



Cisco IOS Voice Gateway – PBX Interoperability: Avaya 8500 Communications Manager 2.1 to T1 QSIG with H.323

Table of Contents

Introduction	1
Network Topology.....	2
Limitations.....	2
Hardware Requirements	3
Software Requirements	3
Features	3
Configuration.....	4
Avaya 8500 Communications Manager 2.1: Switch 1.....	4
Avaya 8500 Communications Manager 2.1: Switch 2.....	16
Cisco 1760 Configuration.....	28
Cisco 2611XM Configuration	34

Introduction

Although specific gateway router models were used to validate its content, this application note also applies to all Cisco 1700/2600/3600/3700/2800/3800 series Cisco IOS voice gateways.

This application note provides configuration guidelines for a toll-bypass network using Cisco IOS voice gateways to connect Avaya 8500 Communications Manager 2.1 PBXs. The PBXs are connected to the Cisco IOS voice gateways by T1 QSIG trunk circuits. The Cisco IOS voice gateways “extend” the T1 QSIG trunk circuits with VoIP, using the H.323 protocol.

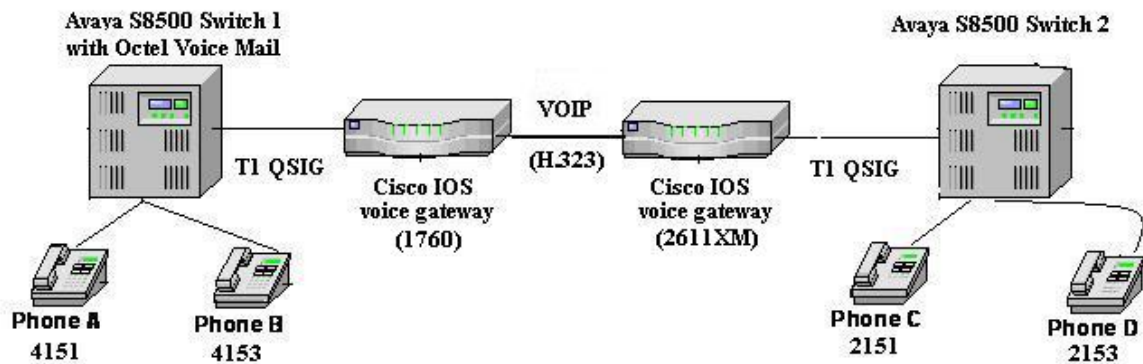
Two Avaya 8500 Communications Manager 2.1 PBXs were connected via T1 QSIG trunk to two Cisco IOS voice gateways. The voice gateways were connected via IP over Ethernet, and configured for VoIP using H.323. End-to-end calls were placed between the PBXs to exercise and test basic calls as well as QSIG supplementary services such as MWI, call hold, call transfer, call conference, and call forward.

Using the Avaya PBX configurations and Cisco IOS voice gateway configurations in this application note, successful toll bypass integration was achieved. This includes basic call, call transfer, call conference, and call forward, with some limitations on Caller ID features during transfer, forward, and conference scenarios. These limitations are detailed in the following sections and all were found to be inherent to the Avaya PBXs. Thus, H.323 toll bypass introduced no new restrictions to the available features or performance.



Network Topology

Figure 1. Network Topology



Limitations

On basic calls, the CONNECTED NUMBER, not the CALLED NUMBER, is displayed on the originating extension. The CONNECTED NUMBER is carried in the ISDN CONNECT message, not the ALERTING message, and is sent when the called extension answers. This is inherent to the PBXs and also occurs with the PBXs connected directly via a T1 QSIG trunk.

On Supervised Transfers, the Calling Name/Number displayed on the final destination digital extension was updated to the original calling extension name/number information only after the transfer was complete. This is inherent to the PBXs and also occurs with the PBXs connected directly via a T1 QSIG trunk.

On Supervised Transfers, the Called Name/Number displayed on the originating digital extension was updated to the final destination extension name/number information only after the transfer was complete. This is inherent to the PBXs and also occurs with the PBXs connected directly via a T1 QSIG trunk.

On Local Conference Calls originating from an external call (e.g., originate call from 'C' to 'A', and conference from 'A' to 'B'), the Connected Name/Number are not updated on the original digital extension when the conferencing extension drops out. The original call is still displayed (e.g., 'A' Name/Number displayed on 'C'). This is inherent to the PBXs and also occurs with the PBXs connected directly via a T1 QSIG trunk.

On External Conference Calls originating from a local call (e.g., originate call from 'A' to 'B', and conference from 'B' to 'C'), the Calling Name/Number are not passed to the remaining conferee ('C') when the conferencing extension ('B') drops out. The conferencing extension's information is still displayed (e.g., 'B' Name/Number displayed on 'C'). This is inherent to the PBXs and also occurs with the PBXs connected directly via a T1 QSIG trunk.

On Network/External Conference Calls originating from an external call (e.g., originate from 'C' to 'A', and conference from 'A' to 'D' or originate from 'C' to 'A', and conference from 'C' to 'B'), the Calling Name/Number are not passed to the remaining conferee when the conferencing extension drops out. The conferencing extension's Name/Number are displayed. This is inherent to the PBXs and also occurs with the PBXs connected directly via a T1 QSIG trunk.



On Network/External Conference Calls originating from an external call (e.g., originate from 'C' to 'A', and conference from 'A' to 'D' or originate from 'C' to 'A', and conference from 'C' to 'B'), the Connected Name/Number are not updated on the original calling extension when a conferee drops out. In cases where the conferencing extension drops, the conferencing extension's Name/Number are displayed on the originating extension. In cases where the originating extension is the conferencing extension, and another extension drops, there is no Connected Name/Number on the original/conferencing extension. However, the Connected Name/Number of the conferenced extension does appear briefly on the conferencing extension display before the conference is completed. This is inherent to the PBXs and also occurs with the PBXs connected directly via a T1 QSIG trunk.

On Forwarded Calls, the original Calling Number is not passed to the final destination extension. This is inherent to the PBXs and also occurs with the PBXs connected directly via a T1 QSIG trunk.

On Forwarded Calls, the forwarding Called Number is not passed to the final destination extension. This is inherent to the PBXs and also occurs with the PBXs connected directly via a T1 QSIG trunk.

On Forwarded Calls, the final destination Connected Number is not updated at the originating extension. This is inherent to the PBXs and also occurs with the PBXs connected directly via a T1 QSIG trunk.

On Forwarded Calls involving an external call followed by an external forward (e.g., originate from 'C' to 'A' and forward from 'A' to 'D'), the forwarding Called Name is not passed to the final destination extension. However, this feature worked properly in release 12.4 (3.9) T1.

Hardware Requirements

- (2) Cisco IOS voice gateways with T1 VWICs (voice/WAN interface cards)
- (2) Avaya 8500s
- (4) Avaya digital station telephones

Software Requirements

Avaya PBXs: Communications Manager Release 2.1

Cisco IOS voice gateways: Cisco IOS Release Version 12.3(13) or later.

Features

- Basic Call (ENBLOC and Overlap)
- Call Transfer: Supervised Local Transfer
- Call Transfer: Supervised Network/External Transfer
- Call Conference: Local
- Call Conference: Network/External
- Call Forward: Local
- Call Forward: Network/External

Configuration

Avaya 8500 Communications Manager 2.1: Switch 1

Figure 2. Uniform Dial Plan (1 of 2)

