Siemens Hicom 300 E CS Release 6.6 using T1 QSIG to Cisco Unified CallManager 4.0

December 10, 2007 Revision 2

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Introduction

This is an Application Note for Connectivity of Siemens Hicom 300 E CS Release 6.6 PBX with Cisco Unified CallManager (CUCM) Release 4.0 using Cisco 6608-T1 QSIG as MGCP Gateway.

The Network Topology diagram shows the test set-up for end-to-end interoperability with the Cisco Unified CallManager connected to the PBX via 6608-T1 QSIG link as MGCP Gateway.

Connectivity is achieved by using the PRI ISO QSIG T1 protocol type on the MGCP gateway and NQISO switch type on the Siemens PBX.

Basic Calls worked in both directions with Calling/Connected Name and Calling/Connected Number features support.
Network Topology

Figure 1. Network Topology

Basic Call Setup End-to-End Configuration

PBX1: Siemens Hicom 300 E CS Release 6.6

Cisco Catalyst 6000 Ethernet Switch

Cisco Unified CallManager Release 4.0

System Components

Hardware Requirements

Cisco Hardware

Cisco Catalyst 6000 switch with 6608-T1 Gateway

Cisco Unified CallManager 4.0

Siemens Hicom 300 E CS PBX.

Hardware: TMDN or TMDN 64

Software Requirements

PBX Software version 6.6 with CorNetNQ package

Cisco Unified CallManager 4.0

Cisco WS-X6608-T1 gateway Version 7.6(2)
Features

Features Supported

- CLIP-Calling Line (Number) Identification Presentation
- CNIP-Calling Name Identification Presentation
- COLP-Connected Line (Number) Identification Presentation
- CONP-Connected Name Identification Presentation
- CT-Call Transfer (by join)
- CFU-Call Forwarding Unconditional (by join)
- CFB-Call Forwarding Busy (by join)
- CFNR-Call Forwarding No Reply (by join)
- QSIG MWI- Message Waiting Indication (lamp ON, lamp OFF) supported by Cisco Unified CallManager 4.0 (not tested

Features Not Supported

- Cisco Unified CallManager 4.0 does not support sending Alerting Name or Busy Name Identification information
- CLIR-Calling Line (Number) Identification Restriction not supported by Hicom 300E CS PBX
- CNIR-Calling Name Identification Restriction not supported by Hicom 300E CS PBX
- COLR- Connected Line (Number) Identification Restriction not supported by Hicom 300E CS PBX
- CONR- Connected Name Identification Restriction not supported by Hicom 300E CS PBX

Configuration

Configuring the Siemens Hicom 300 E CS PBX

Configure in the following sequence:

1. Add the new access code to Dialing Plans
2. Add the new trunk board using BCSU
3. Configure Class of Trunk using COT
4. Configure Class of Parameter for device handler using COP
5. Add the new trunk group access code using TGACC
6. Add the channels using TCSU
7. Configure LROUT
8. Configure LCR Out-dial Rules using LODR

---

1 MWI is supported on CUCM 4.0 but was not tested because CUCM 4.0 was not configured with a messaging System at the time of testing. Therefore, it is not known at this time whether QSIG MWI integration with Siemens Hicom 300E CS PBX will work. MWI will be tested when the CUCM 4.0 is configured with Unity as the message center PINX and PBX users as remote subscribers.
Configuration Menus and Commands

DPLN

<dis-dpln;

TYPE = dgts

DGTS = ;

DIS-DPLN:DGTS,;

H500: AMO DPLN STARTED

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<tr>
<th>DIGIT INTERPRETATION</th>
<th>VALID FOR DIAL PLAN 0</th>
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<tbody>
<tr>
<td>0</td>
<td>ANS</td>
</tr>
<tr>
<td>1</td>
<td>CO</td>
</tr>
<tr>
<td>2000 - 2023</td>
<td>STN</td>
</tr>
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<td>2024 - 2026</td>
<td>STN R</td>
</tr>
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<td>2222</td>
<td>ATNDIND</td>
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<td>3000 - 3023</td>
<td>STN</td>
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<td>3024 - 3099</td>
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<td>43 - 48</td>
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<td>CO</td>
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</tr>
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<td>*572</td>
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<th>ROUTE</th>
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<td>12345 67890 12345 6789012</td>
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*6 | ***** .*** .***** | ROLMPARK |
*7 | **** .*** .***** | CONSULT |
*80 - *89 | **** .*** .***** | PARK |
*9 | .*** .*** .***** | HOLD |
*0 | .*** .*** .***** | BVSL |
*1 | .*** .*** .***** | TOGGLE |

*3 | .*** .*** .***** | PU |
*41 - **48 | .*** .*** .***** | CONFIRMV |
**50 | .*** .*** .***** | CAFGRAVL |
**51 | .*** .*** .***** | CAFGRUNA |
**6 | .*** .*** .***** | INTERCOM |
**8 | .*** .*** .***** | MWANS |
**4 | .*** .*** .***** | CONFIRMV |
**5 | .*** .*** .***** | MONSENT |
**65 | .*** .*** .***** | CAFGROFF |
*#01 | .*** .*** .***** | RCHNL |
*#02 | .*** .*** .***** | RTERM |
*#03 | .*** .*** .***** | LTERM |

*#04 | .*** .*** .***** | PRITEST |
*#274 | .*** .*** .***** | WS |
*#50 | .*** .*** .***** | CAFAVLB |
*#51 | .*** .*** .***** | CAFUNAV |
*#53 | .*** .*** .***** | CIBLKL |
*#54 | ***** .*** .***** | CIBLKB |
*#55 | .*** .*** .***** | CAFFWD |
*#56 | .*** .*** .***** | CAFWDC |
*#57 | .*** .*** .***** | PIDON |
*#58 | .*** .*** .***** | PIDOFF |
*#590 | .*** .*** .***** | DCOSX |
*#591 | .*** .*** .***** | ACOSX |

