



Cisco 3640 Gateway-PBX Interoperability: Lucent Definity G3r PBX with TN760, TN769E E&M signaling

This document describes the interoperability and configuration of a Cisco 3640 voice gateway with a VIC E&M card with Lucent Definity G3r PBX with TN760, TN760E card using E&M signaling. It includes the following sections:

- System Components
- Configuration Tasks
- Caveats

System Components

PBX Model	Lucent Definity Gr3
PBX Release	Software Version G3V6i.01.0.018.2
Telephony Signaling	<ul style="list-style-type: none">• TN760 card supports Type 1 E&M• TN760E card supports Type 1 and Type 5 E&M signaling
Voice Gateway	Cisco 3640
Gateway Release	IOS™ Version 12.2(3.6)T1
VoX Protocol	H.323

Configuration Tasks

See the following sections for configuration tasks for this feature:

- Set Up
- Lucent Definity G3r Configuration
- Cisco 3640 Gateway Configuration

Set Up

This section includes the following information:

-

Connectivity Diagrams

- Set Up Notes

Connectivity Diagrams

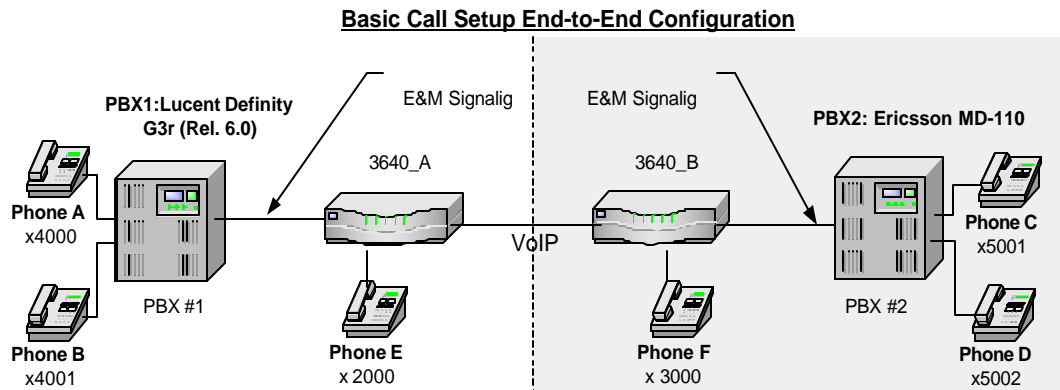


Figure 1: Test Configuration

Figure 1 represents the configuration used for testing: a Lucent Definity G3r PBX connected via an E&M tie trunk to a Cisco 3640.

Set Up Notes

- The Lucent/Avaya Definity G3r PBX will support TN760, TN760B, C, D, E tie trunk cards.
- TN760 tie trunk card supports only Type1 E&M signaling. No jumpers to set on this card.
- TN760E tie trunk card supports both Type1 and Type 5 E&M signaling. The type change requires both jumper settings on the card and software parameter settings.
- TN760, and TN760E tie trunk cards supports only 4-wire audio connections.
- Lucent/Avaya Definity G3r PBX will support **wink-start**, **immediate** and **delay-dial** signaling and **DTMF** and **Pulse-dial** dial type.
- Cisco VIC2-E&M voice port timings (not the IOS defaults) were found to work with Lucent/Avaya Definity G3r PBX:
 - Delay Start Timing for Delay Start is set to 100 msec.
 - Dialout Delay for Immediate start is set to 300 msec.
- For TN760E tie trunk, the Option Switches on the board were set as follows:

Port Type	Switch Settings	
	E&M/SMPLX Switch	Prot/Unprot Switch
Type 1	E&M	Prot
Type 5	SMPLX	Either

- For TN760E tie trunk, the trunk group parameters (Mode, Type) were set as follows:

Signaling Type	trunk group parameter setting							
Type 1	<code>display trunk-group 1 print</code> 08/03/00 10:24 Page 5 of 11							
	TRUNK GROUP Administered Members (min/max): 1/1							
	GROUP MEMBER ASSIGNMENTS Total Administered Members: 1							
	Port	Code	Sfx	Name	Night	Mode	Type	Ans
1:	01A0401	TN760	E		e&m	t1-stan		

	2:																											
Type 5	<pre>display trunk-group 2 print</pre> <p style="text-align: right;">07/31/00 9:52 Page 5 of 11</p> <p>TRUNK GROUP Administered Members (min/max): 1/1</p> <p>GROUP MEMBER ASSIGNMENTS Total Administered Members: 1</p> <table border="1"> <thead> <tr> <th>Port</th> <th>Code</th> <th>Sfx</th> <th>Name</th> <th>Night</th> <th>Mode</th> <th>Type</th> <th>Ans</th> <th>Delay</th> </tr> </thead> <tbody> <tr> <td>1:</td> <td>01A0402</td> <td>TN760</td> <td>E</td> <td>EMTyp5</td> <td>simplex</td> <td>type-5</td> <td></td> <td></td> </tr> <tr> <td>2:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Port	Code	Sfx	Name	Night	Mode	Type	Ans	Delay	1:	01A0402	TN760	E	EMTyp5	simplex	type-5			2:								
	Port	Code	Sfx	Name	Night	Mode	Type	Ans	Delay																			
	1:	01A0402	TN760	E	EMTyp5	simplex	type-5																					
	2:																											

- For TN760 tie trunk, the trunk group parameters (Mode, Type) were set as follows(default):

