



Cisco 7206 Series Router-PBX Interoperability: Lucent Definity G3r PBX and VXC-2TE1+ Port Adapter Card with E1 ISDN PRI Signaling

This document describes the interoperability and configuration of a Cisco 7200 series router with a Lucent Definity G3r PBX using E1 ISDN PRI signaling. It includes the following sections:

- System Components
- Configuration Tasks
- Caveats

System Components

PBX Model	Lucent Definity G3r
PBX Release	G3V7i.01.0.343.7
Telephony Signaling	E1 ISDN PRI
Voice Gateway	Cisco 7206 Series Routers
Gateway Release	Cisco IOS™ (C7200-JS-M), Version 12.2(1)
VoX Protocol	H.323

Configuration Tasks

See the following sections for configuration tasks for this feature:

- Set Up
- Lucent Definity G3r PBX Configuration
- Cisco 7206 Series Router Configuration

Set Up

This section includes the following information:

- Connectivity Diagrams
- Set Up Notes

Connectivity Diagrams

Figure 1: Test Configuration

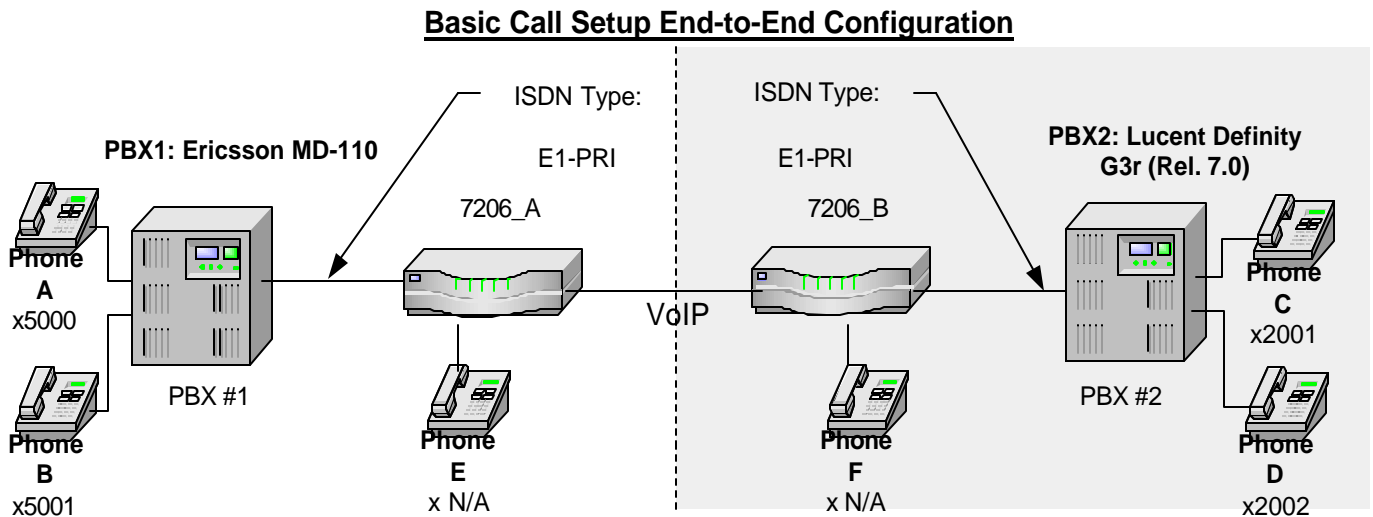


Figure 1 represents the configuration used for testing: a Cisco 7206 series router was connected to a Lucent Definity G3r PBX via ISDN E1 link.

Set Up Notes

- The Cisco 7206 series router with ISDN switch type setting of **primary-net5** supports both protocol sides by using the “**isdn protocol-emulate network/user**” command.
- The Lucent Definity G3r, supports both “**USER**” (peer-slave) and “**NETWORK**” (peer-master) protocol sides by using **change ds1 a12** command.
- The Lucent Definity G3r PBX configuration screen for the E1 trunk interface is reached using **change ds1 a12** command, setting the E1 physical layer parameters.

Lucent Definity G3r PBX Configuration

Lucent Definity G3r PBX Version Information

- Software: Version G3V7i.01.0.343.7
- Hardware: G3siV7.

Lucent Definity G3r PBX Sample Configuration

The following screens display the sample configuration of the Lucent Definity G3r PBX. Use these screens to configure the Lucent Definity G3r PBX.

