



PBX Interoperability: Alcatel 4400 Release 5.1 PBX to a Cisco 3745 using 3745 E1 ECMA QSIG with MGCP and Cisco Unified CallManager Release 4.1

Introduction

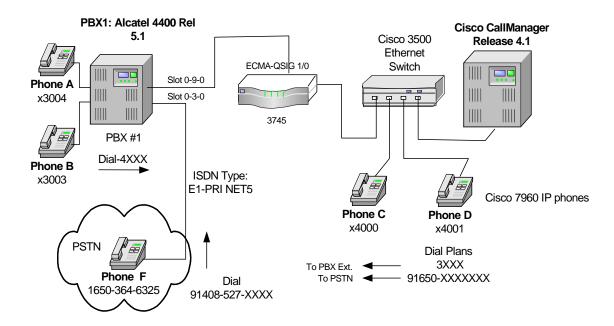
- This is an Application Note for connectivity of an Alcatel 4400 Release 5.1 PBX with Cisco Unified CallManager (CCM) Release 4.1 to a Cisco 3745 router with MGCP using ECMA QSIG protocol.
- The network topology diagram (Figure 1) shows the test setup for end-to-end interoperability with CCM connected to the PBX via a 3745_E1 QSIG link as MGCP gateway.
- Connectivity is achieved by using the PRI ISO QSIG E1 protocol type on the MGCP gateway with the CCM Services parameter QSIG variant of ECMA and ECMA switch type on the Alcatel 4400 PBX.
- This Application Note uses the 3745_E1 voice gateway. However, the use of other Cisco voice gateways is also an option since CCM QSIG implementation does not depend on the physical interface.



Network Topology

Figure 1. Network Topology or Test Setup

Basic Call Setup End-to-End Configuration



Limitations

Basic Call with Overlap Sending

 Alcatel does not display the connected number when configured for Overlap Sending. CCM does send connected name and number when answering the original call.

Path Replacement for Call Transfer

Alcatel does not update connected name and number after Path Replacement.

Additional Network Feature Replacement for Call Diversion

Alcatel does not send a Path Replacement proposal for Call Diversion by forward switch.

System Components

Hardware Requirements

- Cisco 3745 router with 2MFT-E1 ports
- Alcatel 4400 PBX
 - PRA2



Software Requirements

- Cisco Unified CallManager Release 4.1
- PBX Software Release 5.1

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)
- CFB—Call Forwarding Busy (by Reroute)
- CFNR—Call Forwarding No Reply (by Reroute)
- CCBS—Call Completion to Busy Subscriber
- CCNR—Call Completion No Reply
- 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)
- ANF-PR—Additional Network Feature Path Replacement (for Trombone connection)

Features Not Supported

MWI— Message Waiting Indication (lamp ON, lamp OFF) 1

Alcatel does not support Call Forwarding by join.

Configuration

Configuration Sequence and Tasks

Configuring the Alcatel 4400 PBX

Configure in the following sequence:

Configure Board

Configure Digital Access

Configure "ECMA Function" System Parameter

Configure PRI-ABC_F Trunk Group

¹ Not Tested. Alcatel 4400 PBX Release 5.1 does not support MWI QSIG.



Configure PSTN Trunk Group

Configure Network Routing

Configure Network Routing "Own Node"

Configure Routing Prefix

Configure Digital Station

Configure Digital Station Phone Facilities

Configuring Cisco Unified CallManager

Configure in the following sequence:

Configure ECMA Protocol Service Parameters

Configure 3745_E1 Gateway

Configure Partitions

Configure Calling Search Space

Configure Enbloc Route Pattern

Configure Overlap Sending Route Pattern

Configure PSTN Route Pattern

Configure Translation Pattern for Incoming Calls

Configure CLIR Route Pattern

Configure CNIR Route Pattern

Configure COLR Translation Pattern

Configure CONR Translation Pattern

Configure MWI Lamp On/Off

Configure MWI Deactivate Translation Pattern

Configure MWI Activate Translation Pattern

Configure Callback Service Parameters

Configure Callback Softkeys

Configure Path Replacement Service Parameters

Configure Call Pickup

Configure Forward by Reroute Service Parameter

Configure IP Phones

Configure Directory Number

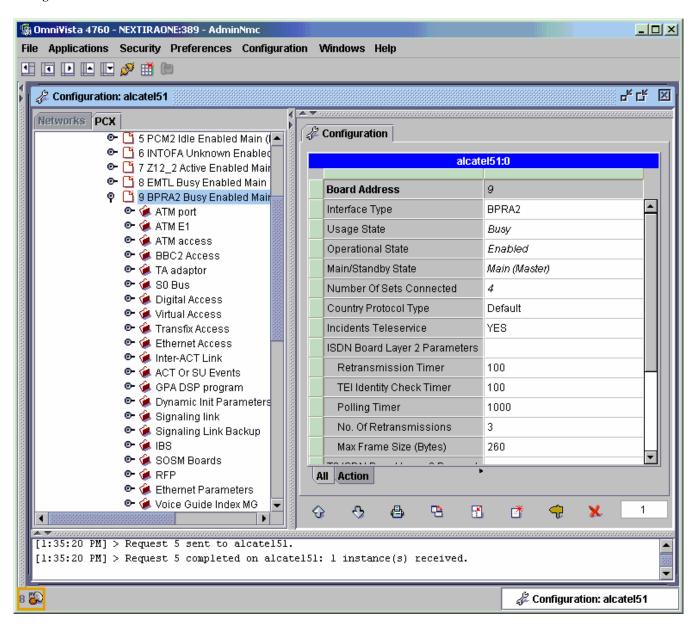
Configure the Cisco 3745 Router

Configuration Menus and Commands

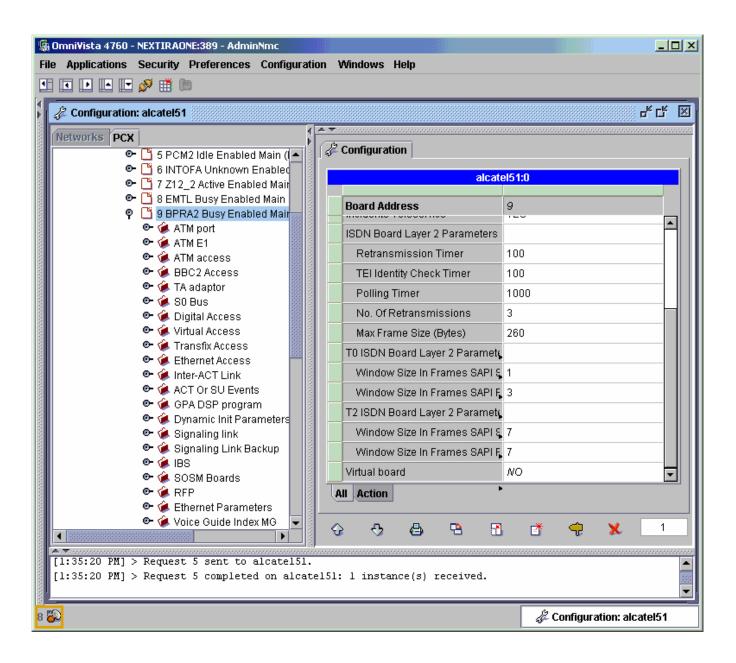