*#63 | ***** ***** ***** ***** | CLEAR |
*#65 | **** .*** .***** | CAFLOGOF |
*#735 | .*** .***** .***** | RELOCATE |
*#738 | .*** .***** .***** | SET |
*#97 | .*** .***** .***** | COXFER |
#0 | .*** .***** .***** | ACUDNAV |
#1 | .*** .***** .***** | ACDNVB |
#2 | .*** .***** .***** | PRION |
#3 | .*** .***** .***** | SPD1 |
#4 | .*** .***** .***** | SNR |
#5 | .*** .***** .***** | ADND |
#61 | .*** .***** .***** | SPD1C |
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</table>

| #02             | ****** .*** .... | SPDC2  |      |       |
| #03             | .... .... ........ | BROADCST |      |       |
| #01             | .... .... ........ | SPKRCALL |      |       |
| #02             | .... .... ........ | CFWABTH |      |       |
| #92             | .... .... ........ | CFWVAEXT |      |       |
| #93             | .... .... ........ | CFWVAINT |      |       |
| #94             | .... .... ........ | CFWVB  |      |       |
| #95             | .... .... ........ | CFWVBNA |      |       |
| #96             | .... .... ........ | CFWVNA |      |       |
| #056            | .... .... ........ | DATA56 |      |       |
| #1              | ***** .... ....... | MWACT  |      |       |

**DIGIT INTERPRETATION**  
**VALID FOR DIAL PLAN 0**

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<th>DIRECTORY NUMBER</th>
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<td>(SKIP DIGIT)</td>
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| #02             | ****** .*** .... | BUZZ  |      |       |
| #329            | .*** .... ....... | FAX  | R    |       |
| #74             | .... .... ........ | VCECALL |      |       |
| #75             | .... .... ........ | DIGIDAT |      |       |
| #76             | .... .... ........ | SWITCH |      |       |
| #77             | .... .... ........ | DTE  |      |       |
| #78             | .... .... ........ | CODE  |      |       |
| #79             | .... .... ........ | SPEED |      |       |
| #88             | .... .... ........ | MWCANORI |      |       |
| #90             | .... .... ........ | HUNTPROG |      |       |
| #92             | .... .... ........ | AHTVCE |      |       |
| #93             | .... .... ........ | DHTVCE |      |       |

**DIGIT INTERPRETATION**  
**VALID FOR DIAL PLAN 0**

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<tr>
<th>DIRECTORY NUMBER</th>
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| #94             | .... .... ........ | AHTDTE |      |       |
| #95             | .... .... ........ | DHTDTE |      |       |
| #96             | .... .... ........ | AHTFAX |      |       |
| #97             | .... .... ........ | DHTFAX |      |       |
| #99             | .... .... ........ | HUNTCLR |      |       |
| #80             | .... .... ........ | ACDAVLB |      |       |
| #1              | .... .... ........ | DCBK  |      |       |
| #2              | .... .... ........ | PRIOFF |      |       |
| #3              | .... .... ........ | SPDIPROG |      |       |
| #4              | .... .... ........ | LNR  |      |       |
| #5              | .... .... ........ | DDND  |      |       |
| #7              | .... .... ........ | KNOVR |      |       |

**DIGIT INTERPRETATION**  
**VALID FOR DIAL PLAN 0**

<table>
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<tr>
<th>DIRECTORY NUMBER</th>
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| #08             | .... .... ........ | DTA  |      |       |
| #91             | .... .... ........ | CFWVAGOFF |      |       |
| #78             | .... .... ........ | RESET |      |       |
| #74             | .... .... ........ | TRACe |      |       |
| #20             | .... .... ........ | MILLWAT |      |       |
| #21             | .... .... ........ | LOOPBACK |      |       |
| #22             | .... .... ........ | SILENCE |      |       |
AMO-DPLN -10 DIALING PLANS, FEATURE ACCESS CODES
DISPLAY COMPLETED;

BCSU

<dis-bcsu

TYPE = tmd
LTG = 1
LTU = 2
SLOT = 25;
DIS-BCSU:TMD,1,2,25;
H500: AMO BCSU STARTED

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<th>DETAILS OF TMD BOARD AT ADDRESS (LTG.LTU.SLOT) = 1. 2. 25</th>
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<tr>
<td>CABTYP = 1 TIMTYP = SYST SIGTYP = MOS</td>
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<tr>
<td>FRAME = ESF TABS = NO FCTID = 2</td>
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<tr>
<td>BISUB = YES BIVDET = NO</td>
</tr>
<tr>
<td>-------------------------------------------------------------</td>
</tr>
<tr>
<td>RDRATIO = 6 RDTH = 2500 RDOQUAL = 15000</td>
</tr>
<tr>
<td>YLSEND = 5000 YLTH = 400 YLQUAL = 100</td>
</tr>
<tr>
<td>LOSS = 150 AGS = 4000</td>
</tr>
<tr>
<td>SESDISTH = 10 SESREQTH = 10</td>
</tr>
<tr>
<td>OESDISTH = 30 OESDISIN = 24-00-00</td>
</tr>
<tr>
<td>OESREQTH = 4000 OESREQIN = 04-00-00</td>
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<td>-------------------------------------------------------------</td>
</tr>
<tr>
<td>NETUSR = NETWK ACKTIM = 1000 DLVTIM = 5000</td>
</tr>
<tr>
<td>OCTMAX = 260 RETMAX = 3 WINDOW = 7</td>
</tr>
<tr>
<td>CRIDC = TTSC = NSFIV =</td>
</tr>
<tr>
<td>NSFSTSC = PFDGT =</td>
</tr>
<tr>
<td>-------------------------------------------------------------</td>
</tr>
<tr>
<td>IGN = 0 IID = 0</td>
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</table>

