



Lucent/Avaya Definity G3si V9 PBX with CallManager using the Cisco 6608-T1 PRI NI-2 Gateway

This application note discusses the integration of the Lucent/Avaya Definity G3si V9 PBX with CallManager using the Cisco 6608-T1 PRI NI-2 Gateway.

Integration Description

Connectivity is achieved by using the industry standard PRI NI-2 protocol. The Lucent/Avaya Definity G3si can be configured as either the NETWORK or USER side. The figure below shows the general network layout for the integration.

Network Layout

Features

Key features supported:

- Calling/Called Number
- Calling/Called Name

Key features not supported:

- Connected Number

Cisco Systems Equipment Needed

- Hardware (Gateway): Cisco 6608 T1 Port
- Software: CallManager Release 3.1

PBX Requirements

- Hardware: TN464F, DS1 INTFC 24/32
- Software: Version V9



Configuring the Lucent/Avaya Definity G3si PBX

To configure the Lucent/Avaya Definity G3si PBX, do the following:

- Step 1.** Add the new circuit pack.
- Step 2.** Add the new signaling group.
- Step 3.** Add the new trunk group.
- Step 4.** Add the Uniform Dialing Plan.

Circuit Pack

The following figures show the configuration of the DS1 circuit pack.

DS1 Circuit Pack

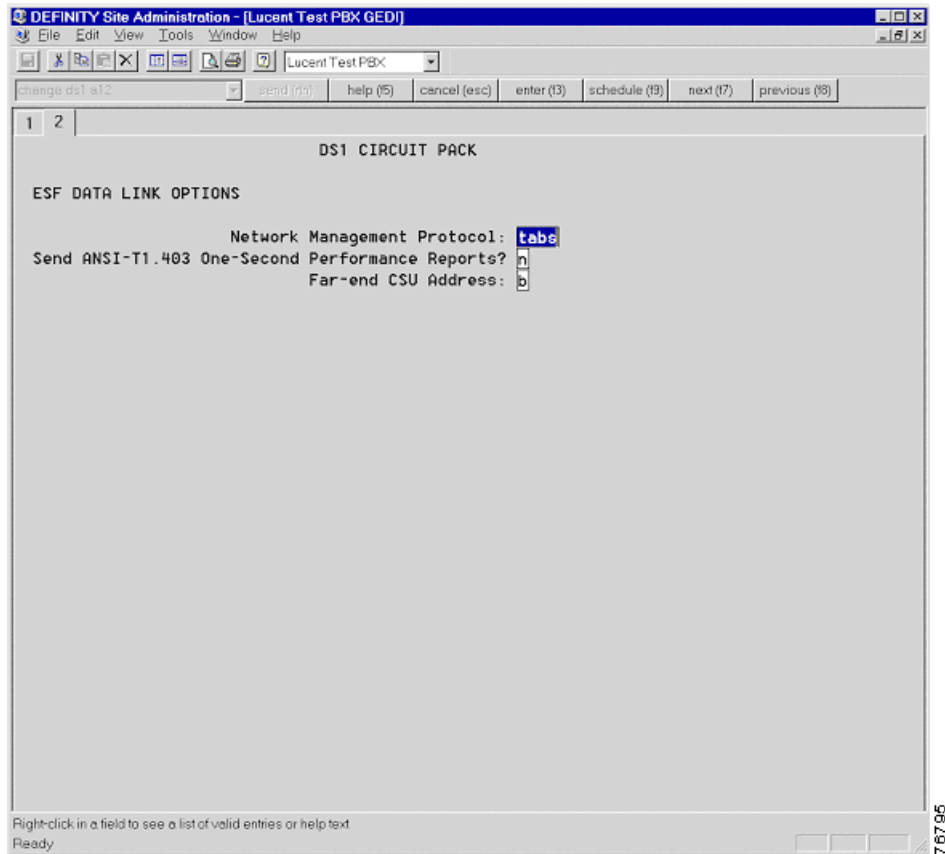
The screenshot displays the 'DEFINITY Site Administration - [Lucent Test PBX GED]' window. The main configuration area is titled 'DS1 CIRCUIT PACK' and contains the following fields and values:

Location:	01A12	Name:	ISDN PRI
Bit Rate:	1.544	Line Coding:	b8zs
Line Compensation:	1	Framing Mode:	esf
Signaling Mode:	isdn-pri		
Connect:	network		
CentreUu Long Timers?	n	Country Protocol:	1
Interworking Message:	PROGress	Protocol Version:	a
Interface Companding:	mulaw	CRC?	n
Idle Code:	11111111		
		DCP/Analog Bearer Capability:	3.1kHz
Slip Detection?	n	Near-end CSU Type:	other

At the bottom of the window, there is a status bar with the text 'Right-click in a field to see a list of valid entries or help text' and 'Ready'. A vertical number '76794' is visible on the right edge of the window.