Figure 2: Dial Plan Record

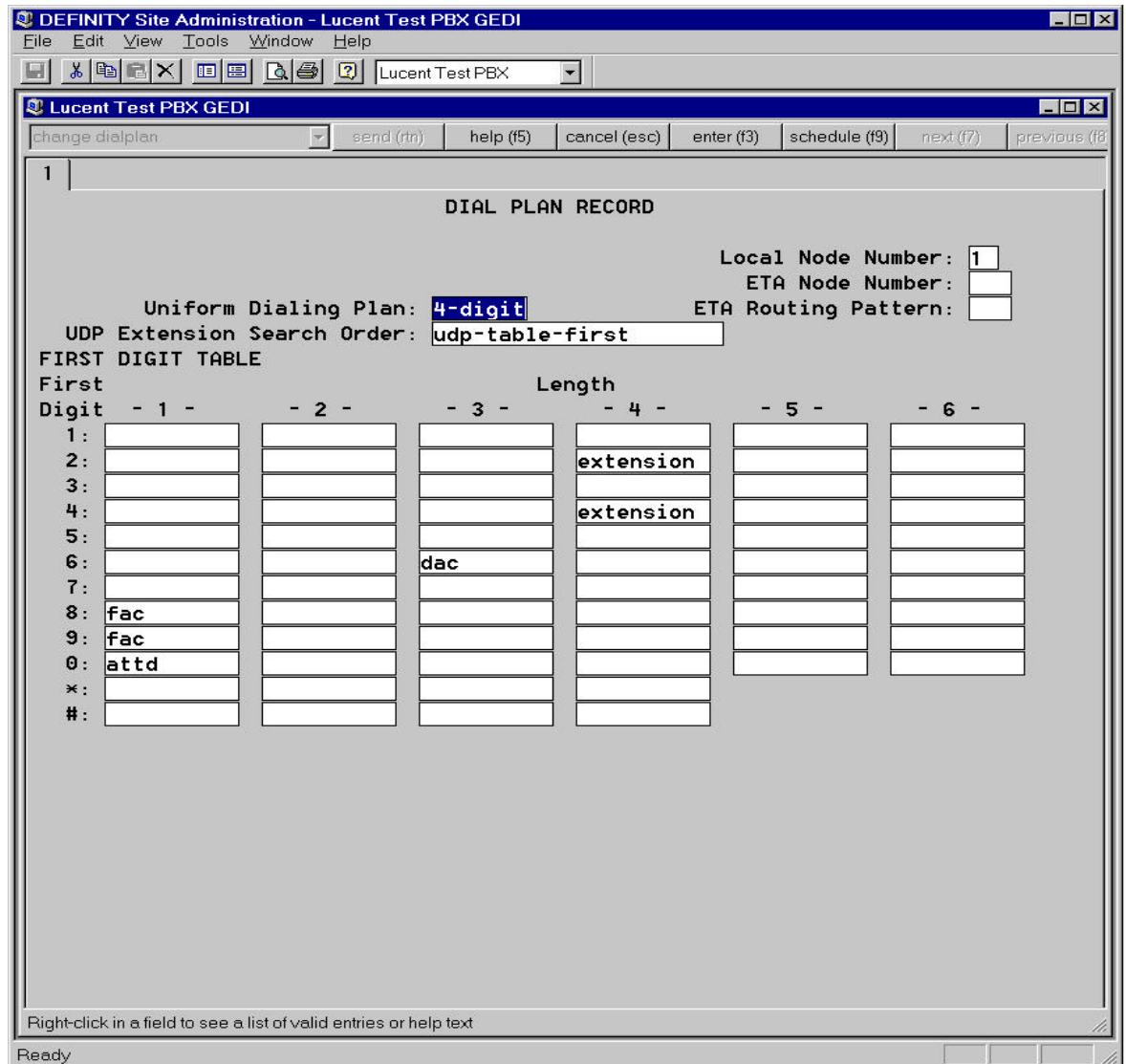


Figure 3: Pattern Number

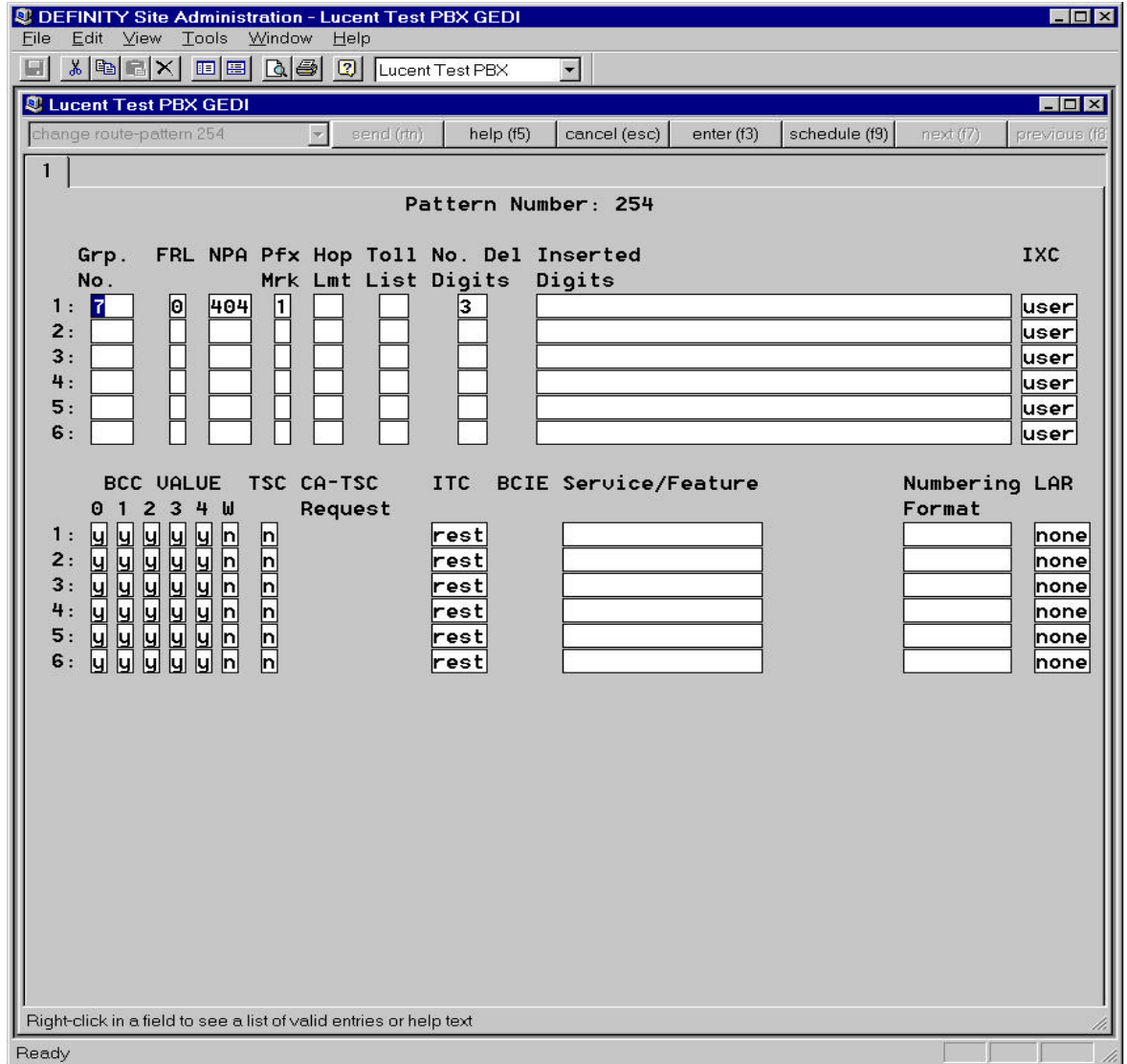


Figure 4: DS1 Circuit Pack

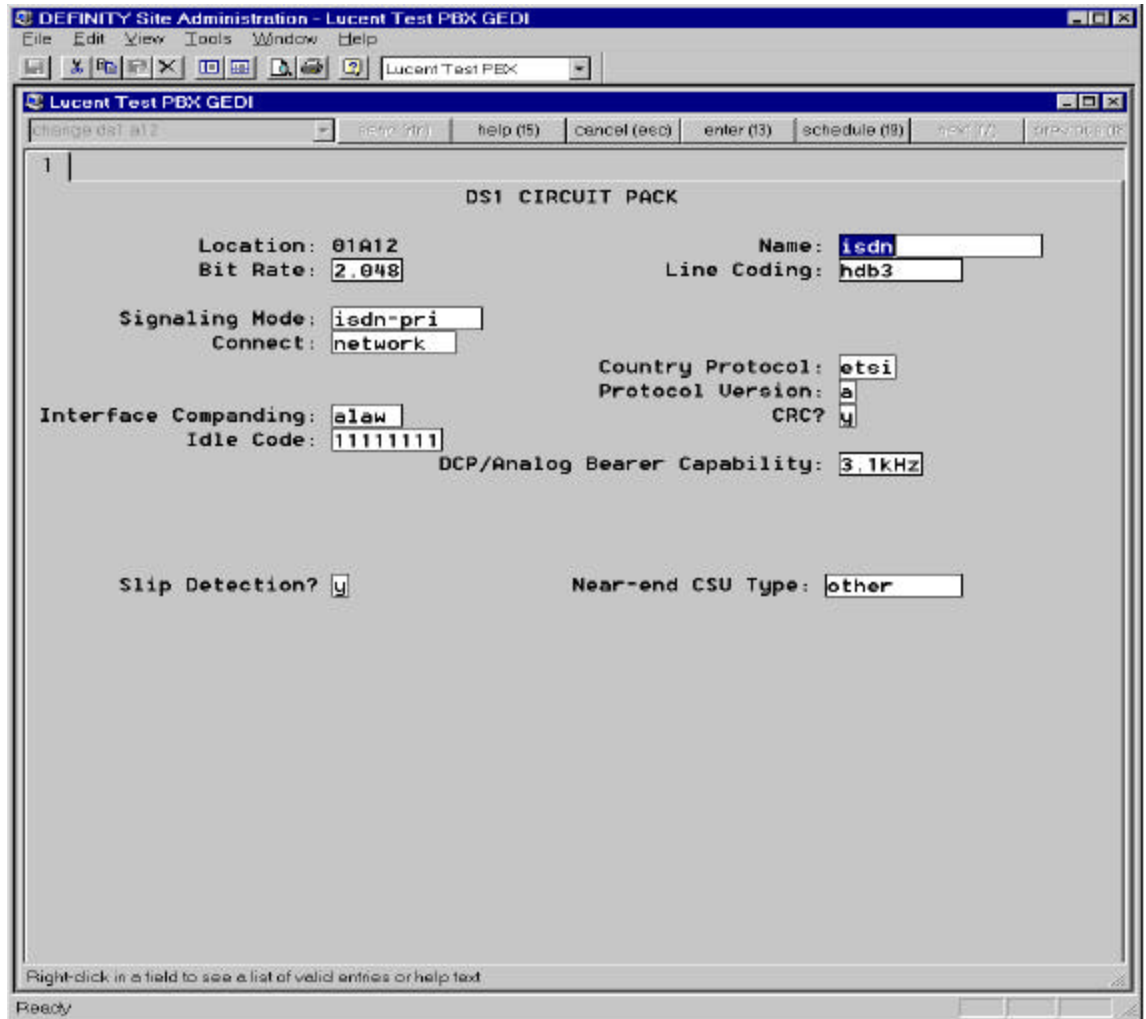


Figure 5: Signaling Group

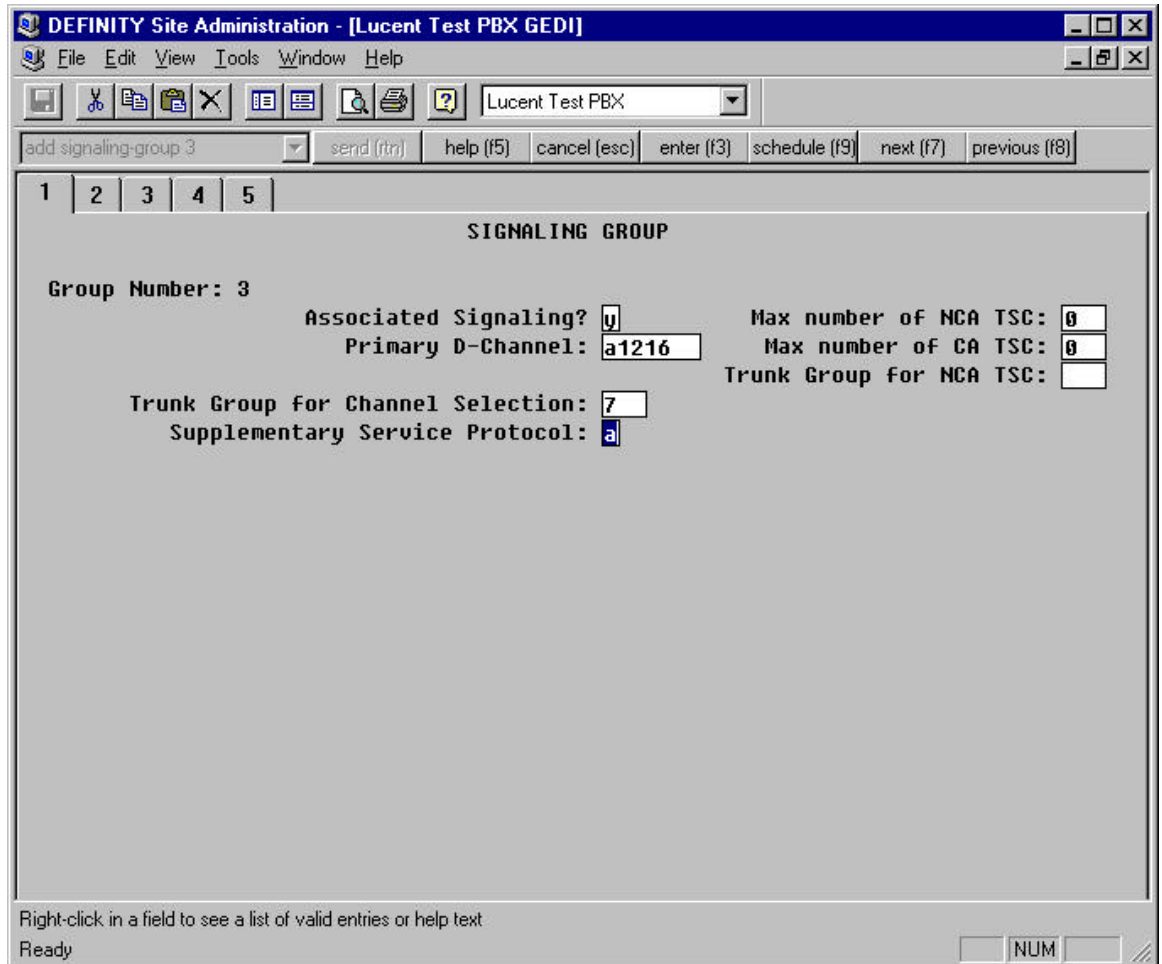


Figure 6: Trunk Group