AMO-BCSU -10 BOARD CONFIGURATION, SWITCHING UNIT
DISPLAY COMPLETED;

Class of Trunk, COT

<dis-cot

COTNO = ;
DIS-COT:;
H500: AMO COT STARTED

|D|A|D|D|D|M|S|V|E|E|A|R|
|I|N|S|S|I|D|A|L|S|S|N|F|
|T|S|A|S|R|T|S|P|P|I|L|
| |R| |S| | |A|A|D|A|
| | | | | | | |T|N|N|S|
| | | | | | | |I|I|I|H|

COT

--------+
0
1|X
2|X
3|X

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Class of Parameter for device handler, COP

<dis-cop;

DIS-COP;
H500; AMO COP STARTED

Trunk group access code, TGACC

<dis-tgacc

TGRP = 41;
DIS-TGACC;41;
H500; AMO TGACC STARTED

TCSU-B Channel
<dis-tcsu>

PEN1 = 1-2-25-1;
DIS-TCSU:1-2-25-1;
H500: AMO TCSU STARTED
+------------------------------------------------------------------------+
| PEN: 1-2-25-1 INS: Y BOARD: TMDN64P DEV: S1B TGRP: 41 |
+------------------------------------------------------------------------+
| TRKID : 0002 TCCID : |
+------------------------------------------------------------------------+
| ACDATA : 0 COTNO : 6 LCRCOSD : 5 |
| ATNTYP : TIE DITIDX : 0 LCRCOSV : 5 |
| BNEGOT : N DPLN : 0 LOCANA : |
| COPNO : 6 ITR : 0 REMANA : |
| COSNO : 75 |
+------------------------------------------------------------------------+

AMO-TCSU -10 TRUNK CONFIGURATION, SWITCHING UNIT
DISPLAY COMPLETED;

TCSU-D Channel

<dis-tcsu>

PEN1 = 1-2-25-24;
DIS-TCSU:1-2-25-24;
H500: AMO TCSU STARTED
+------------------------------------------------------------------------+
| PEN: 1-2-25-24 INS: Y BOARD: TMDN64P DEV: S1D |
+------------------------------------------------------------------------+
| TCCID : |
+------------------------------------------------------------------------+
| ACDATA : 0 COTNO : 6 DPLN : 0 |
| COPNO : 6 DITIDX : ITR : 0 |
| BNEGOT : N PROTOCOL : NQISO |
| CONVER : N BEARER: ONE |
| TMR: |
| 302: 15 303: 6 304: 20 305: 30 306: 30 |
| 316: 120 322: 4 384: 30 385: 30 386: 30 |
+------------------------------------------------------------------------+

AMO-TCSU -10 TRUNK CONFIGURATION, SWITCHING UNIT
DISPLAY COMPLETED;

Trunk Least Cost Routing Configuration

LROUT

<dis-lrout>

ROUTE = 41;
DIS-LROUT:41;
H500: AMO LROUT STARTED
+------------------------------------------------------------------------+
| ROUTENUM = 41 SCHE D = A AORT = INFORMATION |
| ROUTEELE = 1 B = AUTH = 1 TRANS CAP = S3V |
+------------------------------------------------------------------------+
BEAVER = ONE   C = ONHKQ = Y   TRKSIG = COR   |
BANDWTH = 1    D = OFFHKQ = Y   SCCID = -   |
TRUNKGRP = 41  E = ODRNUM = 1   SVCVE = NON   |
MASTGRP = 3    F = APLTYP = VFD  SVCN-V = NON   |
ROUTSERV = N   G = FACNUM = -   |
| H - |

-------------------------------------------------------------------------
|ROUTENUM = 41  SCHED A = X  AORT =       INFORMATION |
|ROUTEELE = 2   B = AUTH = 1   TRANS CAP = S3V  |
|BEAVER = ONE   C = ONHKQ = Y   TRKSIG = COR |
|BANDWTH = 1    D = OFFHKQ = Y   SCCID = -   |
|TRUNKGRP = 41  E = ODRNUM = 1   SVCVE = NON   |
|MASTGRP = 3    F = APLTYP = VD   SVCN-V = NON   |
|ROUTSERV = N   G = FACNUM = -   |
| H - |

END OF LCR ROUTE DEFINITION TABLE DISPLAY
AMO-LROUT=10     ROUTE DEFINITION DETERMINATION PACKAGE

DISPLAY COMPLETED;

PSTN Trunk Routing Configuration

dis-ldpln
PLAN = 148
DIS-LDPLN:148;
H500: AMO LDPLN STARTED

OUTPUT DISPLAY FORMAT
------------------------

DIGIT PATTERN : 9-1-NXX-NXX-XXXX
AREA CODE FIELD IDX : NONE
PLAN NUMBER: 148
OFFICE CODE FIELD IDX: NONE
TYPE OF NUMBER : UNKNOWN
NUMBERING PLAN ID : ISDN_TELEPHONY

DIGIT ANALYSIS GROUP : 0
ROUTE : 1
ACCOUNT FLAG :
USER AUTHORIZATION : 1
AMO-LDPLN-25 AMO LCR DIALING PLAN FOR THE SWITCHING UNIT

DISPLAY COMPLETED;

dis-lrout
ROUTE = 1
DIS-LROUT:1;
H500: AMO LROUT STARTED

LCR ROUTE DEFINITION TABLE
--------------------------

|ROUTENUM = 1  SCHED A = X  AORT =       INFORMATION |
|ROUTEELE = 1   B = AUTH = 1   TRANS CAP = S3 |
|BEAVER = ONE   C = ONHKQ = Y   TRKSIG = PRI   |
|BANDWTH = 1    D = OFFHKQ = Y   SCCID = -   |