DS1 Circuit Pack—ESF Data Link Options





Signaling Group

The following figure shows the configuration of the signaling group.

Signaling Group

The screenshot shows the 'DEFINITY Site Administration - [Lucent Test PBX GED]' window. The main area is titled 'SIGNALING GROUP' and displays the configuration for Group Number: 3. The configuration fields are as follows:

Group Number: 3	Associated Signaling? <input type="checkbox"/>	Max number of NCA TSC: <input type="text" value="0"/>
Primary D-Channel: 01A1224		Max number of CA TSC: <input type="text" value="0"/>
Trunk Group for Channel Selection: 14		Trunk Group for NCA TSC: <input type="text"/>
Supplementary Service Protocol: a		

At the bottom of the window, there is a status bar with the text 'Right-click in a field to see a list of valid entries or help text' and 'Ready'. The window title bar includes a menu bar (File, Edit, View, Tools, Window, Help) and a toolbar with various icons. The bottom right corner of the window has the number '76796'.



Trunk Group

The following figures show the configuration of the trunk group.

Trunk Group

The screenshot displays the configuration for Trunk Group 14 in the DEFINITY Site Administration tool. The interface includes a menu bar (File, Edit, View, Tools, Window, Help), a toolbar, and a command line. The main configuration area is titled "TRUNK GROUP" and contains the following fields:

- Group Number: 14
- Group Type: isdn
- CDR Reports:
- Group Name: ISDN T1 PRI
- COR: 1
- TN: 1
- TAC: 669
- Direction: two-way
- Outgoing Display?:
- Dial Access?:
- Busy Threshold: 99
- Night Service:
- Queue Length: 9
- Service Type: tie
- Auth Code?: n
- TestCall ITC: rest
- Far End Test Line No:
- TestCall BCC:
- TRUNK PARAMETERS
 - Codeset to Send Display: 0
 - Codeset to Send National IEs: 7
 - Max Message Size to Send: 260
 - Charge Advice: none
 - Supplementary Service Protocol: a
 - Digit Handling (in/out): enbloc/enbloc
 - Trunk Hunt: ascend
 - Digital Loss Group: 13
- Calling Number - Delete: Insert: Numbering Format:
- Bit Rate: 1200
- Synchronization: async
- Duplex: full
- Disconnect Supervision - In?: Out?:
- Answer Supervision Timeout: 0

At the bottom of the window, there is a status bar with the text "Right-click in a field to see a list of valid entries or help text" and "Ready". A vertical number "76787" is visible on the right edge of the window.



Trunk Group—Trunk Features

DEFINITY Site Administration - [Lucent Test PBX GED]

File Edit View Tools Window Help

Lucent Test PBX

change trunk-group 14 send (7) help (F5) cancel (esc) enter (13) schedule (F9) next (F7) previous (F6)

1 2 3 4 5 6 7 8 9 10

TRUNK FEATURES

ACA Assignment? Measured: none Wideband Support?
Internal Alert? Maintenance Tests?
Data Restriction? NCA-TSC Trunk Member: 1
Send Name: Send Calling Number:

Used for DCS?
Suppress # Outpulsing? Numbering Format: public
Outgoing Channel ID Encoding: preferred UI IE Treatment: service-provider

Replace Restricted Numbers?
Replace Unavailable Numbers?
Send Connected Number:

Send UCID?
Send Codeset 6/7 LAI IE? Ds1 Echo Cancellation?
US NI Delayed Calling Name Update?

