8 HQ_DS3       Fas 0/1      172          R S I WS-C3560- Fas 0/15

```

A.24.6. IP Route

```

1 HQ_AS8#show ip route
2 ^
3 % Invalid input detected at '^' marker.

```

A.24.7. Spanning Tree

```

1 HQ_AS8#show spanning
2
3 VLAN0001
4   Spanning tree enabled protocol ieee
5   Root ID Priority 32769
6     Address 001a.2fd4.4000
7     Cost    12
8     Port    64 (Port-channel1)
9     Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
10
11   Bridge ID Priority 32769 (priority 32768 sys-id-ext 1)
12     Address f025.72f9.eb80
13     Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
14     Aging Time 300 sec
15
16 Interface      Role Sts Cost Prio.Nbr Type
17 -----
18 Po1             Root FWD 12  128.64 P2p
19
20

```

```

21 VLAN0031
22   Spanning tree enabled protocol ieee
23   Root ID Priority 32799
24     Address 001a.2fd4.4000
25     Cost    12
26     Port    64 (Port-channel1)
27     Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
28
29   Bridge ID Priority 32799 (priority 32768 sys-id-ext 31)
30     Address f025.72f9.eb80
31     Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
32     Aging Time 300 sec
33
34 Interface      Role Sts Cost Prio.Nbr Type
35 -----
36 Po1             Root FWD 12   128.64 P2p
37

```

A.24.8. VLAN

```

1 HQ_AS8#show vlan
2
3 VLAN Name                Status Ports
4 -----
5 1  default                active Gi0/1, Gi0/2
6 31 VLAN0031              active
7 1002 fddi-default        act/unsup
8 1003 token-ring-default  act/unsup
9 1004 fddinet-default     act/unsup
10 1005 trnet-default       act/unsup
11
12 VLAN Type SAID    MTU  Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2
13 -----
14 1  enet 100001 1500 -    -    -    -    -    0    0
15 31 enet 100031 1500 -    -    -    -    -    0    0
16 1002 fddi 101002 1500 -    -    -    -    -    0    0
17 1003 tr 101003 1500 -    -    -    -    srb  0    0
18 1004 fdnet 101004 1500 -    -    -    -    ieee -    0    0
19 1005 trnet 101005 1500 -    -    -    -    ibm  -    0    0
20
21 Remote SPAN VLANs
22 -----
23
24 Primary Secondary Type      Ports
25 -----
26

```

A.25. HQ-AS9

A.25.1. Running Configuration

```

1 HQ_AS9#show run
2 Building configuration...
3
4 Current configuration : 3588 bytes
5 !
6 ! Last configuration change at 08:15:48 UTC Mon Mar 1 1993
7 !

```

```
8 version 15.0
9 no service pad
10 service timestamps debug datetime msec
11 service timestamps log datetime msec
12 no service password-encryption
13 service sequence-numbers
14 !
15 hostname HQ_AS9
16 !
17 boot-start-marker
18 boot-end-marker
19 !
20 enable secret 5 $1$Y2Qg$IGc5ZVwjnbouE7BBZ3.2b.
21 !
22 username ins password 0 ins@lab
23 no aaa new-model
24 system mtu routing 1500
25 !
26 !
27 !
28 !
29 crypto pki trustpoint TP-self-signed-889775872
30 enrollment selfsigned
31 subject-name cn=IOS-Self-Signed-Certificate-889775872
32 revocation-check none
33 rsakeypair TP-self-signed-889775872
34 !
35 !
36 crypto pki certificate chain TP-self-signed-889775872
37 certificate self-signed 01
38     quit
39 !
40 !
41 !
42 !
43 !
44 spanning-tree mode pvst
45 spanning-tree extend system-id
46 !
47 vlan internal allocation policy ascending
48 !
49 !
50 !
51 !
52 !
53 !
54 !
55 !
56 !
57 !
58 !
59 !
60 !
61 !
62 interface FastEthernet0/1
63 !
64 interface FastEthernet0/2
65 !
66 interface FastEthernet0/3
67     switchport access vlan 20
68     switchport mode access
69     spanning-tree portfast
```

```
70 | !
71 | interface FastEthernet0/4
72 |   switchport access vlan 20
73 |   switchport mode access
74 |   spanning-tree portfast
75 | !
76 | interface FastEthernet0/5
77 |   switchport access vlan 20
78 |   switchport mode access
79 |   spanning-tree portfast
80 | !
81 | interface FastEthernet0/6
82 |   switchport access vlan 20
83 |   switchport mode access
84 |   spanning-tree portfast
85 | !
86 | interface FastEthernet0/7
87 |   switchport access vlan 20
88 |   switchport mode access
89 |   spanning-tree portfast
90 | !
91 | interface FastEthernet0/8
92 |   switchport access vlan 20
93 |   switchport mode access
94 |   spanning-tree portfast
95 | !
96 | interface FastEthernet0/9
97 |   switchport access vlan 20
98 |   switchport mode access
99 |   spanning-tree portfast
100 | !
101 | interface FastEthernet0/10
102 |   switchport access vlan 20
103 |   switchport mode access
104 |   spanning-tree portfast
105 | !
106 | interface FastEthernet0/11
107 |   switchport access vlan 20
108 |   switchport mode access
109 |   spanning-tree portfast
110 | !
111 | interface FastEthernet0/12
112 |   switchport access vlan 20
113 |   switchport mode access
114 |   spanning-tree portfast
115 | !
116 | interface FastEthernet0/13
117 |   switchport access vlan 20
118 |   switchport mode access
119 |   spanning-tree portfast
120 | !
121 | interface FastEthernet0/14
122 |   switchport access vlan 20
123 |   switchport mode access
124 |   spanning-tree portfast
125 | !
126 | interface FastEthernet0/15
127 |   switchport access vlan 20
128 |   switchport mode access
129 |   spanning-tree portfast
130 | !
131 | interface FastEthernet0/16
```

```
132 switchport access vlan 10
133 switchport mode access
134 spanning-tree portfast
135 !
136 interface FastEthernet0/17
137 switchport access vlan 10
138 switchport mode access
139 spanning-tree portfast
140 !
141 interface FastEthernet0/18
142 switchport access vlan 10
143 switchport mode access
144 spanning-tree portfast
145 !
146 interface FastEthernet0/19
147 switchport access vlan 10
148 switchport mode access
149 spanning-tree portfast
150 !
151 interface FastEthernet0/20
152 switchport access vlan 10
153 switchport mode access
154 spanning-tree portfast
155 !
156 interface FastEthernet0/21
157 switchport access vlan 10
158 switchport mode access
159 spanning-tree portfast
160 !
161 interface FastEthernet0/22
162 switchport access vlan 10
163 switchport mode access
164 spanning-tree portfast
165 !
166 interface FastEthernet0/23
167 switchport access vlan 10
168 switchport mode access
169 spanning-tree portfast
170 !
171 interface FastEthernet0/24
172 switchport access vlan 10
173 switchport mode access
174 spanning-tree portfast
175 !
176 interface GigabitEthernet0/1
177 !
178 interface GigabitEthernet0/2
179 !
180 interface Vlan1
181 no ip address
182 shutdown
183 !
184 interface Vlan101
185 ip address 172.16.21.4 255.255.255.0
186 !
187 ip default-gateway 172.16.21.1
188 ip http server
189 ip http secure-server
190 !
191 !
192 ip sla enable reaction-alerts
193 snmp-server community public R0
```

```

194 snmp-server community private RW
195 !
196 !
197 line con 0
198 line vty 0 4
199 password cisco
200 login
201 line vty 5 15
202 password cisco
203 login
204 !
205 end

```

A.25.2. IP Interfaces

```

1 HQ_AS9#show ip interface brief
2 Interface      IP-Address  OK? Method Status      Protocol
3 Vlan1          unassigned YES unset administratively down down
4 Vlan101        172.16.21.4 YES manual down        down
5 FastEthernet0/1 unassigned YES unset up          up
6 FastEthernet0/2 unassigned YES unset up          up
7 FastEthernet0/3 unassigned YES unset down        down
8 FastEthernet0/4 unassigned YES unset down        down
9 FastEthernet0/5 unassigned YES unset down        down
10 FastEthernet0/6 unassigned YES unset down        down
11 FastEthernet0/7 unassigned YES unset down        down
12 FastEthernet0/8 unassigned YES unset down        down
13 FastEthernet0/9 unassigned YES unset down        down
14 FastEthernet0/10 unassigned YES unset down        down
15 FastEthernet0/11 unassigned YES unset down        down
16 FastEthernet0/12 unassigned YES unset down        down
17 FastEthernet0/13 unassigned YES unset down        down
18 FastEthernet0/14 unassigned YES unset down        down
19 FastEthernet0/15 unassigned YES unset down        down
20 FastEthernet0/16 unassigned YES unset down        down
21 FastEthernet0/17 unassigned YES unset down        down
22 FastEthernet0/18 unassigned YES unset down        down
23 FastEthernet0/19 unassigned YES unset down        down
24 FastEthernet0/20 unassigned YES unset down        down
25 FastEthernet0/21 unassigned YES unset down        down
26 FastEthernet0/22 unassigned YES unset down        down
27 FastEthernet0/23 unassigned YES unset down        down
28 FastEthernet0/24 unassigned YES unset down        down
29 GigabitEthernet0/1 unassigned YES unset down        down
30 GigabitEthernet0/2 unassigned YES unset down        down

```

A.25.3. Interface Status

```

1 HQ_AS9# show interface status
2
3 Port      Name      Status      Vlan      Duplex Speed Type
4 Fa0/1     connected trunk    a-full a-100 10/100BaseTX
5 Fa0/2     connected trunk    a-full a-100 10/100BaseTX
6 Fa0/3     notconnect 20         auto auto 10/100BaseTX
7 Fa0/4     notconnect 20         auto auto 10/100BaseTX
8 Fa0/5     notconnect 20         auto auto 10/100BaseTX
9 Fa0/6     notconnect 20         auto auto 10/100BaseTX
10 Fa0/7     notconnect 20         auto auto 10/100BaseTX

```

```

11 Fa0/8          notconnect 20      auto auto 10/100BaseTX
12 Fa0/9          notconnect 20      auto auto 10/100BaseTX
13 Fa0/10         notconnect 20      auto auto 10/100BaseTX
14 Fa0/11         notconnect 20      auto auto 10/100BaseTX
15 Fa0/12         notconnect 20      auto auto 10/100BaseTX
16 Fa0/13         notconnect 20      auto auto 10/100BaseTX
17 Fa0/14         notconnect 20      auto auto 10/100BaseTX
18 Fa0/15         notconnect 20      auto auto 10/100BaseTX
19 Fa0/16         notconnect 10      auto auto 10/100BaseTX
20 Fa0/17         notconnect 10      auto auto 10/100BaseTX
21 Fa0/18         notconnect 10      auto auto 10/100BaseTX
22 Fa0/19         notconnect 10      auto auto 10/100BaseTX
23 Fa0/20         notconnect 10      auto auto 10/100BaseTX
24 Fa0/21         notconnect 10      auto auto 10/100BaseTX
25
26 Port  Name      Status  Vlan  Duplex Speed Type
27 Fa0/22         notconnect 10      auto auto 10/100BaseTX
28 Fa0/23         notconnect 10      auto auto 10/100BaseTX
29 Fa0/24         notconnect 10      auto auto 10/100BaseTX
30 Gi0/1          notconnect 1       auto auto Not Present
31 Gi0/2          notconnect 1       auto auto Not Present

```

A.25.4. Interface Trunk

```

1 HQ_AS9#show interface trunk
2
3 Port      Mode      Encapsulation Status  Native vlan
4 Fa0/1     auto      n-802.1q   trunking 1
5 Fa0/2     auto      n-802.1q   trunking 1
6
7 Port      Vlans allowed on trunk
8 Fa0/1     1-4094
9 Fa0/2     1-4094
10
11 Port      Vlans allowed and active in management domain
12 Fa0/1     1,31
13 Fa0/2     1,31
14
15 Port      Vlans in spanning tree forwarding state and not pruned
16 Fa0/1     1,31
17 Fa0/2     none

```

A.25.5. Neighbors

```

1 HQ_AS9#show cdp neighbors
2 Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
3                   S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone,
4                   D - Remote, C - CVTA, M - Two-port Mac Relay
5
6 Device ID    Local Intrfce Holdtme Capability Platform Port ID
7 HQ_DS3      Fas 0/1      122      R S I WS-C3560- Fas 0/17
8 HQ_DS3      Fas 0/2      122      R S I WS-C3560- Fas 0/18

```

A.25.6. IP Route


```

1 HQ_AS9#show ip route
2 Default gateway is 172.16.21.1
3
4 Host          Gateway      Last Use Total Uses Interface
5 ICMP redirect cache is empty

```

A.25.7. Spanning Tree

```

1 HQ_AS9#show spanning
2
3 VLAN0001
4   Spanning tree enabled protocol ieee
5   Root ID Priority 32769
6       Address 001a.2fd4.4000
7       Cost    19
8       Port    3 (FastEthernet0/1)
9       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
10
11   Bridge ID Priority 32769 (priority 32768 sys-id-ext 1)
12       Address 24b6.572a.e000
13       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
14       Aging Time 300 sec
15
16   Interface      Role Sts Cost Prio.Nbr Type
17   -----
18   Fa0/1          Root FWD 19   128.3 P2p
19   Fa0/2          Altn BLK 19   128.4 P2p
20
21
22
23 VLAN0031
24   Spanning tree enabled protocol ieee
25   Root ID Priority 32799
26       Address 001a.2fd4.4000
27       Cost    19
28       Port    3 (FastEthernet0/1)
29       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
30
31   Bridge ID Priority 32799 (priority 32768 sys-id-ext 31)
32       Address 24b6.572a.e000
33       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
34       Aging Time 300 sec
35
36   Interface      Role Sts Cost Prio.Nbr Type
37   -----
38   Fa0/1          Root FWD 19   128.3 P2p
39   Fa0/2          Altn BLK 19   128.4 P2p

```

A.25.8. VLAN

```

1 Q_AS9#show vlan
2
3 VLAN Name                Status Ports
4 -----
5 1  default                active Gi0/1, Gi0/2
6 31 VLAN0031              active
7 1002 fddi-default        act/unsup

```

```

8 1003 token-ring-default      act/unsup
9 1004 fddinet-default        act/unsup
10 1005 trnet-default          act/unsup
11
12 VLAN Type SAID  MTU  Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
13 -----
14 1  enet 100001 1500 -   -   -   -   -   0    0
15 31 enet 100031 1500 -   -   -   -   -   0    0
16 1002 fddi 101002 1500 -   -   -   -   -   0    0
17 1003 tr 101003 1500 -   -   -   -   srb  0    0
18 1004 fdnet 101004 1500 -   -   -   ieee -   0    0
19 1005 trnet 101005 1500 -   -   -   ibm  -   0    0
20
21 Remote SPAN VLANs
22 -----
23
24
25 Primary Secondary Type      Ports
26 -----

```

A.26. HQ-AS10

A.26.1. Running Configuration

```

1 HQ_AS10#show run
2 Building configuration...
3
4 Current configuration : 3569 bytes
5 !
6 ! Last configuration change at 08:07:59 UTC Mon Mar 1 1993
7 !
8 version 15.0
9 no service pad
10 service timestamps debug datetime msec
11 service timestamps log datetime msec
12 no service password-encryption
13 service sequence-numbers
14 !
15 hostname HQ_AS10
16 !
17 boot-start-marker
18 boot-end-marker
19 !
20 enable secret 5 $1$VvXB$dZ2E13oaZ1BEYVi0W5y4K/
21 !
22 username ins password 0 ins@lab
23 no aaa new-model
24 system mtu routing 1500
25 !
26 !
27 !
28 !
29 crypto pki trustpoint TP-self-signed-1926335104
30 enrollment selfsigned
31 subject-name cn=IOS-Self-Signed-Certificate-1926335104
32 revocation-check none
33 rsa-keypair TP-self-signed-1926335104
34 !
35 !
36 crypto pki certificate chain TP-self-signed-1926335104

```

```
37 certificate self-signed 01
38     quit
39 !
40 !
41 !
42 !
43 !
44 spanning-tree mode pvst
45 spanning-tree extend system-id
46 !
47 vlan internal allocation policy ascending
48 !
49 !
50 !
51 !
52 !
53 !
54 !
55 !
56 !
57 !
58 !
59 !
60 !
61 !
62 interface Port-channel2
63     switchport trunk encapsulation dot1q
64     switchport mode trunk
65 !
66 interface FastEthernet0/1
67     switchport trunk encapsulation dot1q
68     switchport mode trunk
69     channel-group 2 mode on
70 !
71 interface FastEthernet0/2
72     switchport trunk encapsulation dot1q
73     switchport mode trunk
74     channel-group 2 mode on
75 !
76 interface FastEthernet0/3
77     switchport access vlan 11
78     switchport mode access
79     spanning-tree portfast
80 !
81 interface FastEthernet0/4
82     switchport access vlan 11
83     switchport mode access
84     spanning-tree portfast
85 !
86 interface FastEthernet0/5
87     switchport access vlan 11
88     switchport mode access
89     spanning-tree portfast
90 !
91 interface FastEthernet0/6
92     switchport access vlan 11
93     switchport mode access
94     spanning-tree portfast
95 !
96 interface FastEthernet0/7
97     switchport access vlan 11
98     switchport mode access
```