Configuring the Alcatel 4400 PBX

Configure Board

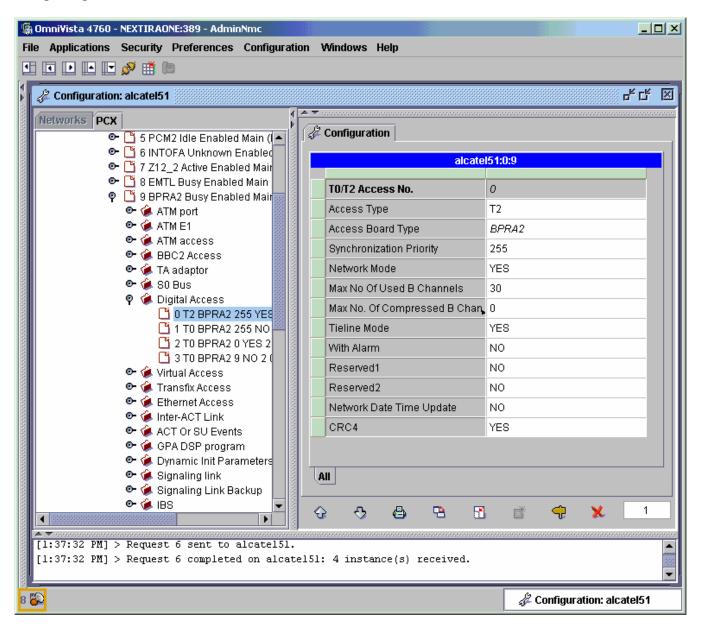






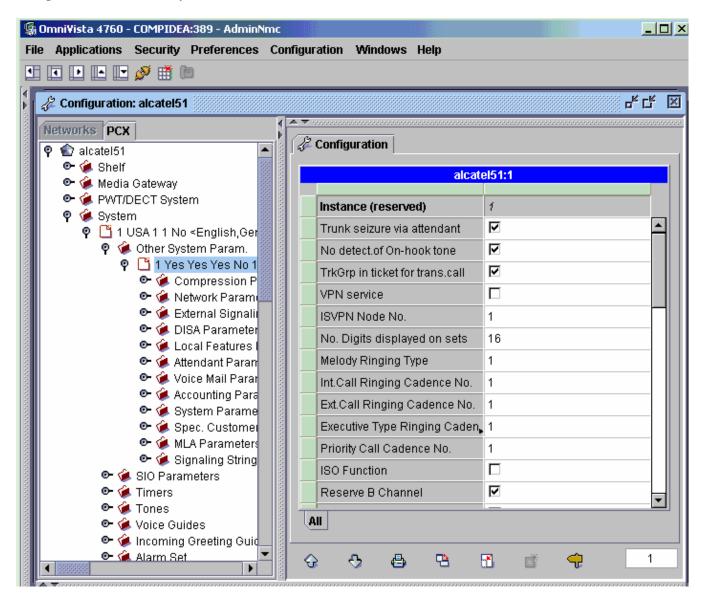


Configure Digital Access



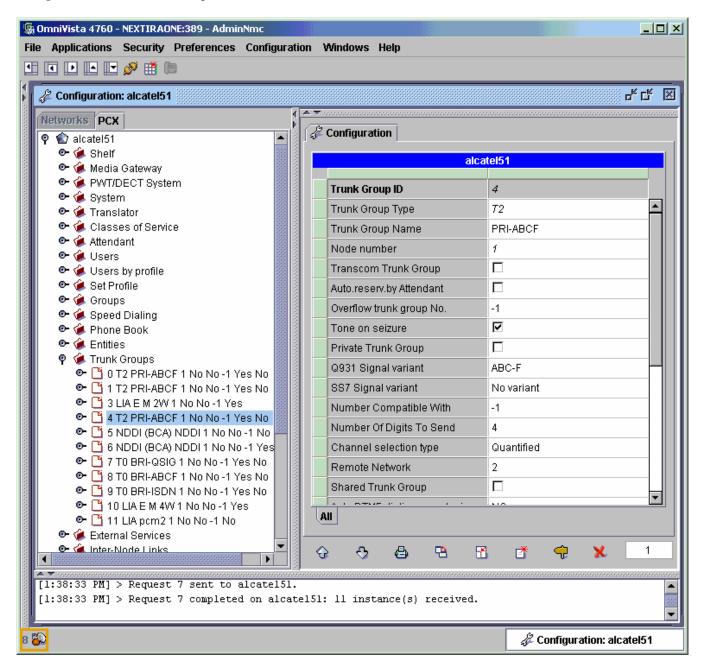


Configure "ECMA Function" System Parameter

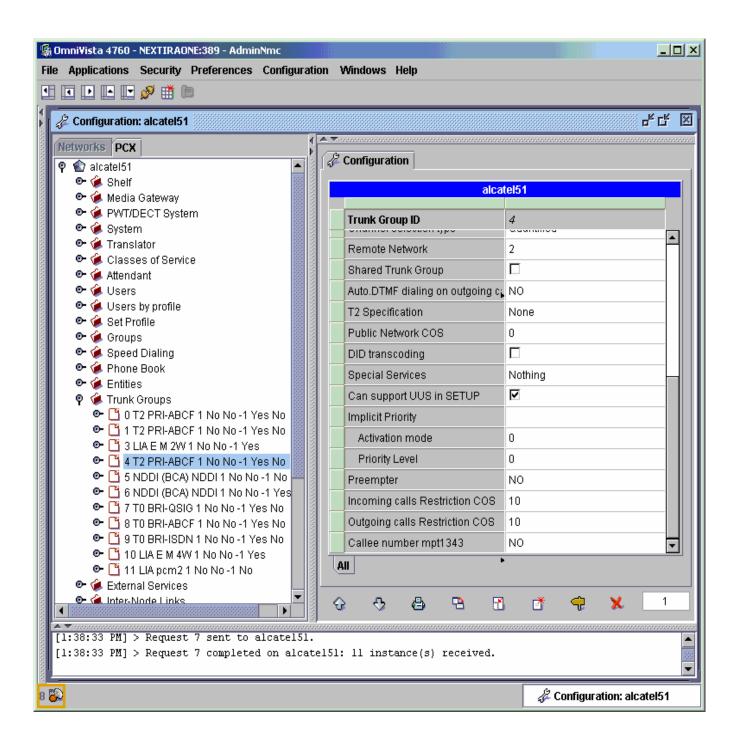




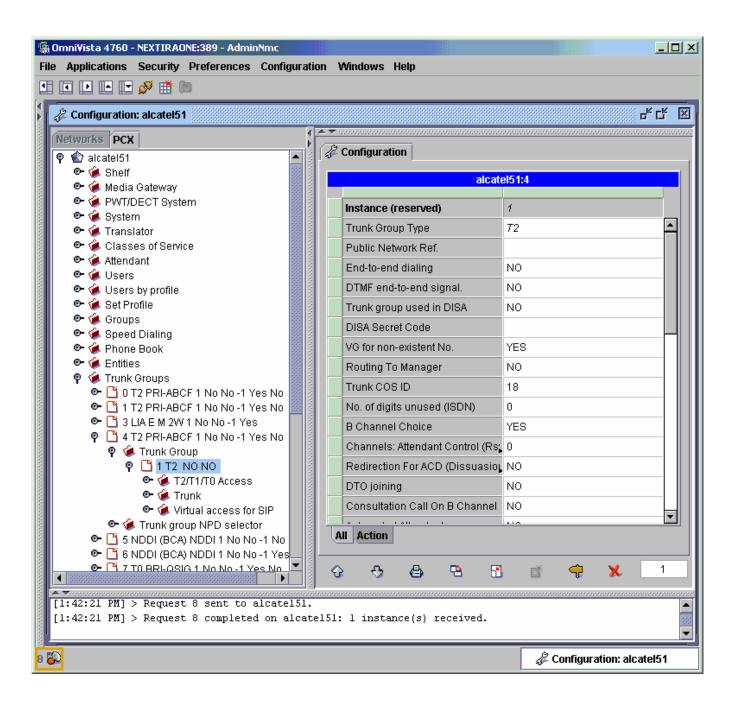
Configure PRI ABC_F Trunk Group



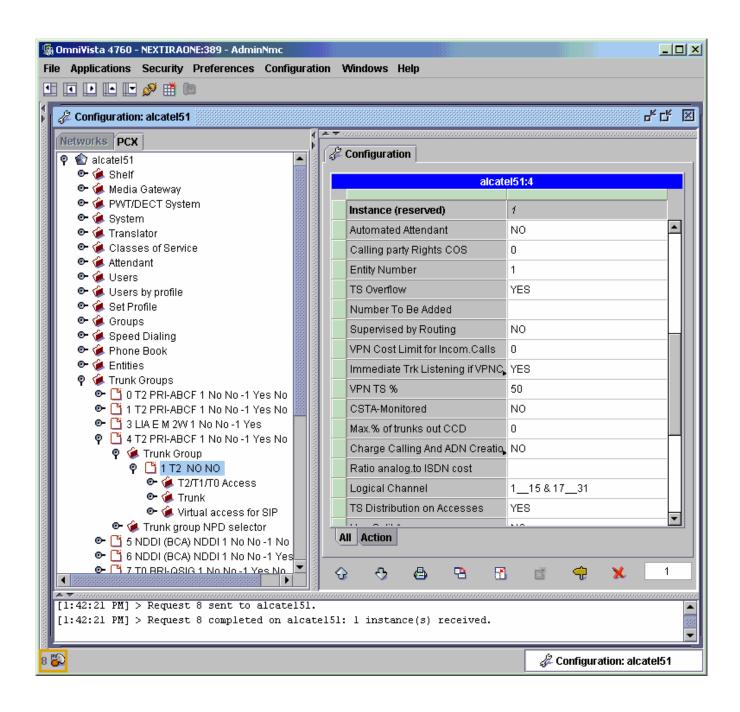




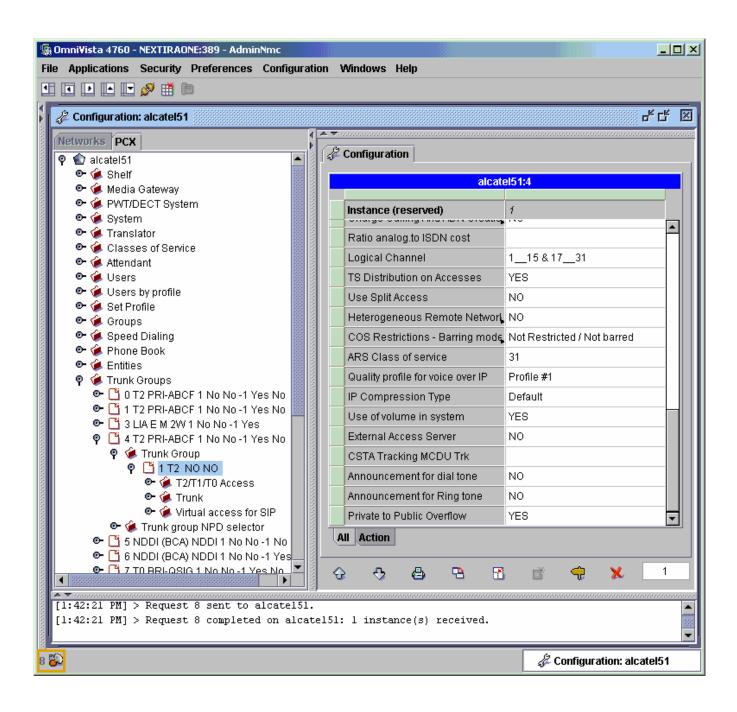




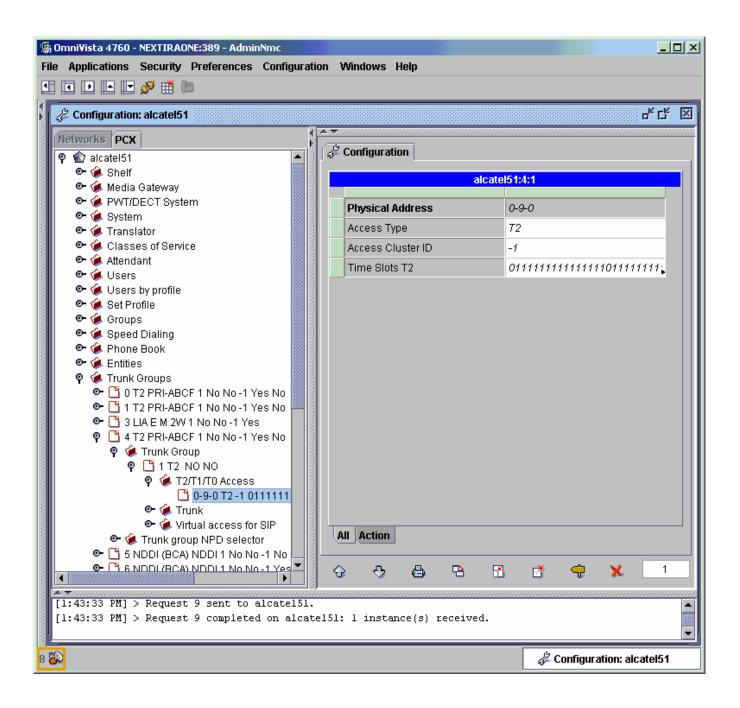






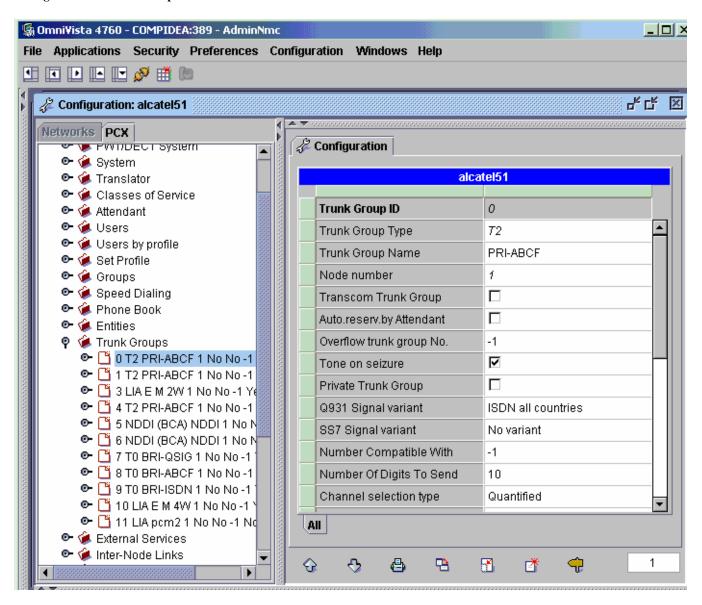




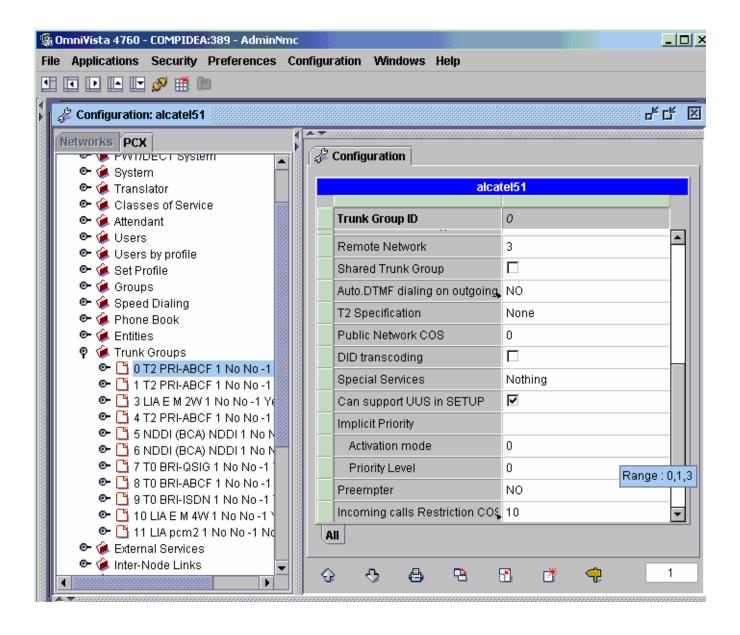




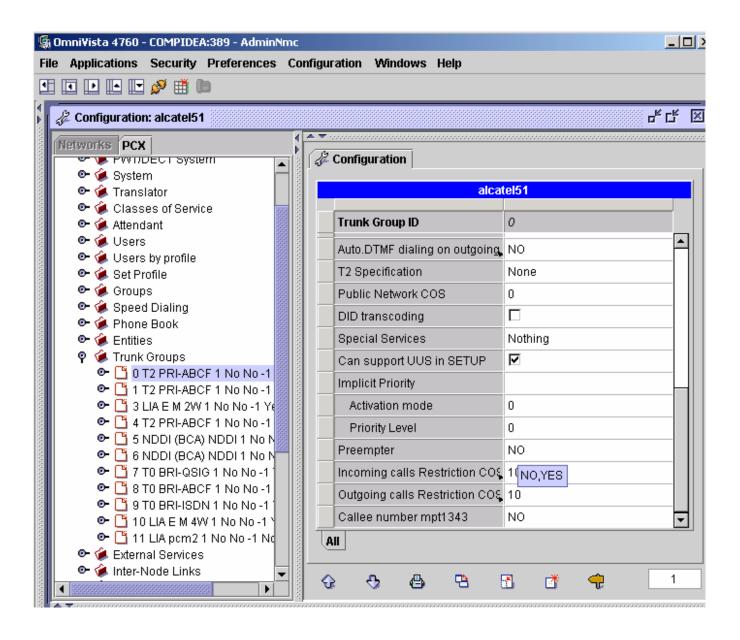
Configure PSTN Trunk Group



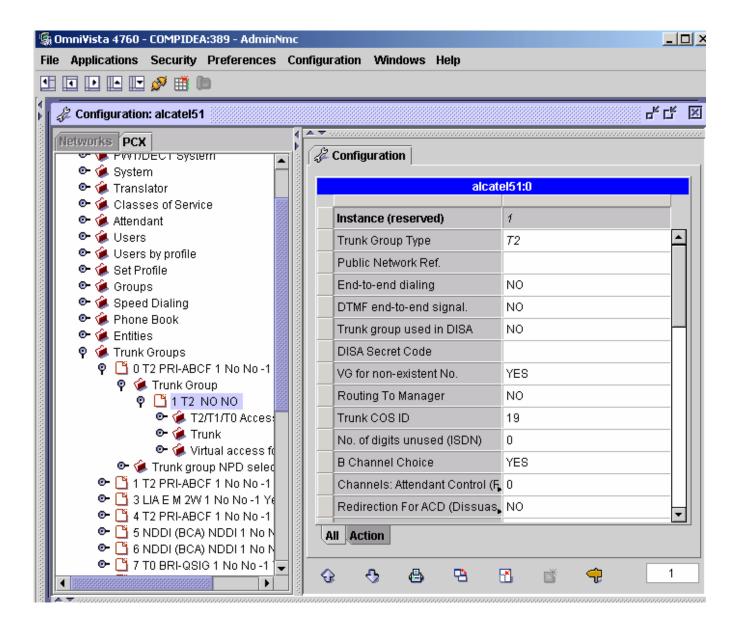




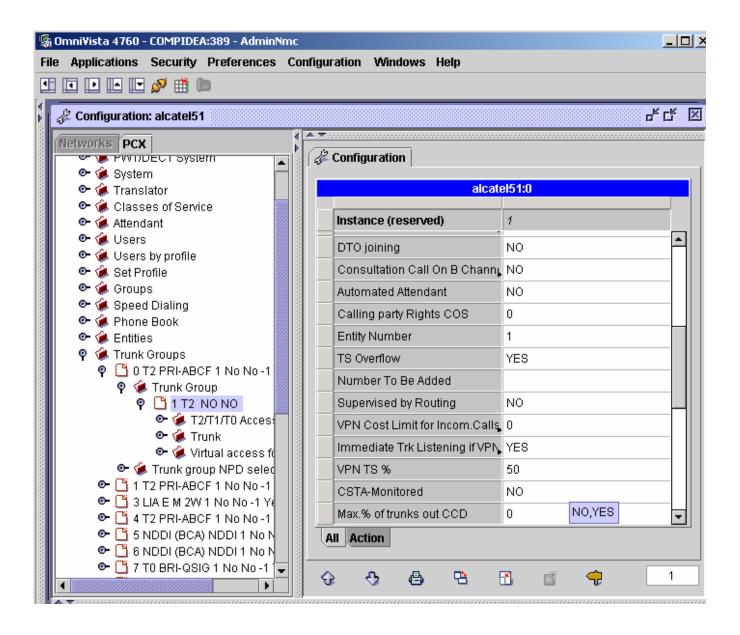




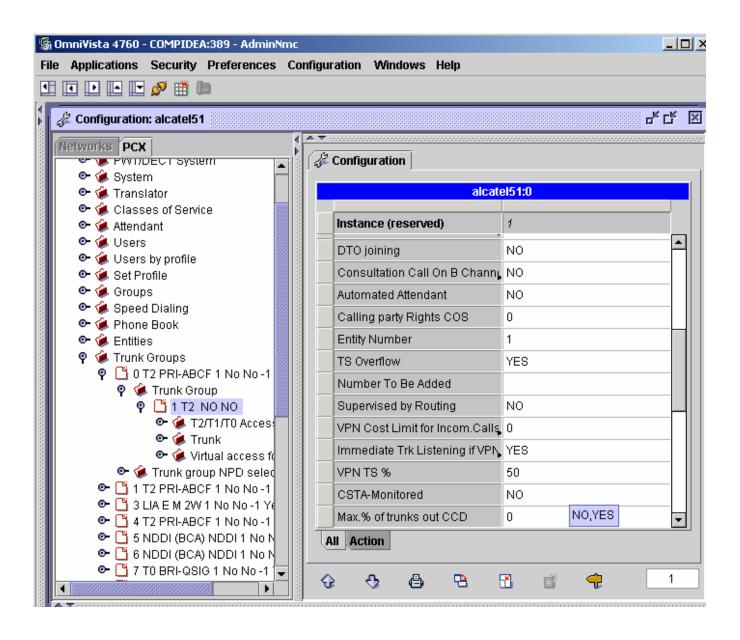




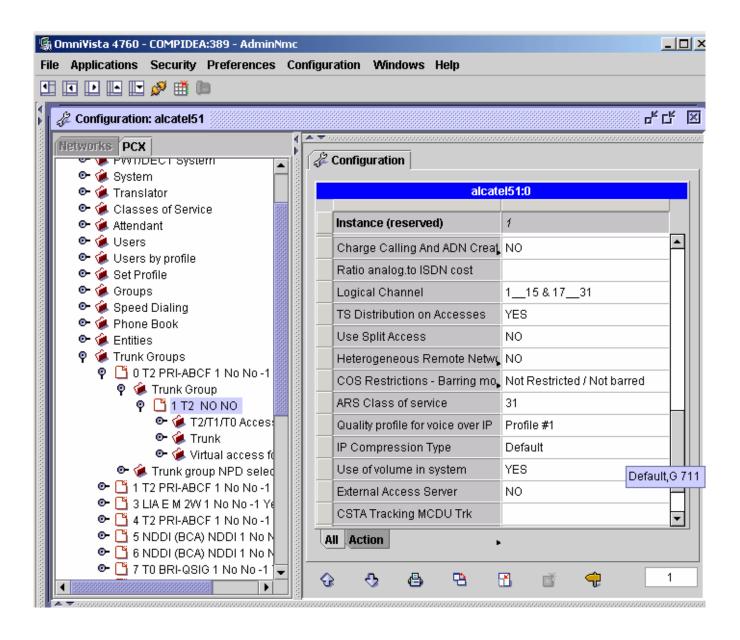




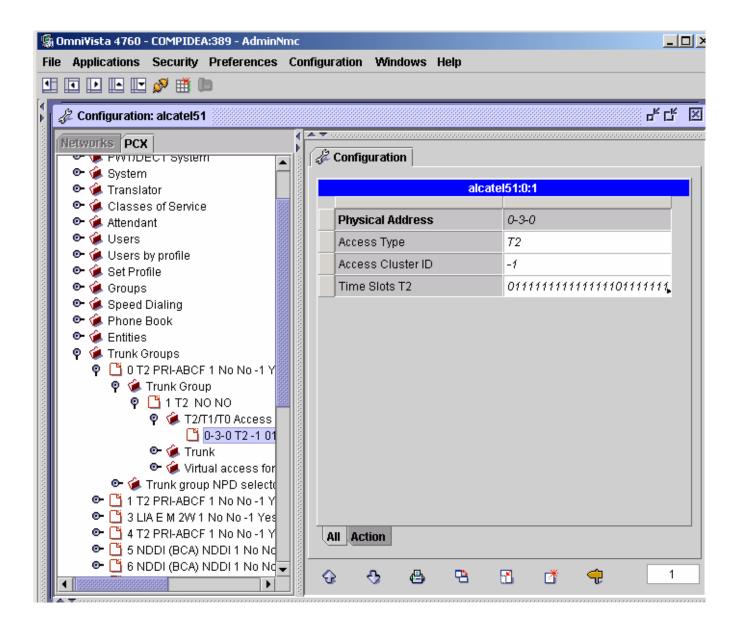






