

Cisco Unified CallManager 4.0-PBX Interoperability: Alcatel 4400 Release 4.2 PBX to a Cisco 6608 Gateway using E1 PRI EURO with MGCP

Introduction

This is an Application Note for Connectivity of Alcatel 4400 Release 4.2 private branch exchange (PBX) with Cisco Unified CallManager Release 4.0 using Cisco Catalyst 6000 Ethernet Switch 6608-E1 primary rate interface (PRI) voice gateway as Media Gateway Control Protocol (MGCP) Gateway.

The Network Topology diagram shows the test set-up for end-to-end interoperability with the CMM connected to the PBX via 6608-E1 PRI voice gateway as MGCP Gateway.

Connectivity is achieved by using the European PRI protocol type on the MGCP gateway and all countries Integrated Services Digital Network (ISDN) (European Telecommunication Standards Institute [ETSI]) protocol type on the Alcatel 4400 PBX.

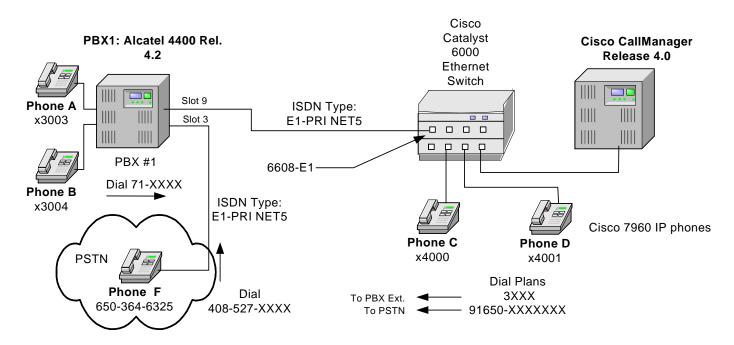
Basic Calls worked fine in both directions with Calling Number features support.

Alcatel 4400 Release 4.2 PBX does not support Calling Name delivery and presentation features for ISDN PRI links.

CCM 4.0 does not support sending Connected Number information for PRI links.

Network Topology

Basic Call Setup End-to-End Configuration





Limitations

Calling Name and Number feature.

Calling Name delivery and presentation features are not supported by the Alcatel 4400 PBX for ISDN PRI links.

CCM 4.0 Release does not support sending Connected Number information in the connect message.

When calling from Alcatel digital phone to Cisco 7960 IP phone, the Cisco IP phone displays Calling Number when the call is answered.

Alcatel phone however displays trunk name only, No connected Name or Number when the call is answered.

When calling from Cisco 7960 IP phone to Alcatel digital phone, Calling/Called Number is displayed on both phones after the call is answered as expected.

System Components

Hardware Requirements

Cisco Hardware

Cisco Catayst 6000 Ethernet Switch with 6608-E1 Gateway

Cisco Unified CallManager 4.0

Alcatel 4400 PBX Hardware

Hardware: BPRA2, 3BA23074ABAC03- E1 BRI/PRI

Software Requirements

Cisco IOS Software Release

Not Applicable

Alcatel 4400 PBX Software Release

Software Version 4.2

Cisco Unified CallManager Release

Unified CallManager 4.0

Features

Key features supported

Calling Number Identification Presentation

Key features not supported

Connected Number Identification delivery is not supported by Cisco Unified CallManager 4.0

Calling Name delivery and presentation features are not supported by the Alcatel $4400\ PBX$

Configuration

Configuration Sequence and Tasks

Configure in the following sequence:

- 1. Configure Board
- 2. Configure Digital Access Options



- **3.** Configure Trunk Group
- 4. Configure Trunk Detail

Configuring the Configuring the Alcatel 4400 PBX

Configure Board

Interface type must be set to BPRA2

\compidea\Shelf::0\Board::9

Board Board Address Interface Type Administrative status Usage State Operational State Main/Standby State Number Of Sets Being Connect. Remote Shelf Address Remote Board Address Synchronisation Priority IO2 With SPB AUXU Parameters 1 AUXU Parameters 2 AUXU Parameters 3 AUXU Parameters 4 CRC4 Country Protocol Type Time Slots\0 Time Slots\1 Time Slots\2 Time Slots\3 Time Slots $\setminus 4$ Time Slots\5 Time Slots\6 Time Slots\7 Time Slots\8 Time Slots\9 Time Slots\10 Time Slots\11 Time Slots\12 Time Slots\13 Time Slots $\14$ Time Slots\15 Time Slots\16 Time Slots\17 Time Slots\18 Time Slots\19 Time Slots\20 Time Slots\21 Time Slots\22 Time Slots\23 Time Slots\24 Time Slots\25 Time Slots\26 Time Slots $\27$