Signaling Type	trunk group parameter setting																												
Type 1	<pre>display trunk-group 1 print</pre> <p style="text-align: right;">08/03/00 10:24 Page 5 of 11</p> <p>TRUNK GROUP Administered Members (min/max): 1/1</p> <p>GROUP MEMBER ASSIGNMENTS Total Administered Members: 1</p> <table border="1"> <thead> <tr> <th>Port</th> <th>Code</th> <th>Sfx</th> <th>Name</th> <th>Night</th> <th>Mode</th> <th>Type</th> <th>Ans</th> <th>Delay</th> </tr> </thead> <tbody> <tr> <td>1:</td> <td>01A0401</td> <td>TN760</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Port	Code	Sfx	Name	Night	Mode	Type	Ans	Delay	1:	01A0401	TN760							2:									
	Port	Code	Sfx	Name	Night	Mode	Type	Ans	Delay																				
	1:	01A0401	TN760																										
	2:																												

- The port pinout of VIC E&M Interface card is as follows:

Pin Number	VIC-2E&M Interface Leads	
	4-wire audio	2-wire audio
1	SB	SB
2	M	M
3	R	
4	R1	R
5	T1	T
6	T	
7	E	E
8	SG	SG

Lucent Definity G3r Configuration

Lucent G3siV6, Software Version G3V6i.01.0.018.2

E&M Type 1 ---- 4-wire ---- immed/immed ---- dtmf -- TN760 E

```
display trunk-group 1 print
```

08/03/00 10:24 Page 1 of 11

TRUNK GROUP

Group Number: 1	Group Type: tie	CDR Reports: y
Group Name: OUTSIDE CALL	COR: 1	TN: 1 TAC: 660
Direction: two-way	Outgoing Display? y	Trunk Signaling Type:
Dial Access? y	Busy Threshold: 99	Night Service:

Cisco 3640 Gateway-PBX Interoperability: Lucent Definity G3r PBX with TN760, TN769E E&M signaling

```
Queue Length: 0                               Incoming Destination:
Comm Type: voice                               Auth Code? n
                                               Trunk Flash? n

TRUNK PARAMETERS
Trunk Type (in/out): immed/immed             Incoming Rotary Timeout(sec): 5
Outgoing Dial Type: dtmf                     Incoming Dial Type: dtmf
                                               Disconnect Timing(msec): 500
Digit Treatment:                             Digits:
Connected to Toll? n                         STT Loss: normal           Sig Bit Inversion: none
Incoming Dial Tone? y                       DTT to DCO Loss: normal

Disconnect Supervision - In? y Out? N       Answer Supervision Timeout: 0
Receive Answer Supervision? y
display trunk-group 1 print                08/03/00 10:24 Page 2 of 11
TRUNK FEATURES
  ACA Assignment? n                           Measured: none
  Internal Alert? n                           Maintenance Tests? y
  Data Restriction? n

  Used for DCS? n
  Suppress # Outpulsing? n
  Seize When Maintenance Busy: neither-end

Incoming Tone (DTMF) ANI? n
Connected to CO? n

display trunk-group 1 print                08/03/00 10:24 Page 3 of 11
TRUNK GROUP
ADMINISTRABLE TIMERS
  Incoming Disconnect(msec): 500             Outgoing Disconnect(msec): 500
  Incoming Dial Guard(msec): 70             Outgoing Dial Guard(msec): 1600
  Incoming Glare Guard(msec): 1500         Outgoing Glare Guard(msec): 1500

  Outgoing Seizure Response(sec): 5
  Programmed Dial Pause(msec): 1500        Disconnect Signal Error(sec): 240
  Flash Length(msec): 540                 Incoming Incomplete Dial Alarm(sec): 255

END TO END SIGNALING
Tone(msec): 350                             Pause(msec): 150

OUTPULSING INFORMATION
PPS: 10   Make(msec): 40   Break(msec): 60

display trunk-group 1 print                08/03/00 10:24 Page 4 of 11
ATMS THRESHOLDS
TTL Type: 105-w-rl                           Far End Test No:
TTL Vendor:                                   TTL Contact:
Trunk Vendor:                                Trunk Contact:
Trunk Length:

MARGINAL                                     UNACCEPTABLE
  Min    Max                                Min    Max
1004 Hz Loss: -2    21                      -2    21
  -Dev   +Dev                               -Dev   +Dev
404 Hz Loss: 9     9                        9     9
2804 Hz Loss: 9     9                        9     9

Maximum C Message Noise: 55                  55
Maximum C Notched Noise: 74                  74
Minimum SRL-HI: 0                            0
Minimum SRL-LO: 0                            0
Minimum ERL: 0                               0

Allow ATMS Busyout, Error Logging and Alarming? n

display trunk-group 1 print                08/03/00 10:24 Page 5 of 11
TRUNK GROUP
Administered Members (min/max): 1/1
```

```

GROUP MEMBER ASSIGNMENTS                               Total Administered Members: 1
      Port      Code Sfx Name           Night           Mode           Type      Ans Delay
1: 01A0401 TN760 E
2:
3:
4:
5:
6:
7:
    
```

