

# Cisco Unified CallManager 4.0-PBX Interoperability: Alcatel 4400 Release 4.2 to a Cisco Catalyst 6608 Gateway using E1 Q.SIG with MGCP

#### Introduction

This is an application note for connectivity of Alcatel 4400 Release 4.2 PBX with Cisco Unified CallManager Release 4.0 using a Cisco 6608-E1 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 through a Cisco 6608-E1 QSIG link as MGCP Gateway.

Connectivity is achieved by using the PRI ISO QSIG E1 protocol type on the MGCP gateway and ABC-F (ISO version) as protocol type on the Alcatel 4400 PBX.

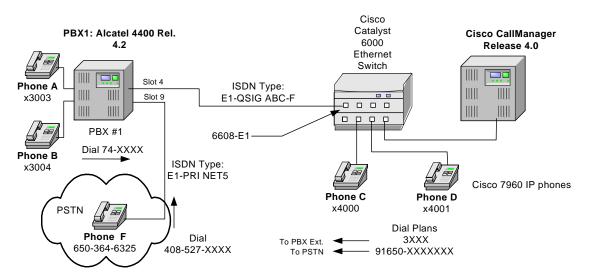
Basic Calls work in both directions with Calling/Connected Name and Calling Number features support.

Alcatel 4400 Release 4.2 PBX does not honor the Connected Number Identification Presentation feature. The Alcatel phone does not display 'Connected Number' even though Cisco Unified CallManager is sending the information in the connect message.

# **Network Topology**

Figure 1. Network Topology

#### **Basic Call Setup End-to-End Configuration**





#### Limitations

# **Calling Name and Number Feature**

When calling from Alcatel digital phone to Cisco 7960 IP phone, the Cisco IP phone displays Calling Name and Number when the call is answered. The Alcatel phone however displays connected Name only, and no Connected Number when the call is answered. Alcatel does not honor Connected Number Identification Presentation Q.SIG service even though Cisco Unified CallManager is sending the Connected Number information in the connect message.

Cisco Unified CallManager Release 4.0 does not support sending Alerting Name or Busy Name Identification information.

# System Components

# **Hardware Requirements**

- Cisco Catalyst 6000 switch with 6608-E1 Gateway
- Alcatel 4400 PBX with PRA2, 3BA23076- E1 PRI/QSIG hardware
- Cisco Unified CallManager server

#### **Software Requirements**

- Cisco Unified CallManager Release 4.0
- PBX software release 4.2

#### Features

#### **Key Features Supported**

Calling Name Identification Presentation
Calling Number Identification Presentation
Connected Name Identification Presentation

# **Key Features Not Supported**

Sending Alerting Name Identification
Sending Busy Name Identification
Updating Connected Number on Alcatel phone for Basic Calls

# Configuration

# **Configuration Sequence and Tasks**

- 1. Configure "ISO function" System Parameter
- Configure Board
- 3. Configure Digital Access Options
- 4. Configure Trunk Group
- 5. Configure Trunk Detail
- 6. T2 Access



#### **Configuration Menus and Commands**

#### Configuring the Alcatel 4400

#### Configure "ISO function" System Parameter

\compidea\System::1\Other System Param::1

Other System Param. Instance (reserved) 1 Trunk seizure via attendant True No On-hook tone detection True TrkGrp No.in ticket for transit call True VPN service False ISVPN Node No. 1 Nb Digits displayed on sets 16 Melody Ringing Type 1 Int.Call Ringing Cadence No 1 Ext.Call Ringing Cadence No 1 Executive Type Ringing Cadence No 1 Prioritary Call Cadence No 1 ISO Function True Booking B Channel True Uncontrol.Business Account Code False Business Pref.With Business No. True Project prefix With Code False Follow-Me on Remote forwarding False BC HLC Fax VG Recording Gain from an UA set 3 7 Calling Line Id.length Nb Of Secret Code Errors 0 Transfer All Business Call Types True Attendt Keep Local on Enqu.cancel False Compatibility GF True Alphanum.Char.Entering-mode2 True False Spain version 2 Delete First STAR Digit True QSIG1 (reserved) QSIG2 (reserved) 0 Stop Tie Line Supervision False Tie Line Germany Entity For Virtual Set Nb Of Business Code Errors Λ Disabled Code Duration 0 Poor ARS Rerouting memo.Dur. 20 Poor ARS Poor Route Inhibit Dur. 180 Tickets by Nb MiniMessages True Remote Numeric Gain For 4630 True Project Code In Redial Key True Cx on Progress message False Differred transm.(Swiss trick) False Send NDS NDI False Call Distributed On Att. In Order False Nb non answ. int. messages by set 16 NS\_read\_before\_ack False SNCM 0