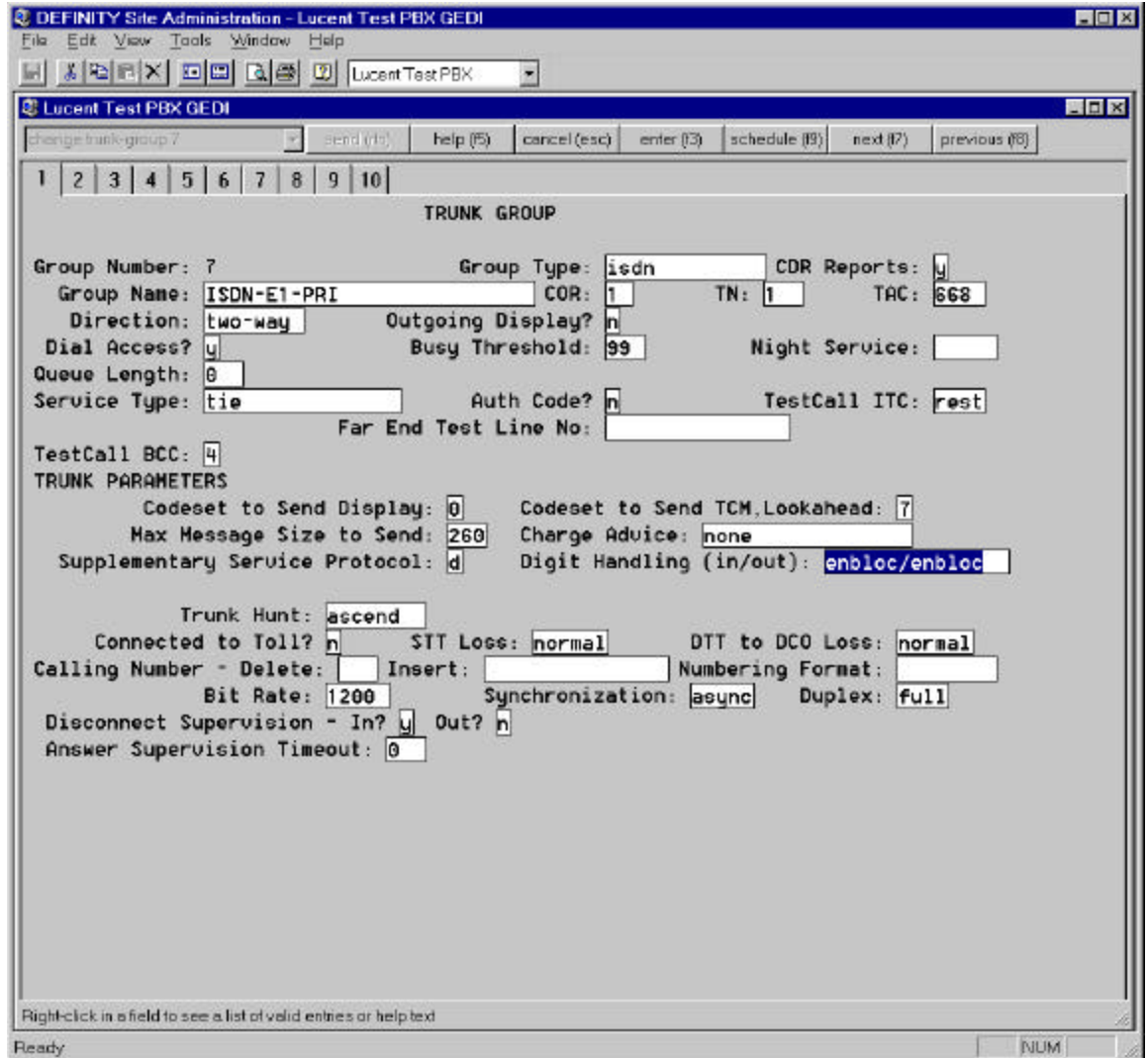


Figure 7: Trunk Features

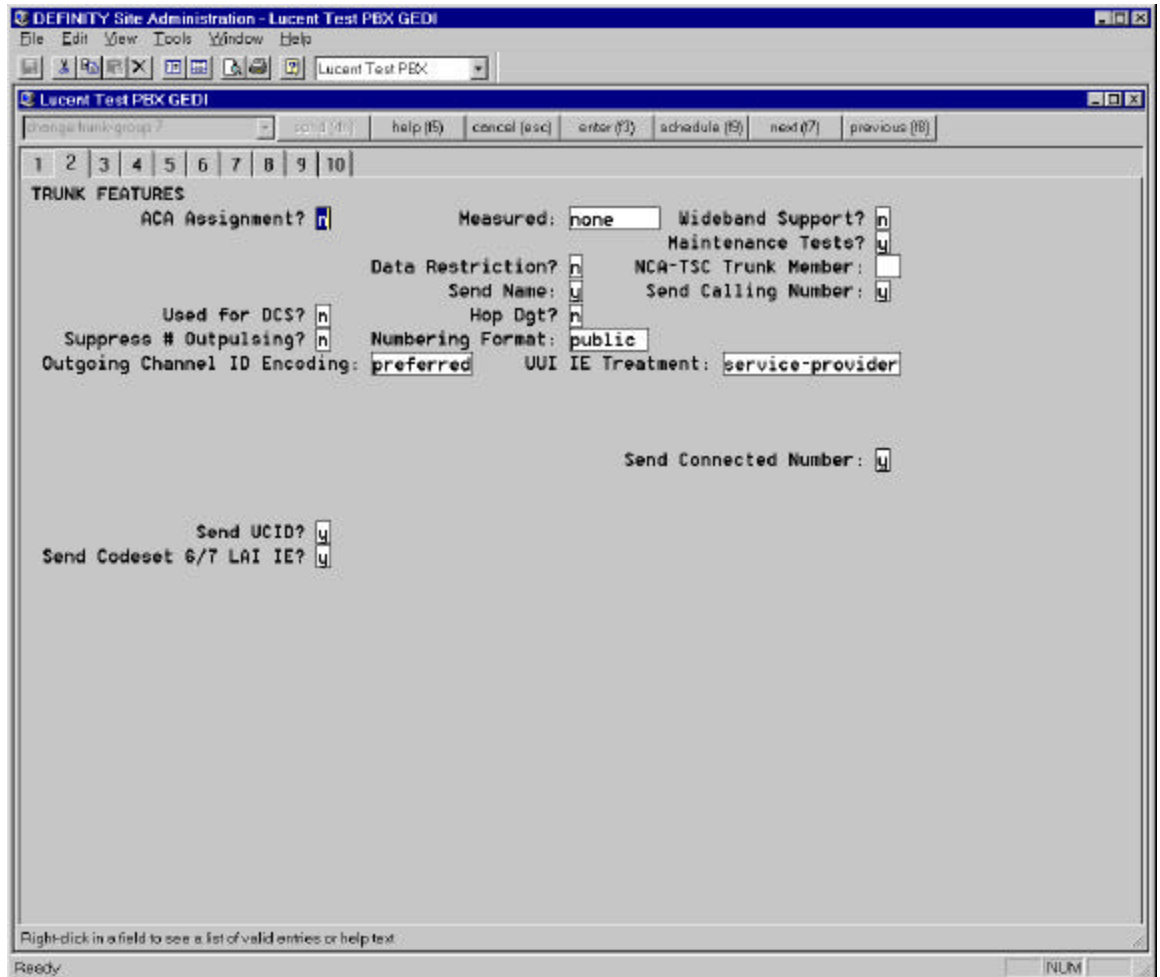


Figure 8: Group Member Assignments Tab 4

The screenshot displays the 'DEFINITY Site Administration - Lucent Test PBX GEDI' application window. The main content area is titled 'TRUNK GROUP' and shows 'Administered Members (min/max): 1/30' and 'Total Administered Members: 39'. Below this, the 'GROUP MEMBER ASSIGNMENTS' section contains a table with 15 rows. Each row represents a port assignment with columns for Port, Code, Sfx, Name, Night, and Sig Grp. The 'Port' column lists ports from 01A1201 to 01A1215. The 'Code' column is 'TN464' for all. The 'Sfx' column is 'F' for all. The 'Name' and 'Night' columns are empty. The 'Sig Grp' column contains the value '3' for all. A status bar at the bottom indicates 'Ready' and 'NUM'.

	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

Figure 9: Group Member Assignments Tab 5

DEFINITY Site Administration - Lucent Test PBX GEDI

File Edit View Tools Window Help

Lucent Test PBX

Lucent Test PBX GEDI

change trunk group? [F5] help (F5) cancel (esc) enter (F3) schedule (F5) 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