E&M Type 1 ---- 4-wire ---- wink/wink ---- dtmf -- TN760 E

display trunk-group 1 print 08/03/00 10:26 Page 1 of 11

```

TRUNK GROUP
Group Number: 1                               Group Type: tie           CDR Reports: y
Group Name: OUTSIDE CALL                       COR: 1                   TN: 1           TAC: 660
Direction: two-way                             Outgoing Display? y      Trunk Signaling Type:
Dial Access? y                                 Busy Threshold: 99       Night Service:
Queue Length: 0                                Incoming Destination:
Comm Type: voice                               Auth Code? n
Trunk Flash? n
    
```

TRUNK PARAMETERS

```

Trunk Type (in/out): wink/wink                 Incoming Rotary Timeout(sec): 5
Outgoing Dial Type: dtmf                       Incoming Dial Type: dtmf
Wink Timer(msec): 300                         Disconnect Timing(msec): 500
Digit Treatment:                               Digits:
                                                Sig Bit Inversion: none
Connected to Toll? n                           STT Loss: normal        DTT to DCO Loss: normal
Incoming Dial Tone? y
Disconnect Supervision - In? y Out? n
Answer Supervision Timeout: 0                 Receive Answer Supervision? y
    
```

display trunk-group 1 print 08/03/00 10:26 Page 2 of 11

```

TRUNK FEATURES
ACA Assignment? n                             Measured: none
                                                Internal Alert? n       Maintenance Tests? y
Data Restriction? n                           Glare Handling: none
Used for DCS? n
Suppress # Outpulsing? n                       Seize When Maintenance Busy: neither-end
Incoming Tone (DTMF) ANI? n
Connected to CO? n
    
```

display trunk-group 1 print 08/03/00 10:26 Page 3 of 11

```

TRUNK GROUP
ADMINISTRABLE TIMERS
Incoming Disconnect(msec): 500                 Outgoing Disconnect(msec): 500
Incoming Dial Guard(msec): 70                 Outgoing Dial Guard(msec): 1600
Incoming Glare Guard(msec): 1500             Outgoing Glare Guard(msec): 1500
                                                Outgoing Seizure Response(sec): 5
Programmed Dial Pause(msec): 1500             Disconnect Signal Error(sec): 240
Flash Length(msec): 540                       Incoming Incomplete Dial Alarm(sec): 255
    
```

```

END TO END SIGNALING
Tone(msec): 350                               Pause(msec): 150
    
```

```

OUTPULSING INFORMATION
PPS: 10   Make(msec): 40   Break(msec): 60
    
```

display trunk-group 1 print 08/03/00 10:26 Page 4 of 11

```

ATMS THRESHOLDS
TTL Type: 105-w-rl                             Far End Test No:
TTL Vendor:                                     TTL Contact:
Trunk Vendor:                                  Trunk Contact:
Trunk Length:
                                                MARGINAL             UNACCEPTABLE
    
```

```

                Min      Max      Min      Max
1004 Hz Loss: -2      21      -2      21

                -Dev    +Dev    -Dev    +Dev
404 Hz Loss:  9       9       9       9
2804 Hz Loss: 9       9       9       9

Maximum C Message Noise: 55          55
Maximum C Notched Noise: 74          74
Minimum SRL-HI:          0           0
Minimum SRL-LO:          0           0
Minimum ERL:            0           0
    
```

Allow ATMS Busyout, Error Logging and Alarming? n

```

display trunk-group 1 print                                08/03/00 10:26 Page  5 of 11
TRUNK GROUP
Administered Members (min/max): 1/1
Total Administered Members: 1

GROUP MEMBER ASSIGNMENTS

  Port   Code Sfx Name      Night      Mode      Type      Ans Delay
1: 01A0401 TN760 E          Night      e&m      t1-stan
2:
3:
4:
5:
6:
7:
    
```

