

Cisco Unified CallManager 5.0 and Cisco Emergency Responder 1.3 - PBX Interoperability: Nortel Succession PBX with Cisco 3845 T1 QSIG as an MGCP Gateway

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Table of Contents

Introduction	2
Network Topology	3
Limitations	
System Components	3
Hardware Requirements	
Software Requirements	3
Features	
Configuration	
Cisco Unified CallManager Configuration	
Cisco Emergency Responder Configuration	40
Nortel CS1000M with Succession 4.0 Software Release PBX Configuration	
Acronyms	

Note: Cisco CallManager is now known as Cisco Unified CallManager in release 4.0 and later releases.



Introduction

The following is an Application Note for Interoperability of a Cisco Unified CallManager 5.0, Cisco Emergency Responder 1.3 and Cisco 3845 with CAMA interface and T1-QSIG trunk with a Nortel Succession PBX interconnected via VWIC-2MFT-T1.

Test emergency 911 call from a PBX digital station was routed to the T1 QSIG trunk, of the Cisco 3845 MGCP gateway, and was correctly associated to the appropriate Emergency Response Location. The call was connected through the Cisco 3845 CAMA trunk to the PSAP Emulator. The Emergency Response Location associated the ten digit DID call back number (ELIN) correctly and sent it to the PSAP, audio connection was also achieved. The PBX digital station was then disconnected.

A return call was originated from an incoming trunk (PSTN side) in the same Cisco Unified CallManager Partition. The number dialed was the DID digits of the 10 digit call back number sent to the PSAP on the previous 911 call (ELIN number). The call was routed through to the PBX digital station that had originated the E911 call. The call was disconnected and an alternate trunk was used to dial the same DID number and the call was routed through, again, to the PBX digital station that had originated the E911 call.

Test emergency 911 calls were made from each PBX digital station and Cisco IP phone. All calls were confirmed to select its associated Emergency Response Location and the associated 10 digit DID call back number. In each case, the call was disconnected and the call back number was confirmed to reach the phone that had originated the E911 call.

Emergency 911 calls made from a Nortel Succession PBX utilizing a T1 QSIG trunk configured as ISO, associates with the correct Emergency Response Location and routes to the associated PSAP with the correctly formatted 10 digit DID call back number.

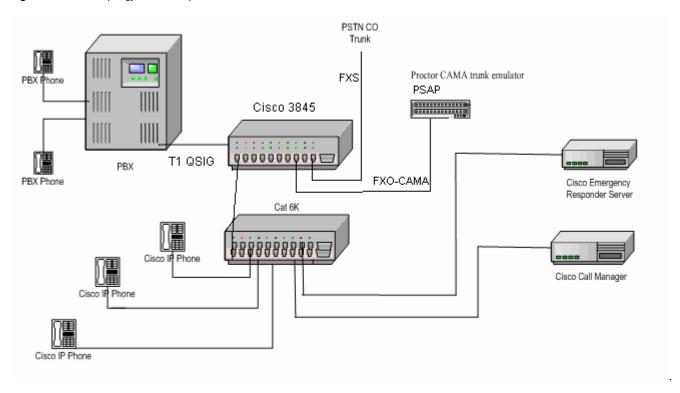
The call back DID number routes the return call to the correct phone that had originated the E911 call from the PBX digital phone.

Figure 1 shows the test set-up for interoperability between the Cisco Unified CallManager and Cisco Emergency Responder connected to the PBX via a T1 QSIG trunk using Cisco3845 MGCP Gateway.



Network Topology

Figure 1. Network Topology or Test Setup



Limitations

Unique DID numbers must be used to associate with each Emergency Response Location to allow the return call if the 911 caller is disconnected.

Each available calling party that might dial 911 from the PBX side must have that calling party number configured in the Manually Configured Phones screen of the Cisco Emergency Responder.

System Components

Hardware Requirements

Cisco Hardware

Cisco 3845 Gateway with NM-HD/VWIC-2MFT-T1 (QSIG trunk) and NM-HD-V2/VIC2-4FXO (CAMA trunk)

Cisco Catalyst 6x00 switch

Cisco Unified CallManager

Cisco Emergency Responder

Nortel Succession PBX

Software Requirements

Cisco IOS Software releases "c3845-ipvoice-mz.123-14.T4".

PBX Software: Version 2121 Release 4.0



Cisco Unified CallManager 5.0 (1.51-346)

Cisco Emergency Responder 1.3 (0.105)

Features

Calling Number

E911 ERL DID number passed to PSAP

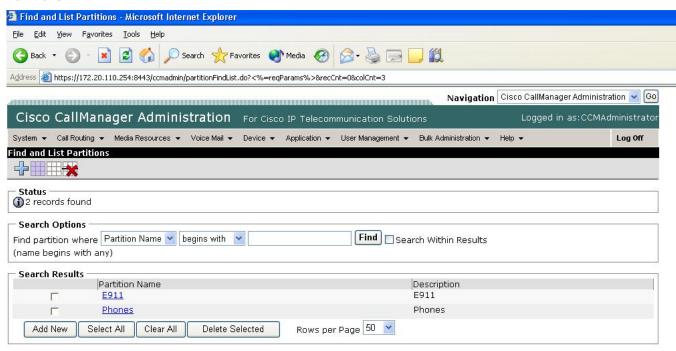
Incoming DID calling to disconnected 911 originating caller