Time Slots\28

Time Slots\29

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
                                                                       NO
Board with DTM
                                                                       False
Incidents Teleservice
                                                                       YES
VG Recording Max.Duration
DASS2 Simulate Network
                                                                       NΟ
DPNSS Layer 2 Address
ISDN Board Layer 2 Parameters\Retransmission Timer
                                                                       100
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
                                                                       7
ISDN Board Layer 2 Parameters\Window Size In Frames SAPI S T2
ISDN Board Layer 2 Parameters\Window Size In Frames SAPI P T2
                                                                       7
Number of configurated ports
                                                                       4
Associated CPU
                                                                       255
Number of configurated El ports
                                                                       8
Synchronisation mode
                                                                       Adaptative
In Band Signalling
                                                                      NΟ
Passive board
                                                                       NΟ
SS7 signalling
                                                                       NO
PRA7 TS signalling
                                                                       16
ISDN T2 on PRA7 board
                                                                       NO
Use Data Compression
                                                                      NO
Mutual Aid
                                                                       YES
LIO Daughter Board
                                                                       COMP6
INTIP Daughter Board
                                                                       GIP6x1
Tone on Board
                                                                       R2 Tone
Number of Used Compressors
GNISC in Rack
                                                                       255
GNISC in position
                                                                       255
Usage State
                                                                       Slave
Atm address
TS used on PCM 0
                                                                       0
TS used on PCM 1
                                                                       0
TS used on PCM 2
                                                                       0
TS used on PCM 3
                                                                       0
TS used on PCM 4
                                                                       0
TS used on PCM 5
                                                                       Λ
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
```



SS7 signal variant