E&M Type 1 ---- 4-wire ---- delay/delay ---- dtmf -- TN760 E

```

display trunk-group 1 print                                08/03/00 10:27 Page  1 of 11
TRUNK GROUP

Group Number: 1          Group Type: tie          CDR Reports: y
Group Name: OUTSIDE CALL      COR: 1          TN: 1          TAC: 660
Direction: two-way          Outgoing Display? y      Trunk Signaling Type:
Dial Access? y          Busy Threshold: 99          Night Service:
Queue Length: 0          Incoming Destination:
Comm Type: voice          Auth Code? n
                          Trunk Flash? n

TRUNK PARAMETERS
Trunk Type (in/out): delay/delay      Incoming Rotary Timeout(sec): 5
Outgoing Dial Type: dtmf          Incoming Dial Type: dtmf
Wink Timer(msec): 300          Disconnect Timing(msec): 500
Digit Treatment:          Digits:
                          Sig Bit Inversion: none
Connected to Toll? n          STT Loss: normal          DTT to DCO Loss: normal
Incoming Dial Tone? y

Disconnect Supervision - In? y  Out? n
Answer Supervision Timeout: 0      Receive Answer Supervision? y
    
```

```

display trunk-group 1 print                                08/03/00 10:27 Page  2 of 11
TRUNK FEATURES
ACA Assignment? n          Measured: none
                          Internal Alert? n          Maintenance Tests? y
Data Restriction? n
Glare Handling: none

Used for DCS? n
Suppress # Outpulsing? n
Seize When Maintenance Busy: neither-end

Incoming Tone (DTMF) ANI? n
Connected to CO? n
    
```

```

display trunk-group 1 print                                08/03/00 10:27 Page  3 of 11
TRUNK GROUP
ADMINISTRABLE TIMERS
    
```



```

Disconnect Supervision - In? y Out? n
Answer Supervision Timeout: 0          Receive Answer Supervision? y

display trunk-group 2 print                07/31/00  9:52 Page  2 of 11
TRUNK FEATURES
  ACA Assignment? n                      Measured: none
                                         Internal Alert? n      Maintenance Tests? n
                                         Data Restriction? n
                                         Glare Handling: none
  Used for DCS? n
  Suppress # Outpulsing? n
  Seize When Maintenance Busy: neither-end

  Connected to CO? n
    
```

```

display trunk-group 2 print                07/31/00  9:52 Page  3 of 11
TRUNK GROUP
ADMINISTRABLE TIMERS
  Incoming Disconnect(msec): 500          Outgoing Disconnect(msec): 500
  Incoming Dial Guard(msec): 70          Outgoing Dial Guard(msec): 1600
  Incoming Glare Guard(msec): 1500       Outgoing Glare Guard(msec): 1500
  Incoming Partial Dial(sec): 18         Outgoing Rotary Dial Interdigit(msec): 800
                                         Outgoing Seizure Response(sec): 5
  Programmed Dial Pause(msec): 1500      Disconnect Signal Error(sec): 240
  Flash Length(msec): 540               Incoming Incomplete Dial Alarm(sec): 255

END TO END SIGNALING
  Tone(msec): 350           Pause(msec): 150
    
```

```

OUTPULSING INFORMATION
  PPS: 10      Make(msec): 40      Break(msec): 60

display trunk-group 2 print                07/31/00  9:52 Page  4 of 11
ATMS THRESHOLDS
  TTL Type: 105-w-rl          Far End Test No:
  TTL Vendor:                 TTL Contact:
  Trunk Vendor:               Trunk Contact:
  Trunk Length:

MARGINAL          UNACCEPTABLE
  Min  Max        Min  Max
1004 Hz Loss: -2  21      -2  21

-Dev  +Dev      -Dev  +Dev
  404 Hz Loss: 9    9      9    9
  2804 Hz Loss: 9    9      9    9

Maximum C Message Noise: 55          55
Maximum C Notched Noise: 74          74
Minimum SRL-HI: 0                    0
Minimum SRL-LO: 0                    0
Minimum ERL: 0                        0

  Allow ATMS Busyout, Error Logging and Alarming? n
    
```

```

display trunk-group 2 print                07/31/00  9:52 Page  5 of 11
TRUNK GROUP
  Administered Members (min/max): 1/1
  Total Administered Members: 1

GROUP MEMBER ASSIGNMENTS
  Port   Code Sfx Name      Night      Mode      Type      Ans Delay
1: 01A0402 TN760 E  EMTyp5      simplex  type-5
2:
3:
4:
5:
6:
7:
    
```

E&M Type 5 ---- 4-wire ---- wink/wink ---- dtmf -- TN760 E

display trunk-group 2 print 07/29/00 12:36 Page 1 of 11

TRUNK GROUP

```

Group Number: 2                Group Type: tie                CDR Reports: y
Group Name:  OUTSIDE CALL      COR: 1                        TN: 1          TAC: 661
Direction:  two-way           Outgoing Display? n          Trunk Signaling Type:
Dial Access? y                Busy Threshold: 99           Night Service:
Queue Length: 0                Auth Code? n                 Incoming Destination:
Comm Type:  voice              Trunk Flash? n
    
```

TRUNK PARAMETERS

```

Trunk Type (in/out):  wink/wink      Incoming Rotary Timeout(sec): 5
Outgoing Dial Type:  dtmf            Incoming Dial Type:  dtmf
Wink Timer(msec):    300              Disconnect Timing(msec): 500
Digit Treatment:
Sig Bit Inversion:  none
Connected to Toll? n  STT Loss: normal            DTT to DCO Loss: normal
Incoming Dial Tone? y
    
```

```

Disconnect Supervision - In? y  Out? n
Answer Supervision Timeout: 0    Receive Answer Supervision? y
    
```

display trunk-group 2 print 07/29/00 12:37 Page 2 of 11

TRUNK FEATURES

```

ACA Assignment? n                Measured: none
Internal Alert? n                Maintenance Tests? n
Data Restriction? n              Glare Handling: none
Used for DCS? n
Suppress # Outpulsing? n
Seize When Maintenance Busy:  neither-end
    
```

```

Incoming Tone (DTMF) ANI? n
Connected to CO? n
    
```

display trunk-group 2 print 07/29/00 12:37 Page 3 of 11

TRUNK GROUP

ADMINISTRABLE TIMERS

```

Incoming Disconnect(msec): 500      Outgoing Disconnect(msec): 500
Incoming Dial Guard(msec): 70      Outgoing Dial Guard(msec): 1600
Incoming Glare Guard(msec): 1500   Outgoing Glare Guard(msec): 1500
    
```

```

Programmed Dial Pause(msec): 1500  Outgoing Seizure Response(sec): 5
Flash Length(msec): 540            Disconnect Signal Error(sec): 240
Incoming Incomplete Dial Alarm(sec): 255
    
```

END TO END SIGNALING

```
Tone(msec): 350      Pause(msec): 150
```

OUTPULSING INFORMATION

```
PPS: 10      Make(msec): 40      Break(msec): 60
```

display trunk-group 2 print 07/29/00 12:37 Page 4 of 11

ATMS THRESHOLDS

```

TTL Type: 105-w-rl              Far End Test No:
TTL Vendor:                      TTL Contact:
Trunk Vendor:                    Trunk Contact:
Trunk Length:
    
```