Configuration

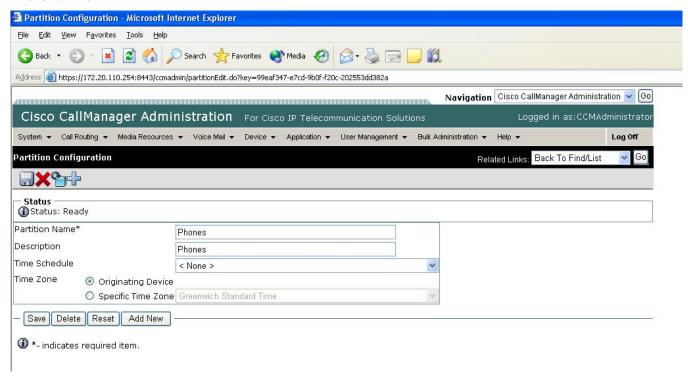
Cisco Unified CallManager Configuration

Partitions



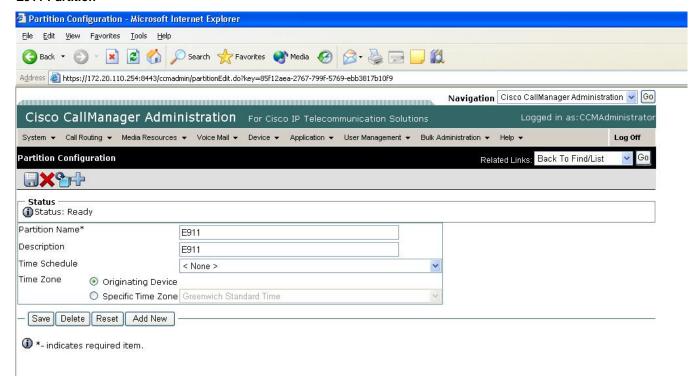


Phone Partition

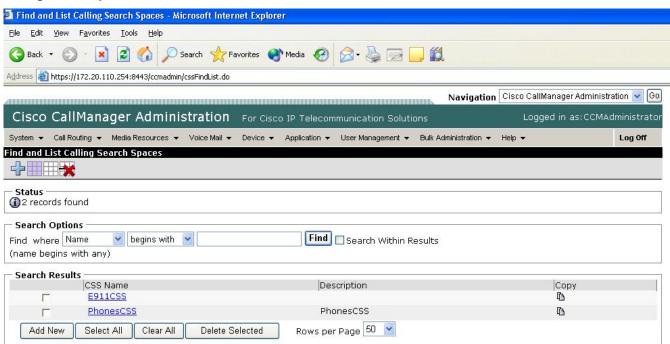




E911 Partition

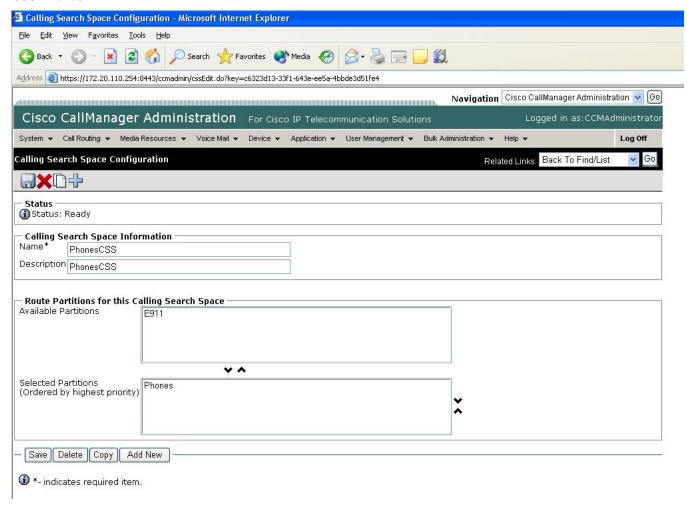


Calling Search Space



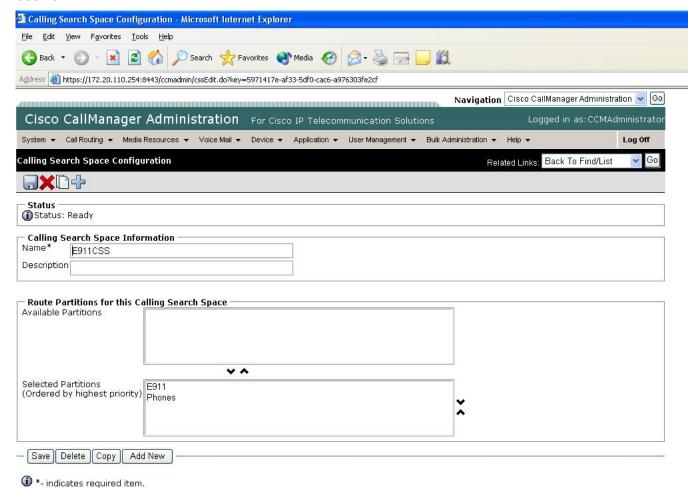


CSS Phones



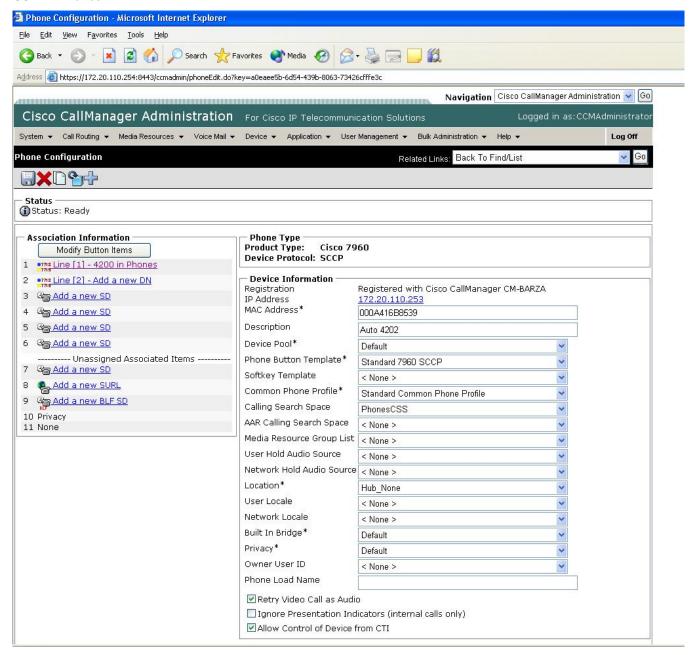


CSS E911

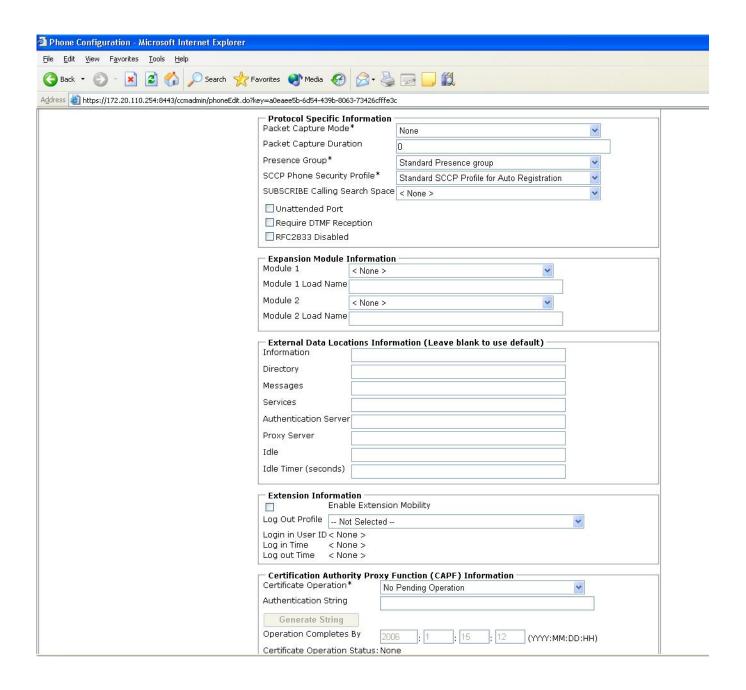




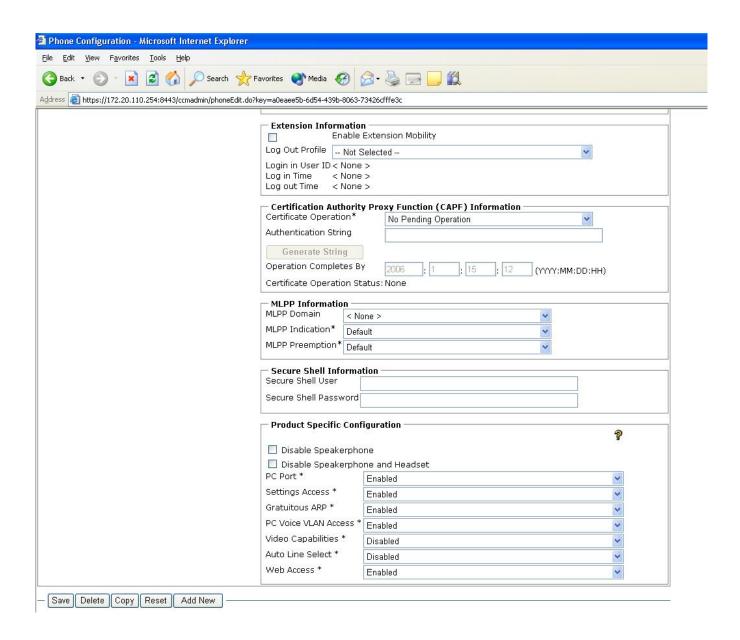
CCM IP Phones



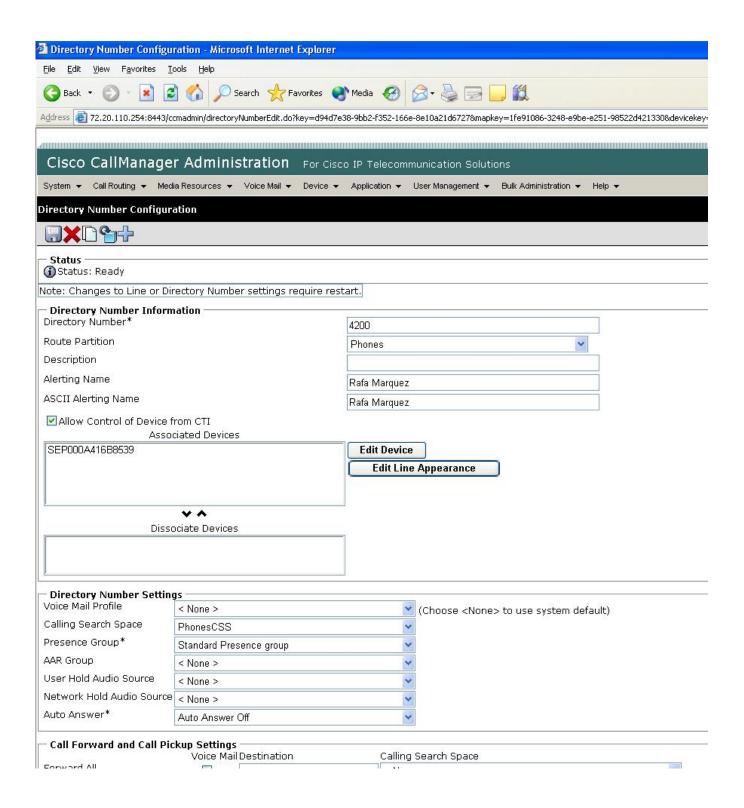




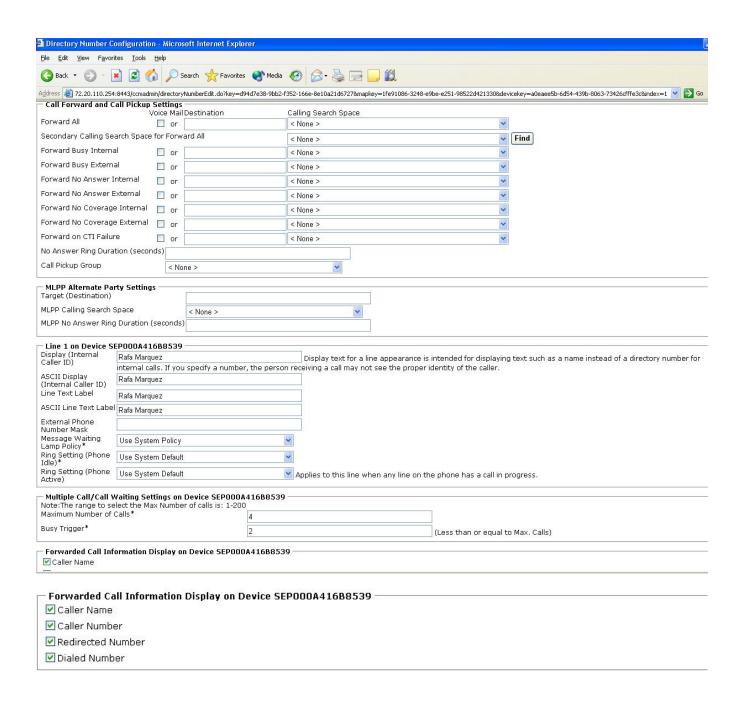






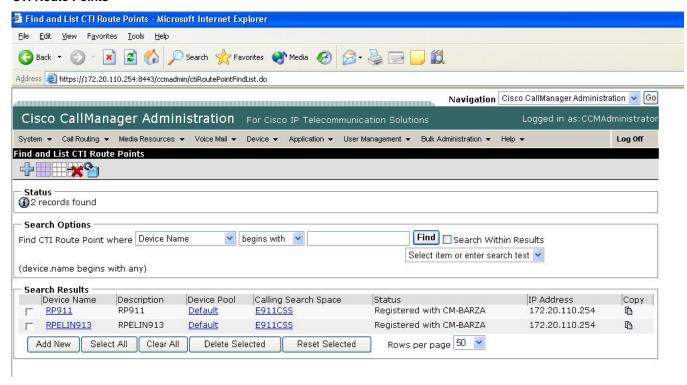






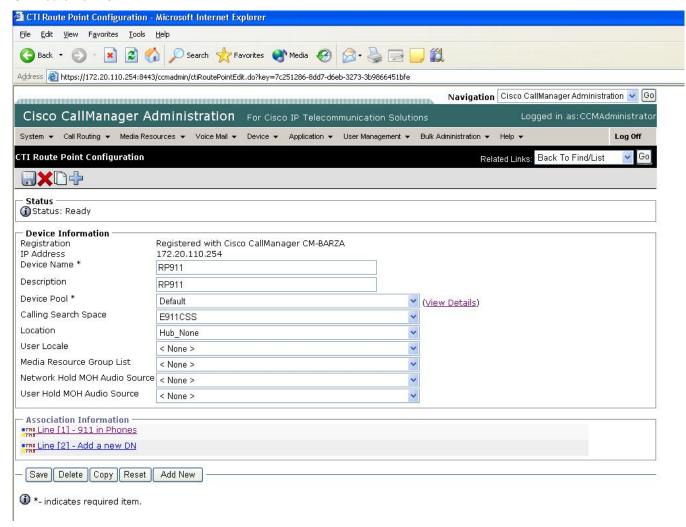


CTI Route Points

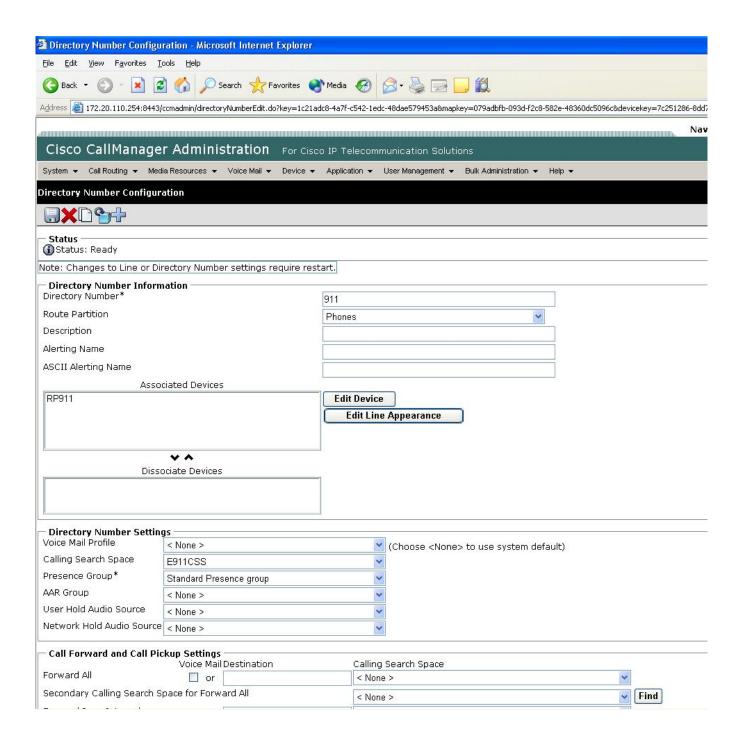




CTI Route Point 911





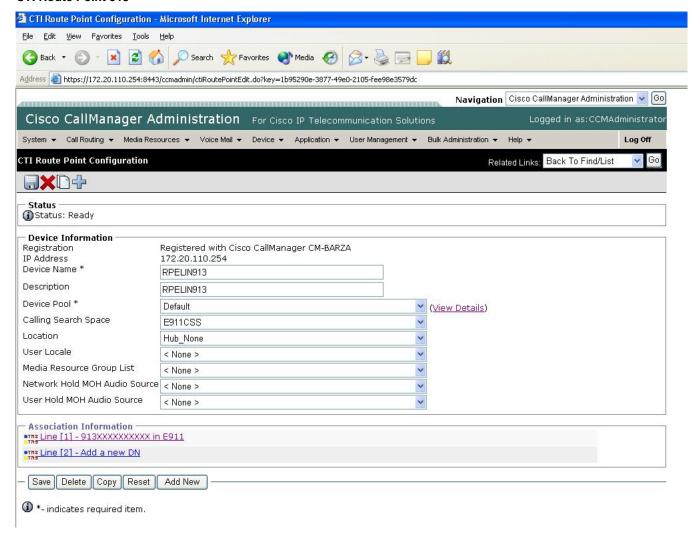




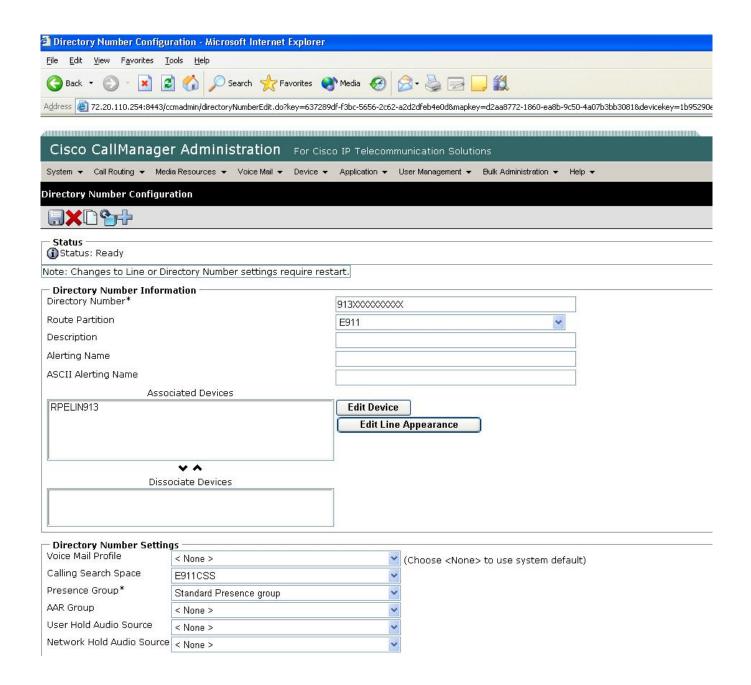
Directory Number Configuration - Microsoft	t Internet Explorer			
<u>File Edit View Favorites Tools Help</u>	Man and the second seco			
O Back ▼ O → 🖹 🙎 🚮 🔎 Sear	ch 🤺 Favorites 🙌 Media			
			-582e-48360dc5096c&devi	cekey=7c251286-8dd7-d6eb-3273-3b9866451bfe&index=1 💟 🔁 G
Forward All or	sunauon	< None >	~	
Secondary Calling Search Space for Forward	d All	< None >	~	Find
