



# Cisco CallManager Release 4.0-PBX Interoperability: Avaya Definity G3 MV1.3 PBX to a Cisco 6608 Gateway using T1 QSIG with MGCP

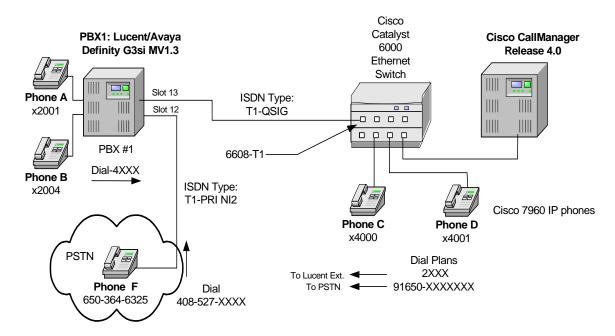
#### Introduction

- This is an Application Note for Connectivity of Lucent/Avaya Definity G3si MV1.3 Private Branch eXchange (PBX) with Cisco CallManager Release 4.0 using Cisco Catalyst 6000 Ethernet Switch 6608-T1 Q signaling (QSIG) voice gateway as Media Gateway Control Protocol (MGCP) gateway.
- The Network Topology diagram shows the test setup for end-to-end interoperability with the Cisco CallManager connected to the PBX via 6608-T1 QSIG voice gateway as MGCP gateway.
- Connectivity is achieved by using the primary rate interface (PRI) International Organization for Standardization (ISO) QSIG T1 protocol type on the MGCP gateway and QSIG protocol (with option "b" for Supplementary Service Protocol) on the Avaya PBX.
- Basic calls worked fine in both directions with Calling/Connected Name and Calling/Connected Number features support.



## **Network Topology**

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



## System Components

## **Hardware Requirements**

Cisco Hardware
 Cisco Catalyst 6000 switch with 6608-T1 gateway

Cisco CallManager 4.0

 Lucent/Avaya Definity G3si MV1.3 PBX Hardware TN464F, DS1 INTFC 24/32

# **Software Requirements**

PBX Software Release
 PBX Software MV1.3

- System: G3siV11 Software Version: R011i.03.0.526.5

Cisco CallManager Release
 Cisco CallManager 4.0



#### 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
- CT-Call Transfer (by join)
- CFU-Call Forwarding Unconditional (by join)
- CFB-Call Forwarding Busy (by join)
- CFNR-Call Forwarding No Reply (by join)
- MWI- Message Waiting Indication (lamp ON, lamp OFF)

## Features Not Supported

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

<sup>&</sup>lt;sup>1</sup> MWI was tested with CallManager 4.0 configured with Cisco Unity as the message center PINX and PBX users as remote subscribers.



# Configuration

# **Configuration Sequence and Tasks**

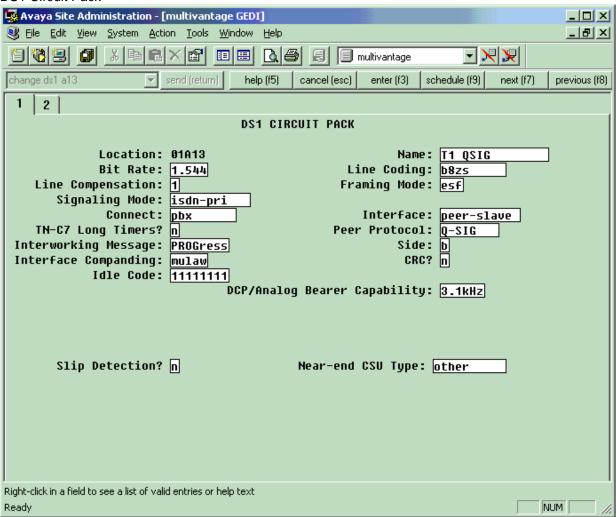
Configure in the following sequence:

- 1. Add the new circuit pack.
- 2. Add the new signaling group.
- 3. Add the new trunk group.
- 4. Add Uniform Dialing Plan.
- 5. Configure Stations for qsig-MWI



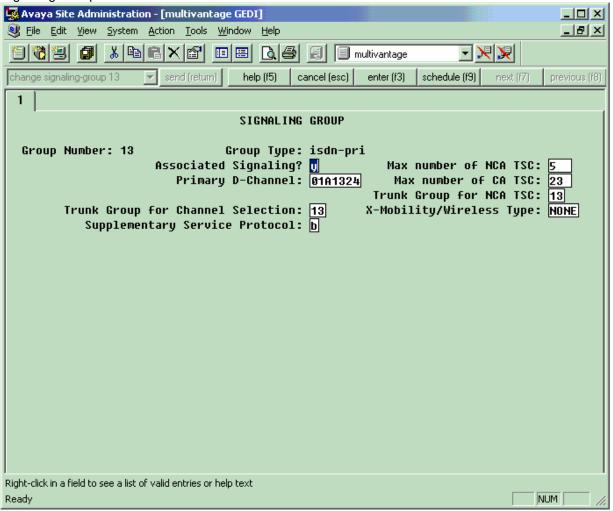
#### Configuring the Lucent/Avaya Definity G3si MV1.3 PBX