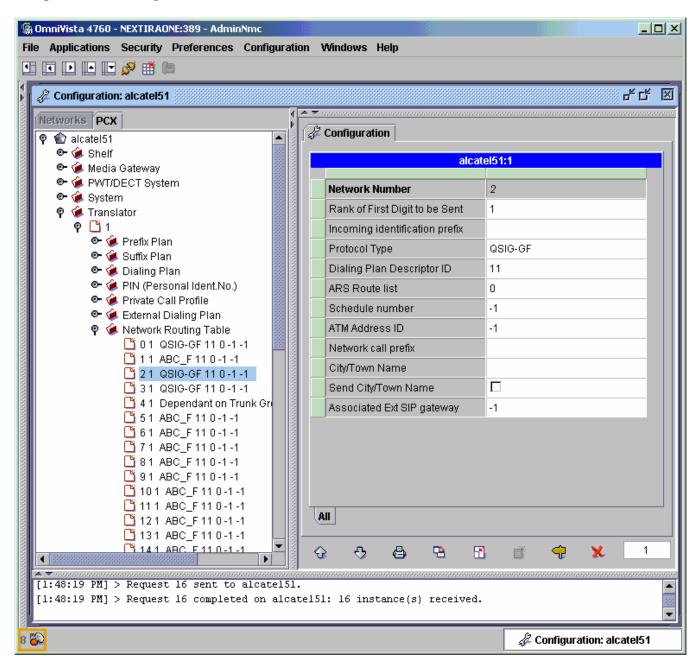






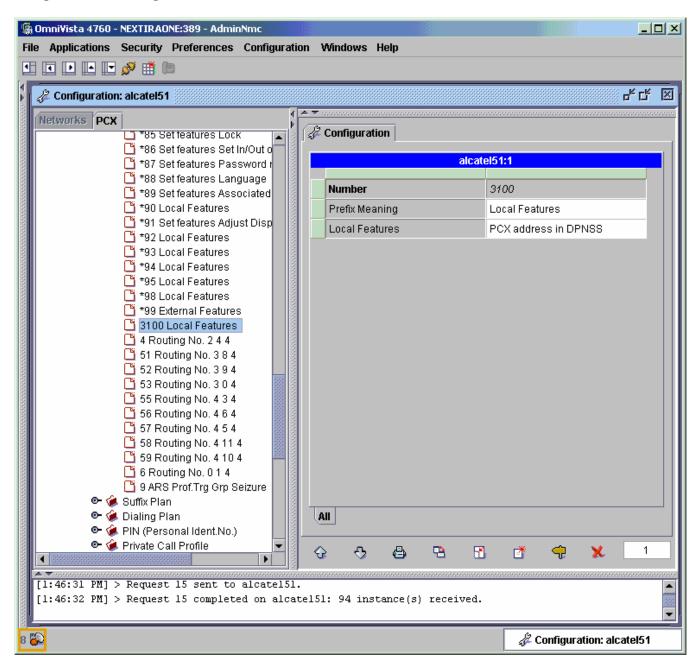


Configure Network Routing



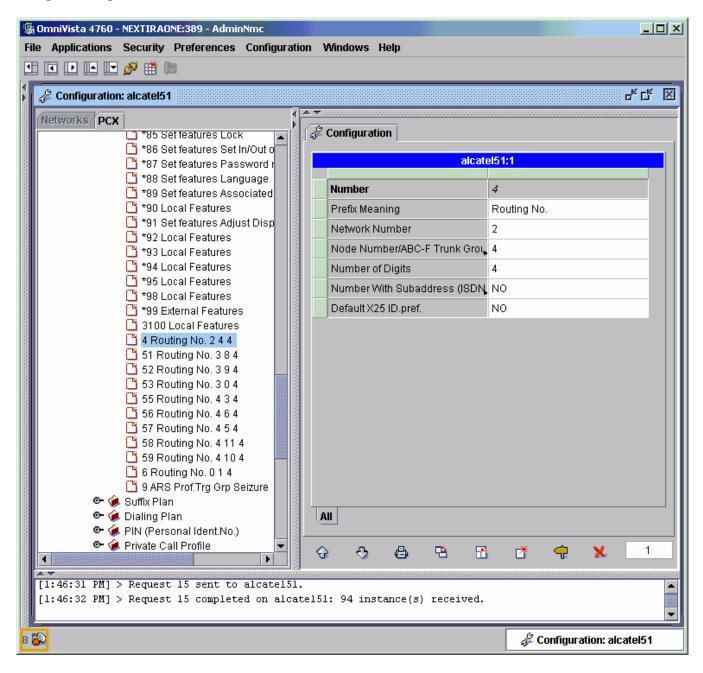


Configure Network Routing Own Node



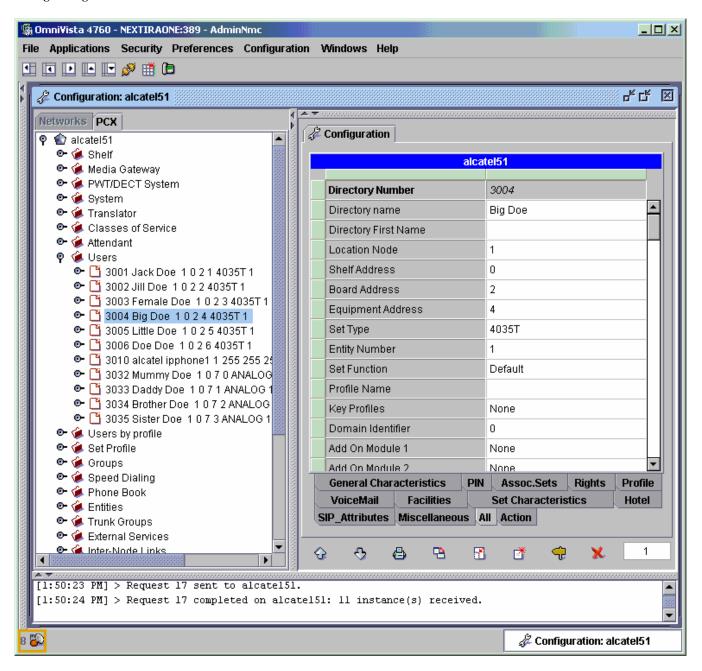


Configure Routing Prefix

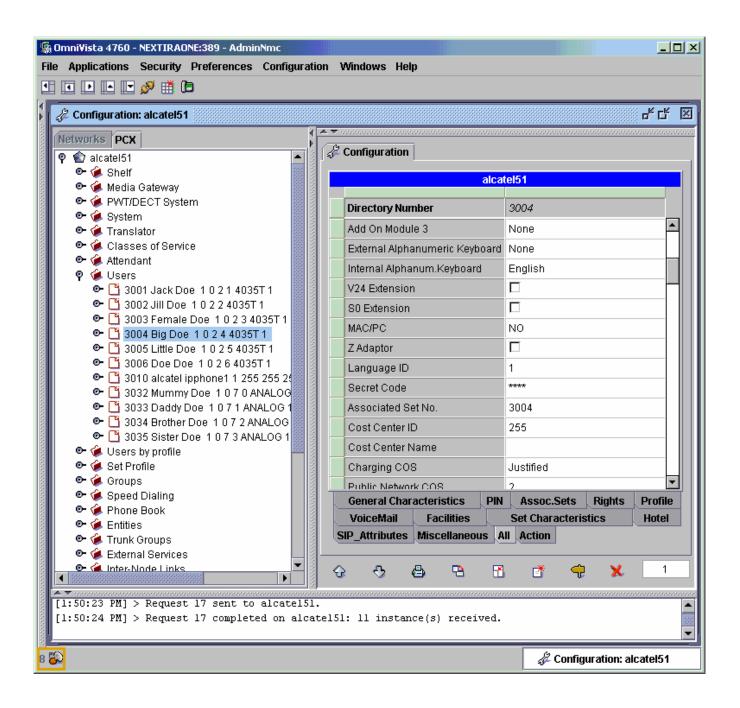




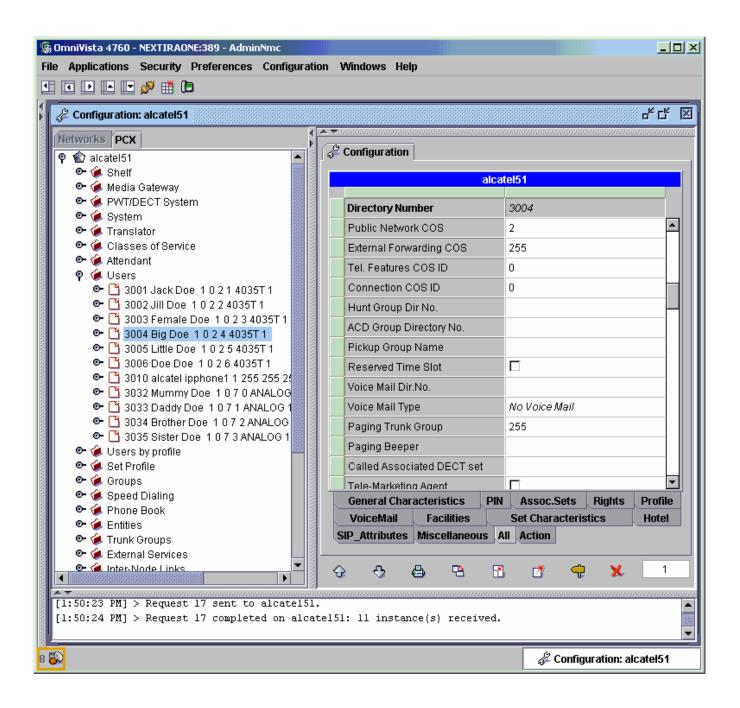
Configure Digital Station



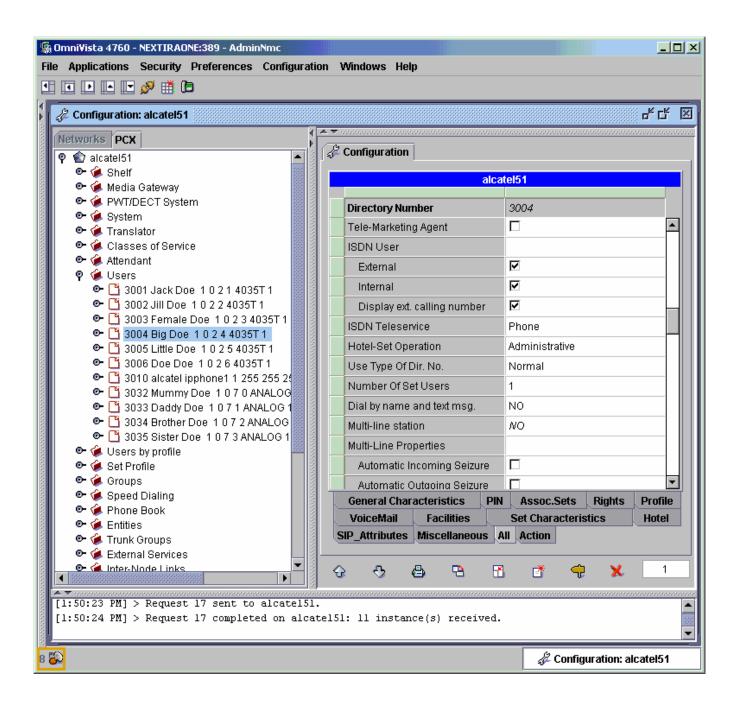




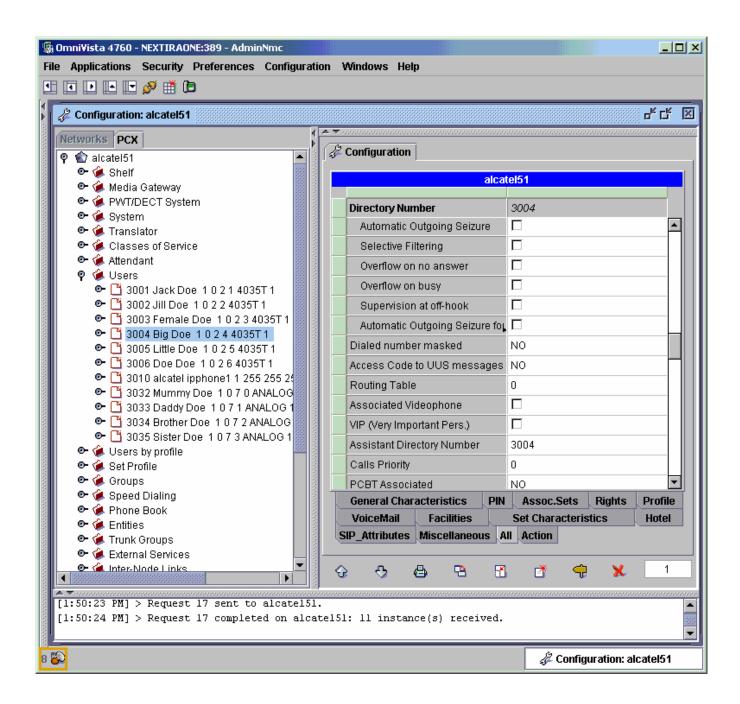




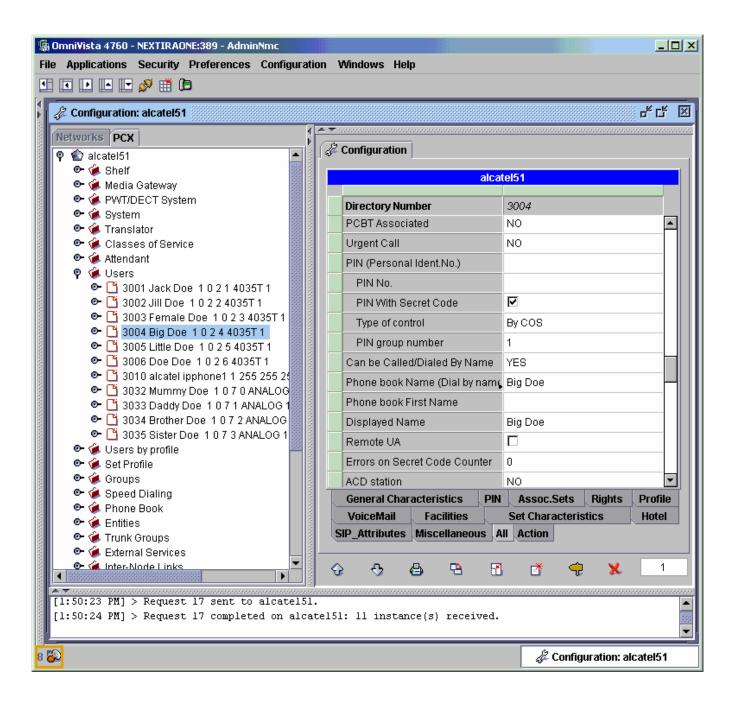




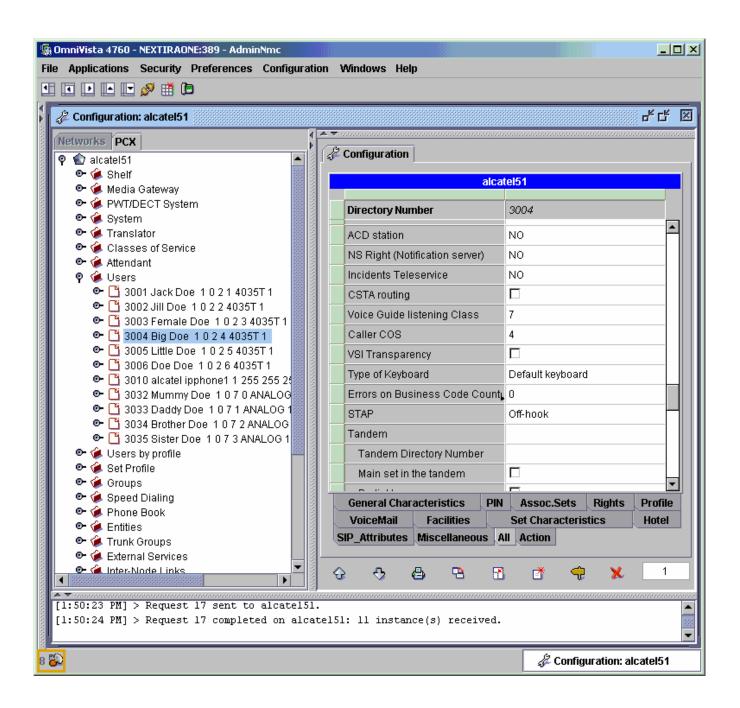




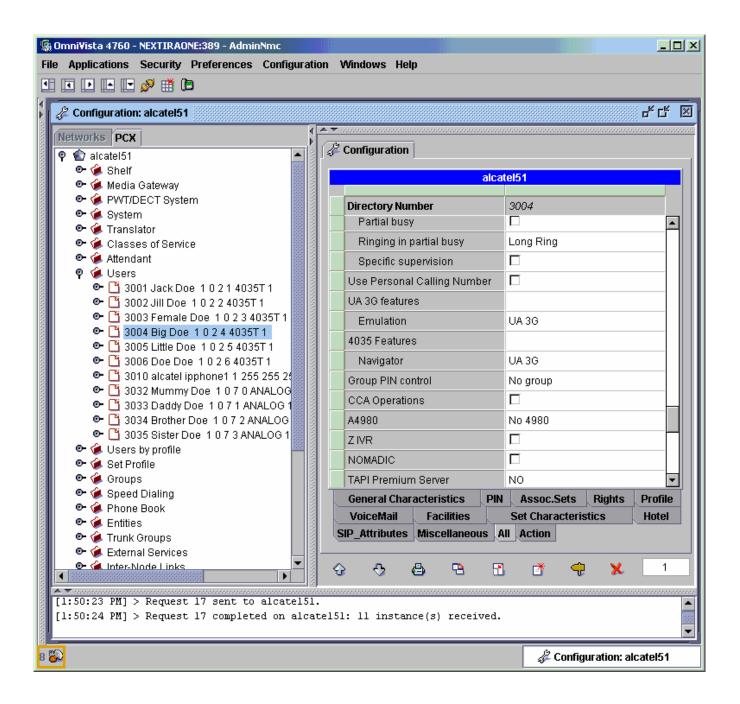




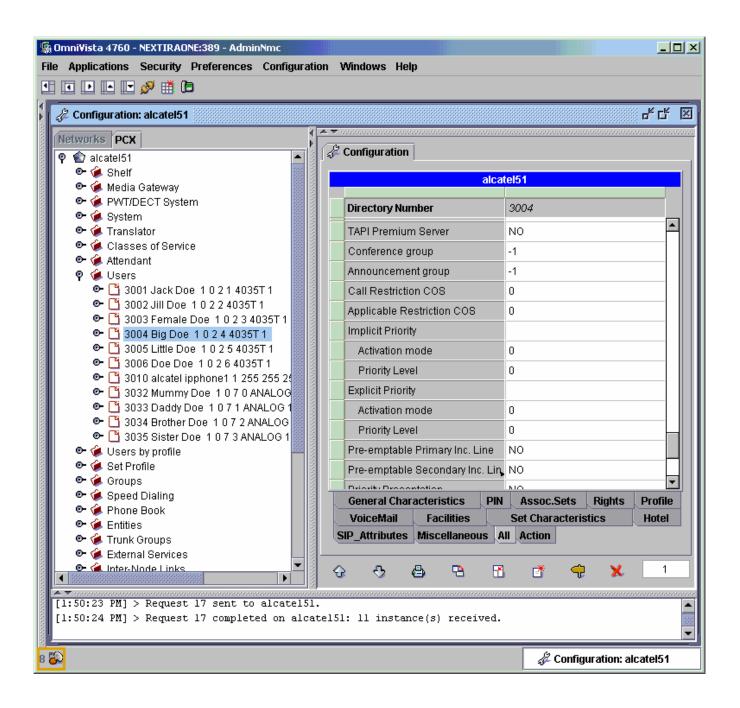




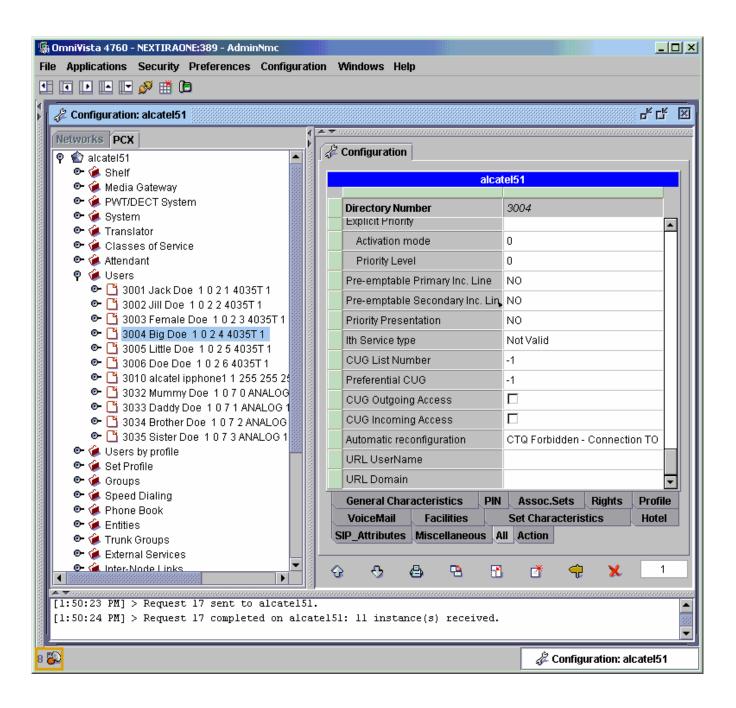






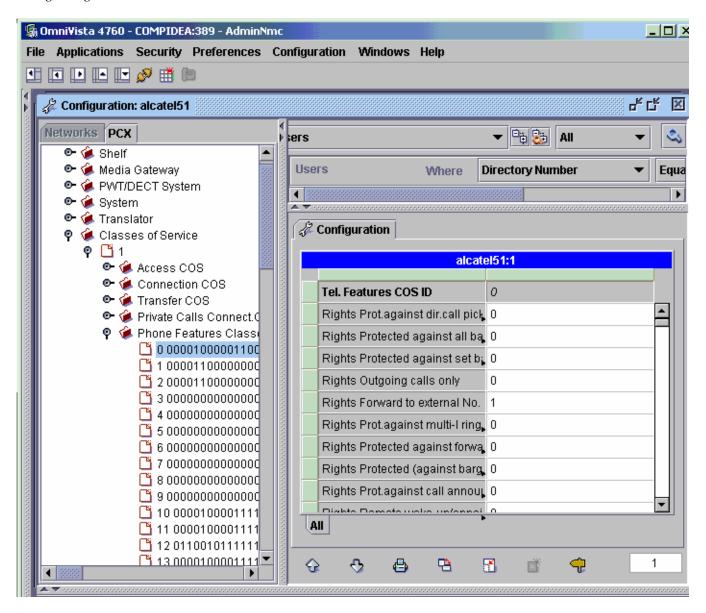




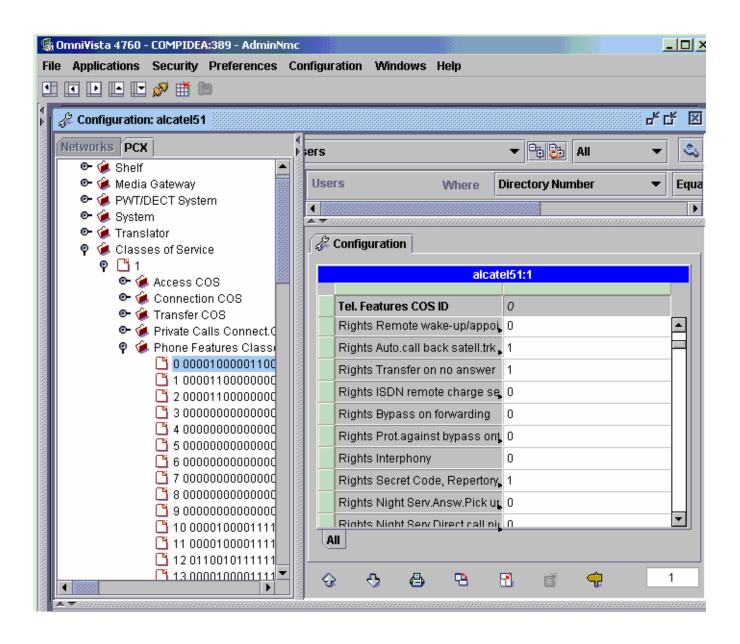




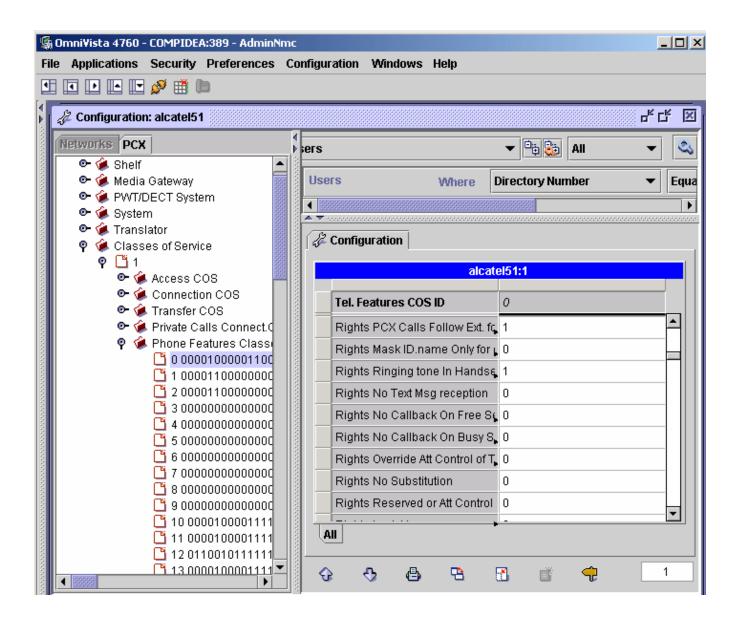
Configure Digital Station Phone Facilities