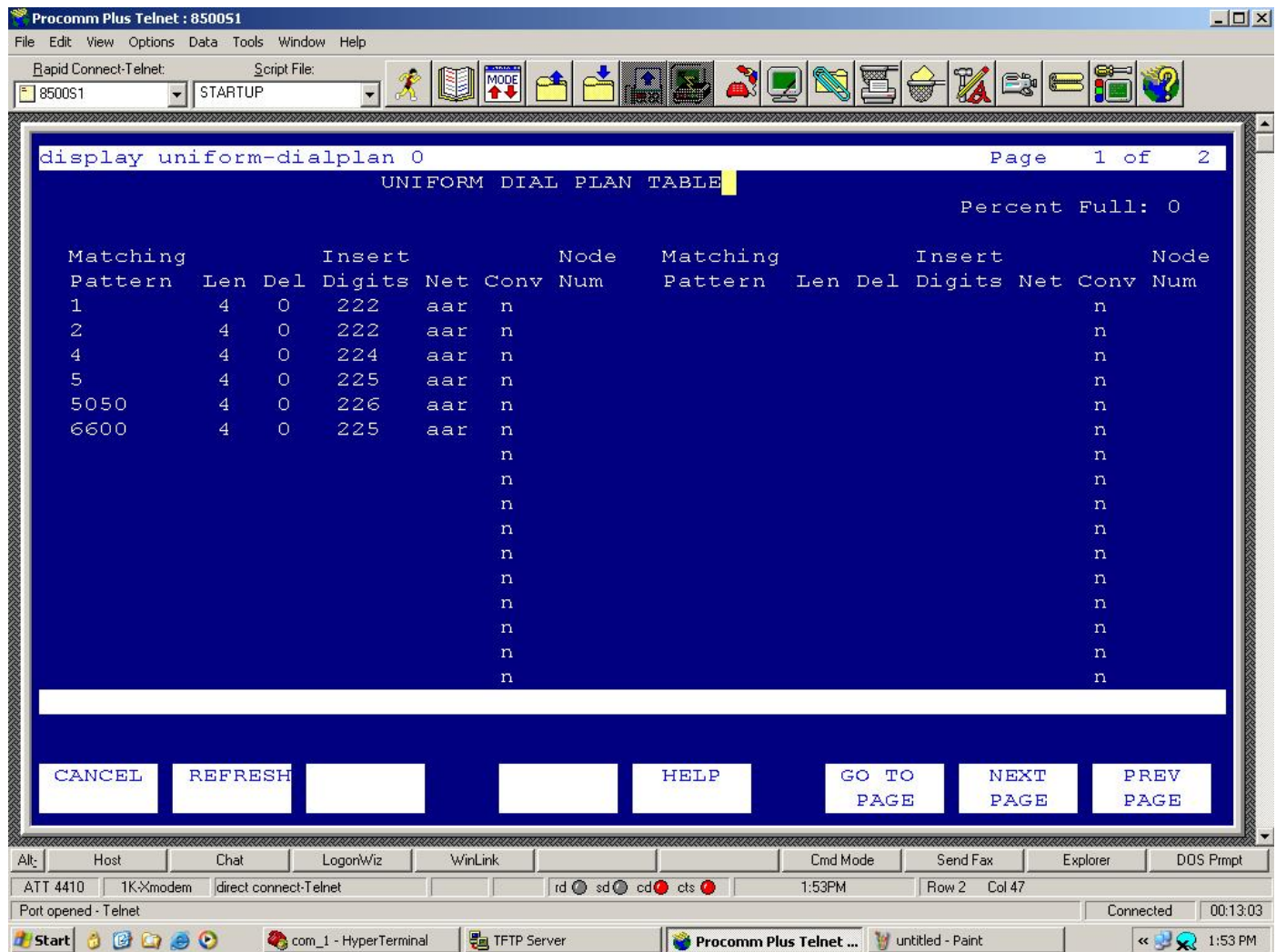




Figure 3. Uniform Dial Plan (2 of 2)

Procomm Plus Telnet : 850051

File Edit View Options Data Tools Window Help

Rapid Connect-Telnet: Script File:

8500S1 STARTUP

display uniform-dialplan 0 Page 2 of 2

UNIFORM DIAL PLAN TABLE

Percent Full: 0

Matching	Insert	Node	Matching	Insert	Node
Pattern	Len Del Digits Net Conv Num		Pattern	Len Del Digits Net Conv Num	
		n			n
		n			n
		n			n
		n			n
		n			n
		n			n
		n			n
		n			n
		n			n
		n			n
		n			n
		n			n
		n			n
		n			n
		n			n
		n			n

CANCEL REFRESH HELP GO TO PAGE NEXT PAGE PREV PAGE

Alt: Host Chat LogonWiz WinLink Cmd Mode Send Fax Explorer DOS Prmpt

ATT 4410 1K-Xmodem direct connect-Telnet rd sd cd cts 1:54PM Row 2 Col 47

Port opened - Telnet Connected 00:13:44

Start com_1 - HyperTerminal TFTP Server Procomm Plus Telnet ... untitled - Paint 1:54 PM



Figure 4. AAR Analysis (1 of 2)

Procomm Plus Telnet : 8500S1

File Edit View Options Data Tools Window Help

Rapid Connect-Telnet: Script File: 8500S1 STARTUP

display aar analysis 0 Page 1 of 2

AAR DIGIT ANALYSIS TABLE

Percent Full: 1

Dialed String	Total Min	Total Max	Route Pattern	Call Type	Node Num	ANI Req'd
2	7	7	999	aar		n
222	7	7	21	aar		n
224	7	7	99	aar		n
225	7	7	4	aar		n
226	7	7	13	aar		n
3	7	7	999	aar		n
4	4	4	39	aar		n
5	7	7	999	aar		n
6	7	7	999	aar		n
7	7	7	999	aar		n
8	7	7	999	aar		n
9	7	7	999	aar		n
						n
						n
						n

CANCEL REFRESH HELP GO TO PAGE NEXT PAGE PREV PAGE

Alt: Host Chat Logon/Wiz WinLink Cmd Mode Send Fax Explorer DOS Prmpt

ATT 4410 1K-Xmodem direct connect-Telnet rd sd cd cts 1:51PM Row 2 Col 54

Port opened - Telnet Connected 00:11:15

Start com_1 - HyperTerminal TFTP Server Procomm Plus Telnet ... untitled - Paint 1:51 PM

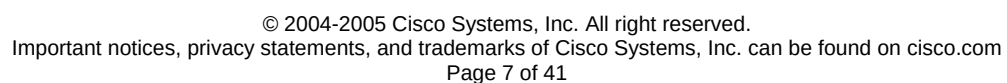




Figure 6. Designated Route Pattern (21) (1 of 3)

Procomm Plus Telnet : 8500S1

File Edit View Options Data Tools Window Help

Rapid Connect-Telnet: Script File: 8500S1 STARTUP

display route-pattern 21 Page 1 of 3

Pattern Number: 21 Pattern Name: ISDN TIE
Secure SIP? n

Grp No	FRL	NPA	Pfx	Hop	Toll	No.	Inserted	DCS/	IXC
			Mrk	Lmt	List	Del	Digits	QSIG	
								Intw	
1:	6	0					3	n	user
2:								n	user
3:								n	user
4:								n	user
5:								n	user
6:								n	user

	BCC	VALUE	TSC	CA-TSC	ITC	BCIE	Service/Feature	BAND	No.	Numbering	LAR
	0	1	2	3	4	W	Request		Dgts	Format	
1:	Y	Y	Y	Y	Y	n	Y	as-needed	bothept	unk-unk	none
2:	Y	Y	Y	Y	Y	n	n		rest		none
3:	Y	Y	Y	Y	Y	n	n		rest		none
4:	Y	Y	Y	Y	Y	n	n		rest		none
5:	Y	Y	Y	Y	Y	n	n		rest		none
6:	Y	Y	Y	Y	Y	n	n		rest		none

CANCEL REFRESH HELP GO TO PAGE NEXT PAGE PREV PAGE

Alt: Host Chat LogonWiz WinLink Cmd Mode Send Fax Explorer DOS Prmpt

ATT 4410 1K-Xmodem direct connect-Telnet rd sd cd cts 2:04PM Row 2 Col 1

Port opened - Telnet Connected 00:23:24

Start com_1 - Hyper... TFTP Server Procomm Plu... untitled - Paint C:\Documents ... disp_uniform-di... 2:04 PM



Figure 7. Designated Route Pattern (21) (2 of 3)

Procomm Plus Telnet : 8500S1

File Edit View Options Data Tools Window Help

Rapid Connect-Telnet: Script File: 8500S1 STARTUP

display route-pattern 21 Page 2 of 3

Pattern Number: 21

Grp No	FRL	NPA	Pfx	Hop	Toll	No.	Inserted	DCS/	IXC
			Mrk	Lmt	List	Del	Digits	QSIG	
							Dgts	Intw	
7:								n	user
8:								n	user
9:								n	user
10:								n	user
11:								n	user
12:								n	user

BCC	VALUE	TSC	CA-TSC	ITC	BCIE	Service/Feature	BAND	No.	Numbering	LAR
0	1	2	3	4	W	Request		Dgts	Format	
								Subaddress		
7:	Y	Y	Y	Y	Y	n	n	rest		none
8:	Y	Y	Y	Y	Y	n	n	rest		none
9:	Y	Y	Y	Y	Y	n	n	rest		none
10:	Y	Y	Y	Y	Y	n	n	rest		none
11:	Y	Y	Y	Y	Y	n	n	rest		none
12:	Y	Y	Y	Y	Y	n	n	rest		none