#### DS1 Circuit Pack



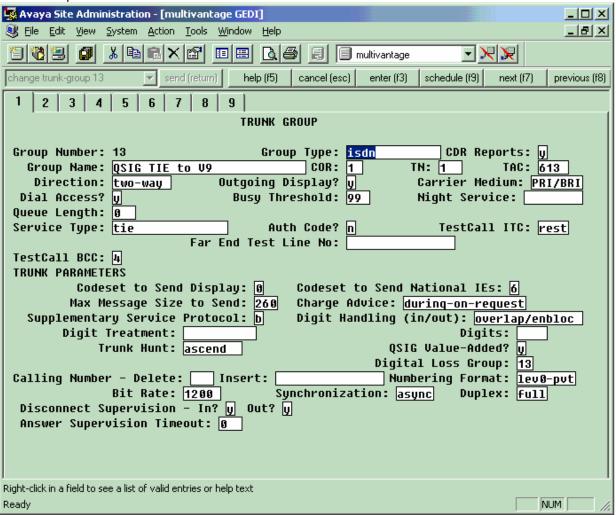


# Signaling Group





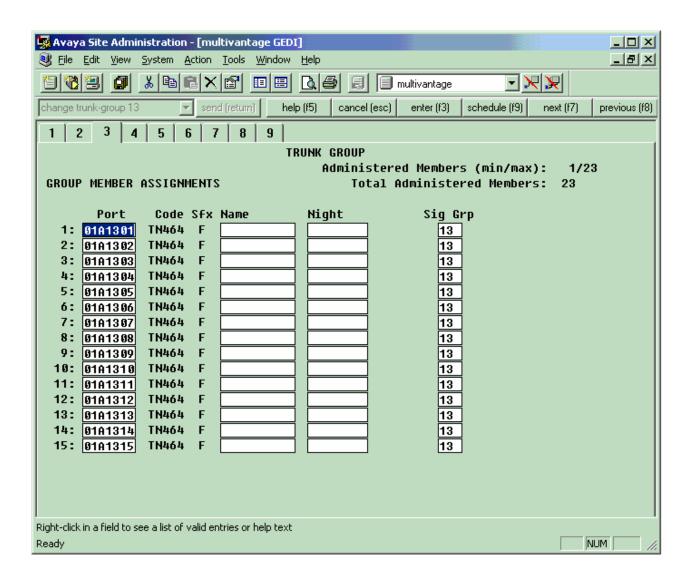
#### Trunk Group



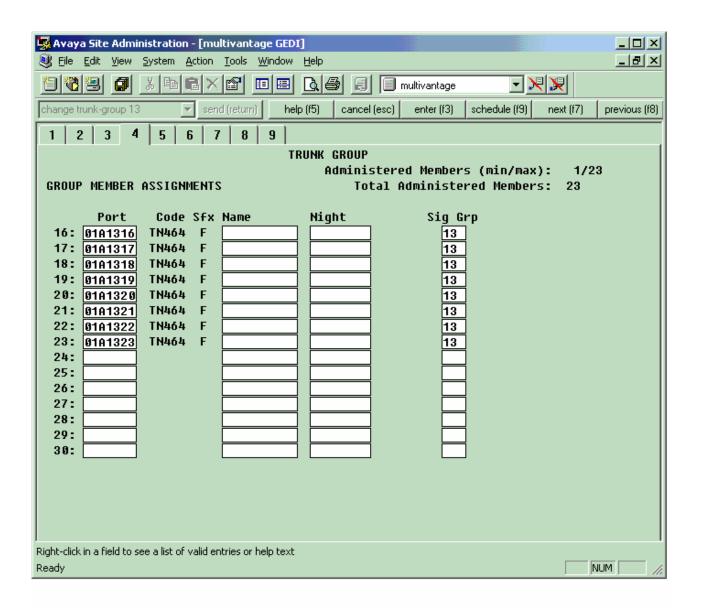


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change trunk-group 13 send (return) help (f5) cancel (esc) enter (f3) schedule (f9) next (f7) previous (f8)					
1 2 3 4 5 6 7 8 9					
TRUNK FEATURES					
ACA Assignment? n Measured: <u>none</u> Wideband Support? <u>n</u>					
Internal Alert? n Maintenance Tests? y					
Data Restriction? n NCA-TSC Trunk Member:					
Send Name: y Send Calling Number: y					
Used for DCS? n Hop Dgt? n					
Suppress # Outpulsing? n Numbering Format: private					
Outgoing Channel ID Encoding: preferred UVI IE Treatment: service-provider					
Charge Conversion: 1					
Decimal Point: none Replace Restricted Numbers? y					
Currency Symbol: Replace Unavailable Numbers? n					
Charge Type: units Send Called/Busy/Connected Number: y					
Send UUI IE? n					
Send UCID? n					
Send Codeset 6/7 LAI IE? y Ds1 Echo Cancellation? n					
Path Replacement with Retention? n Path Replacement Method: better-route					
SBS? n Network (Japan) Needs Connect Before Disconnect? n					
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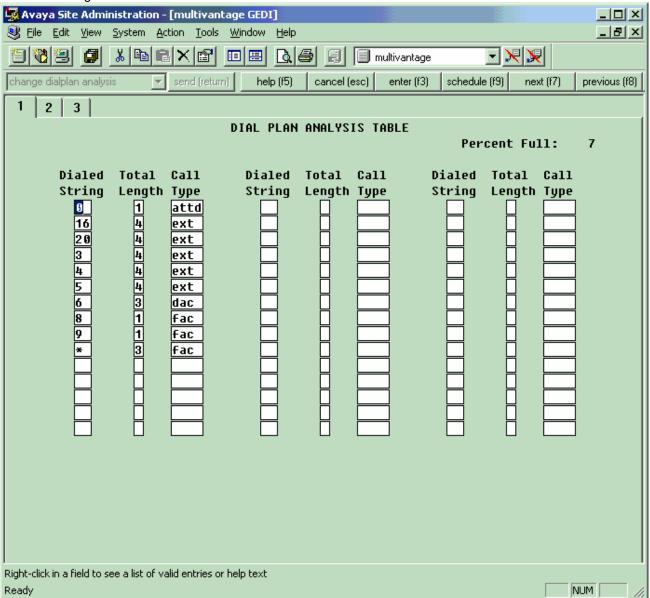




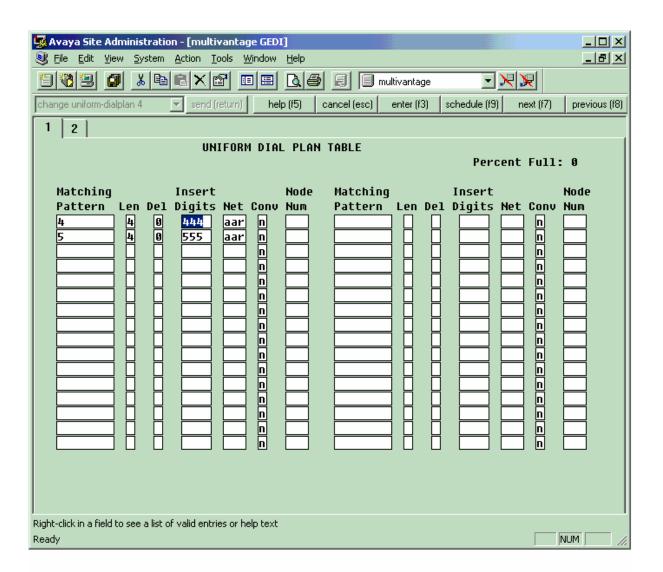




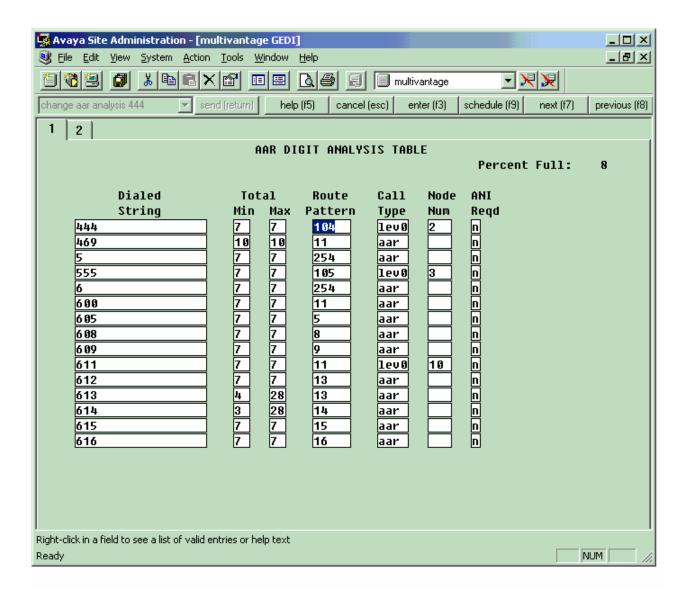
# **Uniform Dialing Plan**









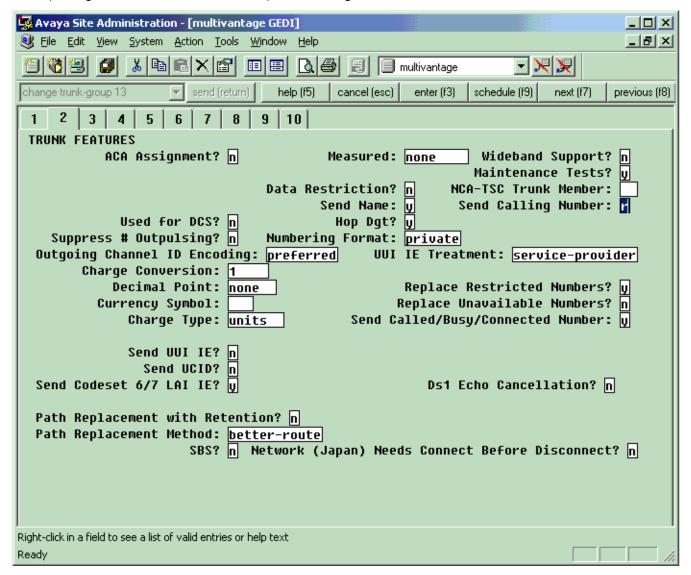




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change route-pattern 104 💌 send (return) help (f5) cancel (esc) enter (f3) schedule (f9) ne	xt (f7) previous (f8)
1	
Pattern Number: 104 Pattern Name:	
Grp FRL NPA Pfx Hop Toll No. Inserted No Mrk Lmt List Del Digits	DCS/ IXC
Dgts	Intw
1: 13 9 6 3	n user
2: 14 0 6 3	n user n user
4:	n user
5:	n user n user n user n user n user
6:	n user
BCC VALUE TSC CA-TSC   ITC BCIE Service/Feature BAND No. Number	ring LAR
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Subaddress  1: y y y y y n y as-needed bothept	put none
2: y y y y n y as-needed bothept leve-	
3: y y y y n n rest	none
3: y y y y y n n rest	none none
6: yyyyyn n rest	none
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## CLIR (Calling Line Identification Restriction) Trunk Configuration