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Page 10 of 31
TRUNKGRP = 40     E =   ODRNUM = 1   SVCVCE = NON     |
MASTGRP = 1       F =   APLTY = VD   SVCN-V = NON     |
ROUTSERV = N      G =   FACNUM =       |
|    H =                        |  
-------------------------------------------------------------------------
-------------------------------------------------------------------------
ROUTENUM = 1       SCHED A = X  AORT  = INFORMATION        |
ROUTEELE = 2       B =   AUTH = 1     TRANS CAP = A          |
BEARER = ONE       C =   ONHKQ = Y    TRKSIG = PRI            |
BANDWTH = 1        D =   OFFHKQ = Y    SCCID =                   |
TRUNKGRP = 40      E =   ODRNUM = 1   SVCVCE = NON     |
MASTGRP = 1        F =   APLTY = VDF   SVCN-V = NON     |
ROUTSERV = N       G =                   FACNUM =       |
|    H =                        |  
-------------------------------------------------------------------------
-------------------------------------------------------------------------
END OF LCR ROUTE DEFINITION TABLE DISPLAY

AMO-LROUT-25    ROUTE DEFINITION DETERMINATION PACKAGE

DISPLAY COMPLETED;

<

LCR Out-dial Rules, LODR

<dis-lodr;

DIS-LODR;
H500: AMO LODR STARTED

<< DISPLAY LCR OUTDIAL RULE >>

<p>| | | |</p>
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<td>ECHOALL</td>
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</table>

-------- END OF DISPLAY --------

AMO-LODR -105   AMO LCR ODR FOR SWITCHING UNIT

DISPLAY COMPLETED;

Station Configuration, SCSU

<dis-scsu

STNO = 2001;

TYPE = all

DIS-SCSU:2001,ALL;
H500: AMO SCSU STARTED

STNO 2001   NAME   DIGITAL TEST 1    ACT DEV
COS1 60   COSX   1   DIAL   -   DLIDX   -   DEVFUNC OPTI
COS2 60   SPDC1 1   DPLN   0   TA   N   PEN   1-2-37-1
LCRCOSV1 12   SPDC2 2   HTLNDX   -   TALNDX   -   PUBSCR 2001
LCRCOSV2 12   SPDI 30   ITLNDX   -   TAINS   -   ACTDE 000000000000
LCRCOSD1 12   HANDSF 1   SPEC   -   ACCLASS   -   NTYPE   NAT
LCRCOSD2 12   INS   Y   FUGRP   -   QPRIOR   -   RTYPE
DSSALERT N   DTS   N   STD   1   FXSERV N/A   HDSTYPE   NONE
NWBALNO   CDIDX   -   WINKOFF   -   SEIZE   -   DTE DL VER
CFWDY N   CFWD   N   DND   N   CALLWAIT N   VCE DL VER   0
VCP OFF   MSGWMP   -   PHONMAIL N   COMMTRP 0   DNIDSP   Y
MAINO   CUI   Y   KEYM   0   TSI   1   LOCODE   -
DCFWBUSY N   API   N   EVMS   N   EVMSIDX   0   OPTITYPE OEAHVPL
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<th>FLASH</th>
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<td></td>
<td></td>
<td>FIXED CFW1</td>
<td>FIXED CFW2</td>
<td>VAR CFW</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>STATION-HUNT</td>
<td>N</td>
<td>UCD-HUNT</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PILOT-HUNT</td>
<td>N</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>NIGHTVARIANT</td>
<td>N</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

AMO-SCSU -10 SUBSCRIBER CONFIGURATION IN THE SWU
DISPLAY COMPLETED;
# Configuring the Cisco Unified CallManager

## 6608-T1 Gateway Configuration

### Gateway Configuration

<table>
<thead>
<tr>
<th>Product</th>
<th>Cisco Catalyst 6000 T1 VoIP Gateway</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gateway</td>
<td>00/DS1-0@0DA0001C9D93A98</td>
</tr>
<tr>
<td>Device Protocol</td>
<td>Digital Access PRI</td>
</tr>
<tr>
<td>Registration</td>
<td>Registered with Cisco CallManager 172.20.32.284</td>
</tr>
<tr>
<td>IP Address</td>
<td>172.20.32.112</td>
</tr>
</tbody>
</table>

### Device Information

<table>
<thead>
<tr>
<th>MAC Address*</th>
<th>0001C9D93A98</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>0DA0001C9D93A98</td>
</tr>
<tr>
<td>Device Pool*</td>
<td>Default</td>
</tr>
<tr>
<td>Network Locale</td>
<td>United States</td>
</tr>
<tr>
<td>Media Resource Group List</td>
<td>&lt;None&gt;</td>
</tr>
<tr>
<td>Location*</td>
<td>&lt;None&gt;</td>
</tr>
<tr>
<td>AAR Group</td>
<td>&lt;None&gt;</td>
</tr>
<tr>
<td>Load Information</td>
<td></td>
</tr>
</tbody>
</table>

### Multilevel Precedence and Preemption (MLPP) Information

<table>
<thead>
<tr>
<th>MLPP Domain (e.g., &quot;0000FF&quot;)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MLPP Indication</td>
<td>Off</td>
</tr>
<tr>
<td>MLPP Preemption</td>
<td>Disabled</td>
</tr>
</tbody>
</table>

### Interface Information

<table>
<thead>
<tr>
<th>PRI Protocol Type*</th>
<th>PRI ISQ SIG T1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protocol Side*</td>
<td>User</td>
</tr>
<tr>
<td>Channel Selection Order*</td>
<td>Top Down</td>
</tr>
<tr>
<td>Channel IE Type*</td>
<td>Timeslot Number</td>
</tr>
</tbody>
</table>
### PCM Type
- **Value:** μAw