Right-click in a field to see a list of valid entries or help text
Ready

76708



Trunk Group—Group Member Assignments

DEFINITY Site Administration - [Lucent Test PBX GED]

File Edit View Tools Window Help

Lucent Test PBX

change trunk-group 14 send (n) help (F5) cancel (esc) enter (t3) schedule (t9) next (t7) previous (t8)

1 2 3 4 5 6 7 8 9 10

TRUNK GROUP

Administered Members (min/max): 1/23
Total Administered Members: 23

GROUP MEMBER ASSIGNMENTS

	Port	Code	Sfx	Name	Night	Sig Grp
1:	01A1201	TN464	F			3
2:	01A1202	TN464	F			3
3:	01A1203	TN464	F			3
4:	01A1204	TN464	F			3
5:	01A1205	TN464	F			3
6:	01A1206	TN464	F			3
7:	01A1207	TN464	F			3
8:	01A1208	TN464	F			3
9:	01A1209	TN464	F			3
10:	01A1210	TN464	F			3
11:	01A1211	TN464	F			3
12:	01A1212	TN464	F			3
13:	01A1213	TN464	F			3
14:	01A1214	TN464	F			3
15:	01A1215	TN464	F			3

Right-click in a field to see a list of valid entries or help text

Ready

76799



Trunk Group—Group Member Assignments Continued

DEFINITY Site Administration - [Lucent Test PBX GEDI]

File Edit View Tools Window Help

Lucent Test PBX

change trunk-group 14 send (rtn) help (f5) cancel (esc) enter (t3) schedule (f3) next (f7) previous (f8)

1 2 3 4 5 6 7 8 9 10

TRUNK GROUP

Administered Members (min/max): 1/23
Total Administered Members: 23

GROUP MEMBER ASSIGNMENTS

	Port	Code	Sfx	Name	Night	Sig	Grp
16:	01A1216	TN464	F			3	
17:	01A1217	TN464	F			3	
18:	01A1218	TN464	F			3	
19:	01A1219	TN464	F			3	
20:	01A1220	TN464	F			3	
21:	01A1221	TN464	F			3	
22:	01A1222	TN464	F			3	
23:	01A1223	TN464	F			3	
24:							
25:							
26:							
27:							
28:							
29:							
30:							

Right-click in a field to see a list of valid entries or help text

Ready

76800



Uniform Dialing Plan

The following figures show the configuration of the uniform dialing plan.

Dial Plan Record

The screenshot shows the 'DEFINTY Site Administration - [Lucent Test PBX GED]' window. The 'DIAL PLAN RECORD' section is active, displaying the following configuration:

- Local Node Number: 2
- ETA Node Number: []
- ETA Routing Pattern: []
- Uniform Dialing Plan: 4-digit
- UDP Extension Search Order: udp-table-first

The 'FIRST DIGIT TABLE' is shown below, with columns for 'First Digit' and 'Length' (1 through 6).

First Digit	Length - 1 -	Length - 2 -	Length - 3 -	Length - 4 -	Length - 5 -	Length - 6 -
1:						
2:				extension		
3:				extension		
4:				extension		
5:						
6:			dac			
7:						
8:	fac					
9:	fac					
0:	attd					
x:	fac					
#:	fac		fac			

Right-click in a field to see a list of valid entries or help text
Ready

76801



Uniform Dialing Plan

DEFINITY Site Administration - [Lucent Test PBX GED]

File Edit View Tools Window Help

Lucent Test PBX

change udp 2 send (n) help (h) cancel (esc) enter (t) schedule (s) next (7) previous (8)

1 2

UNIFORM DIALING PLAN
Ext Codes: 2ddx

Ext Code: 2xxx Type: **UDPCode** 222

dd	Type	dd	Type	dd	Type	dd	Type	dd	Type
0x:	<input type="text"/>	1x:	<input type="text"/>	2x:	<input type="text"/>	3x:	<input type="text"/>	4x:	<input type="text"/>
00:	<input type="text"/>	10:	<input type="text"/>	20:	<input type="text"/>	30:	<input type="text"/>	40:	<input type="text"/>
01:	<input type="text"/>	11:	<input type="text"/>	21:	<input type="text"/>	31:	<input type="text"/>	41:	<input type="text"/>
02:	<input type="text"/>	12:	<input type="text"/>	22:	<input type="text"/>	32:	<input type="text"/>	42:	<input type="text"/>
03:	<input type="text"/>	13:	<input type="text"/>	23:	<input type="text"/>	33:	<input type="text"/>	43:	<input type="text"/>
04:	<input type="text"/>	14:	<input type="text"/>	24:	<input type="text"/>	34:	<input type="text"/>	44:	<input type="text"/>
05:	<input type="text"/>	15:	<input type="text"/>	25:	<input type="text"/>	35:	<input type="text"/>	45:	<input type="text"/>
06:	<input type="text"/>	16:	<input type="text"/>	26:	<input type="text"/>	36:	<input type="text"/>	46:	<input type="text"/>
07:	<input type="text"/>	17:	<input type="text"/>	27:	<input type="text"/>	37:	<input type="text"/>	47:	<input type="text"/>
08:	<input type="text"/>	18:	<input type="text"/>	28:	<input type="text"/>	38:	<input type="text"/>	48:	<input type="text"/>
09:	<input type="text"/>	19:	<input type="text"/>	29:	<input type="text"/>	39:	<input type="text"/>	49:	<input type="text"/>

