

Cisco Unified CallManager Release 5.0-PBX Interoperability: Nortel CS1000M Release 4.0 to a Cisco 3845 Gateway Using T1-QSIG with MGCP

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Introduction

This is an application note for connectivity of Nortel CS1000M Release 4.0 PBX with Cisco Unified CallManager Release 5.0 using Cisco 3845 T1 QSIG as MGCP gateway.

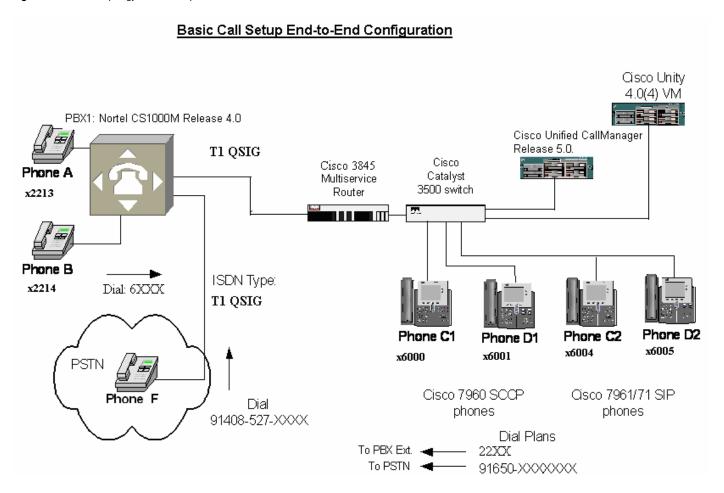
The network topology diagram (Figure 1) shows the test setup for end-to-end interoperability with the Cisco Unified CallManager connected to the PBX via 3845 T1 QSIG link as MGCP gateway.

Connectivity is achieved by using the PRI QSIG T1 protocol type on the MGCP gateway and ISO QSIG switch type on the of Nortel CS1000M Release 4.0 PBX.

This Application Note uses the 3845 T1 voice gateway, however other Cisco voice gateways are also an option to use since Cisco Unified CallManager QSIG implementation does not depend on the physical interface.

Network Topology

Figure 1. Network Topology or Test Setup





Limitations

Call Forwarding (Diversion) by Reroute

The Nortel does not initiate a Call Diversion by Reroute to deflect a call that is meant for a local station programmed to forward all calls to another station within the network. Thus, although the call was completed, no Reroute was done during the call. The Nortel, however, will respond to a Call Reroute message sent by another node and respond by initiating a new SETUP message to an alternate route.

Call Completion to Busy Subscriber

As of the publication of this Application Note, call is not completed when callback is invoked from a Nortel station calling a busy Cisco Unified CallManager 5.0 station. This is a bug which has been addressed by Cisco and integrated in Release 005.001(000.9901.002) (See DDTS CSCse27145)

Call Completion on No Reply

As of the publication of this Application Note, call is not completed when callback is invoked from a Nortel station calling a Cisco Unified CallManager station which does not reply. This is a bug which has been addressed by Cisco and integrated in Release 005.001(000.9901.002) (See DDTS CSCse27145)

Path Replacement for Call Diversion by Forward

As of the publication of this Application Note, the Nortel CS1000M PBX Release 4.0 did not initiate Path Replacement Proposal for Call Diversion by Forward to optimize the path for a call that is meant for a Cisco Unified CallManager station programmed to forward all calls to another Nortel station within the network. Thus, although the call was completed, no Path Replacement Proposal was sent by Nortel during the call. The Nortel, however, will respond to a Path Replacement Proposal message sent by another node and respond by initiating a new SETUP message to an alternate route.

As a work around, in cases where the Path Replacement is not initiated by the PBX, Reroute for Call Diversion by Forward may be used on Cisco Unified CallManager 5.0 instead of Path Replacement for Call Diversion by Forward. This will enable the optimal use of path between the originating station and terminating station by using one call leg instead of two call legs.

Note: Path Replacement for Call Diversion by Forward did work in tests using Nortel Meridian 1 PBX Release 25.15, Nortel Meridian 1 PBX Release 25.40 and Cisco Unified CallManager 5.0. A call was placed from a station on Nortel Meridian 1 PBX Release 25.15 to station on Cisco Unified CallManager which forwarded to a station on Nortel Meridian 1 PBX Release 25.40. The Nortel Meridian 1 PBX Release 25.15 proposed Path Replacement and an optimized path was used for that call.

System Components

Hardware Requirements

Cisco Catalyst 3500

Cisco 3845 router with VWIC 1MFT-T1 on NM-HD-VE and VWIC2-2MFT-T1/E1 on NM-HDV

Cisco Unified CallManager Server

Nortel CS1000M PBX

Software Requirements

PBX Release 4.0

Cisco Unified CallManager 5.0

Features

Features Supported

CLIP-Calling Line (Number) Identification Presentation

CLIR-Calling Line (Number) Identification Restriction



CNIP-Calling Name Identification Presentation

CNIR-Calling Name Identification Restriction

COLP-Connected Line (Number) Identification Presentation

COLR- Connected Line (Number) Identification Restriction

CONP-Connected Name Identification Presentation

CONR- Connected Name Identification Restriction

Sending Alerting Name

CT-Call Transfer (by join)

CFU-Call Forwarding Unconditional (by join)

CFB-Call Forwarding Busy (by join)

CFNR-Call Forwarding No Reply (by join)

CFU-Call Forwarding Unconditional (by Reroute) – see Limitations Section

CFB-Call Forwarding Busy (by Reroute) - see Limitations Section

CFNR-Call Forwarding No Reply (by Reroute) – see Limitations Section

CCBS-Call Completion to Busy Subscriber – see Limitations Section

CCNR-Call Completion No Reply - see Limitations Section

ANF-PR-Additional Network Feature Path Replacement (for Call Transfer by join)

ANF-PR-Additional Network Feature Path Replacement (for Call Diversion by forward switching) - see Limitations Section

ANF-PR-Additional Network Feature Path Replacement (for Trombone connection)

MWI- Message Waiting Indication (lamp ON, lamp OFF)

Configuration

Configuring the Nortel Meridian 1 Option 11C PBX

Configure in the following sequence:

- 1. Configure common equipment
- 2. Configure the D-Channel
- Configure the Route Data Block.
- 4. Configure the Trunk Data Block
- 5. Configure the Coordinated Dialing Plan
- 6. Configure the Digital Station Phone



OTBF 32

DRAT 64KC CLOK EXT IFC ISGF

PARM RS422 DTE

PINX_CUST 0

Configuration Menus and Commands **Nortel Configuration** Common Equipment Configuration ********** >ld 22 PT2000 REQ prt TYPE cequ CEQU 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 B8S FDL -PRI 02 24 ESF NO 00 24 ESF NO B8S FDL -05 00 23 ESF NO B8S FDL -06 00 07 23 ESF NO B8S FDL -00 PRI2 04 DTI2 MISP REQ D-Channel Configuration ********* REQ prt TYPE adan dch 5 ADAN DCH 5 CTYP MSDL CARD 05 PORT 1 DES appnote USR PRI DCHL 5



```
ISDN_MCNT 300
 CLID OPT0
 CO_TYPE STD
 SIDE NET
 CNEG 1
         * *
 RLS ID
 RCAP COLP NDI CCBI CCNI PRI DV3I CTI QMWI
  PR_TRIGS DIV 2 3
          CNG 2 3
          CTR2 2 3
 PR RTN NO
 MBGA NO
 OVLR NO
 OVLS NO
 T310 120
 T200 3
 T203 10
 N200 3
 N201 260
*********
Route Data Block Configuration
********
>ld 21
PT1000
REQ: prt
TYPE: rdb
CUST 0
ROUT 105
TYPE RDB
CUST 00
DMOD
ROUT 105
DES
TKTP TIE
NPID_TBL_NUM
              0
ESN NO
CNVT NO
SAT NO
RCLS EXT
VTRK NO
NODE
DTRK YES
BRIP NO
DGTP PRI
ISDN YES
   MODE PRA
   IFC ISGF
   SBN NO
   PNI 00001
   NCNA NO
```



```
NCRD NO
    CHTY BCH
    CTYP UKWN
    INAC NO
    ISAR NO
    CPFXS YES
   DAPC NO
    INTC NO
DSEL VOD
PTYP PRI
AUTO NO
DNIS NO
DCDR NO
ICOG IAO
SRCH RRB
TRMB YES
STEP
ACOD 505
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
PAGE 002
     VSS
          0
     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
REQ:
********
Digital Station Configuration
********
REQ: prt
TYPE: 2616
TN 01 0 0 0
DATE
PAGE
DES
DES CS101A
TN 001 0 00 00
TYPE 2616
CDEN 8D
CUST 0
AOM 0
FDN 2214
TGAR 1
LDN NO
NCOS 0
SGRP 0
RNPG 0
SCI
SSU
XLST
CLS CTD FBA WTA LPR MTD FND HTA ADD HFD
    MWA LMPN RMMD SMWD AAD IMD XHD IRD NID OLD VCE DRG1
    POD DSX VMD CMSD SLKD CCSD SWD LND CNDA
    CFTA SFD MRD DDV CNID CDCA MSID DAPA BFED RCBD
    ICDD CDMD LLCN MCTD CLBD AUTU
    GPUD DPUD DNDA CFXA ARHD CLTD ASCD
    CPFA CPTA ABDD CFHD FICD NAID BUZZ AGRD MOAD AHD
    DDGA NAMA
    DRDD EXR0
    USRD ULAD RTDD RBDD RBHD PGND OCBD FLXD FTTC DNDY DNO3 MCBN CDMR
```



```
CPND_LANG ENG
RCO 0
EFD 2214
HUNT 2214
EHT 2214
LHK 0
PLEV 02
CSDN
AST
IAPG 0
AACS NO
ITNA NO
DGRP
MLWU_LANG 0
DNDR 0
KEY 00 SCR 2213 0
                   MARP
      CPND
        NAME ZEUS_2213
        XPLN 9
        DISPLAY_FMT FIRST, LAST
    01
    02
    03 CFW 4 5213
    04 A06
    05 TRN
    06
    07
    80
    09
    10
    11
    12
    13 MIK
    14 MCK
    15 RGA
DATE 17 MAY 2006
NACT
Route List Block COnfiguration
*********
REQ prt
CUST 0
FEAT rlb
RLI 5
RLI
    5
ENTR 0
LTER NO
ROUT 105
TOD 0 ON 1 ON 2 ON 3 ON
    4 ON 5 ON 6 ON 7 ON
```



```
VNS NO
CNV NO
EXP NO
FRL 0
DMI 0
FCI 0
FSNI 0
SBOC NRR
IDBB DBD
IOHQ NO
OHQ NO
CBQ NO
ISET 0
NALT 5
MFRL 0
OVLL 0
DISK RECS AVAIL: 1152
REO
Coordinated Dialing Plac (CDP) configuration
*******************
>ld 87
ESN000
DISK RECS AVAIL: 1152
REQ prt
CUST 0
FEAT cdp
TYPE dsc
DSC 521
DSC 521
FLEN 0
DSP LSC
RLI 5
NPA
NXX
MEM AVAIL: (U/P): 2818389 USED U P: 208053 70133 TOT: 3096575
DISK RECS AVAIL: 1152
REQ prt
CUST 0
FEAT cdp
TYPE dsc
DSC 600
DSC 600
FLEN 0
```



DSP LSC RLI 6 NPA NXXSoftware Release ******** >ld 22 PT2000 REQ iss CALL SERVER/MAIN CAB VERSION 2121 RELEASE 4 ISSUE 00 T + IDLE_SET_DISPLAY NORTEL ********* Features / Packages Installed ********* REQ prt TYPE pkg OPTF 1 CUST 2 4 CDR 5 CTY7 RAN TAD 8 9 DNDI 10 EES INTR 11 ANI 12 ANIR 13 BRTE 14 DNDG 16 17 MSB 18 SS25 DDSP 19 ODAS 20 DI 21 CHG 23 CAB 24 BAUT 25 CASM 26 27 CASR 28 BQUE NTRF 29 NCOS 32 CPRK

33



SSC IMS UST UMG ROA NSIG MCBQ NSC BACD ACDB ACDC LMAN MUS ACDA MWC AAB GRP NFCR LNK FCA SR AA HIST	34 35 35 36 37 38 39 40 41 42 43 44 45 55 55 55 55
FCA	52
AA	54
FCBQ	61

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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
TSET	89



LNR	90
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
IDC	113
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

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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
SACP	181
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	212
ECT	215
BRI	216
IVR	218
MWI	219
MSDL	222
FC68	223
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



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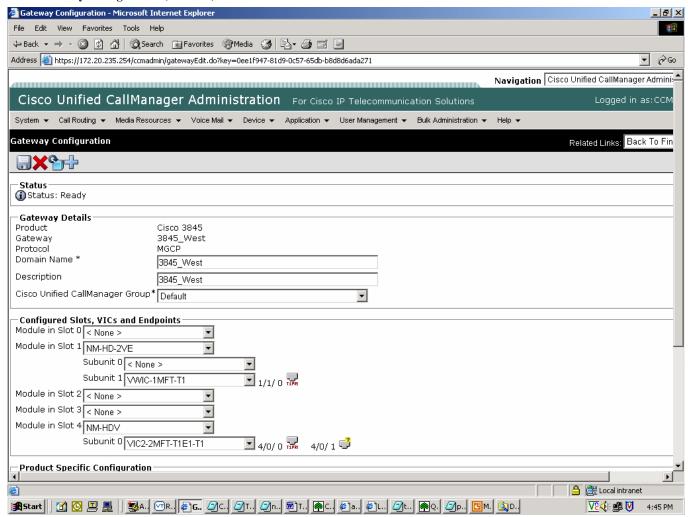
NI-2	291
IPEX	295
MAT	296
CPP	301
QSIGGF	305
CPRKNET	306
PAGENET	307
CPCI	310
TATO	312
OPEN_ALARM	315
QSIG-SS	316
NGEN	324
RANBRD	327
MUSBRD	328
ESA	329
ESA_SUPP	330
ESA_CLMP	331
CNUMB	332
CNAME	333
NI-2_CBC	334
MEET	348
MC32	350
DBA	351
FDID	362
NMCE	364
STS_MSG	380
CDIR	381
VIRTUAL_OFFICE	382
ATAN	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

