

Cisco 2651-PBX Interoperability: Lucent Definity G3r with E1 ISDN PRI Signaling

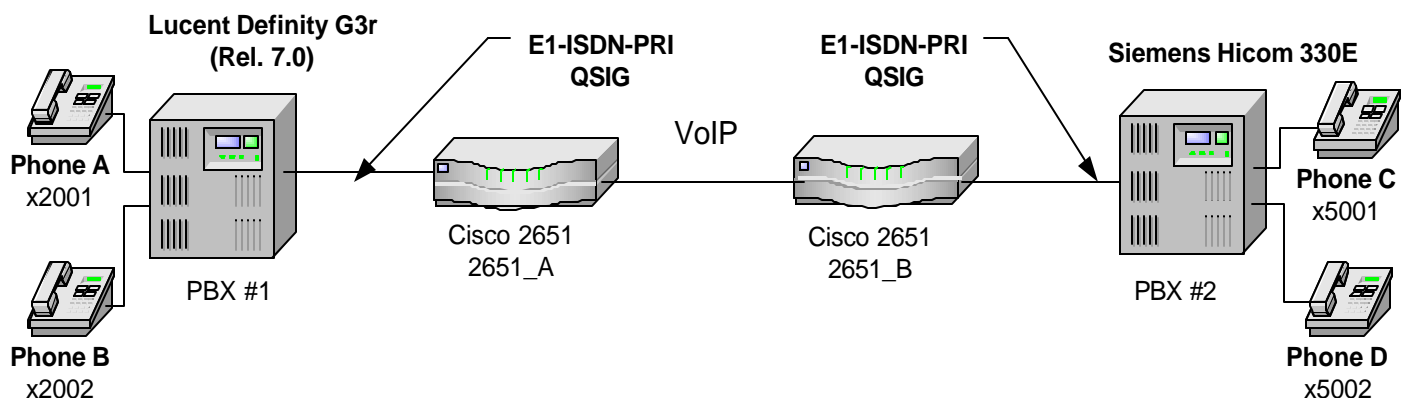
Introduction

This document describes the interoperability and configuration of a Cisco 2651 voice gateway with a Lucent Definity G3r using E1 ISDN PRI signaling.

Network Topology

This diagram represents the various configurations used for testing.

Basic Call Setup End-to-End Configuration



Limitations

- Lucent Definity G3 has no provision for the E1 interface to “line clock” – it **always** wants to provide clock on the interface, so the Cisco 2651 2MFT E1 interface must be set to “line clock” to work with it.
- Lucent Definity G3 uses the same TN464F “DS1 INTFC 24/32” card for both T1 and E1 trunking – To select E1 functionality, some database entries are made in the Lucent trunk configuration screen (see Lucent configuration appendix for details) and there are two DIP switches on the card itself:
 - 24CH/30CH – Set to 24CH for T1, 30CH for E1
 - 120Ω/75Ω -- Set to 120Ω to use with a twisted pair E1 circuit; if set to 75Ω to use with a coaxial wire E1 circuit, must use an external adapter provided by Lucent. Not applicable for the T1 setting – leave at 120Ω.



- The Lucent PBX sends back a Progress Indicator message indicating inband information may be available. The “progress_ind setup enable 1” command is necessary under the voip dial-peer to open the voicepath to ensure the caller hears a ringback tone.
- To assure that calling name is delivered and presented on both sides, both PBXs must be configured for the same type of supplementary services.

