

Cloud Infrastucture Lab1

Layer 1 und Layer 3 Map

Siehe Netzwerk-Map im Anhang. Interface(Media / Speed) und Device Beschreibung ist im Anhang unter Konfiguration zu finden. Layer3 Protokolle sind im Anhang unter Konfiguration zu finden.

Layer 2

Siehe Netzwerk Map im Anhang. VLAN Konfiguration ist im Anhang unter Konfiguration ersichtlich.

Messungen Traceroute

Wir nahmen folgende Messungen vor. Es wurde jeweils ein Client an den Switch/Router verbunden, welcher mit from gekennzeichnet wurde. Von diesem Client wurden die Traceroutes und Pings zu dem Netzwerkgerät, welches mit to gekennzeichnet ist, abgesetzt

from AS1 to BR1_S1

Tracing route to 172.16.100.2 over a maximum of 30 hops

1	2 ms	2 ms	2 ms	172.16.16.1
2	3 ms	1 ms	2 ms	172.16.254.33
3	1 ms	1 ms	1 ms	172.16.254.2
4	1 ms	1 ms	1 ms	172.16.254.58
5	1 ms	1 ms	1 ms	172.16.254.62
6	1842 ms	1532 ms	1676 ms	172.16.252.2
7	1419 ms	1042 ms	655 ms	172.16.100.2

from AS1 to BR2_S1

Tracing route to 172.16.102.2 over a maximum of 30 hops

1	2 ms	1 ms	4 ms	172.16.16.1
2	1 ms	1 ms	2 ms	172.16.254.33
3	1 ms	1 ms	1 ms	172.16.254.2
4	1 ms	1 ms	1 ms	172.16.254.58
5	1 ms	1 ms	1 ms	172.16.254.62
6	501 ms	66 ms	65 ms	172.16.252.3
7	363 ms	79 ms	62 ms	172.16.102.2

from BR1_S2 to AS1

Tracing route to 172.16.20.3 over a maximum of 30 hops

1	2 ms	1 ms	2 ms	172.16.101.1
2	1 ms	1 ms	1 ms	172.16.100.1
3	347 ms	217 ms	413 ms	172.16.252.1
4	467 ms	398 ms	195 ms	172.16.254.61
5	74 ms	49 ms	44 ms	172.16.254.57
6	79 ms	347 ms	77 ms	172.16.254.49
7	419 ms	354 ms	739 ms	172.16.20.3

from AS2 to BR1_R1 via IER1

Tracing route to 200.200.200.2 over a maximum of 30 hops

1	1 ms	1 ms	2 ms	172.16.17.1
2	1 ms	1 ms	1 ms	172.16.254.33
3	1 ms	1 ms	2 ms	172.16.254.2
4	1 ms	1 ms	1 ms	172.16.254.66
5	76 ms	27 ms	67 ms	200.200.200.2

from AS2 to BR1_R2 via IER1

Tracing route to 200.200.200.3 over a maximum of 30 hops

1	2 ms	1 ms	2 ms	172.16.17.1
2	2 ms	1 ms	1 ms	172.16.254.33
3	2 ms	1 ms	1 ms	172.16.254.2
4	1 ms	1 ms	1 ms	172.16.254.66
5	27 ms	81 ms	170 ms	200.200.200.3

Trace complete.

from AS2 to BR2_S2

Tracing route to 200.200.200.3 over a maximum of 30 hops

1	2 ms	1 ms	2 ms	172.16.17.1
2	2 ms	1 ms	1 ms	172.16.254.33
3	2 ms	1 ms	1 ms	172.16.254.2
4	1 ms	1 ms	1 ms	172.16.254.66
5	27 ms	81 ms	170 ms	200.200.200.3

from AS11 to BR1_S2

Tracing route to 172.16.22.2 over a maximum of 30 hops

1	2 ms	1 ms	1 ms	172.16.1.1
2	2 ms	1 ms	2 ms	172.16.254.21
3	2 ms	1 ms	2 ms	172.16.254.5
4	2 ms	1 ms	2 ms	172.16.254.2
5	11 ms	11 ms	12 ms	172.16.254.58
6	1 ms	1 ms	1 ms	172.16.254.62
7	1498 ms	1303 ms	852 ms	172.16.252.2
8	658 ms	491 ms	362 ms	172.16.100.2
9	262 ms	620 ms	289 ms	172.16.22.2

from AS11 to BR2_S2

Tracing route to 172.16.23.2 over a maximum of 30 hops

1	1 ms	1 ms	1 ms	172.16.1.1
2	1 ms	1 ms	3 ms	172.16.254.21
3	2 ms	1 ms	1 ms	172.16.254.5
4	2 ms	1 ms	2 ms	172.16.254.2
5	1 ms	1 ms	1 ms	172.16.254.58
6	1 ms	1 ms	1 ms	172.16.254.62
7	214 ms	44 ms	44 ms	172.16.252.3
8	357 ms	45 ms	46 ms	172.16.102.2
9	409 ms	53 ms	53 ms	172.16.23.2

from BR1_R1 to FRR

```
BR1_R1#ping 172.16.252.1
Success rate is 100 percent (5/5), round-trip min/avg/max = 276/437/680 ms
```

from BR1 to IER1

```
BR1_R1#ping 200.200.200.1
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/4 ms
```

From BR2_S2 to HQ_AS1

Tracing route to 172.16.20.3 over a maximum of 30 hops

1	1 ms	1 ms	1 ms	172.16.103.1
2	1 ms	1 ms	1 ms	172.16.102.1
3	58 ms	89 ms	87 ms	172.16.252.1
4	265 ms	49 ms	91 ms	172.16.254.61
5	73 ms	308 ms	90 ms	172.16.254.57
6	135 ms	307 ms	92 ms	172.16.254.49
7	138 ms	311 ms	91 ms	172.16.20.3

From BR2_S2 to HQ_AS6

Tracing route to 172.16.20.8 over a maximum of 30 hops

1	1 ms	1 ms	2 ms	172.16.103.1
2	1 ms	1 ms	1 ms	172.16.102.1
3	233 ms	284 ms	49 ms	172.16.252.1
4	183 ms	284 ms	44 ms	172.16.254.61
5	166 ms	275 ms	46 ms	172.16.254.57
6	166 ms	309 ms	86 ms	172.16.254.49
7	139 ms	311 ms	94 ms	172.16.20.8

From HQ_FRR to BR1_R1 (ping on switch)

```
HQ_FRR#ping 172.16.252.2
```

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 172.16.252.2, timeout is 2 seconds:

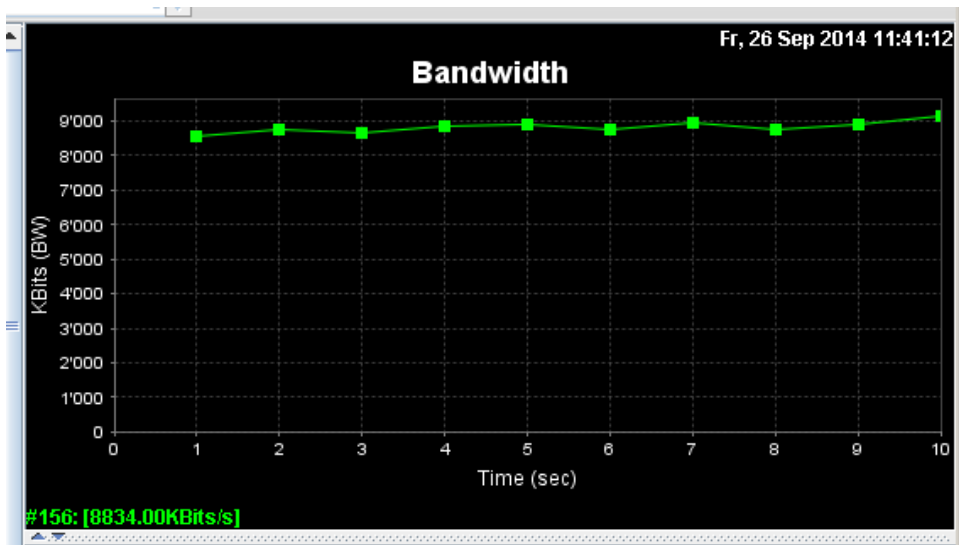
!!!!!!