CANCEL REFRESH HELP GO TO PAGE NEXT PAGE PREV PAGE

Alt: Host Chat LogonWiz WinLink Cmd Mode Send Fax Explorer DOS Prmpt

ATT 4410 1K-Xmodem direct connect-Telnet rd sd cd cts 2:05PM Row 2 Col 1

Port opened - Telnet Connected 00:24:40

Start com_1 - HyperTermi... TFTP Server Procomm Plus Tel... untitled - Paint C:\Documents and ... 2:05 PM



Figure 8. Designated Route Pattern (21) (3 of 3)

Procomm Plus Telnet : 8500S1

File Edit View Options Data Tools Window Help

Rapid Connect-Telnet: Script File: 8500S1 STARTUP

display route-pattern 21 Page 3 of 3

Pattern Number: 21

Grp	FRL	NPA	Pfx	Hop	Toll	No.	Inserted	DCS/	IXC
No			Mrk	Lmt	List	Del	Digits	QSIG	
							Dgts	Intw	
13:								n	user
14:								n	user
15:								n	user
16:								n	user

BCC	VALUE	TSC	CA-TSC	ITC	BCIE	Service/Feature	BAND	No.	Numbering	LAR
0	1	2	3	4	W	Request		Dgts	Format	
								Subaddress		
13:	Y	Y	Y	Y	Y	n	n	rest		none
14:	Y	Y	Y	Y	Y	n	n	rest		none
15:	Y	Y	Y	Y	Y	n	n	rest		none
16:	Y	Y	Y	Y	Y	n	n	rest		none

CANCEL REFRESH HELP GO TO PAGE NEXT PAGE PREV PAGE

Alt: Host Chat Logon/Wiz WinLink Cmd Mode Send Fax Explorer DOS Prmpt

ATT 4410 1K-Xmodem direct connect-Telnet rd sd cd cts 2:08PM Row 2 Col 1

Port opened - Telnet Connected 00:28:11

Start com_1 - HyperTermi... TFTP Server Procomm Plus Tel... untitled - Paint C:\Documents and ... 2:08 PM



Figure 9. Route Patterns (1 of 1)

Procomm Plus Telnet : 850051

File Edit View Options Data Tools Window Help

Rapid Connect-Telnet: Script File: 850051 STARTUP

list route-pattern

Route Pat	Name/Trk Pref	Trk Grp	FRL	Hop Lmt	IXC	ROUTE PATTERNS					TSC	CA-TSC Request	ITC	Service/Feature
						BCC 0	1	2	3	4				
4	1	4	0		user	Y	Y	Y	Y	Y	n	Y	as-needed	both
13	1	13	0	5	user	Y	Y	Y	Y	Y	n	n	none	rest
21	ISDN	TIE												
	1	6	0		user	Y	Y	Y	Y	Y	n	Y	as-needed	both
99	CCS	Server A												
	1	1	0		user	Y	Y	Y	Y	Y	n	Y	as-needed	both

Command successfully completed

Command:

CANCEL HELP

Alt: Host Chat Logon/Wiz WinLink Cmd Mode Send Fax Explorer DOS Prmpt

ATT 4410 1K-Xmodem direct connect-Telnet rd sd cd cts 1:48PM Row 24 Col 10

Port opened - Telnet Connected 00:08:06

Start com_1 - HyperTerminal TFTP Server Procomm Plus Telnet ... sta_tru_6_1_of_1.bmp -...

<< 1:48 PM



Figure 10. Signaling Group (6) (1 of 1)

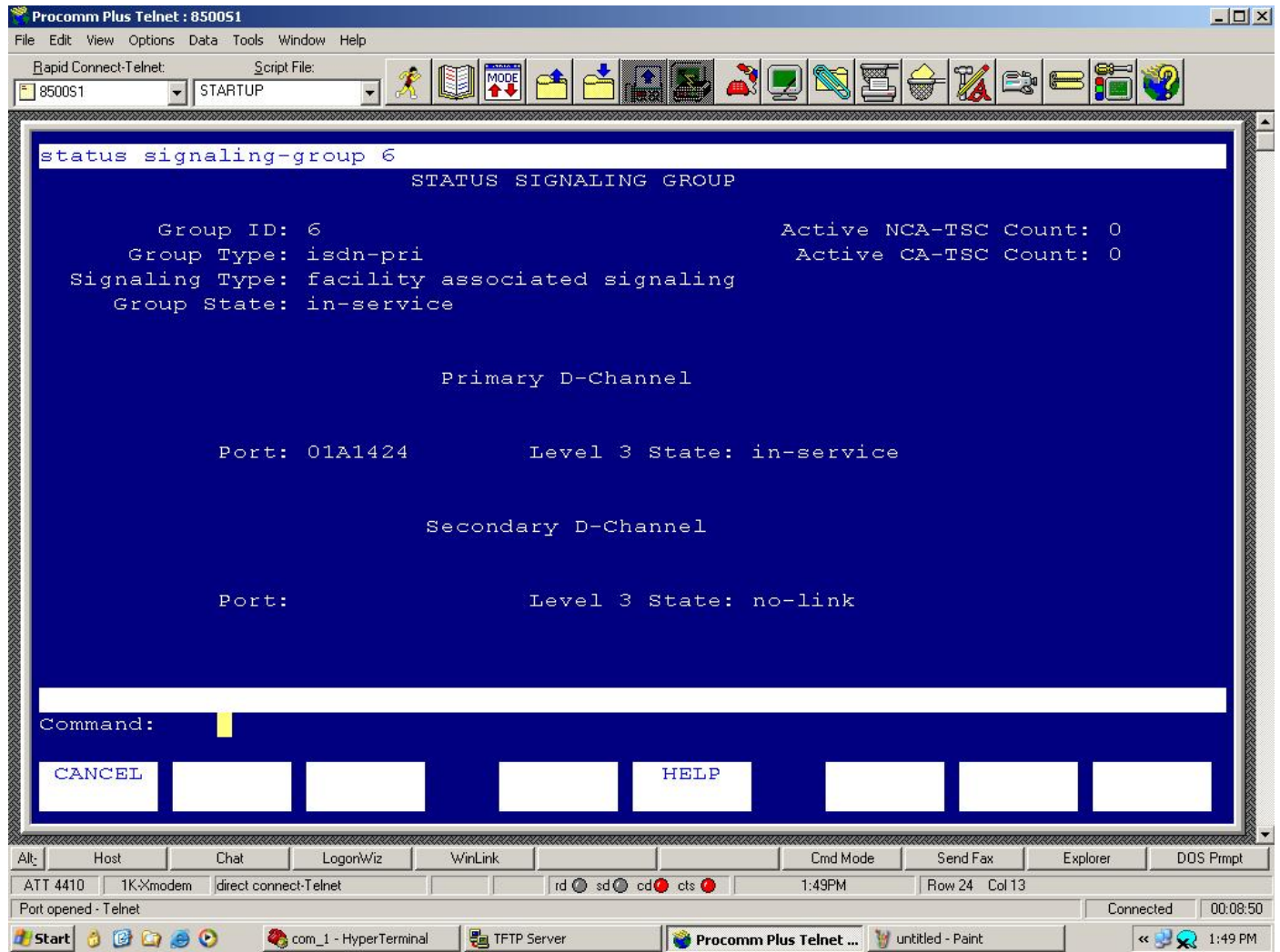




Figure 11. DS1 Board (1 of 2)