```
99 spanning-tree portfast
100 !
101 interface FastEthernet0/8
102 switchport access vlan 11
103 switchport mode access
104 spanning-tree portfast
105 !
106 interface FastEthernet0/9
107 switchport access vlan 11
108 switchport mode access
109 spanning-tree portfast
110 !
111 interface FastEthernet0/10
112 switchport access vlan 11
113 switchport mode access
114 spanning-tree portfast
115 !
116 interface FastEthernet0/11
117 switchport access vlan 11
118 switchport mode access
119 spanning-tree portfast
120 !
121 interface FastEthernet0/12
122 switchport access vlan 11
123 switchport mode access
124 spanning-tree portfast
125 !
126 interface FastEthernet0/13
127 switchport access vlan 11
128 switchport mode access
129 spanning-tree portfast
130 !
131 interface FastEthernet0/14
132 switchport access vlan 11
133 switchport mode access
134 spanning-tree portfast
135 !
136 interface FastEthernet0/15
137 switchport access vlan 11
138 switchport mode access
139 spanning-tree portfast
140 !
141 interface FastEthernet0/16
142 switchport access vlan 11
143 switchport mode access
144 spanning-tree portfast
145 !
146 interface FastEthernet0/17
147 switchport access vlan 11
148 switchport mode access
149 spanning-tree portfast
150 !
151 interface FastEthernet0/18
152 switchport access vlan 11
153 switchport mode access
154 spanning-tree portfast
155 !
156 interface FastEthernet0/19
157 switchport access vlan 11
158 switchport mode access
159 spanning-tree portfast
160 !
```

```

161 interface FastEthernet0/20
162   switchport access vlan 11
163   switchport mode access
164   spanning-tree portfast
165   !
166 interface FastEthernet0/21
167   switchport access vlan 11
168   switchport mode access
169   spanning-tree portfast
170   !
171 interface FastEthernet0/22
172   switchport access vlan 11
173   switchport mode access
174   spanning-tree portfast
175   !
176 interface FastEthernet0/23
177   switchport access vlan 11
178   switchport mode access
179   !
180 interface FastEthernet0/24
181   !
182 interface GigabitEthernet0/1
183   !
184 interface GigabitEthernet0/2
185   !
186 interface Vlan1
187   no ip address
188   shutdown
189   !
190 ip http server
191 ip http secure-server
192   !
193   !
194   !
195   !
196 line con 0
197 line vty 0 4
198   password cisco
199   login
200 line vty 5 15
201   password cisco
202   login
203   !
204 end

```

A.26.2. IP Interfaces

```

1 HQ-AS10#show ip interface brief
2 Interface      IP-Address  OK? Method Status      Protocol
3 Vlan1          unassigned YES unset administratively down down
4 FastEthernet0/1 unassigned YES unset up          up
5 FastEthernet0/2 unassigned YES unset up          up
6 FastEthernet0/3 unassigned YES unset down        down
7 FastEthernet0/4 unassigned YES unset down        down
8 FastEthernet0/5 unassigned YES unset down        down
9 FastEthernet0/6 unassigned YES unset down        down
10 FastEthernet0/7 unassigned YES unset down        down
11 FastEthernet0/8 unassigned YES unset down        down
12 FastEthernet0/9 unassigned YES unset down        down
13 FastEthernet0/10 unassigned YES unset down        down

```

```

14 FastEthernet0/11 unassigned YES unset down down
15 FastEthernet0/12 unassigned YES unset down down
16 FastEthernet0/13 unassigned YES unset down down
17 FastEthernet0/14 unassigned YES unset down down
18 FastEthernet0/15 unassigned YES unset down down
19 FastEthernet0/16 unassigned YES unset down down
20 FastEthernet0/17 unassigned YES unset down down
21 FastEthernet0/18 unassigned YES unset down down
22 FastEthernet0/19 unassigned YES unset down down
23 FastEthernet0/20 unassigned YES unset down down
24 FastEthernet0/21 unassigned YES unset down down
25 FastEthernet0/22 unassigned YES unset down down
26 FastEthernet0/23 unassigned YES unset down down
27 FastEthernet0/24 unassigned YES unset down down
28 GigabitEthernet0/1 unassigned YES unset down down
29 GigabitEthernet0/2 unassigned YES unset down down
30 Port-channel2 unassigned YES unset up up

```

A.26.3. Interface Status

```

1 HQ_AS10#show interface status
2
3 Port      Name      Status    Vlan    Duplex Speed Type
4 Fa0/1      connected trunk    a-full a-100 10/100BaseTX
5 Fa0/2      connected trunk    a-full a-100 10/100BaseTX
6 Fa0/3      notconnect 11        auto auto 10/100BaseTX
7 Fa0/4      notconnect 11        auto auto 10/100BaseTX
8 Fa0/5      notconnect 11        auto auto 10/100BaseTX
9 Fa0/6      notconnect 11        auto auto 10/100BaseTX
10 Fa0/7      notconnect 11        auto auto 10/100BaseTX
11 Fa0/8      notconnect 11        auto auto 10/100BaseTX
12 Fa0/9      notconnect 11        auto auto 10/100BaseTX
13 Fa0/10     notconnect 11        auto auto 10/100BaseTX
14 Fa0/11     notconnect 11        auto auto 10/100BaseTX
15 Fa0/12     notconnect 11        auto auto 10/100BaseTX
16 Fa0/13     notconnect 11        auto auto 10/100BaseTX
17 Fa0/14     notconnect 11        auto auto 10/100BaseTX
18 Fa0/15     notconnect 11        auto auto 10/100BaseTX
19 Fa0/16     notconnect 11        auto auto 10/100BaseTX
20 Fa0/17     notconnect 11        auto auto 10/100BaseTX
21 Fa0/18     notconnect 11        auto auto 10/100BaseTX
22 Fa0/19     notconnect 11        auto auto 10/100BaseTX
23 Fa0/20     notconnect 11        auto auto 10/100BaseTX
24 Fa0/21     notconnect 11        auto auto 10/100BaseTX
25
26 Port      Name      Status    Vlan    Duplex Speed Type
27 Fa0/22     notconnect 11        auto auto 10/100BaseTX
28 Fa0/23     notconnect 11        auto auto 10/100BaseTX
29 Fa0/24     notconnect 1        auto auto 10/100BaseTX
30 Gi0/1      notconnect 1        auto auto Not Present
31 Gi0/2      notconnect 1        auto auto Not Present
32 Po2        connected trunk    a-full a-100

```

A.26.4. Interface Trunk

```

1 HQ_AS10#show interface trunk
2
3 Port      Mode      Encapsulation Status Native vlan

```

```

4 Po2      on          802.1q      trunking  1
5
6 Port      Vlans allowed on trunk
7 Po2      1-4094
8
9 Port      Vlans allowed and active in management domain
10 Po2     1,31
11
12 Port      Vlans in spanning tree forwarding state and not pruned
13 Po2     1,31

```

A.26.5. Neighbors

```

1 HQ_AS10# show cdp neighbors
2 Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
3                   S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone,
4                   D - Remote, C - CVTA, M - Two-port Mac Relay
5
6 Device ID    Local Intfcae Holdtme Capability Platform Port ID
7 HQ_DS3      Fas 0/2      124          R S I WS-C3560- Fas 0/20
8 HQ_DS3      Fas 0/1      124          R S I WS-C3560- Fas 0/19

```

A.26.6. IP Route

```

1 HQ_AS10#show ip route
2 Default gateway is not set
3
4 Host          Gateway      Last Use Total Uses Interface
5 ICMP redirect cache is empty

```

A.26.7. Spanning Tree

```

1 HQ_AS10#show spanning
2
3 VLAN0001
4   Spanning tree enabled protocol ieee
5   Root ID Priority 32769
6       Address 001a.2fd4.4000
7       Cost    12
8       Port    72 (Port-channel2)
9       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
10
11   Bridge ID Priority 32769 (priority 32768 sys-id-ext 1)
12       Address 24b6.5725.db00
13       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
14       Aging Time 300 sec
15
16 Interface      Role Sts Cost Prio.Nbr Type
17 -----
18 Po2            Root FWD 12   128.72 P2p
19
20
21
22 VLAN0031
23   Spanning tree enabled protocol ieee
24   Root ID Priority 32799

```

```

25      Address  001a.2fd4.4000
26      Cost     12
27      Port     72 (Port-channel2)
28      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
29
30      Bridge ID Priority 32799 (priority 32768 sys-id-ext 31)
31      Address  24b6.5725.db00
32      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
33      Aging Time 300 sec
34
35      Interface      Role Sts Cost  Prio.Nbr Type
36      -----
37      Po2            Root FWD 12   128.72 P2p

```

A.26.8. VLAN

```

1  HQ_AS10#show vlan
2
3  VLAN Name                Status Ports
4  -----
5  1  default                 active Fa0/24, Gi0/1, Gi0/2
6  31  VLAN0031               active
7  1002 fddi-default          act/unsup
8  1003 token-ring-default    act/unsup
9  1004 fddinet-default        act/unsup
10 1005 trnet-default          act/unsup
11
12 VLAN Type SAID    MTU  Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2
13 -----
14 1  enet 100001 1500 - - - - - 0 0
15 31 enet 100031 1500 - - - - - 0 0
16 1002 fddi 101002 1500 - - - - - 0 0
17 1003 tr 101003 1500 - - - - srb 0 0
18 1004 fdnet 101004 1500 - - - - ieee - 0 0
19 1005 trnet 101005 1500 - - - - ibm - 0 0
20
21 Remote SPAN VLANs
22 -----
23
24
25 Primary Secondary Type      Ports
26 -----

```

A.27. HQ-AS11

A.27.1. Running Configuration

```

1  HQ_AS11#show run
2  Building configuration...
3
4  Current configuration : 3619 bytes
5  !
6  ! Last configuration change at 08:00:59 UTC Mon Mar 1 1993
7  !
8  version 15.0
9  no service pad
10 service timestamps debug datetime msec
11 service timestamps log datetime msec

```



```
12 no service password-encryption
13 service sequence-numbers
14 !
15 hostname HQ_AS11
16 !
17 boot-start-marker
18 boot-end-marker
19 !
20 enable secret 5 $1$j9wB$cZ0Nl.q0dLaxq5U/qhtod1
21 !
22 username ins password 0 ins@lab
23 no aaa new-model
24 system mtu routing 1500
25 vtp domain LAB4
26 vtp mode transparent
27 !
28 !
29 !
30 !
31 crypto pki trustpoint TP-self-signed-1928849024
32 enrollment selfsigned
33 subject-name cn=IOS-Self-Signed-Certificate-1928849024
34 revocation-check none
35 rsakeypair TP-self-signed-1928849024
36 !
37 !
38 crypto pki certificate chain TP-self-signed-1928849024
39 certificate self-signed 01
40     quit
41 !
42 !
43 !
44 !
45 !
46 spanning-tree mode pvst
47 spanning-tree extend system-id
48 !
49 vlan internal allocation policy ascending
50 !
51 vlan 10
52     name HR
53 !
54 vlan 20
55     name students
56 !
57 vlan 30
58     name guest
59 !
60 vlan 99
61     name management
62 !
63 vlan 101
64     name MGMT
65 !
66 !
67 !
68 !
69 !
70 !
71 interface FastEthernet0/1
72     switchport mode trunk
73 !
```

```
74 interface FastEthernet0/2
75     switchport mode trunk
76     !
77 interface FastEthernet0/3
78     switchport access vlan 10
79     switchport mode access
80     spanning-tree portfast
81     !
82 interface FastEthernet0/4
83     switchport access vlan 10
84     switchport mode access
85     spanning-tree portfast
86     !
87 interface FastEthernet0/5
88     switchport access vlan 10
89     switchport mode access
90     spanning-tree portfast
91     !
92 interface FastEthernet0/6
93     switchport access vlan 10
94     switchport mode access
95     spanning-tree portfast
96     !
97 interface FastEthernet0/7
98     switchport access vlan 10
99     switchport mode access
100    spanning-tree portfast
101    !
102 interface FastEthernet0/8
103    switchport access vlan 10
104    switchport mode access
105    spanning-tree portfast
106    !
107 interface FastEthernet0/9
108    switchport access vlan 10
109    switchport mode access
110    spanning-tree portfast
111    !
112 interface FastEthernet0/10
113    switchport access vlan 10
114    switchport mode access
115    spanning-tree portfast
116    !
117 interface FastEthernet0/11
118    switchport access vlan 10
119    switchport mode access
120    spanning-tree portfast
121    !
122 interface FastEthernet0/12
123    switchport access vlan 10
124    switchport mode access
125    spanning-tree portfast
126    !
127 interface FastEthernet0/13
128    switchport access vlan 10
129    switchport mode access
130    spanning-tree portfast
131    !
132 interface FastEthernet0/14
133    switchport access vlan 10
134    switchport mode access
135    spanning-tree portfast
```

```
136 | !
137 | interface FastEthernet0/15
138 |   switchport access vlan 10
139 |   switchport mode access
140 |   spanning-tree portfast
141 | !
142 | interface FastEthernet0/16
143 |   switchport access vlan 10
144 |   switchport mode access
145 |   spanning-tree portfast
146 | !
147 | interface FastEthernet0/17
148 |   switchport access vlan 10
149 |   switchport mode access
150 |   spanning-tree portfast
151 | !
152 | interface FastEthernet0/18
153 |   switchport access vlan 10
154 |   switchport mode access
155 |   spanning-tree portfast
156 | !
157 | interface FastEthernet0/19
158 |   switchport access vlan 10
159 |   switchport mode access
160 |   spanning-tree portfast
161 | !
162 | interface FastEthernet0/20
163 |   switchport access vlan 10
164 |   switchport mode access
165 |   spanning-tree portfast
166 | !
167 | interface FastEthernet0/21
168 |   switchport access vlan 10
169 |   switchport mode access
170 |   spanning-tree portfast
171 | !
172 | interface FastEthernet0/22
173 |   switchport access vlan 10
174 |   switchport mode access
175 |   spanning-tree portfast
176 | !
177 | interface FastEthernet0/23
178 |   switchport access vlan 10
179 |   switchport mode access
180 |   spanning-tree portfast
181 | !
182 | interface FastEthernet0/24
183 |   switchport access vlan 10
184 |   switchport mode access
185 |   spanning-tree portfast
186 | !
187 | interface GigabitEthernet0/1
188 | !
189 | interface GigabitEthernet0/2
190 | !
191 | interface Vlan1
192 |   no ip address
193 |   shutdown
194 | !
195 | ip http server
196 | ip http secure-server
197 | snmp-server community private RW
```

```

198 !
199 !
200 line con 0
201 line vty 0 4
202 password cisco
203 login
204 line vty 5 15
205 password cisco
206 login
207 !
208 end

```

A.27.2. IP Interfaces

```

1 HQ_AS11#show ip interface brief
2 Interface      IP-Address  OK? Method Status      Protocol
3 Vlan1          unassigned YES  unset administratively down down
4 FastEthernet0/1 unassigned YES  unset up        up
5 FastEthernet0/2 unassigned YES  unset up        up
6 FastEthernet0/3 unassigned YES  unset down      down
7 FastEthernet0/4 unassigned YES  unset down      down
8 FastEthernet0/5 unassigned YES  unset down      down
9 FastEthernet0/6 unassigned YES  unset down      down
10 FastEthernet0/7 unassigned YES  unset down      down
11 FastEthernet0/8 unassigned YES  unset down      down
12 FastEthernet0/9 unassigned YES  unset down      down
13 FastEthernet0/10 unassigned YES  unset down      down
14 FastEthernet0/11 unassigned YES  unset down      down
15 FastEthernet0/12 unassigned YES  unset down      down
16 FastEthernet0/13 unassigned YES  unset down      down
17 FastEthernet0/14 unassigned YES  unset down      down
18 FastEthernet0/15 unassigned YES  unset down      down
19 FastEthernet0/16 unassigned YES  unset down      down
20 FastEthernet0/17 unassigned YES  unset down      down
21 FastEthernet0/18 unassigned YES  unset down      down
22 FastEthernet0/19 unassigned YES  unset down      down
23 FastEthernet0/20 unassigned YES  unset down      down
24 FastEthernet0/21 unassigned YES  unset down      down
25 FastEthernet0/22 unassigned YES  unset down      down
26 FastEthernet0/23 unassigned YES  unset down      down
27 FastEthernet0/24 unassigned YES  unset down      down
28 GigabitEthernet0/1 unassigned YES  unset down      down
29 GigabitEthernet0/2 unassigned YES  unset down      down

```

A.27.3. Interface Status

```

1 HQ_AS11#show interface status
2
3 Port      Name      Status      Vlan      Duplex Speed Type
4 Fa0/1     connected trunk a-full a-100 10/100BaseTX
5 Fa0/2     connected trunk a-full a-100 10/100BaseTX
6 Fa0/3     notconnect 10         auto auto 10/100BaseTX
7 Fa0/4     notconnect 10         auto auto 10/100BaseTX
8 Fa0/5     notconnect 10         auto auto 10/100BaseTX
9 Fa0/6     notconnect 10         auto auto 10/100BaseTX
10 Fa0/7     notconnect 10         auto auto 10/100BaseTX
11 Fa0/8     notconnect 10         auto auto 10/100BaseTX
12 Fa0/9     notconnect 10         auto auto 10/100BaseTX

```

```

13 Fa0/10          notconnect 10      auto auto 10/100BaseTX
14 Fa0/11          notconnect 10      auto auto 10/100BaseTX
15 Fa0/12          notconnect 10      auto auto 10/100BaseTX
16 Fa0/13          notconnect 10      auto auto 10/100BaseTX
17 Fa0/14          notconnect 10      auto auto 10/100BaseTX
18 Fa0/15          notconnect 10      auto auto 10/100BaseTX
19 Fa0/16          notconnect 10      auto auto 10/100BaseTX
20 Fa0/17          notconnect 10      auto auto 10/100BaseTX
21 Fa0/18          notconnect 10      auto auto 10/100BaseTX
22 Fa0/19          notconnect 10      auto auto 10/100BaseTX
23 Fa0/20          notconnect 10      auto auto 10/100BaseTX
24 Fa0/21          notconnect 10      auto auto 10/100BaseTX
25
26 Port   Name      Status   Vlan    Duplex Speed Type
27 Fa0/22  notconnect 10      auto   auto 10/100BaseTX
28 Fa0/23  notconnect 10      auto   auto 10/100BaseTX
29 Fa0/24  notconnect 10      auto   auto 10/100BaseTX
30 Gi0/1   notconnect 1       auto   auto Not Present
31 Gi0/2   notconnect 1       auto   auto Not Present

```

A.27.4. Interface Trunk