Success rate is 100 percent (5/5), round-trip min/avg/max = 392/640/1188 ms

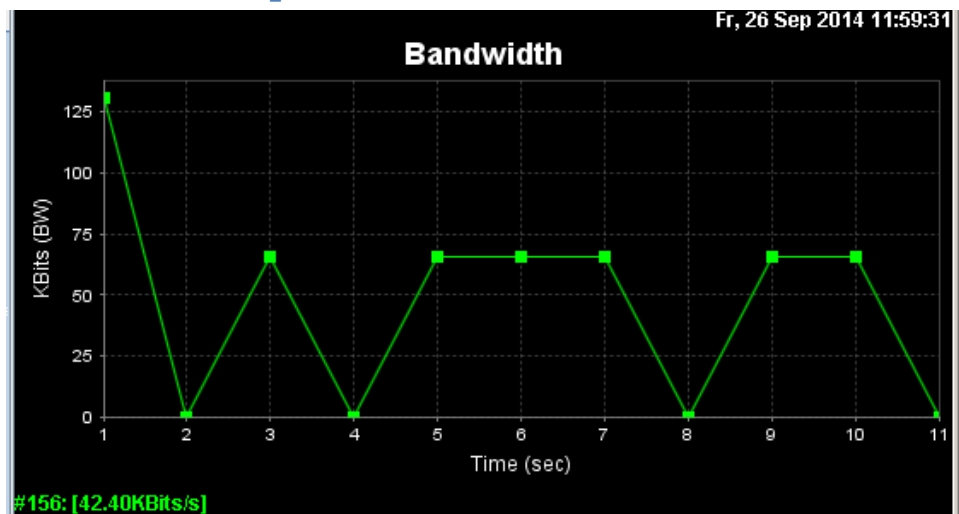
Messungen jPerf

Hier wurden TCP Testverbindungen mit jPerf getestet. Jeweils mit einem Client an dem ersten Switch und einem Server am zweiten Switch. Der Graf zeigt den Durchsatz über die Zeit.

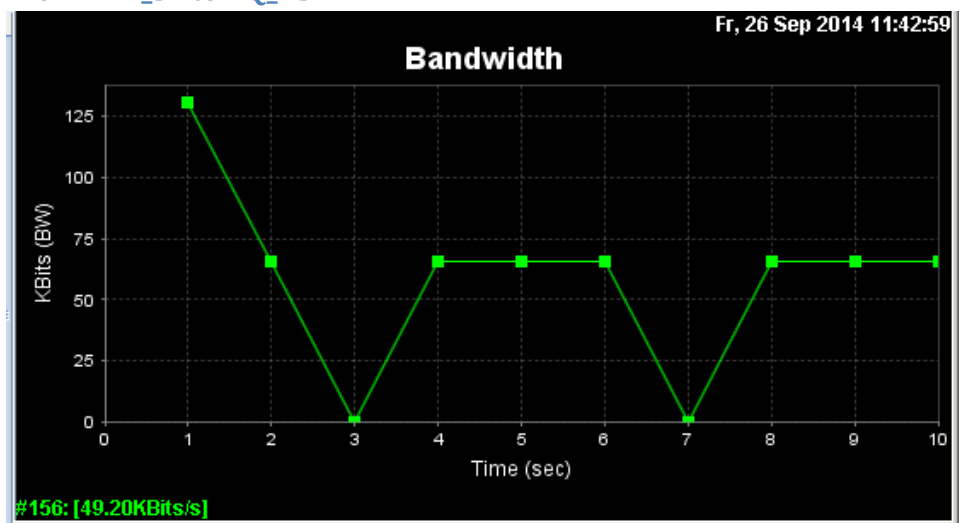
From AS11 to HQ_AS4



From BR1S2 to BR2_S2



From BR2_S2 to HQ_AS4



Gefundene Fehler

Physical

Folgt eine Auflistung der Ports und Portchannels, welche falsch konfiguriert sind. Die Konfiguration der Ports ist im Anhang dieses Dokuments ersichtlich.

- **Link DS1 → CS1** Der Portchannel 3 sind auf CS1 auf 10Mbit beschränkt. Die Ports auf CS1 und DS1 sind auf 10 Mbit beschränkt.
- **Link CS1 → DS2**, Alle 4 Ports des Links sind auf halb Duplex konfiguriert.
- **Link CS2 → CS4**, Alle 4 Ports des Links sind auf 10Mbit beschränkt.

HQ_CS2 ist ein Single Point of Failure, welcher den Ausfall der Verbindung zu beiden Branches unterbrechen würde.

Logical

- Frame Relay mit Packet Loss aufgrund von Überlastung, deshalb auch langsam und unzuverlässig Dies ist in der Messung mit jPerf ersichtlich. Die zwei Messungen From BR1S2 to BR2_S2 und From BR2_S2 to HQ_AS4 zeigen wie zwischenzeitlich Pakete verloren gehen und somit auch gleich ein Einbruch in dem Durchsatz auftritt.
- Per Default geschieht das Routing über den Frame Relay Switch anstatt über den schnelleren ServiceProviderSwitch. Dies schlägt sich in den Antwortzeiten nieder. In den Traceroute Messungen ist schön zu sehen, dass die Antwortzeiten über der Frame Relay extrem hoch sind (siehe z.B. Messung from AS11 to BR1_S2). Über den Providerswitch, Messung from AS2 to BR1_R1 via IER1, ist die Verbindung enorm viel schneller.
- Unschönheit: DHCP Pool zu Vlan 10 und Vlan20 heissen nicht gleich wie Vlan selbst.
- In Branch 1 und Branch 2 wird jeweils je Vlan1 benutzt. Wäre aus Übersichtsgründen schöner wenn ein unterschiedlich benanntes Vlan benutzt würde.

Weiteres Vorgehen / Verbesserungen

- Routing richtigstellen von Core zu BR und auch BR1 to BR2 → Default Routen über Provider Switch
- Frame Relay ersetzen durch etwas moderneres (z.B.zweite Verbindung über anderen Provider Switch)
- Alle Links auf volle Geschwindigkeit aufbohren
- Alle auf Vollduplex Mode schalten bzw. Auto
- HQ_WER1 und HQ_IER1 mit CS4 verbinden um redundante Anbindung zu erreichen
- HQ_DS4 nebst HQ_DS3 hinzufügen damit Redundanz auf Distributionsebene gegeben ist
- Alle Access Switchen redundant anbinden

Report

Als wir das Netz untersuchten, konnten wir einige Fehlkonfigurationen in den Geräten sowie einige Designschwachstellen entdecken. Die Richtigstellung der Fehlkonfiguration ist schnell durchgeführt und kann ohne Netzwerkunterbruch erledigt werden. Dadurch können einige Performanceissues behoben werden. Die Richtigstellung der Designschwachstelle erfordert neue Hardware. Nach dieser Optimierung wird das Netzwerk performanter arbeiten und kann auch plötzlich eintretende Fehler ohne Netzwerkunterbrechung behandeln.

Kostenschätzung

Um alle unter Weiteres „Vorgeben / Verbesserungen“ genannten Verbesserungen vorzunehmen, haben wir folgenden Kostenvoranschlag vorbereitet:

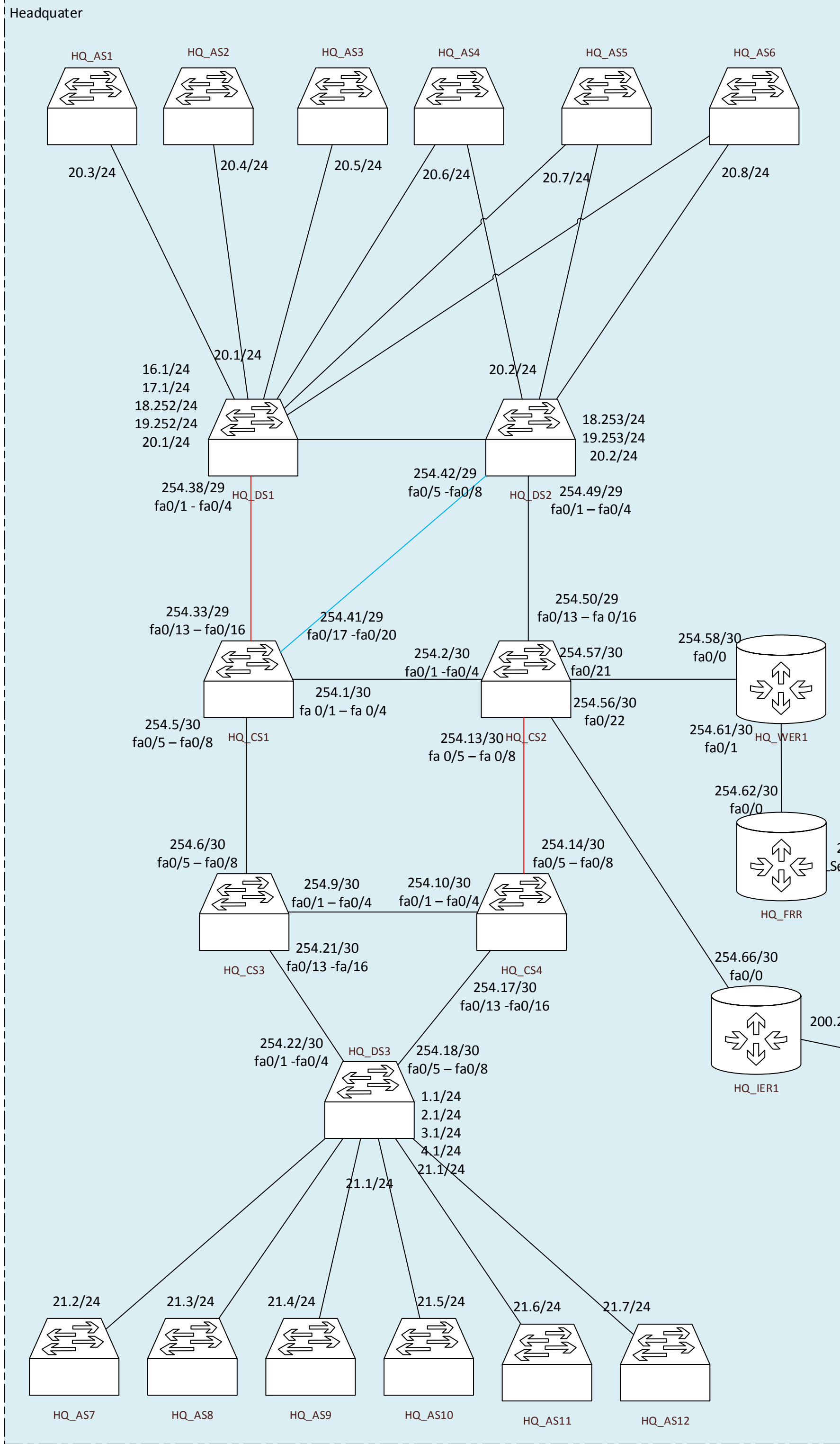
(Alle Preise in CHF)

Switch (HQ_DS4) WS-C3560-24TS	1 Stk.	2500.-
Switch DS4 einbinden und verbinden	4 Stunden à 150.-	600.-
Routing richtigstellen	2 Stunden à 150.-	300.-
Linkgeschwindigkeiten und Duplexmodus korrigieren	1 Stunde à 150.-	150.-
Zusätzliche redundante Anbindung CS4	3 Stunden à 150.-	450.-
Redundante Access-Switchanbindungen	8 Stunden à 150.-	1200.-
Erneute Messungen zum Vergleich	4 Stunden à 150.-	600.-
Patchkabel Cat5e	15 Stk. À 3.	45.-
Total		3595.-

-

Anhang

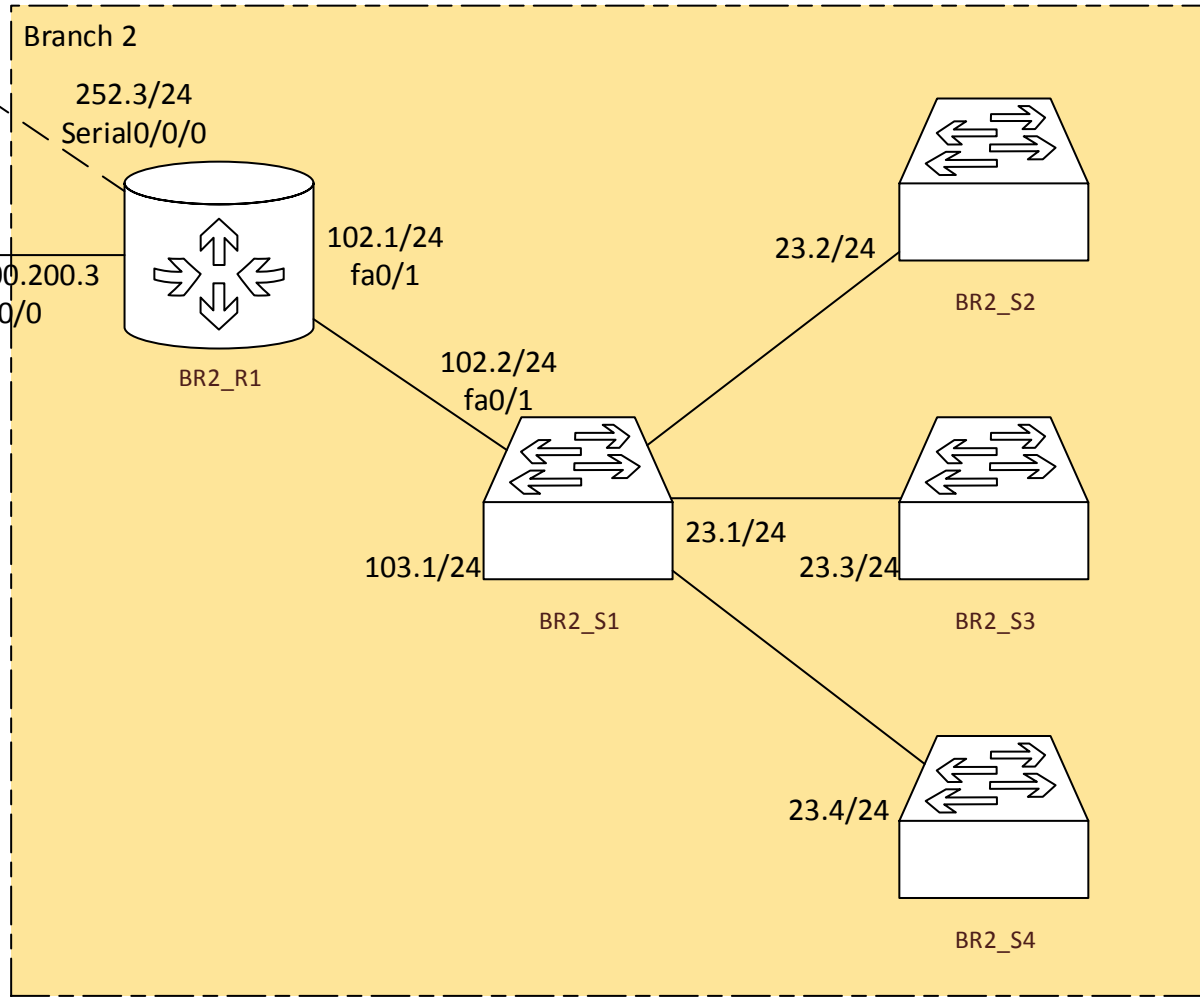
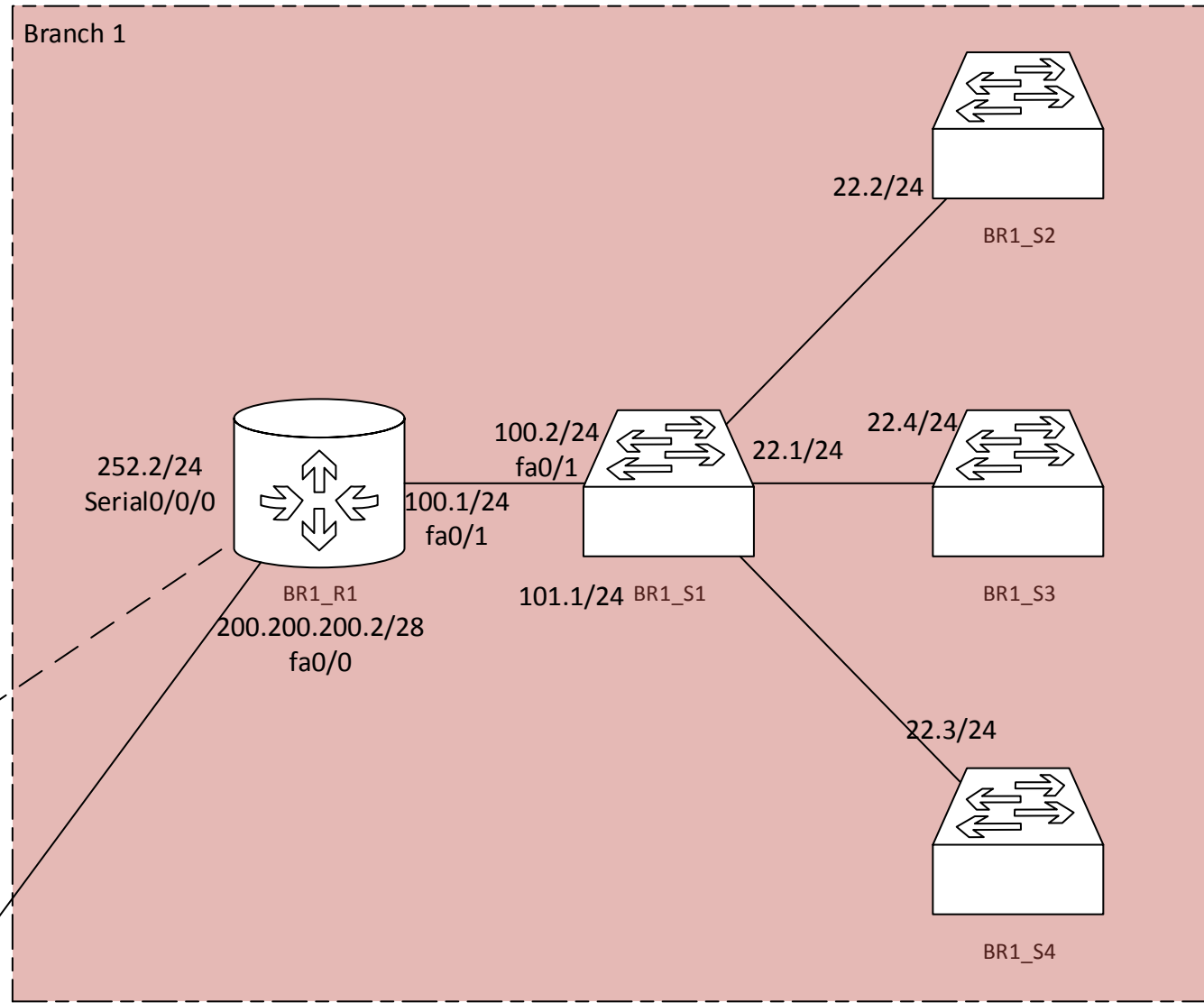
- Netzwerkplan Layer 1 und Layer3
- Netzwerkplan Layer 2
- Konfiguration der Switches