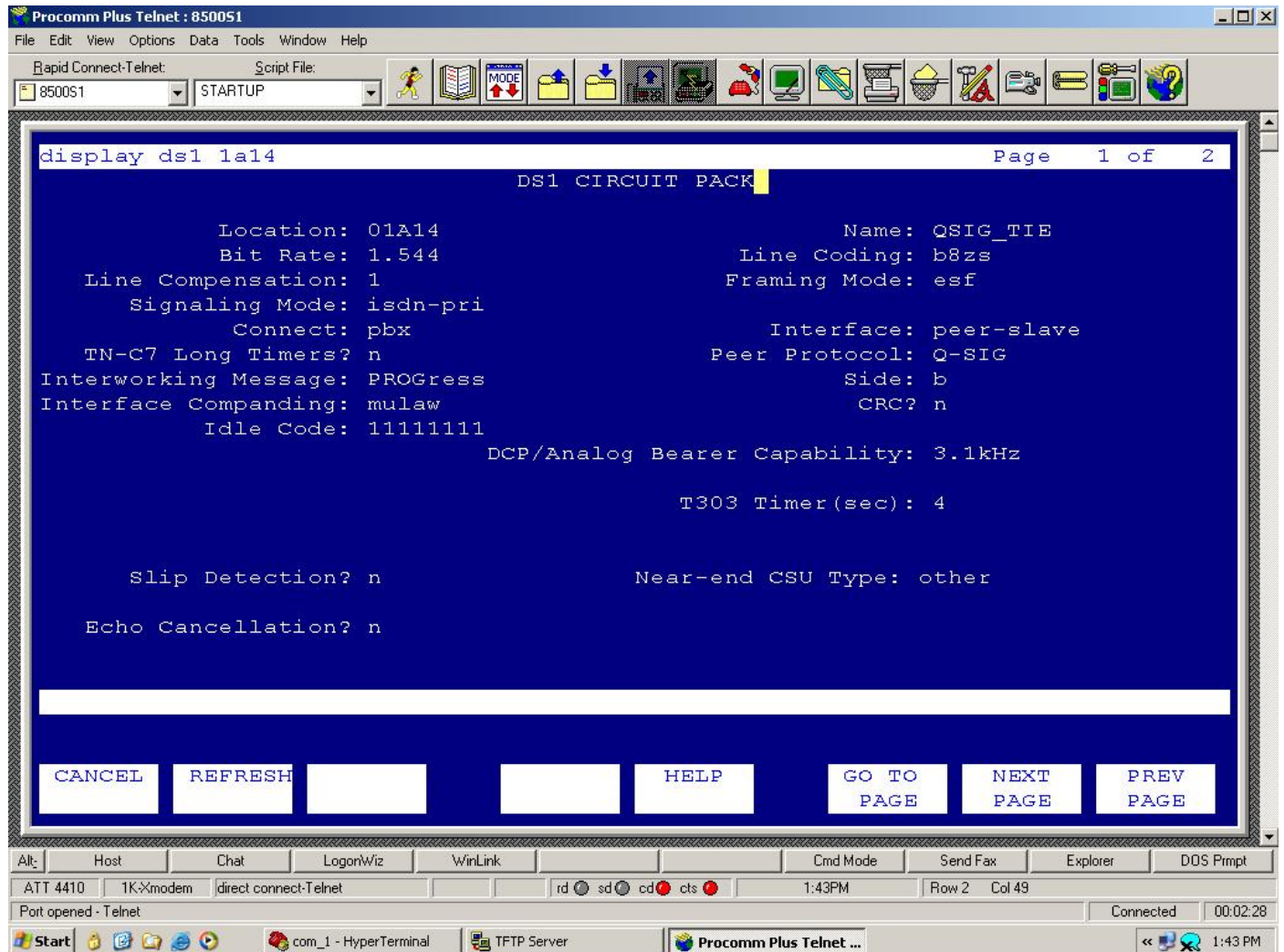




Figure 12. DS1 Board (2 of 2)

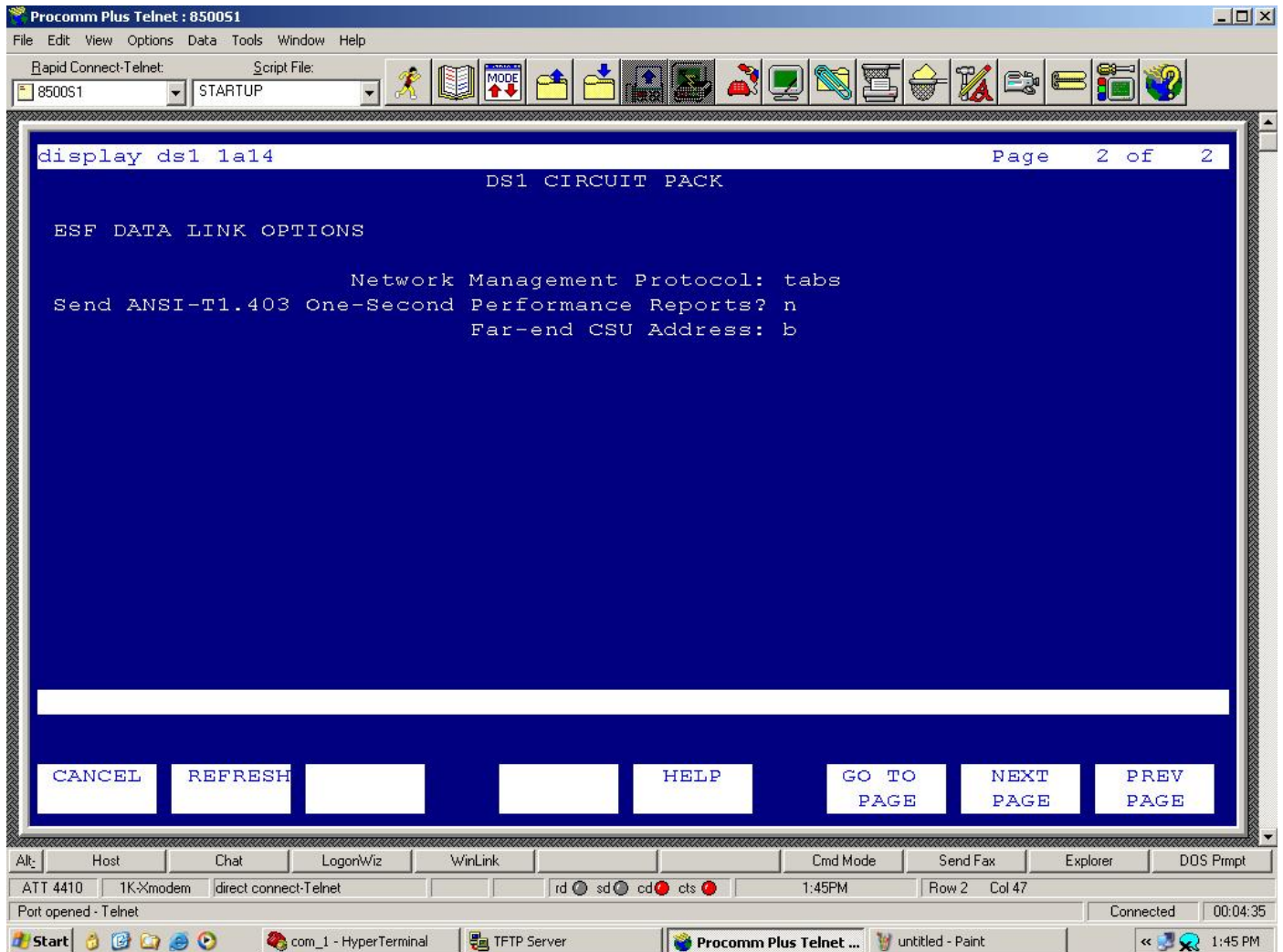




Figure 13. Trunks Status (1 of 1)

Procomm Plus Telnet : 8500S1

File Edit View Options Data Tools Window Help

Rapid Connect-Telnet: Script File:

8500S1 STARTUP

status trunk 6

TRUNK GROUP STATUS

Member	Port	Service State	Mtce Connected Ports Busy
0006/001	01A1401	in-service/idle	no
0006/002	01A1402	in-service/idle	no
0006/003	01A1403	in-service/idle	no
0006/004	01A1404	in-service/idle	no
0006/005	01A1405	in-service/idle	no
0006/006	01A1406	in-service/idle	no
0006/007	01A1407	in-service/idle	no
0006/008	01A1408	in-service/idle	no
0006/009	01A1409	in-service/idle	no
0006/010	01A1410	in-service/idle	no

Command successfully completed

Command:

CANCEL HELP

Alt: Host Chat LogonWiz WinLink Cmd Mode Send Fax Explorer DOS Prmpt

ATT 4410 1K-Xmodem direct connect-Telnet rd sd cd cts 1:46PM Row 24 Col 10

Port opened - Telnet Connected 00:05:49

Start com_1 - HyperTerminal TFTP Server Procomm Plus Telnet ... untitled - Paint 1:46 PM