REQ



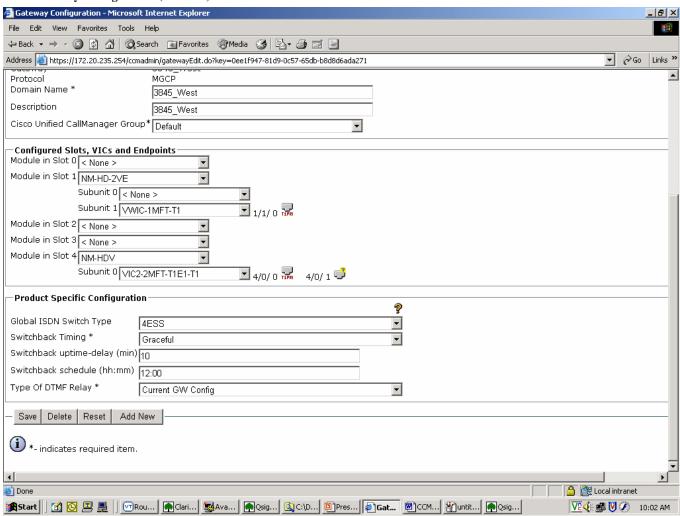
Cisco Unified CallManager Configuration

CCM Gateway Configuration (Screen 1)



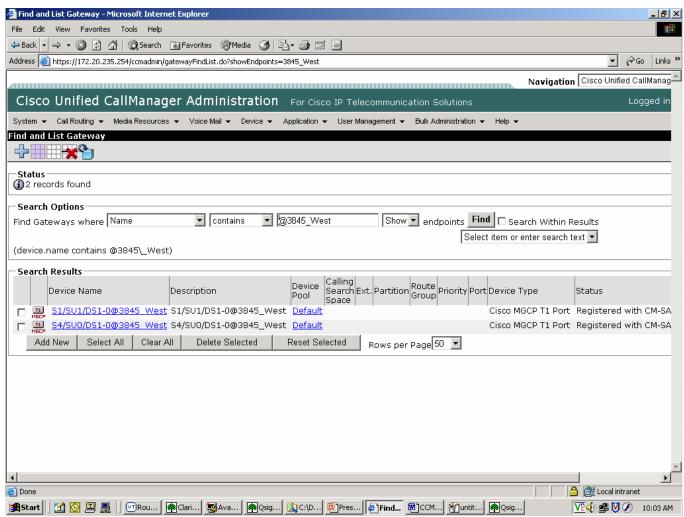


CCM Gateway Configuration (Screen 2)



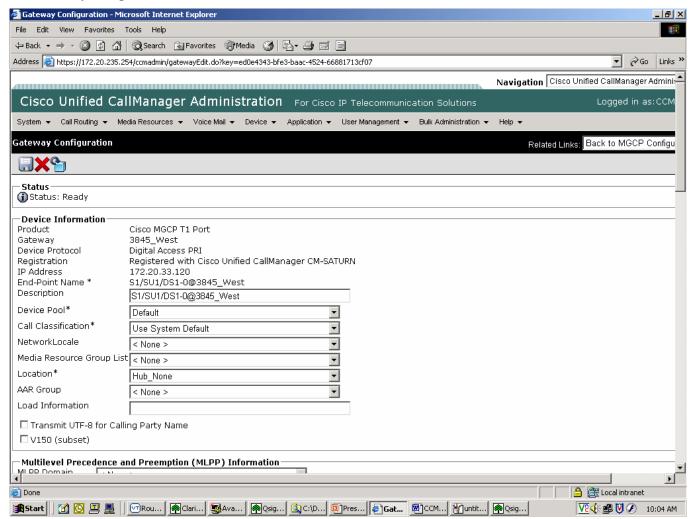


CCM Gateway Configuration (Screen 3)



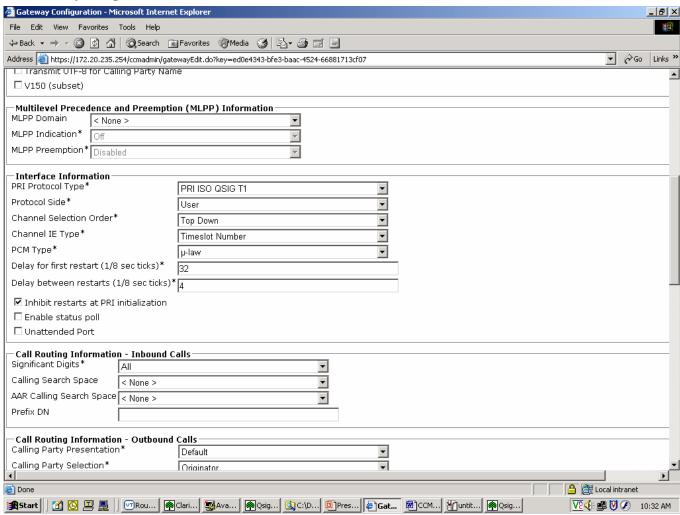


CCM Gateway Configuration (Screen 4)



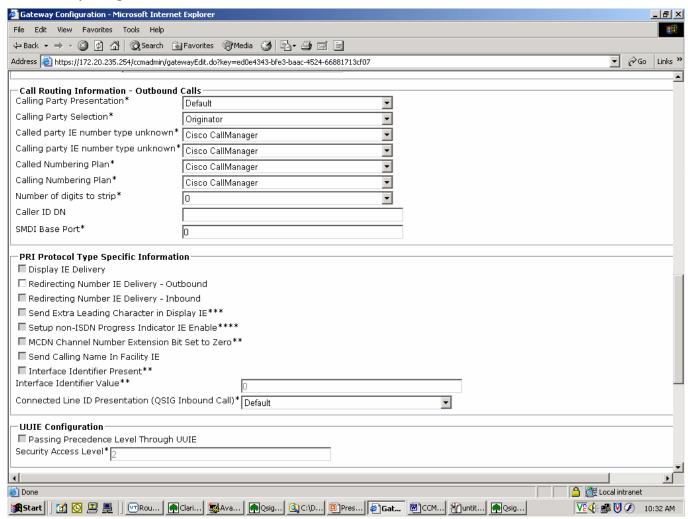


CCM Gateway Configuration (Screen 5)



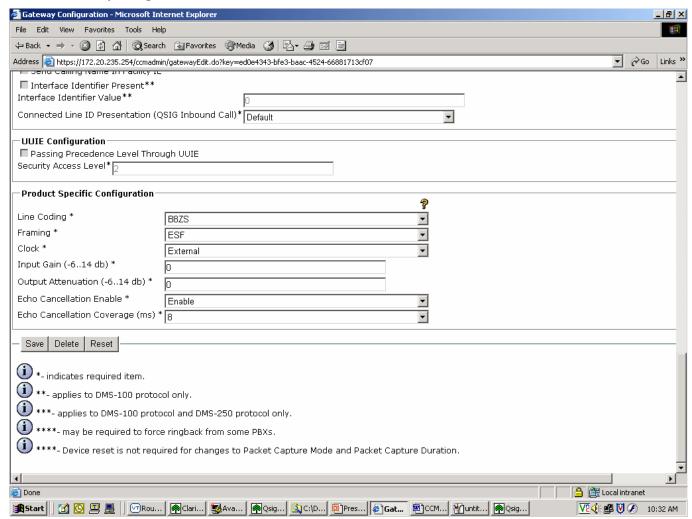


CCM Gateway Configuration (Screen 6)



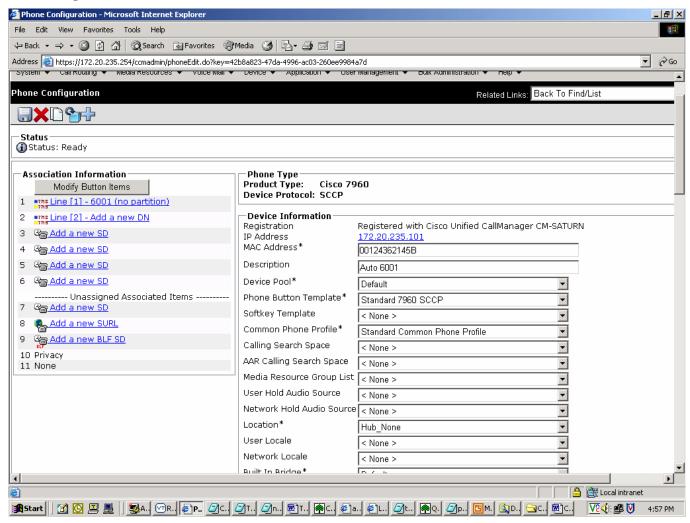


CCM 3845 Gateway Configuration (Screen 7)



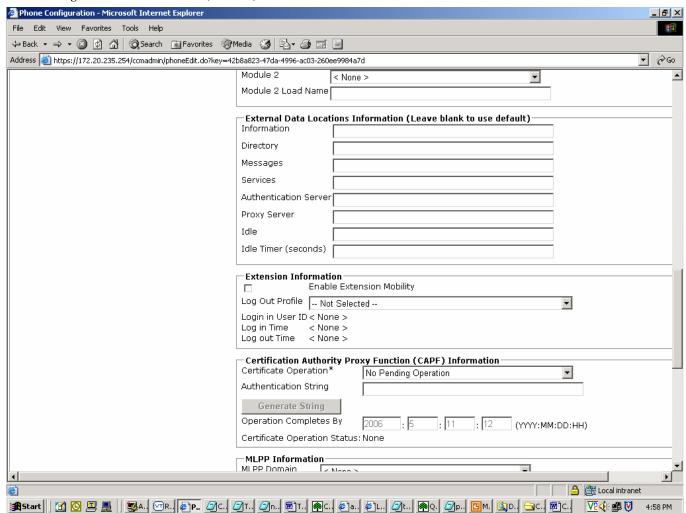


Phone Configuration for SCCP Phone (Screen 1)



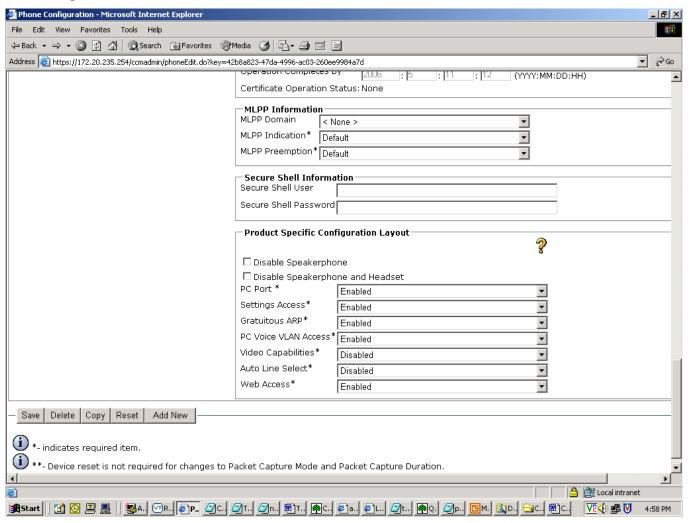


Phone Configuration for SCCP Phone (Screen 2)

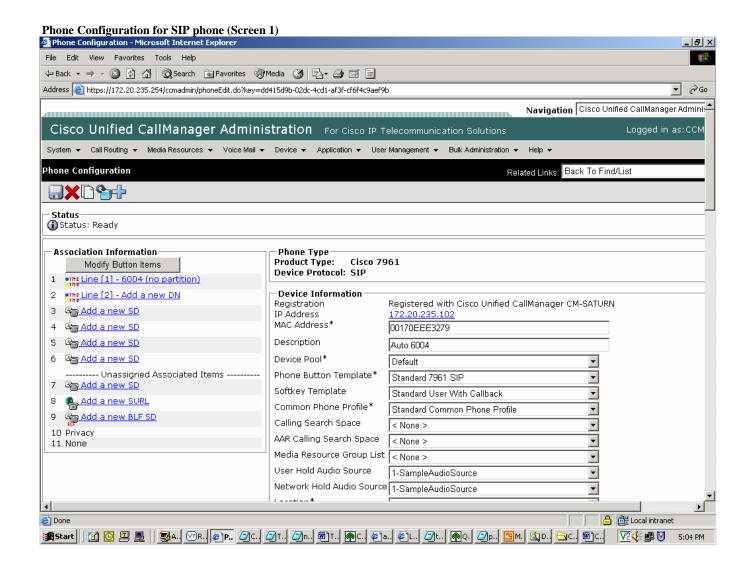




Phone Configuration for SCCP Phone (Screen 3)





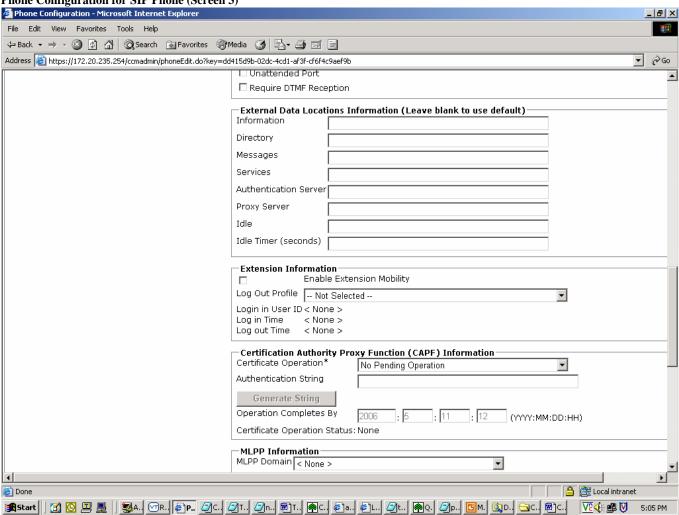




Phone Configuration for SIP Phone (Screen 2) Phone Configuration - Microsoft Internet Explorer File Edit View Favorites Tools Help
 4⇒ Back → → ✓ 🚳 🗗 🚮 | 🐼 Search
 Image: Revorites
 Address https://172.20.235.254/ccmadmin/phoneEdit.do?key=dd415d9b-02dc-4cd1-af3f-cf6f4c9aef9b €Go ~| I-SampleAudioSource Location* • Hub None User Locale **T** < None > Network Locale **T** < None > Built In Bridge* Default • Privacy* Default **T** Owner User ID < None > • Phone Load Name ☐ Ignore Presentation Indicators (internal calls only) ☑ Allow Control of Device from CTI Protocol Specific Information Packet Capture Mode* None ▾ Packet Capture Duration Presence Group* Standard Presence group • SIP Dial Rules • < None > MTP Preferred Originating Codec* 711ulaw SIP Phone Security Profile* Standard SIP Profile for Auto Registration • Rerouting Calling Search Space ▾ < None > SUBSCRIBE Calling Search Space < None > **T** SIP Profile* **T** Standard SIP Profile Digest User < None > ☐ Media Termination Point Required \square Unattended Port ☐ Require DTMF Reception External Data Locations Information (Leave blank to use default) 🔒 🎉 Local intranet Done