### Delay for first restart (1/8 sec ticks)
- **Value:** 32

### Delay between restarts (1/8 sec ticks)
- **Value:** 1

- **Check box:** Inhibit restarts at PRI initialization
- **Check box:** Enable status poll

### Call Routing Information
#### Inbound Calls
- **Significant Digits**
  - **Value:** All
- **Calling Search Space**
  - **Value:** Incoming Trunk
- **AAR Calling Search Space**
  - **Value:** None
- **Prefix DN**
  - **Value:** None

#### Outbound Calls
- **Calling Line ID Presentation**
  - **Value:** Default
- **Calling Party Selection**
  - **Value:** Originator
- **Called party IE number type unknown**
  - **Value:** National
- **Calling party IE number type unknown**
  - **Value:** National
- **Called Numbering Plan**
  - **Value:** ISDN
- **Calling Numbering Plan**
  - **Value:** ISDN
- **Number of digits to strip**
  - **Value:** 0
- **Caller ID DN**
  - **Value:** None
- **SMDI Base Port**
  - **Value:** 0

### PRI Protocol Type Specific Information
- **Check box:** Display IE Delivery
- **Check box:** Redirecting Number IE Delivery - Outbound
- **Check box:** Redirecting Number IE Delivery - Inbound
- **Check box:** Send Extra Leading Character In DisplayIE* ***
- **Check box:** Setup non-ISDN Progress Indicator IE Enable* ***
<table>
<thead>
<tr>
<th>Configuration</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCDN Channel Number Extension Bit Set to Zero</td>
<td>*</td>
</tr>
<tr>
<td>Send Calling Name In Facility IE</td>
<td></td>
</tr>
<tr>
<td>Interface Identifier Present</td>
<td></td>
</tr>
<tr>
<td>Interface Identifier Value</td>
<td>i</td>
</tr>
<tr>
<td>Connected Line ID Presentation (QSIG Inbound Call)</td>
<td>Default</td>
</tr>
<tr>
<td>Connected PBX Model</td>
<td>None</td>
</tr>
<tr>
<td><strong>Product Specific Configuration</strong></td>
<td></td>
</tr>
<tr>
<td>Clock Reference</td>
<td>Network</td>
</tr>
<tr>
<td>TX-Level CSU</td>
<td>0dB</td>
</tr>
<tr>
<td>FDL Channel</td>
<td>ATT 54016</td>
</tr>
<tr>
<td>Framing</td>
<td>ESF</td>
</tr>
<tr>
<td>Audio Signal Adjustment into IP Network</td>
<td>NoOpPadding</td>
</tr>
<tr>
<td>Audio Signal Adjustment from IP Network</td>
<td>NoOpPadding</td>
</tr>
<tr>
<td>Yellow Alarm</td>
<td>Bit2</td>
</tr>
<tr>
<td>Zero Suppression</td>
<td>B8ZS</td>
</tr>
<tr>
<td>Digit On Duration (50-500ms)</td>
<td>100</td>
</tr>
<tr>
<td>Interdigit Duration (50-500ms)</td>
<td>100</td>
</tr>
<tr>
<td>SNMP Community String</td>
<td>public</td>
</tr>
<tr>
<td>Disable SNMP Set operations</td>
<td></td>
</tr>
<tr>
<td>Debug Port Enable</td>
<td>✔</td>
</tr>
<tr>
<td>Hold Tone Silence Duration</td>
<td>0</td>
</tr>
<tr>
<td>Port Used for Voice Calls</td>
<td>✔</td>
</tr>
<tr>
<td>Port Used for modem Calls</td>
<td>✔</td>
</tr>
<tr>
<td>Port Used for Fax Calls</td>
<td>✔</td>
</tr>
<tr>
<td><strong>Fax and Modem Parameters</strong></td>
<td></td>
</tr>
<tr>
<td>Fax Relay Enable</td>
<td>✔</td>
</tr>
<tr>
<td>Fax Error Correction Mode Override</td>
<td>✔</td>
</tr>
<tr>
<td>Maximum Fax Rate</td>
<td>14400 bps</td>
</tr>
<tr>
<td>Parameter</td>
<td>Value</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Maximum Fax Rate</td>
<td>14400 bps</td>
</tr>
<tr>
<td>Fax Payload Size</td>
<td>20</td>
</tr>
<tr>
<td>Non Standard Facilities Country Code</td>
<td>85535</td>
</tr>
<tr>
<td>Non Standard Facilities Vendor Code</td>
<td>85535</td>
</tr>
<tr>
<td>Fax/Modem Packet Redundancy</td>
<td></td>
</tr>
<tr>
<td>NSE Type</td>
<td>Non-IOS Gateways</td>
</tr>
</tbody>
</table>

**Playout Delay Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Playout Delay</td>
<td>40</td>
</tr>
<tr>
<td>Minimum Playout Delay</td>
<td>20</td>
</tr>
<tr>
<td>Maximum Playout Delay</td>
<td>150</td>
</tr>
</tbody>
</table>

**Echo Cancellation Configuration**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Echo Tail Length (ms)</td>
<td>32 ms</td>
</tr>
<tr>
<td>Minimum ERL (clb)</td>
<td>6 clb</td>
</tr>
</tbody>
</table>

* indicates required item
** applicable to CMS-100 protocol only
*** applicable to DMS-100 protocol and DNS-250 protocol only
**** may be required to force ringback from some PEXs
### Enbloc Route Pattern Configuration