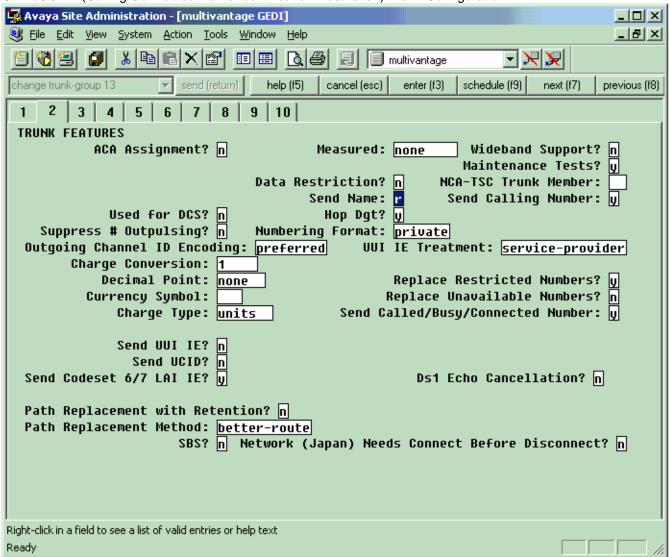


COLR (Connected Line Identification Restriction) TrunkConfiguration

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change trunk-group 13 send (return) help (f5) cancel (esc) enter (f3) schedule (f9) next (f7) previous	(f8)			
1 2 3 4 5 6 7 8 9 10				
TRUNK FEATURES				
ACA Assignment? n Measured: none Wideband Support? n				
Maintenance Tests? y				
Data Restriction? n NCA-TSC Trunk Member:				
Send Name: W Send Calling Number: W				
Used for DCS? n Hop Dgt? y Suppress # Outpulsing? n Numbering Format: private				
Outgoing Channel ID Encoding: preferred UVI IE Treatment: service-provider				
Charge Conversion: 1				
Decimal Point: none Replace Restricted Numbers? W				
Currency Symbol: Replace Unavailable Numbers? n				
Charge Type: units Send Called/Busy/Connected Number: r				
Send UUI IE? n				
Send UCID? n				
Send Codeset 6/7 LAI IE? U  Ds1 Echo Cancellation? n				
Path Replacement with Retention? n				
Path Replacement Method: better-route				
SBS? N Network (Japan) Needs Connect Before Disconnect? N				
Right-click in a field to see a list of valid entries or help text				
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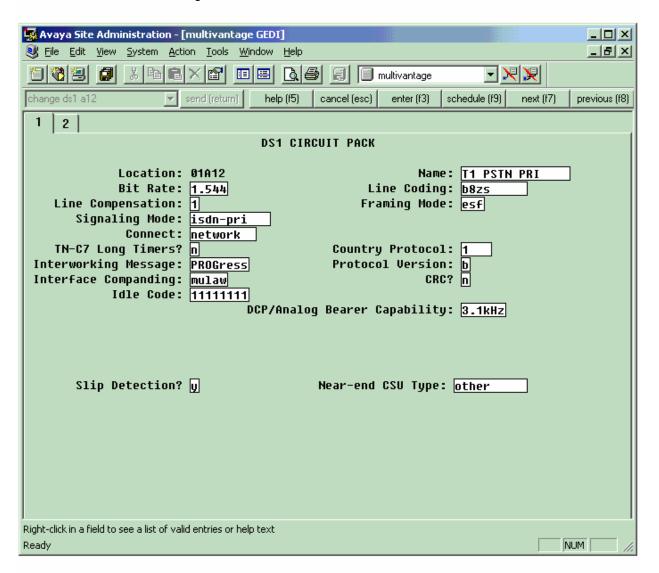
CNIR/CONR (Calling/Connected Name Identification Restriction) Trunk Configuration





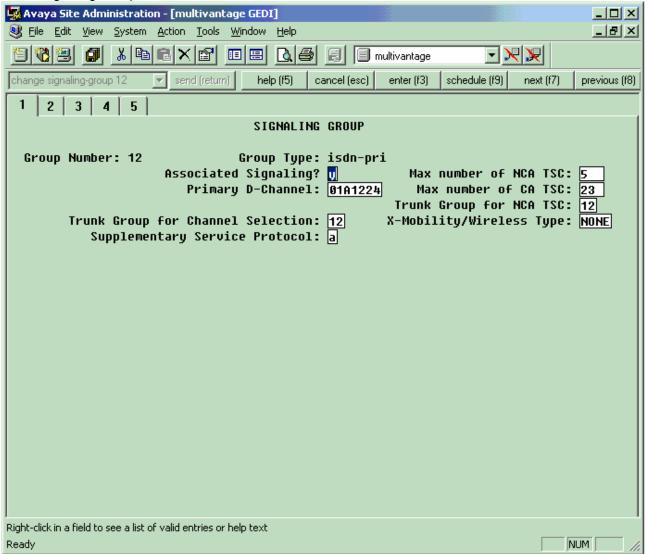
## **Configuring the PSTN**

PSTN DS1 Circuit Pack Configuration



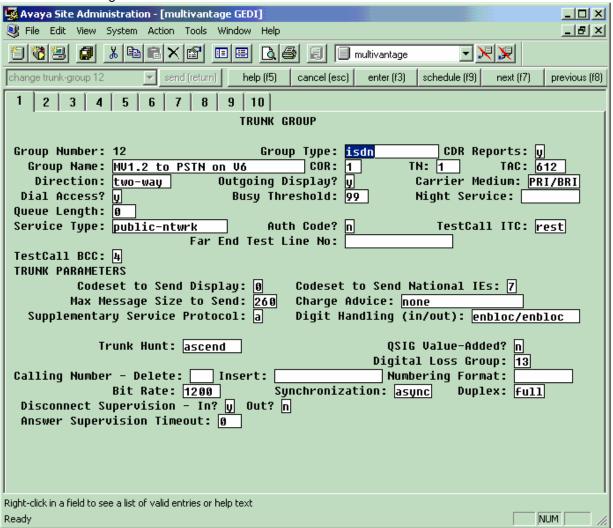


# **PSTN Signaling Group**





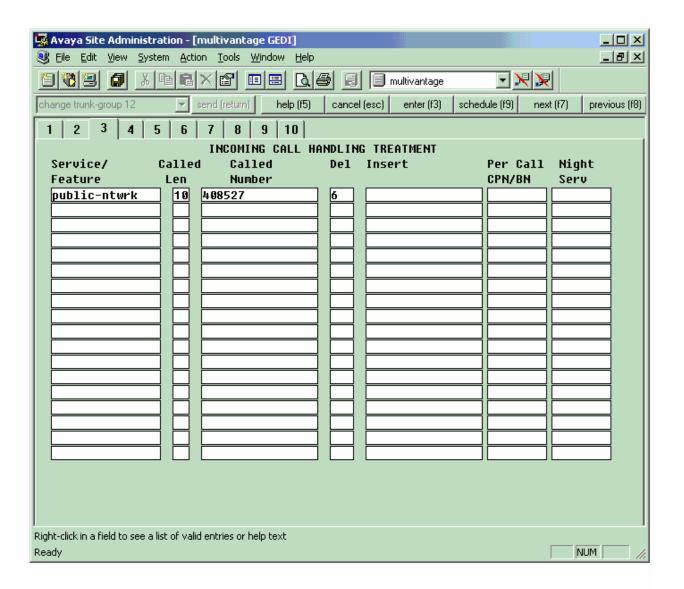
## **PSTN Trunk Configuration**



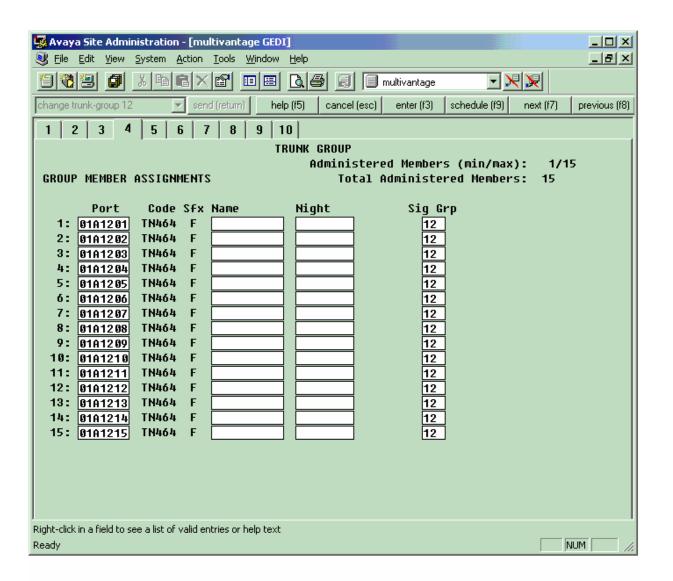


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1 2 3 4 5 6 7 8 9 10 TRUNK FEATURES			
ACA Assignment? n Measured: none Wideband Support? n			
Maintenance Tests? y  Data Restriction? n NCA-TSC Trunk Member:  Send Name: y Send Calling Number: y  Used for DCS? n			
Suppress # Outpulsing? n Numbering Format: public Outgoing Channel ID Encoding: preferred UVI IE Treatment: service-provider			
Replace Restricted Numbers? n Replace Unavailable Numbers? n Send Connected Number: y			
Send UUI IE? n Send UCID? n Send Codeset 6/7 LAI IE? U Ds1 Echo Cancellation? n			
US NI Delayed Calling Name Update? n			
SBS? n Network (Japan) Needs Connect Before Disconnect? n			
Right-click in a field to see a list of valid entries or help text			
Ready NUM NUM			