Figure 10: Optional Features Tab 1

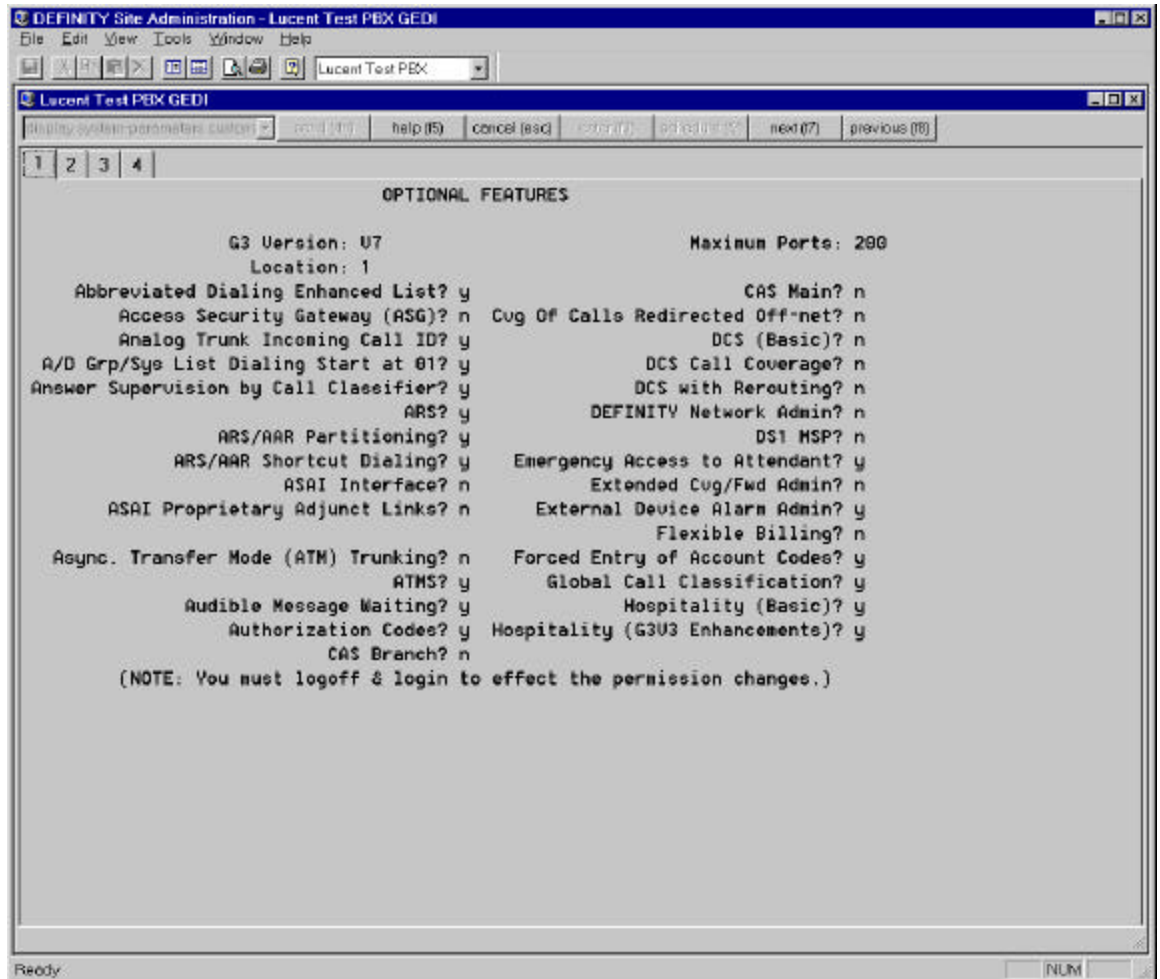
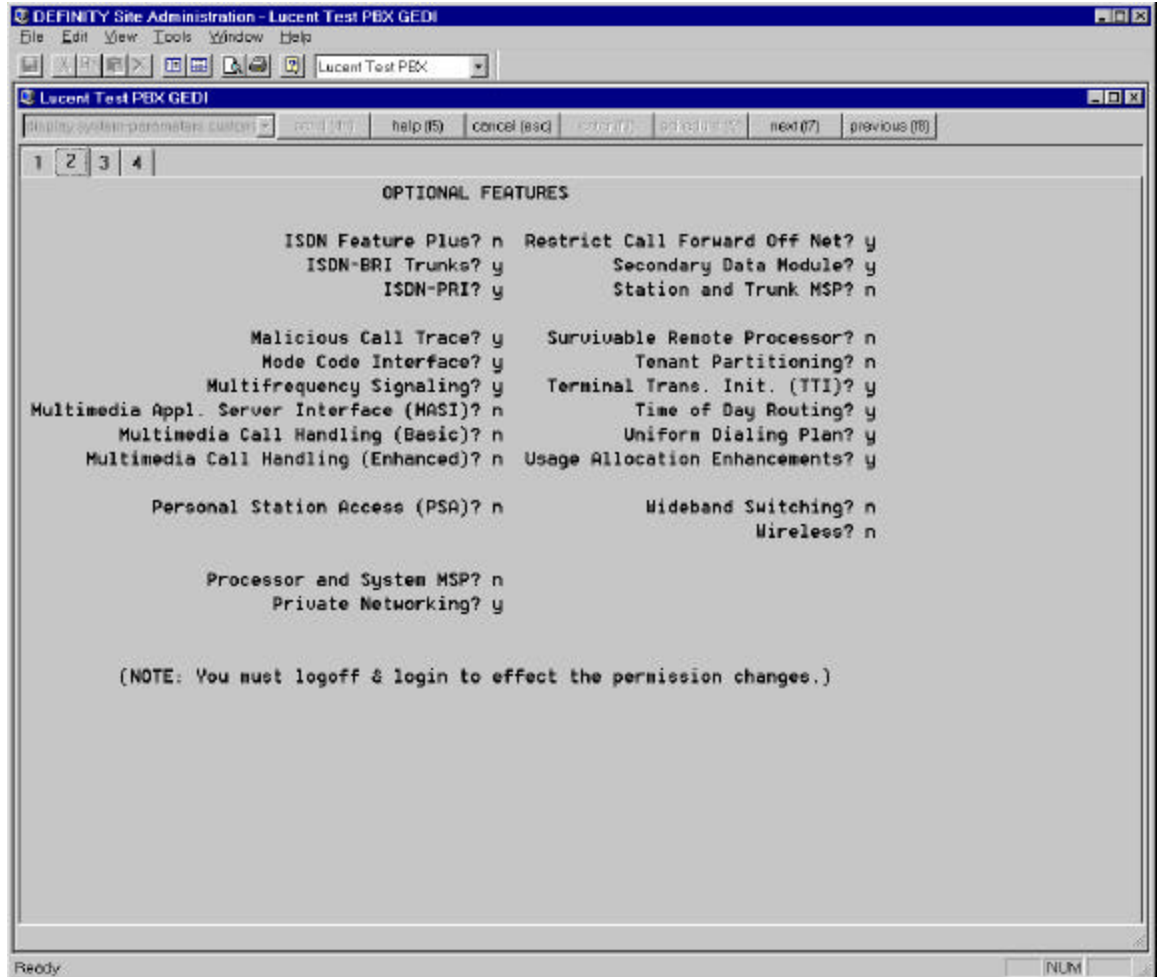


Figure 11: Optional Features Tab 2



Cisco 7206 Series Router Configuration

The following is the configuration of the Cisco 7206 series router connected to the Lucent Definity G3r PBX E1 ISDN PRI interface.

Cisco 7206 Series Router Version Information

- Cisco IOS™ (C7200-JS-M), Version 12.2(1).
- Cisco 7206VXR (NPE300) processor (revision D) with 122880K/40960K bytes of memory.