#### Route Pattern/Hunt Pilot: 2XXX
- Status: Ready

**Note:** Any update to this Route Pattern or Hunt Pilot automatically resets the associated gateway or Route/Hunt List.

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Route Pattern/Hunt Pilot*</td>
<td>2XXX</td>
</tr>
<tr>
<td>Partition</td>
<td>&lt;None&gt;</td>
</tr>
<tr>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>Numbering Plan*</td>
<td>North American Numbering Plan</td>
</tr>
<tr>
<td>Route Filter</td>
<td>&lt;None&gt;</td>
</tr>
<tr>
<td>MLPP Precedence</td>
<td>Default</td>
</tr>
<tr>
<td>Gateway or Route/Hunt List*</td>
<td>@6DA001C9D93A38</td>
</tr>
<tr>
<td>Route Option</td>
<td></td>
</tr>
<tr>
<td>Provide Outside Dial Tone</td>
<td>☑</td>
</tr>
<tr>
<td>Allow Overlap Sending</td>
<td></td>
</tr>
<tr>
<td>Urgent Priority</td>
<td></td>
</tr>
</tbody>
</table>

**Calling Party Transformations**
- Use Calling Party's External Phone Number Mask
- Calling Party Transform Mask
- Prefix Digits (Outgoing Calls)
- Calling Line ID Presentation: Default
- Calling Name Presentation: Default

**Connected Party Transformations**
- Connected Line ID Presentation: Default
- Connected Name Presentation: Default

**Called Party Transformations**
- Discard Digits: <None>
- Called Party Transform Mask
- Prefix Digits (Outgoing Calls)

**ISDN Network-Specific Facilities Information Element**
- Carrier Identification Code
- Network Service Protocol: Not Selected
- Network Service: Not Selected
- Service Parameter Name: Not Selected
- Service Parameter Value: Not Selected

### PSTN Route Pattern Configuration
### Translation Pattern for Incoming Calls

**Route Pattern/Hunt Pilot:** 91650XXXXXXXX

**Status:** Ready

Note: Any update to this Route Pattern or Hunt Pilot automatically resets the associated gateway or Route/Hunt List

#### Pattern Definition

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Route Pattern/Hunt Pilot*</td>
<td>91650XXXXXXXXX</td>
</tr>
<tr>
<td>Partition</td>
<td>&lt;None&gt;</td>
</tr>
<tr>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>Numbering Plan*</td>
<td>North American Numbering Plan</td>
</tr>
<tr>
<td>Route Filter</td>
<td>&lt;None&gt;</td>
</tr>
<tr>
<td>NLPP Precedence</td>
<td>Default</td>
</tr>
<tr>
<td>Gateway or Route/Hunt List*</td>
<td>S3/CDS1-F@SDA000T09D93A98</td>
</tr>
<tr>
<td>Route Option</td>
<td>Route this pattern</td>
</tr>
<tr>
<td></td>
<td>Block this pattern — Not Selected —</td>
</tr>
<tr>
<td>Provide Outside Dial Tone</td>
<td>☑</td>
</tr>
<tr>
<td>Allow Overlap Sending</td>
<td>☑</td>
</tr>
<tr>
<td>Urgent Priority</td>
<td>☑</td>
</tr>
</tbody>
</table>

#### Calling Party Transformations

- Use Calling Party's External Phone Number Mask: ☑
- Calling Party Transform Mask: 
- Prefix Digits (Outgoing Calls): 608527
- Calling Line ID Presentation: Default
- Calling Name Presentation: Default

#### Connected Party Transformations

- Connected Line ID Presentation: Default
- Connected Name Presentation: Default

#### Called Party Transformations

- Discard Digits: <None>
- Called Party Transform Mask: 
- Prefix Digits (Outgoing Calls): 

#### ISDN Network-Specific Facilities Information Element

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carrier Identification Code</td>
<td></td>
</tr>
<tr>
<td>Network Service Protocol</td>
<td>— Not Selected —</td>
</tr>
<tr>
<td>Network Service</td>
<td>— Not Selected —</td>
</tr>
<tr>
<td>Service Parameter Name</td>
<td>&lt;Not Exist&gt;</td>
</tr>
<tr>
<td>Service Parameter Value</td>
<td></td>
</tr>
</tbody>
</table>
**Translation Pattern Configuration**

**Translation Pattern:** 4XXX

**Status:** Ready

<table>
<thead>
<tr>
<th>Action</th>
<th>Copy</th>
<th>Update</th>
<th>Delete</th>
</tr>
</thead>
</table>

**Pattern Definition**

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Translation Pattern</td>
<td>4XXX</td>
</tr>
<tr>
<td>Partition</td>
<td>Incoming Trunk</td>
</tr>
<tr>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>Numbering Plan*</td>
<td>North American Numbering Plan</td>
</tr>
<tr>
<td>Route Filter</td>
<td>&lt;None&gt;</td>
</tr>
<tr>
<td>Calling Search Space</td>
<td>Phones</td>
</tr>
<tr>
<td>MRLP Precedence</td>
<td>Default</td>
</tr>
<tr>
<td>Route Option</td>
<td></td>
</tr>
<tr>
<td>Provide Outside Dial Tone</td>
<td>☑</td>
</tr>
<tr>
<td>Urgent Priority</td>
<td>☐</td>
</tr>
</tbody>
</table>

**Calling Party Transformations**

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use Calling Party's External Phone Number Mask</td>
<td></td>
</tr>
<tr>
<td>Calling Party Transform Mask</td>
<td></td>
</tr>
<tr>
<td>Prefix Digits (Outgoing Calls)</td>
<td></td>
</tr>
<tr>
<td>Calling Line ID Presentation</td>
<td>Default</td>
</tr>
<tr>
<td>Calling Name Presentation</td>
<td>Default</td>
</tr>
</tbody>
</table>

**Connected Party Transformations**

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connected Line ID Presentation</td>
<td>Default</td>
</tr>
<tr>
<td>Connected Name Presentation</td>
<td>Default</td>
</tr>
</tbody>
</table>

**Called Party Transformations**

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discard Digits</td>
<td>&lt;None&gt;</td>
</tr>
<tr>
<td>Called Party Transform Mask</td>
<td></td>
</tr>
<tr>
<td>Prefix Digits (Outgoing Calls)</td>
<td></td>
</tr>
</tbody>
</table>

* indicates required item.