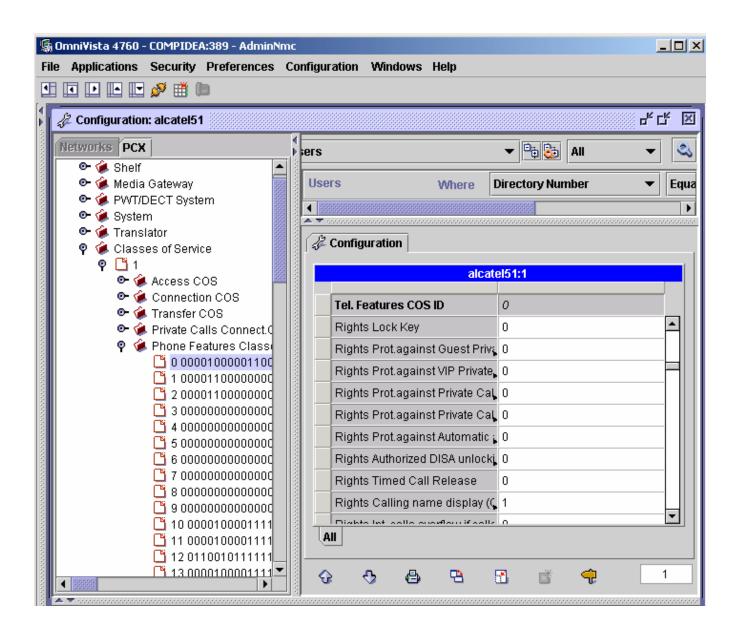




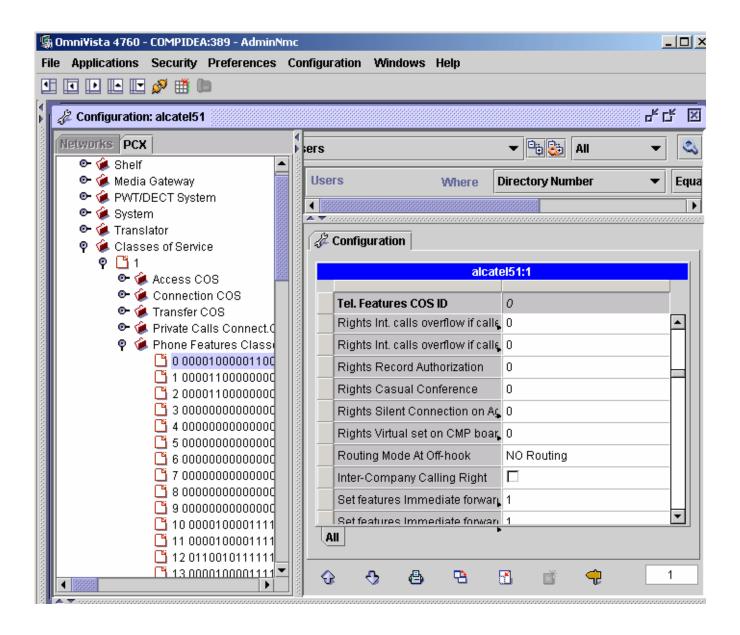




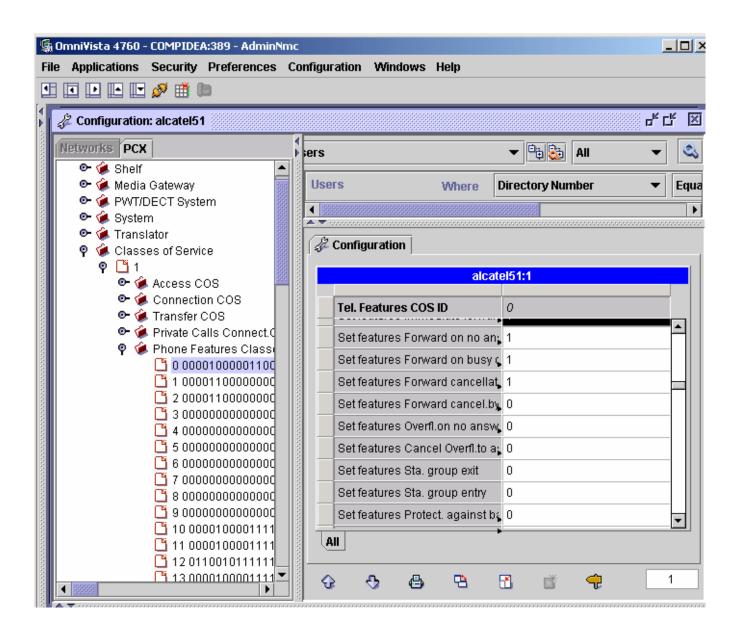




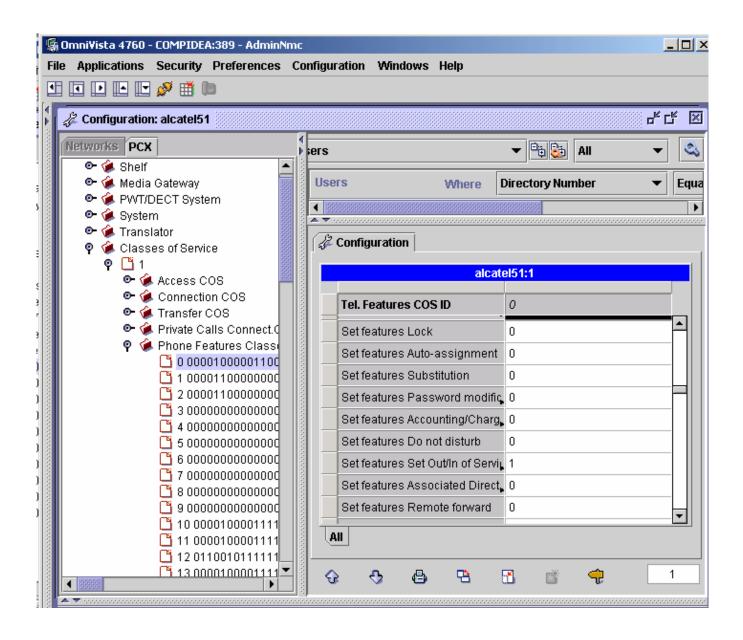




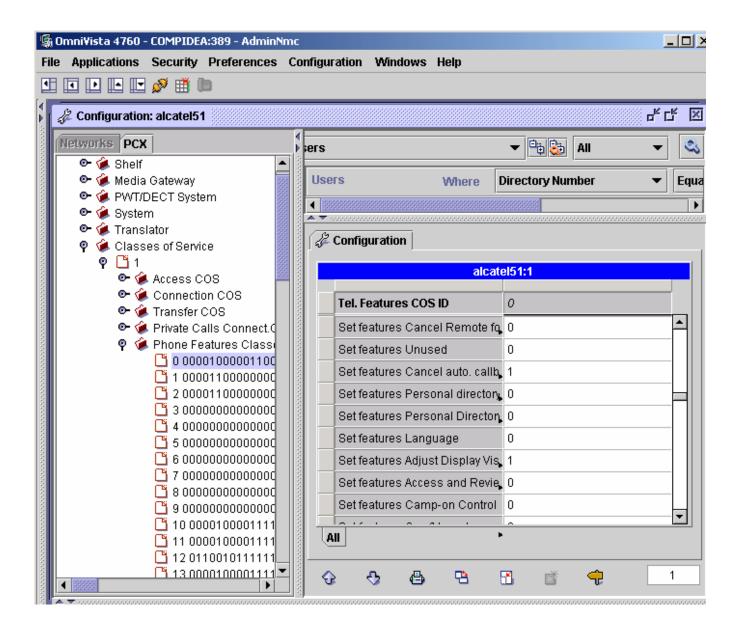




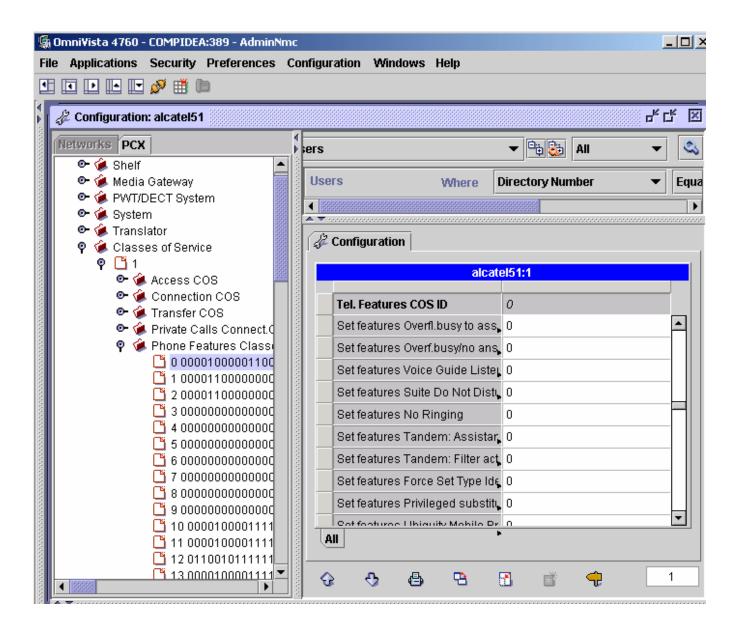




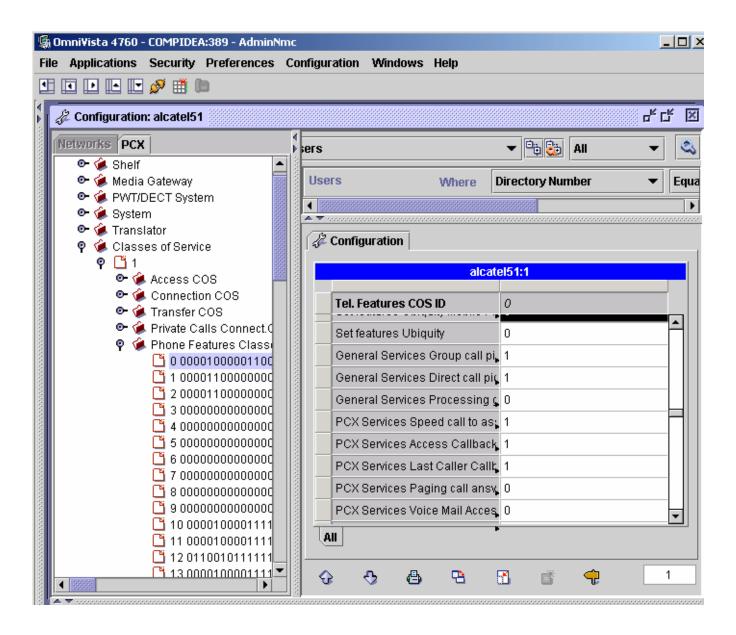




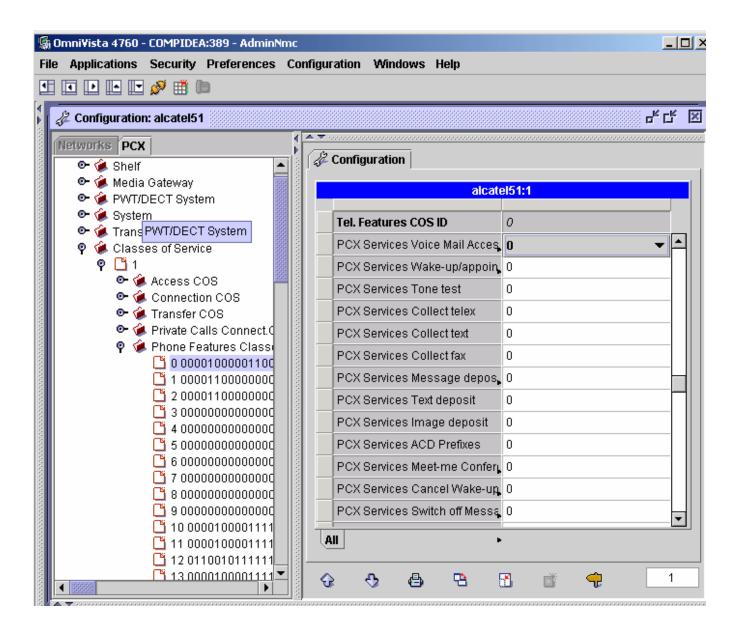




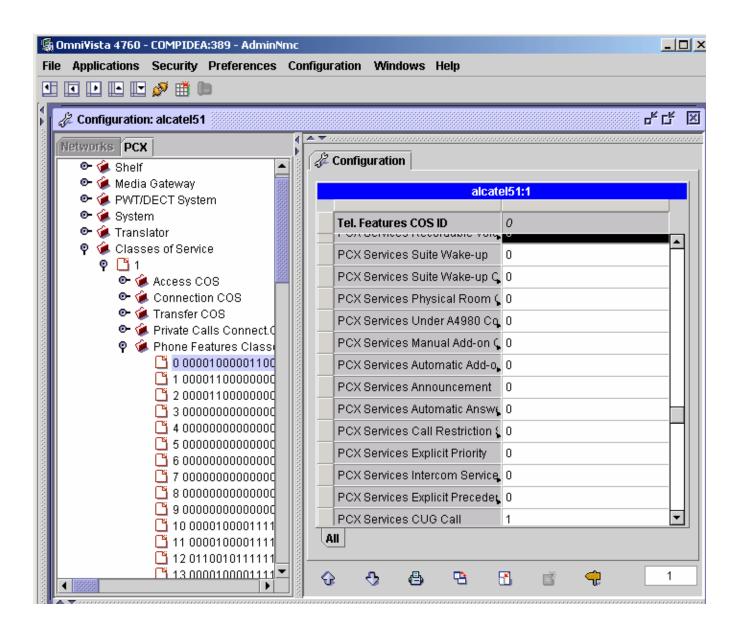




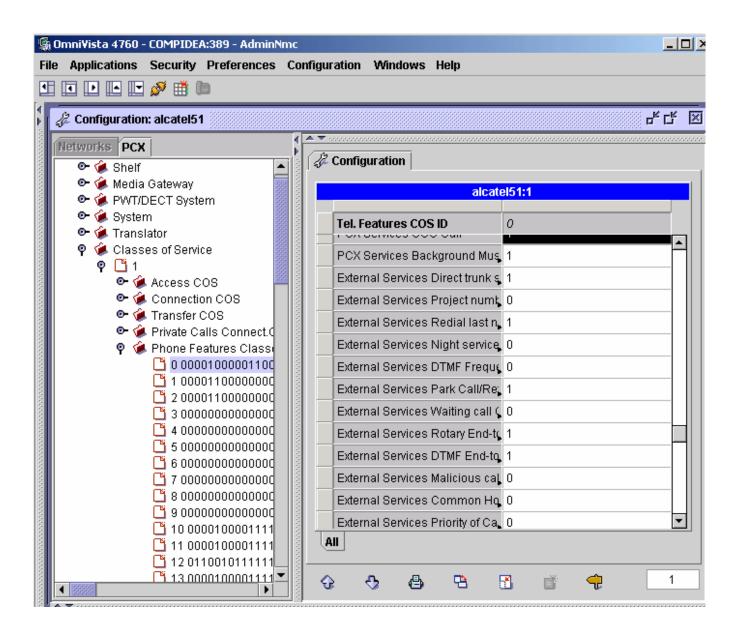




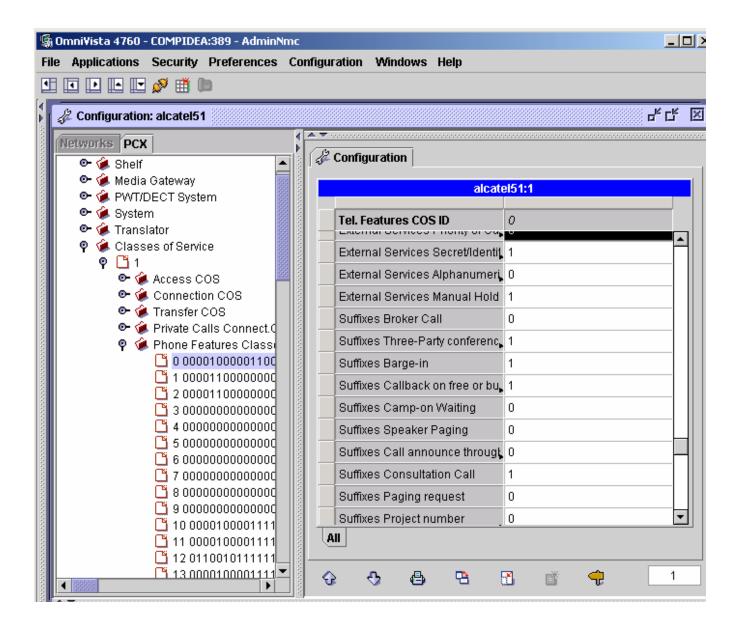




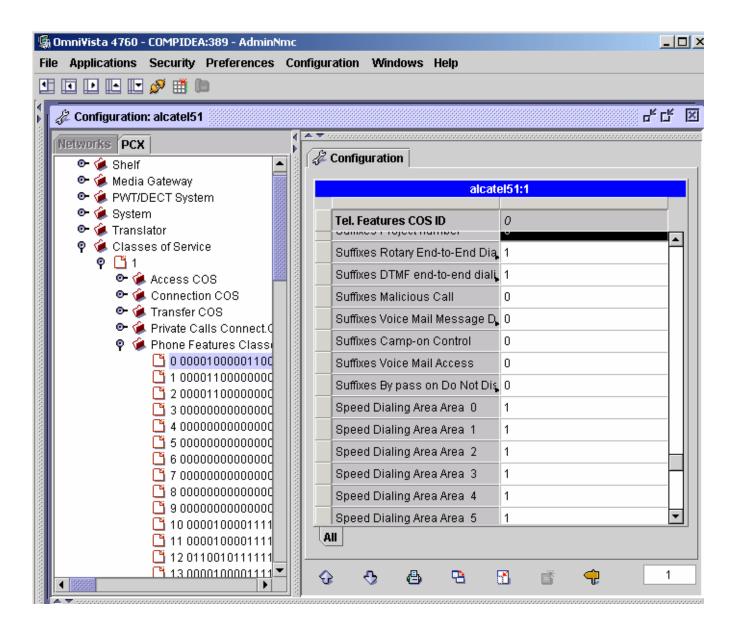




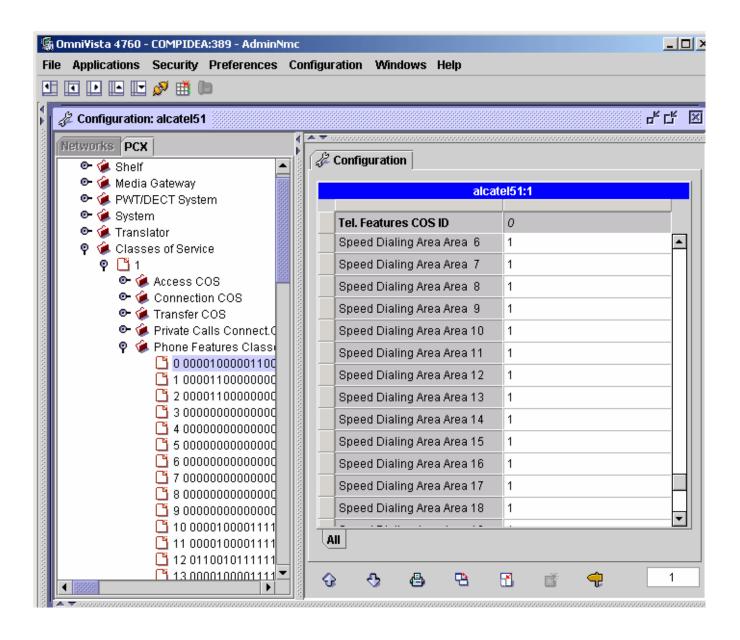




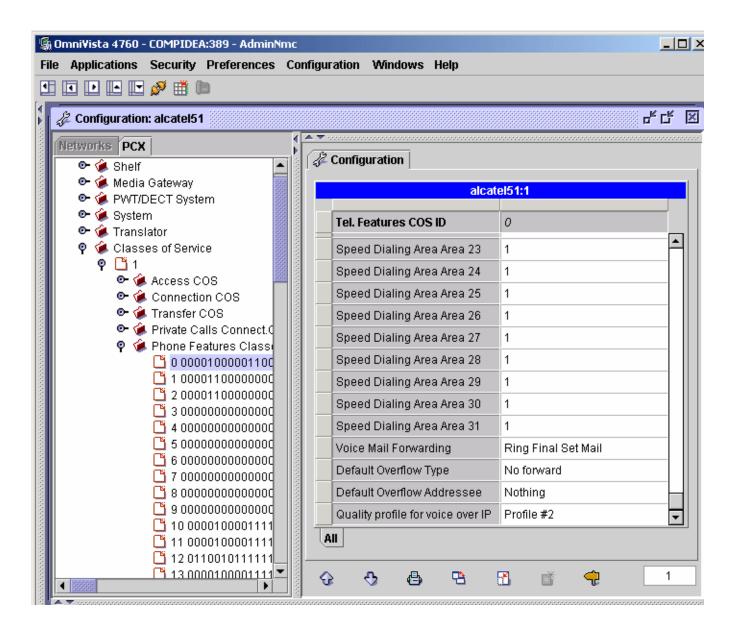








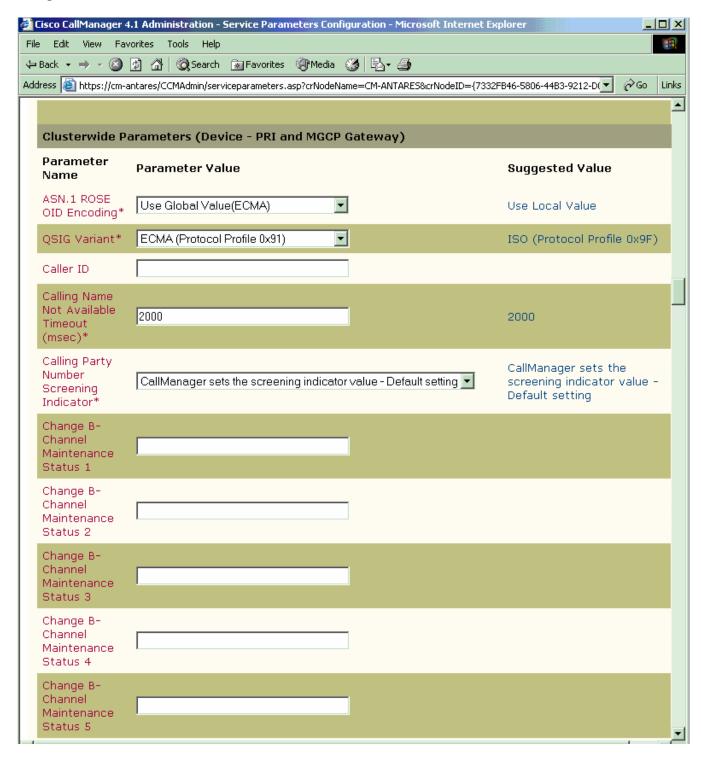






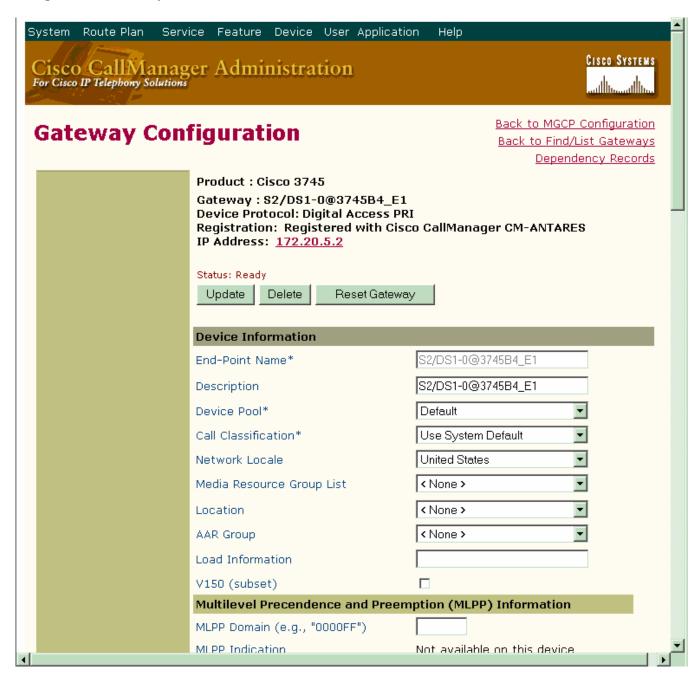
Configuring Cisco Unified CallManager

Configure ECMA Protocol Service Parameters





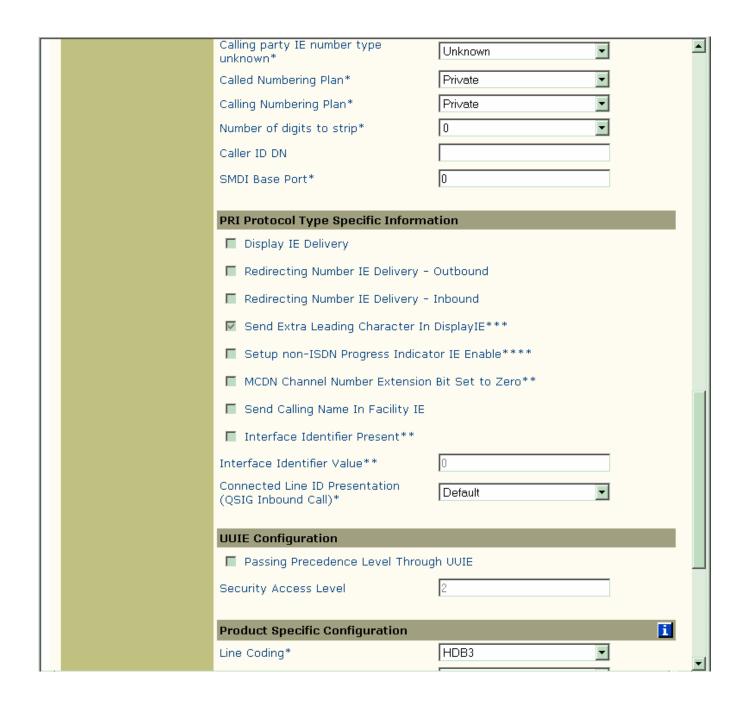
Configure 3745_E1 Gateway





Multilevel Precendence and Preem	ption (MLPP) Information
MLPP Domain (e.g., "0000FF")	
MLPP Indication	Not available on this device
MLPP Preemption	Not available on this device
Interface Information	
PRI Protocol Type*	PRI QSIG E1
Protocol Side*	Network
Channel Selection Order*	Top Down
Channel IE Type*	Timeslot Number
PCM Type*	A-law
Delay for first restart (1/8 sec ticks)	32
Delay between restarts (1/8 sec ticks)	4
☑ Inhibit restarts at PRI initialization	1
☐ Enable status poll	
Call Routing Information	
Inbound Calls	
Significant Digits*	All
Calling Search Space	Incoming Trunk
AAR Calling Search Space	< None >
Prefix DN	
Outbound Calls	
Calling Line ID Presentation*	Default
Calling Party Selection*	Originator
Called party IE number type unknown*	Unknown
Calling party IF number type	



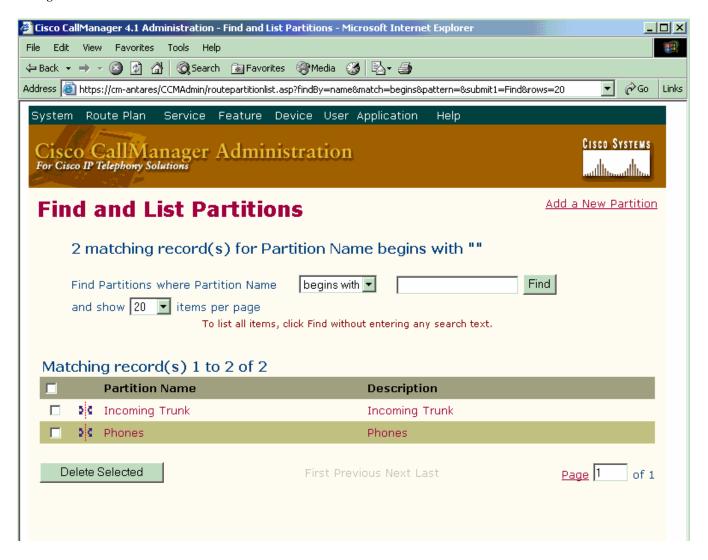




Setup non-ISDN Progress Indica	itor IE Enable****	_					
■ MCDN Channel Number Extension Bit Set to Zero**							
■ Send Calling Name In Facility IE							
☐ Interface Identifier Present**							
Interface Identifier Value**	0						
Connected Line ID Presentation (QSIG Inbound Call)*	Default						
UUIE Configuration							
Passing Precedence Level Throu	igh UUIE						
Security Access Level	2						
Product Specific Configuration		ī					
Line Coding*	HDB3 ▼						
Framing*	CRC4 ▼						
Clock*	External						
Input Gain (-614 db)*	0						
Output Attenuation (-614 db)*	0						
Echo Cancellation Enable*	Enable <u></u>						
Echo Cancellation Coverage (ms)*	Default ▼						
* indicates required item ** applicable to DMS-100 protocol only *** applicable to DMS-100 protocol and D **** may be required to force ringback fr							
	Back to MGCP Configur Back to Find/List Gate						