Forward Busy Internal or 91	2	E911CSS	~	
Forward Busy External		E911CSS	~	
Forward No Answer Internal or 91		E911CSS	~	
Forward No Answer External or 91		E911CSS	~	
Forward No Coverage Internal or		< None >	~	
Forward No Coverage External or		< None >	v	
Forward on CTI Failure	2	E911CSS	~	
No Answer Ring Duration (seconds)			hitte	
Call Pickup Group < None	>	<u> </u>		
Line 1 on Device RP911 Display (Internal Caller ID) ASCII Display (Internal Caller ID) External Phone Number Mask Multiple Call/Call Waiting Settings on De Note:The range to select the Max Number o Maximum Number of Calls* Busy Trigger*	evice RP911 of calls is: 1-10000 5000 4500	Display text for a line appearance is intreceiving a call may not see the proper ider		text such as a name instead of a directory number for
Forwarded Call Information Display on D Caller Name Caller Number Redirected Number Dialed Number Save Delete Copy Reset Add New *- indicates required item.	Device RP911			



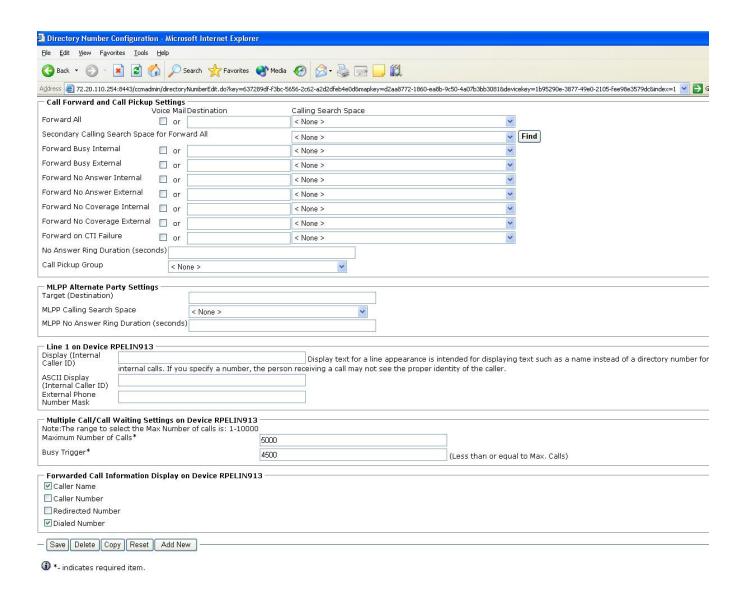
CTI Route Point 913







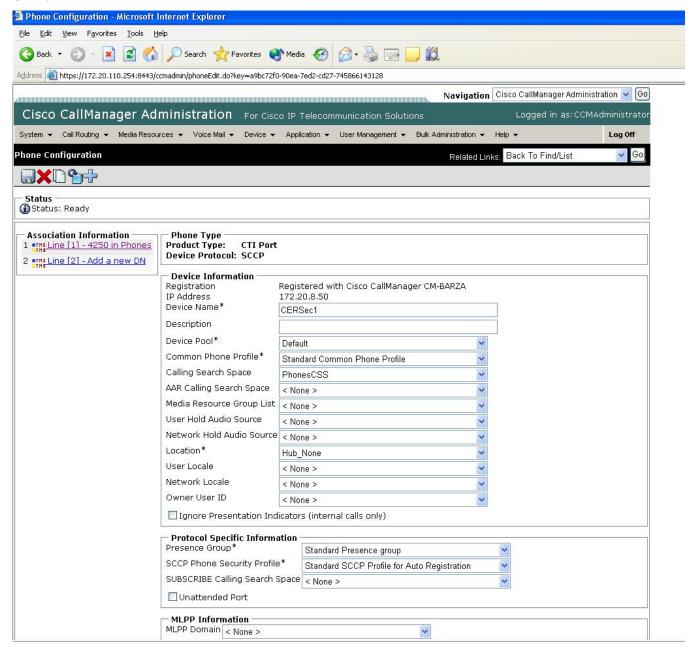




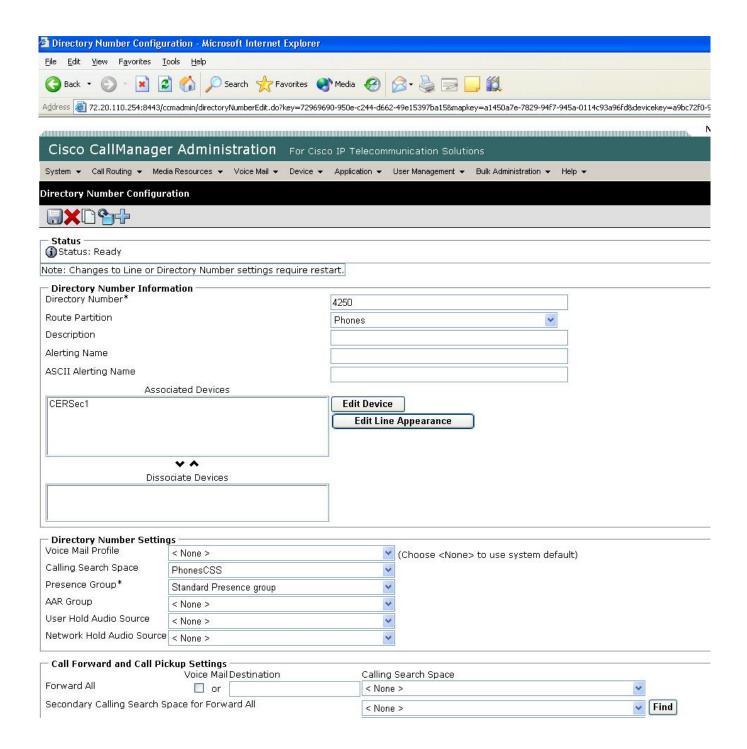
Note: A Backup CER server was not used during testing therefore CTI route point for 912 was not created.