---

**Translation Pattern for Incoming PSTN Calls**

---

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### Translation Pattern Configuration

**Translation Pattern: 8XXX**

**Status:** Ready

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pattern</td>
<td>8XXX</td>
</tr>
<tr>
<td>Partition</td>
<td>Incoming Trunk</td>
</tr>
<tr>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>Numbering Plan*</td>
<td>North American Numbering Plan</td>
</tr>
<tr>
<td>Route Filter</td>
<td>&lt;None&gt;</td>
</tr>
<tr>
<td>Calling Search Space</td>
<td>Phones</td>
</tr>
<tr>
<td>MLPP Precedence</td>
<td>Default</td>
</tr>
<tr>
<td>Route Option</td>
<td>√ Route this pattern</td>
</tr>
<tr>
<td></td>
<td>□ Block this pattern</td>
</tr>
<tr>
<td></td>
<td>— Not Selected —</td>
</tr>
</tbody>
</table>

**Calling Party Transformations**

- Use Calling Party’s External Phone Number Mask
  
- Calling Party Transform Mask
  
- Prefix Digits (Outgoing Calls)
  
- Calling Line ID Presentation
  
- Calling Name Presentation
  
**Connected Party Transformations**

- Connected Line ID Presentation
  
- Connected Name Presentation
  
**Called Party Transformations**

- Discard Digits
  
- Called Party Transform Mask 4XXX
  
- Prefix Digits (Outgoing Calls)

* indicates required item.

---

**CLIR Route Pattern Configuration**
### CNIR Route Pattern Configuration

#### Route Pattern/Hunt Pilot: 2XXX

**Status:** Update completed  
**Note:** Any update to this Route Pattern or Hunt Pilot automatically resets the associated gateway or Route/Hunt List

#### Pattern Definition

- **Route Pattern/Hunt Pilot:** 2XXX
- **Partition:** <None>
- **Description:**
- **Numbering Plan:** North American Numbering Plan
- **Route Filter:** <None>
- **MLPP Precedence:** Default
- **Gateway or Route/Hunt List:** 90/DS1-0@529A0601C9D83A80 (Edit)
- **Route Option:**
  - Route this pattern
  - Block this pattern
  - Not Selected

#### Calling Party Transformations

- **Use Calling Party's External Phone Number Mask**
- **Calling Party Transform Mask:**
- **Prefix Digits (Outgoing Calls):**
- **Calling Line ID Presentation:** Restricted
- **Calling Name Presentation:** Default

#### Connected Party Transformations

- **Connected Line ID Presentation:** Default
- **Connected Name Presentation:**

#### Called Party Transformations

- **Discard Digits:** <None>
- **Called Party Transform Mask:**
- **Prefix Digits (Outgoing Calls):**

#### ISDN Network-Specific Facilities Information Element

<table>
<thead>
<tr>
<th>Carrier Identification Code</th>
<th>Network Service Protocol</th>
<th>Network Service</th>
<th>Service Parameter Name</th>
<th>Service Parameter Value</th>
</tr>
</thead>
</table>

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Page 21 of 31
### Translation Pattern Configuration

**Translation Pattern:** 4XXX

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Translation Pattern</strong></td>
<td>4XXX</td>
</tr>
<tr>
<td><strong>Partition</strong></td>
<td>Incoming Trunk</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Numbering Plan</strong></td>
<td>North American Numbering Plan</td>
</tr>
<tr>
<td><strong>Route Filter</strong></td>
<td>(None)</td>
</tr>
<tr>
<td><strong>Calling Search Space</strong></td>
<td>Phones</td>
</tr>
<tr>
<td><strong>MLPP Precedence</strong></td>
<td>Default</td>
</tr>
<tr>
<td><strong>Route Option</strong></td>
<td>Route this pattern</td>
</tr>
<tr>
<td></td>
<td>Not Selected</td>
</tr>
</tbody>
</table>

- **Provide Outside Dial Tone:** Not selected
- **Urgent Priority:** Yes

#### Calling Party Transformations

- **Use Calling Party's External Phone Number Mask:** Yes
- **Calling Party Transform Mask:**
- **Prefix Digits (Outgoing Calls):**
- **Calling Line ID Presentation:** Default
- **Calling Name Presentation:** Default

#### Connected Party Transformations

- **Connected Line ID Presentation:** Restricted
- **Connected Name Presentation:**

#### Called Party Transformations

- **Discard Digits:**
- **Called Party Transform Mask:**
- **Prefix Digits (Outgoing Calls):**

*indicates required item.*

---

**CONR Translation Pattern Configuration**
7960 IP phone Configuration
### Firmware Load Information (leave blank to use default)

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phone Load Name</td>
<td></td>
</tr>
<tr>
<td>Module 1 Load Name</td>
<td>(Module 1 selection required)</td>
</tr>
<tr>
<td>Module 2 Load Name</td>
<td>(Module 2 selection required)</td>
</tr>
</tbody>
</table>