```
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::9\Digital Access::0
Digital Access
T0/T2 Access No.
                                                                      0
                                                                     Т2
Access Type
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
                                                                     YES
TieLine Mode
With Alarm
                                                                     NO
Access Type S0
                                                                     NO
Reserved1
                                                                     NO
Reserved2
                                                                     NO
Network Date Time Update
                                                                     NO
CRC4
                                                                     YES
Port Class
                                                                     NOT SIG
Multiframe Type
                                                                     SF
Line Type
                                                                     Short Haul 0 to 35 meters
Pulses Encoding
                                                                     AMI
Retransmission Timer
                                                                     100
TEI Identity Check Timer
                                                                     100
Polling Timer
                                                                     1000
Nb_Of_Retransmission
Max Frame Size (Bytes)
                                                                     260
Window Size In Frames SAPI S
                                                                      7
Window Size In SAPI P
                                                                     7
B Channel Rate
                                                                     64K
Configure Trunk Group
Q931 signal variant is used to set the protocol type to ISDN PRI
\compidea\Trunk Groups::4
Trunk Groups
Trunk Group Id
                                                                     4
Trunk Group Type
                                                                     Т2
Trunk Group Name
                                                                     PRI-ISDN
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
Q931 signal variant
                                                                     ISDN all countries
Operator Id
                                                                     ANSI
```

Ω

No variant



Configure Trunk Detail
\compidea\Trunk Groups::4\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 DISA Secret Code	NO NO NO NO O NO
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 Number To Be Added	YES NO 16 0 YES 0 NO NO NO NO O YES
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 Charge Calling And ADN Creation	NO -1 0 YES 50 NO 0 NO



Ratio analog.to ISDN tax Collect Calls Allowed YES Priority of Call NO PCM Network Mode NO LogicalChannel 1__15 & 17__31 TS Distribution on Accesses YES Use Split