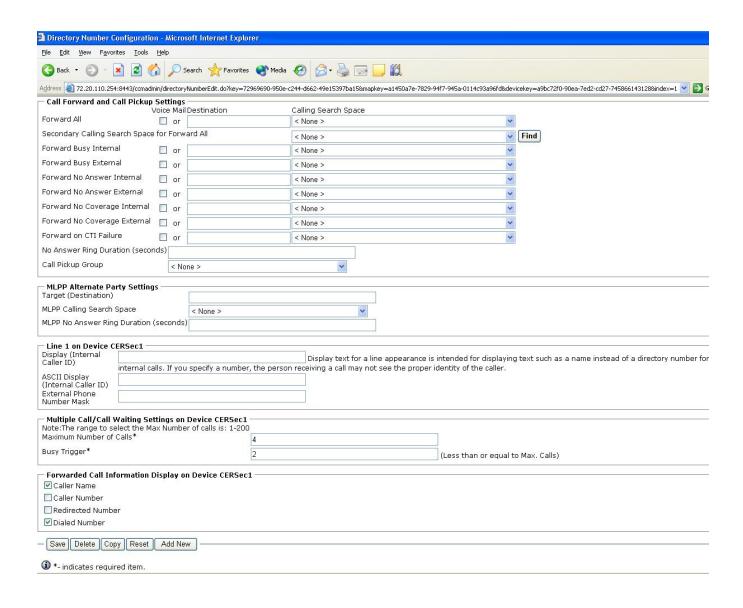
CTI Port





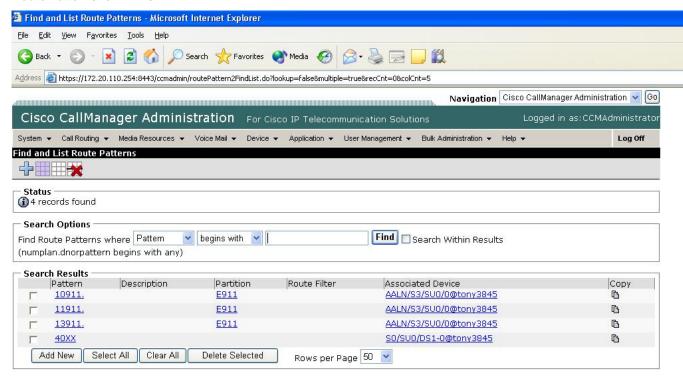






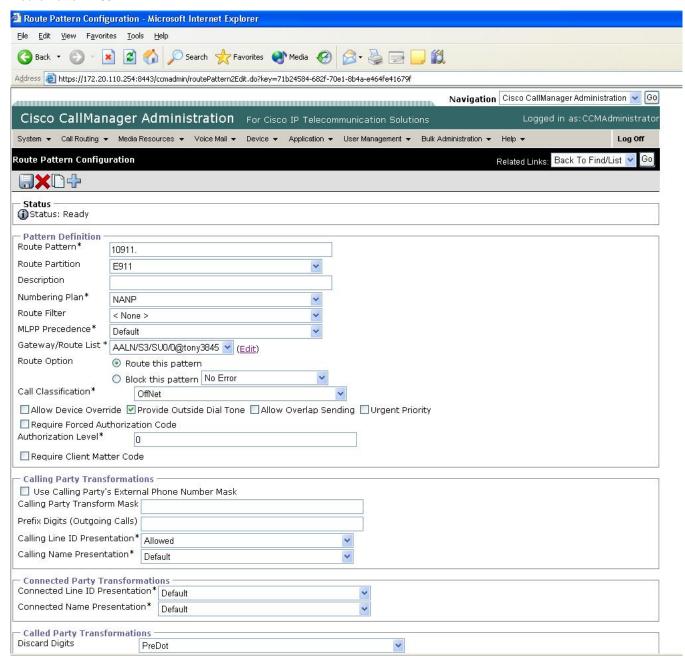


Route Patterns for ELINs





Route Pattern 10911



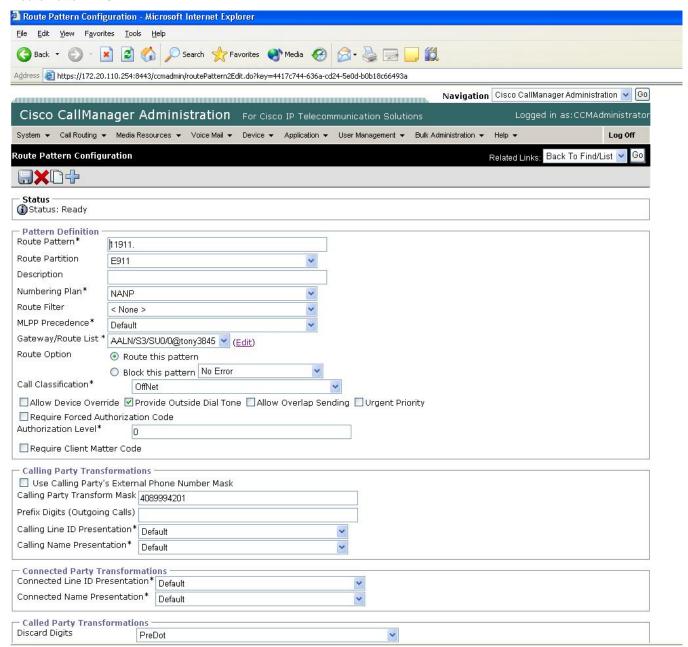


Discard Digits	PreDot		*		
Called Party Transform Mask					
Prefix Digits (Outgoing Calls)	4089994200				
ISDN Network-Specific Fa	cilities Information Fl	ement —			
	Not Selected	~			
Carrier Identification Code					
Network Service		Service Parameter Name		Service Parameter Value	
		< Not Exist >			

(i) *- indicates required item.



Route Pattern 11911



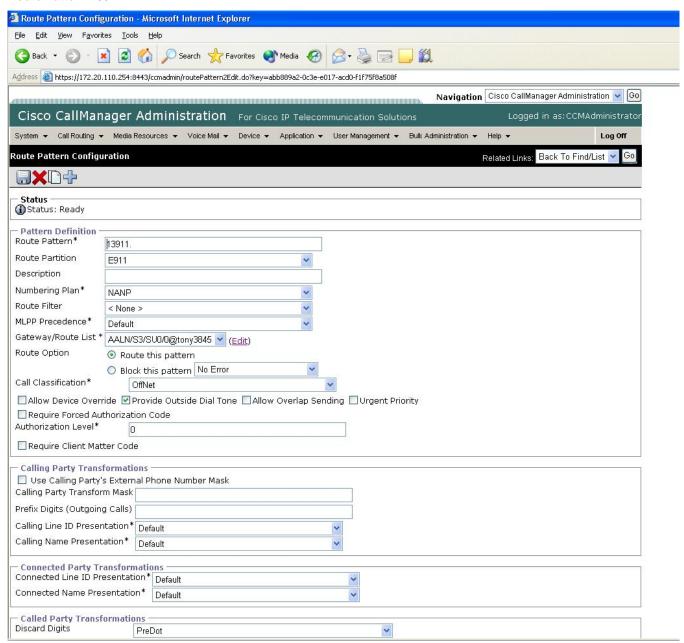


Carrier Identification Code Network Service	Service Parameter Name	Service Parameter Value	
letwork Service Protocol	Not Selected		
[1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [1] - [-acilities Information Element -		
Prefix Digits (Outgoing Call	s) 4089994201		
Called Party Transform Mas			
	PreDot	~	

(i) *- indicates required item.



Route Pattern 13911



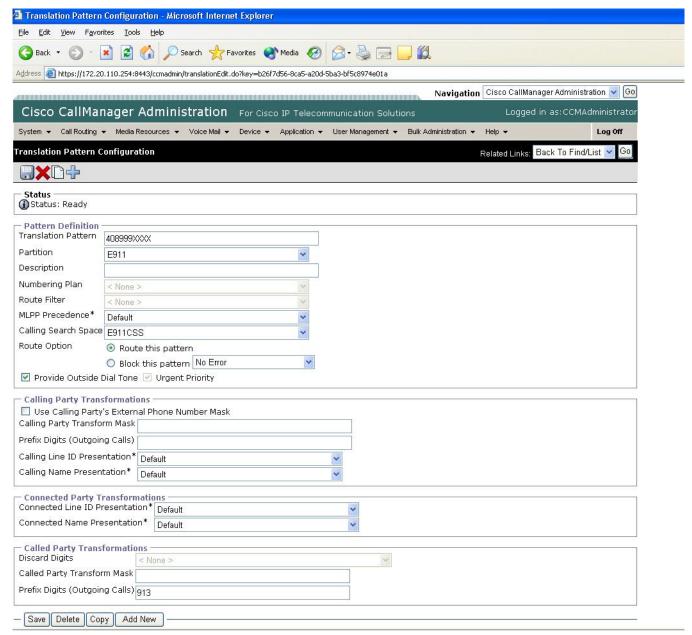


Discard Digits	PreDot		→	
Called Party Transform Mas	sk			
Prefix Digits (Outgoing Call	s) 4089994203			
	Facilities Information Elemen	t —		
letwork Service Protocol	Not Selected	~		
Carrier Identification Code				
Carrier Identification Code Network Service		vice Parameter Name	Service Parameter Value	

*- indicates required item.

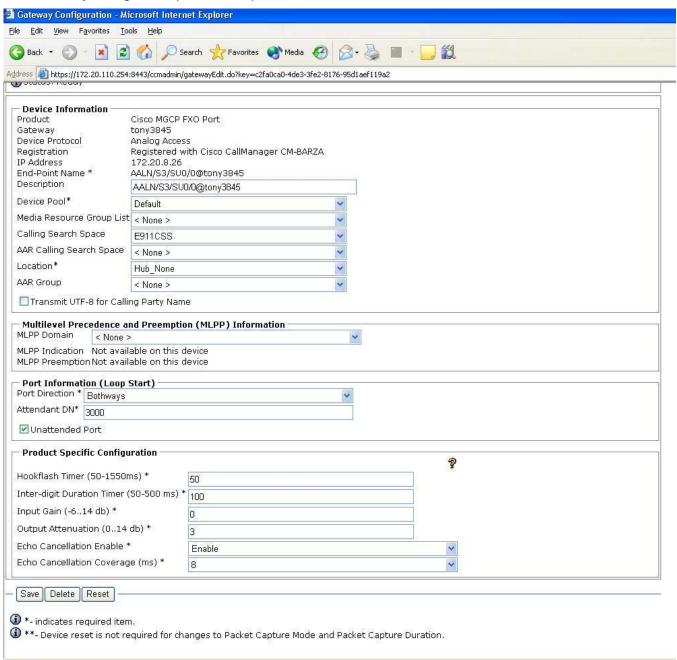


Translation Pattern for ELINs



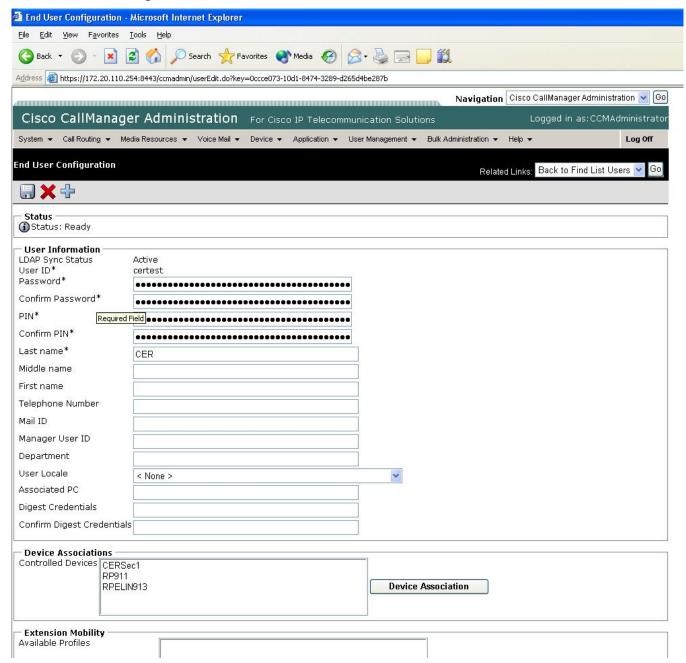


PSAP Gateway Configuration (CAMA Trunk)