```

1 HQ_AS11# show interface trunk
2
3 Port      Mode      Encapsulation Status Native vlan
4 Fa0/1     on        802.1q      trunking  1
5 Fa0/2     on        802.1q      trunking  1
6
7 Port      Vlans allowed on trunk
8 Fa0/1     1-4094
9 Fa0/2     1-4094
10
11 Port      Vlans allowed and active in management domain
12 Fa0/1     1,10,20,30,99,101
13 Fa0/2     1,10,20,30,99,101
14
15 Port      Vlans in spanning tree forwarding state and not pruned
16 Fa0/1     1,10,20,30,99,101
17 Fa0/2     10,20,30,99,101

```

A.27.5. Neighbors

```

1 HQ_AS11#show cdp neighbors
2 Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
3                   S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone,
4                   D - Remote, C - CVTA, M - Two-port Mac Relay
5
6 Device ID    Local Intrfce Holdtme Capability Platform Port ID
7 HQ_DS3      Fas 0/1      159      R S I WS-C3560- Fas 0/21
8 HQ_DS3      Fas 0/2      159      R S I WS-C3560- Fas 0/22

```

A.27.6. IP Route

```

1 HQ_AS11#show ip route
2 ^
3 % Invalid input detected at '^' marker.

```

A.27.7. Spanning Tree

```

1 HQ_AS11#show spanning
2
3 VLAN0001
4   Spanning tree enabled protocol ieee
5   Root ID Priority 32769
6           Address 001a.2fd4.4000
7           Cost     19
8           Port     1 (FastEthernet0/1)
9           Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
10
11   Bridge ID Priority 32769 (priority 32768 sys-id-ext 1)
12           Address 0817.3508.f180
13           Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
14           Aging Time 300 sec
15
16   Interface      Role Sts Cost Prio.Nbr Type
17   -----
18   Fa0/1          Root FWD 19   128.1 P2p
19   Fa0/2          Altn BLK 19   128.2 P2p
20
21
22
23 VLAN0010
24   Spanning tree enabled protocol ieee
25   Root ID Priority 32778
26           Address 0817.3508.f180
27           This bridge is the root
28           Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
29
30   Bridge ID Priority 32778 (priority 32768 sys-id-ext 10)
31           Address 0817.3508.f180
32           Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
33           Aging Time 300 sec
34
35   Interface      Role Sts Cost Prio.Nbr Type
36   -----
37   Fa0/1          Desg FWD 19   128.1 P2p
38   Fa0/2          Desg FWD 19   128.2 P2p
39
40
41
42 VLAN0020
43   Spanning tree enabled protocol ieee
44   Root ID Priority 32788
45           Address 0817.3508.f180
46           This bridge is the root
47           Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
48
49   Bridge ID Priority 32788 (priority 32768 sys-id-ext 20)
50           Address 0817.3508.f180
51           Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
52           Aging Time 300 sec
53
54   Interface      Role Sts Cost Prio.Nbr Type
55   -----
56   Fa0/1          Desg FWD 19   128.1 P2p
57   Fa0/2          Desg FWD 19   128.2 P2p
58
59

```

```

60
61 VLAN0030
62   Spanning tree enabled protocol ieee
63   Root ID Priority 32798
64       Address 0817.3508.f180
65       This bridge is the root
66       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
67
68   Bridge ID Priority 32798 (priority 32768 sys-id-ext 30)
69       Address 0817.3508.f180
70       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
71       Aging Time 300 sec
72
73   Interface      Role Sts Cost Prio.Nbr Type
74   -----
75   Fa0/1          Desg FWD 19   128.1  P2p
76   Fa0/2          Desg FWD 19   128.2  P2p
77
78
79
80 VLAN0099
81   Spanning tree enabled protocol ieee
82   Root ID Priority 32867
83       Address 0817.3508.f180
84       This bridge is the root
85       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
86
87   Bridge ID Priority 32867 (priority 32768 sys-id-ext 99)
88       Address 0817.3508.f180
89       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
90       Aging Time 300 sec
91
92   Interface      Role Sts Cost Prio.Nbr Type
93   -----
94   Fa0/1          Desg FWD 19   128.1  P2p
95   Fa0/2          Desg FWD 19   128.2  P2p
96
97
98
99 VLAN0101
100   Spanning tree enabled protocol ieee
101   Root ID Priority 32869
102       Address 0817.3508.f180
103       This bridge is the root
104       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
105
106   Bridge ID Priority 32869 (priority 32768 sys-id-ext 101)
107       Address 0817.3508.f180
108       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
109       Aging Time 300 sec
110
111   Interface      Role Sts Cost Prio.Nbr Type
112   -----
113   Fa0/1          Desg FWD 19   128.1  P2p
114   Fa0/2          Desg FWD 19   128.2  P2p

```

A.27.8. VLAN

```

1 HQ_AS11#show vlan
2

```

3	VLAN Name		Status	Ports							
4	-----										
5	1	default	active	Gi0/1, Gi0/2							
6	10	HR	active	Fa0/3, Fa0/4, Fa0/5, Fa0/6							
7				Fa0/7, Fa0/8, Fa0/9, Fa0/10							
8				Fa0/11, Fa0/12, Fa0/13, Fa0/14							
9				Fa0/15, Fa0/16, Fa0/17, Fa0/18							
10				Fa0/19, Fa0/20, Fa0/21, Fa0/22							
11				Fa0/23, Fa0/24							
12	20	students	active								
13	30	guest	active								
14	99	management	active								
15	101	MGMT	active								
16	1002	fddi-default	act/unsup								
17	1003	token-ring-default	act/unsup								
18	1004	fddinet-default	act/unsup								
19	1005	trnet-default	act/unsup								
20											
21	VLAN	Type	SAID	MTU	Parent	RingNo	BridgeNo	Stp	BrdgMode	Trans1	Trans2
22	-----										
23	1	enet	100001	1500	-	-	-	-	0	0	
24	10	enet	100010	1500	-	-	-	-	0	0	
25											
26	VLAN	Type	SAID	MTU	Parent	RingNo	BridgeNo	Stp	BrdgMode	Trans1	Trans2
27	-----										
28	20	enet	100020	1500	-	-	-	-	0	0	
29	30	enet	100030	1500	-	-	-	-	0	0	
30	99	enet	100099	1500	-	-	-	-	0	0	
31	101	enet	100101	1500	-	-	-	-	0	0	
32	1002	fddi	101002	1500	-	-	-	-	0	0	
33	1003	tr	101003	1500	-	-	-	-	0	0	
34	1004	fdnet	101004	1500	-	-	-	ieee	0	0	
35	1005	trnet	101005	1500	-	-	-	ibm	0	0	
36											
37	Remote SPAN VLANs										
38	-----										
39											
40											
41	Primary	Secondary	Type	Ports							
42	-----										

A.28. HQ-AS12

A.28.1. Running Configuration

```

1 HQ_AS12#show run
2 Building configuration...
3
4 Current configuration : 3634 bytes
5 !
6 ! Last configuration change at 07:55:37 UTC Mon Mar 1 1993
7 !
8 version 15.0
9 no service pad
10 service timestamps debug datetime msec
11 service timestamps log datetime msec
12 no service password-encryption
13 service sequence-numbers
14 !
15 hostname HQ_AS12

```



```
16 |  
17 | boot-start-marker  
18 | boot-end-marker  
19 |  
20 | enable secret 5 $1$8EsQ$ZW2MewBNZIMh1iMgwJ9pr1  
21 |  
22 | username ins password 0 ins@lab  
23 | no aaa new-model  
24 | system mtu routing 1500  
25 |  
26 |  
27 |  
28 |  
29 | crypto pki trustpoint HTTPS_SS_CERT_KEYPAIR  
30 |   enrollment selfsigned  
31 |   serial-number  
32 |   revocation-check none  
33 |   rsa-keypair HTTPS_SS_CERT_KEYPAIR  
34 |  
35 |  
36 | crypto pki certificate chain HTTPS_SS_CERT_KEYPAIR  
37 |   certificate self-signed 01  
38 |     quit  
39 |  
40 |  
41 |  
42 |  
43 |  
44 | spanning-tree mode pvst  
45 | spanning-tree extend system-id  
46 |  
47 | vlan internal allocation policy ascending  
48 |  
49 |  
50 |  
51 |  
52 |  
53 |  
54 | interface Port-channel5  
55 |   switchport mode trunk  
56 |  
57 | interface FastEthernet0/1  
58 |   switchport mode trunk  
59 |   channel-group 5 mode on  
60 |  
61 | interface FastEthernet0/2  
62 |   switchport mode trunk  
63 |   channel-group 5 mode on  
64 |  
65 | interface FastEthernet0/3  
66 |   switchport access vlan 31  
67 |   switchport mode access  
68 |   spanning-tree portfast  
69 |  
70 | interface FastEthernet0/4  
71 |   switchport access vlan 31  
72 |   switchport mode access  
73 |   spanning-tree portfast  
74 |  
75 | interface FastEthernet0/5  
76 |   switchport access vlan 31  
77 |   switchport mode access
```

```
78 spanning-tree portfast
79 !
80 interface FastEthernet0/6
81 switchport access vlan 31
82 switchport mode access
83 spanning-tree portfast
84 !
85 interface FastEthernet0/7
86 switchport access vlan 31
87 switchport mode access
88 spanning-tree portfast
89 !
90 interface FastEthernet0/8
91 switchport access vlan 31
92 switchport mode access
93 spanning-tree portfast
94 !
95 interface FastEthernet0/9
96 switchport access vlan 31
97 switchport mode access
98 spanning-tree portfast
99 !
100 interface FastEthernet0/10
101 switchport access vlan 31
102 switchport mode access
103 spanning-tree portfast
104 !
105 interface FastEthernet0/11
106 switchport access vlan 31
107 switchport mode access
108 spanning-tree portfast
109 !
110 interface FastEthernet0/12
111 switchport access vlan 31
112 switchport mode access
113 spanning-tree portfast
114 !
115 interface FastEthernet0/13
116 switchport access vlan 31
117 switchport mode access
118 spanning-tree portfast
119 !
120 interface FastEthernet0/14
121 switchport access vlan 31
122 switchport mode access
123 spanning-tree portfast
124 !
125 interface FastEthernet0/15
126 switchport access vlan 31
127 switchport mode access
128 spanning-tree portfast
129 !
130 interface FastEthernet0/16
131 switchport access vlan 31
132 switchport mode access
133 spanning-tree portfast
134 !
135 interface FastEthernet0/17
136 switchport access vlan 31
137 switchport mode access
138 spanning-tree portfast
139 !
```

```
140 interface FastEthernet0/18
141   switchport access vlan 31
142   switchport mode access
143   spanning-tree portfast
144   !
145 interface FastEthernet0/19
146   switchport access vlan 31
147   switchport mode access
148   spanning-tree portfast
149   !
150 interface FastEthernet0/20
151   switchport access vlan 31
152   switchport mode access
153   spanning-tree portfast
154   !
155 interface FastEthernet0/21
156   switchport access vlan 31
157   switchport mode access
158   spanning-tree portfast
159   !
160 interface FastEthernet0/22
161   switchport access vlan 31
162   switchport mode access
163   spanning-tree portfast
164   !
165 interface FastEthernet0/23
166   switchport access vlan 31
167   switchport mode access
168   spanning-tree portfast
169   !
170 interface FastEthernet0/24
171   switchport access vlan 31
172   switchport mode access
173   spanning-tree portfast
174   !
175 interface GigabitEthernet0/1
176   !
177 interface GigabitEthernet0/2
178   !
179 interface Vlan1
180   no ip address
181   shutdown
182   !
183 interface Vlan101
184   ip address 172.16.21.7 255.255.255.0
185   !
186 ip default-gateway 172.16.21.1
187 ip http server
188 ip http secure-server
189 snmp-server community public R0
190 snmp-server community private RW
191   !
192   !
193 line con 0
194 line vty 0 4
195   password cisco
196   login
197 line vty 5 15
198   password cisco
199   login
200   !
201 end
```

A.28.2. IP Interfaces

```

1 HQ_AS12#show ip interface brief
2 Interface      IP-Address  OK? Method Status      Protocol
3 Vlan1          unassigned YES  unset administratively down down
4 Vlan101        172.16.21.7 YES  manual down        down
5 FastEthernet0/1 unassigned YES  unset up          up
6 FastEthernet0/2 unassigned YES  unset up          up
7 FastEthernet0/3 unassigned YES  unset down        down
8 FastEthernet0/4 unassigned YES  unset down        down
9 FastEthernet0/5 unassigned YES  unset down        down
10 FastEthernet0/6 unassigned YES  unset down        down
11 FastEthernet0/7 unassigned YES  unset down        down
12 FastEthernet0/8 unassigned YES  unset down        down
13 FastEthernet0/9 unassigned YES  unset down        down
14 FastEthernet0/10 unassigned YES  unset down        down
15 FastEthernet0/11 unassigned YES  unset down        down
16 FastEthernet0/12 unassigned YES  unset down        down
17 FastEthernet0/13 unassigned YES  unset down        down
18 FastEthernet0/14 unassigned YES  unset down        down
19 FastEthernet0/15 unassigned YES  unset down        down
20 FastEthernet0/16 unassigned YES  unset down        down
21 FastEthernet0/17 unassigned YES  unset down        down
22 FastEthernet0/18 unassigned YES  unset down        down
23 FastEthernet0/19 unassigned YES  unset down        down
24 FastEthernet0/20 unassigned YES  unset down        down
25 FastEthernet0/21 unassigned YES  unset down        down
26 FastEthernet0/22 unassigned YES  unset down        down
27 FastEthernet0/23 unassigned YES  unset down        down
28 FastEthernet0/24 unassigned YES  unset down        down
29 GigabitEthernet0/1 unassigned YES  unset down        down
30 GigabitEthernet0/2 unassigned YES  unset down        down
31 Port-channel5    unassigned YES  unset up          up

```

A.28.3. Interface Status

```

1 HQ_AS12#show interface status
2
3 Port    Name          Status    Vlan    Duplex Speed Type
4 Fa0/1   Name          connected trunk a-full a-100 10/100BaseTX
5 Fa0/2   Name          connected trunk a-full a-100 10/100BaseTX
6 Fa0/3   Name          notconnect 31      auto  auto 10/100BaseTX
7 Fa0/4   Name          notconnect 31      auto  auto 10/100BaseTX
8 Fa0/5   Name          notconnect 31      auto  auto 10/100BaseTX
9 Fa0/6   Name          notconnect 31      auto  auto 10/100BaseTX
10 Fa0/7   Name          notconnect 31      auto  auto 10/100BaseTX
11 Fa0/8   Name          notconnect 31      auto  auto 10/100BaseTX
12 Fa0/9   Name          notconnect 31      auto  auto 10/100BaseTX
13 Fa0/10  Name          notconnect 31      auto  auto 10/100BaseTX
14 Fa0/11  Name          notconnect 31      auto  auto 10/100BaseTX
15 Fa0/12  Name          notconnect 31      auto  auto 10/100BaseTX
16 Fa0/13  Name          notconnect 31      auto  auto 10/100BaseTX
17 Fa0/14  Name          notconnect 31      auto  auto 10/100BaseTX
18 Fa0/15  Name          notconnect 31      auto  auto 10/100BaseTX
19 Fa0/16  Name          notconnect 31      auto  auto 10/100BaseTX
20 Fa0/17  Name          notconnect 31      auto  auto 10/100BaseTX

```

```

21 Fa0/18          notconnect 31      auto auto 10/100BaseTX
22 Fa0/19          notconnect 31      auto auto 10/100BaseTX
23 Fa0/20          notconnect 31      auto auto 10/100BaseTX
24 Fa0/21          notconnect 31      auto auto 10/100BaseTX
25
26 Port   Name      Status   Vlan    Duplex Speed Type
27 Fa0/22          notconnect 31      auto auto 10/100BaseTX
28 Fa0/23          notconnect 31      auto auto 10/100BaseTX
29 Fa0/24          notconnect 31      auto auto 10/100BaseTX
30 Gi0/1          notconnect 1       auto auto Not Present
31 Gi0/2          notconnect 1       auto auto Not Present
32 Po5            connected trunk  a-full a-100

```

A.28.4. Interface Trunk

```

1 HQ_AS12#show interface trunk
2
3 Port      Mode      Encapsulation Status Native vlan
4 Po5       on        802.1q      trunking 1
5
6 Port      Vlans allowed on trunk
7 Po5       1-4094
8
9 Port      Vlans allowed and active in management domain
10 Po5       1,31
11
12 Port      Vlans in spanning tree forwarding state and not pruned
13 Po5       1,31

```

A.28.5. Neighbors

```

1 HQ_AS12# show cdp neighbors
2 Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
3                   S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone,
4                   D - Remote, C - CVTA, M - Two-port Mac Relay
5
6 Device ID    Local Intrfce Holdtme Capability Platform Port ID
7 HQ_DS3      Fas 0/2      162          R S I WS-C3560- Fas 0/24
8 HQ_DS3      Fas 0/1      162          R S I WS-C3560- Fas 0/23

```

A.28.6. IP Route

```

1 HQ_AS12#show ip route
2 ^
3 % Invalid input detected at '^' marker.

```

A.28.7. Spanning Tree

```

1 HQ_AS12#show spanning
2
3 VLAN0001
4 Spanning tree enabled protocol ieee
5 Root ID Priority 32769

```

```

6      Address 001a.2fd4.4000
7      Cost    12
8      Port    96 (Port-channel5)
9      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
10
11     Bridge ID Priority 32769 (priority 32768 sys-id-ext 1)
12       Address 0817.3508.2d80
13       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
14       Aging Time 300 sec
15
16     Interface      Role Sts Cost Prio.Nbr Type
17     -----
18     Po5            Root FWD 12   128.96 P2p
19
20
21
22     VLAN0031
23     Spanning tree enabled protocol ieee
24     Root ID Priority 32799
25       Address 001a.2fd4.4000
26       Cost    12
27       Port    96 (Port-channel5)
28       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
29
30     Bridge ID Priority 32799 (priority 32768 sys-id-ext 31)
31       Address 0817.3508.2d80
32       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
33       Aging Time 300 sec
34
35     Interface      Role Sts Cost Prio.Nbr Type
36     -----
37     Po5            Root FWD 12   128.96 P2p

```

A.28.8. VLAN