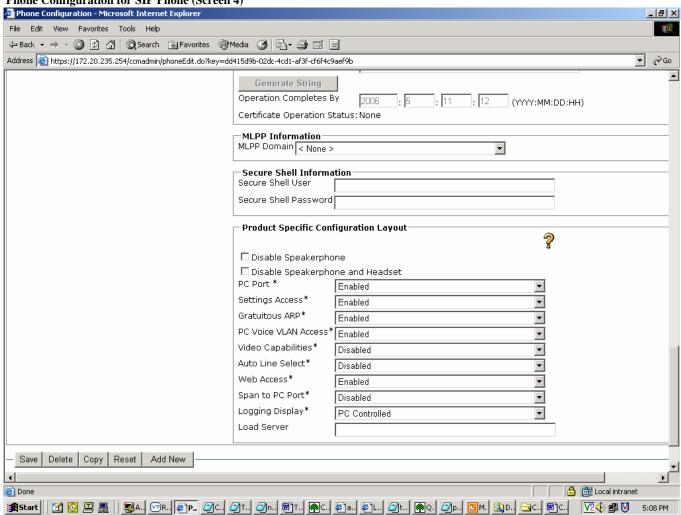


Phone Configuration for SIP Phone (Screen 3)



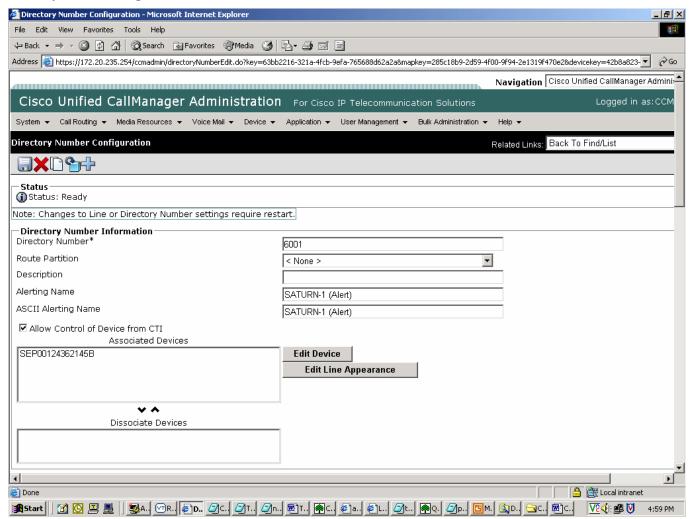


Phone Configuration for SIP Phone (Screen 4)



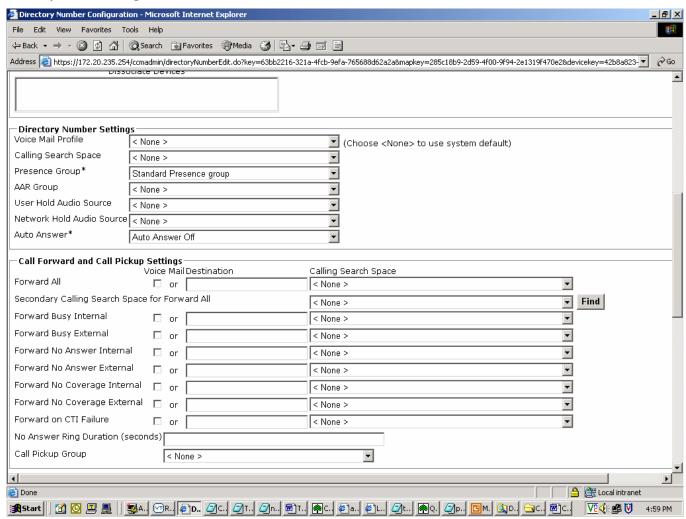


Directory Number Configuration for SCCP Phone (Screen 1)



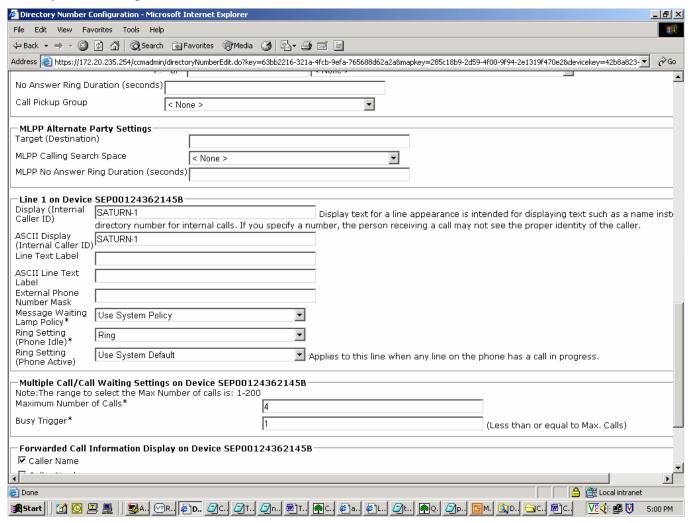


Directory Number Configuration for SCCP Phone (Screen 2)



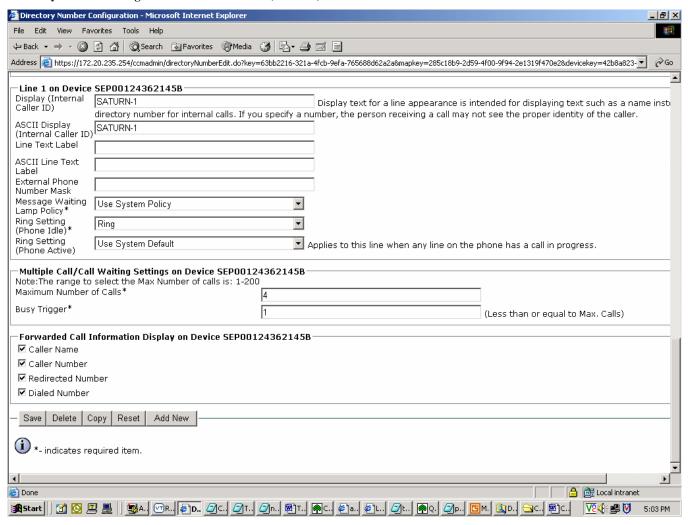


Directory Number Configuration for SCCP Phone (Screen 3)





Directory Number Configuration for SCCP Phone (Screen 4)



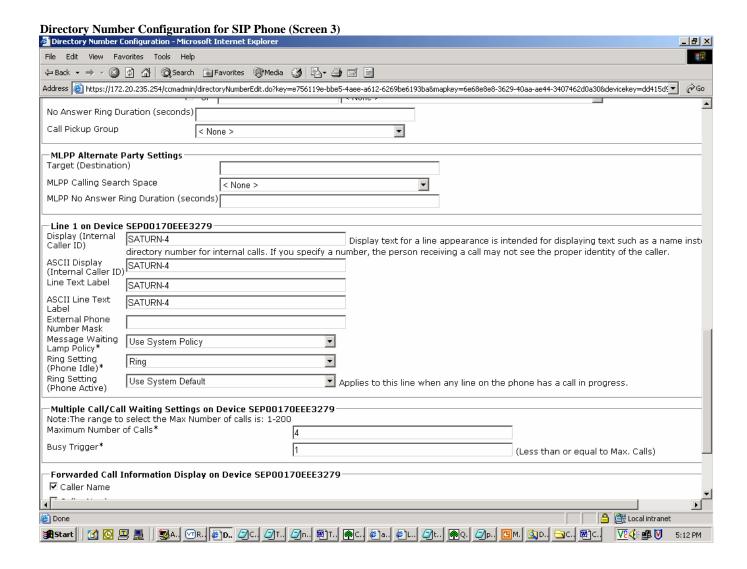


Directory Number Configuration for SIP phone (Screen 1) Directory Number Configuration - Microsoft Internet Explorer _ B × File Edit View Favorites Tools Help 4⇒ Back → → ✓ Ø Ø A Ø Search MarFavorites Marginetia Ø B Ø Ø Ø Ø Ø Address # https://172.20.235.254/ccmadmin/directoryNumberEdit.do?key=e756119e-bbe5-4aee-a612-6269be6193ba&mapkey=668e8e8-3629-40aa-ae44-3407462d0a30&devicekey=dd415d5 Navigation Cisco Unified CallManager Admini Cisco Unified CallManager Administration For Cisco IP Telecommunication Solutions Logged in as:CCM System 🕶 Call Routing 🔻 Media Resources 💌 Voice Mail 🔻 Device 🔻 Application 🕶 User Management 🕶 Bulk Administration 💌 Help 🔻 Directory Number Configuration Related Links: Back To Find/List Status (i) Status: Ready Note: Changes to Line or Directory Number settings require restart. Directory Number Information Directory Number* 6004 Route Partition < None > ▾ Description 6004 SIP Alerting Name SATURN-4 (Alert) ASCII Alerting Name SATURN-4 (Alert) ✓ Allow Control of Device from CTI Associated Devices SEP00170EEE3279 Edit Device Edit Line Appearance **~** ^ Dissociate Devices 🔒 赶 Local intranet **劉Start** | **1** 🖸 🖸 🗏 및 | **S**A. () R. () D. () C. () T. () D. () R. () D. (



Directory Number Configuration for SIP Phone (Screen 2) Directory Number Configuration - Microsoft Internet Explorer _ B × File Edit View Favorites Tools Help 4⇒ Back → → ✓ Ø Ø A Ø Search MarFavorites Marginetia Ø B Ø Ø Ø Ø Ø Address # https://172.20.235.254/ccmadmin/directoryNumberEdit.do?key=e756119e-bbe5-4aee-a612-6269be6193ba&mapkey=668e8e8-3629-40aa-ae44-3407462d0a30&devicekey=dd415d5 Directory Number Settings Voice Mail Profile < None > (Choose <None> to use system default) Calling Search Space < None > Presence Group* • Standard Presence group AAR Group **~** < None > User Hold Audio Source • < None > Network Hold Audio Source < None > • Auto Answer* Auto Answer Off -Call Forward and Call Pickup Settings Voice Mail Destination Calling Search Space Forward All □ or | ▾ < None > Secondary Calling Search Space for Forward All Find • < None > Forward Busy Internal □ or < None > • Forward Busy External • ☐ or < None > Forward No Answer Internal • □ or < None > Forward No Answer External □ or < None > ▾ Forward No Coverage Internal \square or • < None > Forward No Coverage External □ or < None > • Forward on CTI Failure □ or < None > No Answer Ring Duration (seconds) Call Pickup Group ▾ < None > 🔓 赶 Local intranet Done





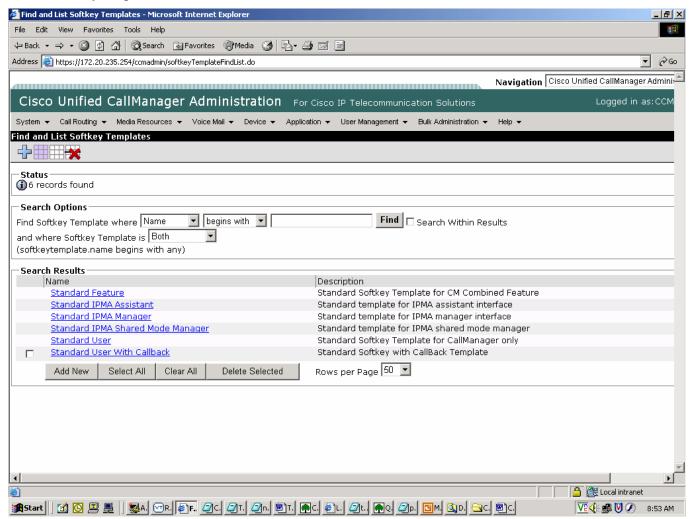


Directory Number Configuration for SIP Phone (Screen 4) Directory Number Configuration - Microsoft Internet Explorer _ B × File Edit View Favorites Tools Help Address 🎒 https://172.20.235.254/ccmadmin/directoryNumberEdit.do?key=e756119e-bbe5-4aee-a612-6269be6193ba&mapkey=6e68e8e8-3629-40aa-ae44-3407462d0a30&devicekey=dd415d5 🔻 Line 1 on Device SEP00170EEE3279 Display (Internal Caller ID) SATURN-4 Display text for a line appearance is intended for displaying text such as a name insti directory number for internal calls. If you specify a number, the person receiving a call may not see the proper identity of the caller. ASCII Display SATURN-4 (Internal Caller ID) Line Text Label SATURN-4 ASCII Line Text SATURN-4 Label External Phone Number Mask Message Waiting Use System Policy Lamp Policy* ▾ Ring Setting (Phone Idle)* Ring • Ring Setting Applies to this line when any line on the phone has a call in progress. Use System Default (Phone Active) Multiple Call/Call Waiting Settings on Device SEP00170EEE3279 Note: The range to select the Max Number of calls is: 1-200 Maximum Number of Calls* Busy Trigaer* 1 (Less than or equal to Max. Calls) Forwarded Call Information Display on Device SEP00170EEE3279 ✓ Caller Name ☑ Caller Number ☑ Redirected Number ☑ Dialed Number Save | Delete | Copy | Reset | Add New (i) *- indicates required item. 🔒 赶 Local intranet E) Done