	MARGINAL		UNACCEPTABLE	
	Min	Max	Min	Max
1004 Hz Loss:	-2	21	-2	21
	-Dev	+Dev	-Dev	+Dev
404 Hz Loss:	9	9	9	9
2804 Hz Loss:	9	9	9	9

```

Maximum C Message Noise: 55      55
Maximum C Notched Noise: 74      74
    
```

Minimum SRL-HI: 0 0
 Minimum SRL-LO: 0 0
 Minimum ERL: 0 0

Allow ATMS Busyout, Error Logging and Alarming? n

display trunk-group 2 print 07/29/00 12:37 Page 5 of 11

```

TRUNK GROUP
Administered Members (min/max): 1/1
Total Administered Members: 1
GROUP MEMBER ASSIGNMENTS
Port Code Sfx Name Night Mode Type Ans Delay
1: 01A0402 TN760 E EMTyp5 simplex type-5
2:
3:
4:
5:
6:
7:
    
```

E&M Type 1 ---- 4-wire ---- wink/wink ---- dtmf -- TN760

display trunk-group 1 print 07/17/00 9:57 Page 1 of 11

```

TRUNK GROUP
Group Number: 1 Group Type: tie CDR Reports: y
Group Name: OUTSIDE CALL COR: 1 TN: 1 TAC: 660
Direction: two-way Outgoing Display? y Trunk Signaling Type:
Dial Access? y Busy Threshold: 99 Night Service:
Queue Length: 0 Incoming Destination: attd
Comm Type: voice Auth Code? n
Trunk Flash? N

TRUNK PARAMETERS
Trunk Type (in/out): wink/wink Incoming Rotary Timeout(sec): 5
Outgoing Dial Type: dtmf Incoming Dial Type: dtmf
Disconnect Timing(msec): 500
Digit Treatment: Digits:
Sig Bit Inversion: none
Connected to Toll? n STT Loss: normal DTT to DCO Loss: normal
Incoming Dial Tone? y

Disconnect Supervision - In? y Out? n
Answer Supervision Timeout: 0 Receive Answer Supervision? y
    
```

display trunk-group 1 print 07/17/00 9:57 Page 2 of 11

```

TRUNK FEATURES
ACA Assignment? n Measured: none
Internal Alert? n Maintenance Tests? y
Data Restriction? n

Used for DCS? n
Suppress # Outpulsing? n
Seize When Maintenance Busy: neither-end

Connected to CO? n
    
```

display trunk-group 1 print 07/17/00 9:57 Page 3 of 11

```

TRUNK GROUP
ADMINISTRABLE TIMERS
Incoming Disconnect(msec): 500 Outgoing Disconnect(msec): 500
Incoming Dial Guard(msec): 70 Outgoing Dial Guard(msec): 1600
Incoming Glare Guard(msec): 1500 Outgoing Glare Guard(msec): 1500
Incoming Partial Dial(sec): 18 Outgoing Rotary Dial Interdigit(msec): 800

Outgoing Seizure Response(sec): 5
Programmed Dial Pause(msec): 1500 Disconnect Signal Error(sec): 240
Flash Length(msec): 540 Incoming Incomplete Dial Alarm(sec): 255
    
```

END TO END SIGNALING
Tone(msec): 350 Pause(msec): 150

OUTPULSING INFORMATION
PPS: 10 Make(msec): 40 Break(msec): 60

display trunk-group 1 print 07/17/00 9:57 Page 4 of 11

TTL Type: 105-w-rl ATMS THRESHOLDS
TTL Vendor: Far End Test No:
Trunk Vendor: TTL Contact:
Trunk Length: Trunk Contact:

	MARGINAL		UNACCEPTABLE	
	Min	Max	Min	Max
1004 Hz Loss:	-2	21	-2	21
	-Dev	+Dev	-Dev	+Dev
404 Hz Loss:	9	9	9	9
2804 Hz Loss:	9	9	9	9

Maximum C Message Noise:	55	55
Maximum C Notched Noise:	74	74
Minimum SRL-HI:	0	0
Minimum SRL-LO:	0	0
Minimum ERL:	0	0

Allow ATMS Busyout, Error Logging and Alarming? N

display dialplan

DIAL PLAN RECORD

North American Area Code: Local Node Number: 2
ETA Node Number:
ETA Routing Pattern:
Uniform Dialing Plan: 4-digit
UDP Extension Search Order: udp-table-first
FIRST DIGIT TABLE

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

Command:

Cisco 3640 Gateway Configuration

The following is the configuration of the 3640 router directly connected to Lucent Definity G3r PBX E&M tie trunk.