Cisco Unified CallManager User

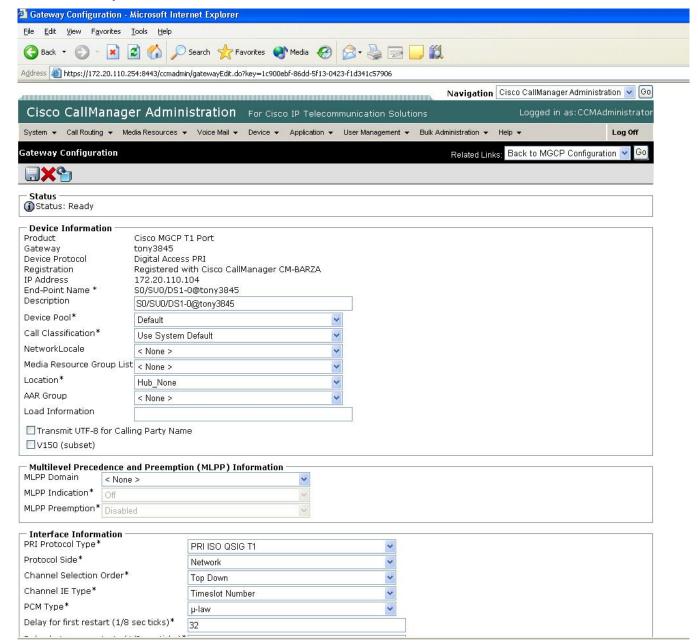




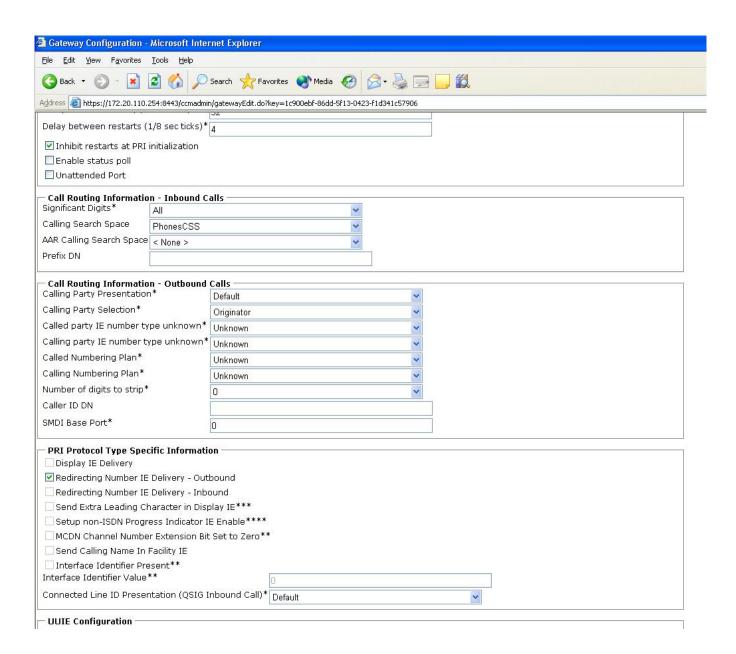
Extension Mobility		
Available Profiles		
		Find
THE RECORD SECURITY MISSES	~ ^	
Controlled Profiles		
Default Profile	See A se	
NO. 24 2002	< None >	
Presence Group*	Standard Presence group	
SUBSCRIBE Calling Search Space	< None >	
✓ Allow Control of Device from (CTI	
Directory Number Association	.5	
Primary Extension < None >	~	
CAPF Information		
Associated CAPF Profiles		-
		Edit Profile
L		
— Permissions Information —		
Groups Standard CTI Allow Calling	Number Modification	
Standard CTI Enabled	Trained Medicalion	
Roles Standard CTI Allow Calling	Number Modification	
Standard CTI Enabled	*	
Save Delete Add New		
indicates required item.		



T1-QSIG Gateway





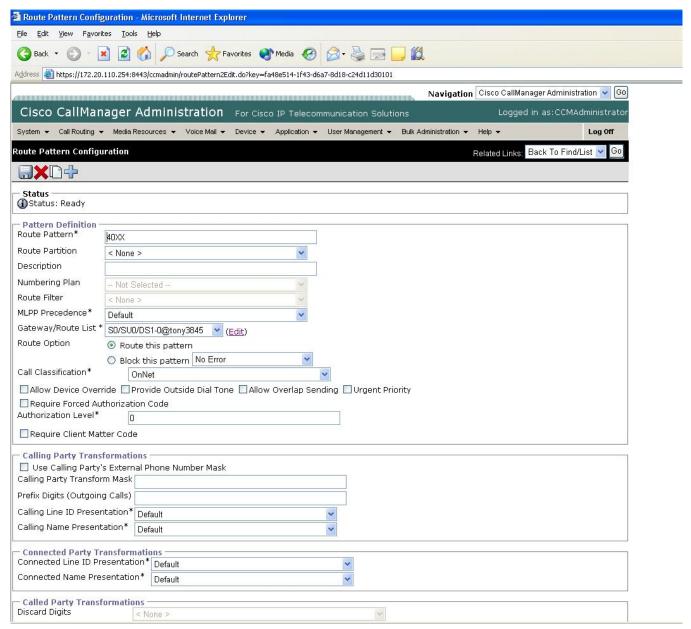




UUIE Configuration			
Passing Precedence Level Thro	ugh UUIE		
Security Access Level* 2			
Product Specific Configuration -			
		?	
_ine Coding *	B8ZS	→	
Framing *	ESF	~	
Clock *	External	▽	
Input Gain (-614 db) *	0		
Output Attenuation (-614 db) *	0		
Echo Cancellation Enable *	Enable	*	
Echo Cancellation Coverage (ms) *	8	~	
Save Delete Reset -			
*- indicates required item.			
**- applies to DMS-100 protoco	l only.		
1) ***- applies to DMS-100 protoc			
****- may be required to force			
	ed for changes to Packet Capture Mod	le and Backet Canture Duration	



Route Pattern to QSIG Trunk



Note: For detailed information regarding QSIG interoperability between CCM and Nortel Succession PBX go to: http://www.cisco.com/warp/public/779/largeent/avvid/inter_operability/flash/portal.html