```

1 HQ_AS12#show vlan
2
3 VLAN Name                Status Ports
4 -----
5 1  default                active Gi0/1, Gi0/2
6 31 VLAN0031              active Fa0/3, Fa0/4, Fa0/5, Fa0/6
7                               Fa0/7, Fa0/8, Fa0/9, Fa0/10
8                               Fa0/11, Fa0/12, Fa0/13, Fa0/14
9                               Fa0/15, Fa0/16, Fa0/17, Fa0/18
10                              Fa0/19, Fa0/20, Fa0/21, Fa0/22
11                              Fa0/23, Fa0/24
12 1002 fddi-default        act/unsup
13 1003 token-ring-default  act/unsup
14 1004 fddinet-default     act/unsup
15 1005 trnet-default       act/unsup
16
17 VLAN Type SAID    MTU  Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2
18 -----
19 1  enet 100001 1500 -    -    -    -    -    0    0
20 31 enet 100031 1500 -    -    -    -    -    0    0
21 1002 fddi 101002 1500 -    -    -    -    -    0    0
22 1003 tr 101003 1500 -    -    -    -    -    0    0
23 1004 fdnet 101004 1500 -    -    -    ieee -    0    0
24 1005 trnet 101005 1500 -    -    -    ibm -    0    0
25

```

26	Remote SPAN VLANs			
27	-----			
28				
29				
30	Primary	Secondary	Type	Ports
31	-----			

A.29. BR1-S2

A.29.1. Running Configuration

```

1 BR1_S2#show run
2 Building configuration...
3
4 Current configuration : 2940 bytes
5 !
6 ! Last configuration change at 07:14:05 UTC Mon Mar 1 1993
7 !
8 version 15.0
9 no service pad
10 service timestamps debug datetime msec
11 service timestamps log datetime msec
12 no service password-encryption
13 !
14 hostname BR1_S2
15 !
16 boot-start-marker
17 boot-end-marker
18 !
19 enable secret 5 $1$Z7N0$gcC.KzyaWHzoy5LqlSdoJ1
20 !
21 username ins password 0 ins@lab
22 no aaa new-model
23 system mtu routing 1500
24 !
25 !
26 !
27 !
28 crypto pki trustpoint HTTPS_SS_CERT_KEYPAIR
29   enrollment selfsigned
30   serial-number
31   revocation-check none
32   rsakeypair HTTPS_SS_CERT_KEYPAIR
33 !
34 !
35 crypto pki certificate chain HTTPS_SS_CERT_KEYPAIR
36   certificate self-signed 01
37     quit
38 !
39 !
40 !
41 !
42 !
43 spanning-tree mode pvst
44 spanning-tree extend system-id
45 !
46 vlan internal allocation policy ascending
47 !
48 !
49 !

```

```
50 | !
51 | !
52 | !
53 | interface FastEthernet0/1
54 |   switchport mode access
55 |   spanning-tree portfast
56 | !
57 | interface FastEthernet0/2
58 |   switchport mode access
59 |   spanning-tree portfast
60 | !
61 | interface FastEthernet0/3
62 |   switchport mode access
63 |   spanning-tree portfast
64 | !
65 | interface FastEthernet0/4
66 |   switchport mode access
67 |   spanning-tree portfast
68 | !
69 | interface FastEthernet0/5
70 |   switchport mode access
71 |   spanning-tree portfast
72 | !
73 | interface FastEthernet0/6
74 |   switchport mode access
75 |   spanning-tree portfast
76 | !
77 | interface FastEthernet0/7
78 |   switchport mode access
79 |   spanning-tree portfast
80 | !
81 | interface FastEthernet0/8
82 |   switchport mode access
83 |   spanning-tree portfast
84 | !
85 | interface FastEthernet0/9
86 |   switchport mode access
87 |   spanning-tree portfast
88 | !
89 | interface FastEthernet0/10
90 |   switchport mode access
91 |   spanning-tree portfast
92 | !
93 | interface FastEthernet0/11
94 |   switchport mode access
95 |   spanning-tree portfast
96 | !
97 | interface FastEthernet0/12
98 |   switchport mode access
99 |   spanning-tree portfast
100 | !
101 | interface FastEthernet0/13
102 |   switchport mode access
103 |   spanning-tree portfast
104 | !
105 | interface FastEthernet0/14
106 |   switchport mode access
107 |   spanning-tree portfast
108 | !
109 | interface FastEthernet0/15
110 |   switchport mode access
111 |   spanning-tree portfast
```



```
112 |  
113 | interface FastEthernet0/16  
114 |   switchport mode access  
115 |   spanning-tree portfast  
116 |  
117 | interface FastEthernet0/17  
118 |   switchport mode access  
119 |   spanning-tree portfast  
120 |  
121 | interface FastEthernet0/18  
122 |   switchport mode access  
123 |   spanning-tree portfast  
124 |  
125 | interface FastEthernet0/19  
126 |   switchport mode access  
127 |   spanning-tree portfast  
128 |  
129 | interface FastEthernet0/20  
130 |   switchport mode access  
131 |   spanning-tree portfast  
132 |  
133 | interface FastEthernet0/21  
134 |   switchport mode access  
135 |   spanning-tree portfast  
136 |  
137 | interface FastEthernet0/22  
138 |   switchport mode access  
139 |   spanning-tree portfast  
140 |  
141 | interface FastEthernet0/23  
142 |   switchport mode access  
143 |   spanning-tree portfast  
144 |  
145 | interface FastEthernet0/24  
146 |   switchport mode trunk  
147 |  
148 | interface GigabitEthernet0/1  
149 |  
150 | interface GigabitEthernet0/2  
151 |  
152 | interface Vlan1  
153 |   no ip address  
154 |   shutdown  
155 |  
156 | interface Vlan102  
157 |   ip address 172.16.22.2 255.255.255.0  
158 |  
159 | ip default-gateway 172.16.22.1  
160 | ip http server  
161 | ip http secure-server  
162 | snmp-server community public R0  
163 | snmp-server community private RW  
164 |  
165 |  
166 | line con 0  
167 | line vty 0 4  
168 |   password cisco  
169 |   login  
170 | line vty 5 15  
171 |   password cisco  
172 |   login  
173 |  
174 |
```

```
174 | end
```

A.29.2. IP Interfaces

```
1 BR1_S2# show ip interface brief
2 Interface      IP-Address  OK? Method Status      Protocol
3 Vlan1          unassigned YES unset administratively down down
4 Vlan102        172.16.22.2 YES manual  down        down
5 FastEthernet0/1 unassigned YES unset  down        down
6 FastEthernet0/2 unassigned YES unset  down        down
7 FastEthernet0/3 unassigned YES unset  down        down
8 FastEthernet0/4 unassigned YES unset  down        down
9 FastEthernet0/5 unassigned YES unset  down        down
10 FastEthernet0/6 unassigned YES unset  down        down
11 FastEthernet0/7 unassigned YES unset  down        down
12 FastEthernet0/8 unassigned YES unset  down        down
13 FastEthernet0/9 unassigned YES unset  down        down
14 FastEthernet0/10 unassigned YES unset  down        down
15 FastEthernet0/11 unassigned YES unset  down        down
16 FastEthernet0/12 unassigned YES unset  down        down
17 FastEthernet0/13 unassigned YES unset  down        down
18 FastEthernet0/14 unassigned YES unset  down        down
19 FastEthernet0/15 unassigned YES unset  down        down
20 FastEthernet0/16 unassigned YES unset  down        down
21 FastEthernet0/17 unassigned YES unset  down        down
22 FastEthernet0/18 unassigned YES unset  down        down
23 FastEthernet0/19 unassigned YES unset  down        down
24 FastEthernet0/20 unassigned YES unset  down        down
25 FastEthernet0/21 unassigned YES unset  down        down
26 FastEthernet0/22 unassigned YES unset  down        down
27 FastEthernet0/23 unassigned YES unset  down        down
28 FastEthernet0/24 unassigned YES unset  up         up
29 GigabitEthernet0/1 unassigned YES unset  down        down
30 GigabitEthernet0/2 unassigned YES unset  down        down
```

A.29.3. Interface Status

```
1 BR1_S2#show interface status
2
3 Port      Name          Status      Vlan      Duplex Speed Type
4 Fa0/1     notconnect  1          auto auto 10/100BaseTX
5 Fa0/2     notconnect  1          auto auto 10/100BaseTX
6 Fa0/3     notconnect  1          auto auto 10/100BaseTX
7 Fa0/4     notconnect  1          auto auto 10/100BaseTX
8 Fa0/5     notconnect  1          auto auto 10/100BaseTX
9 Fa0/6     notconnect  1          auto auto 10/100BaseTX
10 Fa0/7     notconnect  1          auto auto 10/100BaseTX
11 Fa0/8     notconnect  1          auto auto 10/100BaseTX
12 Fa0/9     notconnect  1          auto auto 10/100BaseTX
13 Fa0/10    notconnect  1          auto auto 10/100BaseTX
14 Fa0/11    notconnect  1          auto auto 10/100BaseTX
15 Fa0/12    notconnect  1          auto auto 10/100BaseTX
16 Fa0/13    notconnect  1          auto auto 10/100BaseTX
17 Fa0/14    notconnect  1          auto auto 10/100BaseTX
18 Fa0/15    notconnect  1          auto auto 10/100BaseTX
19 Fa0/16    notconnect  1          auto auto 10/100BaseTX
20 Fa0/17    notconnect  1          auto auto 10/100BaseTX
21 Fa0/18    notconnect  1          auto auto 10/100BaseTX
```

```

22 Fa0/19          notconnect 1          auto auto 10/100BaseTX
23 Fa0/20          notconnect 1          auto auto 10/100BaseTX
24 Fa0/21          notconnect 1          auto auto 10/100BaseTX
25
26 Port   Name      Status    Vlan    Duplex Speed Type
27 Fa0/22          notconnect 1          auto auto 10/100BaseTX
28 Fa0/23          notconnect 1          auto auto 10/100BaseTX
29 Fa0/24          connected trunk  a-full a-100 10/100BaseTX
30 Gi0/1          notconnect 1          auto auto Not Present
31 Gi0/2          notconnect 1          auto auto Not Present

```

A.29.4. Interface Trunk

```

1 BR1_S2#show interface trunk
2
3 Port      Mode      Encapsulation Status Native vlan
4 Fa0/24    on        802.1q      trunking  1
5
6 Port      Vlans allowed on trunk
7 Fa0/24    1-4094
8
9 Port      Vlans allowed and active in management domain
10 Fa0/24    1
11
12 Port      Vlans in spanning tree forwarding state and not pruned
13 Fa0/24    1

```

A.29.5. Neighbors

```

1 BR1_S2#show cdp neighbors
2 Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
3                   S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone,
4                   D - Remote, C - CVTA, M - Two-port Mac Relay
5
6 Device ID    Local Intrfce Holdtme Capability Platform Port ID
7 BR1_S1       Fas 0/24      175          R S I WS-C3560- Fas 0/2

```

A.29.6. IP Route

```

1 BR1_S2#show ip route
2 ^
3 % Invalid input detected at '^' marker.

```

A.29.7. Spanning Tree

```

1 BR1_S2#show spanning
2
3 VLAN0001
4   Spanning tree enabled protocol ieee
5   Root ID Priority 32769
6         Address 001a.2fd4.2480
7         Cost    19
8         Port    24 (FastEthernet0/24)

```

```

9      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
10
11     Bridge ID Priority 32769 (priority 32768 sys-id-ext 1)
12       Address 0817.3508.e700
13       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
14       Aging Time 300 sec
15
16     Interface      Role Sts Cost Prio.Nbr Type
17     -----
18     Fa0/24         Root FWD 19   128.24 P2p

```

A.29.8. VLAN

```

1  BR1_S2#show vlan
2
3  VLAN Name                Status Ports
4  -----
5  1  default                 active Fa0/1, Fa0/2, Fa0/3, Fa0/4
6                                Fa0/5, Fa0/6, Fa0/7, Fa0/8
7                                Fa0/9, Fa0/10, Fa0/11, Fa0/12
8                                Fa0/13, Fa0/14, Fa0/15, Fa0/16
9                                Fa0/17, Fa0/18, Fa0/19, Fa0/20
10                               Fa0/21, Fa0/22, Fa0/23, Gi0/1
11                               Gi0/2
12  1002 fddi-default         act/unsup
13  1003 token-ring-default   act/unsup
14  1004 fddinet-default      act/unsup
15  1005 trnet-default        act/unsup
16
17  VLAN Type SAID    MTU  Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2
18  -----
19  1  enet 100001 1500 -    -    -    -    0    0
20  1002 fddi 101002 1500 -    -    -    -    0    0
21  1003 tr  101003 1500 -    -    -    -    0    0
22  1004 fdnet 101004 1500 -    -    -    ieee -    0    0
23  1005 trnet 101005 1500 -    -    -    ibm -    0    0
24
25  Remote SPAN VLANs
26  -----
27
28
29  Primary Secondary Type    Ports
30  -----

```

A.30. BR1-S3

A.30.1. Running Configuration

```

1  BR1_S3#show run
2  Building configuration...
3
4  Current configuration : 2964 bytes
5  !
6  ! Last configuration change at 07:08:45 UTC Mon Mar 1 1993
7  !
8  version 15.0
9  no service pad
10 service timestamps debug datetime msec

```

```
11 service timestamps log datetime msec
12 no service password-encryption
13 !
14 hostname BR1_S3
15 !
16 boot-start-marker
17 boot-end-marker
18 !
19 enable secret 5 $1$0Gze$JaQI.iMWefJ2vul7r0l4C0
20 !
21 username ins password 0 ins@lab
22 no aaa new-model
23 system mtu routing 1500
24 !
25 !
26 !
27 !
28 crypto pki trustpoint TP-self-signed-889742208
29 enrollment selfsigned
30 subject-name cn=IOS-Self-Signed-Certificate-889742208
31 revocation-check none
32 rsakeypair TP-self-signed-889742208
33 !
34 !
35 crypto pki certificate chain TP-self-signed-889742208
36 certificate self-signed 01
37     quit
38 !
39 !
40 !
41 !
42 !
43 spanning-tree mode pvst
44 spanning-tree extend system-id
45 !
46 vlan internal allocation policy ascending
47 !
48 !
49 !
50 !
51 !
52 !
53 interface FastEthernet0/1
54     switchport mode access
55     spanning-tree portfast
56 !
57 interface FastEthernet0/2
58     switchport mode access
59     spanning-tree portfast
60 !
61 interface FastEthernet0/3
62     switchport mode access
63     spanning-tree portfast
64 !
65 interface FastEthernet0/4
66     switchport mode access
67     spanning-tree portfast
68 !
69 interface FastEthernet0/5
70     switchport mode access
71     spanning-tree portfast
72 !
```

```
73 interface FastEthernet0/6
74   switchport mode access
75   spanning-tree portfast
76   !
77 interface FastEthernet0/7
78   switchport mode access
79   spanning-tree portfast
80   !
81 interface FastEthernet0/8
82   switchport mode access
83   spanning-tree portfast
84   !
85 interface FastEthernet0/9
86   switchport mode access
87   spanning-tree portfast
88   !
89 interface FastEthernet0/10
90   switchport mode access
91   spanning-tree portfast
92   !
93 interface FastEthernet0/11
94   switchport mode access
95   spanning-tree portfast
96   !
97 interface FastEthernet0/12
98   switchport mode access
99   spanning-tree portfast
100  !
101 interface FastEthernet0/13
102   switchport mode access
103   spanning-tree portfast
104   !
105 interface FastEthernet0/14
106   switchport mode access
107   spanning-tree portfast
108   !
109 interface FastEthernet0/15
110   switchport mode access
111   spanning-tree portfast
112   !
113 interface FastEthernet0/16
114   switchport mode access
115   spanning-tree portfast
116   !
117 interface FastEthernet0/17
118   switchport mode access
119   spanning-tree portfast
120   !
121 interface FastEthernet0/18
122   switchport mode access
123   spanning-tree portfast
124   !
125 interface FastEthernet0/19
126   switchport mode access
127   spanning-tree portfast
128   !
129 interface FastEthernet0/20
130   switchport mode access
131   spanning-tree portfast
132   !
133 interface FastEthernet0/21
134   switchport mode access
```

```

135 spanning-tree portfast
136 !
137 interface FastEthernet0/22
138   switchport mode access
139   spanning-tree portfast
140 !
141 interface FastEthernet0/23
142   switchport mode trunk
143 !
144 interface FastEthernet0/24
145   switchport mode trunk
146 !
147 interface GigabitEthernet0/1
148 !
149 interface GigabitEthernet0/2
150 !
151 interface Vlan1
152   no ip address
153   shutdown
154 !
155 interface Vlan102
156   ip address 172.16.22.3 255.255.255.0
157 !
158 ip default-gateway 172.16.22.1
159 ip http server
160 ip http secure-server
161 snmp-server community public RO
162 snmp-server community private RW
163 !
164 !
165 line con 0
166 line vty 0 4
167   password cisco
168   login
169 line vty 5 15
170   password cisco
171   login
172 !
173 end

```

A.30.2. IP Interfaces