172.16.0.0/16

Vlan Adressierungsplan:

Vlan10:	1.0/24	faculty-staff / HR ?
Vlan11:	2.0/24	Engineering
Vlan20:	3.0/24	Students / Production ?
Vlan21:	16.0/24	IT
Vlan30:	17.0/24	Server
Vlan31:	4.0/24	Finance
Vlan40:	18.0/24	Marketing
Vlan41:	19.0/24	Sales
Vlan100:	20.0/24	MGMT
Vlan101:	21.0/24	MGMT
Vlan102:	22.0/24	Mgmt Branch1
Vlan103:	23.0/24	Mgmt Branch2
Vlan1 Branch1:	101.0/24	Branch1
Vlan1 Branch2:	103.0/24	Branch2

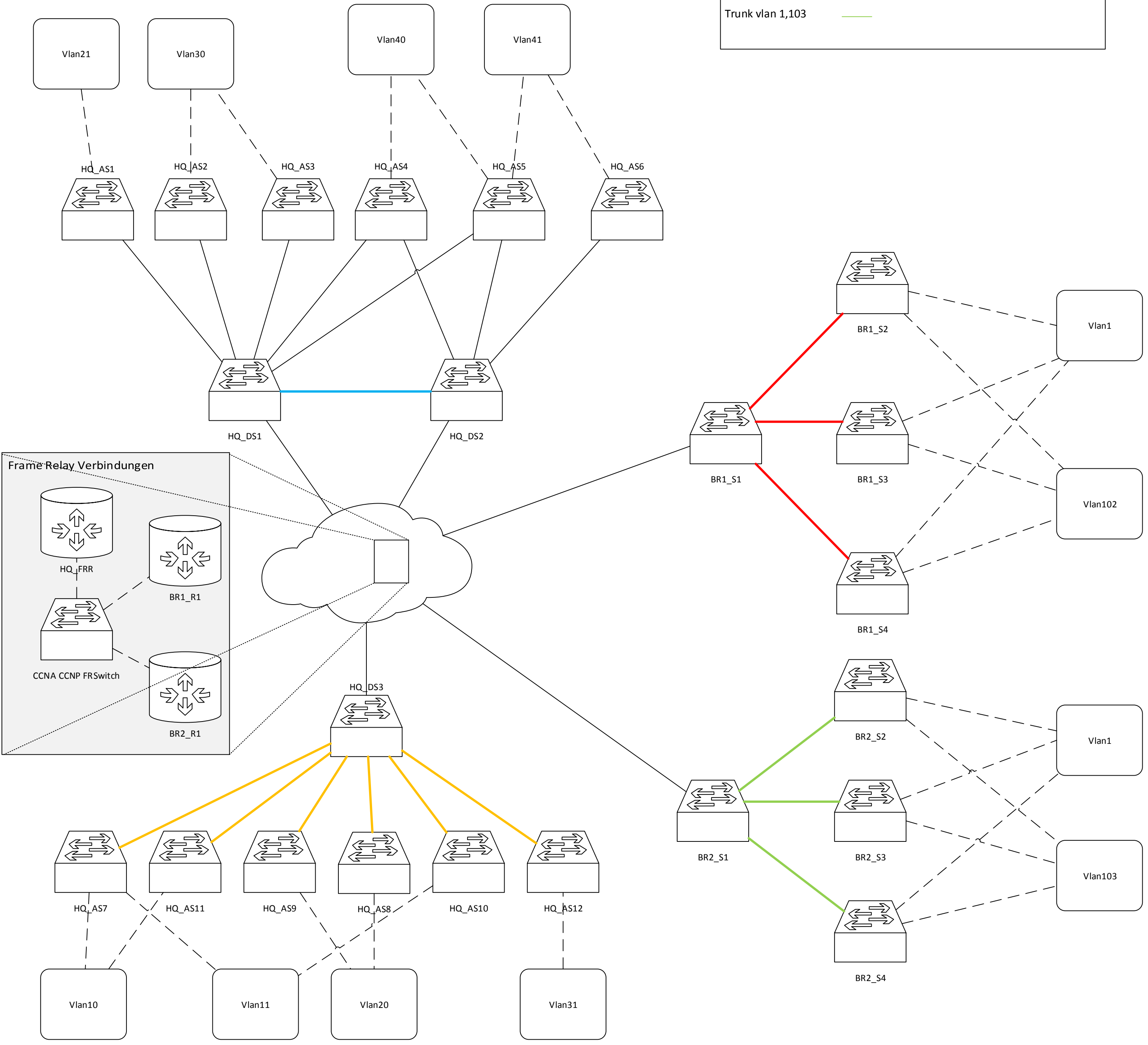


Legende:

Serial	-----
Ethernet 100Mbit	—————
Ethernet 10Mbit	—————
Ethernet 100 Mbit halbduplex	—————
fa0/1 – fa0/4:	Port channel group

Legende:

- Trunk vlan 10,11,20 —
- Trunk vlan 11,21, 30 —
- Trunk vlan 1,102 —
- Trunk vlan 1,103 —
- vlan Access - - - - -



Konfiguration

HSR CloudInf Praktikum 1 HS13

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15	Datasheet for HQ_AS10	19
16	Datasheet for HQ_AS11	20
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18	Datasheet for BR1_S2	22
19	Datasheet for BR1_S3	23
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24	Datasheet for HQ_CS4	28
25	Datasheet for HQ_DS3	29
26	Datasheet for HQ_CS1	30
27	Datasheet for HQ_DS2	31
28	Datasheet for HQ_CS2	32