Acces NO Heterogeneous Remote Network NO Barring mode Not barred ARS class of service 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) Λ External Access Server NO Mcdu Trk MonitCsta Announcement for Dialtone NO Announcement for Ringtone NO Private to Public Overflow YES

T2 Access

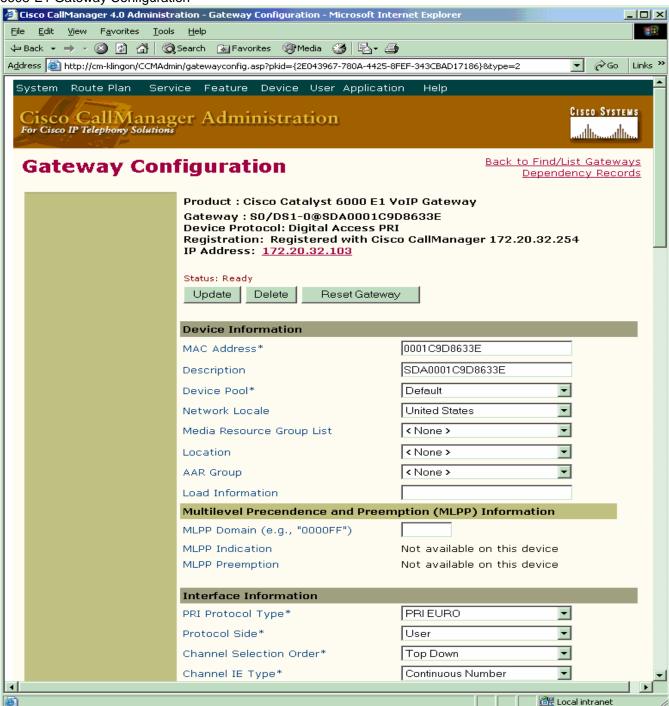
\compidea\Trunk Groups::4\T2/T1/T0 Access::0-9-0

T2/T1/T0 Access 0-9-0 Physical Address Access Type Т2 Access Cluster Id -1 Time Slots T2 0111111111111111011111111111111 11 Time Slots T0 Time Slots T1 CCS 011111111111111111111111111111 Time Slots Virtual 01111110000000 DLCT 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

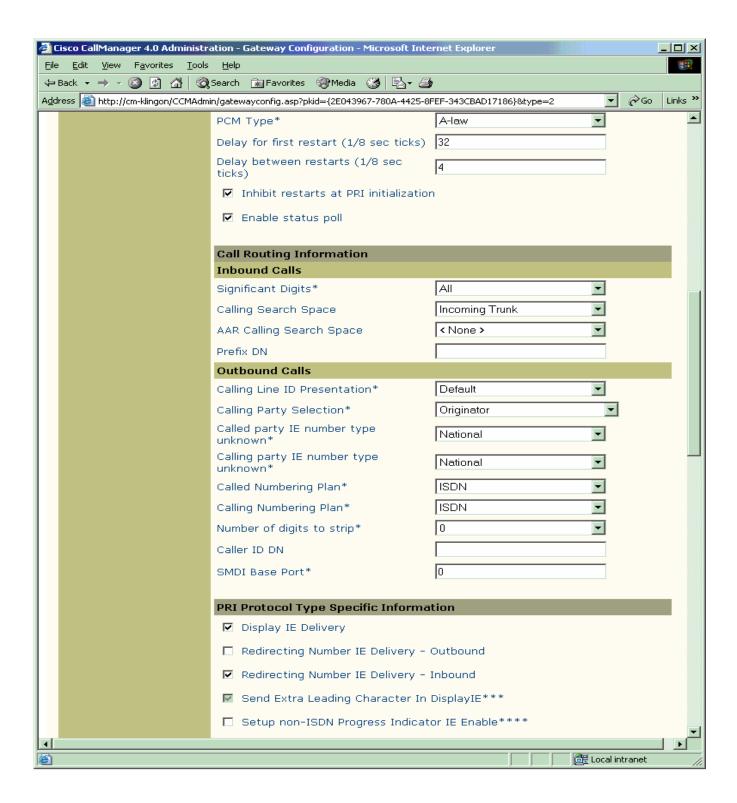


Configuring Cisco Unified CallManager

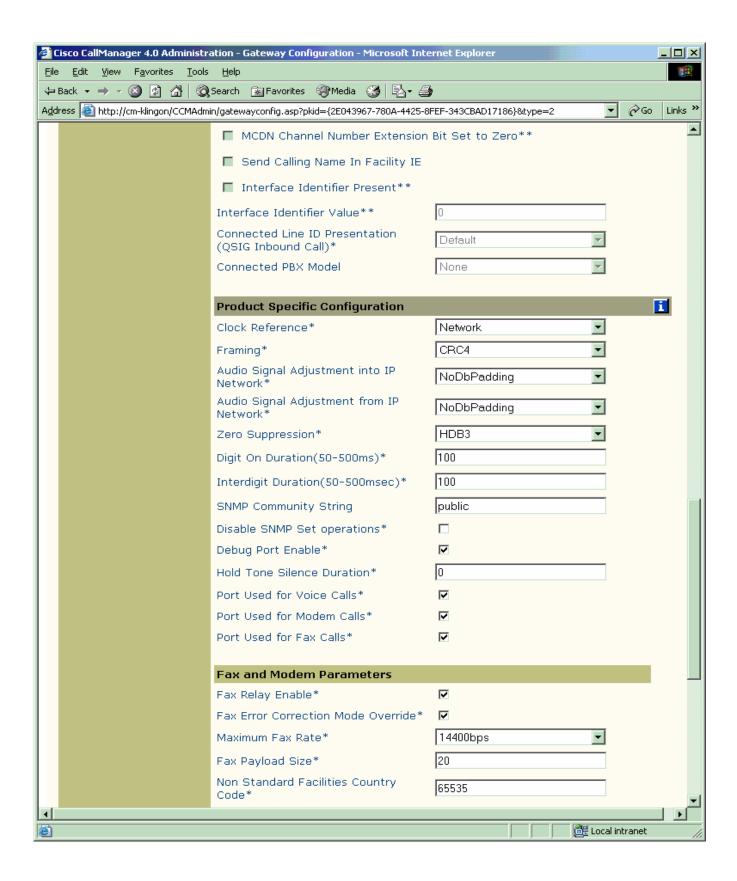
6608-E1 Gateway Configuration



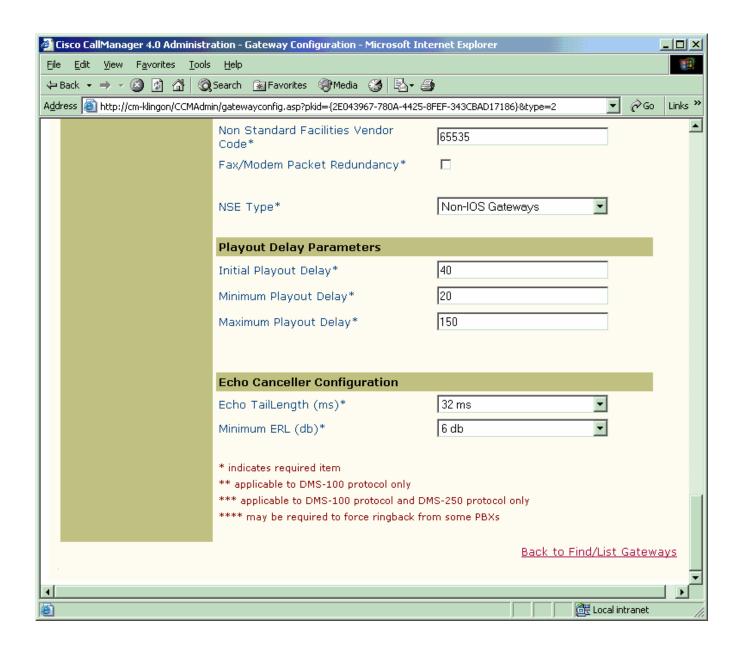






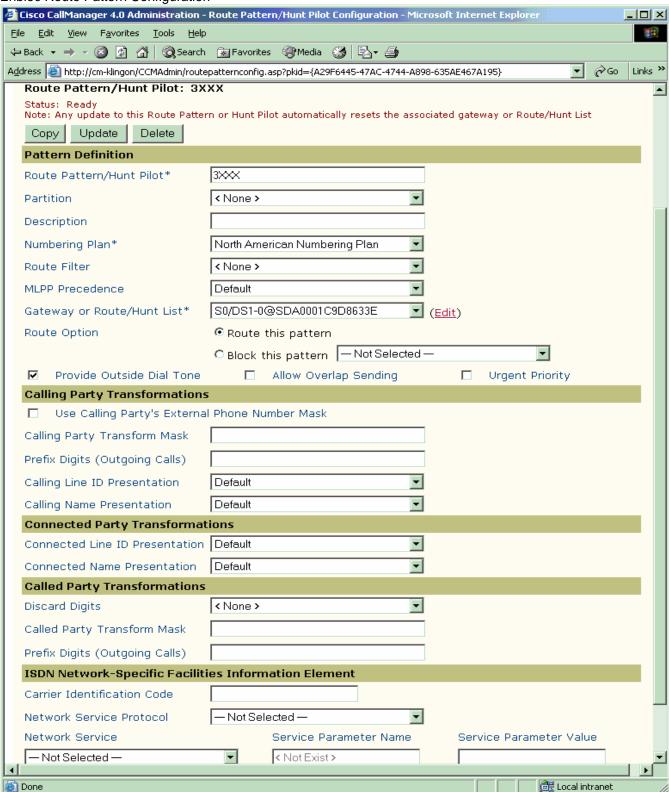






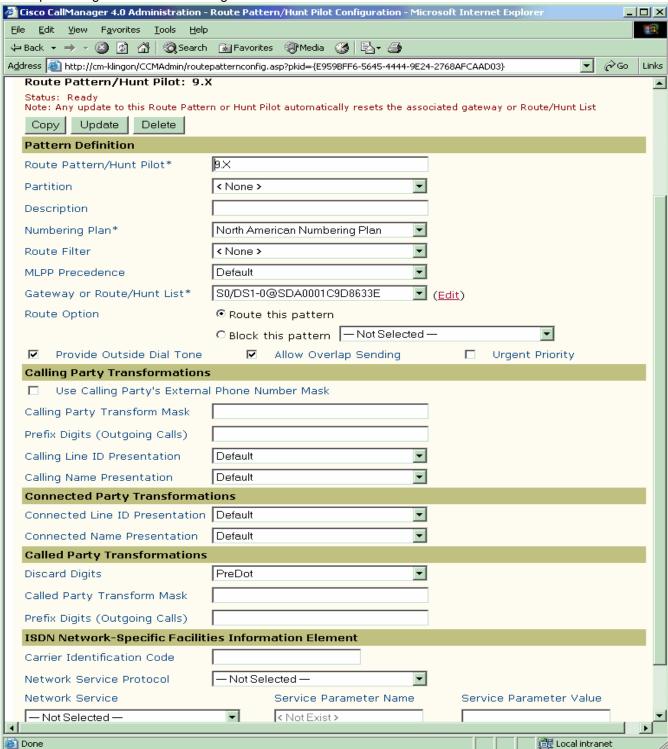


Enbloc Route Pattern Configuration



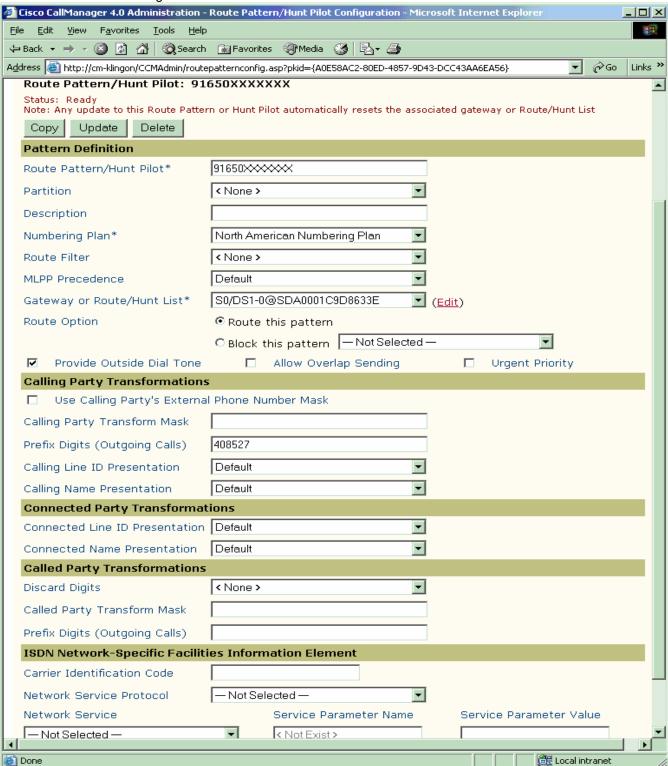