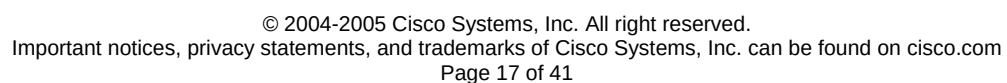
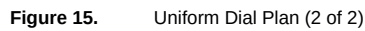




Figure 16. AAR Analysis (1 of 2)

Procomm Plus Telnet : 8500s2

File Edit View Options Data Tools Window Help

Rapid Connect-Telnet: Script File: 8500s2 STARTUP

display aar analysis 21 Page 1 of 2

AAR DIGIT ANALYSIS TABLE

Percent Full: 1

Dialed String	Total Min	Total Max	Route Pattern	Call Type	Node Num	ANI Req'd
222	7	7	99	aar		n
223	7	7	21	aar	1	n
3	7	7	999	aar		n
4	7	7	999	aar		n
5	7	7	999	aar		n
6	7	7	999	aar		n
7	7	7	999	aar		n
8	7	7	999	aar		n
9	7	7	999	aar		n
						n
						n
						n
						n
						n
						n

CANCEL REFRESH HELP GO TO PAGE NEXT PAGE PREV PAGE

Alt: Host Chat LogonWiz WinLink Cmd Mode Send Fax Explorer DOS Prmpt

ATT 4410 1K-Xmodem direct connect-Telnet rd sd cd cts 3:34PM Row 2 Col 54

Port opened - Telnet Connected 01:23:39

Start xyz - HyperTerminal TFTP Server Procomm Plus Telnet ... untitled - Paint 3:34 PM

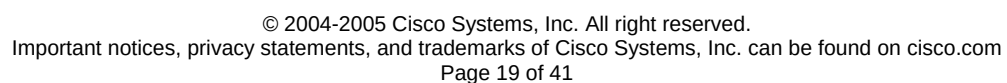




Figure 18. Designated Route Pattern (21) (1 of 3)

Procomm Plus Telnet : 8500s2

File Edit View Options Data Tools Window Help

Rapid Connect-Telnet: Script File: 8500s2 STARTUP

display route-pattern 21 Page 1 of 3

Pattern Number: 21 Pattern Name: ISDN NODE 1
Secure SIP? n

Grp No	FRL	NPA	Pfx	Hop	Toll	No.	Inserted	DCS/	IXC
			Mrk	Lmt	List	Del	Digits	QSIG	
								Intw	
1:	6	0					3	n	user
2:								n	user
3:								n	user
4:								n	user
5:								n	user
6:								n	user

	BCC	VALUE	TSC	CA-TSC	ITC	BCIE	Service/Feature	BAND	No.	Numbering	LAR
	0	1	2	3	4	W	Request		Dgts	Format	
									Subaddress		
1:	Y	Y	Y	Y	Y	n	Y	as-needed	bothept	unk-unk	none
2:	Y	Y	Y	Y	Y	n	n		rest		none
3:	Y	Y	Y	Y	Y	n	n		rest		none
4:	Y	Y	Y	Y	Y	n	n		rest		none
5:	Y	Y	Y	Y	Y	n	n		rest		none
6:	Y	Y	Y	Y	Y	n	n		rest		none

CANCEL REFRESH HELP GO TO PAGE NEXT PAGE PREV PAGE

Alt: Host Chat LogonWiz WinLink Cmd Mode Send Fax Explorer DOS Prmpt

ATT 4410 1K-Xmodem direct connect-Telnet rd sd cd cts 3:38PM Row 2 Col 1

Port opened - Telnet Connected 01:27:48

Start xyz - HyperTerminal TFTP Server Procomm Plus Telnet ... untitled - Paint 3:39 PM



Figure 19. Designated Route Pattern (21) (2 of 3)

Procomm Plus Telnet : 8500s2

File Edit View Options Data Tools Window Help

Rapid Connect-Telnet: Script File: 8500s2 STARTUP

display route-pattern 21 Page 2 of 3

Pattern Number: 21

Grp No	FRL	NPA	Pfx	Hop	Toll	No.	Inserted	DCS/	IXC
			Mrk	Lmt	List	Del	Digits	QSIG	
							Dgts	Intw	
7:								n	user
8:								n	user
9:								n	user
10:								n	user
11:								n	user
12:								n	user

BCC	VALUE	TSC	CA-TSC	ITC	BCIE	Service/Feature	BAND	No.	Numbering	LAR
0	1	2	3	4	W	Request		Dgts	Format	
							Subaddress			
7:	Y	Y	Y	Y	Y	n	n	rest		none
8:	Y	Y	Y	Y	Y	n	n	rest		none
9:	Y	Y	Y	Y	Y	n	n	rest		none
10:	Y	Y	Y	Y	Y	n	n	rest		none
11:	Y	Y	Y	Y	Y	n	n	rest		none
12:	Y	Y	Y	Y	Y	n	n	rest		none

CANCEL REFRESH HELP GO TO PAGE NEXT PAGE PREV PAGE

Alt: Host Chat Logon/Wiz WinLink Cmd Mode Send Fax Explorer DOS Prmpt

ATT 4410 1K-Xmodem direct connect-Telnet rd sd cd cts 3:42PM Row 2 Col 1

Port opened - Telnet Connected 01:30:59

Start xyz - HyperTerminal TFTP Server Procomm Plus Telnet ... Cisco Employee Connecti...



Figure 20. Designated Route Pattern (21) (3 of 3)

Procomm Plus Telnet : 8500s2

File Edit View Options Data Tools Window Help

Rapid Connect-Telnet: Script File: 8500s2 STARTUP

display route-pattern 21 Page 3 of 3

Pattern Number: 21

Grp No	FRL	NPA	Pfx	Hop	Toll	No.	Inserted	DCS/	IXC
			Mrk	Lmt	List	Del	Digits	QSIG	
							Dgts	Intw	
13:								n	user
14:								n	user
15:								n	user
16:								n	user

BCC	VALUE	TSC	CA-TSC	ITC	BCIE	Service/Feature	BAND	No.	Numbering	LAR
0	1	2	3	4	W	Request		Dgts	Format	
								Subaddress		
13:	Y	Y	Y	Y	Y	n	n	rest		none
14:	Y	Y	Y	Y	Y	n	n	rest		none
15:	Y	Y	Y	Y	Y	n	n	rest		none
16:	Y	Y	Y	Y	Y	n	n	rest		none

CANCEL REFRESH HELP GO TO PAGE NEXT PAGE PREV PAGE

Alt: Host Chat Logon/Wiz WinLink Cmd Mode Send Fax Explorer DOS Prmpt

ATT 4410 1K-Xmodem direct connect-Telnet rd sd cd cts 3:43PM Row 2 Col 1

Port opened - Telnet Connected 01:31:57

Start xyz - HyperTerminal TFTP Server Procomm Plus Tel... Cisco Employee Con... untitled - Paint 3:43 PM



Figure 21. Route Patterns (1 of 1)

Procomm Plus Telnet : 8500s2

File Edit View Options Data Tools Window Help

Rapid Connect-Telnet: Script File: 8500s2 STARTUP

list route-pattern

ROUTE PATTERNS												
Route	Name/Trk	FRL	Hop	IXC	BCC	TSC	CA-TSC	ITC	Service/Feature			
Pat	Pref	Grp	Lmt		0 1 2 3 4 w		Request					
21	ISDN	NODE	1									
	1	6	0	user	y y y y y n	y	as-needed	both				
99	CCS	Sever	2									
	1	1	0	user	y y y y y n	y	as-needed	both				

Command successfully completed

Command:

CANCEL HELP

Alt: Host Chat Logon/Wiz WinLink Cmd Mode Send Fax Explorer DOS Prmpt

ATT 4410 1K-Xmodem direct connect-Telnet rd sd cd cts 3:27PM Row 24 Col 10

Port opened - Telnet Connected 01:16:05

Start xyz - HyperTerminal TFTP Server Procomm Plus Telnet ... untitled - Paint 3:27 PM



Figure 22. Signaling Group (6) (1 of 1)