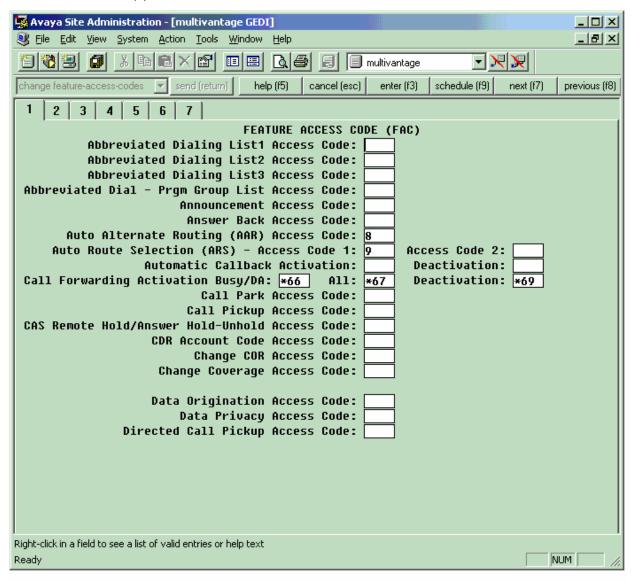






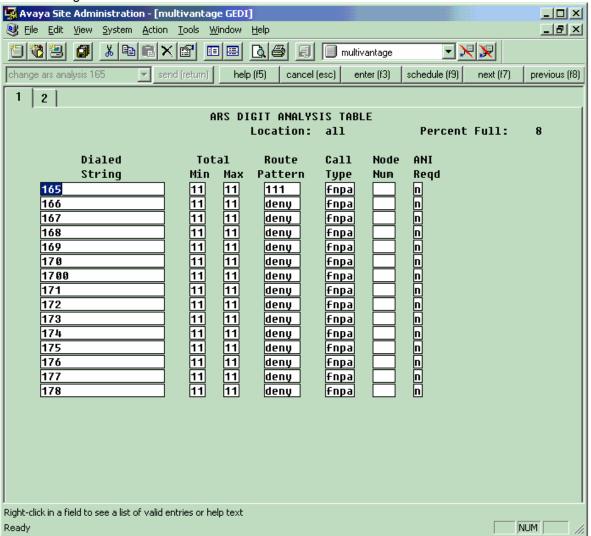


## PSTN Access Code (9)





# **PSTN Dialing Plan**





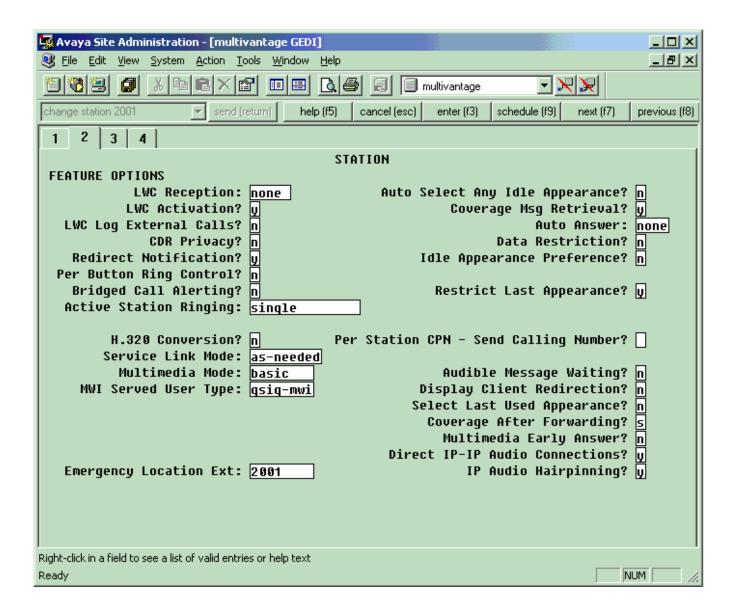
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Configure Station for QSIG MWI

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change station 2001 send (return) help (f5)	cancel (esc) enter (f3) schedule (f9) next (f7) pre	vious (f8)
1 2 3 4		
STE	NOITE	
Extension: 2001	Lock Messages? n BCC: 0	
Type: 6408D+	Security Code: TN: 1	
Port: 01A0404 Name: Sadie the horse	Coverage Path 1: COR: 1 Coverage Path 2: COS: 1	
Saute the norse	Hunt-to Station:	
STATION OPTIONS		
Loss Group: 2	Personalized Ringing Pattern: 1	
Data Module? n	Message Lamp Ext: 2001	
Speakerphone: 2-way Display Language: english	Mute Button Enabled? y	
propray cangaager Engress		
	Media Complex Ext:	
	IP SoftPhone? n Remote Office Phone? n	
Right-click in a field to see a list of valid entries or help text		
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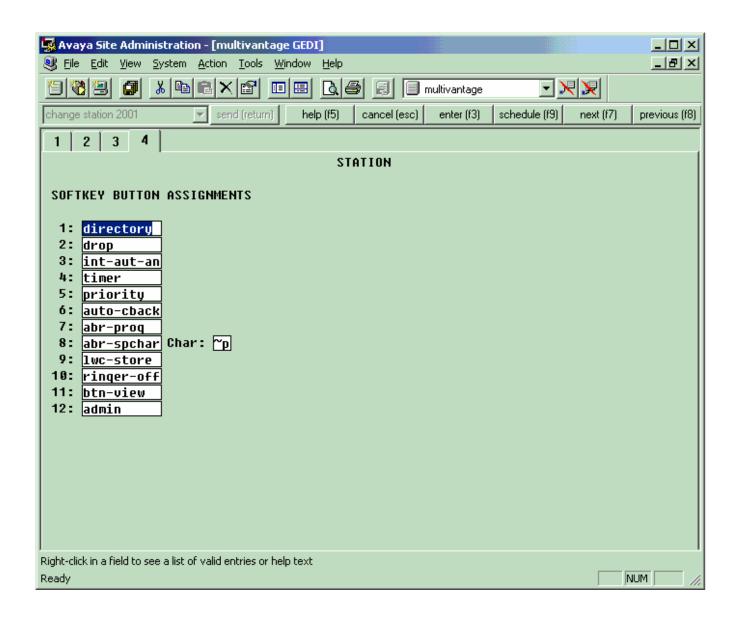






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change station 2001 🔻 send (return	help (f5) cancel (esc) enter (f3)	schedule (f9) next (f7) previous (f8)
1 2 3 4		
	NOITATZ	
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BUTTON ASSIGNMENTS  1: call-appr  2: call-appr  3: call-appr  4:  Right-click in a field to see a list of valid entries or	8: cfwd-bsyda Ex	kt: kt:
Ready		NUM //