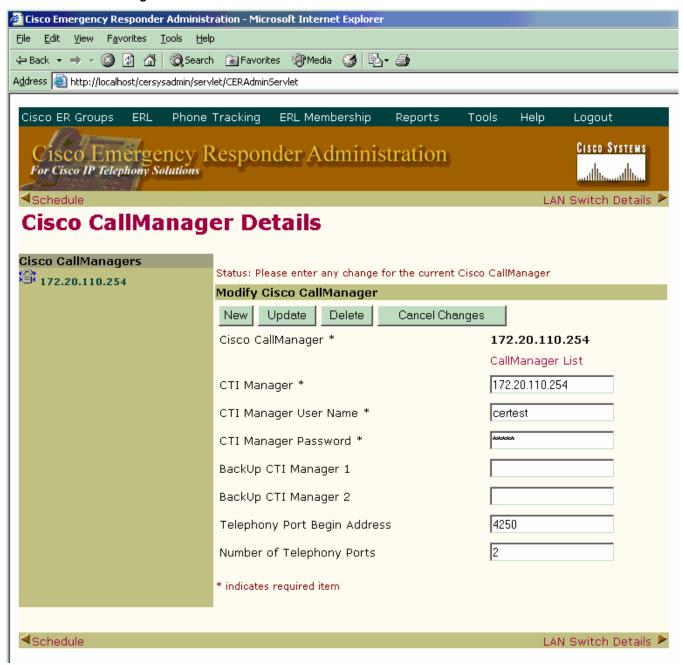
SNMP service must be active





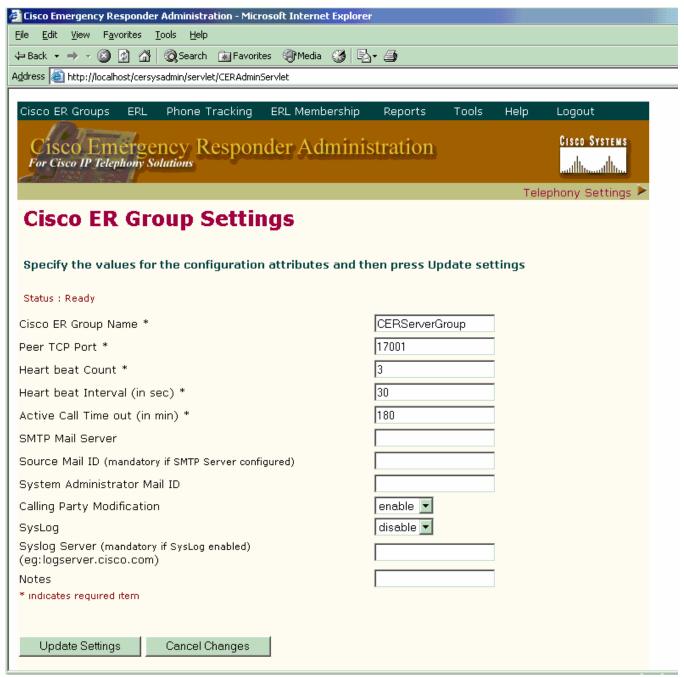
Cisco Emergency Responder Configuration

Cisco Unified CallManager Details



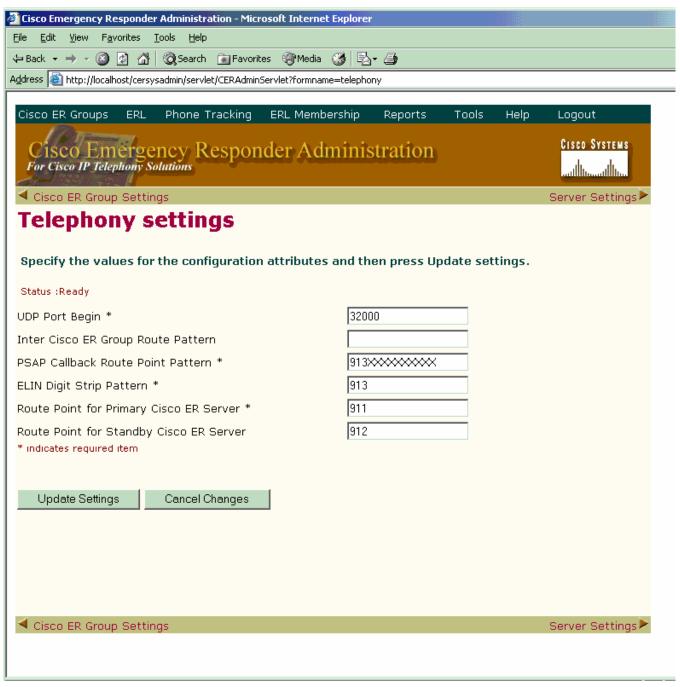


Cisco Emergency Responder Server Group



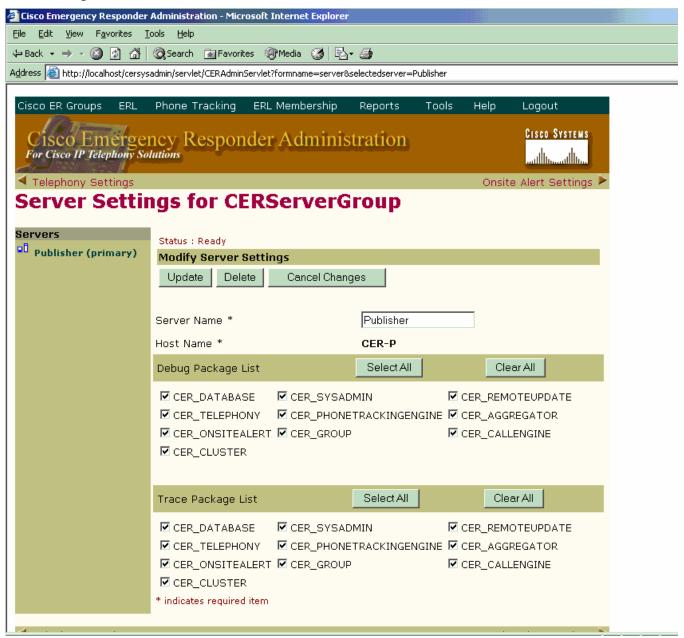


Telephony Settings



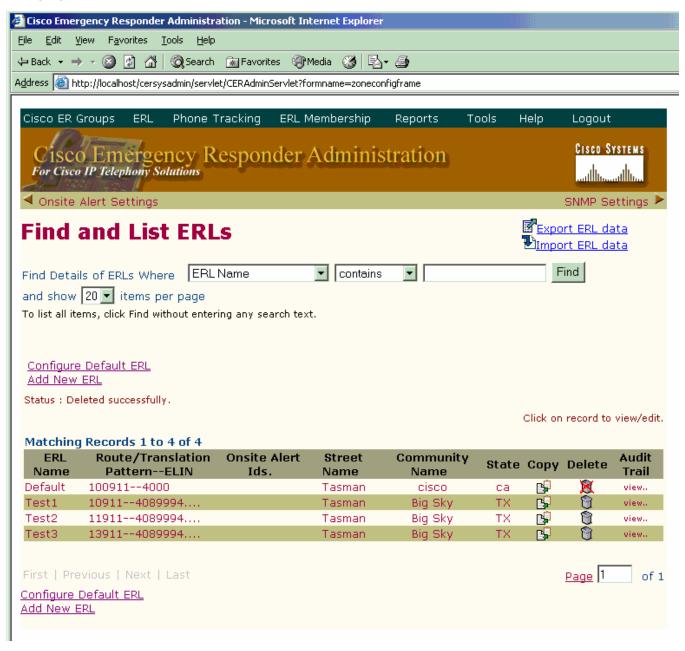


Server Settings



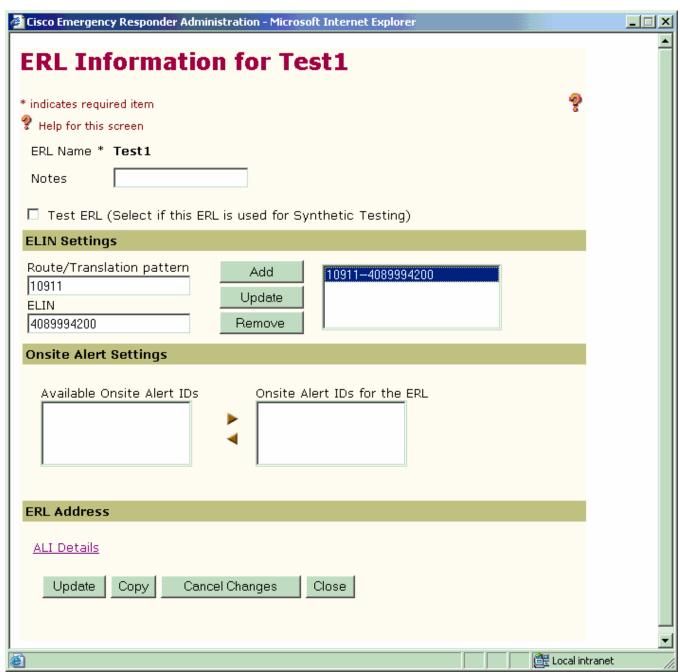


ERLs List



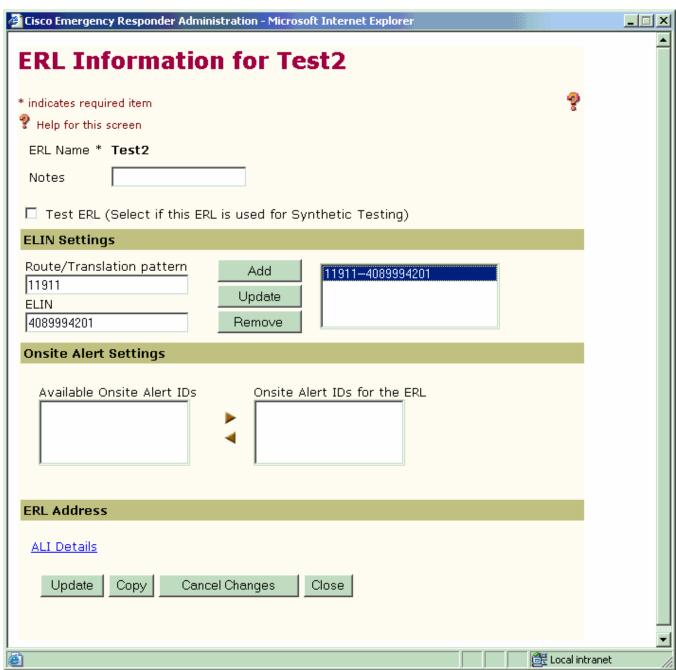


ERL 1



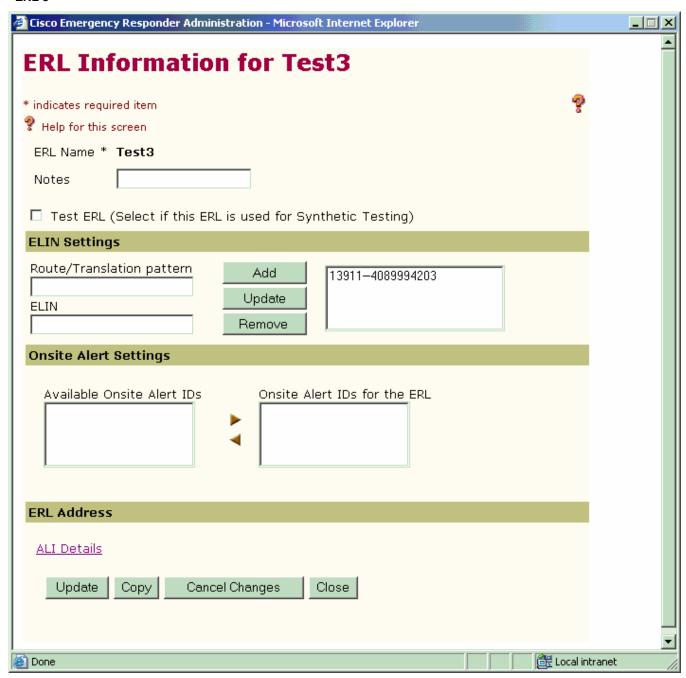


ERL 2



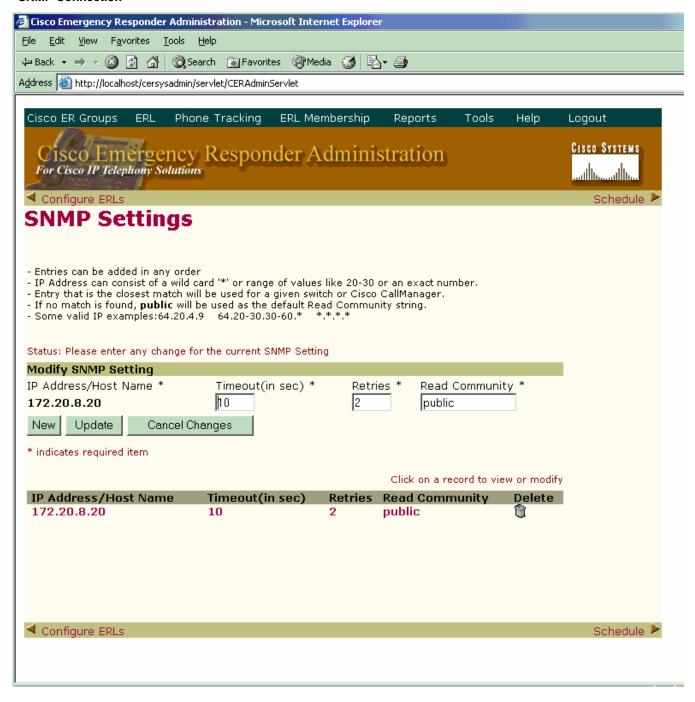


ERL 3



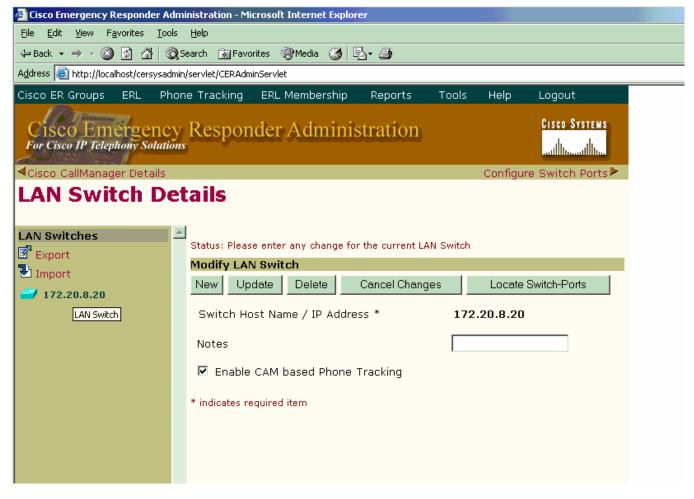


SNMP Connection



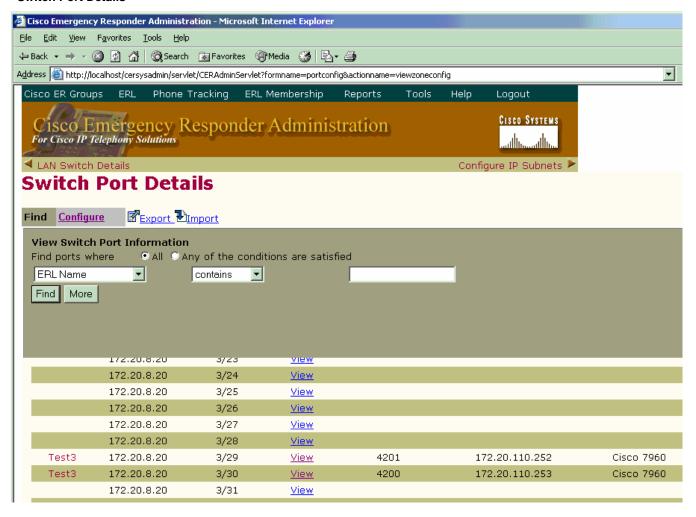


LAN Switch Identifying



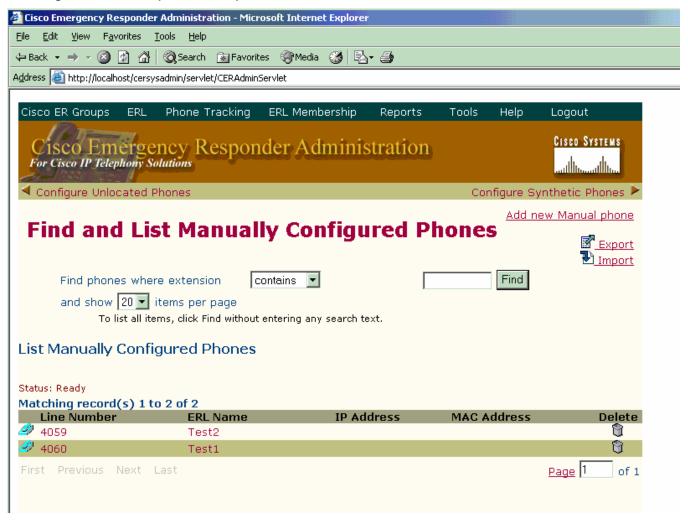


Switch Port Details

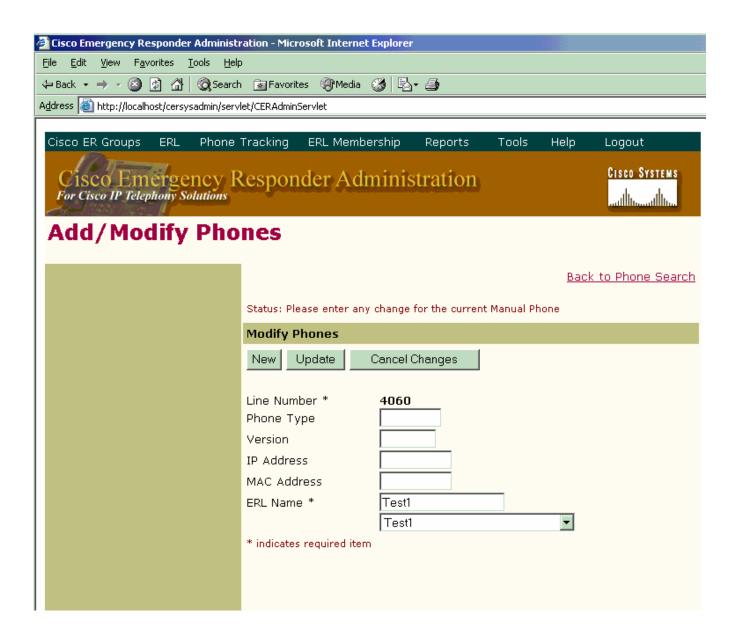




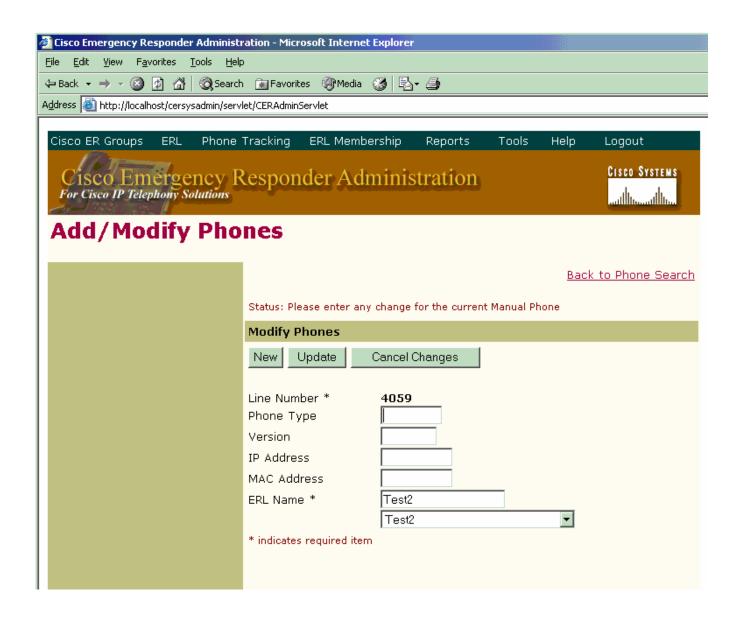
Defining Manual Phones (PBX Stations)











Cisco 3845 Cisco IOS Gateway Configuration

Router3845# show running-config Building configuration...

Current configuration: 3087 bytes

Version 12.3

service timestamps debug datetime msec service timestamps log datetime msec no service password-encryption

hostname Router3845



```
boot-start-marker
boot system flash:c3845-ipvoice-mz.123-14.T4.bin
boot-end-marker
enable password cisco
no aaa new-model
resource policy
no network-clock-participate slot 3
no network-clock-participate slot 4
network-clock-participate wic 0
voice-card 0
no dspfarm
voice-card 3
no dspfarm
voice-card 4
dspfarm
ip subnet-zero
ip cef
no ip dhcp use vrf connected
ip host CM-GUANATOS 172.20.8.254
ip host CM-BARZA 172.20.110.254
no ftp-server write-enable
isdn switch-type primary-4ess
controller T1 0/0/0
framing esf
```



```
linecode b8zs
pri-group timeslots 1-24 service mgcp
controller T1 0/0/1
framing esf
linecode b8zs
controller E1 4/0/0
shutdown
pri-group timeslots 1-31 service mgcp
controller E1 4/0/1
interface GigabitEthernet0/0
ip address 172.20.8.26 255.255.255.0
duplex half
speed 100
media-type rj45
negotiation auto
interface GigabitEthernet0/1
ip address 172.20.110.104 255.255.255.0
shutdown
duplex auto
speed auto
media-type rj45
negotiation auto
interface Serial0/0/0:23
no ip address