劉Start | 🕜 🖸 🖳 🖳 | 🔩 A., 🐨 R., 😰 D., ② C., ② T., ② n., 圖 T., [@ C., ② a., ② L., ② t., [@ Q., ② p., [图 M. [Q.] D., [입 M. [Q.] C., [图 C., [] V 2 4: 4] V 5:12 PM

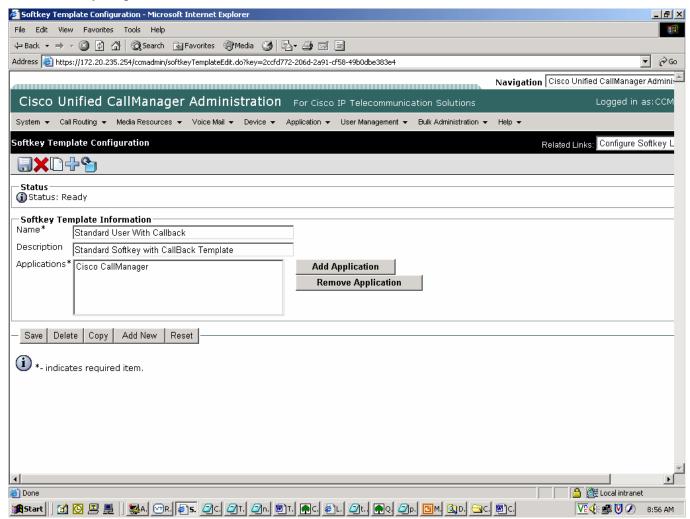


CallBack Softkey Template (Screen 1)



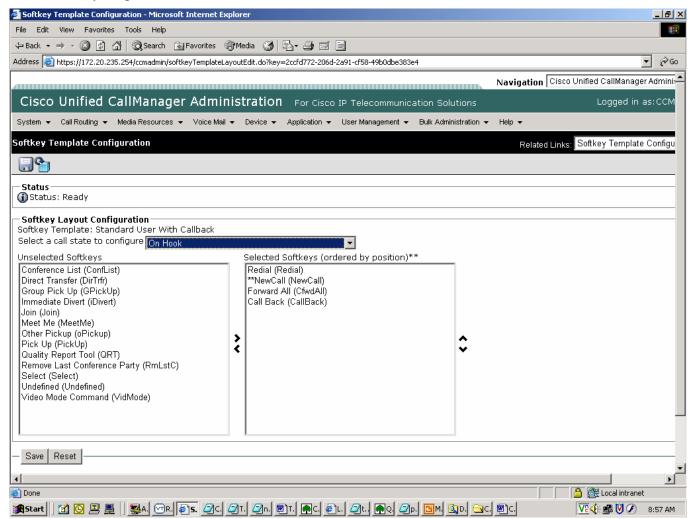


CallBack Softkey Template (Screen 2)



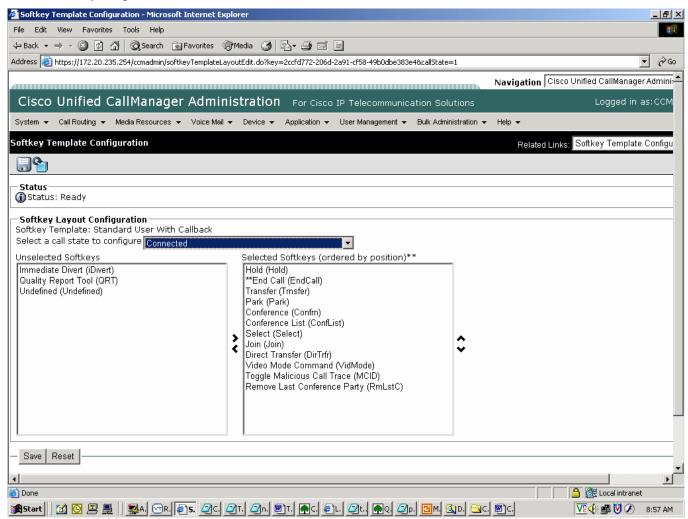


CallBack Softkey Template (Screen 3)



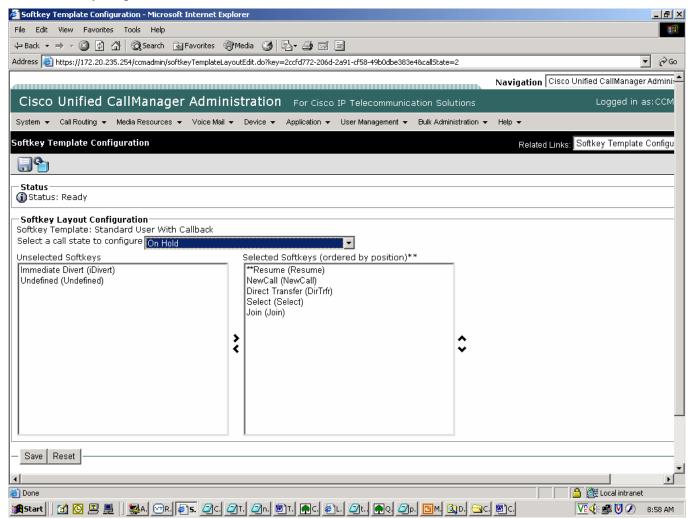


CallBack Softkey Template (Screen 4)



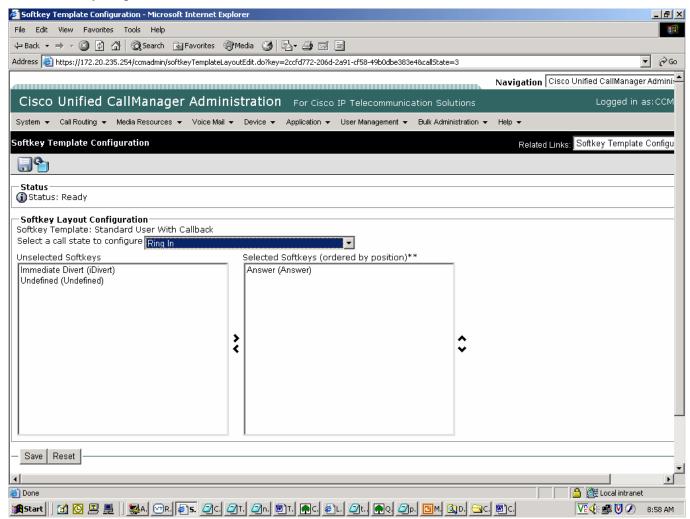


CallBack Softkey Template (Screen 5)



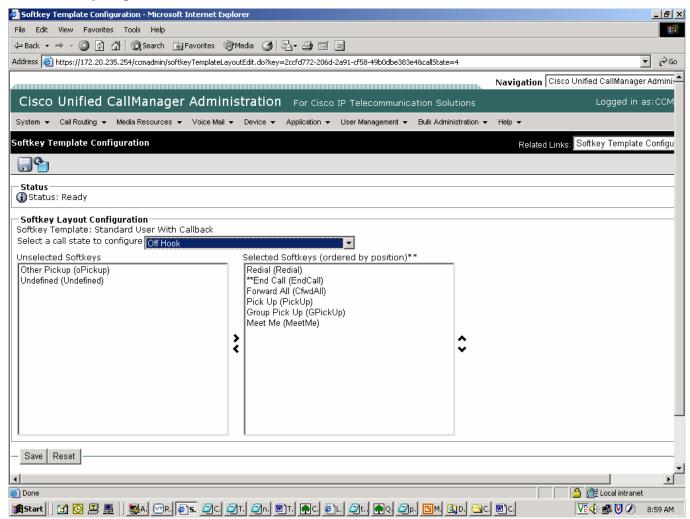


CallBack Softkey Template (Screen 6)



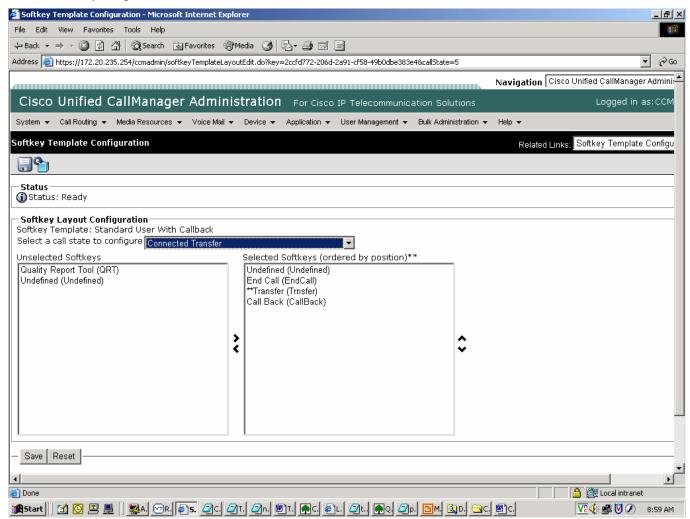


CallBack Softkey Template (Screen 7)



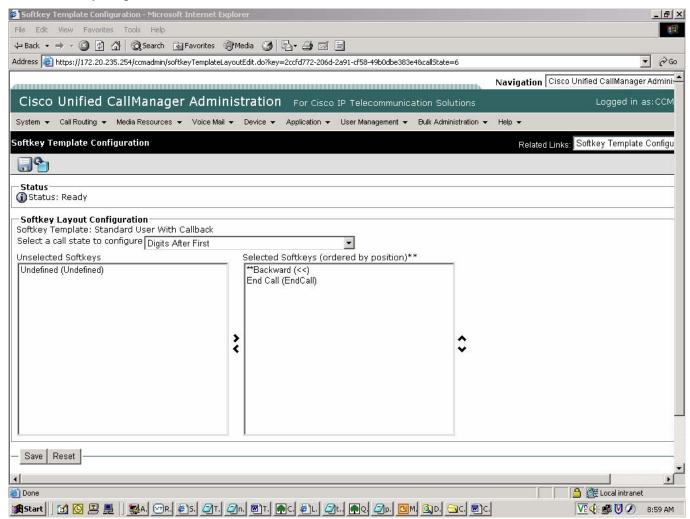


CallBack Softkey Template (Screen 8)



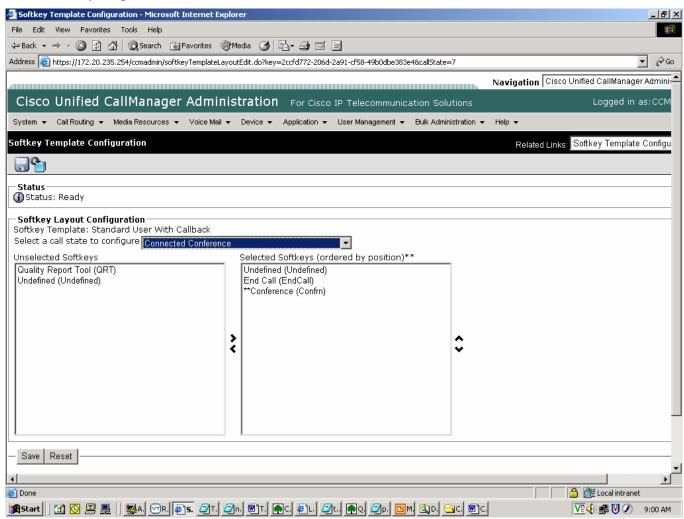


CallBack Softkey Template (Screen 9)



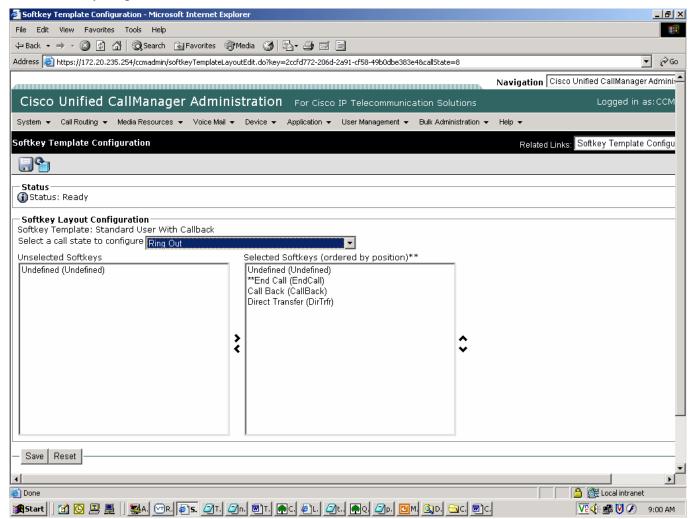


CallBack Softkey Template (Screen 10)



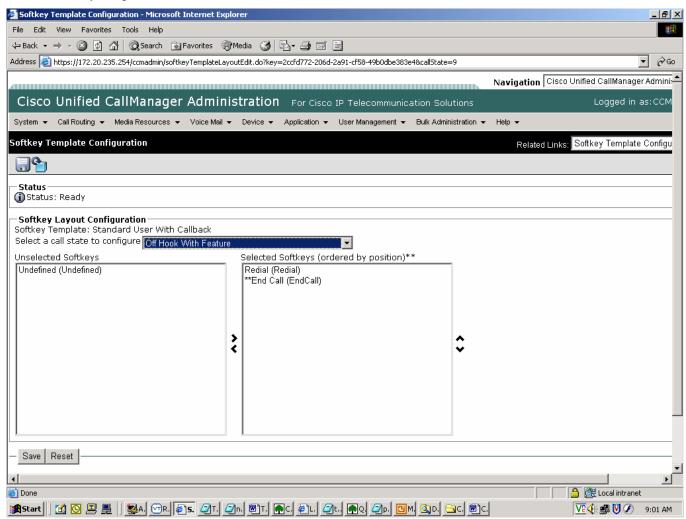


CallBack Softkey Template (Screen 11)