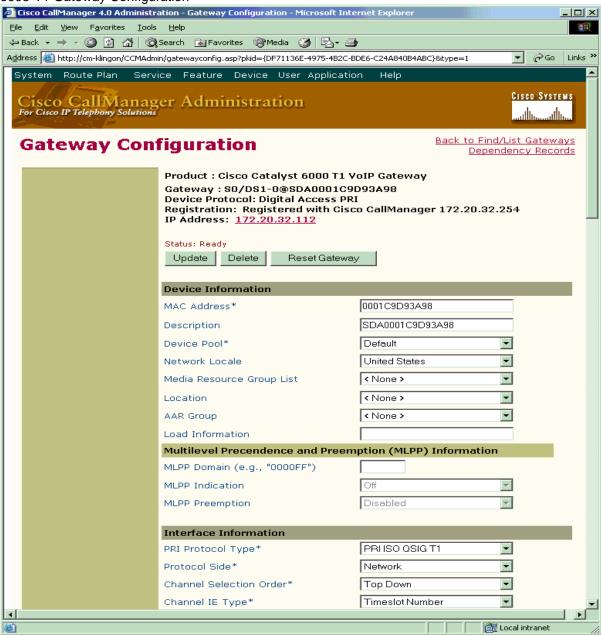




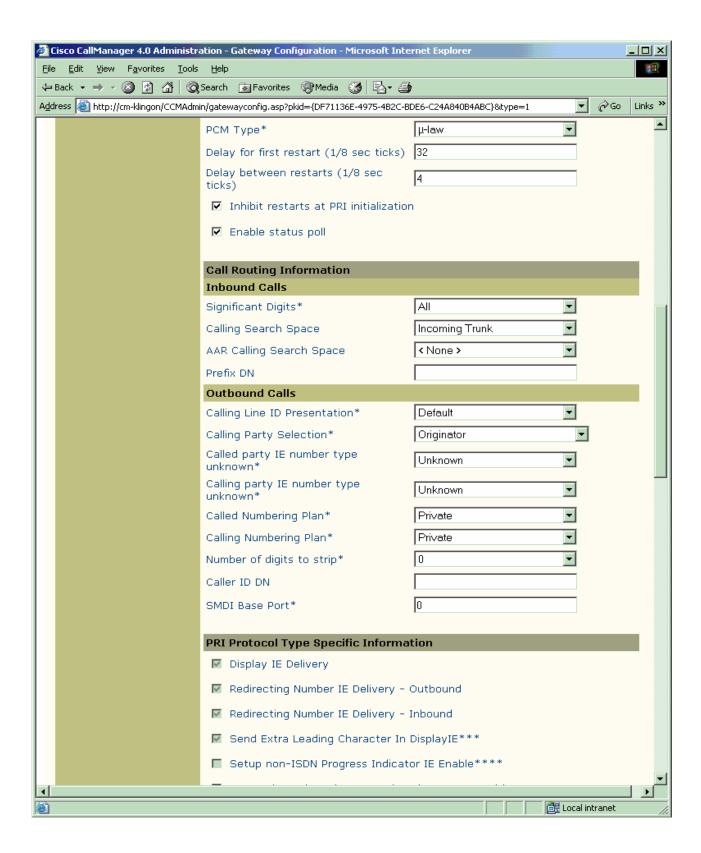


#### **Configuring Cisco CallManager**

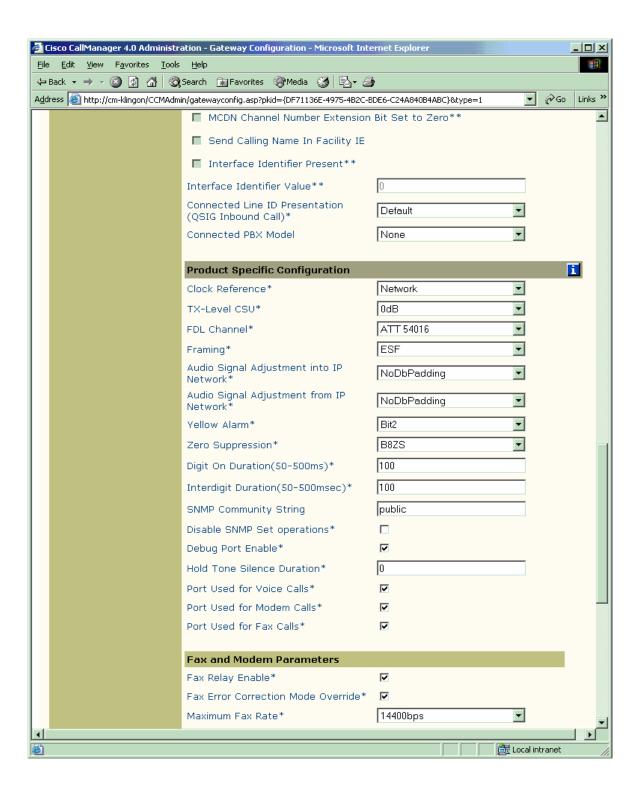
6608-T1 Gateway Configuration



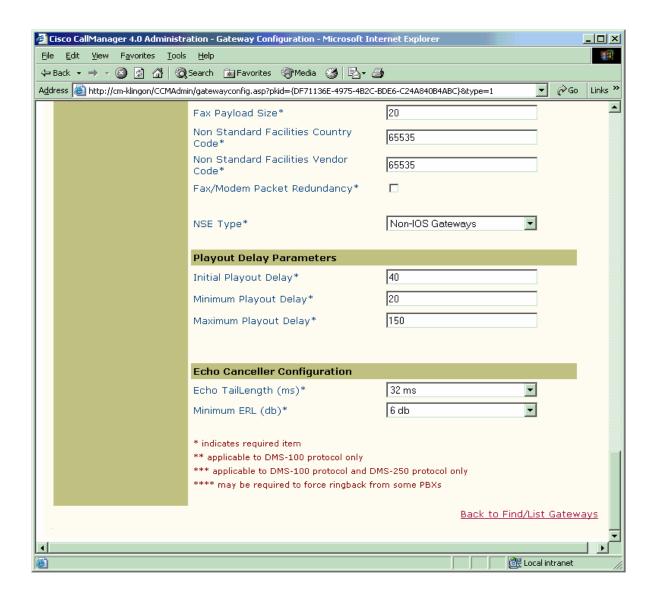






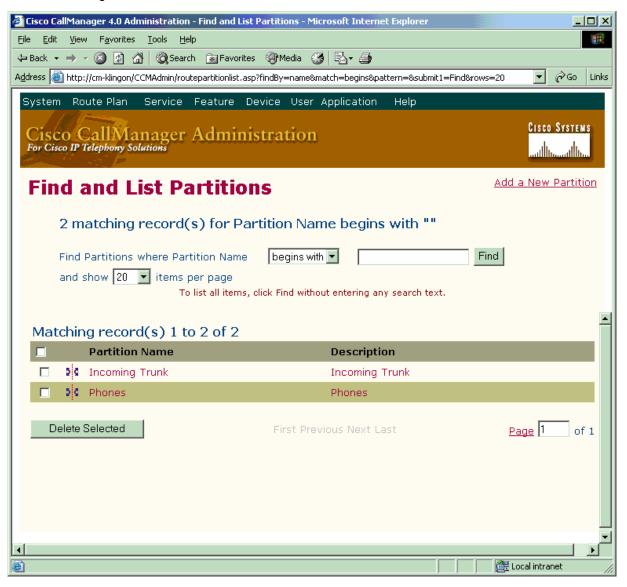






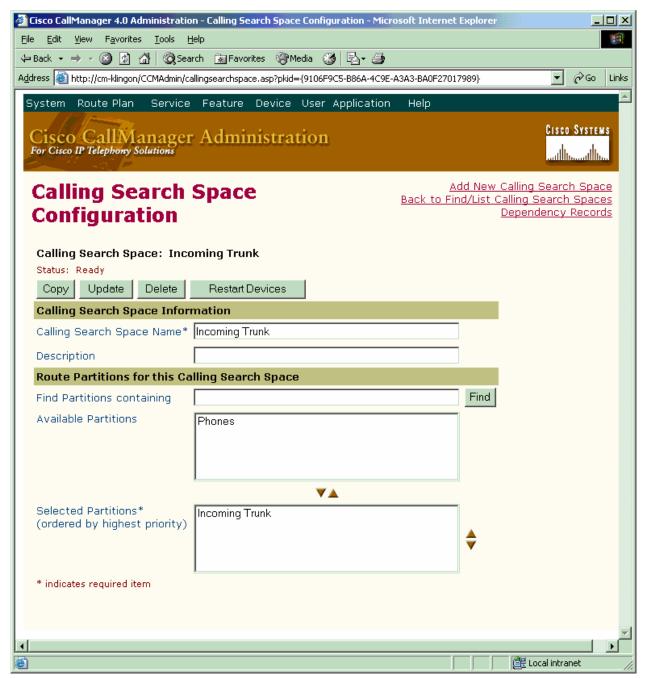


## **Partitions Configuration**

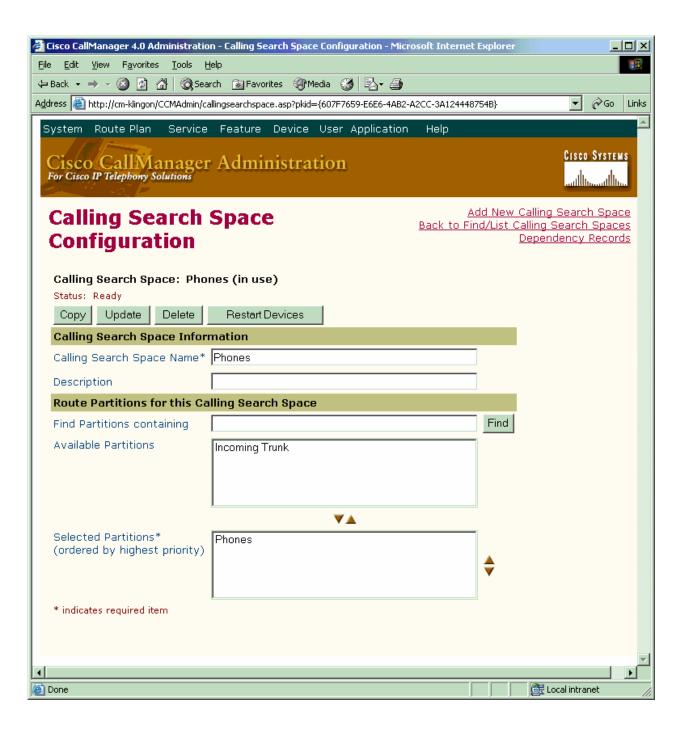




# Calling Search Space Configuration

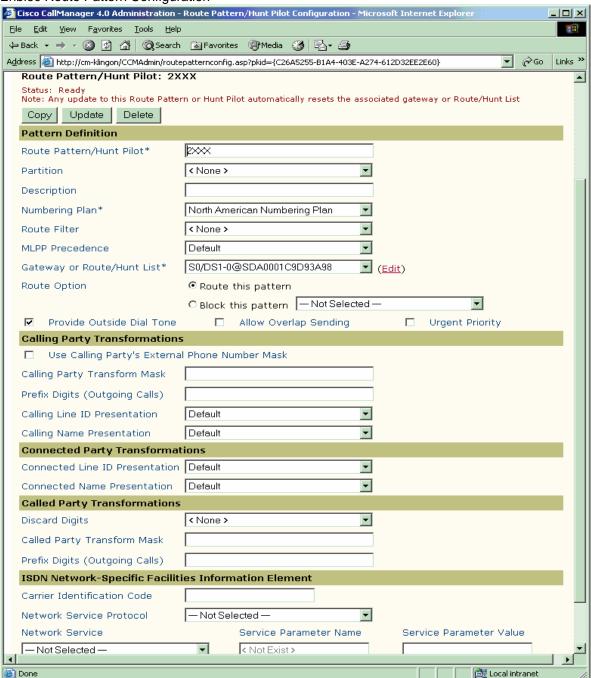






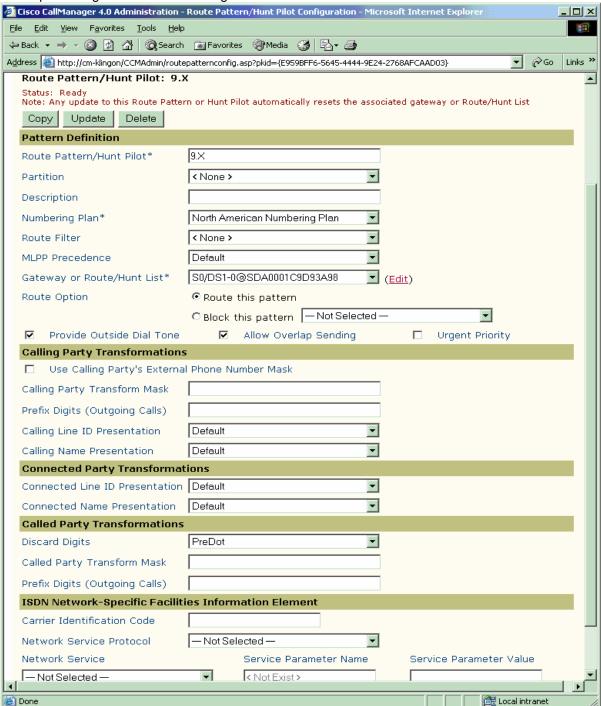


Enbloc Route Pattern Configuration



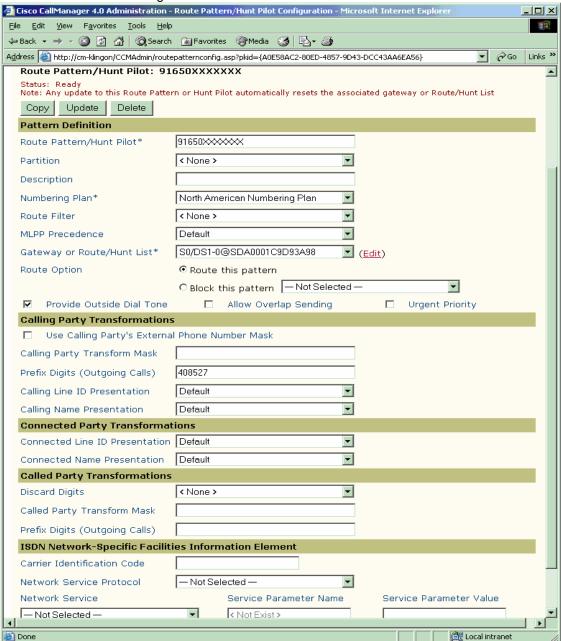


Overlap Sending Route Pattern Configuration



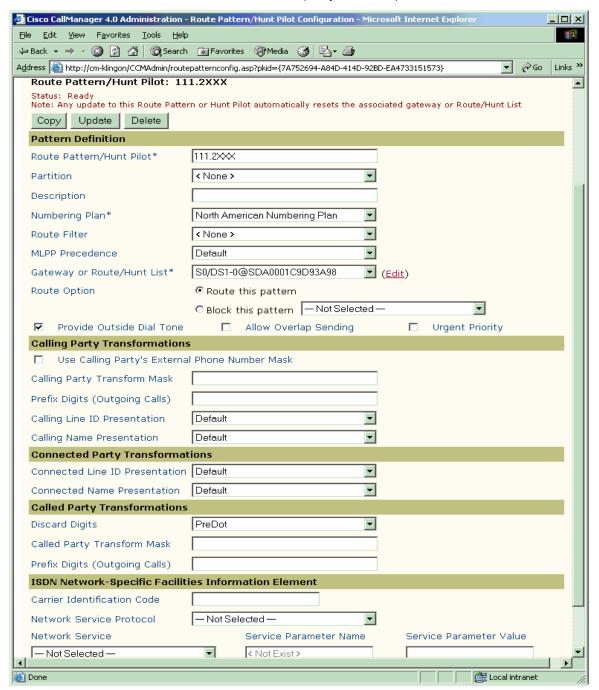


**PSTN Route Pattern Configuration** 



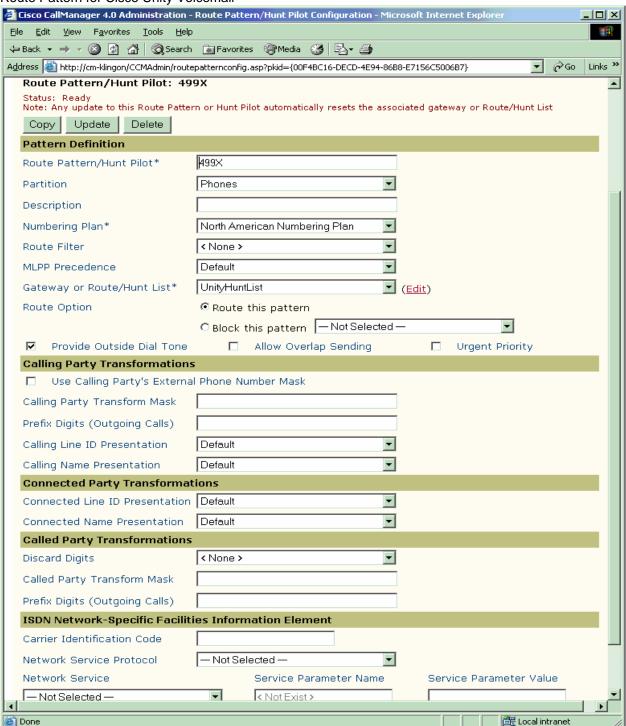


## Route Pattern for Remote Voicemail Subscribers (Avaya Stations)



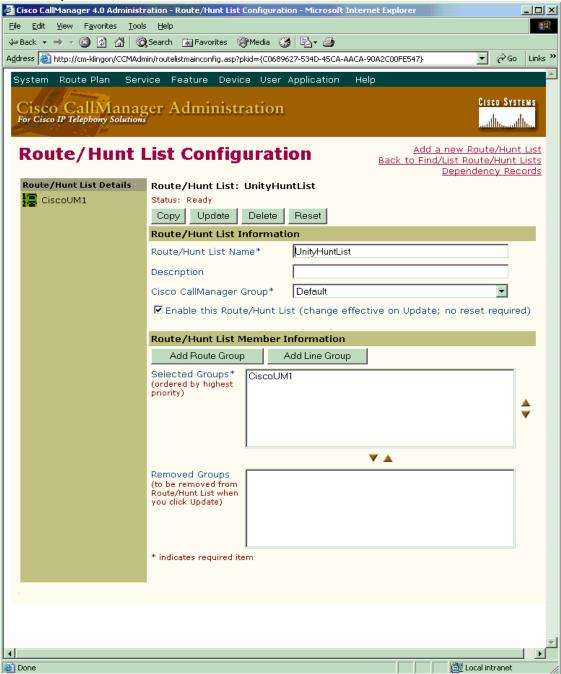