Cisco 3640 Voice Gateway Version Information

```
3640_A#sho ver  
Cisco Internetwork Operating System Software
```



```
Building configuration...

Current configuration : 1328 bytes
!
version 12.2
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
no service dhcp
!
hostname 3640_A
!
!
!
!
ip subnet-zero
!
!
no ip domain-lookup
ip host danube 171.69.2.27
ip host whiz 171.69.1.162
ip host dirt 171.69.1.129
!
no lane client flush
!
!
!
!
!
!
!
!
!
!
interface Ethernet0/0
 ip address 1.1.1.1 255.255.255.0
 no ip mroute-cache
 full-duplex
 no cdp enable
!
interface Ethernet0/1
 ip address 10.1.1.211 255.255.255.0
 no ip mroute-cache
 half-duplex
 no cdp enable
!
ip classless
no ip http server
ip pim bidir-enable
!
no cdp run
!
!
snmp-server manager
tftp-server flash
tftp-server nvram
tftp-server slot0:
call rsvp-sync
!
voice-port 2/0/0
!
voice-port 2/0/1
!
voice-port 2/1/0
 timing delay-start 100
 operation 4-wire
 type 5
 signal immediate
!
voice-port 2/1/1
 operation 4-wire
 type 5
 signal immediate
```

```
!  
!  
mgcp profile default  
!  
dial-peer cor custom  
!  
!  
!  
dial-peer voice 3 pots  
  destination-pattern 4...  
  progress_ind progress enable 8  
  port 2/1/0  
  prefix 4  
!  
dial-peer voice 1 pots  
  destination-pattern 2000  
  port 2/0/0  
!  
dial-peer voice 2 voip  
  destination-pattern 5...  
  session target ipv4:1.1.1.2  
!  
dial-peer voice 4 voip  
  destination-pattern 3000  
  session target ipv4:1.1.1.2  
!  
!  
line con 0  
line aux 0  
line vty 0 4  
  password cisco  
  no login  
!  
!  
end
```

```
3640_A#  
3640_A#
```

```
3640_A#  
3640_A#  
3640_A#
```

E&M Type 5 -- 4-wire -- dtmf ---- immediate

```
3640_A#sho voice port 2/1/0
```

```
recEive And transMit 2/1/0 Slot is 2, Sub-unit is 1, Port is 0  
Type of VoicePort is E&M  
Operation State is DORMANT  
Administrative State is UP  
The Last Interface Down Failure Cause is Administrative Shutdown  
Description is not set  
Noise Regeneration is enabled  
Non Linear Processing is enabled  
Non Linear Mute is disabled  
Non Linear Threshold is -21 dB  
Music On Hold Threshold is Set to -38 dBm  
In Gain is Set to 0 dB  
Out Attenuation is Set to 0 dB  
Echo Cancellation is enabled  
Echo Cancellation NLP mute is disabled  
Echo Cancellation NLP threshold is -21 dB  
Echo Cancel Coverage is set to 8 ms  
Playout-delay Mode is set to default  
Playout-delay Nominal is set to 60 ms  
Playout-delay Maximum is set to 200 ms  
Playout-delay Minimum mode is set to default, value 40 ms  
Playout-delay Fax is set to 300 ms  
Connection Mode is normal  
Connection Number is not set  
Initial Time Out is set to 10 s  
Interdigit Time Out is set to 10 s
```

```
Call Disconnect Time Out is set to 60 s
Ringing Time Out is set to 180 s
Wait Release Time Out is set to 30 s
Companding Type is u-law
Region Tone is set for US

Analog Info Follows:
Currently processing none
Maintenance Mode Set to None (not in mtc mode)
Number of signaling protocol errors are 0
Impedance is set to 600r Ohm
Station name None, Station number None

Voice card specific Info Follows:
Operation Type is 4-wire
E&M Type is 5
Signal Type is immediate
Dial Type is dtmf
In Seizure is inactive
Out Seizure is inactive
Digit Duration Timing is set to 100 ms
InterDigit Duration Timing is set to 100 ms
Pulse Rate Timing is set to 10 pulses/second
InterDigit Pulse Duration Timing is set to 750 ms
Clear Wait Duration Timing is set to 400 ms
Wink Wait Duration Timing is set to 200 ms
Wait Wink Duration Timing is set to 550 ms
Wink Duration Timing is set to 200 ms
Delay Start Timing is set to 100 ms
Delay Duration Timing is set to 2000 ms
Dial Pulse Min. Delay is set to 140 ms
Percent Break of Pulse is 60 percent
Auto Cut-through is disabled
Dialout Delay is 300 ms
3640_A#
```

E&M Type 5 -- 4-wire -- dtmf ---- wink-start

```
3640_A#
3640_A#sho voice port 2/1/0

recEive And transMit 2/1/0 Slot is 2, Sub-unit is 1, Port is 0
Type of VoicePort is E&M
Operation State is DORMANT
Administrative State is UP
The Last Interface Down Failure Cause is Administrative Shutdown
Description is not set
Noise Regeneration is enabled
Non Linear Processing is enabled
Non Linear Mute is disabled
Non Linear Threshold is -21 dB
Music On Hold Threshold is Set to -38 dBm
In Gain is Set to 0 dB
Out Attenuation is Set to 0 dB
Echo Cancellation is enabled
Echo Cancellation NLP mute is disabled
Echo Cancellation NLP threshold is -21 dB
Echo Cancel Coverage is set to 8 ms
Payout-delay Mode is set to default
Payout-delay Nominal is set to 60 ms
Payout-delay Maximum is set to 200 ms
Payout-delay Minimum mode is set to default, value 40 ms
Payout-delay Fax is set to 300 ms
Connection Mode is normal
Connection Number is not set
Initial Time Out is set to 10 s
Interdigit Time Out is set to 10 s
Call Disconnect Time Out is set to 60 s
Ringing Time Out is set to 180 s
Wait Release Time Out is set to 30 s
```



```
Companding Type is u-law
Region Tone is set for US

Analog Info Follows:
Currently processing none
Maintenance Mode Set to None (not in mtc mode)
Number of signaling protocol errors are 0
Impedance is set to 600r Ohm
Station name None, Station number None

Voice card specific Info Follows:
Operation Type is 4-wire
E&M Type is 5
Signal Type is wink-start
Dial Type is dtmf
In Seizure is inactive
Out Seizure is inactive
Digit Duration Timing is set to 100 ms
InterDigit Duration Timing is set to 100 ms
Pulse Rate Timing is set to 10 pulses/second
InterDigit Pulse Duration Timing is set to 750 ms
Clear Wait Duration Timing is set to 400 ms
Wink Wait Duration Timing is set to 200 ms
Wait Wink Duration Timing is set to 550 ms
Wink Duration Timing is set to 200 ms
Delay Start Timing is set to 100 ms
Delay Duration Timing is set to 2000 ms
Dial Pulse Min. Delay is set to 140 ms
Percent Break of Pulse is 60 percent
Auto Cut-through is disabled
Dialout Delay is 300 ms
3640_A#
```