Right-click in a field to see a list of valid entries or help text

Ready

76802



Configuring Cisco CallManager

To configure Cisco CallManager, do the following:

- Step 1.** Configure the gateway.
- Step 2.** Configure the route pattern.

Gateway Configuration

The following figures show the configuration of the Cisco 6608 Gateway.

Cisco 6608 Gateway Configuration

The screenshot shows the Cisco CallManager Administration interface for Gateway Configuration. The page title is "Gateway Configuration" with a link "Back to Find/List Gateways". The configuration details are as follows:

Product	Cisco Catalyst 6000 T1 VoIP Gateway
Gateway	S0/DS1-0@SDA0001C9D93A99
Device Protocol	Digital Access PRI
Registration	Registered with Cisco CallManager KLINGON
IP Address	10.1.1.108

Status: Ready

Buttons: Update, Delete, Reset Gateway, Cancel Changes

Fields:

MAC Address*	0001C9D93A99
Description	SDA0001C9D93A99
Device Pool*	Default
Media Resource Group List	< None >

Cisco 6608 Gateway Configuration Continued

The screenshot shows the continuation of the Gateway Configuration page. The configuration details are as follows:

Network Hold Audio Source	< None >
User Hold Audio Source	< None >
Calling Search Space	< None >
Location	< None >
Load Information	
Channel Selection Order*	Top Down
PCM Type*	µ-law
Protocol Side*	Network
Caller ID DN	
Calling Party Selection*	Originator
Channel IE Type*	Use Number when 1B
Interface Identifier Present**	<input type="checkbox"/>
Interface Identifier Value**	0
Display IE Delivery	<input checked="" type="checkbox"/>
Redirecting Number IE Delivery	<input checked="" type="checkbox"/>
Delay for first restart (1/8 sec ticks)	32



Cisco 6608 Gateway Configuration Continued

Delay between restarts (1/8 sec ticks)	4
Num Digits*	23
Sig Digits	<input checked="" type="checkbox"/>
Prefix DN	
Presentation Bit*	Allowed
Called party IE number type unknown*	Cisco CallManager
Calling party IE number type unknown*	Cisco CallManager
Called Numbering Plan*	Cisco CallManager
Calling Numbering Plan*	Cisco CallManager
PRI Protocol Type*	PRI NI2
Inhibit restarts at PRI initialization	<input checked="" type="checkbox"/>
Enable status poll	<input type="checkbox"/>
Number of digits to strip*	0
Country Code*	North America
Setup non-ISDN Progress Indicator IE Enable***	<input type="checkbox"/>

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Cisco 6608 Gateway Configuration Continued

Product Specific Configuration	
Clock Reference*	Network
TX-Level CSU*	0dB
FDL Channel*	ATT 54016
Framing*	ESF
Audio Signal Adjustment into IP Network*	NoDbPadding
Audio Signal Adjustment from IP Network*	NoDbPadding
Yellow Alarm*	Bit2
Zero Suppression*	B82S

* indicates required item
** applicable to DMS-100 protocol only
*** may be required to force ringback from some PBXs

[Back to Find/List Gateways](#)

Local Intranet 76806



Route Pattern Configuration

The following figures show the configuration of the route pattern.

Route Pattern Configuration

The screenshot shows the Cisco CallManager Administration web interface. The title bar includes "System Route Plan Service Feature Device User Application Help". The main header displays "Cisco CallManager Administration For Cisco IP Telephony Solutions" and the "CISCO SYSTEMS" logo. The page title is "Route Pattern Configuration".