#### **Configure Board**

Interface type must be set to PRA2 \compidea\Shelf::0\Board::4 Board Board Address Interface Type PRA2 Administrative status Enabled Usage State Busy Enabled Operational State Main/Standby State Main (Master) Number Of Sets Being Connect. Remote Shelf Address 255 Remote Board Address 255 255 Synchronisation Priority IO2 With SPB NO AUXU Parameters 1 None AUXU Parameters 2 None AUXU Parameters 3 None AUXU Parameters 4 None CRC4 YES Country Protocol Type Default Time Slots\0 0 Time Slots\1 1 Time Slots\2 1 Time Slots\3 1 Time Slots\4 1 Time Slots\5 1 Time Slots\6 Time Slots\7 1 Time Slots\8 Time Slots\9 1 Time Slots\10 1 Time Slots\11 1 Time Slots $\12$ 1 Time Slots\13 1 Time Slots\14 1 Time Slots\15 1 Time Slots\16 Time Slots\17 1 Time Slots\18 1 Time Slots $\19$ 1 Time Slots\20 1 Time Slots\21 1 Time Slots\22 1 Time Slots\23 1 Time Slots\24 Time Slots\25 1 Time Slots\26 1 Time Slots\27 1 Time Slots\28 1 Time Slots\29 1 Time Slots\30 1 Time Slots\31 1 Voice-->Data TS YES SU shelf Type 2 PCM Shelf DECT Location area number 255 Send Init Dynamic Msg False Param By Default True Clock Mode Internal CPU with Optimized B Channel Access NΟ



```
Board with DTM
                                                                     False
Incidents Teleservice
                                                                     YES
VG Recording Max.Duration
                                                                     \cap
DASS2 Simulate Network
                                                                     NO
DPNSS Layer 2 Address
                                                                     100
ISDN Board Layer 2 Parameters\Retransmission Timer
ISDN Board Layer 2 Parameters\TEI Identity Check Timer
ISDN Board Layer 2 Parameters\Polling Timer
                                                                     1000
ISDN Board Layer 2 Parameters\Nb_Of_Retransmission
                                                                     3
ISDN Board Layer 2 Parameters\Max Frame Size (Bytes)
                                                                     260
ISDN Board Layer 2 Parameters\Window Size In Frames SAPI S T0
                                                                     1
ISDN Board Layer 2 Parameters\Window Size In Frames SAPI P T0
                                                                     3
ISDN Board Layer 2 Parameters\Window Size In Frames SAPI S T2
                                                                     7
ISDN Board Layer 2 Parameters\Window Size In Frames SAPI P T2
                                                                     7
Number of configurated ports
Associated CPU
                                                                     255
Number of configurated El ports
                                                                     8
Synchronisation mode
                                                                     Adaptative
In Band Signalling
                                                                     NΟ
Passive board
                                                                     NO
SS7 signalling
                                                                     NO
PRA7 TS signalling
                                                                     16
ISDN T2 on PRA7 board
                                                                     NO
Use Data Compression
                                                                     NΟ
Mutual Aid
                                                                     YES
LIO Daughter Board
                                                                     COMP6
INTIP Daughter Board
                                                                     GIP6x1
Tone on Board
                                                                     R2 Tone
Number of Used Compressors
                                                                     0
GNISC in Rack
                                                                     255
GNISC in position
                                                                     255
Usage State
                                                                     Slave
Atm address
TS used on PCM 0
                                                                     Λ
TS used on PCM 1
                                                                     0
TS used on PCM 2
                                                                     0
TS used on PCM 3
                                                                     0
TS used on PCM 4
TS used on PCM 5
                                                                     0
TS used on PCM 6
                                                                     0
TS used on PCM 7
                                                                     0
Daughter board equipped
                                                                     NO
Nb of Compressors for Gateway
                                                                     0
Nb of Compressors for IP Devices
                                                                     0
Mode
                                                                     Gateway IP
Voice Guide Language Index
CLIP Signalization
                                                                     No CLIP
IVR Protocol
                                                                     No IVR Protocol
4615 Present
                                                                     NO
LIOE coupler 1 address
                                                                     255
LIOE coupler 2 address
                                                                     255
Associated BBC2 coupler
                                                                     255
Associated BBC2 access
                                                                     255
Board IP Version
                                                                     IP Default
Use of volume in system
                                                                     YES
Local volume (dB)
Network recording use
                                                                     False
Remote node number
                                                                     255
```