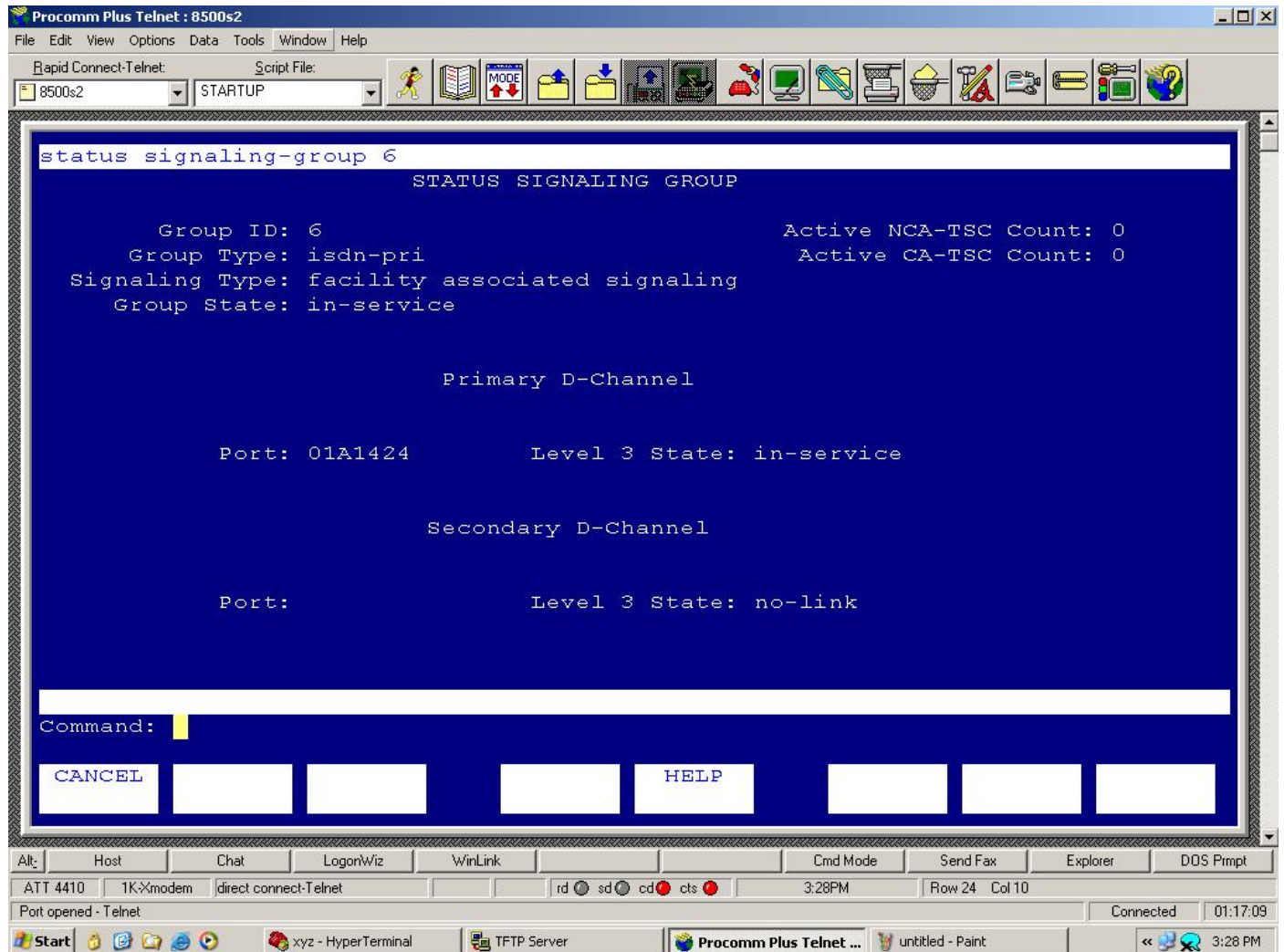




Figure 23. DS1 Board (1 of 2)

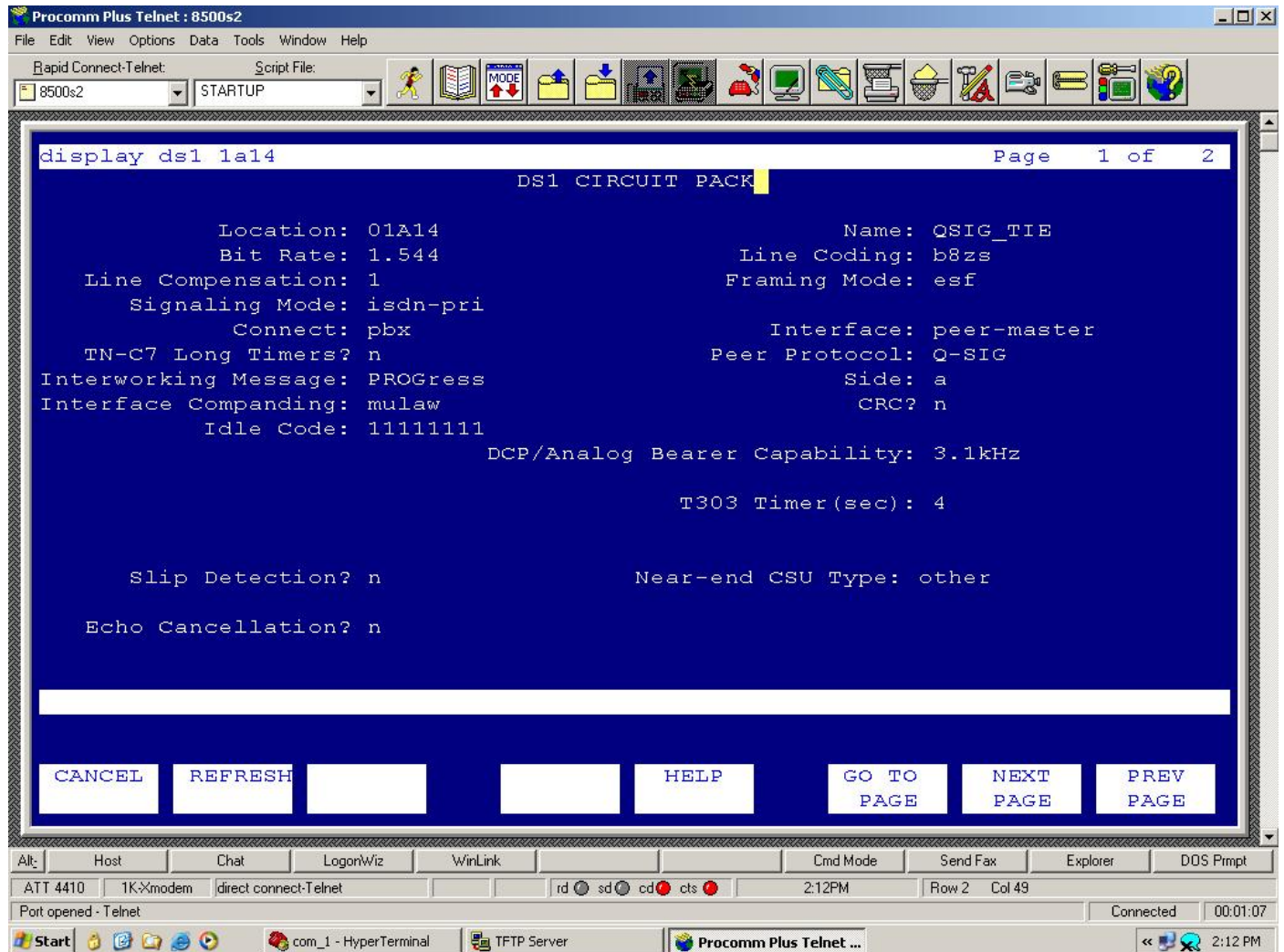




Figure 24. DS1 Board (2 of 2)