System Components

Hardware Requirements

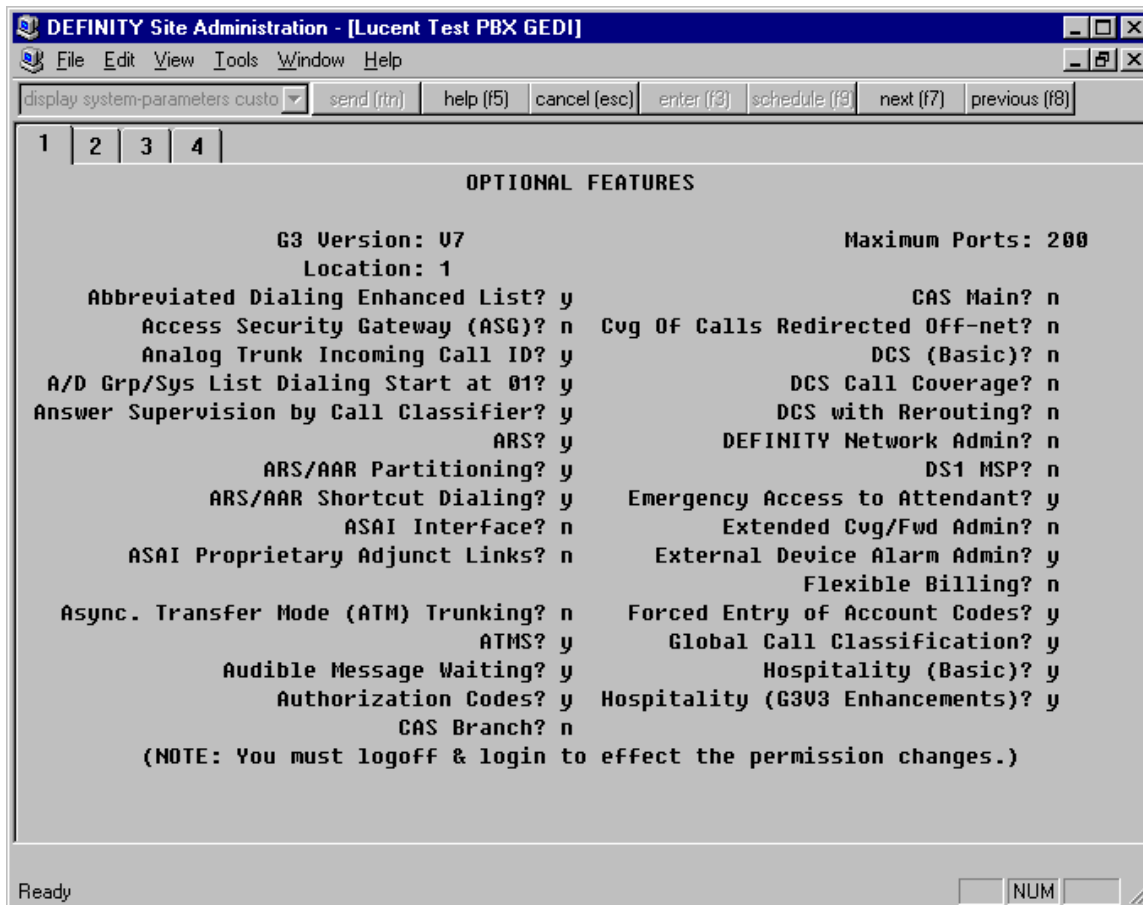
- Cisco hardware—Cisco 2651 with 2MFT-E1
- PBX hardware—G3siV7

Software Requirements

- Cisco software release—IOS™ Version 12.2
- PBX software release—version G3V7i.01.0.343.7

Configuration

Configuring the Lucent G3r





DEFINITY Site Administration - [Lucent Test PBX GEDI]

File Edit View Tools Window Help

display system-parameters custo send (ftr) help (f5) cancel (esc) enter (f3) schedule (f9) next (f7) previous (f8)

1 2 3 4

OPTIONAL FEATURES

ISDN Feature Plus? n	Restrict Call Forward Off Net? y
ISDN-BRI Trunks? y	Secondary Data Module? y
ISDN-PRI? y	Station and Trunk MSP? n
Malicious Call Trace? y	Survivable Remote Processor? n
Mode Code Interface? y	Tenant Partitioning? n
Multifrequency Signaling? y	Terminal Trans. Init. (TTI)? y
Multimedia Appl. Server Interface (MASI)? n	Time of Day Routing? y
Multimedia Call Handling (Basic)? n	Uniform Dialing Plan? y
Multimedia Call Handling (Enhanced)? n	Usage Allocation Enhancements? y
Personal Station Access (PSA)? n	Wideband Switching? n
	Wireless? n
Processor and System MSP? n	
Private Networking? y	

(NOTE: You must logoff & login to effect the permission changes.)