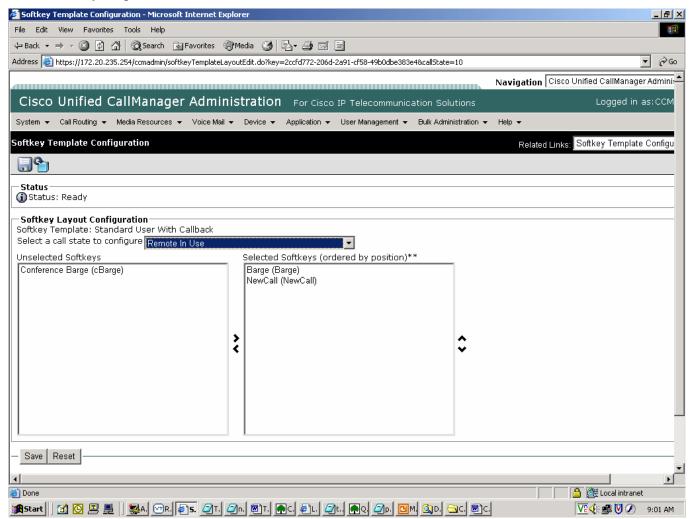


CallBack Softkey Template (Screen 12)



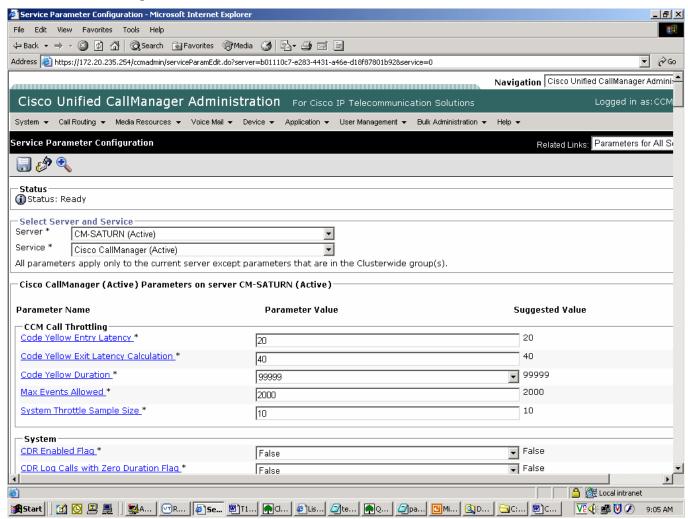


CallBack Softkey Template (Screen 13)



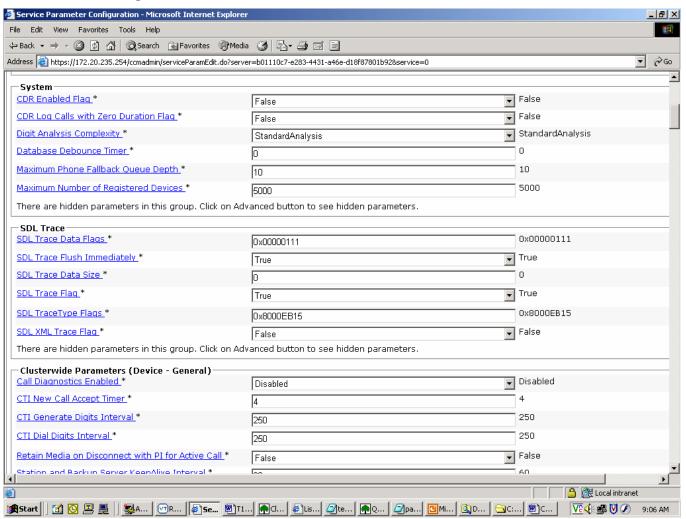


Service Parameters Configuration (Screen 1)



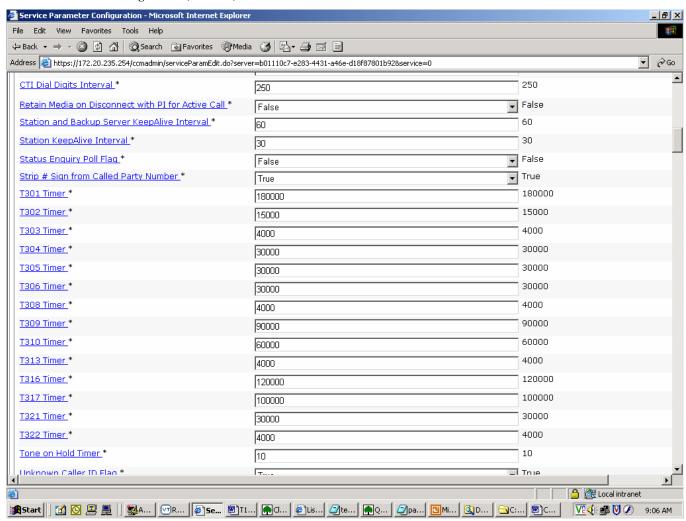


Service Parameters Configuration (Screen 2)



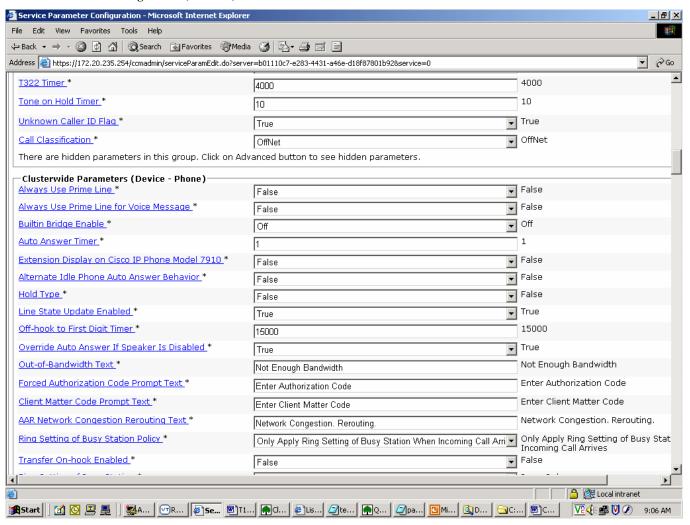


Service Parameters Configuration (Screen 3)



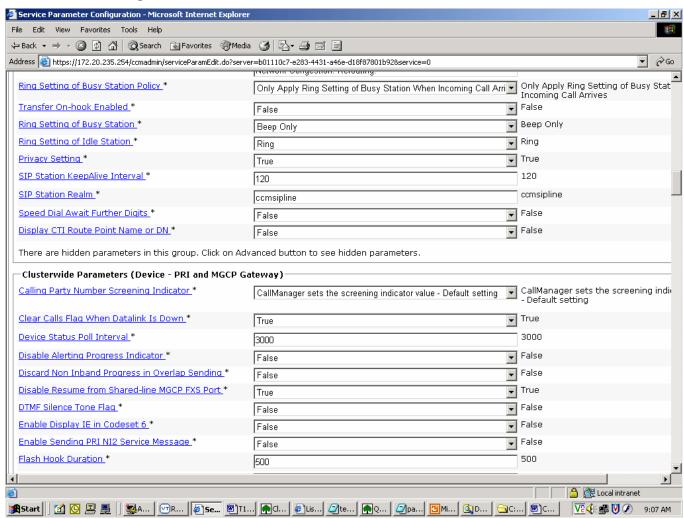


Service Parameters Configuration (Screen 4)



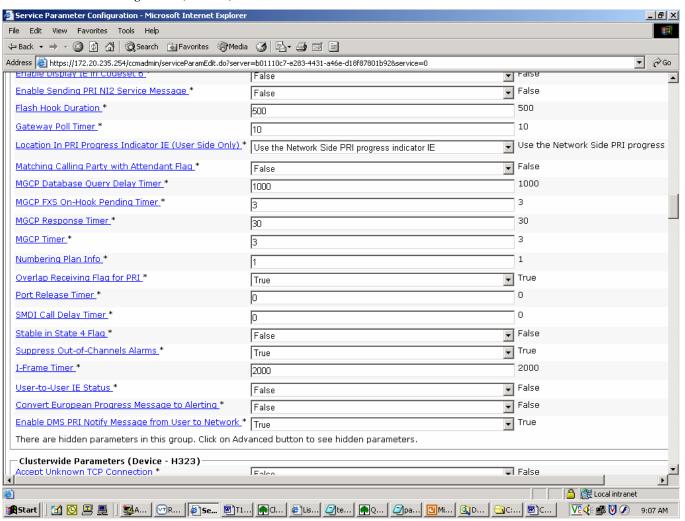


Service Parameters Configuration (Screen 5)



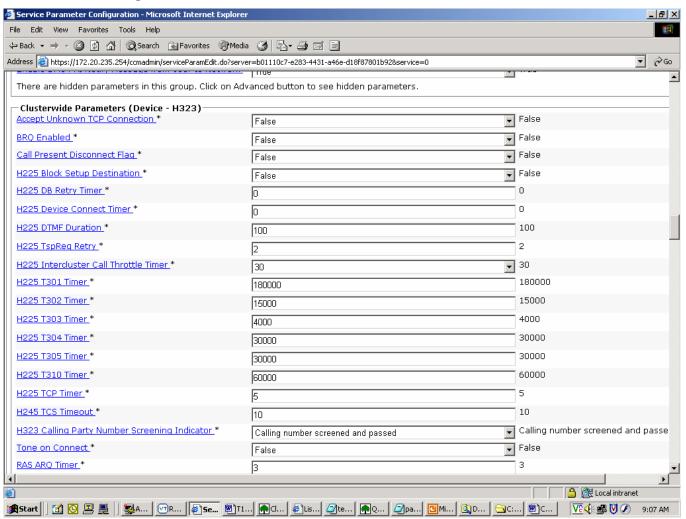


Service Parameters Configuration (Screen 6)



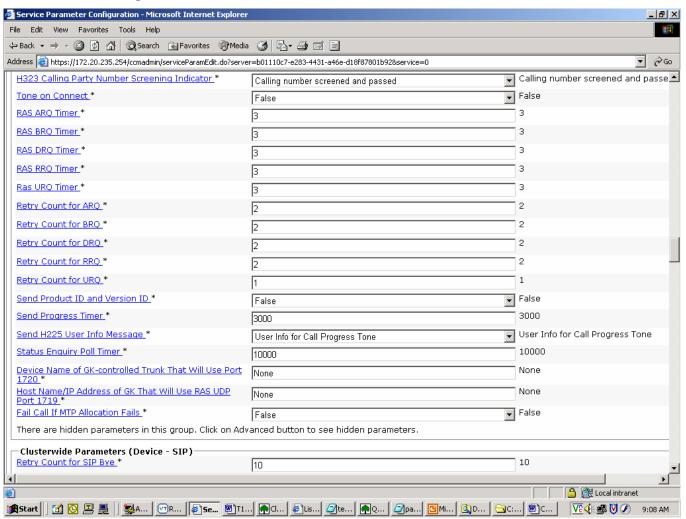


Service Parameters Configuration (Screen 7)



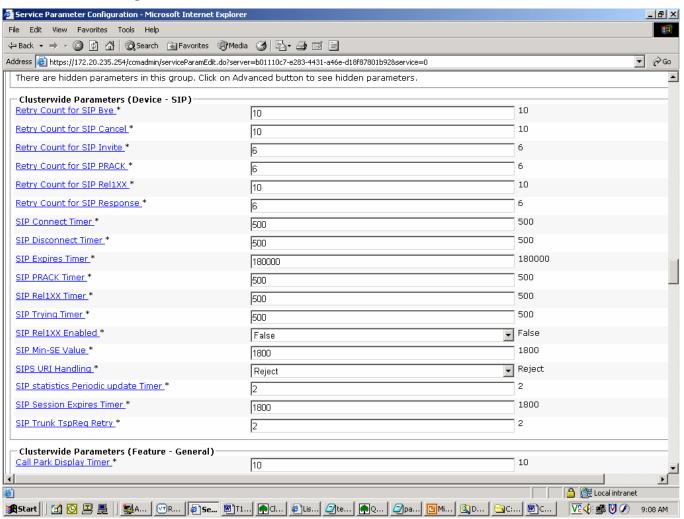


Service Parameters Configuration (Screen 8)



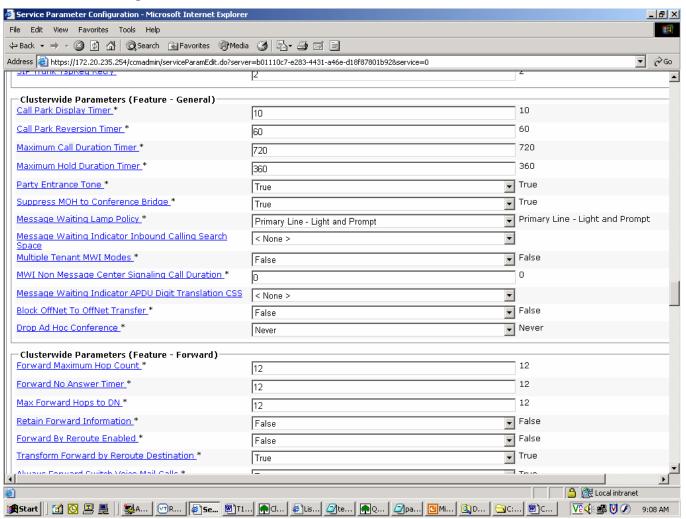


Service Parameters Configuration (Screen 9)



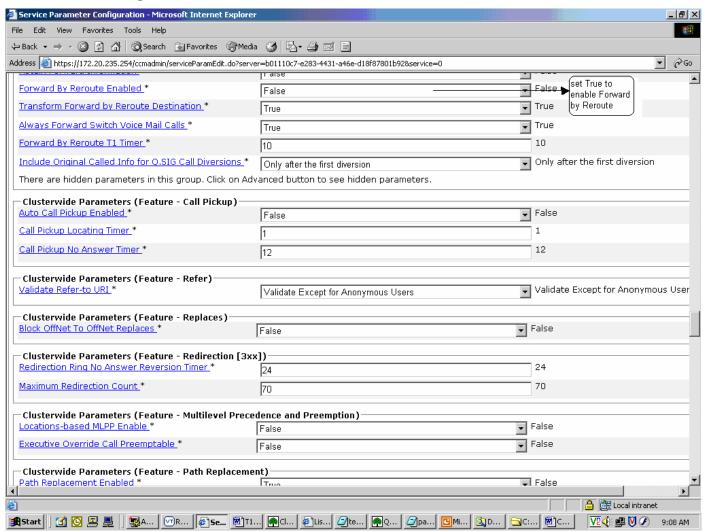


Service Parameters Configuration (Screen 10)