Route Pattern: 6.XXXX

Status: Ready
Note: Any update to this route pattern automatically resets the associated gateway/route list

Buttons: Copy, Update, Delete, Cancel Changes

Pattern Definition

Route Pattern*	6.XXXX
Partition	< None >
Numbering Plan*	North American Numbering Pl...
Route Filter	< None >
Gateway/Route List*	S0/DS1-0@SDA0001C9D93A99 (Edit)
Route Option	<input checked="" type="radio"/> Route this pattern <input type="radio"/> Block this pattern

Local intranet 76807

Route Pattern Configuration Continued

This screenshot continues the configuration from the previous one, showing the "Calling Party Transformations" and "Called Party Transformations" sections.

Route Pattern*: 6.XXXX

Partition: < None >

Numbering Plan*: North American Numbering Pl...

Route Filter: < None >

Gateway/Route List*: S0/DS1-0@SDA0001C9D93A99 (Edit)

Route Option: Route this pattern Block this pattern

Provide Outside Dial Tone Urgent Priority

Calling Party Transformations

Use Calling Party's External Phone Number Mask

Calling Party Transform Mask: []

Prefix Digits (Outgoing Calls): []

Called Party Transformations

Discard Digits: PreDot

Called Party Transform Mask: []

Prefix Digits (Outgoing Calls): []

* indicates required item.

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Considerations

Calling Name and Number Feature

When calling from a Cisco 7960 IP phone to a Lucent/Avaya digital phone, Calling Name and Number are displayed on both phones after the call is answered as expected.

When calling from a Lucent/Avaya digital phone to a Cisco 7960 IP phone, the IP phone displays the Connected Name and Number after the call is answered. The Lucent/Avaya phone, however, displays only the Called Name but not the Called Number. It was verified using an ISDN protocol analyzer that the CallManager was not sending Connected Number information in the connect message back to PBX. Only the Connected Name was sent in the connect message.

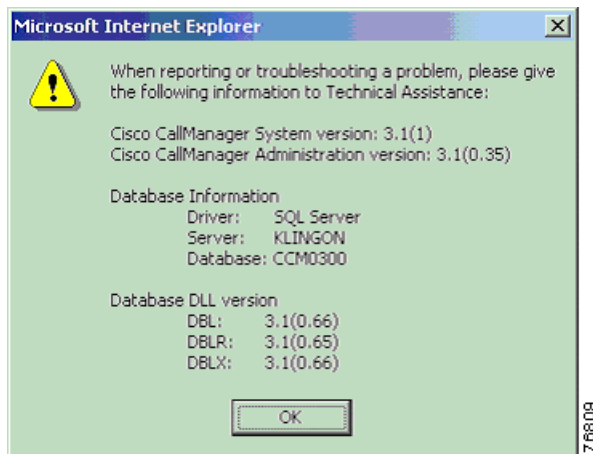
Integration Testing

This section contains information about the setup used in testing the integration of the Lucent/Avaya Definity G3si and the Cisco 6608-T1 PRI NI-2 Gateway.

CallManager Software Release:

The following figure shows the information about the release of CallManager being used.

CallManager Software Release



Lucent/Avaya Definity G3si Software Release

The following release of the Lucent/Avaya Definity G3si was used:

- System: G3siV6
- Software Version: G3V9i.02.0.033.2



Catalyst 6000 Switch Configuration

The following shows the configuration of the Catalyst 6000 Switch.

Console> (enable) **show version**

WS-C6006 Software, Version NmpSW: 5.5(6a)
Copyright (c) 1995-2001 by Cisco Systems
NMP S/W compiled on Feb 23 2001, 10:23:18

System Bootstrap Version: 5.3(1)