29 Datasheet for HQ_WER1	33
30 Datasheet for HQ_FRR	34
31 Datasheet for HQ_IER1	35
32 Datasheet for HQ_CS3	36
33 Datasheet for HQ_IER1	37
34 Datasheet for BR1_R1	38
35 Datasheet for HQ_CS2	39

1 Einführung

Dieses Dokument wurde folgendermassen erstellt:

1.1 Konfiguration auslesen

Folgendes Expect Script liest die Konfiguration von \$1 aus:

```
#!/usr/ in/expect

set router [lindex $argv 0]
set pass cisco
set timeout 1000
set filesave [exec date +%m-%d-%Y]

spawn telnet $router
expect "Password:"
send "$pass\n"
expect ">"
send "en\n"
expect "Password:"
send "$pass\n"

log_file $router--$filesave.cfg
send "term len 0\n"
send "show running-config\n"
expect "end\r"
send "\n"
send "exit\n"
log_file
```

1.2 Konfiguration von allen Geräten auslesen

Folgendes Skript holt die Konfiguration von allen von uns gefundenen Geräten:

```
#!/bin/bash

for i in \
  172.16.16.1 \
  172.16.10{1,2,3}.1 \
  172.16.20.{8,7,5,6,3,4} \
  172.16.21.{4,5,2,3,6,7} \
  172.16.22.{2,3,4} \
  172.16.23.{2,3,4} \
  172.16.254.{6,49,1,57,8,7,58,62,66,18,14} \
  200.200.200.1
do
  if echo ping $i -c 1 >/dev/null 2>&1
  then
    echo "[*] Host $i alive. Getting config..."
    ./getcfg $i > $i.cfg
  else
    echo "[*] Host $i dead"
  fi
done
```

1.3 Cisco Konfiguration parsen

Folgendes Python Skript liest die wichtigen Informationen aus der Konfiguration von \$1 und gibt diese als CSV aus. Die Konfiguration wird mithilfe der Library ciscoconfparse geparkt:

```
#!/usr/bin/python

from ciscoconfparse import CiscoConfParse
import sys

#parse = CiscoConfParse('200.200.200.1.cfg')
```

```

parse = CiscoConfParse(sys.argv[1])

print("\nInterface; Portmode; Duplex; Speed; VLAN; IP; Proto; Tun Src; Tun Dst")
print("\n-----; -----; -----; -----; ----; --; -----; -----; -----")

#for intf in parse.find_objects(r'^interface.+?thetnet'):
for intf in parse.find_objects(r'^interface'):

    if intf.has_child_with(r'shutdown'):
        continue

    interface = intf.text.replace("interface ", "")

    if intf.has_child_with(r'switchport mode access'):
        mode = "access"
    elif intf.has_child_with(r'switchport mode trunk'):
        mode = "trunk"
    else:
        mode = "N/A"

    vlans=""
    for vlan in intf.re_search_children(r'switchport access vlan'):
        vlans = vlans + vlan.text.replace("switchport access vlan ", "")
    if vlans == "":
        vlans = "N/A";

    ip=""
    for ips in intf.re_search_children(r' ip address'):
        ip = ip + ips.text.replace(" ip address ", "")
    if ip == "" or ip == " no ip address":
        ip = "N/A";

    if intf.has_child_with(r'duplex auto'):
        duplex = "auto"
    elif intf.has_child_with(r'duplex half'):
        duplex = "half"
    else:
        duplex = "N/A"

    speed=""
    for s in intf.re_search_children(r' speed '):
        speed = speed + s.text.replace(" speed ", "")
    if speed == "":
        speed = "N/A";

    protocols = ""
    if intf.has_child_with(r' ip ospf '):
        protocols += "ospf"
    if intf.has_child_with(r' spanning-tree'):
        protocols += "stp"
    if protocols == "":
        protocols = "N/A";

    tunnel_source=""
    for i in intf.re_search_children(r' tunnel source '):
        tunnel_source = tunnel_source + i.text.replace(" tunnel source ", "")
    if tunnel_source == "":
        tunnel_source = "N/A";

    tunnel_destination=""
    for i in intf.re_search_children(r' tunnel destination '):
        tunnel_destination = tunnel_destination + i.text.replace(" tunnel destination ", "")
    if tunnel_destination == "":
        tunnel_destination = "N/A";

print(interface, ";", mode, ";", duplex, ";", speed, ";", vlans, ";", ip, ";", protocols, ";", tunnel_source, ";", tunnel_destination)

```

1.4 Schönes PDF generieren

Mit folgendem Skript wandelt man das CSV in eine Tabelle um und fügt Überschriften ein. Mit Pandoc wird das Markdown in ein LaTeX file und anschliessend in ein PDF konvertiert:

```
#!/bin/bash

cat << EOI > output.md
---
title: Konfiguration
subtitle: HSR CloudInf Praktikum 1 HS13
author: Emanuel Duss, Roland Bischofberger
lang: german
papersize: a4paper
fontsize: 9pt
classoption: oneseide, parskip
documentclass: scrartcl # screprt
geometry: margin=1cm
header-includes: \usepackage{cmbright}
...
EOI

for i in configfiles/*.cfg
do
  HOSTNAME=`awk '/^hostname/{ print $2}' $i`

  echo "\\newpage"
  echo ""
  echo ""
  echo "# Datasheet for $HOSTNAME"
  echo ""
  echo ""
  # echo "~~~~~"
  ./parseconfig $i | column -t -s \;
  # echo "~~~~~"
  echo ""
done >> output.md

pandoc -f markdown output.md --toc -N --variable "date=`date '+%Y-%m-%d %H:%M'`" -o output.pdf
```

2 Datasheet for BR1_S1

Interface	Portmode	Duplex	Speed	VLAN	IP	Proto	Tun Src	Tun Dst
FastEthernet0/1	N/A	N/A	N/A	N/A	172.16.100.2 255.255.255.0	ospf	N/A	N/A
FastEthernet0/2	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/3	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/4	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/5	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/6	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/7	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/16	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/17	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/18	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/19	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/21	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/22	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/23	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/24	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vlan1	N/A	N/A	N/A	N/A	172.16.101.1 255.255.255.0	ospf	N/A	N/A
Vlan102	N/A	N/A	N/A	N/A	172.16.22.1 255.255.255.0	ospf	N/A	N/A

3 Datasheet for BR2_R1

Interface	Portmode	Duplex	Speed	VLAN	IP	Proto	Tun Src	Tun Dst
Tunnel0	N/A	N/A	N/A	N/A	172.16.255.6 255.255.255.252	ospf	200.200.200.3	200.200.200.1
FastEthernet0/0	N/A	auto	auto	N/A	200.200.200.3 255.255.255.240	N/A	N/A	N/A
FastEthernet0/1	N/A	auto	auto	N/A	172.16.102.1 255.255.255.0	ospf	N/A	N/A
Serial0/0/0	N/A	N/A	N/A	N/A	172.16.252.3 255.255.255.0	ospf	N/A	N/A

4 Datasheet for BR2_S1

Interface	Portmode	Duplex	Speed	VLAN	IP	Proto	Tun Src	Tun Dst
FastEthernet0/1	N/A	N/A	N/A	N/A	172.16.102.2 255.255.255.0	ospf	N/A	N/A
FastEthernet0/2	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/3	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/4	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/5	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/6	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/7	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/16	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/17	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/18	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/19	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/21	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/22	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/23	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/24	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vlan1	N/A	N/A	N/A	N/A	172.16.103.1 255.255.255.0	ospf	N/A	N/A
Vlan103	N/A	N/A	N/A	N/A	172.16.23.1 255.255.255.0	ospf	N/A	N/A

5 Datasheet for HQ_DS1

Interface	Portmode	Duplex	Speed	VLAN	IP	Proto	Tun Src	Tun Dst
Loopback100	N/A	N/A	N/A	N/A	172.16.25.5 255.255.255.0	ospf	N/A	N/A
Port-channel1	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Port-channel2	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Port-channel3	N/A	N/A	N/A	N/A	172.16.254.38 255.255.255.248	ospf	N/A	N/A
Port-channel4	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Port-channel5	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Port-channel6	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/5	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/6	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/7	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/8	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/9	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/10	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/11	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/12	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/13	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/14	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/15	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/16	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/17	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/18	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/19	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/21	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/22	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/23	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/24	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vlan21	N/A	N/A	N/A	N/A	172.16.16.1 255.255.255.0	ospf	N/A	N/A
Vlan30	N/A	N/A	N/A	N/A	172.16.17.1 255.255.255.0	ospf	N/A	N/A
Vlan40	N/A	N/A	N/A	N/A	172.16.18.252 255.255.255.0	ospf	N/A	N/A
Vlan41	N/A	N/A	N/A	N/A	172.16.19.252 255.255.255.0	ospf	N/A	N/A
Vlan100	N/A	N/A	N/A	N/A	172.16.20.1 255.255.255.0	ospf	N/A	N/A