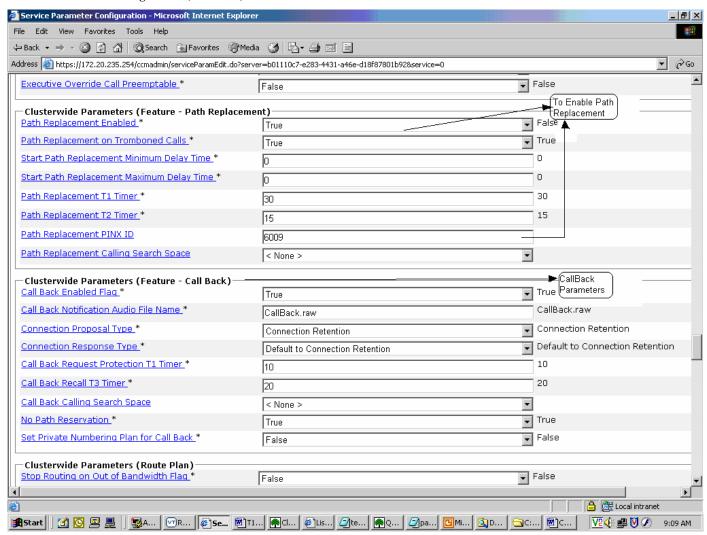


Service Parameters Configuration (Screen 11)



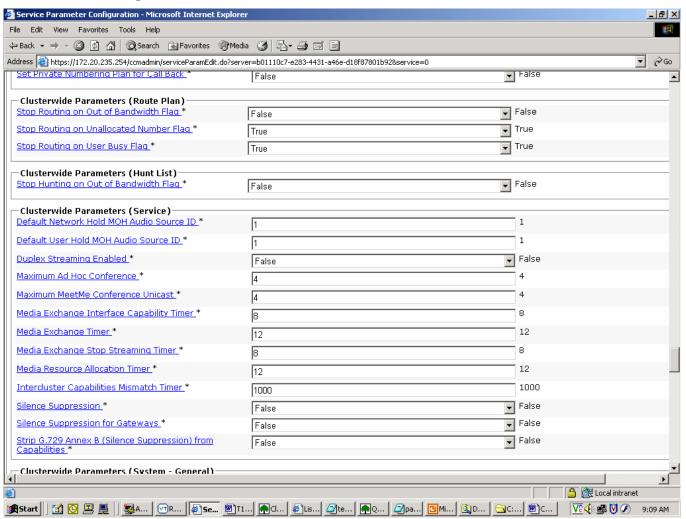


Service Parameters Configuration (Screen 12)



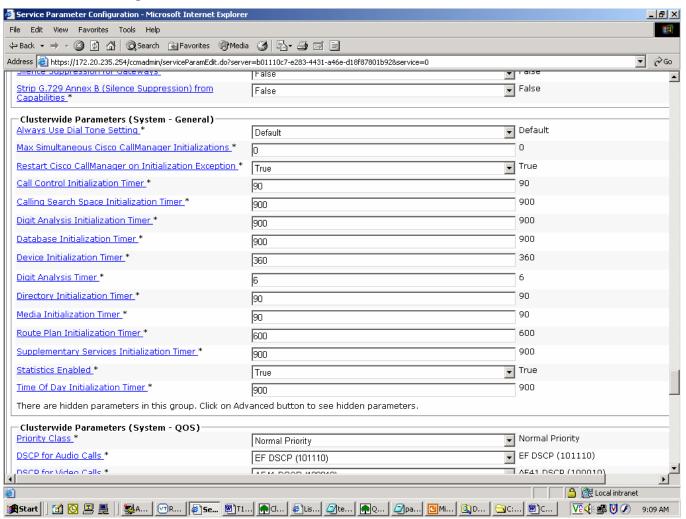


Service Parameters Configuration (Screen 13)



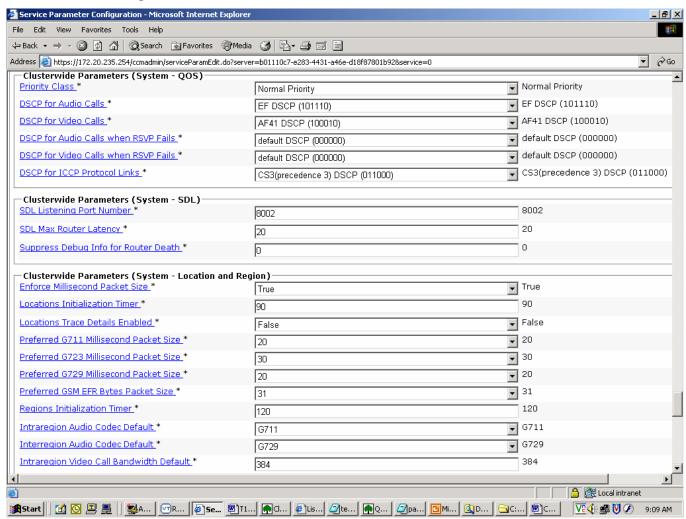


Service Parameters Configuration (Screen 14)



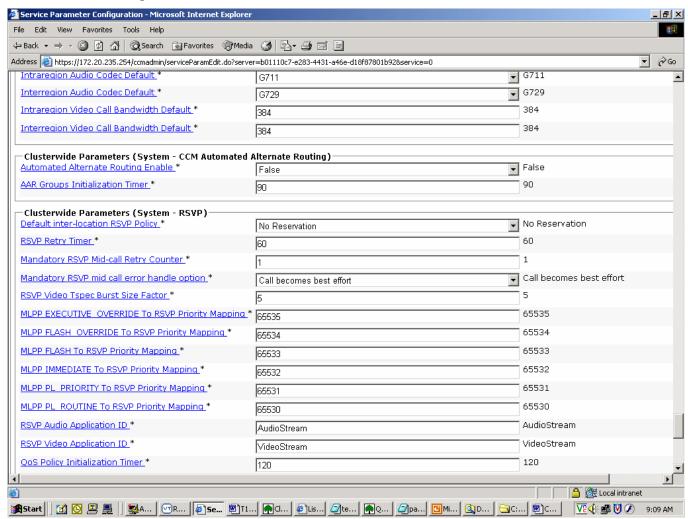


Service Parameters Configuration (Screen 15)



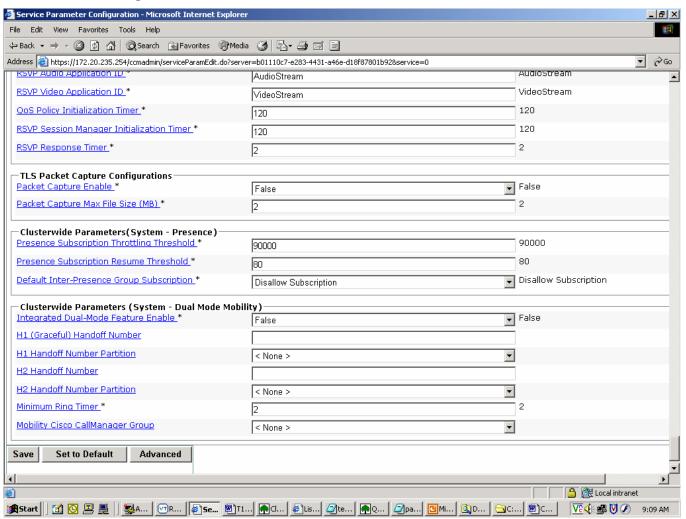


Service Parameters Configuration (Screen 16)



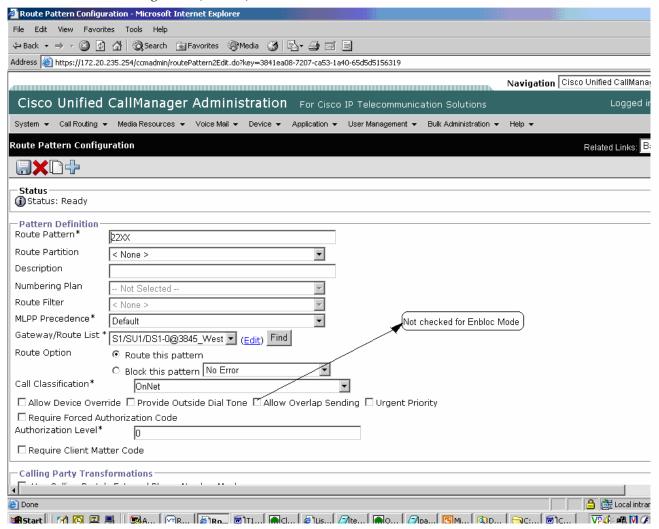


Service Parameters Configuration (Screen 17)



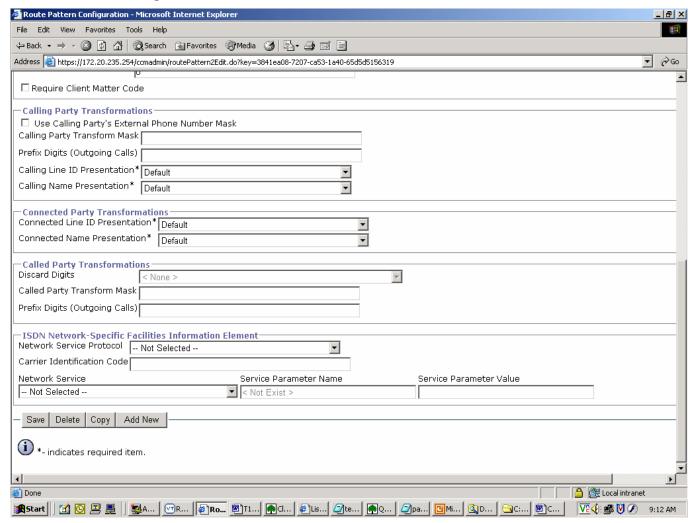


Enbloc Route Pattern Configuration (Screen 1)



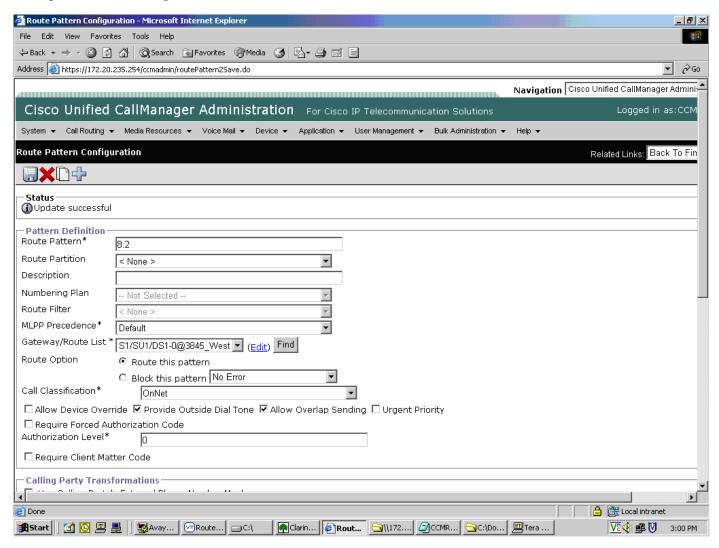


Enbloc Route Pattern Configuration (Screen 2)



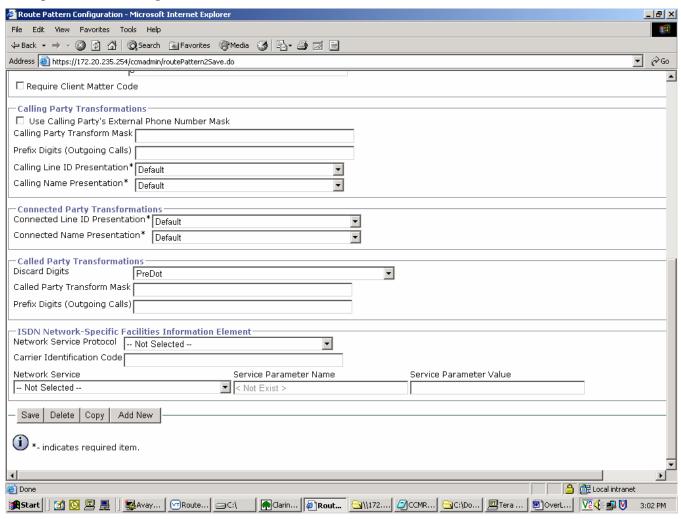


Overlap Route Pattern Configuration (Screen 1)



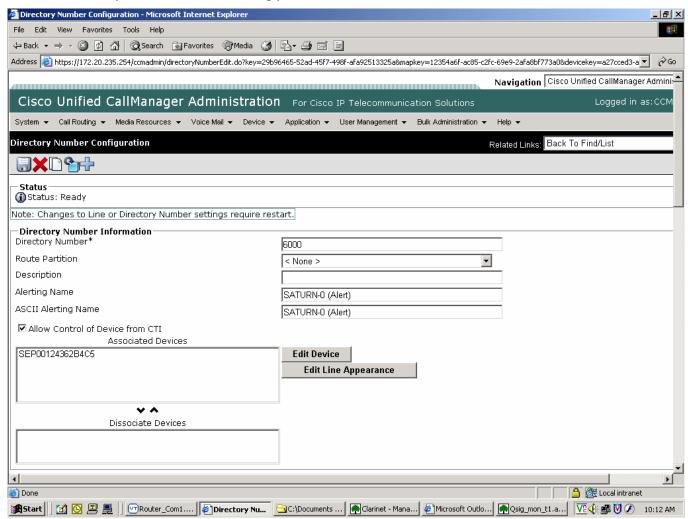


Overlap Route Pattern Configuration (Screen 2)