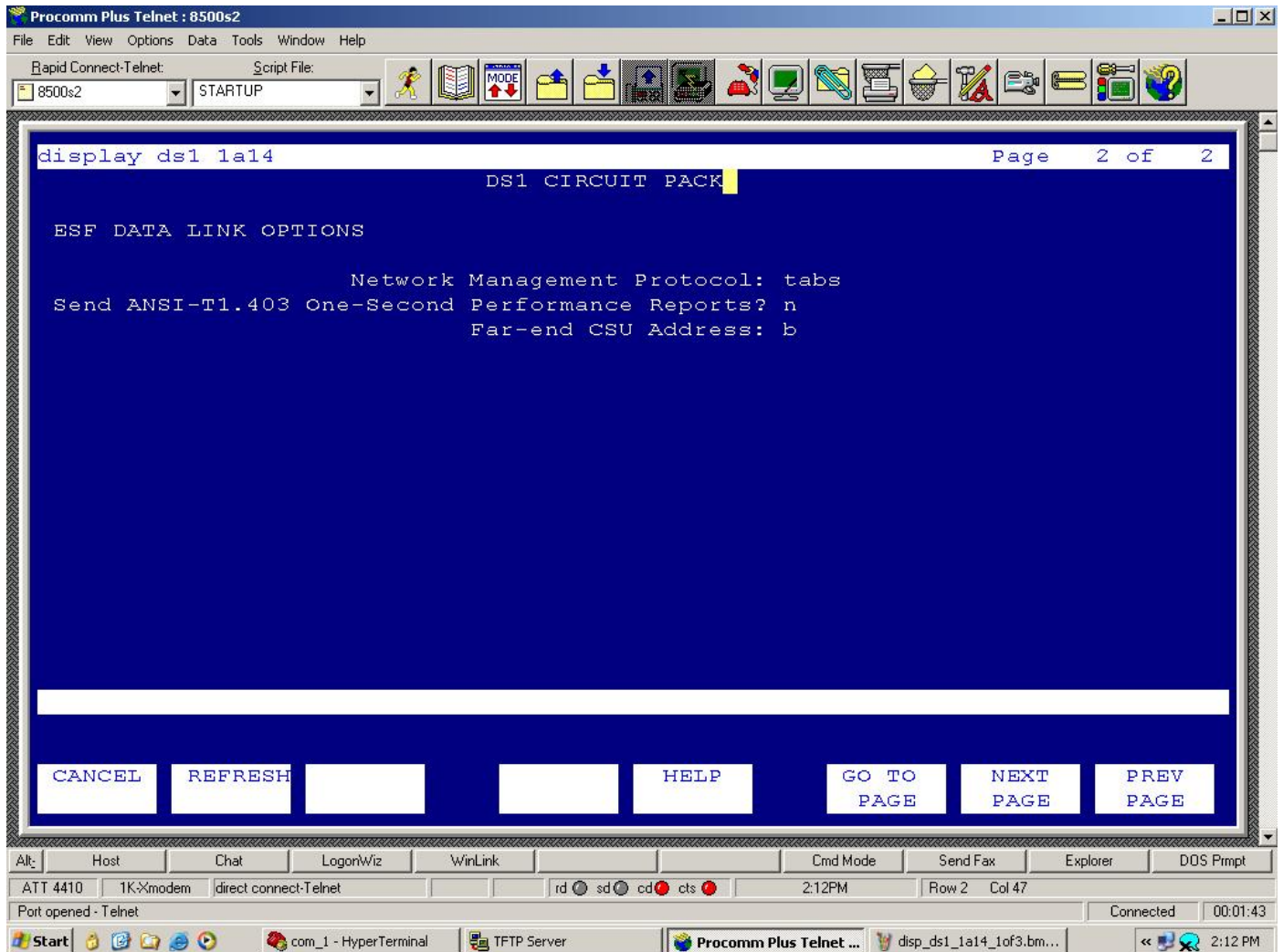




Figure 25. Trunks Status (1 of 1)

Procomm Plus Telnet : 8500s2

File Edit View Options Data Tools Window Help

Rapid Connect-Telnet: Script File:

8500s2 STARTUP

status trunk 6

TRUNK GROUP STATUS

Member	Port	Service State	Mtce Connected Ports Busy
0006/001	01A1401	in-service/idle	no
0006/002	01A1402	in-service/idle	no
0006/003	01A1403	in-service/idle	no
0006/004	01A1404	in-service/idle	no
0006/005	01A1405	in-service/idle	no
0006/006	01A1406	in-service/idle	no
0006/007	01A1407	in-service/idle	no
0006/008	01A1408	in-service/idle	no
0006/009	01A1409	in-service/idle	no
0006/010	01A1410	in-service/idle	no

Command successfully completed

Command:

CANCEL HELP

Alt: Host Chat LogonWiz WinLink Cmd Mode Send Fax Explorer DOS Prmpt

ATT 4410 1K-Xmodem direct connect-Telnet rd sd cd cts 3:25PM Row 24 Col 10

Port opened - Telnet Connected 01:14:47

Start xyz - HyperTerminal TFTP Server Procomm Plus Telnet ... untitled - Paint 3:25 PM



Cisco 1760 Configuration

1760_A# **show version**

Cisco Internetwork Operating System Software

IOS (tm) C1700 Software (C1700-IPVOICE-M), Version 12.3(13), RELEASE SOFTWARE (fc2)

Technical Support: <http://www.cisco.com/techsupport>

Copyright (c) 1986-2005 by cisco Systems, Inc.

Compiled Thu 10-Feb-05 08:03 by ssearch

Image text-base: 0x8000816C, data-base: 0x81428708

ROM: System Bootstrap, Version 12.2(4r)XL, RELEASE SOFTWARE (fc1)

ROM: C1700 Software (C1700-IPVOICE-M), Version 12.3(13), RELEASE SOFTWARE (fc2)

1760_A uptime is 6 days, 23 hours, 29 minutes

System returned to ROM by power-on

System image file is "flash:c1700-ipvoice-mz.123-13.bin"

cisco 1760 (MPC860P) processor (revision 0x200) with 49152K/16384K bytes of memory.

Processor board ID VEN0530003X (355247610), with hardware revision 0000

MPC860P processor: part number 5, mask 2

Bridging software.

X.25 software, Version 3.0.0.

Primary Rate ISDN software, Version 1.1.

1 FastEthernet/IEEE 802.3 interface(s)

24 Serial network interface(s)

2 Channelized T1/PRI port(s)

2 Voice FXS interface(s)

32K bytes of non-volatile configuration memory.

16384K bytes of processor board System flash (Read/Write)

Configuration register is 0x2101



1760_A# **show running-config**

Building configuration...

Current configuration : 2133 bytes

!

version 12.3

service timestamps debug datetime msec

service timestamps log uptime

no service password-encryption

!

hostname 1760_A

!

boot-start-marker

boot-end-marker

!

logging buffered 999999 debugging

enable password cisco

!

memory-size iomem 25

tdm clock T1 1/0 both export line

mmi polling-interval 60

no mmi auto-configure

no mmi pvc

mmi snmp-timeout 180

voice-card 0

!

voice-card 1

!

no aaa new-model



```
ip subnet-zero
ip cef
!
!
no ip domain lookup
no ftp-server write-enable
isdn switch-type primary-qsig
!
!
voice call send-alert
voice rtp send-recv
!
voice service voip
h323
!
!
voice class h323 1
!
!
controller T1 1/0
framing esf
linecode b8zs
pri-group timeslots 1-24
!
controller T1 1/1
framing esf
linecode b8zs
!
!
```



```
!  
interface FastEthernet0/0  
  
ip address 172.20.26.252 255.255.255.0  
  
no ip mroute-cache  
  
speed auto  
  
!  
  
interface Serial1/0:23  
  
no ip address  
  
no logging event link-status  
  
isdn switch-type primary-qsig  
  
isdn overlap-receiving  
  
isdn protocol-emulate network  
  
isdn incoming-voice voice  
  
isdn negotiate-bchan  
  
no cdp enable  
  
!  
  
ip classless  
  
ip route 0.0.0.0 0.0.0.0 FastEthernet0/0  
  
no ip http server  
  
!  
  
tftp-server flash:c1700-sv8y7-mz.bcp050303  
  
!  
  
voice-port 0/0  
  
!  
  
voice-port 0/1  
  
!  
  
voice-port 1/0:23  
  
!  
  
dial-peer cor custom
```



```
!  
!  
dial-peer voice 51000 voip  
  incoming called-number .  
  shutdown  
  destination-pattern 4085251...  
  session target ipv4:172.20.26.253  
  dtmf-relay h245-signal  
  codec g711alaw  
  ip qos dscp cs5 media  
!  
dial-peer voice 1 pots  
  incoming called-number .  
  shutdown  
  destination-pattern 4085252...  
  direct-inward-dial  
  forward-digits all  
!  
dial-peer voice 1023 pots  
  destination-pattern 41..  
  direct-inward-dial  
  port 1/0:23  
  forward-digits all  
!  
dial-peer voice 323 voip  
  destination-pattern 21..  
  session target ipv4:172.20.26.253  
!  
dial-peer voice 4100 pots
```



```
destination-pattern 4100
```

```
port 0/1
```

```
!
```

```
dial-peer voice 5100 pots
```

```
destination-pattern 2100
```

```
port 0/0
```

```
!
```

```
dial-peer voice 5050 pots
```

```
destination-pattern 5050
```

```
direct-inward-dial
```

```
port 1/0:23
```

```
forward-digits all
```

```
!
```

```
gateway
```

```
!
```

```
line con 0
```

```
exec-timeout 0 0
```

```
line aux 0
```

```
line vty 0 4
```

```
password cisco
```

```
login
```

```
!
```

```
end
```

```
1760_A#
```




Cisco 2611XM Configuration

26xm# **show version**

Cisco Internetwork Operating System Software

IOS (tm) C2600 Software (C2600-IPVOICE-M), Version 12.3(13), RELEASE SOFTWARE (fc2)

Technical Support: <http://www.cisco.com/techsupport>

Copyright (c) 1986-2005 by cisco Systems, Inc.