#### **Configure Digital Access Options**

Network mode must be set to Yes for (Master/Network) or No- (Slave/User). Access Type must be set to T2.

\compidea\Shelf::0\Board::4\Digital Access::0

Digital Access T0/T2 Access No. 0 Access Type Т2 Used Access YES Synchronisation Priority 255 Network Mode YES Max Nb Of Used B Channels 30 Max\_Nb\_Of\_Compressed\_B\_Channels 0 Nb Of Signalization TS 1 TieLine Mode YES With Alarm NO Access Type S0 NO Reserved1 NO NO Reserved2 Network Date Time Update NO YES CRC4 Port Class NOT SIG Multiframe Type SF Short Haul 0 to 35 meters Line Type Pulses Encoding AMI Retransmission Timer 100 TEI Identity Check Timer 100 Polling Timer 1000  ${\tt Nb\_Of\_Retransmission}$ 3 Max Frame Size (Bytes) 260 Window Size In Frames SAPI S 7 Window Size In SAPI P B Channel Rate 64K

# **Configure Trunk Group**

Q931 signal variant is used to set the protocol type to ABC-F

\compidea\Trunk Groups::1

Trunk Groups Trunk Group Id Т2 Trunk Group Type Trunk Group Name PRI-ABCF Node number 1 Transcom Trunk Group False Auto.reserv.by Attendant False Overflow trunk group No. -1 Tone on seizure True Private Trunk Group False Paging Trunk Group False Paging Table Id -1 NDDI Paging Signalization Security Patrol False ABC-F Q931 signal variant Operator Id ANSI SS7 signal variant No variant



Number Compatible With Prefix Sending Number Of Digits To Send Channel selection type Remote Network Shared Trunk Group T.line Calling last dig.length auto.DTMF dialing on outgoing call T2 Specificity Public Network Category DDI transcoding Special Services Can support UUS in SETUP Register Signalling Implicit Priority\Activation mode Implicit Priority\Priority Level Preempter	-1 False 4 Quantum 15 False 0 NO None 0 False Nothing True Decadic/MF Q23 0 0 NO
	ŭ

# **Configure Trunk Detail**

\compidea\Trunk Groups::1\Trunk Group::1

Trunk Group Instance (reserved) Trunk Group Type Public Network Ref.	1 T2
Dialling end to end DTMF end to end signal. Paying Incoming Calls TS Permanently assigned Min. Nb.of digits on seize Signal.with access code Trunk group used in DISA	NO NO NO O NO NO
DISA Secret Code VG for non-existent No. Routing To Executive Trunk Category Id Nb of digits unused (ISDN) B Channel Choice Channels Reserved By Attend. Dissuasion For ACD DTO joining Enquiry Call On B Channel DDI Mode Automated Attendant Calling party Rights category Entity Number TS Overflow	YES NO 19 4 YES 0 NO NO NO NO NO O YES
Number To Be Added Supervised by Routing Access Cluster Id VPN Cost Limit for Incom.Calls Immediat Trk Listening For VPN Call VPN TS % Csta Monitored Max.% of trunks	NO -1 0 YES 50 NO 0