6 Datasheet for HQ_AS1

Interface	Portmode	Duplex	Speed	VLAN	IP	Proto	Tun Src	Tun Dst
FastEthernet0/1	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/2	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/3	access	N/A	N/A	21	N/A	stp	N/A	N/A
FastEthernet0/4	access	N/A	N/A	21	N/A	stp	N/A	N/A
FastEthernet0/5	access	N/A	N/A	21	N/A	stp	N/A	N/A
FastEthernet0/6	access	N/A	N/A	21	N/A	stp	N/A	N/A
FastEthernet0/7	access	N/A	N/A	21	N/A	stp	N/A	N/A
FastEthernet0/8	access	N/A	N/A	21	N/A	stp	N/A	N/A
FastEthernet0/9	access	N/A	N/A	21	N/A	stp	N/A	N/A
FastEthernet0/10	access	N/A	N/A	21	N/A	stp	N/A	N/A
FastEthernet0/11	access	N/A	N/A	21	N/A	stp	N/A	N/A
FastEthernet0/12	access	N/A	N/A	21	N/A	stp	N/A	N/A
FastEthernet0/13	access	N/A	N/A	21	N/A	stp	N/A	N/A
FastEthernet0/14	access	N/A	N/A	21	N/A	stp	N/A	N/A
FastEthernet0/15	access	N/A	N/A	21	N/A	stp	N/A	N/A
FastEthernet0/16	access	N/A	N/A	21	N/A	stp	N/A	N/A
FastEthernet0/17	access	N/A	N/A	21	N/A	stp	N/A	N/A
FastEthernet0/18	access	N/A	N/A	21	N/A	stp	N/A	N/A
FastEthernet0/19	access	N/A	N/A	21	N/A	stp	N/A	N/A
FastEthernet0/20	access	N/A	N/A	21	N/A	stp	N/A	N/A
FastEthernet0/21	access	N/A	N/A	21	N/A	stp	N/A	N/A
FastEthernet0/22	access	N/A	N/A	21	N/A	stp	N/A	N/A
FastEthernet0/23	access	N/A	N/A	21	N/A	stp	N/A	N/A
FastEthernet0/24	access	N/A	N/A	21	N/A	stp	N/A	N/A
GigabitEthernet0/1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vlan1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vlan100	N/A	N/A	N/A	N/A	172.16.20.3 255.255.255.0	N/A	N/A	N/A

7 Datasheet for HQ_AS2

Interface	Portmode	Duplex	Speed	VLAN	IP	Proto	Tun Src	Tun Dst
Port-channel4	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/1	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/2	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/3	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/4	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/5	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/6	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/7	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/8	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/9	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/10	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/11	trunk	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/12	trunk	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/13	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/14	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/15	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/16	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/17	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/18	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/19	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/20	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/21	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/22	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/23	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/24	access	N/A	N/A	30	N/A	stp	N/A	N/A
GigabitEthernet0/1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vlan100	N/A	N/A	N/A	N/A	172.16.20.4 255.255.255.0	N/A	N/A	N/A

8 Datasheet for HQ_AS3

Interface	Portmode	Duplex	Speed	VLAN	IP	Proto	Tun Src	Tun Dst
FastEthernet0/1	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/2	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/3	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/4	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/5	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/6	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/7	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/8	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/9	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/10	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/11	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/12	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/13	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/14	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/15	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/16	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/17	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/18	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/19	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/20	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/21	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/22	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/23	access	N/A	N/A	30	N/A	stp	N/A	N/A
FastEthernet0/24	access	N/A	N/A	30	N/A	stp	N/A	N/A
GigabitEthernet0/1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vlan1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vlan100	N/A	N/A	N/A	N/A	172.16.20.5 255.255.255.0	N/A	N/A	N/A

9 Datasheet for HQ_AS4

Interface	Portmode	Duplex	Speed	VLAN	IP	Proto	Tun Src	Tun Dst
Port-channel5	trunk	N/A	N/A	40	N/A	N/A	N/A	N/A
FastEthernet0/1	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/2	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/3	trunk	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/4	trunk	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/5	access	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/6	access	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/7	access	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/8	access	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/9	access	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/10	access	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/11	access	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/12	access	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/13	access	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/14	access	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/15	access	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/16	access	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/17	access	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/18	access	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/19	access	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/20	access	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/21	access	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/22	access	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/23	access	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/24	access	N/A	N/A	40	N/A	stp	N/A	N/A
GigabitEthernet0/1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vlan40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vlan100	N/A	N/A	N/A	N/A	172.16.20.6 255.255.255.0	N/A	N/A	N/A

10 Datasheet for HQ_AS5

Interface	Portmode	Duplex	Speed	VLAN	IP	Proto	Tun Src	Tun Dst
FastEthernet0/1	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/2	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/3	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/4	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/5	access	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/6	access	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/7	access	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/8	access	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/9	access	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/10	access	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/11	access	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/12	access	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/13	access	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/14	access	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/15	access	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/16	access	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/17	access	N/A	N/A	40	N/A	stp	N/A	N/A
FastEthernet0/18	access	N/A	N/A	41	N/A	stp	N/A	N/A
FastEthernet0/19	access	N/A	N/A	41	N/A	stp	N/A	N/A
FastEthernet0/20	access	N/A	N/A	41	N/A	stp	N/A	N/A
FastEthernet0/21	access	N/A	N/A	41	N/A	stp	N/A	N/A
FastEthernet0/22	access	N/A	N/A	41	N/A	stp	N/A	N/A
FastEthernet0/23	access	N/A	N/A	41	N/A	stp	N/A	N/A
FastEthernet0/24	access	N/A	N/A	41	N/A	stp	N/A	N/A
GigabitEthernet0/1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vlan100	N/A	N/A	N/A	N/A	172.16.20.7	255.255.255.0	N/A	N/A

11 Datasheet for HQ_AS6

Interface	Portmode	Duplex	Speed	VLAN	IP	Proto	Tun Src	Tun Dst
Port-channel6	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/1	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/2	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/3	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/4	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/5	access	N/A	N/A	41	N/A	stp	N/A	N/A
FastEthernet0/6	access	N/A	N/A	41	N/A	stp	N/A	N/A
FastEthernet0/7	access	N/A	N/A	41	N/A	stp	N/A	N/A
FastEthernet0/8	access	N/A	N/A	41	N/A	stp	N/A	N/A
FastEthernet0/9	access	N/A	N/A	41	N/A	stp	N/A	N/A
FastEthernet0/10	access	N/A	N/A	41	N/A	stp	N/A	N/A
FastEthernet0/11	access	N/A	N/A	41	N/A	stp	N/A	N/A
FastEthernet0/12	access	N/A	N/A	41	N/A	stp	N/A	N/A
FastEthernet0/13	access	N/A	N/A	41	N/A	stp	N/A	N/A
FastEthernet0/14	access	N/A	N/A	41	N/A	stp	N/A	N/A
FastEthernet0/15	access	N/A	N/A	41	N/A	stp	N/A	N/A
FastEthernet0/16	access	N/A	N/A	41	N/A	stp	N/A	N/A
FastEthernet0/17	access	N/A	N/A	41	N/A	stp	N/A	N/A
FastEthernet0/18	access	N/A	N/A	41	N/A	stp	N/A	N/A
FastEthernet0/19	access	N/A	N/A	41	N/A	stp	N/A	N/A
FastEthernet0/20	access	N/A	N/A	41	N/A	stp	N/A	N/A
FastEthernet0/21	access	N/A	N/A	41	N/A	stp	N/A	N/A
FastEthernet0/22	access	N/A	N/A	41	N/A	stp	N/A	N/A
FastEthernet0/23	access	N/A	N/A	41	N/A	stp	N/A	N/A
FastEthernet0/24	access	N/A	N/A	41	N/A	stp	N/A	N/A
GigabitEthernet0/1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vlan1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vlan100	N/A	N/A	N/A	N/A	172.16.20.8 255.255.255.0	N/A	N/A	N/A