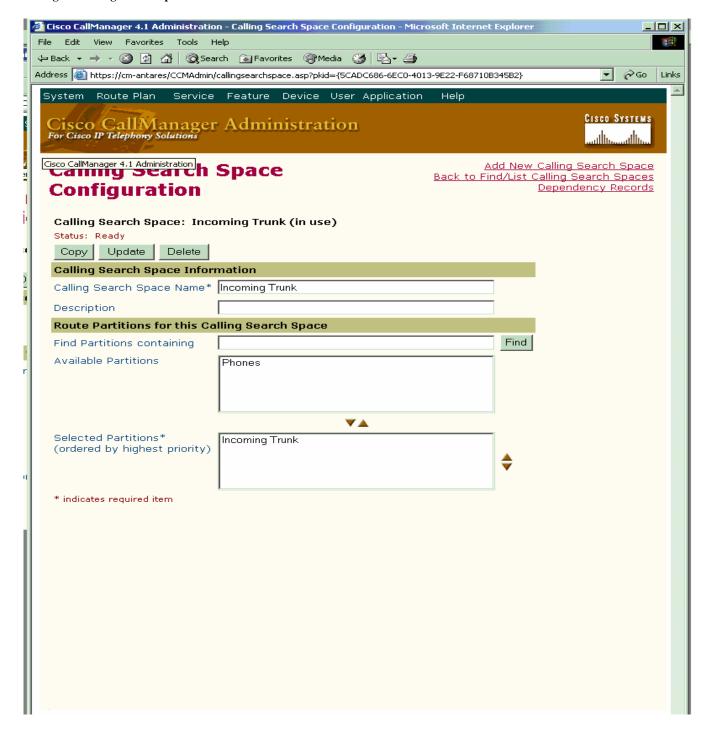


Configure Partitions

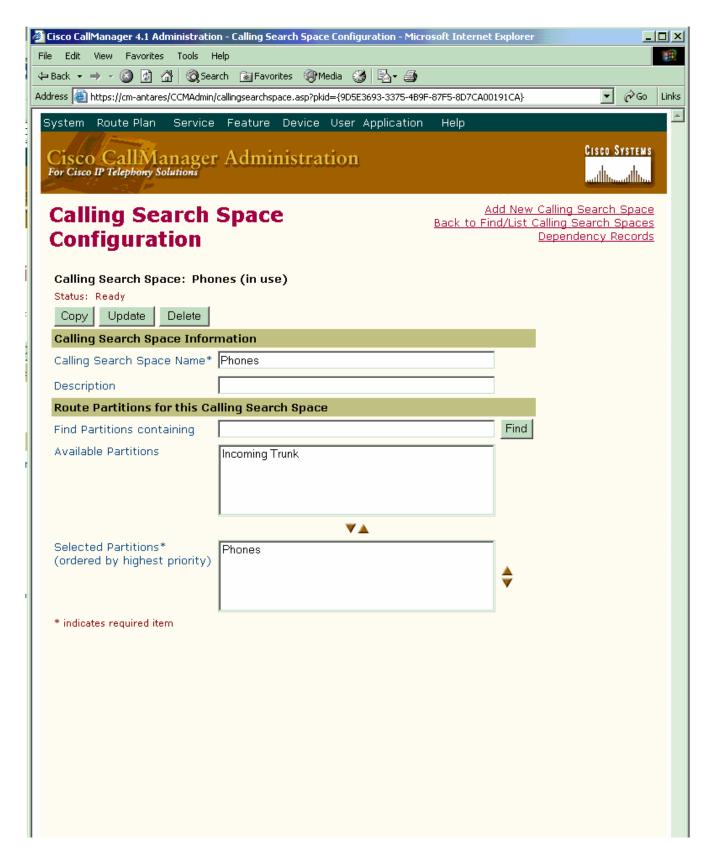




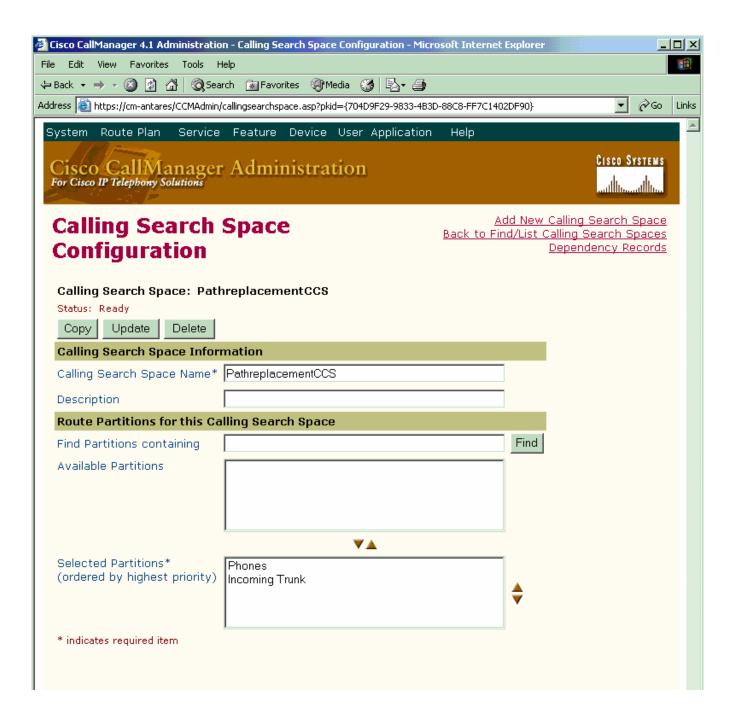
Configure Calling Search Space





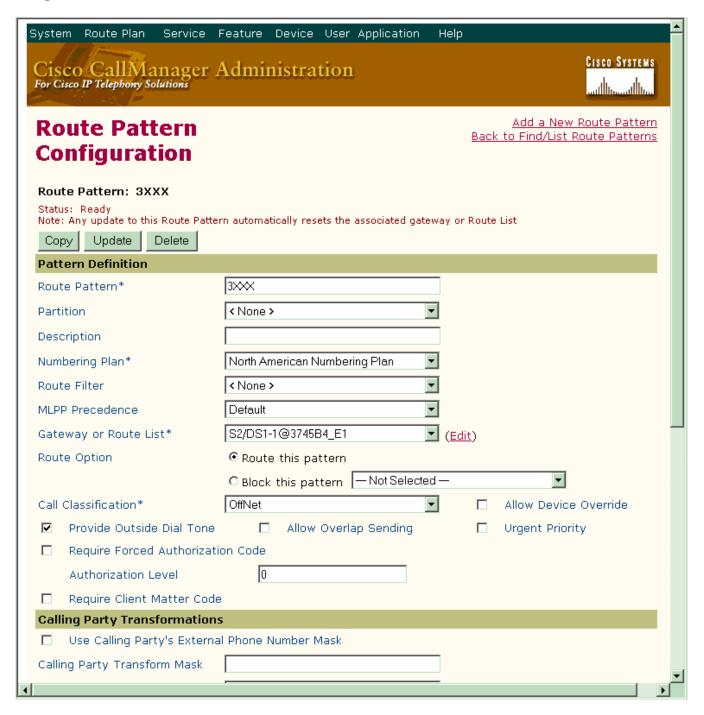








Configure Enbloc Route Pattern

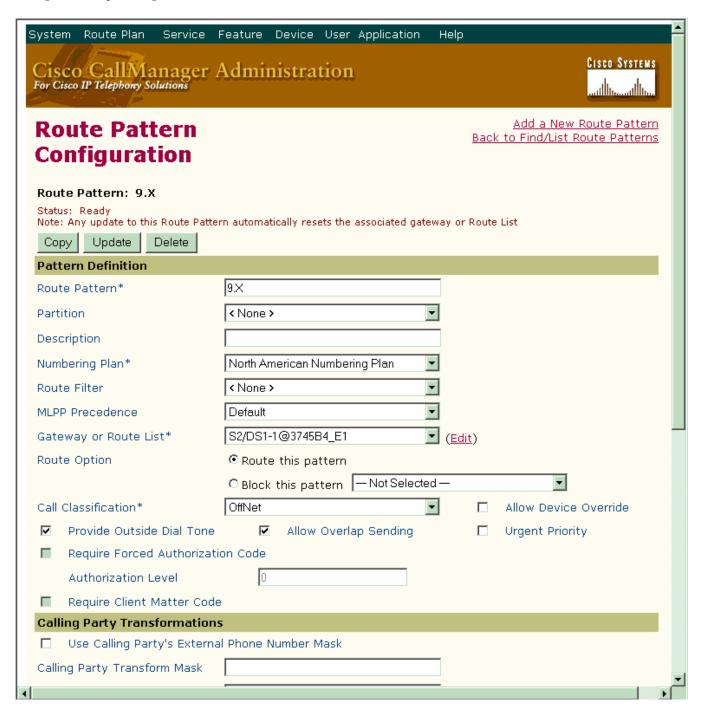




	Gateway or Route List*	S2/DS1-1	@3745B4_E1		T	(Edit)			•
	Route Option	• Route	this pattern						
		C Block t	his pattern	— Not Selec	ted-	_	▼		
	Call Classification*	OffNet			▼		Allow Device Override	Э	
	✓ Provide Outside Dial Tone		Allow Overla	ap Sending			Urgent Priority		
	☐ Require Forced Authorization	on Code							
	Authorization Level	0							
	☐ Require Client Matter Code								
	Calling Party Transformations								
	Use Calling Party's External	l Phone Nu	ımber Mask						
	Calling Party Transform Mask								
	Prefix Digits (Outgoing Calls)								
	Calling Line ID Presentation	Default			-				
	Calling Name Presentation	Default			-				
	Connected Party Transformat	ions							
	Connected Line ID Presentation	Default			▼				
	Connected Name Presentation	Default			-				
	Called Party Transformations								
	Discard Digits	< None >			▼				
	Called Party Transform Mask								
	Prefix Digits (Outgoing Calls)								
	ISDN Network-Specific Faciliti	es Inforn	nation Eleme	ent					
	Carrier Identification Code								
	Network Service Protocol	— Not Sel	ected —		_				
	Network Service		Service Par	ameter Nam	ie	Se	ervice Parameter Value		
	— Not Selected —	▼	< Not Exist >						
	* indicates required item.								
1									₹



Configure Overlap Sending Route Pattern

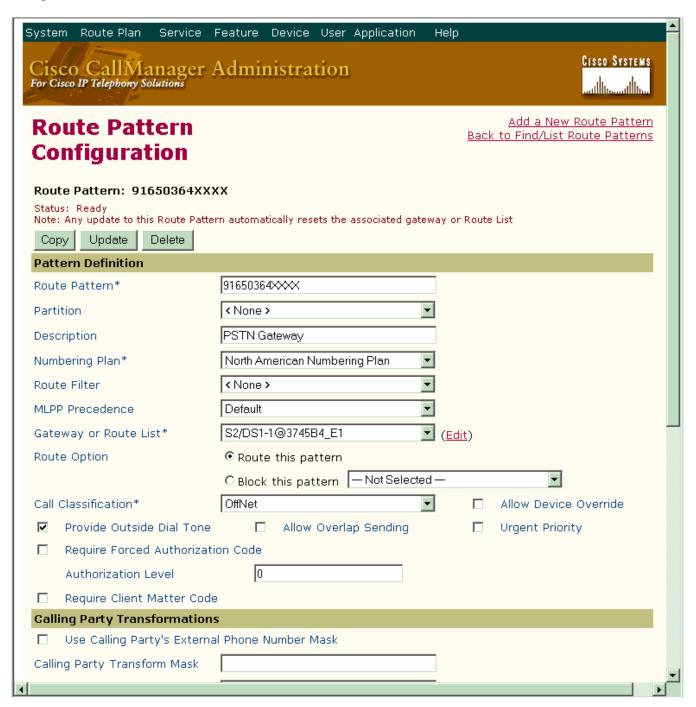




	Gateway or Route List*	S2/DS1-1	@3745B4_E1		-	(Edit)			•
	Route Option	• Route	this pattern						
		C Block t	his pattern	— Not Select	ed-		▼		
	Call Classification*	OffNet			•		Allow Device Overrid	е	
	✓ Provide Outside Dial Tone	~	Allow Overl	ap Sending			Urgent Priority		
	Require Forced Authorization	on Code							
	Authorization Level	0							
	Require Client Matter Code								
	Calling Party Transformations								
	Use Calling Party's External	l Phone Nu	ımber Mask						
	Calling Party Transform Mask								
	Prefix Digits (Outgoing Calls)								
	Calling Line ID Presentation	Default			-				
	Calling Name Presentation	Default			-				
	Connected Party Transformat	ions							
	Connected Line ID Presentation	Default			-				
	Connected Name Presentation	Default			•				
	Called Party Transformations								
	Discard Digits	PreDot			▼				
	Called Party Transform Mask								
	Prefix Digits (Outgoing Calls)								
	ISDN Network-Specific Faciliti	es Inform	nation Elem	ent					
	Carrier Identification Code								
	Network Service Protocol	— Not Sel	ected —		v				
	Network Service		Service Par	ameter Name	9	Ser	vice Parameter Value		
	— Not Selected —	¥	< Not Exist >						
	* indicates required item.								
									₹
4									



Configure PSTN Route Pattern

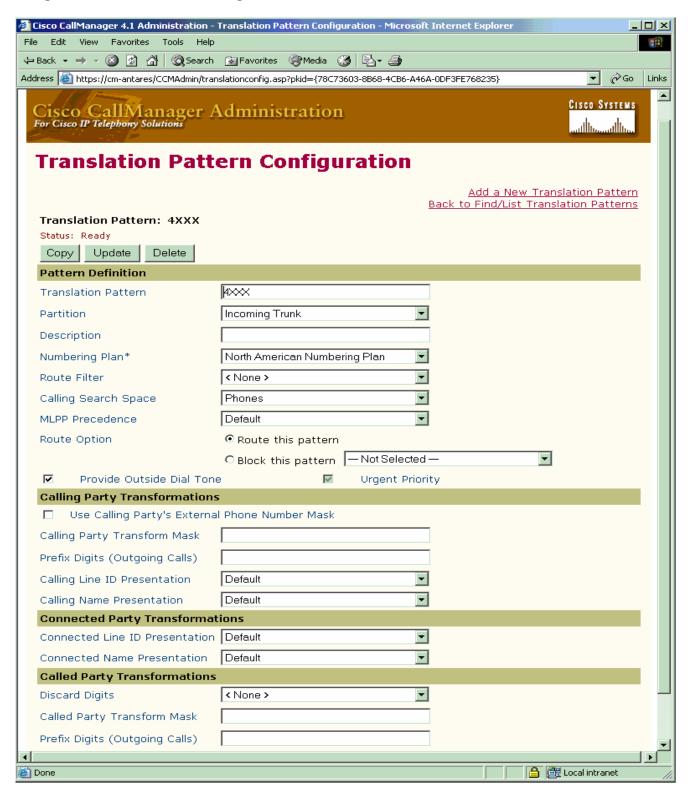




Gateway or Route List*	S2/DS1-1@3745B4_E1	(Edit)		•
Route Option					
	C Block this pattern Not Select	ted —		V	
Call Classification*	OffNet	¥		Allow Device Override	
✓ Provide Outside Dial Tone	Allow Overlap Sending			Urgent Priority	
☐ Require Forced Authorization	on Code				
Authorization Level	0				
☐ Require Client Matter Code					
Calling Party Transformations					
Use Calling Party's External	Phone Number Mask				
Calling Party Transform Mask					
Prefix Digits (Outgoing Calls)					
Calling Line ID Presentation	Default	▼			
Calling Name Presentation	Default	▼			
Connected Party Transformat	ions				
Connected Line ID Presentation	Default	▼			
Connected Name Presentation	Default	▼			
Called Party Transformations					
Discard Digits	< None >	▼			
Called Party Transform Mask					
Prefix Digits (Outgoing Calls)					
ISDN Network-Specific Faciliti	es Information Element				
Carrier Identification Code					
Network Service Protocol	— Not Selected —	▼			
Network Service	Service Parameter Name	е	Serv	ice Parameter Value	
— Not Selected —	▼ Not Exist >				
* indicates required item.					
. 4					Ŧ