Charge Calling And ADN Creation Ratio analog.to ISDN tax	NO
Collect Calls Allowed	YES
Priority of Call	NO
PCM Network Mode	NO
LogicalChannel	115 & 1731
TS Distribution on Accesses	YES
Use Split Acces	NO
Heterogeneous Remote Network	NO
Barring mode	Not barred
ARS class of service	31
Megacom Service	NO
SDN Service	NO
Quality profile for voice on IP	Profile #1
IP compression type	Default
Use of volume in system	YES
Local volume (dB)	0
External Access Server	NO
Mcdu Trk MonitCsta	
Announcement for Dialtone	NO
Announcement for Ringtone	NO
Private to Public Overflow	YES

# T2 Access

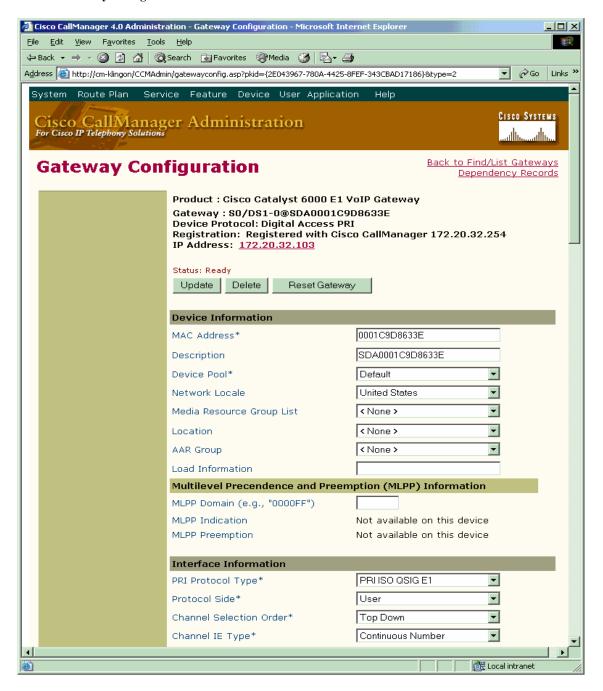
\compidea\Trunk Groups::1\T2/T1/T0 Access::0-4-0

T2/T1/T0 Access Physical Address Access Type	0-4-0 T2
Access Cluster Id	-1
Time Slots T2	
	0111111111111111011111111111111
11	
Time Slots T0	011
Time Slots T1 CCS	0111111111111111111111111
Time Slots Virtual	01111110000000
DLCI	16
Committed Information Rate	48
Extended Information Rate	64
CIR Measurement Interval	10
Support Time Slot Address	
ISDN Compression Number	
Release Support Timer (100ms)	0
Protection Timer (1mn)	0