```

1 BR1_S3#show ip interface brief
2 Interface      IP-Address  OK? Method Status      Protocol
3 Vlan1          unassigned YES  unset administratively down down
4 Vlan102        172.16.22.3 YES  manual down          down
5 FastEthernet0/1 unassigned YES  unset down          down
6 FastEthernet0/2 unassigned YES  unset down          down
7 FastEthernet0/3 unassigned YES  unset down          down
8 FastEthernet0/4 unassigned YES  unset down          down
9 FastEthernet0/5 unassigned YES  unset down          down
10 FastEthernet0/6 unassigned YES  unset down          down
11 FastEthernet0/7 unassigned YES  unset down          down
12 FastEthernet0/8 unassigned YES  unset down          down
13 FastEthernet0/9 unassigned YES  unset down          down
14 FastEthernet0/10 unassigned YES  unset down          down
15 FastEthernet0/11 unassigned YES  unset down          down
16 FastEthernet0/12 unassigned YES  unset down          down
17 FastEthernet0/13 unassigned YES  unset down          down
18 FastEthernet0/14 unassigned YES  unset down          down

```

```

19 FastEthernet0/15 unassigned YES unset down down
20 FastEthernet0/16 unassigned YES unset down down
21 FastEthernet0/17 unassigned YES unset down down
22 FastEthernet0/18 unassigned YES unset down down
23 FastEthernet0/19 unassigned YES unset down down
24 FastEthernet0/20 unassigned YES unset down down
25 FastEthernet0/21 unassigned YES unset down down
26 FastEthernet0/22 unassigned YES unset down down
27 FastEthernet0/23 unassigned YES unset up up
28 FastEthernet0/24 unassigned YES unset up up
29 GigabitEthernet0/1 unassigned YES unset down down
30 GigabitEthernet0/2 unassigned YES unset down down

```

A.30.3. Interface Status

```

1 BR1_S3#show interface status
2
3 Port      Name      Status    Vlan    Duplex Speed Type
4 Fa0/1     notconnect 1         auto   auto  10/100BaseTX
5 Fa0/2     notconnect 1         auto   auto  10/100BaseTX
6 Fa0/3     notconnect 1         auto   auto  10/100BaseTX
7 Fa0/4     notconnect 1         auto   auto  10/100BaseTX
8 Fa0/5     notconnect 1         auto   auto  10/100BaseTX
9 Fa0/6     notconnect 1         auto   auto  10/100BaseTX
10 Fa0/7     notconnect 1         auto   auto  10/100BaseTX
11 Fa0/8     notconnect 1         auto   auto  10/100BaseTX
12 Fa0/9     notconnect 1         auto   auto  10/100BaseTX
13 Fa0/10    notconnect 1         auto   auto  10/100BaseTX
14 Fa0/11    notconnect 1         auto   auto  10/100BaseTX
15 Fa0/12    notconnect 1         auto   auto  10/100BaseTX
16 Fa0/13    notconnect 1         auto   auto  10/100BaseTX
17 Fa0/14    notconnect 1         auto   auto  10/100BaseTX
18 Fa0/15    notconnect 1         auto   auto  10/100BaseTX
19 Fa0/16    notconnect 1         auto   auto  10/100BaseTX
20 Fa0/17    notconnect 1         auto   auto  10/100BaseTX
21 Fa0/18    notconnect 1         auto   auto  10/100BaseTX
22 Fa0/19    notconnect 1         auto   auto  10/100BaseTX
23 Fa0/20    notconnect 1         auto   auto  10/100BaseTX
24 Fa0/21    notconnect 1         auto   auto  10/100BaseTX
25
26 Port      Name      Status    Vlan    Duplex Speed Type
27 Fa0/22    notconnect 1         auto   auto  10/100BaseTX
28 Fa0/23    connected trunk    a-full  a-100  10/100BaseTX
29 Fa0/24    connected trunk    a-full  a-100  10/100BaseTX
30 Gi0/1     notconnect 1         auto   auto  Not Present
31 Gi0/2     notconnect 1         auto   auto  Not Present

```

A.30.4. Interface Trunk

```

1 BR1_S3#show interface trunk
2
3 Port      Mode      Encapsulation Status Native vlan
4 Fa0/23    on        802.1q      trunking  1
5 Fa0/24    on        802.1q      trunking  1
6
7 Port      Vlans allowed on trunk
8 Fa0/23    1-4094
9 Fa0/24    1-4094

```



```

10
11 Port      Vlans allowed and active in management domain
12 Fa0/23    1
13 Fa0/24    1
14
15 Port      Vlans in spanning tree forwarding state and not pruned
16 Fa0/23    1
17 Fa0/24    none

```

A.30.5. Neighbors

```

1 BR1_S3#show cdp neighbors
2 Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
3                   S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone,
4                   D - Remote, C - CVTA, M - Two-port Mac Relay
5
6 Device ID    Local Intrfce Holdtme Capability Platform Port ID
7 BR1_S1       Fas 0/24      171          R S I WS-C3560- Fas 0/5
8 BR1_S1       Fas 0/23      171          R S I WS-C3560- Fas 0/4

```

A.30.6. IP Route

```

1 BR1_S3#show ip route
2 ^
3 % Invalid input detected at '^' marker.

```

A.30.7. Spanning Tree

```

1 BR1_S3#show spanning
2
3 VLAN0001
4   Spanning tree enabled protocol ieee
5   Root ID Priority 32769
6     Address 001a.2fd4.2480
7     Cost    19
8     Port    23 (FastEthernet0/23)
9     Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
10
11   Bridge ID Priority 32769 (priority 32768 sys-id-ext 1)
12     Address f025.72d1.8a80
13     Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
14     Aging Time 300 sec
15
16 Interface      Role Sts Cost Prio.Nbr Type
17 -----
18 Fa0/23          Root FWD 19   128.23 P2p
19 Fa0/24          Altn BLK 19   128.24 P2p

```

A.30.8. VLAN

```

1 BR1_S3#show vlan
2
3 VLAN Name                Status Ports

```

```

4 -----
5 1  default                active Fa0/1, Fa0/2, Fa0/3, Fa0/4
6                                Fa0/5, Fa0/6, Fa0/7, Fa0/8
7                                Fa0/9, Fa0/10, Fa0/11, Fa0/12
8                                Fa0/13, Fa0/14, Fa0/15, Fa0/16
9                                Fa0/17, Fa0/18, Fa0/19, Fa0/20
10                               Fa0/21, Fa0/22, Gi0/1, Gi0/2
11 1002 fddi-default        act/unsup
12 1003 token-ring-default  act/unsup
13 1004 fddinet-default     act/unsup
14 1005 trnet-default       act/unsup
15
16 VLAN Type SAID  MTU  Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2
17 -----
18 1   enet 100001 1500 -    -    -      -    -      0      0
19 1002 fddi 101002 1500 -    -    -      -    -      0      0
20 1003 tr  101003 1500 -    -    -      -    -      0      0
21 1004 fdnet 101004 1500 -    -    -      ieee  -      0      0
22 1005 trnet 101005 1500 -    -    -      ibm   -      0      0
23
24 Remote SPAN VLANs
25 -----
26
27
28 Primary Secondary Type      Ports
29 -----

```

A.31. BR1-S4

A.31.1. Running Configuration

```

1 BR1_S4#show run
2 Building configuration...
3
4 Current configuration : 2968 bytes
5 !
6 ! Last configuration change at 07:24:26 UTC Mon Mar 1 1993
7 !
8 version 15.0
9 no service pad
10 service timestamps debug datetime msec
11 service timestamps log datetime msec
12 no service password-encryption
13 !
14 hostname BR1_S4
15 !
16 boot-start-marker
17 boot-end-marker
18 !
19 enable secret 5 $1$NF2.$38hwI07bd5UD0zmPQVWni.
20 !
21 username ins password 0 ins@lab
22 no aaa new-model
23 system mtu routing 1500
24 !
25 !
26 !
27 !
28 crypto pki trustpoint TP-self-signed-1915116160
29 enrollment selfsigned

```

```
30 subject-name cn=IOS-Self-Signed-Certificate-1915116160
31 revocation-check none
32 rsakeypair TP-self-signed-1915116160
33 !
34 !
35 crypto pki certificate chain TP-self-signed-1915116160
36 certificate self-signed 01
37     quit
38 !
39 !
40 !
41 !
42 !
43 spanning-tree mode pvst
44 spanning-tree extend system-id
45 !
46 vlan internal allocation policy ascending
47 !
48 !
49 !
50 !
51 !
52 !
53 interface FastEthernet0/1
54     switchport mode access
55     spanning-tree portfast
56 !
57 interface FastEthernet0/2
58     switchport mode access
59     spanning-tree portfast
60 !
61 interface FastEthernet0/3
62     switchport mode access
63     spanning-tree portfast
64 !
65 interface FastEthernet0/4
66     switchport mode access
67     spanning-tree portfast
68 !
69 interface FastEthernet0/5
70     switchport mode access
71     spanning-tree portfast
72 !
73 interface FastEthernet0/6
74     switchport mode access
75     spanning-tree portfast
76 !
77 interface FastEthernet0/7
78     switchport mode access
79     spanning-tree portfast
80 !
81 interface FastEthernet0/8
82     switchport mode access
83     spanning-tree portfast
84 !
85 interface FastEthernet0/9
86     switchport mode access
87     spanning-tree portfast
88 !
89 interface FastEthernet0/10
90     switchport mode access
91     spanning-tree portfast
```

```
92  !
93  interface FastEthernet0/11
94  switchport mode access
95  spanning-tree portfast
96  !
97  interface FastEthernet0/12
98  switchport mode access
99  spanning-tree portfast
100 !
101 interface FastEthernet0/13
102 switchport mode access
103 spanning-tree portfast
104 !
105 interface FastEthernet0/14
106 switchport mode access
107 spanning-tree portfast
108 !
109 interface FastEthernet0/15
110 switchport mode access
111 spanning-tree portfast
112 !
113 interface FastEthernet0/16
114 switchport mode access
115 spanning-tree portfast
116 !
117 interface FastEthernet0/17
118 switchport mode access
119 spanning-tree portfast
120 !
121 interface FastEthernet0/18
122 switchport mode access
123 spanning-tree portfast
124 !
125 interface FastEthernet0/19
126 switchport mode access
127 spanning-tree portfast
128 !
129 interface FastEthernet0/20
130 switchport mode access
131 spanning-tree portfast
132 !
133 interface FastEthernet0/21
134 switchport mode access
135 spanning-tree portfast
136 !
137 interface FastEthernet0/22
138 switchport mode access
139 spanning-tree portfast
140 !
141 interface FastEthernet0/23
142 switchport mode trunk
143 !
144 interface FastEthernet0/24
145 switchport mode trunk
146 !
147 interface GigabitEthernet0/1
148 !
149 interface GigabitEthernet0/2
150 !
151 interface Vlan1
152 no ip address
153 shutdown
```

```

154 !
155 interface Vlan102
156   ip address 172.16.22.4 255.255.255.0
157 !
158 ip default-gateway 172.16.22.1
159 ip http server
160 ip http secure-server
161 snmp-server community public RO
162 snmp-server community private RW
163 !
164 !
165 line con 0
166 line vty 0 4
167   password cisco
168   login
169 line vty 5 15
170   password cisco
171   login
172 !
173 end

```

A.31.2. IP Interfaces

```

1 BR1_S4#show ip interface brief
2 Interface      IP-Address  OK? Method Status      Protocol
3 Vlan1          unassigned YES unset administratively down down
4 Vlan102        172.16.22.4 YES manual down        down
5 FastEthernet0/1 unassigned YES unset down        down
6 FastEthernet0/2 unassigned YES unset down        down
7 FastEthernet0/3 unassigned YES unset down        down
8 FastEthernet0/4 unassigned YES unset down        down
9 FastEthernet0/5 unassigned YES unset down        down
10 FastEthernet0/6 unassigned YES unset down        down
11 FastEthernet0/7 unassigned YES unset down        down
12 FastEthernet0/8 unassigned YES unset down        down
13 FastEthernet0/9 unassigned YES unset down        down
14 FastEthernet0/10 unassigned YES unset down        down
15 FastEthernet0/11 unassigned YES unset down        down
16 FastEthernet0/12 unassigned YES unset down        down
17 FastEthernet0/13 unassigned YES unset down        down
18 FastEthernet0/14 unassigned YES unset down        down
19 FastEthernet0/15 unassigned YES unset down        down
20 FastEthernet0/16 unassigned YES unset down        down
21 FastEthernet0/17 unassigned YES unset down        down
22 FastEthernet0/18 unassigned YES unset down        down
23 FastEthernet0/19 unassigned YES unset down        down
24 FastEthernet0/20 unassigned YES unset down        down
25 FastEthernet0/21 unassigned YES unset down        down
26 FastEthernet0/22 unassigned YES unset down        down
27 FastEthernet0/23 unassigned YES unset up          up
28 FastEthernet0/24 unassigned YES unset up          up
29 GigabitEthernet0/1 unassigned YES unset down        down
30 GigabitEthernet0/2 unassigned YES unset down        down

```

A.31.3. Interface Status

```

1 BR1_S4# show interface status
2

```

Port	Name	Status	Vlan	Duplex	Speed	Type
Fa0/1		notconnect	1	auto	auto	10/100BaseTX
Fa0/2		notconnect	1	auto	auto	10/100BaseTX
Fa0/3		notconnect	1	auto	auto	10/100BaseTX
Fa0/4		notconnect	1	auto	auto	10/100BaseTX
Fa0/5		notconnect	1	auto	auto	10/100BaseTX
Fa0/6		notconnect	1	auto	auto	10/100BaseTX
Fa0/7		notconnect	1	auto	auto	10/100BaseTX
Fa0/8		notconnect	1	auto	auto	10/100BaseTX
Fa0/9		notconnect	1	auto	auto	10/100BaseTX
Fa0/10		notconnect	1	auto	auto	10/100BaseTX
Fa0/11		notconnect	1	auto	auto	10/100BaseTX
Fa0/12		notconnect	1	auto	auto	10/100BaseTX
Fa0/13		notconnect	1	auto	auto	10/100BaseTX
Fa0/14		notconnect	1	auto	auto	10/100BaseTX
Fa0/15		notconnect	1	auto	auto	10/100BaseTX
Fa0/16		notconnect	1	auto	auto	10/100BaseTX
Fa0/17		notconnect	1	auto	auto	10/100BaseTX
Fa0/18		notconnect	1	auto	auto	10/100BaseTX
Fa0/19		notconnect	1	auto	auto	10/100BaseTX
Fa0/20		notconnect	1	auto	auto	10/100BaseTX
Fa0/21		notconnect	1	auto	auto	10/100BaseTX
Port	Name	Status	Vlan	Duplex	Speed	Type
Fa0/22		notconnect	1	auto	auto	10/100BaseTX
Fa0/23		connected	trunk	a-full	a-100	10/100BaseTX
Fa0/24		connected	trunk	a-full	a-100	10/100BaseTX
Gi0/1		notconnect	1	auto	auto	Not Present
Gi0/2		notconnect	1	auto	auto	Not Present

A.31.4. Interface Trunk

```

1 BR1_S4#show interface trunk
2
3 Port      Mode      Encapsulation Status Native vlan
4 Fa0/23    on        802.1q      trunking  1
5 Fa0/24    on        802.1q      trunking  1
6
7 Port      Vlans allowed on trunk
8 Fa0/23    1-4094
9 Fa0/24    1-4094
10
11 Port      Vlans allowed and active in management domain
12 Fa0/23    1
13 Fa0/24    1
14
15 Port      Vlans in spanning tree forwarding state and not pruned
16 Fa0/23    1
17 Fa0/24    none

```

A.31.5. Neighbors

```

1 BR1_S4#show cdp neighbors
2 Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
3                   S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone,
4                   D - Remote, C - CVTA, M - Two-port Mac Relay
5
6 Device ID    Local Intrfce Holdtme Capability Platform Port ID

```

```

7 BR1_S1      Fas 0/23      173      R S I WS-C3560- Fas 0/6
8 BR1_S1      Fas 0/24      173      R S I WS-C3560- Fas 0/7

```

A.31.6. IP Route

```

1 BR1_S4#show ip route
2      ^
3 % Invalid input detected at '^' marker.

```

A.31.7. Spanning Tree

```

1 BR1_S4#show spanning
2
3 VLAN0001
4   Spanning tree enabled protocol ieee
5   Root ID Priority 32769
6       Address 001a.2fd4.2480
7       Cost    19
8       Port    23 (FastEthernet0/23)
9       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
10
11   Bridge ID Priority 32769 (priority 32768 sys-id-ext 1)
12       Address f025.72f7.fe00
13       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
14       Aging Time 300 sec
15
16 Interface      Role Sts Cost Prio.Nbr Type
17 -----
18 Fa0/23         Root FWD 19   128.23 P2p
19 Fa0/24         Altn BLK 19   128.24 P2p

```

A.31.8. VLAN

```

1 BR1_S4#show vlan
2
3 VLAN Name                Status Ports
4 -----
5 1  default                active Fa0/1, Fa0/2, Fa0/3, Fa0/4
6                               Fa0/5, Fa0/6, Fa0/7, Fa0/8
7                               Fa0/9, Fa0/10, Fa0/11, Fa0/12
8                               Fa0/13, Fa0/14, Fa0/15, Fa0/16
9                               Fa0/17, Fa0/18, Fa0/19, Fa0/20
10                              Fa0/21, Fa0/22, Gi0/1, Gi0/2
11 1002 fddi-default        act/unsup
12 1003 token-ring-default  act/unsup
13 1004 fddinet-default     act/unsup
14 1005 trnet-default       act/unsup
15
16 VLAN Type SAID    MTU Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2
17 -----
18 1  enet 100001 1500 - - - - - 0 0
19 1002 fddi 101002 1500 - - - - - 0 0
20 1003 tr 101003 1500 - - - - - 0 0
21 1004 fdnet 101004 1500 - - - ieee - 0 0
22 1005 trnet 101005 1500 - - - ibm - 0 0
23

```

24	Remote SPAN VLANs			
25	-----			
26				
27				
28	Primary	Secondary	Type	Ports
29	-----	-----	-----	-----

A.32. BR2-S2

A.32.1. Running Configuration