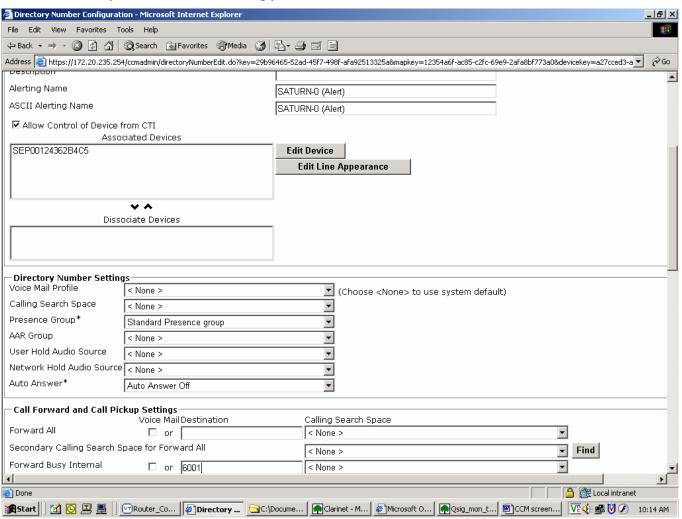


Call Forward on Busy and Call Forward on No Reply (Screen 1)



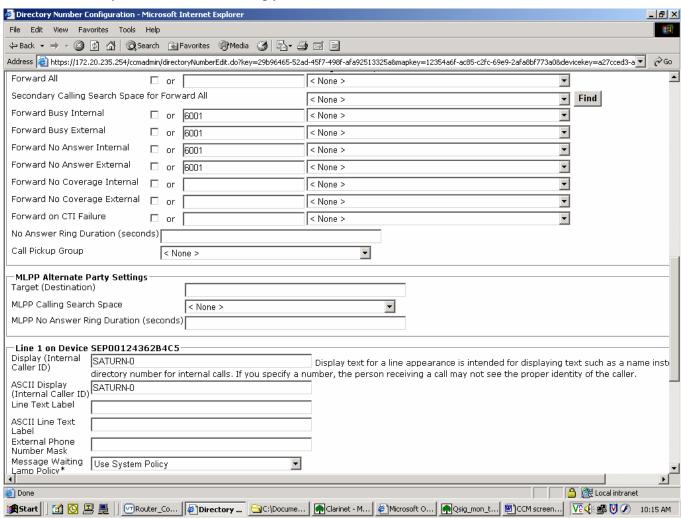


Call Forward on Busy and Call Forward on No Reply (Screen 2)



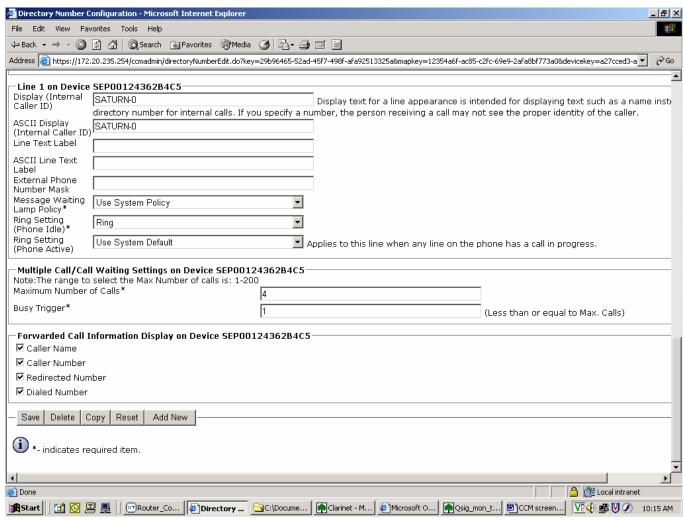


Call Forward on Busy and Call Forward on No Reply (Screen 3)



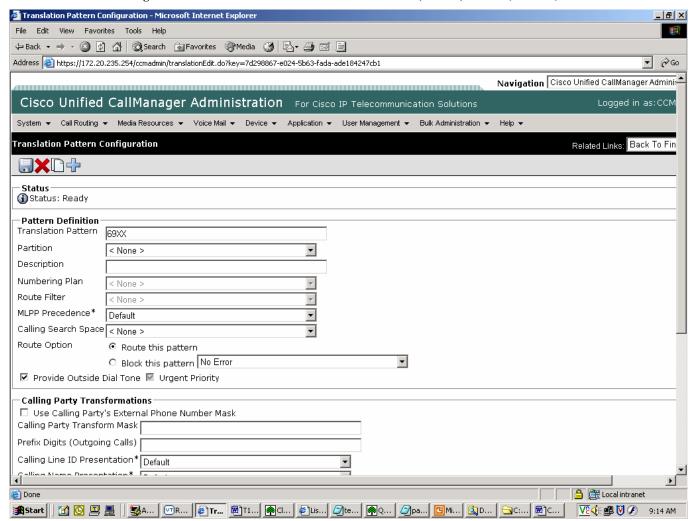


Call Forward on Busy and Call Forward on No Reply (Screen 4)



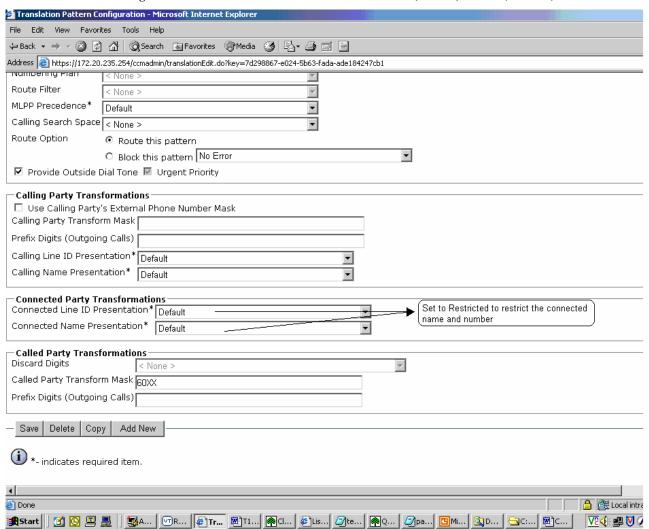


Translation Pattern Configuration - Connected Name and Number Restrictions, COLR, CONR (Screen 1)



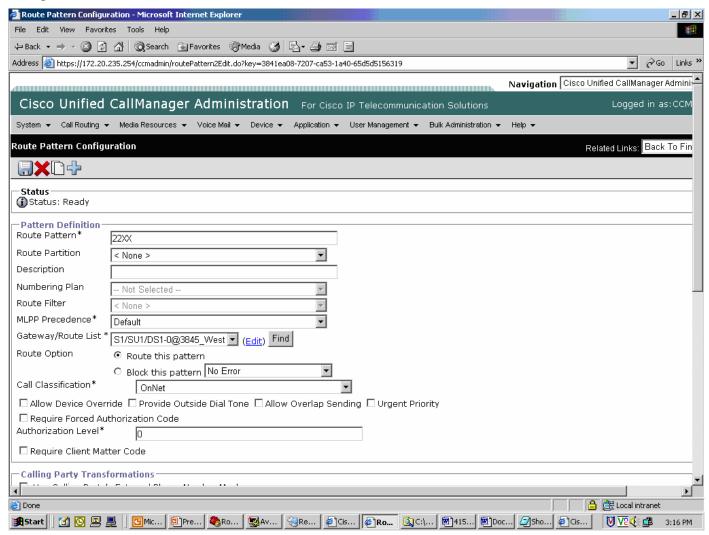


Translation Pattern Configuration - Connected Name and Number Restrictions, COLR, CONR (Screen 2)



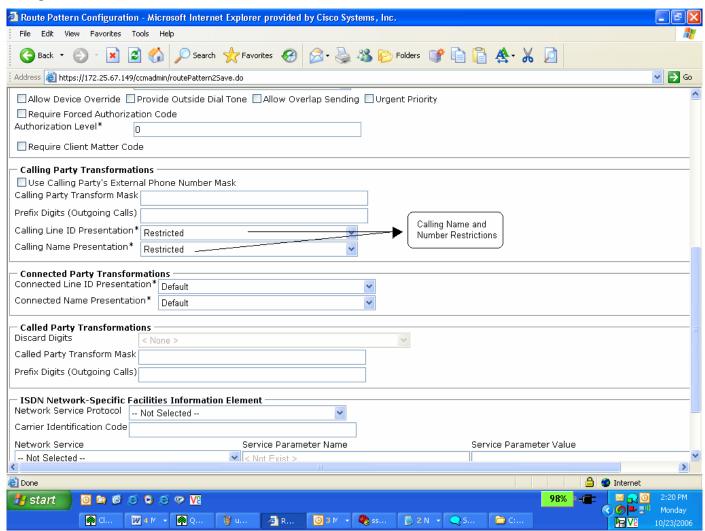


Calling Line/Name ID Restrictions - CLIR, CNIR (Screen 1)



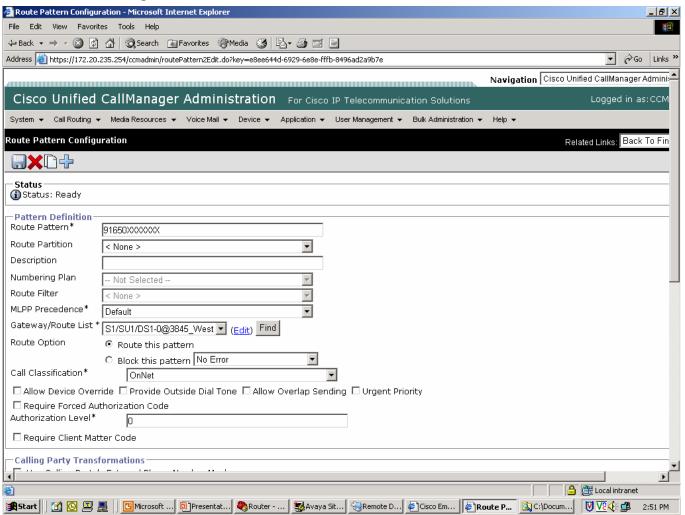


Calling Line/Name ID Restrictions -CLIR, CNIR (Screen 2)



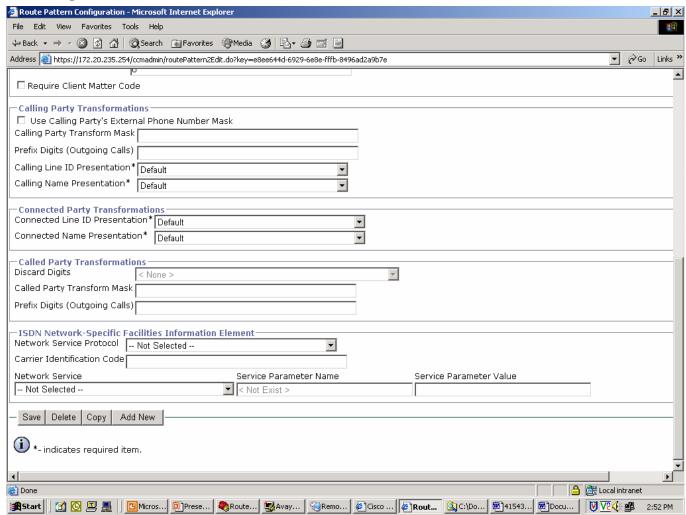


PSTN Route Pattern Configuration (Screen 1)



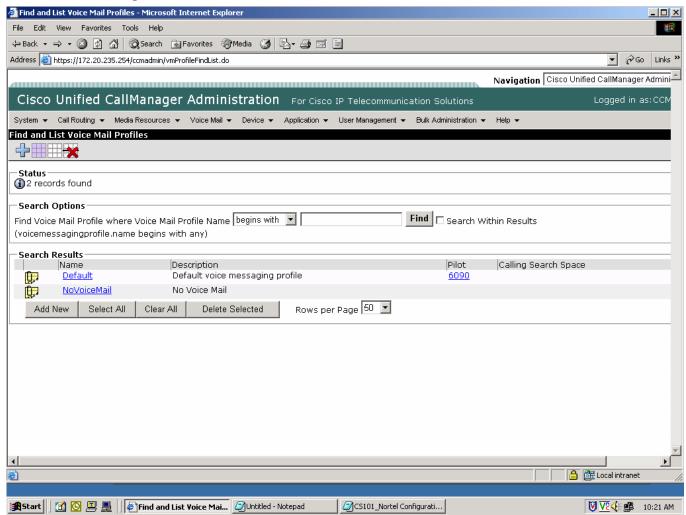


PSTN Configuration (Screen 2)



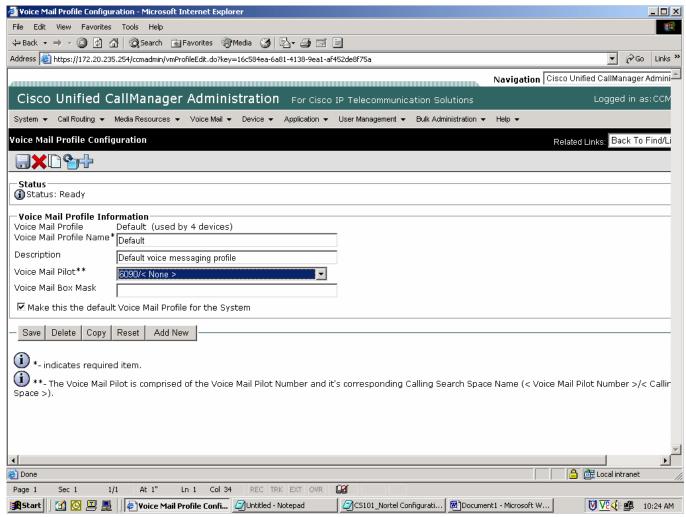


Voice Mail Profile Configuration (Screen 1)



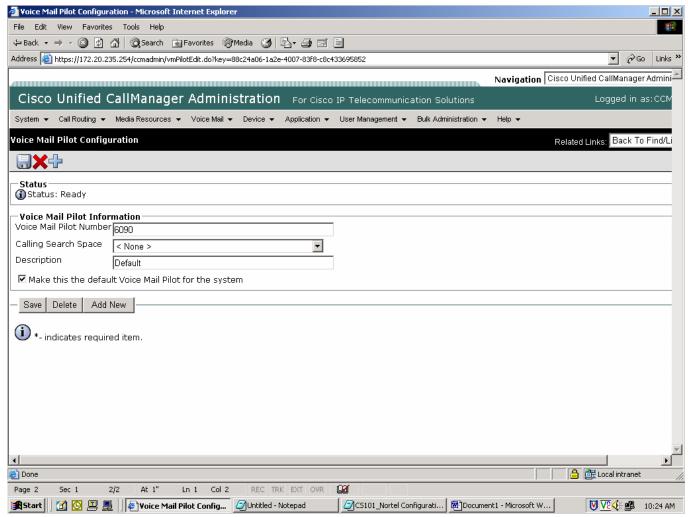


Voice Mail Profile Configuration (Screen 2)