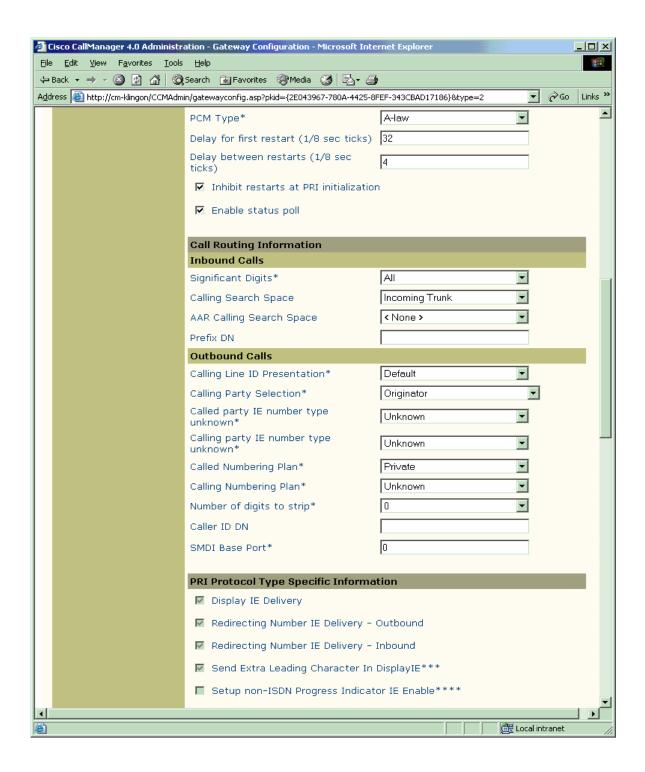


# Configuring Cisco Unified CallManager

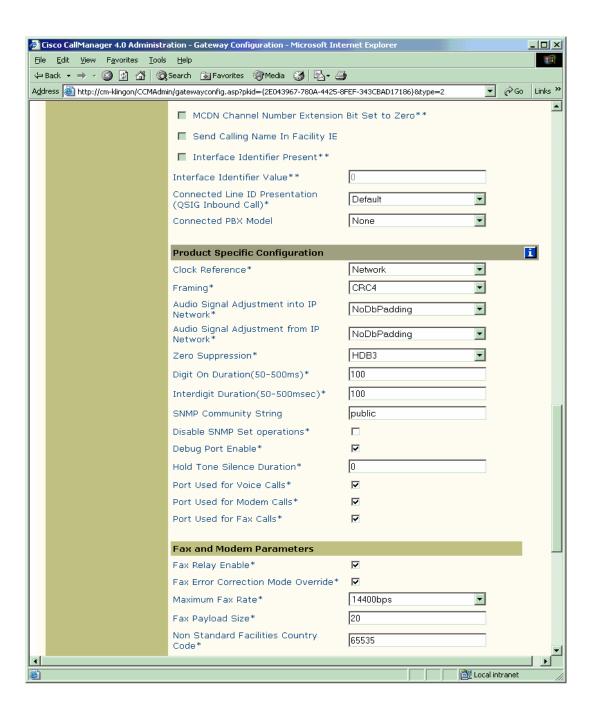
#### 6608-E1 Gateway Configuration



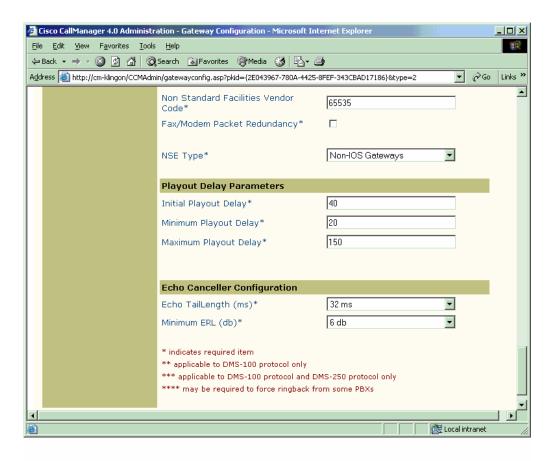






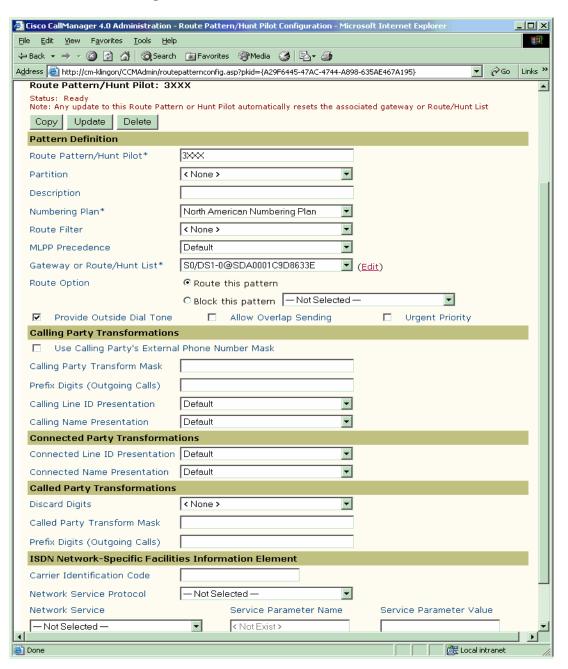