12 Datasheet for HQ_AS7

Interface	Portmode	Duplex	Speed	VLAN	IP	Proto	Tun Src	Tun Dst
FastEthernet0/1	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/2	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/3	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/4	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/5	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/6	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/7	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/8	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/9	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/10	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/11	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/12	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/13	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/14	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/15	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/16	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/17	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/18	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/19	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/20	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/21	access	N/A	N/A	11	N/A	stp	N/A	N/A
FastEthernet0/22	access	N/A	N/A	11	N/A	stp	N/A	N/A
FastEthernet0/23	access	N/A	N/A	11	N/A	stp	N/A	N/A
FastEthernet0/24	access	N/A	N/A	11	N/A	stp	N/A	N/A
GigabitEthernet0/1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vlan101	N/A	N/A	N/A	N/A	172.16.21.2 255.255.255.0	N/A	N/A	N/A

13 Datasheet for HQ_AS8

Interface	Portmode	Duplex	Speed	VLAN	IP	Proto	Tun Src	Tun Dst
Port-channel1	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/1	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/2	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/3	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/4	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/5	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/6	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/7	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/8	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/9	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/10	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/11	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/12	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/13	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/14	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/15	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/16	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/17	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/18	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/19	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/20	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/21	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/22	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/23	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/24	access	N/A	N/A	20	N/A	stp	N/A	N/A
GigabitEthernet0/1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vlan101	N/A	N/A	N/A	N/A	172.16.21.3 255.255.255.0	N/A	N/A	N/A

14 Datasheet for HQ_AS9

Interface	Portmode	Duplex	Speed	VLAN	IP	Proto	Tun Src	Tun Dst
FastEthernet0/1	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/2	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/3	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/4	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/5	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/6	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/7	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/8	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/9	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/10	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/11	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/12	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/13	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/14	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/15	access	N/A	N/A	20	N/A	stp	N/A	N/A
FastEthernet0/16	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/17	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/18	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/19	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/20	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/21	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/22	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/23	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/24	access	N/A	N/A	10	N/A	stp	N/A	N/A
GigabitEthernet0/1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vlan101	N/A	N/A	N/A	N/A	172.16.21.4 255.255.255.0	N/A	N/A	N/A

15 Datasheet for HQ_AS10

Interface	Portmode	Duplex	Speed	VLAN	IP	Proto	Tun Src	Tun Dst
Port-channel2	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/1	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/2	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/3	access	N/A	N/A	11	N/A	stp	N/A	N/A
FastEthernet0/4	access	N/A	N/A	11	N/A	stp	N/A	N/A
FastEthernet0/5	access	N/A	N/A	11	N/A	stp	N/A	N/A
FastEthernet0/6	access	N/A	N/A	11	N/A	stp	N/A	N/A
FastEthernet0/7	access	N/A	N/A	11	N/A	stp	N/A	N/A
FastEthernet0/8	access	N/A	N/A	11	N/A	stp	N/A	N/A
FastEthernet0/9	access	N/A	N/A	11	N/A	stp	N/A	N/A
FastEthernet0/10	access	N/A	N/A	11	N/A	stp	N/A	N/A
FastEthernet0/11	access	N/A	N/A	11	N/A	stp	N/A	N/A
FastEthernet0/12	access	N/A	N/A	11	N/A	stp	N/A	N/A
FastEthernet0/13	access	N/A	N/A	11	N/A	stp	N/A	N/A
FastEthernet0/14	access	N/A	N/A	11	N/A	stp	N/A	N/A
FastEthernet0/15	access	N/A	N/A	11	N/A	stp	N/A	N/A
FastEthernet0/16	access	N/A	N/A	11	N/A	stp	N/A	N/A
FastEthernet0/17	access	N/A	N/A	11	N/A	stp	N/A	N/A
FastEthernet0/18	access	N/A	N/A	11	N/A	stp	N/A	N/A
FastEthernet0/19	access	N/A	N/A	11	N/A	stp	N/A	N/A
FastEthernet0/20	access	N/A	N/A	11	N/A	stp	N/A	N/A
FastEthernet0/21	access	N/A	N/A	11	N/A	stp	N/A	N/A
FastEthernet0/22	access	N/A	N/A	11	N/A	stp	N/A	N/A
FastEthernet0/23	access	N/A	N/A	11	N/A	stp	N/A	N/A
FastEthernet0/24	access	N/A	N/A	11	N/A	stp	N/A	N/A
GigabitEthernet0/1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vlan101	N/A	N/A	N/A	N/A	172.16.21.5 255.255.255.0	N/A	N/A	N/A

16 Datasheet for HQ_AS11

Interface	Portmode	Duplex	Speed	VLAN	IP	Proto	Tun Src	Tun Dst
FastEthernet0/1	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/2	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/3	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/4	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/5	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/6	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/7	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/8	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/9	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/10	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/11	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/12	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/13	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/14	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/15	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/16	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/17	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/18	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/19	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/20	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/21	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/22	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/23	access	N/A	N/A	10	N/A	stp	N/A	N/A
FastEthernet0/24	access	N/A	N/A	10	N/A	stp	N/A	N/A
GigabitEthernet0/1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vlan101	N/A	N/A	N/A	N/A	172.16.21.6 255.255.255.0	N/A	N/A	N/A

17 Datasheet for HQ_AS12

Interface	Portmode	Duplex	Speed	VLAN	IP	Proto	Tun Src	Tun Dst
Port-channel5	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/1	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/2	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/3	access	N/A	N/A	31	N/A	stp	N/A	N/A
FastEthernet0/4	access	N/A	N/A	31	N/A	stp	N/A	N/A
FastEthernet0/5	access	N/A	N/A	31	N/A	stp	N/A	N/A
FastEthernet0/6	access	N/A	N/A	31	N/A	stp	N/A	N/A
FastEthernet0/7	access	N/A	N/A	31	N/A	stp	N/A	N/A
FastEthernet0/8	access	N/A	N/A	31	N/A	stp	N/A	N/A
FastEthernet0/9	access	N/A	N/A	31	N/A	stp	N/A	N/A
FastEthernet0/10	access	N/A	N/A	31	N/A	stp	N/A	N/A
FastEthernet0/11	access	N/A	N/A	31	N/A	stp	N/A	N/A
FastEthernet0/12	access	N/A	N/A	31	N/A	stp	N/A	N/A
FastEthernet0/13	access	N/A	N/A	31	N/A	stp	N/A	N/A
FastEthernet0/14	access	N/A	N/A	31	N/A	stp	N/A	N/A
FastEthernet0/15	access	N/A	N/A	31	N/A	stp	N/A	N/A
FastEthernet0/16	access	N/A	N/A	31	N/A	stp	N/A	N/A
FastEthernet0/17	access	N/A	N/A	31	N/A	stp	N/A	N/A
FastEthernet0/18	access	N/A	N/A	31	N/A	stp	N/A	N/A
FastEthernet0/19	access	N/A	N/A	31	N/A	stp	N/A	N/A
FastEthernet0/20	access	N/A	N/A	31	N/A	stp	N/A	N/A
FastEthernet0/21	access	N/A	N/A	31	N/A	stp	N/A	N/A
FastEthernet0/22	access	N/A	N/A	31	N/A	stp	N/A	N/A
FastEthernet0/23	access	N/A	N/A	31	N/A	stp	N/A	N/A
FastEthernet0/24	access	N/A	N/A	31	N/A	stp	N/A	N/A
GigabitEthernet0/1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vlan101	N/A	N/A	N/A	N/A	172.16.21.7 255.255.255.0	N/A	N/A	N/A

18 Datasheet for BR1_S2

Interface	Portmode	Duplex	Speed	VLAN	IP	Proto	Tun Src	Tun Dst
FastEthernet0/1	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/2	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/3	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/4	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/5	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/6	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/7	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/8	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/9	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/10	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/11	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/12	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/13	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/14	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/15	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/16	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/17	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/18	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/19	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/20	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/21	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/22	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/23	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/24	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vlan102	N/A	N/A	N/A	N/A	172.16.22.2 255.255.255.0	N/A	N/A	N/A