Hardware Version: 2.0 Model: WS-C6006 Serial #: TBA04511172

Mod	Port	Model	Serial #	Versions
1	2	WS-X6K-SUP1A-2GE	SAD05010NBK	Hw : 7.0 Fw : 5.3(1) Fw1: 5.4(2) Sw : 5.5(6a) Sw1: 5.5(6a)
3	48	WS-F6K-PFC WS-X6348-RJ-45	SAD05020221 SAD04420N7B	Hw : 1.1 Hw : 1.4 Fw : 5.4(2) Sw : 5.5(6a)
4	24	WS-F6K-VPWR WS-X6624-FXS	SAD050203M8	Hw : 1.0 Hw : 3.0 Fw : 5.4(2) Sw : 5.5(6a)
5	8	WS-X6608-T1	SAD04400EM0	HP : A00203010010; DSP : A003E031 (3.3.32) Hw : 1.1 Fw : 5.4(2) Sw : 5.5(6a) HP1: D00403010017; DSP1: D005E031 (3.3.32) HP2: D00403010017; DSP2: D005E031 (3.3.32) HP3: D00403010017; DSP3: D005E031 (3.3.32) HP4: D00403010017; DSP4: D005E031 (3.3.32) HP5: D00403010017; DSP5: D005E031 (3.3.32) HP6: D00403010017; DSP6: D005E031 (3.3.32) HP7: D00403010017; DSP7: D005E031 (3.3.32) HP8: D00403010017; DSP8: D005E031 (3.3.32)
6	8	WS-X6608-E1	SAD04380DW1	Hw : 1.1 Fw : 5.4(2) Sw : 5.5(6a) HP1: D00403010017; DSP1: D005E031 (3.3.32) HP2: D00403010017; DSP2: D005E031 (3.3.32) HP3: D00403010017; DSP3: D005E031 (3.3.32) HP4: D00403010017; DSP4: D005E031 (3.3.32) HP5: D00403010017; DSP5: D005E031 (3.3.32) HP6: D00403010017; DSP6: D005E031 (3.3.32) HP7: D00403010017; DSP7: D005E031 (3.3.32) HP8: D00403010017; DSP8: D005E031 (3.3.32)

Module	DRAM			FLASH			NVRAM		
	Total	Used	Free	Total	Used	Free	Total	Used	Free
1	65408K	37863K	27545K	16384K	11546K	4838K	512K	198K	314K

Uptime is 83 days, 2 hours, 34 minutes

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Console> (enable) **show module**

Mod	Slot	Ports	Module-Type	Model	Sub	Status
1	1	2	1000BaseX Supervisor	WS-X6K-SUP1A-2GE	yes	ok
3	3	48	10/100BaseTX Ethernet	WS-X6348-RJ-45	yes	ok
4	4	24	FXS	WS-X6624-FXS	no	ok
5	5	8	T1	WS-X6608-T1	no	ok
6	6	8	E1	WS-X6608-E1	no	ok

Mod	Module-Name	Serial-Num
1		SAD05010NBK
3		SAD04420N7B
4		SAD050203M8
5		SAD04400EM0
6		SAD04380DW1

Mod	MAC-Address(es)	Hw	Fw	Sw
1	00-04-c0-f8-42-02 to 00-04-c0-f8-42-03 00-04-c0-f8-42-00 to 00-04-c0-f8-42-01 00-04-9b-f0-78-00 to 00-04-9b-f0-7b-ff	7.0	5.3(1)	5.5(6a)
3	00-02-fc-20-5e-50 to 00-02-fc-20-5e-7f	1.4	5.4(2)	5.5(6a)
4	00-03-32-ba-2e-35	3.0	5.4(2)	5.5(6a)
5	00-01-c9-d9-3a-98 to 00-01-c9-d9-3a-9f	1.1	5.4(2)	5.5(6a)
6	00-01-c9-d8-63-3e to 00-01-c9-d8-63-45	1.1	5.4(2)	5.5(6a)

Mod	Sub-Type	Sub-Model	Sub-Serial	Sub-Hw
1	L3 Switching Engine	WS-F6K-PFC	SAD05020221	1.1
3	Inline Power Module	WS-F6K-VPWR		1.0

Console> (enable)

Console> (enable) **show port 5**

Port	Name	Status	Vlan	Duplex	Speed	Type
5/1		notconnect	1	full	1.544	T1
5/2		connected	1	full	1.544	T1
5/3		notconnect	1	full	1.544	T1
5/4		notconnect	1	full	1.544	T1
5/5		notconnect	1	full	1.544	T1
5/6		notconnect	1	full	1.544	T1
5/7		notconnect	1	full	1.544	T1
5/8		notconnect	1	full	1.544	T1