Cisco 7206 Series Router Sample Configuration

The following is the configuration of the Cisco 7206 series router directly connected to Lucent Definity G3r PBX ISDN PRI interface.

```
7206VXR#sh ver
Cisco Internetwork Operating System Software
IOS (tm) 7200 Software (C7200-JS-M), Version 12.2(1), RELEASE SOFTWARE
Copyright (c) 1986-2001 by Cisco Systems, Inc.
Compiled Thu 26-Apr-01 22:10 by cmong
Image text-base: 0x60008960, data-base: 0x616B0000

ROM: System Bootstrap, Version 12.0(19990210:195103) [12.0XE 105], DEVELOPMENT SOFTWARE

7206VXR uptime is 5 hours, 4 minutes
System returned to ROM by power-on
System image file is "slot0:c7200-js-mz.122-1"

Cisco 7206VXR (NPE300) processor (revision D) with 122880K/40960K bytes of memory.
Processor board ID 18282879
R7000 CPU at 262Mhz, Implementation 39, Rev 1.0, 256KB L2, 2048KB L3 Cache
6 slot VXR midplane, Version 2.0

Last reset from power-on
Bridging software.
X.25 software, Version 3.0.0.
SuperLAT software (copyright 1990 by Meridian Technology Corp).
TN3270 Emulation software.
Primary Rate ISDN software, Version 1.1.
Channelized E1, Version 1.0.
1 FastEthernet/IEEE 802.3 interface(s)
31 Serial network interface(s)
2 Channelized E1/PRI port(s)
1 Voice resource(s)
125K bytes of non-volatile configuration memory.
16384K bytes of Flash PCMCIA card at slot 0 (Sector size 128K).
4096K bytes of Flash internal SIMM (Sector size 256K).
Configuration register is 0x0

7206VXR#
-----
7206VXR#sh diag
Slot 0:
Fast-ethernet on C7200 I/O card with MII or RJ45 Port adapter, 1 port
Port adapter is analyzed
Port adapter insertion time 05:04:06 ago
EEPROM contents at hardware discovery:
Hardware revision 2.1          Board revision B0
Serial number 18517759        Part number 73-4092-03
Test history 0x0              RMA number 00-00-00
EEPROM format version 1
EEPROM contents (hex):
0x20: 01 83 02 01 01 1A 8E FF 49 0F FC 03 00 00 00 00
0x30: 58 00 00 00 00 04 16 00 00 00 FF FF FF FF FF

Slot 1:
VXC-2TE1+ Port adapter, 2 ports
Port adapter is analyzed
Port adapter insertion time 05:04:05 ago
EEPROM contents at hardware discovery:
Hardware Revision      : 0.2
PCB Serial Number     : MIC05022QA2
Part Number           : 73-5340-03
Board Revision        : A0
RMA Test History      : 00
RMA Number            : 0-0-0-0
RMA History           : 00
Deviation Number      : 0-0
Product Number        : PA-VXC-2T1E1+
Top Assy. Part Number : 8034-08469-01
```

```
EEPROM format version 4
EEPROM contents (hex):
0x00: 04 FF 40 02 11 41 00 02 C1 8B 4D 49 43 30 35 30
0x10: 32 32 51 41 32 82 49 14 DC 03 42 41 30 03 00 81
0x20: 00 00 00 00 04 00 80 00 00 00 00 00 CB 94 50 41 2D
0x30: 56 58 43 2D 32 54 31 45 31 2B 20 20 20 20 20 20
0x40: 20 C0 46 1F 62 00 21 15 01 FF FF FF FF FF FF FF
0x50: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0x60: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
0x70: FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
```

7206VXR#

```
7206VXR#sh controllers e1 1/0
E1 1/0 is up.
  Applique type is Channelized E1 - balanced
  No alarms detected.
  alarm-trigger is not set
  Framing is CRC4, Line Code is HDB3, Clock Source is Line.
  International Bit: 1, National Bits: 11111
  Active xconns: 0
  Data in current interval (32 seconds elapsed):
    0 Line Code Violations, 0 Path Code Violations
    0 Slip Secs, 0 Fr Loss Secs, 0 Line Err Secs, 0 Degraded Mins
    0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 0 Unavail Secs
7206VXR#
```

```
7206VXR#sh conf
Using 1266 out of 129016 bytes
!
version 12.2
no service single-slot-reload-enable
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname 7206VXR
!
card type e1 1
logging rate-limit console 10 except errors
!
frame-clock-select 1 E1 1/0
dspint DSPfarm1/0
!
ip subnet-zero
!
!
no ip finger
!
no ip dhcp-client network-discovery
isdn switch-type primary-net5
call rsvp-sync
!
!
!
!
!
!
controller E1 1/0
  pri-group timeslots 1-31
!
controller E1 1/1
  shutdown
!
!
interface FastEthernet0/0
  ip address 18.0.0.2 255.255.255.0
  no ip mroute-cache
```

```
duplex full
fair-queue
!
interface Serial1/0:15
no ip address
no logging event link-status
isdn switch-type primary-net5
isdn overlap-receiving
isdn protocol-emulate network
isdn incoming-voice modem
isdn guard-timer 3000
isdn T203 30000
isdn T310 60000
isdn bchan-number-order ascending
no cdp enable
!
ip kerberos source-interface any
ip classless
no ip http server
!
!
!
voice-port 1/0:15
!
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...
session target ipv4:18.0.0.1
!
!
gatekeeper
shutdown
!
!
line con 0
transport input none
line aux 0
line vty 0 4
login
line vty 5 15
login
!
end

7206VXR#
```

Caveats

- None.