### Cisco IP Phone - External Data Locations (leave blank to use default)

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information</td>
<td></td>
</tr>
<tr>
<td>Directory</td>
<td></td>
</tr>
<tr>
<td>Messages</td>
<td></td>
</tr>
<tr>
<td>Services</td>
<td></td>
</tr>
<tr>
<td>Authentication Server</td>
<td></td>
</tr>
<tr>
<td>Proxy Server</td>
<td></td>
</tr>
<tr>
<td>Idle</td>
<td></td>
</tr>
<tr>
<td>Idle Timer (seconds)</td>
<td></td>
</tr>
</tbody>
</table>

### Extension Mobility (Device Profile) Information

- **Enable Extension Mobility Feature**: [ ]

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Out Profile</td>
<td>Not Selected</td>
</tr>
<tr>
<td>Log In User ID</td>
<td>&lt; None &gt;</td>
</tr>
<tr>
<td>Log In Time</td>
<td>&lt; None &gt;</td>
</tr>
<tr>
<td>Log Out Time</td>
<td>&lt; None &gt;</td>
</tr>
</tbody>
</table>

### Multilevel Precedence and Preemption (MLPP) Information

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLPP Domain</td>
<td>(e.g., &quot;0000FF&quot;)</td>
</tr>
<tr>
<td>MLPP Indication</td>
<td>Default</td>
</tr>
<tr>
<td>MLPP Preemption</td>
<td>Default</td>
</tr>
</tbody>
</table>

### Product Specific Configuration

- **Disable Speakerphone**: [ ]
- **Disable Speakerphone and Headset**: [ ]

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forwarding Delay*</td>
<td>Disabled</td>
</tr>
<tr>
<td>PC Port*</td>
<td>Enabled</td>
</tr>
<tr>
<td>Settings Access*</td>
<td>Enabled</td>
</tr>
<tr>
<td>Gratuitous ARP*</td>
<td>Enabled</td>
</tr>
<tr>
<td>PC Voice VLAN Access*</td>
<td>Enabled</td>
</tr>
</tbody>
</table>
### Directory Number Configuration

**Directory Number: 4000 (Phones)**

- **Status:** Ready
- **Note:** Any update to this Directory Number automatically resets the associated devices

#### Directory Number

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directory Number*</td>
<td>4000</td>
</tr>
<tr>
<td>Partition</td>
<td>Phones</td>
</tr>
</tbody>
</table>

#### Directory Number Settings

- **Voice Mail Profile**
  - (Choose <None> to use default)
- **Calling Search Space**
  - Phones
- **AAR Group**
  - <None>
- **User Hold Audio Source**
  - <None>
- **Network Hold Audio Source**
  - <None>
- **Auto Answer**
  - Auto Answer Off

#### Call Forward and Pickup Settings

<table>
<thead>
<tr>
<th>Setting</th>
<th>Voice Mail Destination</th>
<th>Calling Search Space</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward All</td>
<td></td>
<td>&lt;None&gt;</td>
</tr>
<tr>
<td>Forward Busy</td>
<td></td>
<td>&lt;None&gt;</td>
</tr>
<tr>
<td>Forward No Answer</td>
<td></td>
<td>&lt;None&gt;</td>
</tr>
<tr>
<td>No Answer Ring Duration</td>
<td></td>
<td>(seconds)</td>
</tr>
<tr>
<td>Call Pickup Group</td>
<td>&lt;None&gt;</td>
<td></td>
</tr>
</tbody>
</table>

#### MLPP Alternate Party Settings

- **Target (Destination)**
- **Calling Search Space**
  - <None>
- **No Answer Ring Duration**
  - (seconds)

#### Line Settings for this Device

- **Display (Internal Caller ID)**: JOHN DOE
Message Waiting Lamp Policy: Use System Policy
Ring Setting (Phone Idle): Use System Default
Ring Setting (Phone Active): Use System Default

**Multiple Call / Call Waiting Settings**
- Maximum Number of Calls*: 4 (1 - 200)
- Busy Trigger*: 2 (<= Max. Calls)

**Forwarded Call Information Display**
- Caller Name
- Caller Number
- Redirected Number
- Dialed Number

* indicates required item; changes to Line or Directory Number settings require restart.
** Ring Setting (Phone Active) applies to this line when any line on the phone has a call in progress.

**Note:**
If you are using a language other than English for Display (Internal Caller ID) or Line Text Label text, make sure the correct character set (shown below) is selected. Text displays incorrectly if the wrong character set is selected. (English characters are included in all character sets.)

Character Set: Western European (Latin 1)
### Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUCM</td>
<td>Cisco Unified CallManager</td>
</tr>
<tr>
<td>CFB</td>
<td>Call Forwarding Busy</td>
</tr>
<tr>
<td>CFNR</td>
<td>Call Forwarding No Reply</td>
</tr>
<tr>
<td>CFU</td>
<td>Call Forwarding Unconditional</td>
</tr>
<tr>
<td>CLIP</td>
<td>Calling Line (Number) Identification Presentation</td>
</tr>
<tr>
<td>CLIR</td>
<td>Calling Line (Number) Identification Restriction</td>
</tr>
<tr>
<td>CNIP</td>
<td>Calling Name Identification Presentation</td>
</tr>
<tr>
<td>CNIR</td>
<td>Calling Name Identification Restriction</td>
</tr>
<tr>
<td>COLP</td>
<td>Connected Line (Number) Identification Presentation</td>
</tr>
<tr>
<td>COLR</td>
<td>Connected Line (Number) Identification Restriction</td>
</tr>
<tr>
<td>CONP</td>
<td>Connected Name Identification Presentation</td>
</tr>
<tr>
<td>CONR</td>
<td>Connected Name Identification Restriction</td>
</tr>
<tr>
<td>CT</td>
<td>Call Transfer</td>
</tr>
<tr>
<td>PSTN</td>
<td>Public Switched Telephone Network</td>
</tr>
</tbody>
</table>
Important Information

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