isdn switch-type primary-qsig
isdn protocol-emulate network
isdn incoming-voice voice
isdn T310 120000
isdn bind-l3 ccm-manager
no cdp enable
interface Serial4/0/0:15
no ip address
shutdown
isdn switch-type primary-qsig
isdn incoming-voice voice
isdn bind-l3 ccm-manager
no cdp enable
ip default-gateway 172.20.8.1
ip classless
ip route 0.0.0.0 0.0.0.0 172.20.8.1
```



```
ip http server
control-plane
voice-port 0/0/0:23
voice-port 3/0/0
signal cama KP-NPD-NXX-XXXX-ST
dial-type mf
timing hookflash-out 500
voice-port 3/0/1
dial-type mf
timing hookflash-out 500
voice-port 3/0/2
dial-type mf
timing hookflash-out 500
voice-port 3/0/3
dial-type mf
timing hookflash-out 500
voice-port 3/1/0
voice-port 3/1/1
voice-port 4/0/0:15
ccm-manager mgcp
ccm-manager music-on-hold
ccm-manager config server CM-GUANATOS
ccm-manager config
!
mgcp
mgcp call-agent CM-GUANATOS 2427 service-type mgcp version 0.1
mgcp dtmf-relay voip codec all mode out-of-band
mgcp rtp unreachable timeout 1000 action notify
mgcp modem passthrough voip mode nse
mgcp package-capability rtp-package
no mgcp package-capability res-package
mgcp package-capability sst-package
no mgcp package-capability fxr-package
mgcp package-capability pre-package
```



```
no mgcp timer receive-rtcp
mgcp sdp simple
mgcp fax t38 inhibit
mgcp rtp payload-type g726r16 static
mgcp profile default
dial-peer voice 999300 pots
service mgcpapp
port 3/0/0
dial-peer voice 999301 pots
service mgcpapp
port 3/0/1
dial-peer voice 999310 pots
service mgcpapp
port 3/1/0
dial-peer voice 999311 pots
service mgcpapp
port 3/1/1
dial-peer voice 999302 pots
service mgcpapp
port 3/0/2
dial-peer voice 999303 pots
service mgcpapp
port 3/0/3
line con 0
password cisco
stopbits 1
line aux 0
stopbits 1
line vty 0 4
password cisco
login
scheduler allocate 20000 1000
End
Router3845#sh ver
Cisco IOS Software, 3800 Software (C3845-IPVOICE-M), Version 12.3(14)T4, RELEASE
SOFTWARE (fc2)
```



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ROM: System Bootstrap, Version 12.3(11r)T2, RELEASE SOFTWARE (fc1)

Router3845 uptime is 1 week, 2 days, 5 hours, 15 minutes System returned to ROM by power-on System image file is "flash:c3845-ipvoice-mz.123-14.T4.bin"

Cisco 3845 (revision 1.0) with 485376K/38912K bytes of memory.