Ready NUM



DEFINITY Site Administration - [Lucent Test PBX GEDI]

File Edit View Tools Window Help

change dialplan send (ftr) help (f5) cancel (esc) enter (f3) schedule (f9) next (f7) previous (f8)

1

DIAL PLAN RECORD

Local Node Number:
ETA Node Number:
ETA Routing Pattern:

Uniform Dialing Plan:
UDP Extension Search Order:

FIRST DIGIT TABLE

First Digit	- 1 -	- 2 -	- 3 -	- 4 -	- 5 -	- 6 -
1:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
2:	<input type="text"/>	<input type="text"/>	<input type="text"/>	extension	<input type="text"/>	<input type="text"/>
3:	<input type="text"/>	<input type="text"/>	<input type="text"/>	extension	<input type="text"/>	<input type="text"/>
4:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	extension	<input type="text"/>
5:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
6:	<input type="text"/>	<input type="text"/>	dac	<input type="text"/>	<input type="text"/>	<input type="text"/>
7:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	extension	<input type="text"/>
8:	fac	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
9:	fac	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
0:	attd	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
*:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
#:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

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

Ready



DEFINITY Site Administration - [Lucent Test PBX GEDI]

File Edit View Tools Window Help

change signaling-group 3 send (ftr) help (f5) cancel (esc) enter (f3) schedule (f9) next (f7) previous (f8)

1

SIGNALING GROUP

Group Number: 3

Associated Signaling? Max number of NCA TSC:

Primary D-Channel: Max number of CA TSC:

Trunk Group for NCA TSC:

Trunk Group for Channel Selection:

Supplementary Service Protocol:

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

Ready



DEFINITY Site Administration - [Lucent Direct-Com1 GEDI]

File Edit View Tools Window Help

Lucent Direct-Com1

change trunk-group 7 send (ftr) help (f5) cancel (esc) enter (f3) schedule (f9) next (f7) previous (f8)

1 2 3 4 5 6 7 8 9 10

TRUNK GROUP

Group Number: 7 Group Type: isdn CDR Reports:
Group Name: ISDN-NFAS COR: 1 TN: 1 TAC: 668
Direction: two-way Outgoing Display?
Dial Access? Busy Threshold: 99 Night Service:
Queue Length: 0
Service Type: tandem TestCall ITC: rest
Far End Test Line No:
TestCall BCC: 4

TRUNK PARAMETERS

Codeset to Send Display: 0 Codeset to Send TCM,Lookahead: 6
Max Message Size to Send: 260 Charge Advice: none
Supplementary Service Protocol: b Digit Handling (in/out): enbloc/enbloc

Trunk Hunt: ascend
Connected to Toll? n STT Loss: normal DTT to DCO Loss: normal
Calling Number - Delete: Insert: Numbering Format:
Bit Rate: 1200 Synchronization: async Duplex: full
Disconnect Supervision - In? Out?
Answer Supervision Timeout: 0

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



DEFINITY Site Administration - [Lucent Direct-Com1 GEDI]

File Edit View Tools Window Help

Lucent Direct-Com1

change trunk-group 7 send (ftr) help (f5) cancel (esc) enter (f3) schedule (f9) next (f7) previous (f8)

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

TRUNK FEATURES

ACA Assignment? Measured: Wideband Support?
Maintenance Tests?
Data Restriction? NCA-TSC Trunk Member:
Send Name: Send Calling Number:
Used for DCS? Hop Dgt?
Suppress # Outpulsing? Numbering Format:
Outgoing Channel ID Encoding: UUI IE Treatment:

Send Connected Number:

Send UCID?
Send Codeset 6/7 LAI IE?