E&M Type 5 -- 4-wire -- dtmf ---- delay-dial

```
3640_A#
3640_A#
3640_A#sho voice port 2/1/0

recEive And transMit 2/1/0 Slot is 2, Sub-unit is 1, Port is 0
Type of VoicePort is E&M
Operation State is DORMANT
Administrative State is UP
The Last Interface Down Failure Cause is Administrative Shutdown
Description is not set
Noise Regeneration is enabled
Non Linear Processing is enabled
Non Linear Mute is disabled
Non Linear Threshold is -21 dB
Music On Hold Threshold is Set to -38 dBm
In Gain is Set to 0 dB
Out Attenuation is Set to 0 dB
Echo Cancellation is enabled
Echo Cancellation NLP mute is disabled
Echo Cancellation NLP threshold is -21 dB
Echo Cancel Coverage is set to 8 ms
Payout-delay Mode is set to default
Payout-delay Nominal is set to 60 ms
Payout-delay Maximum is set to 200 ms
Payout-delay Minimum mode is set to default, value 40 ms
Payout-delay Fax is set to 300 ms
Connection Mode is normal
Connection Number is not set
Initial Time Out is set to 10 s
Interdigit Time Out is set to 10 s
Call Disconnect Time Out is set to 60 s
Ringing Time Out is set to 180 s
Wait Release Time Out is set to 30 s
Companding Type is u-law
Region Tone is set for US

Analog Info Follows:
```

```
Currently processing none
Maintenance Mode Set to None (not in mtc mode)
Number of signaling protocol errors are 0
Impedance is set to 600r Ohm
Station name None, Station number None

Voice card specific Info Follows:
Operation Type is 4-wire
E&M Type is 5
Signal Type is delay-dial
Dial Type is dtmf
In Seizure is inactive
Out Seizure is inactive
Digit Duration Timing is set to 100 ms
InterDigit Duration Timing is set to 100 ms
Pulse Rate Timing is set to 10 pulses/second
InterDigit Pulse Duration Timing is set to 750 ms
Clear Wait Duration Timing is set to 400 ms
Wink Wait Duration Timing is set to 200 ms
Wait Wink Duration Timing is set to 550 ms
Wink Duration Timing is set to 200 ms
Delay Start Timing is set to 100 ms
Delay Duration Timing is set to 2000 ms
Dial Pulse Min. Delay is set to 140 ms
Percent Break of Pulse is 60 percent
Auto Cut-through is disabled
Dialout Delay is 300 ms
3640_A#
```

E&M Type 1 -- 4-wire -- dtmf ---- delay-dial

```
3640_A#
3640_A#sho voice port 2/1/0

recEive And transMit 2/1/0 Slot is 2, Sub-unit is 1, Port is 0
Type of VoicePort is E&M
Operation State is DORMANT
Administrative State is UP
The Last Interface Down Failure Cause is Administrative Shutdown
Description is not set
Noise Regeneration is enabled
Non Linear Processing is enabled
Non Linear Mute is disabled
Non Linear Threshold is -21 dB
Music On Hold Threshold is Set to -38 dBm
In Gain is Set to 0 dB
Out Attenuation is Set to 0 dB
Echo Cancellation is enabled
Echo Cancellation NLP mute is disabled
Echo Cancellation NLP threshold is -21 dB
Echo Cancel Coverage is set to 8 ms
Playout-delay Mode is set to default
Playout-delay Nominal is set to 60 ms
Playout-delay Maximum is set to 200 ms
Playout-delay Minimum mode is set to default, value 40 ms
Playout-delay Fax is set to 300 ms
Connection Mode is normal
Connection Number is not set
Initial Time Out is set to 10 s
Interdigit Time Out is set to 10 s
Call Disconnect Time Out is set to 60 s
Ringing Time Out is set to 180 s
Wait Release Time Out is set to 30 s
Companding Type is u-law
Region Tone is set for US

Analog Info Follows:
Currently processing none
Maintenance Mode Set to None (not in mtc mode)
Number of signaling protocol errors are 0
Impedance is set to 600r Ohm
```

```
Station name None, Station number None

Voice card specific Info Follows:
Operation Type is 4-wire
E&M Type is 1
Signal Type is delay-dial
Dial Type is dtmf
In Seizure is inactive
Out Seizure is inactive
Digit Duration Timing is set to 100 ms
InterDigit Duration Timing is set to 100 ms
Pulse Rate Timing is set to 10 pulses/second
InterDigit Pulse Duration Timing is set to 750 ms
Clear Wait Duration Timing is set to 400 ms
Wink Wait Duration Timing is set to 200 ms
Wait Wink Duration Timing is set to 550 ms
Wink Duration Timing is set to 200 ms
Delay Start Timing is set to 100 ms
Delay Duration Timing is set to 2000 ms
Dial Pulse Min. Delay is set to 140 ms
Percent Break of Pulse is 60 percent
Auto Cut-through is disabled
Dialout Delay is 300 ms
3640_A#
```