```

1 BR2_S2#show run
2 Building configuration...
3
4 Current configuration : 3097 bytes
5 !
6 ! Last configuration change at 13:11:20 UTC Mon Mar 1 1993
7 !
8 version 15.0
9 no service pad
10 service timestamps debug datetime msec
11 service timestamps log datetime msec
12 no service password-encryption
13 !
14 hostname BR2_S2
15 !
16 boot-start-marker
17 boot-end-marker
18 !
19 enable secret 5 $1$GtpN$haY30dKGDmWJMguQrdwF.
20 !
21 username ins password 0 ins@lab
22 no aaa new-model
23 system mtu routing 1500
24 vtp domain CCIE
25 vtp mode transparent
26 no ip domain-lookup
27 !
28 !
29 !
30 !
31 crypto pki trustpoint HTTPS_SS_CERT_KEYPAIR
32 enrollment selfsigned
33 serial-number
34 revocation-check none
35 rsakeypair HTTPS_SS_CERT_KEYPAIR
36 !
37 !
38 crypto pki certificate chain HTTPS_SS_CERT_KEYPAIR
39 certificate self-signed 01
40     quit
41 !
42 !
43 !
44 !
45 !
46 spanning-tree mode pvst
47 spanning-tree extend system-id
48 !
49 vlan internal allocation policy ascending

```



```
50 | !
51 | vlan 2-5
52 | !
53 | vlan 10
54 |   name HR
55 | !
56 | vlan 11
57 |   name IT
58 | !
59 | vlan 17,19,46,1006
60 | !
61 | !
62 | !
63 | !
64 | !
65 | !
66 | !
67 | !
68 | !
69 | !
70 | !
71 | !
72 | !
73 | !
74 | interface FastEthernet0/1
75 |   switchport mode access
76 |   spanning-tree portfast
77 | !
78 | interface FastEthernet0/2
79 |   switchport mode access
80 |   spanning-tree portfast
81 | !
82 | interface FastEthernet0/3
83 |   switchport mode access
84 |   spanning-tree portfast
85 | !
86 | interface FastEthernet0/4
87 |   switchport mode access
88 |   spanning-tree portfast
89 | !
90 | interface FastEthernet0/5
91 |   switchport mode access
92 |   spanning-tree portfast
93 | !
94 | interface FastEthernet0/6
95 |   switchport mode access
96 |   spanning-tree portfast
97 | !
98 | interface FastEthernet0/7
99 |   switchport mode access
100 |   spanning-tree portfast
101 | !
102 | interface FastEthernet0/8
103 |   switchport mode access
104 |   spanning-tree portfast
105 | !
106 | interface FastEthernet0/9
107 |   switchport mode access
108 |   spanning-tree portfast
109 | !
110 | interface FastEthernet0/10
111 |   switchport mode access
```

```
112 spanning-tree portfast
113 !
114 interface FastEthernet0/11
115 switchport mode access
116 spanning-tree portfast
117 !
118 interface FastEthernet0/12
119 switchport mode access
120 spanning-tree portfast
121 !
122 interface FastEthernet0/13
123 switchport mode access
124 spanning-tree portfast
125 !
126 interface FastEthernet0/14
127 switchport mode access
128 spanning-tree portfast
129 !
130 interface FastEthernet0/15
131 switchport mode access
132 spanning-tree portfast
133 !
134 interface FastEthernet0/16
135 switchport mode access
136 spanning-tree portfast
137 !
138 interface FastEthernet0/17
139 switchport mode access
140 spanning-tree portfast
141 !
142 interface FastEthernet0/18
143 switchport mode access
144 spanning-tree portfast
145 !
146 interface FastEthernet0/19
147 switchport mode access
148 spanning-tree portfast
149 !
150 interface FastEthernet0/20
151 switchport mode access
152 spanning-tree portfast
153 !
154 interface FastEthernet0/21
155 switchport mode access
156 spanning-tree portfast
157 !
158 interface FastEthernet0/22
159 switchport mode access
160 spanning-tree portfast
161 !
162 interface FastEthernet0/23
163 switchport mode access
164 spanning-tree portfast
165 !
166 interface FastEthernet0/24
167 !
168 interface GigabitEthernet0/1
169 !
170 interface GigabitEthernet0/2
171 !
172 interface Vlan1
173 no ip address
```

```

174 shutdown
175 !
176 interface Vlan103
177 ip address 172.16.23.2 255.255.255.0
178 !
179 ip default-gateway 172.16.23.1
180 ip http server
181 ip http secure-server
182 !
183 !
184 ip sla enable reaction-alerts
185 snmp-server community private RW
186 snmp-server community public R0
187 !
188 !
189 line con 0
190 line vty 0 4
191 password cisco
192 login
193 line vty 5 15
194 password cisco
195 login
196 !
197 end

```

A.32.2. IP Interfaces

```

1 BR2_S2#show ip interface brief
2 Interface      IP-Address  OK? Method Status      Protocol
3 Vlan1          unassigned YES unset administratively down down
4 Vlan103        172.16.23.2 YES manual  down        down
5 FastEthernet0/1 unassigned YES unset  down        down
6 FastEthernet0/2 unassigned YES unset  down        down
7 FastEthernet0/3 unassigned YES unset  down        down
8 FastEthernet0/4 unassigned YES unset  down        down
9 FastEthernet0/5 unassigned YES unset  down        down
10 FastEthernet0/6 unassigned YES unset  up          up
11 FastEthernet0/7 unassigned YES unset  down        down
12 FastEthernet0/8 unassigned YES unset  down        down
13 FastEthernet0/9 unassigned YES unset  down        down
14 FastEthernet0/10 unassigned YES unset  down        down
15 FastEthernet0/11 unassigned YES unset  down        down
16 FastEthernet0/12 unassigned YES unset  down        down
17 FastEthernet0/13 unassigned YES unset  down        down
18 FastEthernet0/14 unassigned YES unset  down        down
19 FastEthernet0/15 unassigned YES unset  down        down
20 FastEthernet0/16 unassigned YES unset  down        down
21 FastEthernet0/17 unassigned YES unset  down        down
22 FastEthernet0/18 unassigned YES unset  down        down
23 FastEthernet0/19 unassigned YES unset  down        down
24 FastEthernet0/20 unassigned YES unset  down        down
25 FastEthernet0/21 unassigned YES unset  down        down
26 FastEthernet0/22 unassigned YES unset  down        down
27 FastEthernet0/23 unassigned YES unset  up          up
28 FastEthernet0/24 unassigned YES unset  up          up
29 GigabitEthernet0/1 unassigned YES unset  down        down
30 GigabitEthernet0/2 unassigned YES unset  down        down

```

A.32.3. Interface Status

```

1 BR2_S2#show interface status
2
3 Port      Name      Status      Vlan      Duplex Speed Type
4 Fa0/1     notconnect 1           auto      auto    10/100BaseTX
5 Fa0/2     notconnect 1           auto      auto    10/100BaseTX
6 Fa0/3     notconnect 1           auto      auto    10/100BaseTX
7 Fa0/4     notconnect 1           auto      auto    10/100BaseTX
8 Fa0/5     notconnect 1           auto      auto    10/100BaseTX
9 Fa0/6     connected 1           a-full    a-100   10/100BaseTX
10 Fa0/7     notconnect 1           auto      auto    10/100BaseTX
11 Fa0/8     notconnect 1           auto      auto    10/100BaseTX
12 Fa0/9     notconnect 1           auto      auto    10/100BaseTX
13 Fa0/10    notconnect 1           auto      auto    10/100BaseTX
14 Fa0/11    notconnect 1           auto      auto    10/100BaseTX
15 Fa0/12    notconnect 1           auto      auto    10/100BaseTX
16 Fa0/13    notconnect 1           auto      auto    10/100BaseTX
17 Fa0/14    notconnect 1           auto      auto    10/100BaseTX
18 Fa0/15    notconnect 1           auto      auto    10/100BaseTX
19 Fa0/16    notconnect 1           auto      auto    10/100BaseTX
20 Fa0/17    notconnect 1           auto      auto    10/100BaseTX
21 Fa0/18    notconnect 1           auto      auto    10/100BaseTX
22 Fa0/19    notconnect 1           auto      auto    10/100BaseTX
23 Fa0/20    notconnect 1           auto      auto    10/100BaseTX
24 Fa0/21    notconnect 1           auto      auto    10/100BaseTX
25
26 Port      Name      Status      Vlan      Duplex Speed Type
27 Fa0/22    notconnect 1           auto      auto    10/100BaseTX
28 Fa0/23    connected 1           a-full    a-100   10/100BaseTX
29 Fa0/24    connected trunk a-full    a-100   10/100BaseTX
30 Gi0/1     notconnect 1           auto      auto    Not Present
31 Gi0/2     notconnect 1           auto      auto    Not Present

```

A.32.4. Interface Trunk

```

1 BR2_S2#show interface trunk
2
3 Port      Mode      Encapsulation Status Native vlan
4 Fa0/24    auto      n-802.1q    trunking 1
5
6 Port      Vlans allowed on trunk
7 Fa0/24    1-4094
8
9 Port      Vlans allowed and active in management domain
10 Fa0/24    1-5,10-11,17,19,46,1006
11
12 Port      Vlans in spanning tree forwarding state and not pruned
13 Fa0/24    1-5,10-11,17,19,46,1006

```

A.32.5. Neighbors

```

1 BR2_S2#show cdp neighbors
2 Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
3                   S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone,
4                   D - Remote, C - CVTA, M - Two-port Mac Relay
5

```

```

6 Device ID      Local Intrfce Holdtme Capability Platform Port ID
7 BR2_S1         Fas 0/24      170          R S I WS-C3560V Fas 0/3
8 BR2_S1         Fas 0/23      169          R S I WS-C3560V Fas 0/2

```

A.32.6. IP Route

```

1 BR2_S2#show ip route
2 Default gateway is 172.16.23.1
3
4 Host          Gateway      Last Use Total Uses Interface
5 ICMP redirect cache is empty

```

A.32.7. Spanning Tree

```

1 BR2_S2#show spanning
2
3 VLAN0001
4   Spanning tree enabled protocol ieee
5   Root ID Priority 32769
6       Address 24b6.5725.d180
7       This bridge is the root
8       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
9
10  Bridge ID Priority 32769 (priority 32768 sys-id-ext 1)
11      Address 24b6.5725.d180
12      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
13      Aging Time 300 sec
14
15  Interface      Role Sts Cost Prio.Nbr Type
16  -----
17  Fa0/6          Desg FWD 19   128.8  P2p Edge
18  Fa0/23         Desg FWD 19   128.25 P2p
19  Fa0/24         Desg FWD 19   128.26 P2p
20
21
22
23 VLAN0002
24   Spanning tree enabled protocol ieee
25   Root ID Priority 32770
26       Address 24b6.5725.d180
27       This bridge is the root
28       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
29
30  Bridge ID Priority 32770 (priority 32768 sys-id-ext 2)
31      Address 24b6.5725.d180
32      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
33      Aging Time 300 sec
34
35  Interface      Role Sts Cost Prio.Nbr Type
36  -----
37  Fa0/24         Desg FWD 19   128.26 P2p
38
39
40
41 VLAN0003
42   Spanning tree enabled protocol ieee
43   Root ID Priority 32771
44       Address 24b6.5725.d180

```

```

45         This bridge is the root
46         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
47
48     Bridge ID Priority 32771 (priority 32768 sys-id-ext 3)
49         Address 24b6.5725.d180
50         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
51         Aging Time 300 sec
52
53     Interface      Role Sts Cost  Prio.Nbr Type
54     -----
55     Fa0/24         Desg FWD 19   128.26 P2p
56
57
58
59     VLAN0004
60         Spanning tree enabled protocol ieee
61         Root ID Priority 32772
62             Address 24b6.5725.d180
63             This bridge is the root
64             Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
65
66         Bridge ID Priority 32772 (priority 32768 sys-id-ext 4)
67             Address 24b6.5725.d180
68             Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
69             Aging Time 300 sec
70
71     Interface      Role Sts Cost  Prio.Nbr Type
72     -----
73     Fa0/24         Desg FWD 19   128.26 P2p
74
75
76
77     VLAN0005
78         Spanning tree enabled protocol ieee
79         Root ID Priority 32773
80             Address 24b6.5725.d180
81             This bridge is the root
82             Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
83
84         Bridge ID Priority 32773 (priority 32768 sys-id-ext 5)
85             Address 24b6.5725.d180
86             Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
87             Aging Time 300 sec
88
89     Interface      Role Sts Cost  Prio.Nbr Type
90     -----
91     Fa0/24         Desg FWD 19   128.26 P2p
92
93
94
95     VLAN0010
96         Spanning tree enabled protocol ieee
97         Root ID Priority 32778
98             Address 24b6.5725.d180
99             This bridge is the root
100             Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
101
102         Bridge ID Priority 32778 (priority 32768 sys-id-ext 10)
103             Address 24b6.5725.d180
104             Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
105             Aging Time 300 sec
106

```

```

107 Interface      Role Sts Cost Prio.Nbr Type
108 -----
109 Fa0/24          Desg FWD 19   128.26 P2p
110
111
112
113 VLAN0011
114   Spanning tree enabled protocol ieee
115   Root ID Priority 32779
116       Address 24b6.5725.d180
117       This bridge is the root
118       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
119
120   Bridge ID Priority 32779 (priority 32768 sys-id-ext 11)
121       Address 24b6.5725.d180
122       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
123       Aging Time 300 sec
124
125 Interface      Role Sts Cost Prio.Nbr Type
126 -----
127 Fa0/24          Desg FWD 19   128.26 P2p
128
129
130
131 VLAN0017
132   Spanning tree enabled protocol ieee
133   Root ID Priority 32785
134       Address 24b6.5725.d180
135       This bridge is the root
136       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
137
138   Bridge ID Priority 32785 (priority 32768 sys-id-ext 17)
139       Address 24b6.5725.d180
140       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
141       Aging Time 300 sec
142
143 Interface      Role Sts Cost Prio.Nbr Type
144 -----
145 Fa0/24          Desg FWD 19   128.26 P2p
146
147
148
149 VLAN0019
150   Spanning tree enabled protocol ieee
151   Root ID Priority 32787
152       Address 24b6.5725.d180
153       This bridge is the root
154       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
155
156   Bridge ID Priority 32787 (priority 32768 sys-id-ext 19)
157       Address 24b6.5725.d180
158       Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
159       Aging Time 300 sec
160
161 Interface      Role Sts Cost Prio.Nbr Type
162 -----
163 Fa0/24          Desg FWD 19   128.26 P2p
164
165
166
167 VLAN0046
168   Spanning tree enabled protocol ieee

```

```

169 Root ID Priority 32814
170     Address 24b6.5725.d180
171     This bridge is the root
172     Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
173
174 Bridge ID Priority 32814 (priority 32768 sys-id-ext 46)
175     Address 24b6.5725.d180
176     Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
177     Aging Time 300 sec
178
179 Interface      Role Sts Cost Prio.Nbr Type
180 -----
181 Fa0/24         Desg FWD 19   128.26 P2p
182
183
184
185 VLAN1006
186 Spanning tree enabled protocol ieee
187 Root ID Priority 33774
188     Address 24b6.5725.d180
189     This bridge is the root
190     Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
191
192 Bridge ID Priority 33774 (priority 32768 sys-id-ext 1006)
193     Address 24b6.5725.d180
194     Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
195     Aging Time 300 sec
196
197 Interface      Role Sts Cost Prio.Nbr Type
198 -----
199 Fa0/24         Desg FWD 19   128.26 P2p

```

A.32.8. VLAN

```

1 BR2_S2#show vlan
2
3 VLAN Name                Status Ports
4 -----
5 1  default                active Fa0/1, Fa0/2, Fa0/3, Fa0/4
6                                Fa0/5, Fa0/6, Fa0/7, Fa0/8
7                                Fa0/9, Fa0/10, Fa0/11, Fa0/12
8                                Fa0/13, Fa0/14, Fa0/15, Fa0/16
9                                Fa0/17, Fa0/18, Fa0/19, Fa0/20
10                               Fa0/21, Fa0/22, Fa0/23, Gi0/1
11                               Gi0/2
12 2  VLAN0002              active
13 3  VLAN0003              active
14 4  VLAN0004              active
15 5  VLAN0005              active
16 10 HR                    active
17 11 IT                    active
18 17 VLAN0017              active
19 19 VLAN0019              active
20 46 VLAN0046              active
21 1002 fddi-default        act/unsup
22 1003 trcrf-default        act/unsup
23 1004 fddinet-default      act/unsup
24 1005 trbrf-default        act/unsup
25
26 VLAN Name                Status Ports

```



```

27 -----
28 1006 VLAN1006                active
29
30 VLAN Type SAID    MTU  Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
31 -----
32 1   enet 100001  1500 -    -    -    -    -    0    0
33 2   enet 100002  1500 -    -    -    -    -    0    0
34 3   enet 100003  1500 -    -    -    -    -    0    0
35 4   enet 100004  1500 -    -    -    -    -    0    0
36 5   enet 100005  1500 -    -    -    -    -    0    0
37 10  enet 100010  1500 -    -    -    -    -    0    0
38 11  enet 100011  1500 -    -    -    -    -    0    0
39 17  enet 100017  1500 -    -    -    -    -    0    0
40 19  enet 100019  1500 -    -    -    -    -    0    0
41 46  enet 100046  1500 -    -    -    -    -    0    0
42 1002 fddi 101002  1500 -    -    -    -    -    0    0
43 1003 trcrf 101003  4472 1005 3276 -    -    srb    0    0
44 1004 fdnet 101004  1500 -    -    -    -    -    0    0
45 1005 trbrf 101005  4472 -    -    15    -    -    0    0
46 1006 enet 101006  1500 -    -    -    -    -    0    0
47
48
49 VLAN AREHops STEHops Backup CRF
50 -----
51
52
53 VLAN AREHops STEHops Backup CRF
54 -----
55 1003 7      7      off
56
57 Remote SPAN VLANs
58 -----
59
60
61 Primary Secondary Type      Ports
62 -----

```

A.33. BR2-S3

A.33.1. Running Configuration