Compiled Thu 10-Feb-05 02:11 by ssearch

Image text-base: 0x80008098, data-base: 0x81833D30

ROM: System Bootstrap, Version 12.2(7r) [cmong 7r], RELEASE SOFTWARE (fc1)

ROM: C2600 Software (C2600-IPVOICE-M), Version 12.3(13), RELEASE SOFTWARE (fc2)

26xm uptime is 6 days, 4 hours, 0 minutes

System returned to ROM by power-on

System image file is "flash:c2600-ipvoice-mz.123-13.bin"

cisco 2611XM (MPC860P) processor (revision 0x100) with 92160K/6144K bytes of memory.

Processor board ID JAD07060ATN (1435121423)

M860 processor: part number 5, mask 2

Bridging software.

X.25 software, Version 3.0.0.

Primary Rate ISDN software, Version 1.1.

2 FastEthernet/IEEE 802.3 interface(s)

24 Serial network interface(s)

2 Channelized T1/PRI port(s)

32K bytes of non-volatile configuration memory.

49152K bytes of processor board System flash (Read/Write)

Configuration register is 0x2102



26xm# **show running-config**

Building configuration...

Current configuration : 2076 bytes

!

version 12.3

service timestamps debug datetime msec

service timestamps log datetime msec

no service password-encryption

!

hostname 26xm

!

boot-start-marker

boot-end-marker

!

logging buffered 1000000 debugging

!

no network-clock-participate slot 1

no network-clock-participate wic 0

voice-card 1

!

no aaa new-model

ip subnet-zero

ip cef

!

!

no ip domain lookup

ip host r2 2065 1.1.1.1

no ftp-server write-enable



```
isdn switch-type primary-qsig
!
voice call send-alert
voice rtp send-recv
!
voice service voip
h323
!
!
voice class h323 1
!
!
controller T1 1/0
framing esf
linecode b8zs
pri-group timeslots 1-24
!
controller T1 1/1
framing sf
linecode ami
!
!
interface Loopback1
ip address 1.1.1.1 255.255.255.255
!
interface FastEthernet0/0
ip address 172.20.26.253 255.255.255.0
duplex auto
speed auto
```



```
!  
interface FastEthernet0/1  
  
no ip address  
  
shutdown  
  
duplex auto  
  
speed auto  
  
!  
  
interface Serial1/0:23  
  
no ip address  
  
no logging event link-status  
  
isdn switch-type primary-qsig  
  
isdn overlap-receiving  
  
isdn incoming-voice voice  
  
isdn negotiate-bchan  
  
isdn bchan-number-order ascending  
  
no cdp enable  
  
!  
  
ip classless  
  
ip route 0.0.0.0 0.0.0.0 FastEthernet0/0  
  
ip http server  
  
!  
  
!  
  
voice-port 1/0:23  
  
!  
  
!  
  
dial-peer cor custom  
  
!  
  
!  
  
dial-peer voice 52001 voip
```



```
description Send VoIP to 1760
incoming called-number .
shutdown
destination-pattern 4085252...
session target ipv4:172.20.26.252
dtmf-relay h245-signal
codec g711alaw
ip qos dscp cs5 media
!
dial-peer voice 1 pots
incoming called-number .
shutdown
destination-pattern 4085251...
direct-inward-dial
forward-digits all
!
dial-peer voice 1023 pots
destination-pattern 21..
direct-inward-dial
port 1/0:23
forward-digits all
!
dial-peer voice 323 voip
destination-pattern 41..
session target ipv4:172.20.26.252
!
dial-peer voice 5100 voip
destination-pattern 51..
session target ipv4:172.20.26.252
```




```
!  
dial-peer voice 5050 voip  
destination-pattern 5050  
session target ipv4:172.20.26.252
```

```
!  
!  
line con 0  
line aux 0  
transport input all  
line vty 0 4  
login  
!  
!  
end
```

```
26xm#
```



Important Information

THE SPECIFICATIONS AND INFORMATION REGARDING THE PRODUCTS IN THIS MANUAL ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL STATEMENTS, INFORMATION, AND RECOMMENDATIONS IN THIS MANUAL ARE BELIEVED TO BE ACCURATE BUT ARE PRESENTED WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. USERS MUST TAKE FULL RESPONSIBILITY FOR THEIR APPLICATION OF ANY PRODUCTS.

IN NO EVENT SHALL CISCO OR ITS SUPPLIERS BE LIABLE FOR ANY INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOST PROFITS OR LOSS OR DAMAGE TO DATA ARISING OUT OF THE USE OR INABILITY TO USE THIS MANUAL, EVEN IF CISCO OR ITS SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.



Corporate Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 526-4100

European Headquarters

Cisco Systems International
BV
Haarlerbergpark
Haarlerbergweg 13-19
1101 CH Amsterdam
The Netherlands
www-europe.cisco.com
Tel: 31 0 20 357 1000
Fax: 31 0 20 357 1100

Americas Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-7660
Fax: 408 527-0883

Asia Pacific Headquarters

Cisco Systems, Inc.
Capital Tower
168 Robinson Road
#22-01 to #29-01
Singapore 068912
www.cisco.com
Tel: +65 317 7777
Fax: +65 317 7799

Cisco Systems has more than 200 offices in the following countries and regions. Addresses, phone numbers, and fax numbers are listed on the Cisco Web site at www.cisco.com/go/offices.

Argentina • Australia • Austria • Belgium • Brazil • Bulgaria • Canada • Chile • China PRC • Colombia • Costa Rica • Croatia • Czech Republic • Denmark • Dubai, UAE • Finland • France • Germany • Greece • Hong Kong SAR • Hungary • India • Indonesia • Ireland • Israel • Italy • Japan • Korea • Luxembourg • Malaysia • Mexico • The Netherlands • New Zealand • Norway • Peru • Philippines • Poland • Portugal • Puerto Rico • Romania • Russia • Saudi Arabia • Scotland • Singapore • Slovakia • Slovenia • South Africa • Spain • Sweden • Switzerland • Taiwan • Thailand • Turkey • Ukraine • United Kingdom • United States • Venezuela • Vietnam • Zimbabwe

Copyright © 2005 Cisco Systems, Inc. All rights reserved. CCSP, the Cisco Square Bridge logo, Follow Me Browsing, and StackWise are trademarks of Cisco Systems, Inc.; Changing the Way We Work, Live, Play, and Learn, and iQuick Study are service marks of Cisco Systems, Inc.; and Access Registrar, Aironet, ASIST, BPX, Catalyst, CCDA, CCDP, CCIE, CCIP, CCNA, CCNP, Cisco, the Cisco Certified Internetwork Expert logo, Cisco IOS, Cisco Press, Cisco Systems, Cisco Systems Capital, the Cisco Systems logo, Cisco Unity, Empowering the Internet Generation, Enterprise/Solver, EtherChannel, EtherFast, EtherSwitch, Fast Step, FormShare, GigaDrive, GigaStack, HomeLink, Internet Quotient, IOS, IP/TV, iQ Expertise, the iQ logo, iQ Net Readiness Scorecard, LightStream, Linksys, MeetingPlace, MGX, the Networkers logo, Networking Academy, Network Registrar, Packet, PIX, Post-Routing, Pre-Routing, ProConnect, RateMUX, ScriptShare, SlideCast, SMARTnet, StrataView Plus, SwitchProbe, TeleRouter, The Fastest Way to Increase Your Internet Quotient, TransPath, and VCO are registered trademarks of Cisco Systems, Inc. and/or its affiliates in the United States and certain other countries.

All other trademarks mentioned in this document or Website are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (0501R)

Printed in the USA