E&M Type 1 -- 4-wire -- dtmf ---- wink-start

```
3640_A#
3640_A#sho voice port 2/1/0

recEive And transMit 2/1/0 Slot is 2, Sub-unit is 1, Port is 0
Type of VoicePort is E&M
Operation State is DORMANT
Administrative State is UP
The Last Interface Down Failure Cause is Administrative Shutdown
Description is not set
Noise Regeneration is enabled
Non Linear Processing is enabled
Non Linear Mute is disabled
Non Linear Threshold is -21 dB
Music On Hold Threshold is Set to -38 dBm
In Gain is Set to 0 dB
Out Attenuation is Set to 0 dB
Echo Cancellation is enabled
Echo Cancellation NLP mute is disabled
Echo Cancellation NLP threshold is -21 dB
Echo Cancel Coverage is set to 8 ms
Playout-delay Mode is set to default
Playout-delay Nominal is set to 60 ms
Playout-delay Maximum is set to 200 ms
Playout-delay Minimum mode is set to default, value 40 ms
Playout-delay Fax is set to 300 ms
Connection Mode is normal
Connection Number is not set
Initial Time Out is set to 10 s
Interdigit Time Out is set to 10 s
Call Disconnect Time Out is set to 60 s
Ringing Time Out is set to 180 s
Wait Release Time Out is set to 30 s
Companding Type is u-law
Region Tone is set for US

Analog Info Follows:
Currently processing none
Maintenance Mode Set to None (not in mtc mode)
Number of signaling protocol errors are 0
Impedance is set to 600r Ohm
Station name None, Station number None

Voice card specific Info Follows:
Operation Type is 4-wire
```

```
E&M Type is 1
Signal Type is wink-start
Dial Type is dtmf
In Seizure is inactive
Out Seizure is inactive
Digit Duration Timing is set to 100 ms
InterDigit Duration Timing is set to 100 ms
Pulse Rate Timing is set to 10 pulses/second
InterDigit Pulse Duration Timing is set to 750 ms
Clear Wait Duration Timing is set to 400 ms
Wink Wait Duration Timing is set to 200 ms
Wait Wink Duration Timing is set to 550 ms
Wink Duration Timing is set to 200 ms
Delay Start Timing is set to 100 ms
Delay Duration Timing is set to 2000 ms
Dial Pulse Min. Delay is set to 140 ms
Percent Break of Pulse is 60 percent
Auto Cut-through is disabled
Dialout Delay is 300 ms
3640_A#
```

E&M Type 1 -- 4-wire -- pulse ---- immediate

```
3640_A#
3640_A#sho voice port 2/1/0

recEive And transMIt 2/1/0 Slot is 2, Sub-unit is 1, Port is 0
Type of VoicePort is E&M
Operation State is DORMANT
Administrative State is UP
The Last Interface Down Failure Cause is Administrative Shutdown
Description is not set
Noise Regeneration is enabled
Non Linear Processing is enabled
Non Linear Mute is disabled
Non Linear Threshold is -21 dB
Music On Hold Threshold is Set to -38 dBm
In Gain is Set to 0 dB
Out Attenuation is Set to 0 dB
Echo Cancellation is enabled
Echo Cancellation NLP mute is disabled
Echo Cancellation NLP threshold is -21 dB
Echo Cancel Coverage is set to 8 ms
Playout-delay Mode is set to default
Playout-delay Nominal is set to 60 ms
Playout-delay Maximum is set to 200 ms
Playout-delay Minimum mode is set to default, value 40 ms
Playout-delay Fax is set to 300 ms
Connection Mode is normal
Connection Number is not set
Initial Time Out is set to 10 s
Interdigit Time Out is set to 10 s
Call Disconnect Time Out is set to 60 s
Ringing Time Out is set to 180 s
Wait Release Time Out is set to 30 s
Companding Type is u-law
Region Tone is set for US

Analog Info Follows:
Currently processing none
Maintenance Mode Set to None (not in mtc mode)
Number of signaling protocol errors are 0
Impedance is set to 600r Ohm
Station name None, Station number None

Voice card specific Info Follows:
Operation Type is 4-wire
E&M Type is 1
Signal Type is immediate
Dial Type is pulse
In Seizure is inactive
```

```
Out Seizure is inactive
Digit Duration Timing is set to 100 ms
InterDigit Duration Timing is set to 100 ms
Pulse Rate Timing is set to 10 pulses/second
InterDigit Pulse Duration Timing is set to 750 ms
Clear Wait Duration Timing is set to 400 ms
Wink Wait Duration Timing is set to 200 ms
Wait Wink Duration Timing is set to 550 ms
Wink Duration Timing is set to 200 ms
Delay Start Timing is set to 100 ms
Delay Duration Timing is set to 2000 ms
Dial Pulse Min. Delay is set to 140 ms
Percent Break of Pulse is 60 percent
Auto Cut-through is disabled
Dialout Delay is 300 ms
```

```
3640_A#
3640_A#
```

Caveats

- None