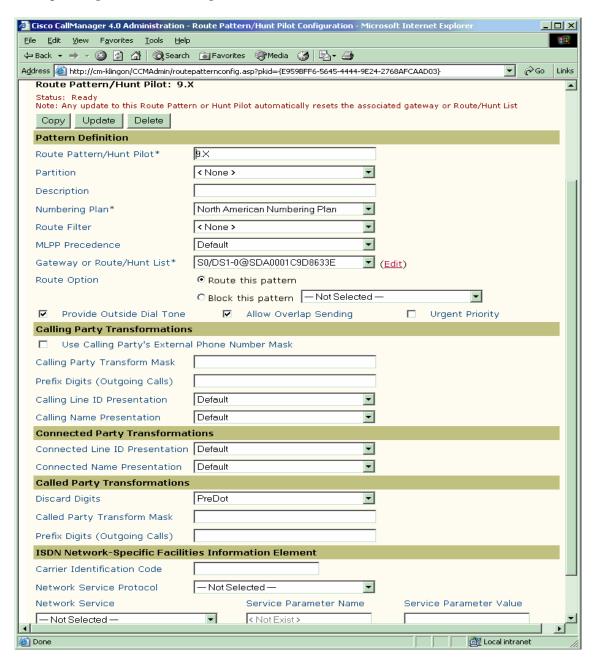


# **Enbloc Route Pattern Configuration**



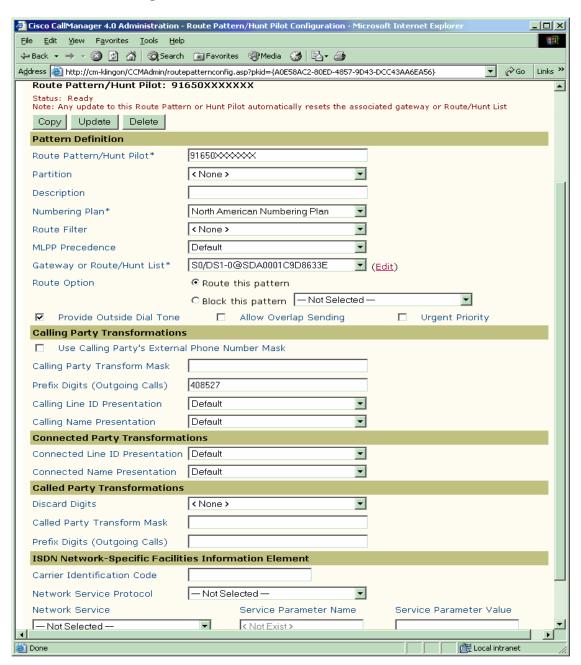


# **Overlap Sending Route Pattern Configuration**



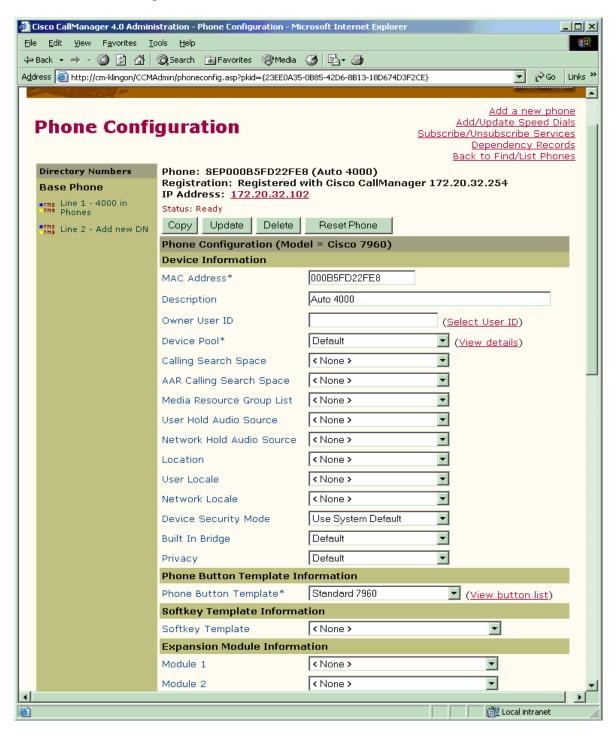