Port	DHCP	MAC-Address	IP-Address	Subnet-Mask
5/1	enable	00-01-c9-d9-3a-98	10.1.1.107	255.255.255.0
5/2	enable	00-01-c9-d9-3a-99	10.1.1.108	255.255.255.0
5/3	enable	00-01-c9-d9-3a-9a	10.1.1.109	255.255.255.0
5/4	enable	00-01-c9-d9-3a-9b	10.1.1.110	255.255.255.0
5/5	enable	00-01-c9-d9-3a-9c	10.1.1.111	255.255.255.0
5/6	enable	00-01-c9-d9-3a-9d	10.1.1.112	255.255.255.0
5/7	enable	00-01-c9-d9-3a-9e	10.1.1.113	255.255.255.0
5/8	enable	00-01-c9-d9-3a-9f	10.1.1.114	255.255.255.0



Port	Call-Manager(s)	DHCP-Server	TFTP-Server	Gateway
5/1	10.1.1.2	10.1.1.2	10.1.1.2	10.1.1.7
5/2	10.1.1.2	10.1.1.2	10.1.1.2	10.1.1.7
5/3	10.1.1.2	10.1.1.2	10.1.1.2	10.1.1.7
5/4	10.1.1.2	10.1.1.2	10.1.1.2	10.1.1.7
5/5	10.1.1.2	10.1.1.2	10.1.1.2	10.1.1.7
5/6	10.1.1.2	10.1.1.2	10.1.1.2	10.1.1.7
5/7	10.1.1.2	10.1.1.2	10.1.1.2	10.1.1.7
5/8	10.1.1.2	10.1.1.2	10.1.1.2	10.1.1.7

Port	DNS-Server(s)	Domain
5/1	-	-
5/2	-	-
5/3	-	-
5/4	-	-
5/5	-	-
5/6	-	-
5/7	-	-
5/8	-	-

Port	CallManagerState	DSP-Type
5/1	registered	C549
5/2	registered	C549
5/3	registered	C549
5/4	registered	C549
5/5	registered	C549
5/6	registered	C549
5/7	registered	C549
5/8	registered	C549

Port	NoiseRegen	NonLinearProcessing
5/1	enabled	enabled
5/2	enabled	enabled
5/3	enabled	enabled
5/4	enabled	enabled
5/5	enabled	enabled
5/6	enabled	enabled
5/7	enabled	enabled
5/8	enabled	enabled

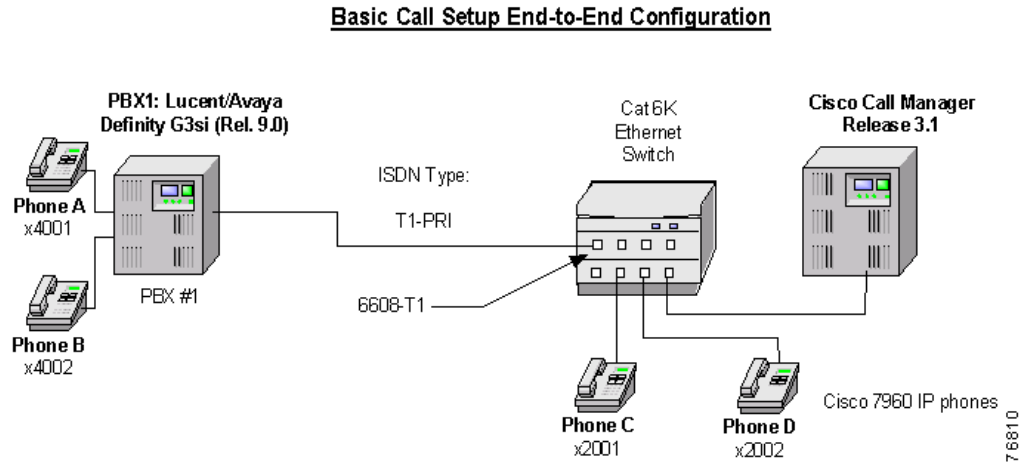
Console> (enable)



Test Configuration

The following figure represents the various configurations used for testing.

Testbed Network Configuration



As shown in the figure above, a Lucent/Avaya Definity G3si PBX was connected via an ISDN T1 PRI link to a Cisco 6608-T1 Gateway, which in turn, was connected to an Ethernet switch. The interoperability testing involved Layers 1, 2 and 3 on the ISDN PRI link between a Cisco 6608-T1 and the PBX.

Layer 1 (Physical Layer)

The Lucent/Avaya Definity G3si PBX configuration screen for the DS1 trunk interface is reached using the **change ds1 a12** command, which sets the T1 physical layer parameters.