```

1 BR2_S3#show run
2 Building configuration...
3
4 Current configuration : 3046 bytes
5 !
6 ! Last configuration change at 13:12:02 UTC Mon Mar 1 1993
7 !
8 version 15.0
9 no service pad
10 service timestamps debug datetime msec
11 service timestamps log datetime msec
12 no service password-encryption
13 !
14 hostname BR2_S3
15 !
16 boot-start-marker
17 boot-end-marker
18 !
19 enable secret 5 $1$nqEC$NxCxIG6gZVime6v0dVtCx.

```

```
20 | !
21 | username ins password 0 ins@lab
22 | no aaa new-model
23 | system mtu routing 1500
24 | vtp domain CCIE
25 | vtp mode transparent
26 | !
27 | !
28 | no ip domain-lookup
29 | !
30 | !
31 | crypto pki trustpoint HTTPS_SS_CERT_KEYPAIR
32 |   enrollment selfsigned
33 |   serial-number
34 |   revocation-check none
35 |   rsakeypair HTTPS_SS_CERT_KEYPAIR
36 | !
37 | !
38 | crypto pki certificate chain HTTPS_SS_CERT_KEYPAIR
39 |   certificate self-signed 01
40 |   quit
41 | !
42 | !
43 | !
44 | !
45 | !
46 | spanning-tree mode pvst
47 | spanning-tree extend system-id
48 | !
49 | vlan internal allocation policy ascending
50 | !
51 | vlan 2-5
52 | !
53 | vlan 10
54 |   name HR
55 | !
56 | vlan 11
57 |   name IT
58 | !
59 | vlan 17,19,46,1006
60 | !
61 | !
62 | !
63 | !
64 | !
65 | !
66 | interface FastEthernet0/1
67 |   switchport mode access
68 |   spanning-tree portfast
69 | !
70 | interface FastEthernet0/2
71 |   switchport mode access
72 |   spanning-tree portfast
73 | !
74 | interface FastEthernet0/3
75 |   switchport mode access
76 |   spanning-tree portfast
77 | !
78 | interface FastEthernet0/4
79 |   switchport mode access
80 |   spanning-tree portfast
81 | !
```

```
82 interface FastEthernet0/5
83   switchport mode access
84   spanning-tree portfast
85   !
86 interface FastEthernet0/6
87   switchport mode access
88   spanning-tree portfast
89   !
90 interface FastEthernet0/7
91   switchport mode access
92   spanning-tree portfast
93   !
94 interface FastEthernet0/8
95   switchport mode access
96   spanning-tree portfast
97   !
98 interface FastEthernet0/9
99   switchport mode access
100  spanning-tree portfast
101  !
102 interface FastEthernet0/10
103   switchport mode access
104   spanning-tree portfast
105   !
106 interface FastEthernet0/11
107   switchport mode access
108   spanning-tree portfast
109   !
110 interface FastEthernet0/12
111   switchport mode access
112   spanning-tree portfast
113   !
114 interface FastEthernet0/13
115   switchport mode access
116   spanning-tree portfast
117   !
118 interface FastEthernet0/14
119   switchport mode access
120   spanning-tree portfast
121   !
122 interface FastEthernet0/15
123   switchport mode access
124   spanning-tree portfast
125   !
126 interface FastEthernet0/16
127   switchport mode access
128   spanning-tree portfast
129   !
130 interface FastEthernet0/17
131   switchport mode access
132   spanning-tree portfast
133   !
134 interface FastEthernet0/18
135   switchport mode access
136   spanning-tree portfast
137   !
138 interface FastEthernet0/19
139   switchport mode access
140   spanning-tree portfast
141   !
142 interface FastEthernet0/20
143   switchport mode access
```

```

144 spanning-tree portfast
145 !
146 interface FastEthernet0/21
147   switchport mode access
148   spanning-tree portfast
149   !
150 interface FastEthernet0/22
151   switchport mode access
152   spanning-tree portfast
153   !
154 interface FastEthernet0/23
155   switchport mode access
156   spanning-tree portfast
157   !
158 interface FastEthernet0/24
159   !
160 interface GigabitEthernet0/1
161   !
162 interface GigabitEthernet0/2
163   !
164 interface Vlan1
165   no ip address
166   shutdown
167   !
168 interface Vlan103
169   ip address 172.16.23.3 255.255.255.0
170   !
171 ip default-gateway 172.16.23.1
172 ip http server
173 ip http secure-server
174 snmp-server community private RW
175 snmp-server community public RO
176   !
177   !
178 line con 0
179 line vty 0 4
180   password cisco
181   login
182 line vty 5 15
183   password cisco
184   login
185   !
186 end

```

A.33.2. IP Interfaces

```

1 BR2_S3# show ip interface brief
2 Interface      IP-Address OK? Method Status      Protocol
3 Vlan1          unassigned YES unset administratively down down
4 Vlan103        172.16.23.3 YES manual down        down
5 FastEthernet0/1 unassigned YES unset down        down
6 FastEthernet0/2 unassigned YES unset down        down
7 FastEthernet0/3 unassigned YES unset down        down
8 FastEthernet0/4 unassigned YES unset down        down
9 FastEthernet0/5 unassigned YES unset down        down
10 FastEthernet0/6 unassigned YES unset down        down
11 FastEthernet0/7 unassigned YES unset down        down
12 FastEthernet0/8 unassigned YES unset down        down
13 FastEthernet0/9 unassigned YES unset down        down
14 FastEthernet0/10 unassigned YES unset down        down

```

```

15 FastEthernet0/11 unassigned YES unset down down
16 FastEthernet0/12 unassigned YES unset down down
17 FastEthernet0/13 unassigned YES unset down down
18 FastEthernet0/14 unassigned YES unset down down
19 FastEthernet0/15 unassigned YES unset down down
20 FastEthernet0/16 unassigned YES unset down down
21 FastEthernet0/17 unassigned YES unset down down
22 FastEthernet0/18 unassigned YES unset down down
23 FastEthernet0/19 unassigned YES unset down down
24 FastEthernet0/20 unassigned YES unset down down
25 FastEthernet0/21 unassigned YES unset down down
26 FastEthernet0/22 unassigned YES unset down down
27 FastEthernet0/23 unassigned YES unset up up
28 FastEthernet0/24 unassigned YES unset up up
29 GigabitEthernet0/1 unassigned YES unset down down
30 GigabitEthernet0/2 unassigned YES unset down down

```

A.33.3. Interface Status

```

1 BR2_S3#show interface status
2
3 Port      Name      Status    Vlan    Duplex Speed Type
4 Fa0/1     notconnect 1         auto   auto  10/100BaseTX
5 Fa0/2     notconnect 1         auto   auto  10/100BaseTX
6 Fa0/3     notconnect 1         auto   auto  10/100BaseTX
7 Fa0/4     notconnect 1         auto   auto  10/100BaseTX
8 Fa0/5     notconnect 1         auto   auto  10/100BaseTX
9 Fa0/6     notconnect 1         auto   auto  10/100BaseTX
10 Fa0/7     notconnect 1         auto   auto  10/100BaseTX
11 Fa0/8     notconnect 1         auto   auto  10/100BaseTX
12 Fa0/9     notconnect 1         auto   auto  10/100BaseTX
13 Fa0/10    notconnect 1         auto   auto  10/100BaseTX
14 Fa0/11    notconnect 1         auto   auto  10/100BaseTX
15 Fa0/12    notconnect 1         auto   auto  10/100BaseTX
16 Fa0/13    notconnect 1         auto   auto  10/100BaseTX
17 Fa0/14    notconnect 1         auto   auto  10/100BaseTX
18 Fa0/15    notconnect 1         auto   auto  10/100BaseTX
19 Fa0/16    notconnect 1         auto   auto  10/100BaseTX
20 Fa0/17    notconnect 1         auto   auto  10/100BaseTX
21 Fa0/18    notconnect 1         auto   auto  10/100BaseTX
22 Fa0/19    notconnect 1         auto   auto  10/100BaseTX
23 Fa0/20    notconnect 1         auto   auto  10/100BaseTX
24 Fa0/21    notconnect 1         auto   auto  10/100BaseTX
25
26 Port      Name      Status    Vlan    Duplex Speed Type
27 Fa0/22    notconnect 1         auto   auto  10/100BaseTX
28 Fa0/23    connected 1         a-full a-100 10/100BaseTX
29 Fa0/24    connected trunk   a-full a-100 10/100BaseTX
30 Gi0/1     notconnect 1         auto   auto  Not Present
31 Gi0/2     notconnect 1         auto   auto  Not Present

```

A.33.4. Interface Trunk

```

1 BR2_S3#show interface trunk
2
3 Port      Mode      Encapsulation Status Native vlan
4 Fa0/24    auto      802.1q      trunking 1
5

```

```

6 Port      Vlans allowed on trunk
7 Fa0/24    1-4094
8
9 Port      Vlans allowed and active in management domain
10 Fa0/24    1-5,10-11,17,19,46,1006
11
12 Port      Vlans in spanning tree forwarding state and not pruned
13 Fa0/24    1-5,10-11,17,19,46,1006

```

A.33.5. Neighbors

```

1 BR2_S3#show cdp neighbors
2 Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
3                   S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone,
4                   D - Remote, C - CVTA, M - Two-port Mac Relay
5
6 Device ID    Local Intrfce Holdtme Capability Platform Port ID
7 BR2_S1       Fas 0/24      176           R S I WS-C3560V Fas 0/5
8 BR2_S1       Fas 0/23      176           R S I WS-C3560V Fas 0/4

```

A.33.6. IP Route

```

1 BR2_S3# show ip route
2      ^
3 % Invalid input detected at '^' marker.

```

A.33.7. Spanning Tree

```

1 2_S3#show spanning
2
3 VLAN0001
4   Spanning tree enabled protocol ieee
5   Root ID Priority 32769
6         Address 24b6.5725.d180
7         Cost    38
8         Port    24 (FastEthernet0/24)
9         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
10
11   Bridge ID Priority 32769 (priority 32768 sys-id-ext 1)
12         Address f025.72f7.e680
13         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
14         Aging Time 300 sec
15
16 Interface      Role Sts Cost Prio.Nbr Type
17 -----
18 Fa0/23          Desg BKN*19 128.23 P2p Edge *TYPE_Inc
19 Fa0/24          Root FWD 19 128.24 P2p
20
21
22
23 VLAN0002
24   Spanning tree enabled protocol ieee
25   Root ID Priority 32770
26         Address 24b6.5725.d180
27         Cost    38
28         Port    24 (FastEthernet0/24)

```

```

29         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
30
31     Bridge ID Priority 32770 (priority 32768 sys-id-ext 2)
32         Address f025.72f7.e680
33         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
34         Aging Time 300 sec
35
36 Interface      Role Sts Cost Prio.Nbr Type
37 -----
38 Fa0/24         Root FWD 19   128.24 P2p
39
40
41
42 VLAN0003
43     Spanning tree enabled protocol ieee
44     Root ID Priority 32771
45         Address 24b6.5725.d180
46         Cost    38
47         Port    24 (FastEthernet0/24)
48         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
49
50     Bridge ID Priority 32771 (priority 32768 sys-id-ext 3)
51         Address f025.72f7.e680
52         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
53         Aging Time 300 sec
54
55 Interface      Role Sts Cost Prio.Nbr Type
56 -----
57 Fa0/24         Root FWD 19   128.24 P2p
58
59
60
61 VLAN0004
62     Spanning tree enabled protocol ieee
63     Root ID Priority 32772
64         Address 24b6.5725.d180
65         Cost    38
66         Port    24 (FastEthernet0/24)
67         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
68
69     Bridge ID Priority 32772 (priority 32768 sys-id-ext 4)
70         Address f025.72f7.e680
71         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
72         Aging Time 300 sec
73
74 Interface      Role Sts Cost Prio.Nbr Type
75 -----
76 Fa0/24         Root FWD 19   128.24 P2p
77
78
79
80 VLAN0005
81     Spanning tree enabled protocol ieee
82     Root ID Priority 32773
83         Address 24b6.5725.d180
84         Cost    38
85         Port    24 (FastEthernet0/24)
86         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
87
88     Bridge ID Priority 32773 (priority 32768 sys-id-ext 5)
89         Address f025.72f7.e680
90         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

```

```

91      Aging Time 300 sec
92
93  Interface      Role Sts Cost Prio.Nbr Type
94  -----
95  Fa0/24         Root FWD 19   128.24 P2p
96
97
98
99  VLAN0010
100  Spanning tree enabled protocol ieee
101  Root ID Priority 32778
102      Address 24b6.5725.d180
103      Cost    38
104      Port    24 (FastEthernet0/24)
105      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
106
107  Bridge ID Priority 32778 (priority 32768 sys-id-ext 10)
108      Address f025.72f7.e680
109      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
110      Aging Time 300 sec
111
112  Interface      Role Sts Cost Prio.Nbr Type
113  -----
114  Fa0/24         Root FWD 19   128.24 P2p
115
116
117
118  VLAN0011
119  Spanning tree enabled protocol ieee
120  Root ID Priority 32779
121      Address 24b6.5725.d180
122      Cost    38
123      Port    24 (FastEthernet0/24)
124      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
125
126  Bridge ID Priority 32779 (priority 32768 sys-id-ext 11)
127      Address f025.72f7.e680
128      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
129      Aging Time 300 sec
130
131  Interface      Role Sts Cost Prio.Nbr Type
132  -----
133  Fa0/24         Root FWD 19   128.24 P2p
134
135
136
137  VLAN0017
138  Spanning tree enabled protocol ieee
139  Root ID Priority 32785
140      Address 24b6.5725.d180
141      Cost    38
142      Port    24 (FastEthernet0/24)
143      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
144
145  Bridge ID Priority 32785 (priority 32768 sys-id-ext 17)
146      Address f025.72f7.e680
147      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
148      Aging Time 300 sec
149
150  Interface      Role Sts Cost Prio.Nbr Type
151  -----
152  Fa0/24         Root FWD 19   128.24 P2p

```



```

153
154
155
156 VLAN0019
157   Spanning tree enabled protocol ieee
158   Root ID Priority 32787
159         Address 24b6.5725.d180
160         Cost    38
161         Port    24 (FastEthernet0/24)
162         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
163
164   Bridge ID Priority 32787 (priority 32768 sys-id-ext 19)
165         Address f025.72f7.e680
166         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
167         Aging Time 300 sec
168
169   Interface      Role Sts Cost Prio.Nbr Type
170   -----
171   Fa0/24         Root FWD 19   128.24 P2p
172
173
174
175 VLAN0046
176   Spanning tree enabled protocol ieee
177   Root ID Priority 32814
178         Address 24b6.5725.d180
179         Cost    38
180         Port    24 (FastEthernet0/24)
181         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
182
183   Bridge ID Priority 32814 (priority 32768 sys-id-ext 46)
184         Address f025.72f7.e680
185         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
186         Aging Time 300 sec
187
188   Interface      Role Sts Cost Prio.Nbr Type
189   -----
190   Fa0/24         Root FWD 19   128.24 P2p
191
192
193
194 VLAN1006
195   Spanning tree enabled protocol ieee
196   Root ID Priority 33774
197         Address 24b6.5725.d180
198         Cost    38
199         Port    24 (FastEthernet0/24)
200         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
201
202   Bridge ID Priority 33774 (priority 32768 sys-id-ext 1006)
203         Address f025.72f7.e680
204         Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
205         Aging Time 300 sec
206
207   Interface      Role Sts Cost Prio.Nbr Type
208   -----
209   Fa0/24         Root FWD 19   128.24 P2p

```

A.33.8. VLAN

```

1 BR2_S3#show vlan
2
3 VLAN Name                Status Ports
4 -----
5 1  default                active Fa0/1, Fa0/2, Fa0/3, Fa0/4
6                                Fa0/5, Fa0/6, Fa0/7, Fa0/8
7                                Fa0/9, Fa0/10, Fa0/11, Fa0/12
8                                Fa0/13, Fa0/14, Fa0/15, Fa0/16
9                                Fa0/17, Fa0/18, Fa0/19, Fa0/20
10                               Fa0/21, Fa0/22, Fa0/23, Gi0/1
11                               Gi0/2
12 2  VLAN0002              active
13 3  VLAN0003              active
14 4  VLAN0004              active
15 5  VLAN0005              active
16 10 HR                    active
17 11 IT                    active
18 17 VLAN0017              active
19 19 VLAN0019              active
20 46 VLAN0046              active
21 1002 fddi-default        act/unsup
22 1003 trcrf-default        act/unsup
23 1004 fddinet-default      act/unsup
24 1005 trbrf-default        act/unsup
25
26 VLAN Name                Status Ports
27 -----
28 1006 VLAN1006            active
29
30 VLAN Type SAID    MTU  Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
31 -----
32 1  enet 100001 1500 -    -    -    -    -    0    0
33 2  enet 100002 1500 -    -    -    -    -    0    0
34 3  enet 100003 1500 -    -    -    -    -    0    0
35 4  enet 100004 1500 -    -    -    -    -    0    0
36 5  enet 100005 1500 -    -    -    -    -    0    0
37 10 enet 100010 1500 -    -    -    -    -    0    0
38 11 enet 100011 1500 -    -    -    -    -    0    0
39 17 enet 100017 1500 -    -    -    -    -    0    0
40 19 enet 100019 1500 -    -    -    -    -    0    0
41 46 enet 100046 1500 -    -    -    -    -    0    0
42 1002 fddi 101002 1500 -    -    -    -    -    0    0
43 1003 trcrf 101003 4472 1005 3276 -    -    srb    0    0
44 1004 fdnet 101004 1500 -    -    -    -    -    0    0
45 1005 trbrf 101005 4472 -    -    15    -    -    0    0
46 1006 enet 101006 1500 -    -    -    -    -    0    0
47
48
49 VLAN AREHops STEHops Backup CRF
50 -----
51
52
53 VLAN AREHops STEHops Backup CRF
54 -----
55 1003 7      7      off
56
57 Remote SPAN VLANs
58 -----
59
60
61 Primary Secondary Type      Ports
62 -----

```

A.34. BR2-S4

A.34.1. Running Configuration