# **PSTN Route Pattern Configuration**

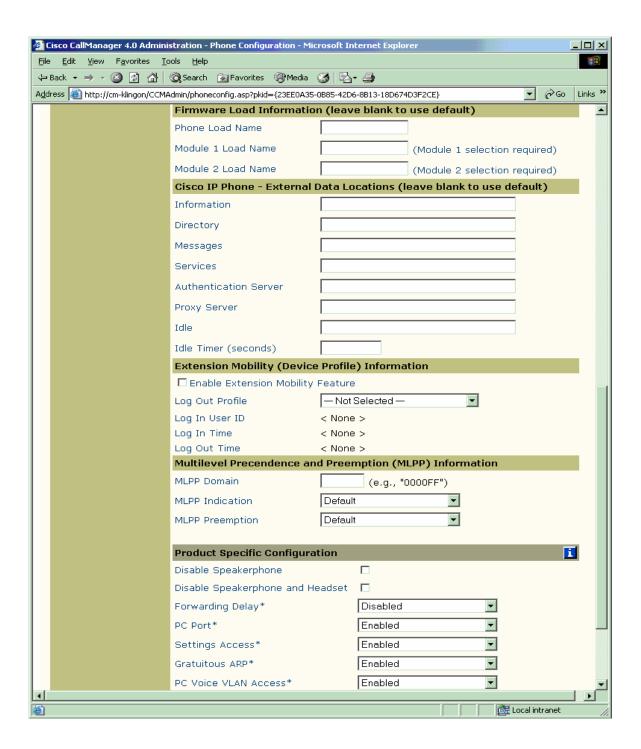




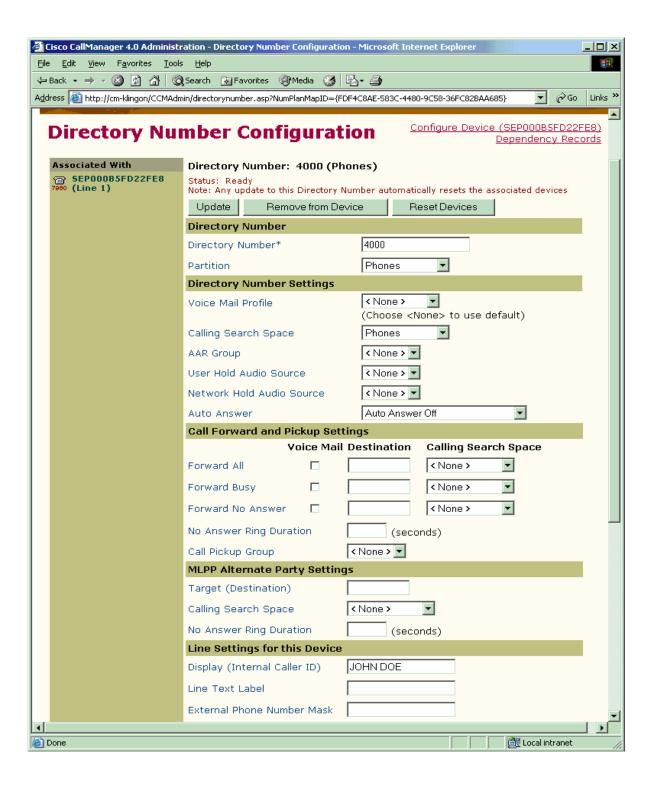
# Cisco IP Phone 7960 Configuration



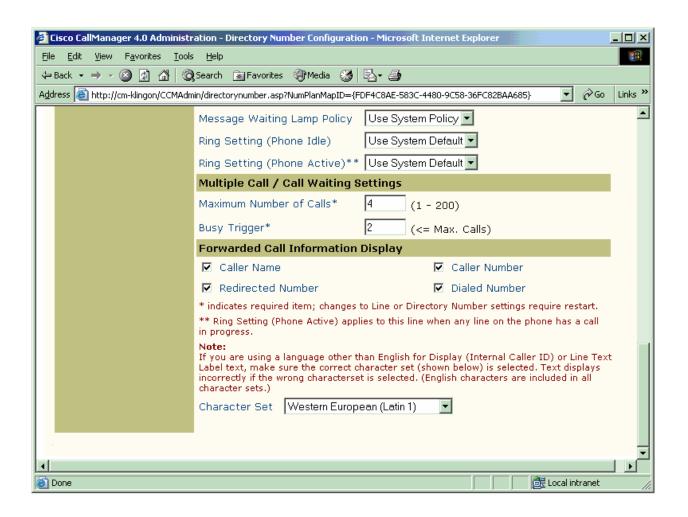














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