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



DEFINITY Site Administration - [Lucent Direct-Com1 GEDI]

File Edit View Tools Window Help

Lucent Direct-Com1

change trunk-group 14 send (ftr) help (f5) cancel (esc) enter (f3) schedule (f9) next (f7) previous (f8)

1 2 3 4 5 6 7 8 9 10

TRUNK GROUP
Administered Members (min/max): 1/30
Total Administered Members: 30

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 NUM



DEFINITY Site Administration - [Lucent Direct-Com1 GEDI]

File Edit View Tools Window Help

Lucent Direct-Com1

change trunk-group 14 send (ftr) help (f5) cancel (esc) enter (f3) schedule (f9) next (f7) previous (f8)

1 2 3 4 5 6 7 8 9 10

TRUNK GROUP

Administered Members (min/max): 1/30
Total Administered Members: 30

GROUP MEMBER ASSIGNMENTS

Port	Code	Sfx	Name	Night	Sig Grp
16:	01A1217	TN464	F		3
17:	01A1218	TN464	F		3
18:	01A1219	TN464	F		3
19:	01A1220	TN464	F		3
20:	01A1221	TN464	F		3
21:	01A1222	TN464	F		3
22:	01A1223	TN464	F		3
23:	01A1224	TN464	F		3
24:	01A1225	TN464	F		3
25:	01A1226	TN464	F		3
26:	01A1227	TN464	F		3
27:	01A1228	TN464	F		3
28:	01A1229	TN464	F		3
29:	01A1230	TN464	F		3
30:	01A1231	TN464	F		3

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

Ready

NUM

Configuring the Cisco 2651

```
2651_A#show running-configuration
```

```
Using 1553 out of 29688 bytes
```

```
!  
version 12.2  
no service single-slot-reload-enable  
service timestamps debug uptime  
service timestamps log uptime  
no service password-encryption  
!  
hostname 2651_A  
!  
no logging buffered  
logging rate-limit console 10 except errors  
!  
memory-size iomem 15  
voice-card 1  
!
```



```
ip subnet-zero
!
!
no ip finger
no ip domain-lookup
!
no ip dhcp-client network-discovery
isdn switch-type primary-qsig
call rsvp-sync
!
!
!
!
!
!
!
controller E1 1/0
  pri-group timeslots 1-31
!
controller E1 1/1
!
!
interface FastEthernet0/0
  mac-address 000c.000c.0001
  ip address 101.1.1.1 255.255.0.0
  load-interval 30
  no keepalive
  shutdown
  speed 100
  full-duplex
!
interface FastEthernet0/1
  ip address 10.1.1.2 255.255.255.0
  duplex auto
  speed auto
!
interface Serial1/0:15
  no ip address
  no logging event link-status
  isdn switch-type primary-qsig
  isdn overlap-receiving
  isdn incoming-voice voice
  isdn T203 30000
  isdn T310 60000
  isdn bchan-number-order ascending
  no cdp enable
!
ip kerberos source-interface any
ip classless
ip http server
```



```
!  
!  
snmp-server engineID local 80000009030000024B135580  
snmp-server packetsize 4096  
snmp-server manager  
!  
voice-port 1/0:15  
!  
dial-peer cor custom  
!  
!  
!  
dial-peer voice 1 pots  
  destination-pattern 2...  
  direct-inward-dial  
  port 1/0:15  
  prefix 2  
!  
dial-peer voice 2 voip  
  destination-pattern 5...  
  progress_ind setup enable 1  
  session target ipv4:10.1.1.1  
!  
!  
line con 0  
  exec-timeout 0 0  
  transport input none  
line aux 0  
  exec-timeout 0 0  
line vty 0 4  
  exec-timeout 0 0  
  login  
line vty 5 15  
  exec-timeout 0 0  
  login  
!  
scheduler allocate 3996 1000  
end
```

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