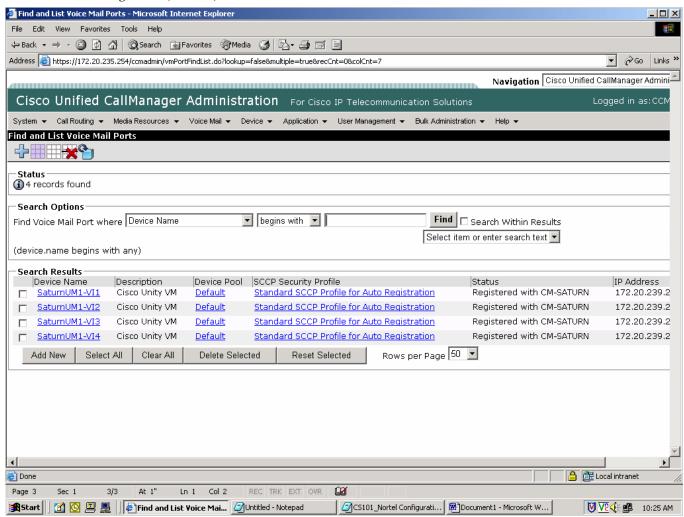


Voice Mail Pilot Configuration



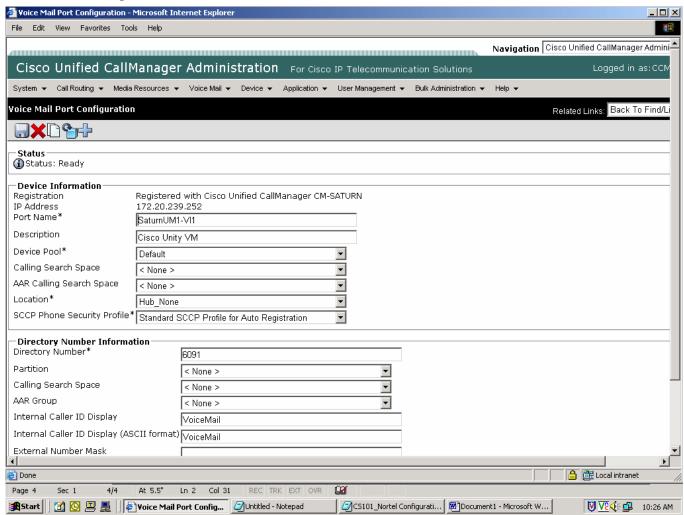


Voice Mail Port Configuration (Screen 1)



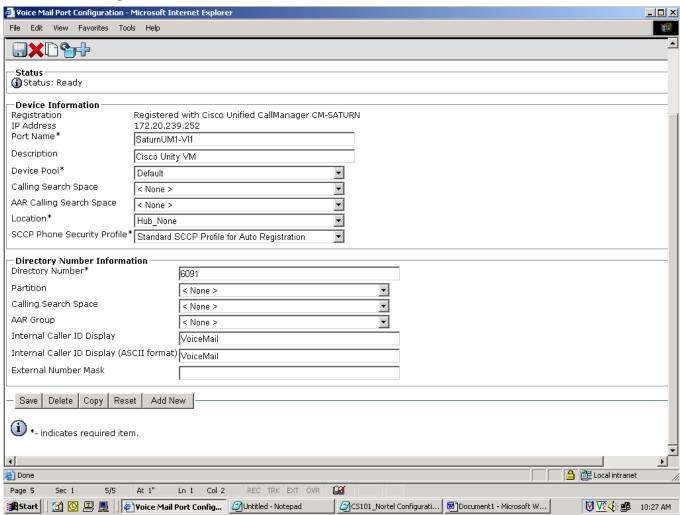


Voice Mail Port Configuration (Screen 2)



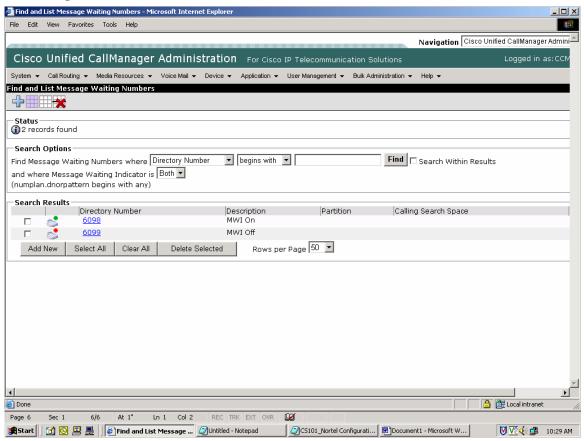


Voice Mail Port Configuration (Screen 3)



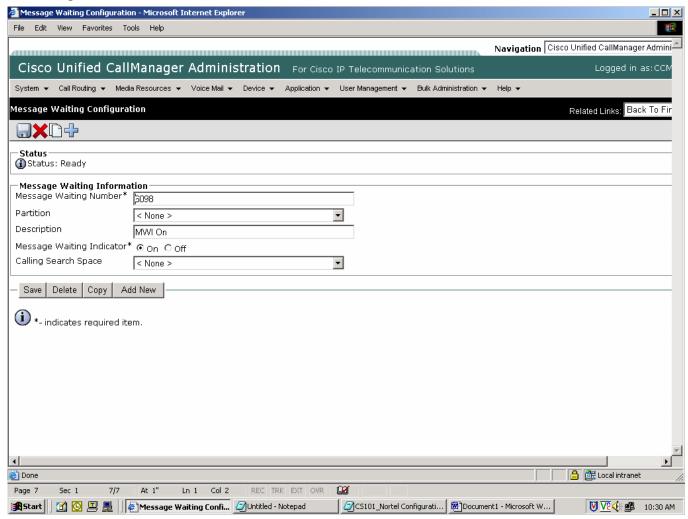


MWI Configuration (Screen 1)



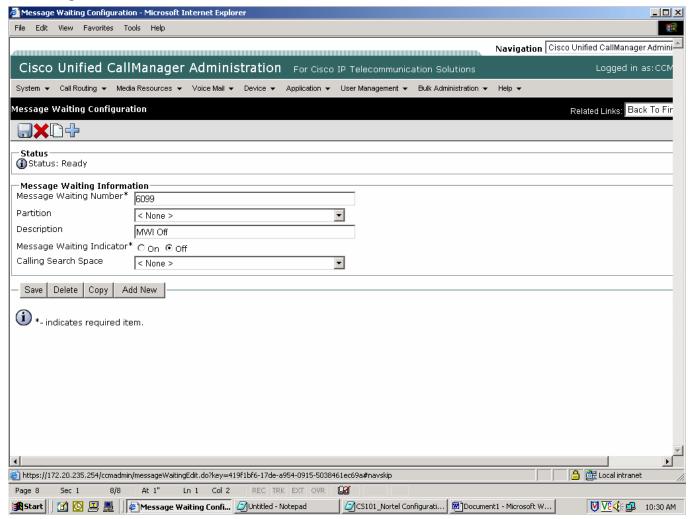


MWI Configuration (Screen 2)





MWI Configuration (Screen 3)





Cisco 3845 Configuration

```
3845 West# sh run
Building configuration...
Current configuration: 3773 bytes
!
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
hostname 3845_West
boot-start-marker
boot system flash:c3845-ipvoice-mz.124-5.13.T2
boot-end-marker
!
card type t1 4 0
logging buffered 51200 warnings
enable secret 5 $1$MFhi$AqqpDsFeO4Sb/IkzkrcmO/
!
no aaa new-model
resource policy
no network-clock-participate slot 1
no network-clock-participate slot 4
voice-card 0
no dspfarm
voice-card 1
no dspfarm
voice-card 4
 dspfarm
ip cef
ip tcp synwait-time 13
!
ı
no ip domain lookup
ip host CM-SATURN 172.20.235.254
ip name-server 172.20.235.254
isdn switch-type primary-4ess
no voice call carrier capacity active
!
voice class codec 1
 codec preference 2 g711ulaw
```



```
codec preference 3 g711alaw
!
!
!
!
controller T1 1/1/0
framing esf
linecode b8zs
pri-group timeslots 1-24 service mgcp
controller T1 4/0/0
framing esf
linecode b8zs
pri-group timeslots 1-24 service mgcp
controller T1 4/0/1
 framing esf
 linecode b8zs
ı
interface GigabitEthernet0/0
 description $ETH-LAN$$ETH-SW-LAUNCH$$INTF-INFO-GE 0/0$
 ip address 10.10.10.1 255.255.255.248
 shutdown
duplex auto
 speed auto
media-type rj45
negotiation auto
interface GigabitEthernet0/1
 ip address 172.20.33.120 255.255.255.0
duplex auto
 speed auto
media-type rj45
negotiation auto
interface Serial1/1/0:23
no ip address
 encapsulation hdlc
 no logging event link-status
 isdn switch-type primary-qsig
 isdn incoming-voice voice
 isdn bind-13 ccm-manager
no cdp enable
ı
```



```
interface Serial4/0/0:23
no ip address
 encapsulation hdlc
 no logging event link-status
 isdn switch-type primary-qsig
 isdn protocol-emulate network
 isdn incoming-voice voice
 isdn T310 120000
 isdn bind-13 ccm-manager
no cdp enable
ip route 0.0.0.0 0.0.0.0 GigabitEthernet0/1
ip route 0.0.0.0 0.0.0.0 172.20.33.1
!
ip http server
ip http authentication local
!
!
1
control-plane
1
!
voice-port 0/1/0
!
voice-port 0/1/1
voice-port 1/1/0:23
voice-port 4/0/0:23
ccm-manager mgcp
ccm-manager music-on-hold
ccm-manager config server 172.20.235.254
ccm-manager config
mgcp
mgcp call-agent CM-SATURN 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
mqcp 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 cor custom
dial-peer voice 1 pots
service mgcpapp
port 1/1/0:23
dial-peer voice 2 pots
 service mgcp
port 1/1/0:23
dial-peer voice 3 pots
 service mgcp
port 4/0/0:23
banner login ^C
Cisco Router and Security Device Manager (SDM) is installed on this device. This
feature requires the one time use, initial credentials, of username "cisco"
with password "cisco".
Please change these publicly known initial credentials through SDM or IOS CLI.
Here's the Cisco IOS command:
no username cisco
NOTE: Please add a new username to be able to launch SDM for router management.
For more information about SDM please follow the instructions in the QUICK
START GUIDE for your router or at
http://www.cisco.com/go/sdm
^C
line con 0
 stopbits 1
line aux 0
 stopbits 1
line vty 0 4
privilege level 15
login
 transport input telnet
line vty 5 15
privilege level 15
login local
transport input telnet
scheduler allocate 20000 1000
end
```



PSTN Gateway (Cisco 3745) Configuration

```
3745E1#sh run
Building configuration...
Current configuration: 1778 bytes
!
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
hostname 3745E1
boot-start-marker
boot system flash:c3745-ipvoice-mz.124-3.bin
boot system slot0:C3745-ipvoice-mz.shamu_p2_18
boot-end-marker
logging buffered 1000000 debugging
1
no aaa new-model
resource policy
no network-clock-participate slot 2
no network-clock-participate slot 3
no network-clock-participate slot 4
voice-card 2
no dspfarm
voice-card 3
 dspfarm
voice-card 4
 dspfarm
ip subnet-zero
ip cef
ip tcp synwait-time 13
!
isdn switch-type primary-dms100
1
no voice call carrier capacity active
!
1
!
!
```



```
controller T1 4/0
framing esf
linecode b8zs
pri-group timeslots 1-24
!
interface FastEthernet0/0
 ip address 172.20.33.52 255.255.255.0
duplex auto
speed auto
interface FastEthernet0/1
no ip address
 shutdown
duplex auto
speed auto
1
interface Serial4/0:23
no ip address
no logging event link-status
isdn switch-type primary-dms100
isdn protocol-emulate network
 isdn incoming-voice voice
 isdn channel-id invert extend-bit
no cdp enable
ip classless
ip route 0.0.0.0 0.0.0.0 172.20.31.1
ip route 0.0.0.0 0.0.0.0 FastEthernet0/0
ip route 0.0.0.0 0.0.0.0 172.20.33.1
ip http server
control-plane
!
voice-port 2/0/0
station-id name PSTN_PHONE
voice-port 2/0/1
voice-port 4/0:23
```



```
no mgcp package-capability res-package
no mgcp package-capability fxr-package
no mgcp timer receive-rtcp
!
dial-peer voice 1 pots
 destination-pattern 16503646325
port 2/0/0
dial-peer voice 2 pots
 destination-pattern 91408527....
 direct-inward-dial
 port 4/0:23
prefix 91408527
line con 0
line aux 0
line vty 0 4
 exec-timeout 0 0
 password CISCO
 login
!
end
3745E1#
```



Acronyms

Acronym	Definitions
ANF-PR	Additional Network Feature Path Replacement
CCM	Cisco CallManager
CCBS	Call Completion to Busy Subscriber
CCNR	Call Completion on No Reply
CFB	Call Forwarding on Busy
CFNR	Call Forwarding No Reply
CFU	Call Forwarding Unconditional
CLIP	Calling Line (Number) Identification Presentation
CLIR	Calling Line (Number) Identification Restriction
CNIP	Calling Name Identification Presentation
CNIR	Calling Name Identification Restriction
COLP	Connected Line (Number) Identification Presentation
COLR	Connected Line (Number) Identification Restriction
CONP	Connected Name Identification Presentation
CONR	Connected Name Identification Restriction
СТ	Call Transfer
MWI	Message Waiting Indicator
PSTN	Public Switched Telephone Network



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