Layers 2 & 3 (Q.921 and Q.931)

Layer 2 and 3 packet exchanges were monitored using an Acacia Clarinet protocol analyzer, bridged across the PRI link in high impedance mode.

Layer 2 Q.921 packets were monitored to ensure that each PBX/6608-T1 software configuration properly exchanged SABME/UA packets to initialize the ISDN link, and then RR packets were exchanged every 30 seconds.

Layer 3 Q.931 packets were monitored to ensure that the appropriate call setup/teardown packets were exchanged for each configuration, and that the SETUP packets contained the mandatory Information Elements with the necessary details, as well as optional IEs such as Calling Name and Number.

Telephone calls were made end-to-end in both directions through the Cisco 6608-T1 Gateway, and a check was made to ensure that there was an audio path in both directions for each call.

User/Network Settings

The Cisco 6608-T1 Gateway with ISDN protocol type setting of PRI-NI2 supports both protocol sides by selecting “Network/User” in the protocol side field when configuring the Gateway via CallManager.

The Lucent/Avaya Definity G3si PBX supports both “USER” and “NETWORK” protocol sides.



Test Results

Testing was performed by Test Engineer(s): Samir Batio, October 2, 2001

Test 1

In test 1:

- The PBX1 country-protocol is set to 1a (US / AT&T TR 41449/41459) to emulate the Network.
- The Cisco 6608-T1 Gateway was configured as a PRI NI2 to emulate the User.

The results are shown in the following tables.

Table 1 Basic Calls (Enbloc Sending)

Calls Made	Call Comp?	Calling Number passed to final destination?	Calling Name passed to final destination?	Called Number passed to original side?	Called Name passed to the original side?
Phone A to Phone C	Yes	Yes	Yes	No	Yes
Phone C to Phone A	Yes	Yes	Yes	Yes	Yes

Table 2 Call Transfers (Supervised Local Transfers)

Calls Made	Call Comp?	Original Calling Number displayed on final dest phone?	Original Calling Name displayed on final dest phone?	Called Number display on original phone updated after transfer?	Called Name display on original phone updated after transfer?
Phone C to Phone A Xfr to Phone B	Yes	Yes	Yes	No	No
Phone A to Phone C Xfr to Phone D	Yes	Yes	Yes	No	No

Table 3 Call Conferencing (Local)

Calls Made	Call Comp?	Calling Number passed to the remaining conferee when the conferencing phone drops out?	Calling Name passed to the remaining conferee when the conferencing phone drops out?	Connected Number updated on original caller phone display when a conferee drops out?	Connected Name updated on original caller phone display when a conferee drops out?
Phone C to Phone A, Phone A conf Phone B	Yes	(A Drops out) Yes	(A Drops out) Yes	(A Drops out) No	(A Drops out) No
Phone C to Phone A, Phone C conf Phone D	Yes	(C Drops out) No	(C Drops out) No	(D Drops out) No	(D Drops out) No



Table 3 Call Conferencing (Local)

Calls Made	Call Comp?	Calling Number passed to the remaining conferee when the conferencing phone drops out?	Calling Name passed to the remaining conferee when the conferencing phone drops out?	Connected Number updated on original caller phone display when a conferee drops out?	Connected Name updated on original caller phone display when a conferee drops out?
Phone A to Phone C, Phone C conf Phone D	Yes	(C Drops out) No	(C Drops out) No	(C Drops out) No	(C Drops out) No
Phone A to Phone C, Phone A conf Phone B	Yes	(A Drops out) No	(A Drops out) Yes	(B Drops out) No	(B Drops out) Yes

Table 4 Call Forward (Local)

Calls Made	Call Comp?	Original Calling Number passed to final dest?	Original Calling Name passed to final dest?	Forwarding Called Number passed to final dest?	Forwarding Called Name passed to final dest	Final destination Connected Number updated at original side?	Final destination Connected Name updated at original side?
Phone C to Phone A fwd to Phone B	Yes	Yes	Yes	No	Yes	No	No
Phone A to Phone C fwd to Phone D	Yes	Yes	Yes	No	No	No	Yes

Test 2

In test 2:

- The PBX1 country-protocol is set to 1a (US / AT&T TR 41449/41459) to emulate the User.
- The Cisco 6608-T1 Gateway is configured as a PRI NI2 to emulate the Network.

The test results are identical to those in Test 1.