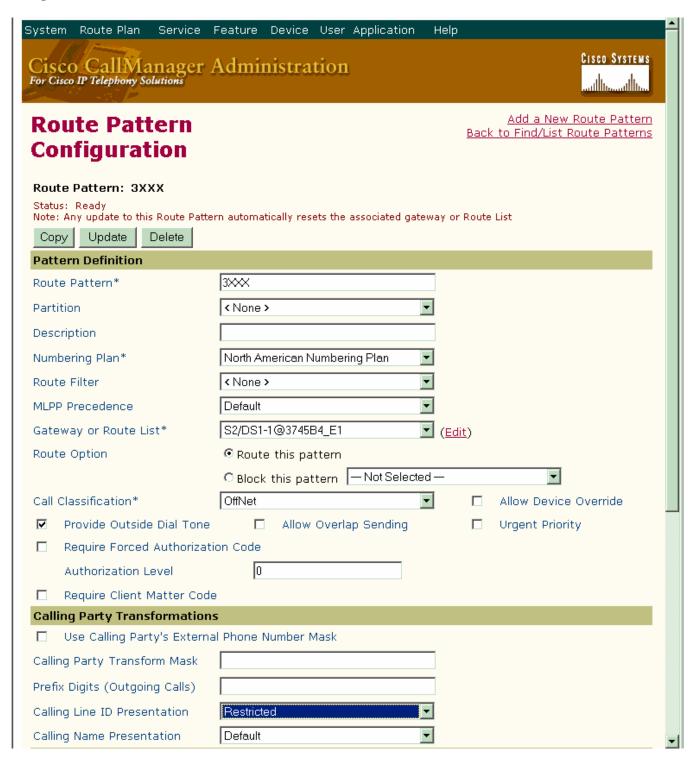


Configure Translation Pattern for Incoming Calls



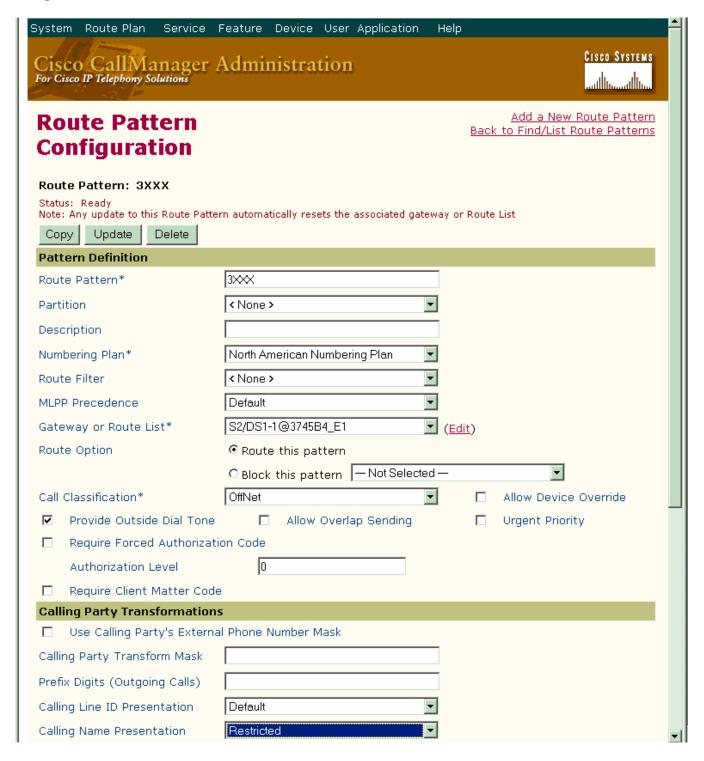


Configure CLIR Route Pattern



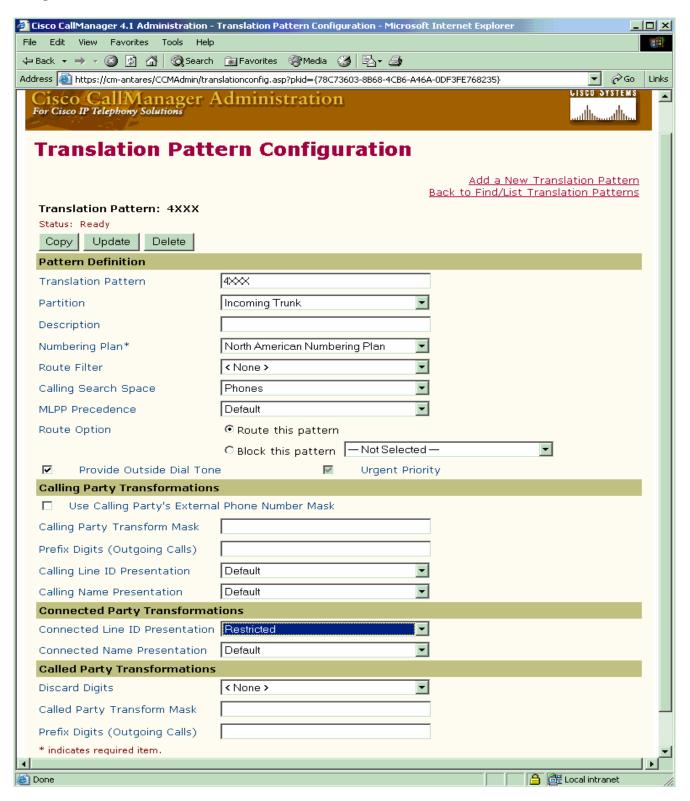


Configure CNIR Route Pattern



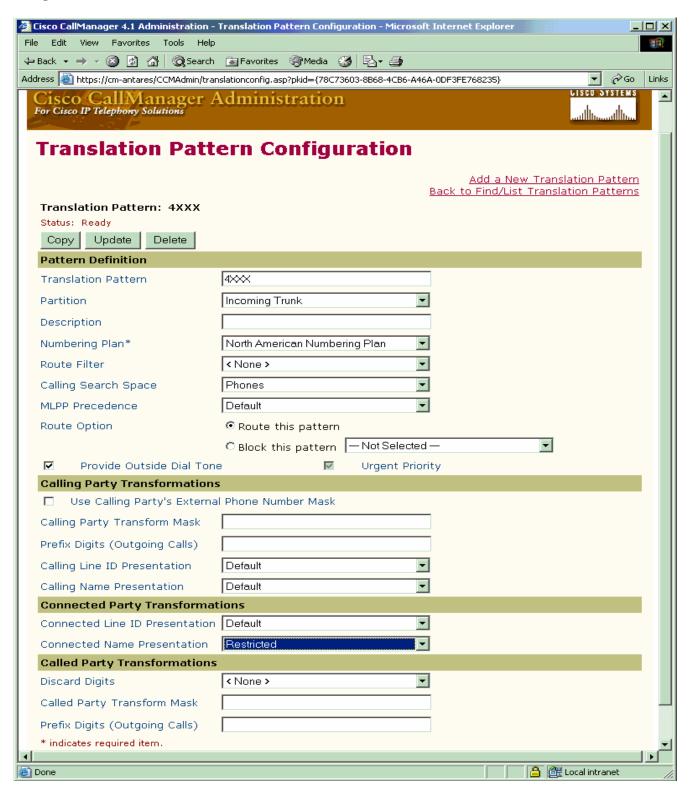


Configure COLR Translation Pattern



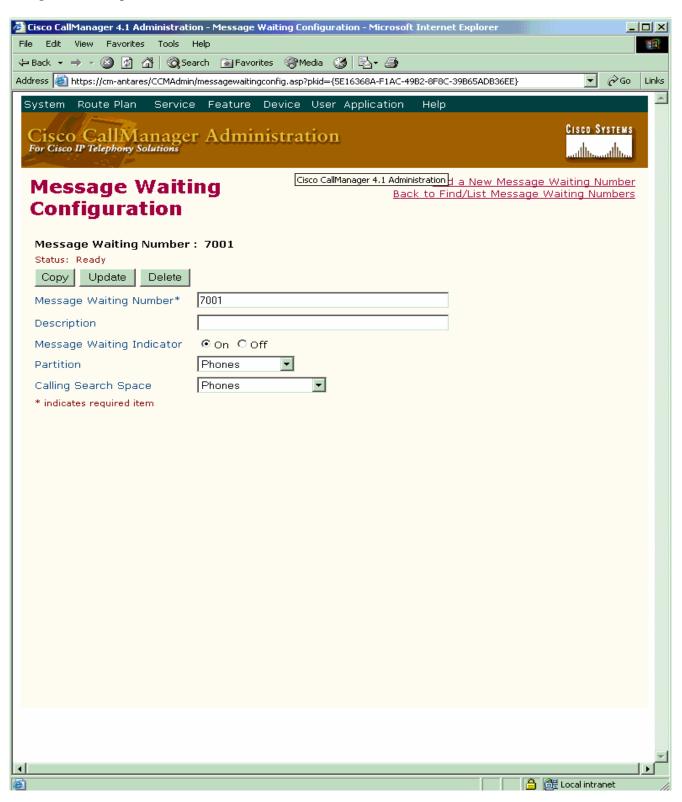


Configure CONR Translation Pattern

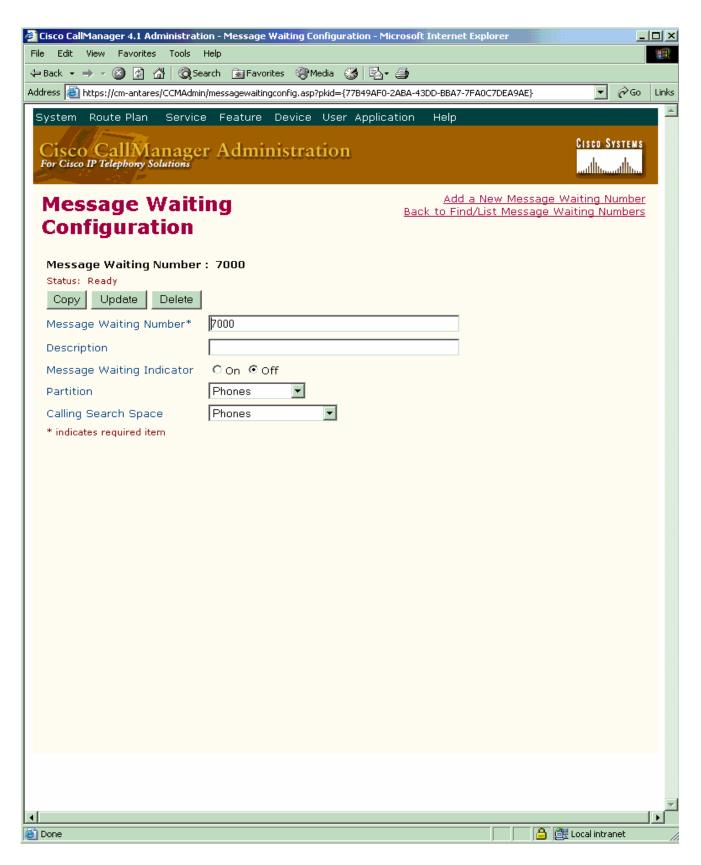




Configure MWI Lamp On/Off

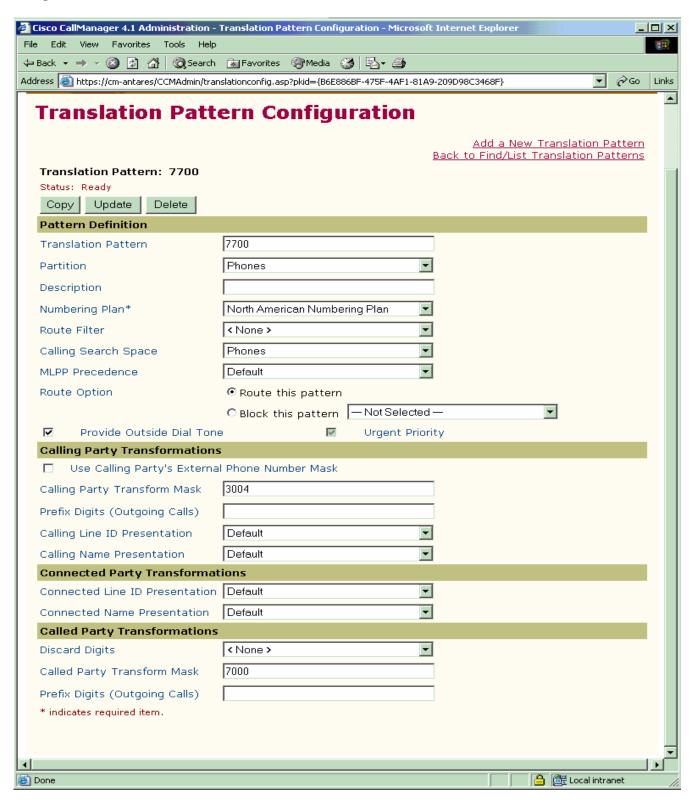






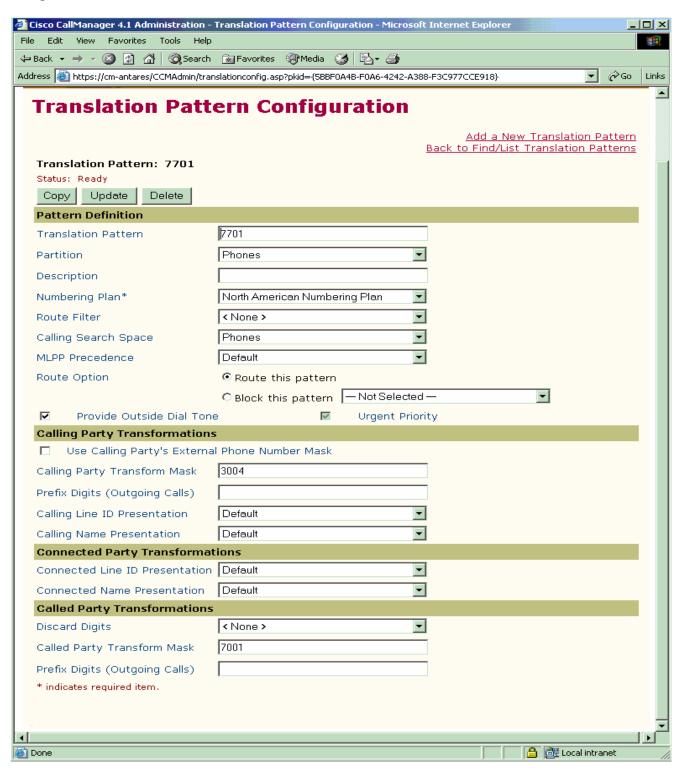


Configure MWI Deactivate Translation Pattern



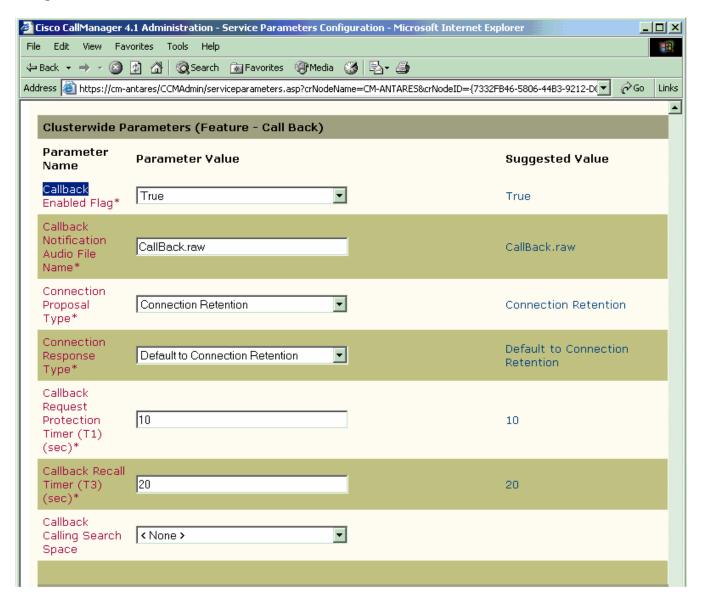


Configure MWI Activate Translation Pattern



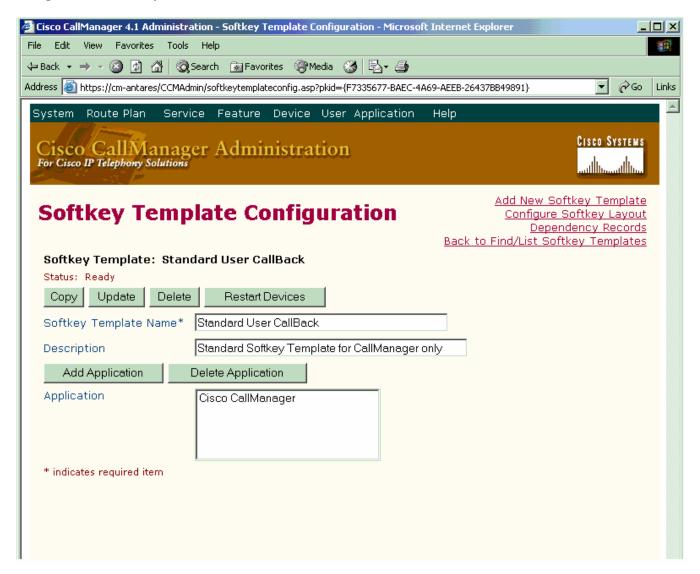


Configure CallBack Service Parameters

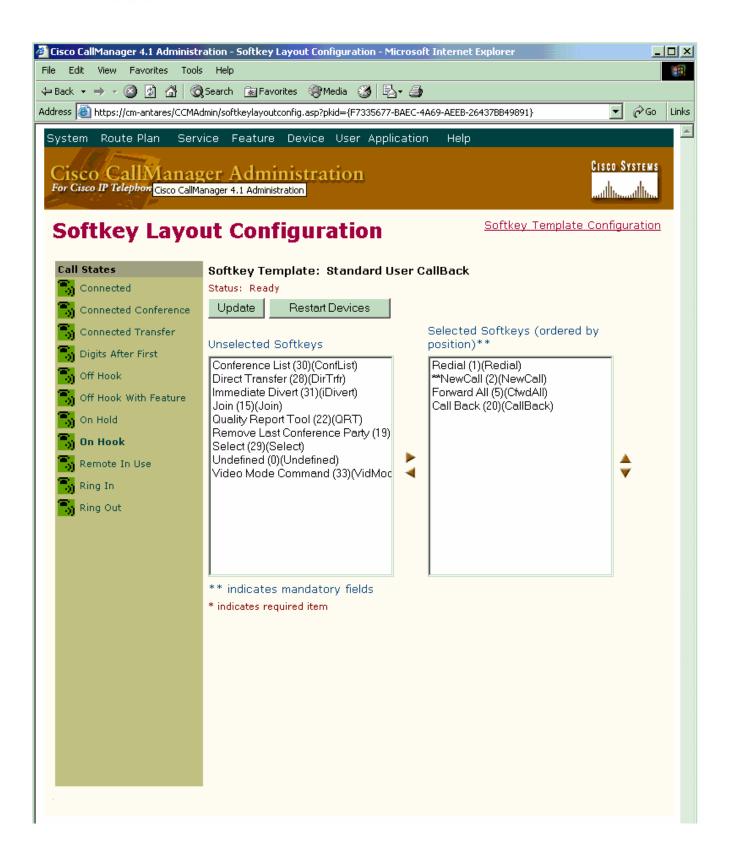




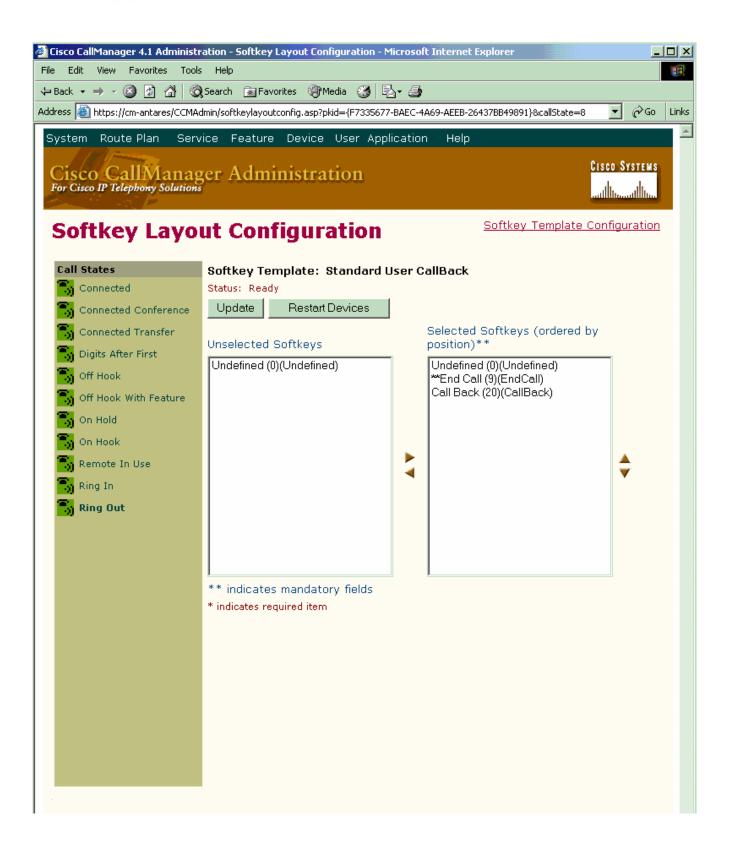
Configure Callback Softkeys





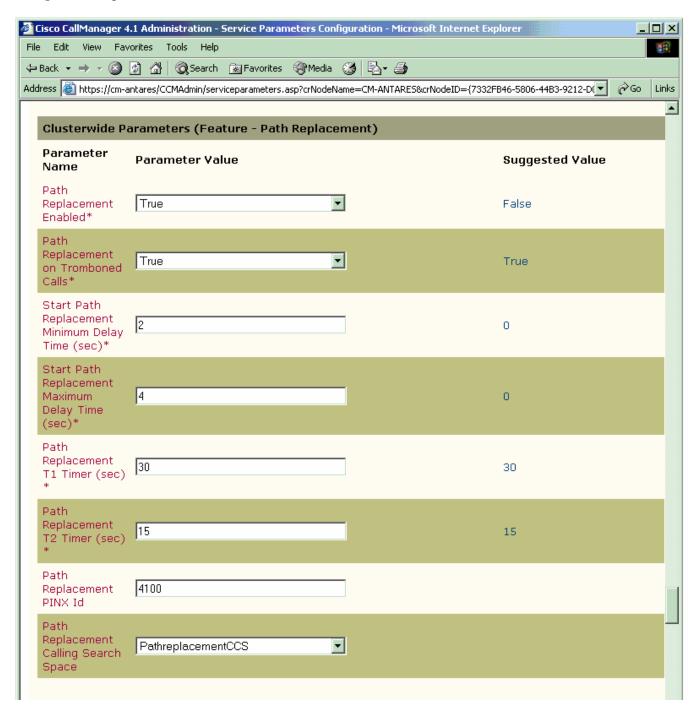






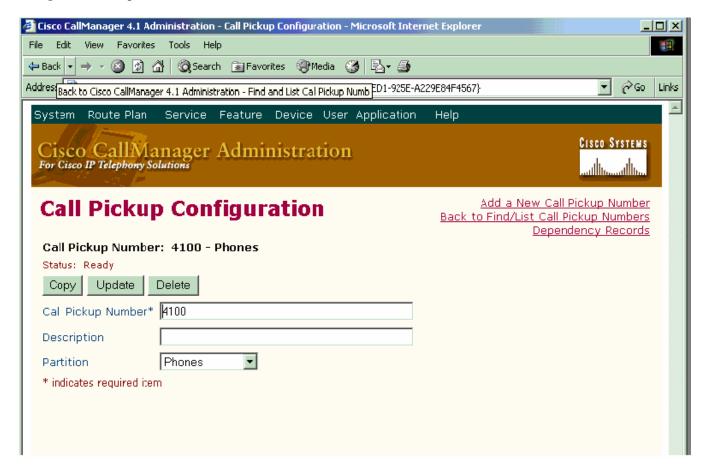


Configure Path Replacement Service Parameters



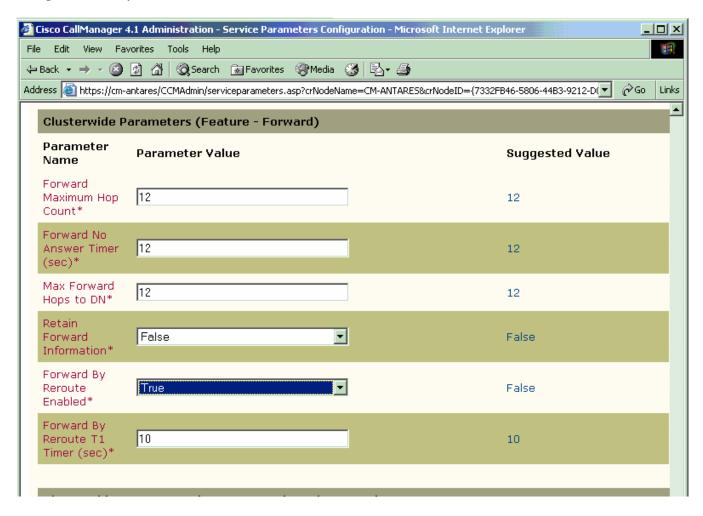


Configure Call Pickup



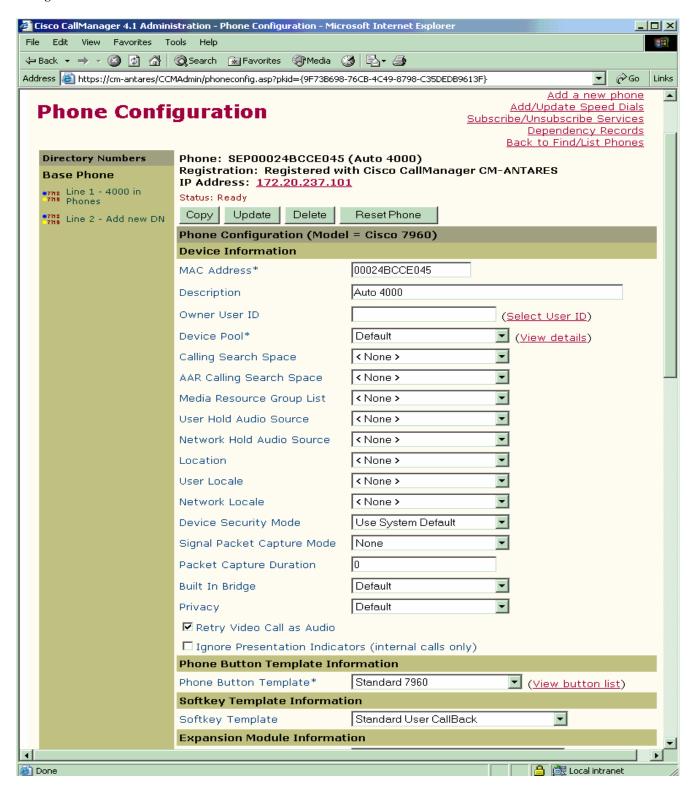


Configure Forward by Reroute Service Parameter

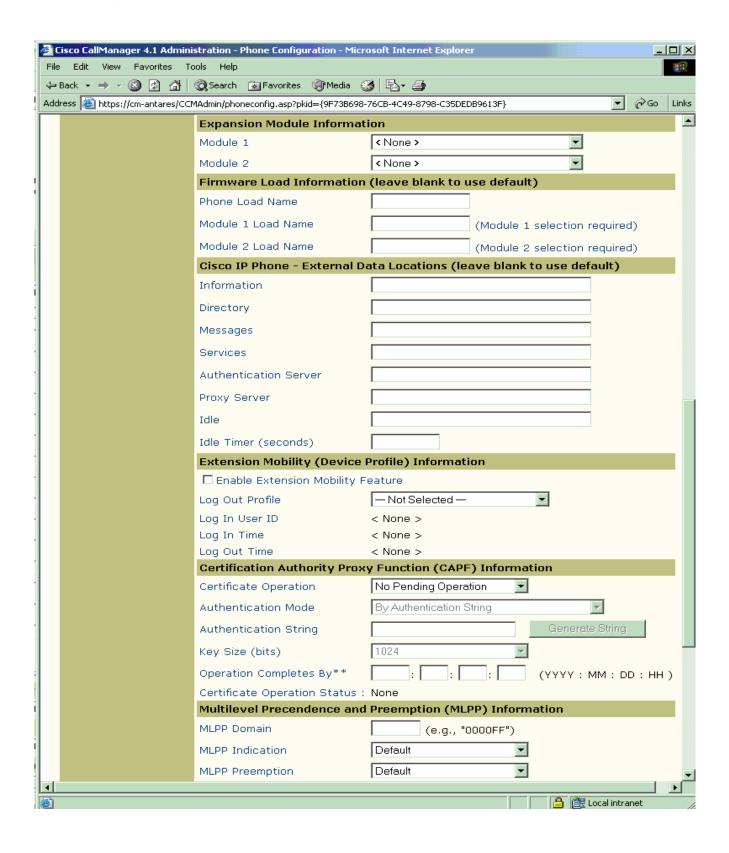




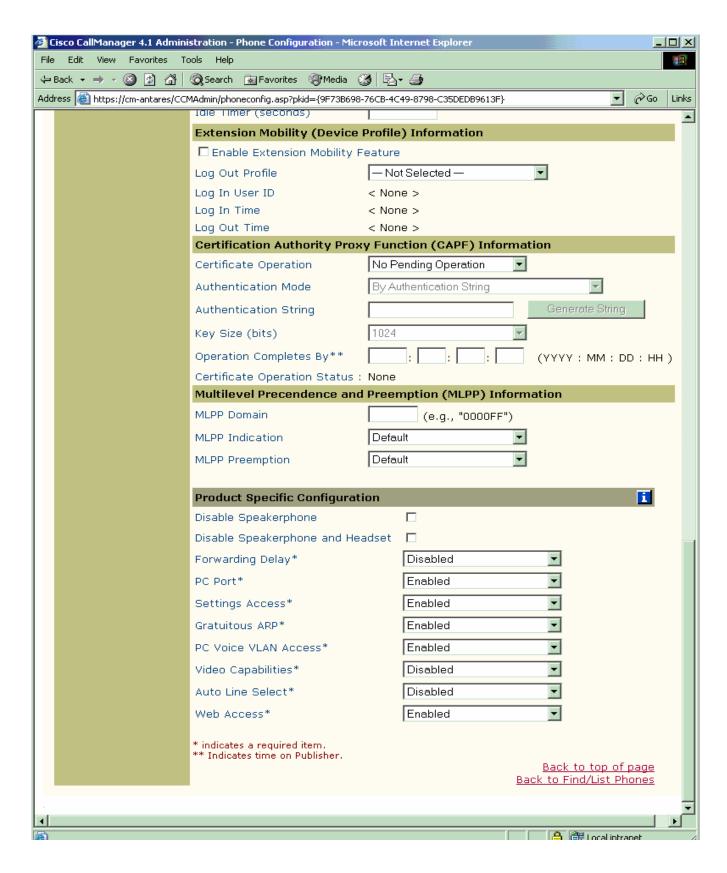
Configure IP Phones





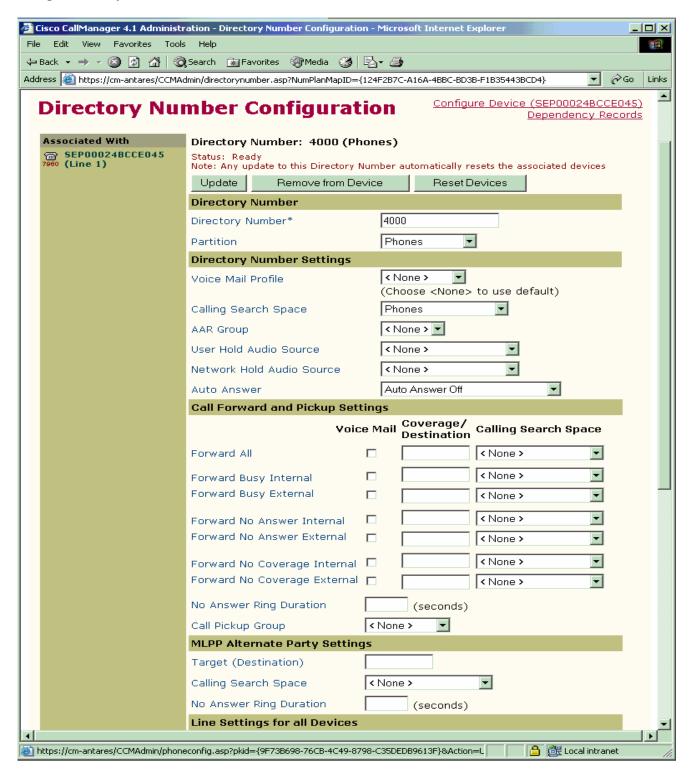




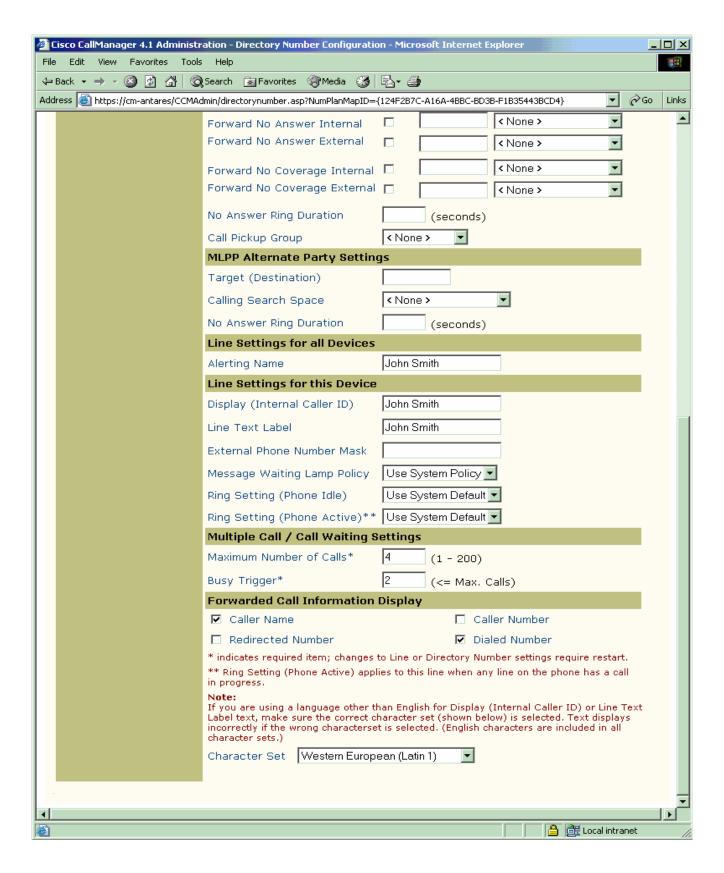




Configure Directory Number









Configuring the Cisco 3745 Router

3745B4_E1#**sho ver**

Cisco IOS Software, 3700 Software (C3745-ADVENTERPRISEK9-M), Version 12.3(7)T, RELEASE SOFTWARE (fc1)

Technical Support: http://www.cisco.com/techsupport

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Compiled Sat 21-Feb-04 05:53 by eaarmas

ROM: System Bootstrap, Version 12.2(8r)T2, RELEASE SOFTWARE (fc1)

3745B4_E1 uptime is 1 week, 6 days, 4 hours, 47 minutes

System returned to ROM by power-on

System image file is "flash:c3745-adventerprisek9-mz.123-7.T.bin"

This product contains cryptographic features and is subject to United States and local country laws governing import, export, transfer and use. Delivery of Cisco cryptographic products does not imply third-party authority to import, export, distribute or use encryption. Importers, exporters, distributors and users are responsible for compliance with U.S. and local country laws. By using this product you agree to comply with applicable laws and regulations. If you are unable to comply with U.S. and local laws, return this product immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at: http://www.cisco.com/wwl/export/crypto/tool/stqrg.html

If you require further assistance please contact us by sending email to export@cisco.com.

Cisco 3745 (R7000) processor (revision 2.0) with 248832K/13312K bytes of memory.



no network-clock-participate slot 4

```
Processor board ID JMX0715L08P
R7000 CPU at 350MHz, Implementation 39, Rev 3.3, 256KB L2, 2048KB L3 Cache
2 FastEthernet interfaces
62 Serial interfaces
4 Channelized E1/PRI ports
DRAM configuration is 64 bits wide with parity disabled.
151K bytes of NVRAM.
125184K bytes of ATA System CompactFlash (Read/Write)
Configuration register is 0x101
3745B4_E1#
3745B4_E1#sho run
Building configuration...
Current configuration: 3306 bytes
version 12.3
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
hostname 3745B4_E1
!
boot-start-marker
boot-end-marker
!
no network-clock-participate slot 1
no network-clock-participate slot 2
no network-clock-participate slot 3
```



```
no network-clock-participate wic 0
no network-clock-participate wic 1
no network-clock-participate wic 2
no network-clock-participate aim 0
no network-clock-participate aim 1
voice-card 2
 dspfarm
no aaa new-model
ip subnet-zero
ip cef
ip tcp synwait-time 13
ip dhcp excluded-address 192.168.10.0 192.168.10.60
ip dhcp excluded-address 192.168.11.0 192.168.11.10
ip dhcp pool hq-pool-phones
   network 192.168.10.0 255.255.255.0
   option 150 ip 192.168.10.50
   default-router 192.168.10.1
ip dhcp pool hq-pool-data
   network 192.168.11.0 255.255.255.0
   default-router 192.168.11.1
!
no ip domain lookup
ip host whiz 171.69.1.162
ip host dirt 171.69.1.129
ip host danube 171.69.17.14
ip host CM-ANTARES 172.20.237.254
ip name-server 172.20.237.254
```



```
ip audit po max-events 100
ip dhcp-server 192.168.10.1
no ftp-server write-enable
isdn switch-type primary-net5
!
voice call carrier capacity active
ccm-manager mgcp
ccm-manager music-on-hold
ccm-manager config server CM-ANTARES
ccm-manager config
controller E1 0/0
controller E1 0/1
controller E1 2/0
pri-group timeslots 1-31 service mgcp
controller E1 2/1
pri-group timeslots 1-31 service mgcp
!
no crypto isakmp enable
!
interface FastEthernet0/0
ip address 172.20.5.2 255.255.255.0
duplex auto
speed auto
```



```
!
interface FastEthernet0/0.10
encapsulation dot1Q 10
!
interface FastEthernet0/0.11
encapsulation dot1Q 11
ip address 192.168.11.1 255.255.255.0
interface FastEthernet0/1
no ip address
shutdown
duplex auto
speed auto
!
interface Serial2/0:15
no ip address
no logging event link-status
isdn switch-type primary-qsig
isdn protocol-emulate network
isdn incoming-voice modem
isdn incoming-voice voice
isdn bind-13 ccm-manager
no cdp enable
!
interface Serial2/1:15
no ip address
no logging event link-status
isdn switch-type primary-qsig