19 Datasheet for BR1_S3

Interface	Portmode	Duplex	Speed	VLAN	IP	Proto	Tun Src	Tun Dst
FastEthernet0/1	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/2	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/3	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/4	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/5	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/6	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/7	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/8	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/9	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/10	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/11	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/12	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/13	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/14	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/15	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/16	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/17	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/18	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/19	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/20	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/21	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/22	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/23	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/24	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vlan102	N/A	N/A	N/A	N/A	172.16.22.3 255.255.255.0	N/A	N/A	N/A

20 Datasheet for BR1_S4

Interface	Portmode	Duplex	Speed	VLAN	IP	Proto	Tun Src	Tun Dst
FastEthernet0/1	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/2	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/3	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/4	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/5	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/6	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/7	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/8	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/9	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/10	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/11	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/12	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/13	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/14	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/15	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/16	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/17	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/18	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/19	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/20	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/21	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/22	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/23	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/24	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vlan102	N/A	N/A	N/A	N/A	172.16.22.4	255.255.255.0	N/A	N/A

21 Datasheet for BR2_S2

Interface	Portmode	Duplex	Speed	VLAN	IP	Proto	Tun Src	Tun Dst
FastEthernet0/1	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/2	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/3	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/4	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/5	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/6	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/7	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/8	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/9	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/10	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/11	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/12	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/13	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/14	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/15	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/16	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/17	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/18	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/19	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/20	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/21	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/22	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/23	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/24	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vlan1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vlan103	N/A	N/A	N/A	N/A	172.16.23.2 255.255.255.0	N/A	N/A	N/A

22 Datasheet for BR2_S3

Interface	Portmode	Duplex	Speed	VLAN	IP	Proto	Tun Src	Tun Dst
FastEthernet0/1	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/2	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/3	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/4	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/5	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/6	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/7	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/8	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/9	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/10	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/11	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/12	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/13	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/14	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/15	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/16	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/17	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/18	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/19	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/20	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/21	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/22	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/23	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/24	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vlan103	N/A	N/A	N/A	N/A	172.16.23.3 255.255.255.0	N/A	N/A	N/A

23 Datasheet for BR2_S4

Interface	Portmode	Duplex	Speed	VLAN	IP	Proto	Tun Src	Tun Dst
FastEthernet0/1	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/2	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/3	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/4	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/5	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/6	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/7	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/8	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/9	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/10	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/11	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/12	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/13	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/14	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/15	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/16	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/17	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/18	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/19	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/20	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/21	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/22	access	N/A	N/A	N/A	N/A	stp	N/A	N/A
FastEthernet0/23	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/24	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vlan1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vlan103	N/A	N/A	N/A	N/A	172.16.23.4 255.255.255.0	N/A	N/A	N/A

25 Datasheet for HQ_DS3

Interface	Portmode	Duplex	Speed	VLAN	IP	Proto	Tun Src	Tun Dst
Loopback100	N/A	N/A	N/A	N/A	172.16.25.7 255.255.255.0	ospf	N/A	N/A
Port-channel1	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Port-channel2	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Port-channel3	N/A	N/A	N/A	N/A	172.16.254.22 255.255.255.252	ospf	N/A	N/A
Port-channel4	N/A	N/A	N/A	N/A	172.16.254.18 255.255.255.252	ospf	N/A	N/A
Port-channel5	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Port-channel15	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/13	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/14	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/15	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/16	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/17	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/18	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/19	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/20	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/21	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/22	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/23	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/24	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vlan10	N/A	N/A	N/A	N/A	172.16.1.1 255.255.255.0	ospf	N/A	N/A
Vlan11	N/A	N/A	N/A	N/A	172.16.2.1 255.255.255.0	ospf	N/A	N/A
Vlan20	N/A	N/A	N/A	N/A	172.16.3.1 255.255.255.0	ospf	N/A	N/A
Vlan31	N/A	N/A	N/A	N/A	172.16.4.1 255.255.255.0	ospf	N/A	N/A
Vlan101	N/A	N/A	N/A	N/A	172.16.21.1 255.255.255.0	ospf	N/A	N/A

27 Datasheet for HQ_DS2

Interface	Portmode	Duplex	Speed	VLAN	IP	Proto	Tun Src	Tun Dst
Loopback100	N/A	N/A	N/A	N/A	172.16.25.6 255.255.255.0	ospf	N/A	N/A
Port-channel1	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Port-channel3	N/A	N/A	N/A	N/A	172.16.254.49 255.255.255.248	ospf	N/A	N/A
Port-channel4	N/A	N/A	N/A	N/A	172.16.254.42 255.255.255.248	ospf	N/A	N/A
FastEthernet0/1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/16	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/17	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/18	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/19	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/21	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/22	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/23	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FastEthernet0/24	trunk	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GigabitEthernet0/2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vlan21	N/A	N/A	N/A	N/A	N/A	ospf	N/A	N/A
Vlan30	N/A	N/A	N/A	N/A	N/A	ospf	N/A	N/A
Vlan40	N/A	N/A	N/A	N/A	172.16.18.253 255.255.255.0	ospf	N/A	N/A
Vlan41	N/A	N/A	N/A	N/A	172.16.19.253 255.255.255.0	ospf	N/A	N/A
Vlan100	N/A	N/A	N/A	N/A	172.16.20.2 255.255.255.0	ospf	N/A	N/A

29 Datasheet for HQ_WER1

Interface	Portmode	Duplex	Speed	VLAN	IP	Proto	Tun Src	Tun Dst
FastEthernet0/0	N/A	auto	auto	N/A	172.16.254.58 255.255.255.252	ospf	N/A	N/A
FastEthernet0/1	N/A	auto	auto	N/A	172.16.254.61 255.255.255.252	ospf	N/A	N/A

30 Datasheet for HQ_FRR

Interface	Portmode	Duplex	Speed	VLAN	IP	Proto	Tun Src	Tun Dst
FastEthernet0/0	N/A	auto	auto	N/A	172.16.254.62 255.255.255.252	ospf	N/A	N/A
Serial0/0/0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Serial0/0/0.123 multipoint	N/A	N/A	N/A	N/A	172.16.252.1 255.255.255.0	ospf	N/A	N/A

31 Datasheet for HQ.IER1

Interface	Portmode	Duplex	Speed	VLAN	IP	Proto	Tun Src	Tun Dst
Tunnel0	N/A	N/A	N/A	N/A	172.16.255.1 255.255.255.252	ospf	200.200.200.1	200.200.200.2
Tunnel1	N/A	N/A	N/A	N/A	172.16.255.5 255.255.255.252	ospf	200.200.200.1	200.200.200.3
Tunnel2	N/A	N/A	N/A	N/A	172.16.255.9 255.255.255.252	ospf	200.200.200.1	200.200.200.4
FastEthernet0/0	N/A	auto	auto	N/A	172.16.254.66 255.255.255.252	ospf	N/A	N/A
FastEthernet0/1	N/A	auto	auto	N/A	200.200.200.1 255.255.255.240	ospf	N/A	N/A

33 Datasheet for HQ.IER1

Interface	Portmode	Duplex	Speed	VLAN	IP	Proto	Tun Src	Tun Dst
Tunnel0	N/A	N/A	N/A	N/A	172.16.255.1 255.255.255.252	ospf	200.200.200.1	200.200.200.2
Tunnel1	N/A	N/A	N/A	N/A	172.16.255.5 255.255.255.252	ospf	200.200.200.1	200.200.200.3
Tunnel2	N/A	N/A	N/A	N/A	172.16.255.9 255.255.255.252	ospf	200.200.200.1	200.200.200.4
FastEthernet0/0	N/A	auto	auto	N/A	172.16.254.66 255.255.255.252	ospf	N/A	N/A
FastEthernet0/1	N/A	auto	auto	N/A	200.200.200.1 255.255.255.240	ospf	N/A	N/A

34 Datasheet for BR1_R1

Interface	Portmode	Duplex	Speed	VLAN	IP	Proto	Tun Src	Tun Dst
Tunnel0	N/A	N/A	N/A	N/A	172.16.255.2 255.255.255.252	ospf	200.200.200.2	200.200.200.1
FastEthernet0/0	N/A	auto	auto	N/A	200.200.200.2 255.255.255.240	N/A	N/A	N/A
FastEthernet0/1	N/A	auto	auto	N/A	172.16.100.1 255.255.255.0	ospf	N/A	N/A
Serial0/0/0	N/A	N/A	N/A	N/A	172.16.252.2 255.255.255.0	ospf	N/A	N/A