```
1 BR2_S4#show run
2 Building configuration...
3
4 Current configuration : 2879 bytes
5 !
6 ! Last configuration change at 13:12:38 UTC Mon Mar 1 1993
7 !
8 version 15.0
9 no service pad
10 service timestamps debug datetime msec
11 service timestamps log datetime msec
12 no service password-encryption
13 !
14 hostname BR2_S4
15 !
16 boot-start-marker
17 boot-end-marker
18 !
19 enable secret 5 $1$4Bgw$1NJwpzYWCd7Jsk7qFR068.
20 !
21 username ins password 0 ins@lab
22 no aaa new-model
23 system mtu routing 1500
24 !
25 !
26 no ip domain-lookup
27 !
28 !
29 crypto pki trustpoint HTTPS_SS_CERT_KEYPAIR
30 enrollment selfsigned
31 serial-number
32 revocation-check none
33 rsa-keypair HTTPS_SS_CERT_KEYPAIR
34 !
35 !
36 crypto pki certificate chain HTTPS_SS_CERT_KEYPAIR
37 certificate self-signed 01
38     quit
39 !
40 !
41 !
42 !
43 !
44 spanning-tree mode pvst
45 spanning-tree extend system-id
46 !
47 vlan internal allocation policy ascending
48 !
49 !
50 !
51 !
52 !
53 !
54 interface FastEthernet0/1
```

```
55 | switchport mode access
56 | spanning-tree portfast
57 | !
58 | interface FastEthernet0/2
59 | switchport mode access
60 | spanning-tree portfast
61 | !
62 | interface FastEthernet0/3
63 | switchport mode access
64 | spanning-tree portfast
65 | !
66 | interface FastEthernet0/4
67 | switchport mode access
68 | spanning-tree portfast
69 | !
70 | interface FastEthernet0/5
71 | switchport mode access
72 | spanning-tree portfast
73 | !
74 | interface FastEthernet0/6
75 | switchport mode access
76 | spanning-tree portfast
77 | !
78 | interface FastEthernet0/7
79 | switchport mode access
80 | spanning-tree portfast
81 | !
82 | interface FastEthernet0/8
83 | switchport mode access
84 | spanning-tree portfast
85 | !
86 | interface FastEthernet0/9
87 | switchport mode access
88 | spanning-tree portfast
89 | !
90 | interface FastEthernet0/10
91 | switchport mode access
92 | spanning-tree portfast
93 | !
94 | interface FastEthernet0/11
95 | switchport mode access
96 | spanning-tree portfast
97 | !
98 | interface FastEthernet0/12
99 | switchport mode access
100 | spanning-tree portfast
101 | !
102 | interface FastEthernet0/13
103 | switchport mode access
104 | spanning-tree portfast
105 | !
106 | interface FastEthernet0/14
107 | switchport mode access
108 | spanning-tree portfast
109 | !
110 | interface FastEthernet0/15
111 | switchport mode access
112 | spanning-tree portfast
113 | !
114 | interface FastEthernet0/16
115 | switchport mode access
116 | spanning-tree portfast
```

```

117 !
118 interface FastEthernet0/17
119   switchport mode access
120   spanning-tree portfast
121 !
122 interface FastEthernet0/18
123   switchport mode access
124   spanning-tree portfast
125 !
126 interface FastEthernet0/19
127   switchport mode access
128   spanning-tree portfast
129 !
130 interface FastEthernet0/20
131   switchport mode access
132   spanning-tree portfast
133 !
134 interface FastEthernet0/21
135   switchport mode access
136   spanning-tree portfast
137 !
138 interface FastEthernet0/22
139   switchport mode access
140   spanning-tree portfast
141 !
142 interface FastEthernet0/23
143 !
144 interface FastEthernet0/24
145 !
146 interface GigabitEthernet0/1
147 !
148 interface GigabitEthernet0/2
149 !
150 interface Vlan1
151   no ip address
152 !
153 interface Vlan103
154   ip address 172.16.23.4 255.255.255.0
155 !
156 ip default-gateway 172.16.23.1
157 ip http server
158 ip http secure-server
159 snmp-server community private RW
160 snmp-server community public R0
161 !
162 !
163 line con 0
164 line vty 0 4
165   password cisco
166   login
167 line vty 5 15
168   password cisco
169   login
170 !
171 end

```

A.34.2. IP Interfaces

```

1 BR2_S4#show ip interface brief
2 Interface          IP-Address  OK? Method Status  Protocol

```

```

3  |Vlan1                unassigned YES unset up          up
4  |Vlan103             172.16.23.4 YES manual down       down
5  |FastEthernet0/1     unassigned YES unset down       down
6  |FastEthernet0/2     unassigned YES unset down       down
7  |FastEthernet0/3     unassigned YES unset down       down
8  |FastEthernet0/4     unassigned YES unset down       down
9  |FastEthernet0/5     unassigned YES unset down       down
10 |FastEthernet0/6     unassigned YES unset down       down
11 |FastEthernet0/7     unassigned YES unset down       down
12 |FastEthernet0/8     unassigned YES unset down       down
13 |FastEthernet0/9     unassigned YES unset down       down
14 |FastEthernet0/10    unassigned YES unset down       down
15 |FastEthernet0/11    unassigned YES unset down       down
16 |FastEthernet0/12    unassigned YES unset down       down
17 |FastEthernet0/13    unassigned YES unset down       down
18 |FastEthernet0/14    unassigned YES unset down       down
19 |FastEthernet0/15    unassigned YES unset down       down
20 |FastEthernet0/16    unassigned YES unset down       down
21 |FastEthernet0/17    unassigned YES unset down       down
22 |FastEthernet0/18    unassigned YES unset down       down
23 |FastEthernet0/19    unassigned YES unset down       down
24 |FastEthernet0/20    unassigned YES unset down       down
25 |FastEthernet0/21    unassigned YES unset down       down
26 |FastEthernet0/22    unassigned YES unset down       down
27 |FastEthernet0/23    unassigned YES unset up        up
28 |FastEthernet0/24    unassigned YES unset up        up
29 |GigabitEthernet0/1  unassigned YES unset down       down
30 |GigabitEthernet0/2  unassigned YES unset down       down

```

A.34.3. Interface Status

```

1  |BR2_S4#show interface status
2
3  |Port    Name          Status    Vlan    Duplex Speed Type
4  |Fa0/1    Fa0/1              notconnect 1        auto  auto  10/100BaseTX
5  |Fa0/2    Fa0/2              notconnect 1        auto  auto  10/100BaseTX
6  |Fa0/3    Fa0/3              notconnect 1        auto  auto  10/100BaseTX
7  |Fa0/4    Fa0/4              notconnect 1        auto  auto  10/100BaseTX
8  |Fa0/5    Fa0/5              notconnect 1        auto  auto  10/100BaseTX
9  |Fa0/6    Fa0/6              notconnect 1        auto  auto  10/100BaseTX
10 |Fa0/7    Fa0/7              notconnect 1        auto  auto  10/100BaseTX
11 |Fa0/8    Fa0/8              notconnect 1        auto  auto  10/100BaseTX
12 |Fa0/9    Fa0/9              notconnect 1        auto  auto  10/100BaseTX
13 |Fa0/10   Fa0/10             notconnect 1        auto  auto  10/100BaseTX
14 |Fa0/11   Fa0/11             notconnect 1        auto  auto  10/100BaseTX
15 |Fa0/12   Fa0/12             notconnect 1        auto  auto  10/100BaseTX
16 |Fa0/13   Fa0/13             notconnect 1        auto  auto  10/100BaseTX
17 |Fa0/14   Fa0/14             notconnect 1        auto  auto  10/100BaseTX
18 |Fa0/15   Fa0/15             notconnect 1        auto  auto  10/100BaseTX
19 |Fa0/16   Fa0/16             notconnect 1        auto  auto  10/100BaseTX
20 |Fa0/17   Fa0/17             notconnect 1        auto  auto  10/100BaseTX
21 |Fa0/18   Fa0/18             notconnect 1        auto  auto  10/100BaseTX
22 |Fa0/19   Fa0/19             notconnect 1        auto  auto  10/100BaseTX
23 |Fa0/20   Fa0/20             notconnect 1        auto  auto  10/100BaseTX
24 |Fa0/21   Fa0/21             notconnect 1        auto  auto  10/100BaseTX
25
26 |Port    Name          Status    Vlan    Duplex Speed Type
27 |Fa0/22   Fa0/22              notconnect 1        auto  auto  10/100BaseTX
28 |Fa0/23   Fa0/23              connected trunk a-full a-100 10/100BaseTX
29 |Fa0/24   Fa0/24              connected trunk a-full a-100 10/100BaseTX

```

```

30 Gi0/1          notconnect 1      auto auto Not Present
31 Gi0/2          notconnect 1      auto auto Not Present

```

A.34.4. Interface Trunk

```

1 BR2_S4#show interface trunk
2
3 Port      Mode      Encapsulation Status Native vlan
4 Fa0/23    auto      802.1q      trunking  1
5 Fa0/24    auto      802.1q      trunking  1
6
7 Port      Vlans allowed on trunk
8 Fa0/23    1-4094
9 Fa0/24    1-4094
10
11 Port      Vlans allowed and active in management domain
12 Fa0/23    1-5,17,19,46,1006
13 Fa0/24    1-5,17,19,46,1006
14
15 Port      Vlans in spanning tree forwarding state and not pruned
16 Fa0/23    1-5,17,19,46,1006
17 Fa0/24    none

```

A.34.5. Neighbors

```

1 BR2_S4#show cdp neighbors
2 Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
3                   S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone,
4                   D - Remote, C - CVTA, M - Two-port Mac Relay
5
6 Device ID    Local Intrfce Holdtme Capability Platform Port ID
7 BR2_S1       Fas 0/24    151      R S I WS-C3560V Fas 0/7
8 BR2_S1       Fas 0/23    151      R S I WS-C3560V Fas 0/6

```

A.34.6. IP Route

```

1 BR2_S4#show ip route
2 ^
3 % Invalid input detected at '^' marker.

```

A.34.7. Spanning Tree

```

1 BR2_S4#show spanning
2
3 VLAN0001
4 Spanning tree enabled protocol ieee
5 Root ID Priority 32769
6 Address 24b6.5725.d180
7 Cost 38
8 Port 23 (FastEthernet0/23)
9 Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
10
11 Bridge ID Priority 32769 (priority 32768 sys-id-ext 1)

```

```

12      Address f025.72f9.bf80
13      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
14      Aging Time 300 sec

```

```

15
16 Interface      Role Sts Cost Prio.Nbr Type
17 -----
18 Fa0/23          Root FWD 19   128.23 P2p
19 Fa0/24          Altn BLK 19   128.24 P2p

```

VLAN0002

```

22
23 Spanning tree enabled protocol ieee
24 Root ID Priority 32770
25      Address 24b6.5725.d180
26      Cost    38
27      Port    23 (FastEthernet0/23)
28      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
29
30 Bridge ID Priority 32770 (priority 32768 sys-id-ext 2)
31      Address f025.72f9.bf80
32      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
33      Aging Time 300 sec

```

```

34
35 Interface      Role Sts Cost Prio.Nbr Type
36 -----
37 Fa0/23          Root FWD 19   128.23 P2p
38 Fa0/24          Altn BLK 19   128.24 P2p

```

VLAN0003

```

40
41 Spanning tree enabled protocol ieee
42 Root ID Priority 32771
43      Address 24b6.5725.d180
44      Cost    38
45      Port    23 (FastEthernet0/23)
46      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
47
48 Bridge ID Priority 32771 (priority 32768 sys-id-ext 3)
49      Address f025.72f9.bf80
50      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
51      Aging Time 300 sec

```

```

52
53 Interface      Role Sts Cost Prio.Nbr Type
54 -----
55 Fa0/23          Root FWD 19   128.23 P2p
56 Fa0/24          Altn BLK 19   128.24 P2p

```

VLAN0004

```

58
59 Spanning tree enabled protocol ieee
60 Root ID Priority 32772
61      Address 24b6.5725.d180
62      Cost    38
63      Port    23 (FastEthernet0/23)
64      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
65
66 Bridge ID Priority 32772 (priority 32768 sys-id-ext 4)
67      Address f025.72f9.bf80
68      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

```



```

74      Aging Time 300 sec
75
76      Interface      Role Sts Cost Prio.Nbr Type
77      -----
78      Fa0/23         Root FWD 19   128.23 P2p
79      Fa0/24         Altn BLK 19   128.24 P2p
80
81
82
83      VLAN0005
84      Spanning tree enabled protocol ieee
85      Root ID Priority 32773
86      Address 24b6.5725.d180
87      Cost 38
88      Port 23 (FastEthernet0/23)
89      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
90
91      Bridge ID Priority 32773 (priority 32768 sys-id-ext 5)
92      Address f025.72f9.bf80
93      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
94      Aging Time 300 sec
95
96      Interface      Role Sts Cost Prio.Nbr Type
97      -----
98      Fa0/23         Root FWD 19   128.23 P2p
99      Fa0/24         Altn BLK 19   128.24 P2p
100
101
102
103      VLAN0017
104      Spanning tree enabled protocol ieee
105      Root ID Priority 32785
106      Address 24b6.5725.d180
107      Cost 38
108      Port 23 (FastEthernet0/23)
109      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
110
111      Bridge ID Priority 32785 (priority 32768 sys-id-ext 17)
112      Address f025.72f9.bf80
113      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
114      Aging Time 300 sec
115
116      Interface      Role Sts Cost Prio.Nbr Type
117      -----
118      Fa0/23         Root FWD 19   128.23 P2p
119      Fa0/24         Altn BLK 19   128.24 P2p
120
121
122
123      VLAN0019
124      Spanning tree enabled protocol ieee
125      Root ID Priority 32787
126      Address 24b6.5725.d180
127      Cost 38
128      Port 23 (FastEthernet0/23)
129      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
130
131      Bridge ID Priority 32787 (priority 32768 sys-id-ext 19)
132      Address f025.72f9.bf80
133      Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
134      Aging Time 300 sec
135

```

136	Interface	Role	Sts	Cost	Prio.Nbr	Type
137	-----					
138	Fa0/23	Root	FWD	19	128.23	P2p
139	Fa0/24	Altn	BLK	19	128.24	P2p
140						
141						
142						
143	VLAN0046					
144	Spanning tree enabled protocol ieee					
145	Root ID Priority 32814					
146	Address 24b6.5725.d180					
147	Cost 38					
148	Port 23 (FastEthernet0/23)					
149	Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec					
150						
151	Bridge ID Priority 32814 (priority 32768 sys-id-ext 46)					
152	Address f025.72f9.bf80					
153	Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec					
154	Aging Time 300 sec					
155						
156	Interface	Role	Sts	Cost	Prio.Nbr	Type
157	-----					
158	Fa0/23	Root	FWD	19	128.23	P2p
159	Fa0/24	Altn	BLK	19	128.24	P2p
160						
161						
162						
163	VLAN1006					
164	Spanning tree enabled protocol ieee					
165	Root ID Priority 33774					
166	Address 24b6.5725.d180					
167	Cost 38					
168	Port 23 (FastEthernet0/23)					
169	Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec					
170						
171	Bridge ID Priority 33774 (priority 32768 sys-id-ext 1006)					
172	Address f025.72f9.bf80					
173	Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec					
174	Aging Time 300 sec					
175						
176	Interface	Role	Sts	Cost	Prio.Nbr	Type
177	-----					
178	Fa0/23	Root	FWD	19	128.23	P2p
179	Fa0/24	Altn	BLK	19	128.24	P2p

A.34.8. VLAN

1	BR2_S4#show vlan		
2			
3	VLAN Name	Status	Ports
4	-----		
5	1 default	active	Fa0/1, Fa0/2, Fa0/3, Fa0/4
6			Fa0/5, Fa0/6, Fa0/7, Fa0/8
7			Fa0/9, Fa0/10, Fa0/11, Fa0/12
8			Fa0/13, Fa0/14, Fa0/15, Fa0/16
9			Fa0/17, Fa0/18, Fa0/19, Fa0/20
10			Fa0/21, Fa0/22, Gi0/1, Gi0/2
11	2 VLAN0002	active	
12	3 VLAN0003	active	
13	4 VLAN0004	active	

```

14 5   VLAN0005           active
15 17  VLAN0017           active
16 19  VLAN0019           active
17 46  VLAN0046           active
18 1002 fddi-default      act/unsup
19 1003 trcrf-default     act/unsup
20 1004 fddinet-default   act/unsup
21 1005 trbrf-default     act/unsup
22 1006 VLAN1006          active
23
24 VLAN Type SAID  MTU  Parent RingNo BridgeNo Stp BrdgMode Trans1 Trans2
25 -----
26 1   enet 100001  1500 -    -    -    -    -    0    0
27 2   enet 100002  1500 -    -    -    -    -    0    0
28 3   enet 100003  1500 -    -    -    -    -    0    0
29 4   enet 100004  1500 -    -    -    -    -    0    0
30 5   enet 100005  1500 -    -    -    -    -    0    0
31 17  enet 100017  1500 -    -    -    -    -    0    0
32 19  enet 100019  1500 -    -    -    -    -    0    0
33 46  enet 100046  1500 -    -    -    -    -    0    0
34 1002 fddi 101002  1500 -    -    -    -    -    0    0
35 1003 trcrf 101003  4472 1005 3276 -    -    srb    0    0
36 1004 fdnet 101004  1500 -    -    -    ieee -    0    0
37 1005 trbrf 101005  4472 -    -    15    ibm -    0    0
38 1006 enet 101006  1500 -    -    -    -    -    0    0
39
40
41 VLAN AREHops STEHops Backup CRF
42 -----
43 1003 7      7      off
44
45 Remote SPAN VLANs
46 -----
47
48
49 Primary Secondary Type      Ports
50 -----

```

B. Messungen

B.1. Von X nach Y