Route Pattern for Cisco Unity Voicemail



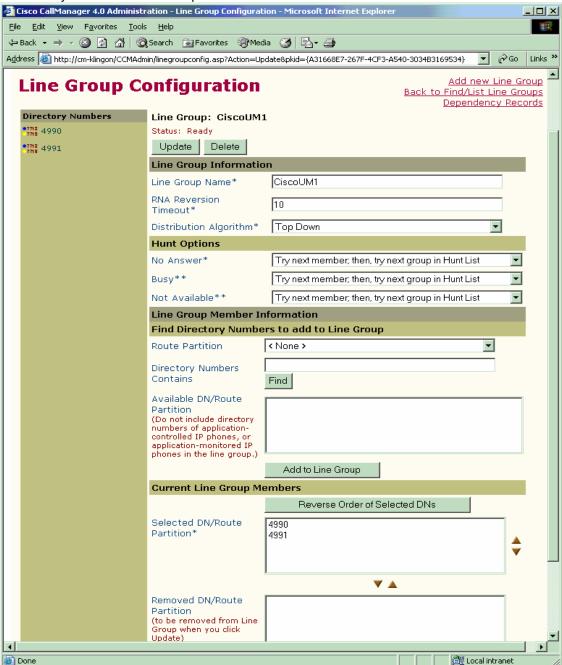


Cisco Unity Voicemail HuntList



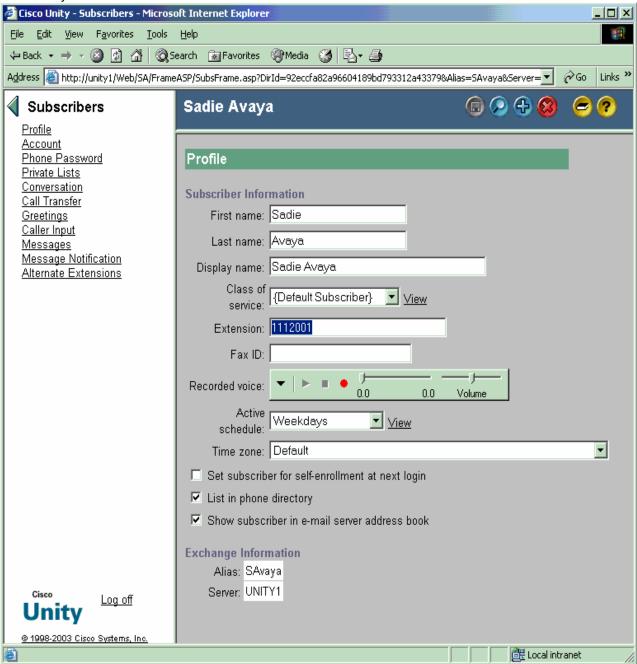


Cisco Unity Voicemail Line Group



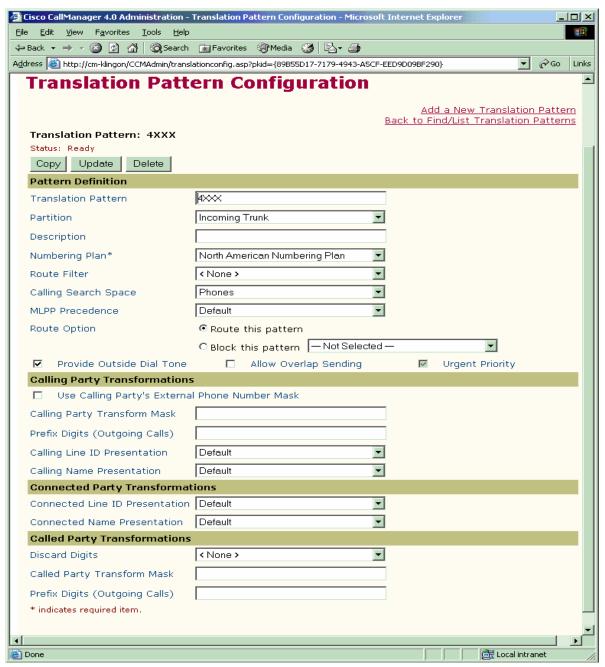


# Cisco Unity Subscriber



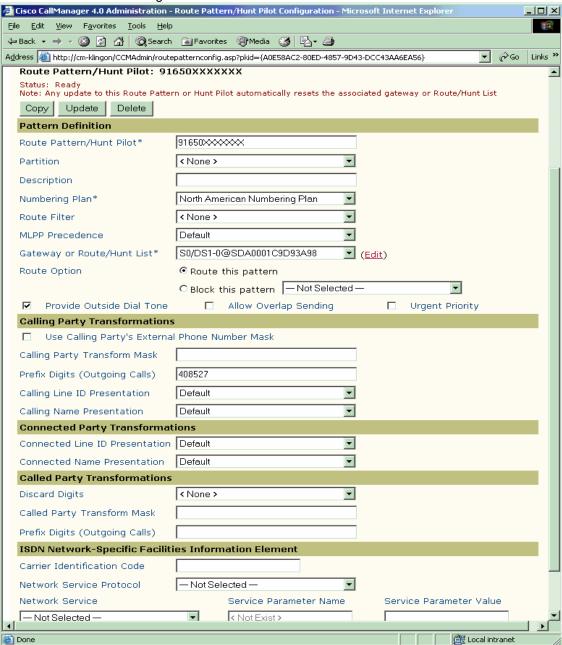


# Translation Pattern for Incoming Calls





#### **PSTN Route Pattern Configuration**

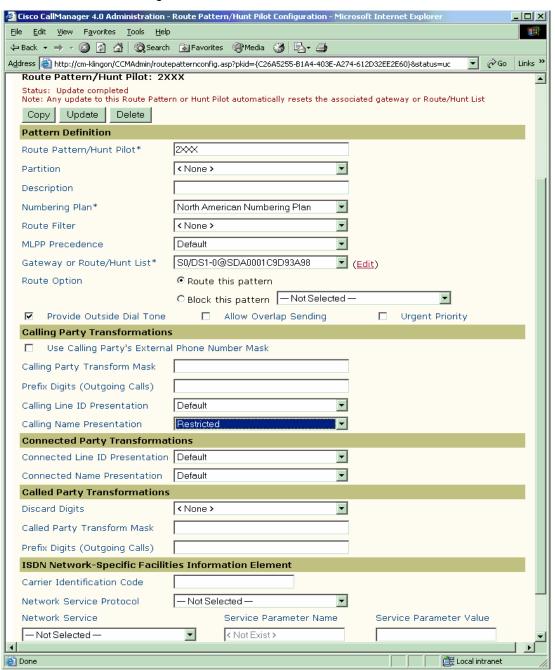




**CLIR Route Pattern Configuration** 🗿 Cisco CallManager 4.0 Administration - Route Pattern/Hunt Pilot Configuration - Microsoft Internet Explorer File Edit View Favorites Tools Help Address 🍯 http://cm-klingon/CCMAdmin/routepatternconfig.asp?pkid={C26A5255-B1A4-403E-A274-612D32EE2E60}&status=uc Route Pattern/Hunt Pilot: 2XXX Status: Update completed Note: Any update to this Route Pattern