Overlap Sending Route Pattern Configuration



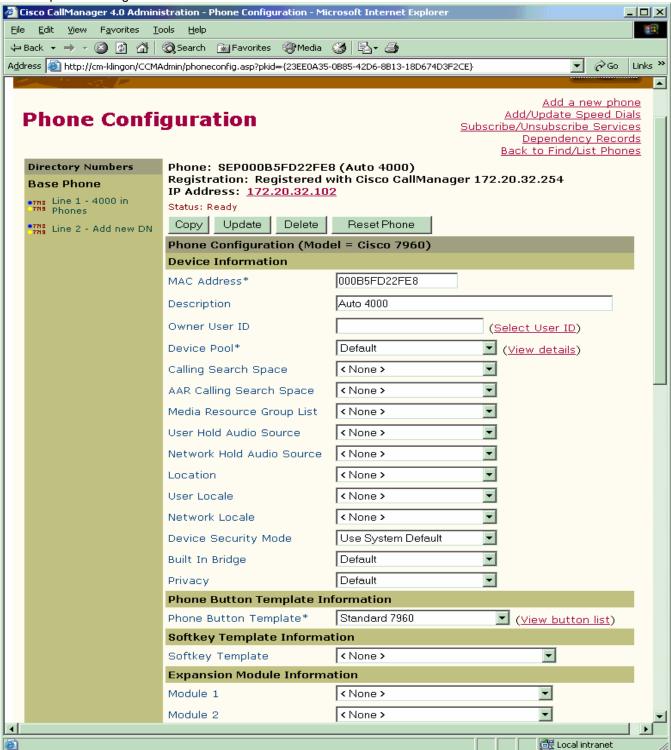


PSTN Route Pattern Configuration

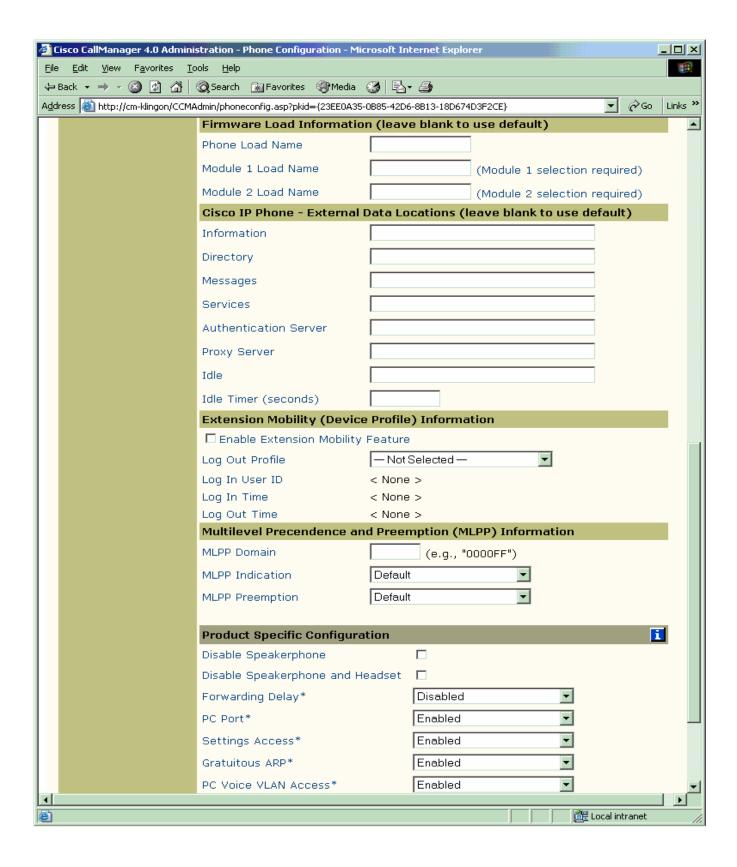




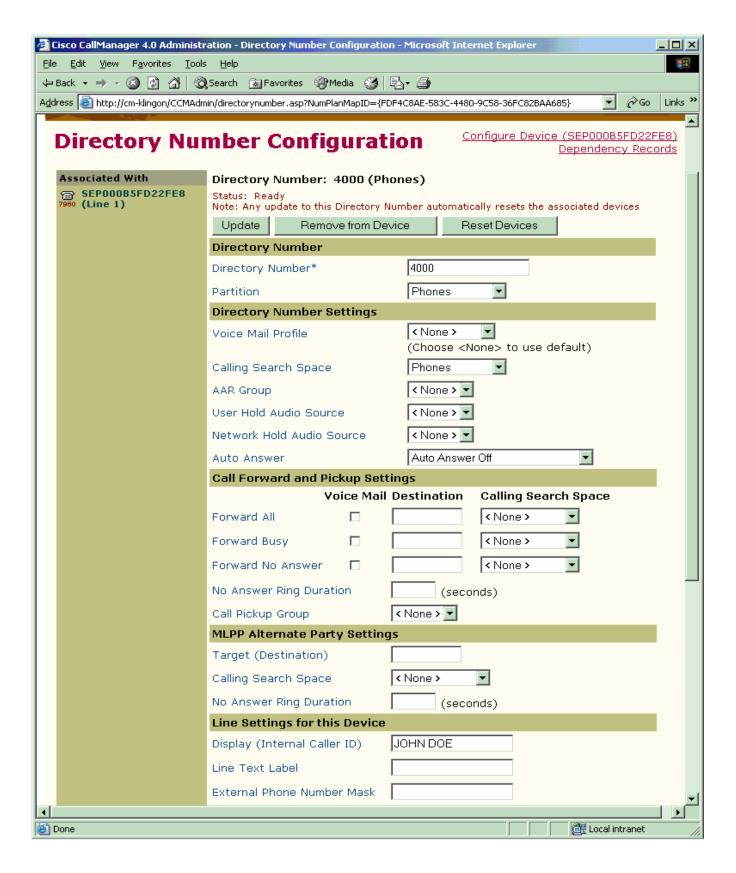
7960 IP phone Configuration



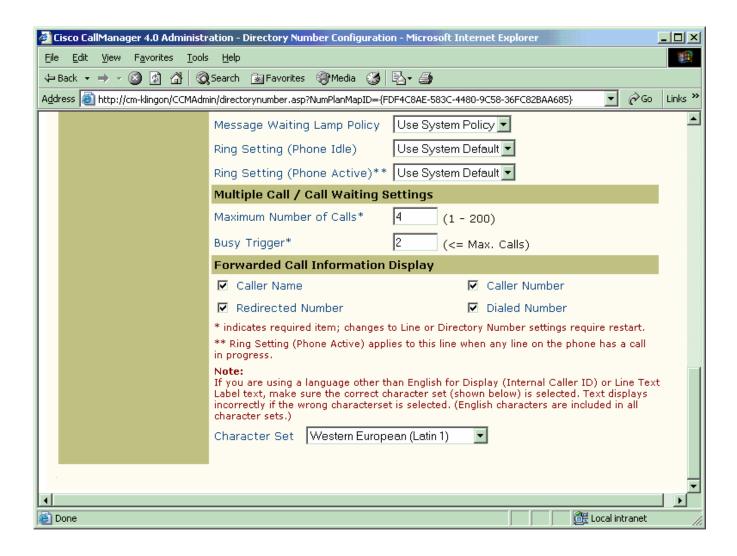












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Corporate Headquarters

Cisco Systems, Inc. 170 West Tasman Drive San Jose, CA 95134-1706 USA www.cisco.com Tel: 408 526-4000

800 553-NETS (6387) Fax: 408 526-4100

European Headquarters

Cisco Systems International Haarlerbergpark Haarlerbergweg 13-19 1101 CH Amsterdam

www-europe.cisco.com Tel: 31 0 20 357 1000 Fax: 31 0 20 357 1100

The Netherlands

Americas Headquarters

Cisco Systems, Inc. 170 West Tasman Drive San Jose, CA 95134-1706

USA

www.cisco.com Tel: 408 526-7660 Fax: 408 527-0883

Asia Pacific Headquarters

Cisco Systems, Inc. Capital Tower 168 Robinson Road #22-01 to #29-01 Singapore 068912 www.cisco.com

Tel: +65 317 7777 Fax: +65 317 7799

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