Processor board ID FTX0933A1JA

2 Gigabit Ethernet interfaces

55 Serial interfaces

2 Channelized E1/PRI ports

2 Channelized T1/PRI ports

4 Voice FXO interfaces

2 Voice FXS interfaces

DRAM configuration is 64 bits wide with parity enabled.

479K bytes of NVRAM.

125184K bytes of ATA System CompactFlash (Read/Write)

Configuration register is 0x2102

Router3845#

Router3845# show voice port 3/0/0

Foreign Exchange Office 3/0/0 Slot is 3, Sub-unit is 0, Port is 0

Type of VoicePort is FXO

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 3 dB

Echo Cancellation is enabled

Echo Cancellation NLP mute is disabled

Echo Cancellation NLP threshold is -21 dB

Echo Cancel Coverage is set to 64 ms

Echo Cancel worst case ERL is set to 6 dB

Playout-delay Mode is set to adaptive

Playout-delay Nominal is set to 60 ms

Playout-delay Maximum is set to 250 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 8

Impedance is set to 600r Ohm

Station name None, Station number None

Translation profile (Incoming):

Translation profile (Outgoing):

Voice card specific Info Follows:

Signal Type is cama

Cama Type is KP-NPD-NXX-XXXX-ST

NPD to NPA mapping is :

NPD NPA

0 0

1 0

2 (

3 0

Battery-Reversal is enabled

Number Of Rings is set to 1

Supervisory Disconnect is signal

Answer Supervision is inactive

Hook Status is On Hook

Ring Detect Status is inactive

Ring Ground Status is inactive

Tip Ground Status is inactive

Dial Out Type is mf

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

Percent Break of Pulse is 60 percent

GuardOut timer is 2000 ms

Minimum ring duration timer is 125 ms

Hookflash-in Timing is set to 600 ms

Hookflash-out Timing is set to 500 ms



Supervisory Disconnect Timing is set to 350 ms Router3845#

Cisco Catalyst 6x00 Configuration

Console> (enable) **showsnmp**SNMP: Enabled
RMON: Disabled

Extended RMON Netflow Enabled : None.

Memory usage limit for new RMON entries: 85 percent

EngineId: 00:00:00:09:00:01:97:31:c8:00:00:00

Chassis Alias: Traps Enabled: None Port Traps Enabled: None

Community-Access Community-String

read-only public read-write private read-write-all secret

Additional- Access-

Community-String Access-Type Number View

Trap-Rec-Address Trap-Rec-Community Trap-Rec-Port Trap-Rec-Owner Trap-Rec-Index

Console> (enable) show cdp

CDP : enabled
Message Interval : 60
Hold Time : 180
Version : V2
Device Id Format : Other
Console> (enable)

set interface sc0 109 172.20.8.20/255.255.255.0 172.20.8.255



Nortel CS1000M with Succession 4.0 Software Release PBX Configuration

Common Equipment

```
REQ prt
TYPE cequ
CEOU
 MPED 8D
 SUPL 000 004 008 012 016 032 036 040
       044 048 064 068
       072 V096 V100
 TDS
       000
 CONF 029 030 031 062
       094 095
 DLOP NUM DCH FRM TMDI LCMT YALM T1TE TRSH
  PRI 02 24 ESF NO B8S FDL - 00
      06 23 ESF NO B8S FDL -
                                      00
 PRI2 04 05 07
 DTI2
 MISP
```

Configure D-Channel

```
REQ prt
TYPE adan dch 4
ADAN
       DCH 4
 CTYP MSDL
 CARD 04
 PORT 1
 DES toJupiter
USR PRI
 DCHL 4
 OTBF 32
 PARM RS422 DTE
 DRAT 64KC
 CLOK EXT
 IFC ISGF
   PINX_CUST 0
   ISDN_MCNT 300
 CLID OPT0
 CO_TYPE STD
 SIDE USR
 CNEG 2
 RLS ID 4
 QCHID YES
 RCAP COLP NDI CCBI CCNI PRI DV3I CTI QMWI
 PR_TRIGS DIV 2 3
      CON 0 1
       CTR1 2 3
 MBGA NO
 OVLR NO
```



OVLS NO T310 120 T200 3 T203 10 N200 3 N201 260 K 7

Configure Route Data Block

REQ: prt TYPE: rdb CUST 0 ROUT 104 TYPE RDB CUST 00 DMOD ROUT 104 DES TOJUPITER TKTP TIE NPID_TBL_NUM 0 ESN NO CNVT NO SAT NO RCLS EXT VTRK NO NODE DTRK YES BRIP NO DGTP PRI2 ISDN YES MODE PRA IFC ISGF SBN NO PNI 00001 NCNA NO NCRD NO CTYP UKWN INAC NO ISAR NO CPFXS YES DAPC NO INTC NO DSEL VOD PTYP DTT AUTO NO DNIS NO DCDR NO ICOG IAO SRCH LIN TRMB YES STEP ACOD 204 TCPP NO TARG 01 CLEN 1 BILN NO OABS

INST



ANTK

SIGO STD ICIS YES TIMR ICF 512 OGF 512 EOD 13952 NRD 10112 DDL 70 ODT 4096 RGV 640 GRD 896 SFB 3 NBS 2048 NBL 4096 IENB 5 TFD 0 VSS 0 PAGE 002 VGD 6 DRNG NO CDR NO VRAT NO MUS NO FRL 0 0 FRL 1 0 FRL 2 0 FRL 3 0 FRL 4 0 FRL 5 0 FRL 6 0 FRL 7 0 OHQ NO OHQT 00 CBQ NO AUTH NO TTBL 0 ATAN NO PLEV 2 ALRM NO ART 0 SGRP 0 AACR NO

Configure Trunk

REQ: prt
TYPE: tnb
TN 4 1
DATE
PAGE
DES
TOJUPITER

004 01

TN



```
TYPE TIE
CDEN SD
CUST 0
TRK PRI2
PDCA 1
PCML A
NCOS 0
RTMB 104 1
B-CHANNEL SIGNALING
TGAR 1
AST NO
LAPG 0
CLS UNR DTN WTA LPR APN THFD
P10 VNL
```

Software Release

>LD 22

PT2000

MARP NOT ACTIVATED

1d 22

PT2000

REQ iss

CALL SERVER/MAIN CAB
VERSION 2121

RELEASE 4

ISSUE 00 T +

IDLE_SET_DISPLAY NORTEL

REQ ****

Software Package Installed (Succession 4.0)

OPTF	1
CUST	2
CDR	4
CTY	5
RAN	7
TAD	8
DNDI	9
EES	10
INTR	11
ANI	12
ANIR	13
BRTE	14
DNDG	16
MSB	17
SS25	18
DDSP	19
ODAS	20
DI	21
CHG	23
CAB	24
BAUT	25
CASM	26
CASR	27
BQUE	28
NTRF	29
NCOS	32



CPRK	33
CFKK	
SSC	34
IMS	35
UST	35
UMG	35
ROA	36
NSIG	37
MCBQ	38
NSC	39
BACD	40
ACDB	41
ACDC	42
LMAN	43
MUS	44
ACDA	45
MWC	46
AAB	47
GRP	48
NFCR	49
	51
LNK	
FCA	52
	53
SR	
AA	54
	55
HIST	
AOP	56
BARS	57
NARS	58
CDP	59
PQUE	60
FCBQ	61
OHQ	62
NAUT	63
SNR	64
NXFR	67
HOT	70
DHLD	71
LSEL	72
SS5	73
DRNG	74
PBXI	75
DLDN	76
CSL	77
OOD	79
SCI	80
CCOS	81
CDRQ	83
TENS	86
FTDS	87
DSET	88
DSEI	88
TSET	89
	90
LNR	
DLT2	91
PXLT	92
SUPV	93
CPND	95
DNIS	98
BGD	99
RMS	100
MR	101
AWU	102
PMSI	103
LLC	105
MCT	107
ICDR	108
APL	109
TVS	110
TOF	111



TDC	113
IDC	
DCP	115
PAGT	116
CBC	117
CCDR	118
EMUS	119
PLDN	120
SCMP	121
FTC	125
BKI	127
DTI2	129
TBAR	132
ENS	133
FFC	139
DCON	140
MPO	141
ISDN	145
PRA	146
ISL	147
NTWK	148
IEC	149
DNXP	150
CDRE	151
FXS	152
IAP3P	153
PRI2	154
THF	157
FGD	158
NAS	159
FNP	160
ISDN_INTL_SUP	161
SAR	162
MINT	163
LAPW	164
GPRI	167
ARIE	170
CPGS	172
ECCS	173
AAA	174
NMS	175
EOVF	178
HVS	179
DKS	180
	181
SACP	
VNS	183
OVLP	184
EDRG	185
POVR	186
SECL	191
ORC-RVQ	192
AINS	200
IPRA	202
XPE	203
XCT0	204
XCT1	205
MLWU	206
HSE	208
MLM	209
MAID	210
VAWU	212
EAR	214
ECT	215
	216
BRI	
IVR	218
MWI	219
MSDL	222
FC68	223
1 000	443



CCATT	000
SSAU	229
BRIT	233
FCDR	234
BRIL	235
MCMO	240
MULTI_USER	242
ALRM_FILTER	243
SYS MSG LKUP	
	245
VMBA	246
CALL_ID	247
DPNA	250
SCDR	251
ARFW	253
PHTN	254
ADMINSET	256
ATX	258
CDRX	259
QSIG	263
NI-2	291
IPEX	295
MAT	296
CPP	301
QSIGGF	305
CPRKNET	306
PAGENET	307
CPCI	310
TATO	312
OPEN_ALARM	315
QSIG-SS	316
NGEN	324
RANBRD	327
MUSBRD	328
ESA	329
ESA_SUPP	330
ESA_CLMP	331
CNUMB	332
CNAME	333
NI-2_CBC	334
MEET	348
MC32	350
DBA	351
FDID	362
NMCE	364
STS_MSG	380
CDIR	381
VIRTUAL_OFFICE	382
ATAN	384
NI2NAME	385
M3900_PROD_ENH	386
VIR_OFF_ENH	387
OAS	394
ICON	397
PCA	398
H323_VTRK	399
LOCX	400
PVQM	401
SIP	406
OII	100

REQ

Acronyms

Acronym	Definitions	
CAMA	Analog "Centralized Automatic Message Accounting" E911 Trunk	



Acronym	Definitions	
PSAP	Public Service Answering Point	

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