or Hunt Pilot automatically resets the associated gateway or Route/Hunt List Copy Update Delete **Pattern Definition** Route Pattern/Hunt Pilot\* 2>>>> Partition < None > Description Numbering Plan\* North American Numbering Plan < None > Route Filter Default MLPP Precedence Gateway or Route/Hunt List\* S0/DS1-0@SDA0001C9D93A98 (Edit) Route Option • Route this pattern C Block this pattern - Not Selected -✓ Provide Outside Dial Tone Allow Overlap Sending **Urgent Priority Calling Party Transformations** Use Calling Party's External Phone Number Mask Calling Party Transform Mask Prefix Digits (Outgoing Calls) Calling Line ID Presentation Restricted Default Calling Name Presentation **Connected Party Transformations** Connected Line ID Presentation | Default Connected Name Presentation **Called Party Transformations** Discard Digits < None > Called Party Transform Mask Prefix Digits (Outgoing Calls) ISDN Network-Specific Facilities Information Element Carrier Identification Code - Not Selected -Network Service Protocol Network Service Service Parameter Name Service Parameter Value - Not Selected -< Not Exist > 럝 Local intranet



## **CNIR Route Pattern Configuration**



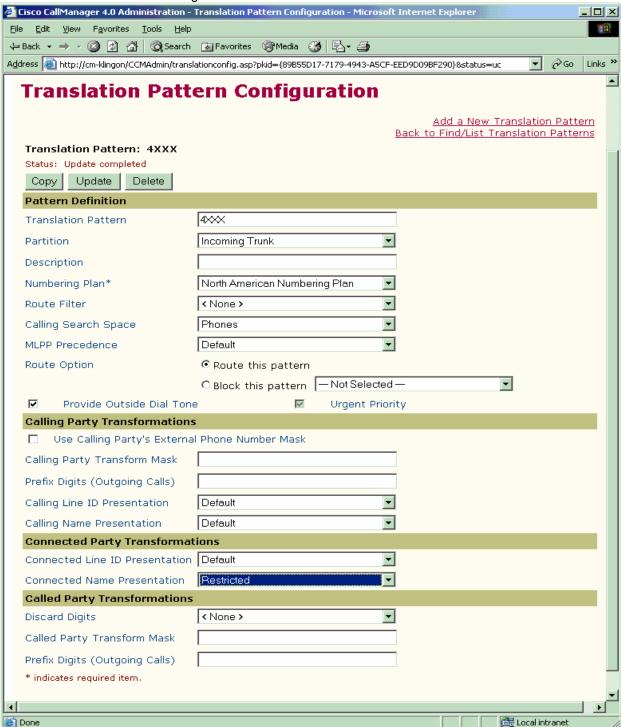


**COLR Translation Pattern Configuration** 



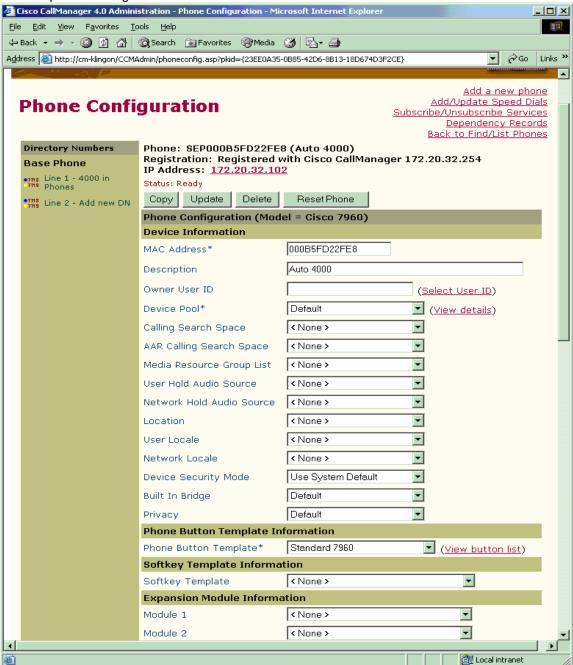


**CONR Translation Pattern Configuration** 

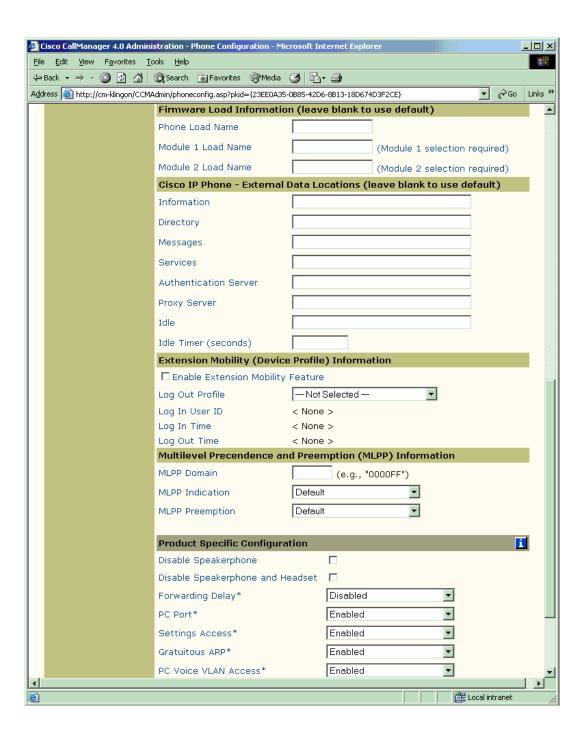




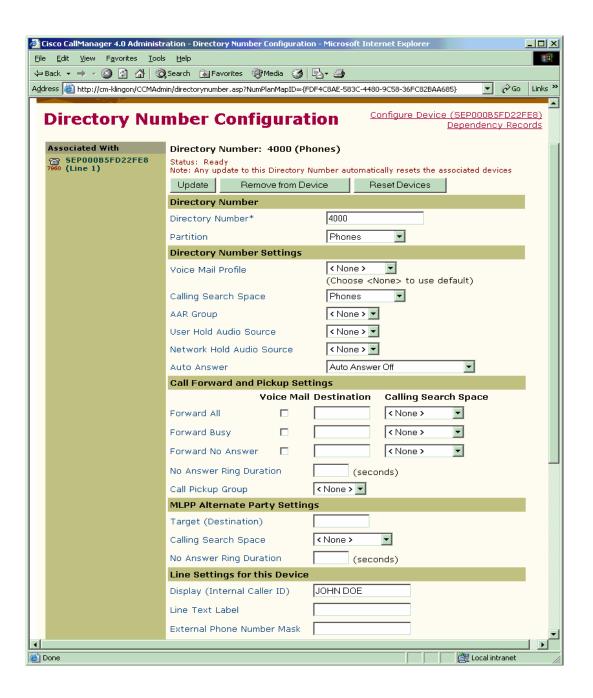
7960 IP phone Configuration



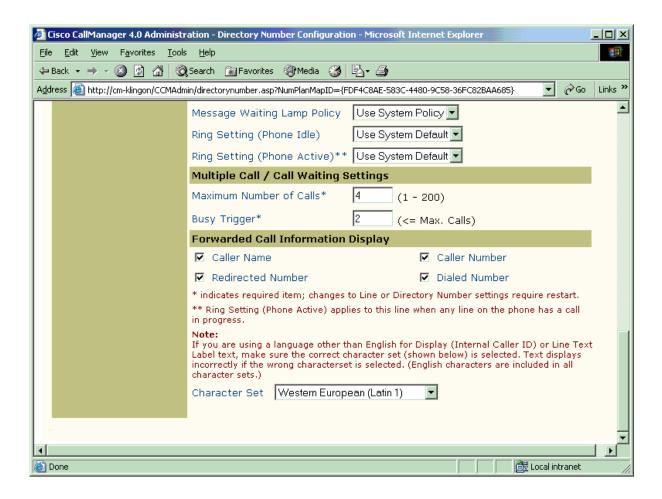












## Acronyms

Acronym	Definitions
CCM	Cisco CallManager
CFB	Call Forwarding 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

## Important Information

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