isdn incoming-voice modem
isdn incoming-voice voice
isdn bind-13 ccm-manager
 isdn bchan-number-order ascending
```



```
no cdp enable
!
ip classless
ip route 0.0.0.0 0.0.0.0 FastEthernet0/0
ip route 0.0.0.0 0.0.0.0 172.20.31.1
ip route 0.0.0.0 0.0.0.0 172.20.33.1
ip route 0.0.0.0 0.0.0.0 172.20.237.1
ip http server
no ip http secure-server
dialer-list 1 protocol ip permit
!
control-plane
voice-port 2/0:15
voice-port 2/1:15
!
mgcp
mgcp call-agent CM-ANTARES 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 package-capability rtp-package
no mgcp package-capability res-package
mgcp package-capability sst-package
no mgcp package-capability fxr-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
application mgcpapp
port 2/0:15
!
dial-peer voice 2 pots
 application mgcpapp
port 2/1:15
line con 0
line aux 0
line vty 0 4
login
!
end
3745B4_E1#
3745B4_E1#sh diag
c3700 IO-Board EEPROM:
                     : 2.0
   Hardware Revision
   Top Assy. Part Number : 800-14462-01
   Board Revision
                         : B0
```



Deviation Number : 0-0
Fab Version : 03

PCB Serial Number : JAD07060M7X

RMA Test History : 00

RMA Number : 0-0-0-0

RMA History : 00

Calibration Data : Minimum: -1 dBmV, Maximum: -1 dBmV

Calibration values: 0xFFFF 0xFFFF 0xC28B 0x4A4D 0x5830

0x3731 0x354C 0x3038 0x50FF 0xFFFF 0xFFFF

0xFFFF 0xFFFF 0xFFFF 0xFFFF 0xFFFF 0xFFFF

0xFFFF 0xFFFF 0xFFFF 0xFFFF 0xFFFF 0xFFFF

0xFFFF 0xFFFF 0xFFFF 0xFFFF 0xFFFF 0xFFFF

0xFFFF 0xFFFD 0x0110 0xDFAB 0x1234 0xCD00 0x0000 0xBF65 0x9C5D 0xDC62 0xD936 0xC460

0x4269 0x0066 0x24BA 0xDC66 0x24B9 0xF880

0x0000 0x1200 0x0000 0x0100 0x0000 0x0053

0x6572 0x6961 0x6C32 0x2F31 0x3A30 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000 0x0000

0x0000 0x0000 0x0000 0x00FD 0x0110 0xDFAB

0x1234 0xCD00 0x0000 0x0365 0x583F 0x3063

0x0AE0 0xA861 0x9926 0x1866 0x24BB 0x2066

0x24BA 0xA400 0x0000 0x0E00 0x0000 0x0061 0x9930 0x94DE 0xADBE 0xEF61 0x9930 0x9400

0x0000 0x000D 0x0D0D 0x0D65 0xA3B4 0x9465

0xF4D6 0xDC0D 0x0D0D 0x0DAB 0x1234 0xCD00

0x0000 0x0365 0x583F 0x3063 0x0BC8 0x1C60

0x780D 0x1066 0x24E2 0x5C66 0x24BA 0xF080

0x0013 0x8A00 0x0000 0x0100 0x0000 0x00EF

0x4321 0xCD00 0x0000 0x0000 0x0000 0x0000

0x0000 0x0000 0x0000 0x0000 0x0000 0x0000



0x0000 0x00EF 0x4321 0xCD00 0x0000 0x00EF 0x4321 0xCD00 0x0000 0x00EF 0x4321 0xCD00 0x0000

Chassis Serial Number : JMX0715L08P

 ${\tt EEPROM} \ {\tt format} \ {\tt version} \ {\tt 4}$

EEPROM contents (hex):

c3700 Mid-Plane EEPROM:

Hardware Revision : 2.0

Top Assy. Part Number : 800-12289-01



Board Revision : A0

Deviation Number : 0-0

Fab Version : 05

PCB Serial Number : SMQ0710T03N

RMA Test History : 00

RMA Number : 0-0-0-0

RMA History : 00

Calibration Data : Minimum: -1 dBmV, Maximum: -1 dBmV

Calibration values: 0xffff 0xffff 0xffff 0xc28B 0x4A4D 0x5830

0x3731 0x354C 0x3038 0x5043 0x0050 0xC306

0x000C 0x30D0 0x1E50 0xFFFF 0xFFFF 0xFFFF

Oxffff Oxffff Oxffff Oxffff Oxffff

0xffff 0xffff 0xffff 0xffff 0xffff 0xffff

Oxffff Oxffff Oxffff Oxffff Oxffff

0xFFFF 0xFFFD 0x0110 0xDFAB 0x1234 0xCD00

0x0000 0x0365 0x583F 0x3063 0x0AE0 0xA861 0x9849 0x6865 0xF910 0xA465 0xF90E 0x9080

0x0000 0xAA00 0x0000 0x0100 0x0000 0x0032

0x3030 0x2038 0x3638 0x204F 0x4B0A 0x493A

0x2033 0x410A 0x0A76 0x3D30 0x0D0A 0x633D

0x494E 0x2049 0x5034 0x2031 0x3732 0x2E32

0x302E 0x352E 0x320D 0x0A6D 0x3D61 0x7564

0x696F 0x2031 0x3734 0x3538 0x2052 0x5450

0x2F41 0x5650 0x2030 0x2038 0x2039 0x3920

0x3130 0x3120 0x3130 0x3220 0x3220 0x3130

0x3320 0x3138 0x2031 0x3235 0x0D0A 0x613D

0x7274 0x706D 0x6170 0x3A39 0x3920 0x472E

0x3732 0x3961 0x2F38 0x3030 0x300D 0x0A61

0x3D72 0x7470 0x6D61 0x703A 0x3130 0x3120

0x472E 0x3732 0x362D 0x3136 0x2F38 0x3030

0x300D 0x0A61 0x3D72 0x7470 0x6D61 0x703A

0x3130 0x3220 0x472E 0x3732 0x362D 0x3234



0x2F38 0x3030 0x300D 0x0A61 0x3D72 0x7470 0x6D61 0x703A 0x3130 0x3320 0x472E 0x3732 0x3962 0x2F38 0x3030 0x300D 0x0A61 0x3D72 0x7470 0x6D61 0x703A 0x3132 0x3520 0x472E 0x6E58 0x3634 0x2F38 0x3030 0x300D 0x0A00 0x0000 0x00FD 0x0110 0xDFAB 0x1234 0xCD00 0x0000 0x0365 0x583F 0x3063 0x0AE0 0xA861 0x9849 0x6865 0xF911 0xD865 0xF90F 0x3C80 0x0000 0x8600 0x0000 0x0100 0x0000 0x0032 0x3530 0x2038 0x3639 0x204F 0x4B0A

Chassis Serial Number : JMX0715L08P

MAC Address block size : 80

Chassis MAC Address : 000c.30d0.1e50

 ${\tt EEPROM} \ {\tt format} \ {\tt version} \ {\tt 4}$

EEPROM contents (hex):



Slot 0:

C3745 Mother board 2FE(TX)-3W Port adapter, 2 ports

Port adapter is analyzed

Port adapter insertion time unknown

EEPROM contents at hardware discovery:

PCB Serial Number : JAD071106DY

Processor type : 69

Top Assy. Part Number : 800-15934-02

Board Revision : B0

Fab Part Number : 28-4672-04

Deviation Number : 65535-65535

Manufacturing Test Data : FF FF FF FF FF FF FF

RMA Number : 0-0-0-0

RMA History : 00

RMA Test History : 00

Field Diagnostics Data : FF FF FF FF FF FF FF

Hardware Revision : 2.0
Fab Version : 04

Chassis Serial Number : JMX0715L08P

EEPROM format version 4

EEPROM contents (hex):

0x00: 04 FF C1 8B 4A 41 44 30 37 31 31 30 36 44 59 09

 $0x10: 69 \ 40 \ 02 \ F7 \ C0 \ 46 \ 03 \ 20 \ 00 \ 3E \ 3E \ 02 \ 42 \ 42 \ 30 \ 85$

0x20: 1C 12 40 04 80 FF FF FF FF C4 08 FF FF FF FF

0x30: FF FF FF 81 00 00 00 04 00 03 00 C5 08 FF FF

0x40: FF FF FF FF FF FF 41 02 00 02 04 C2 8B 4A 4D 58

 $0 \! \times \! 50 \! : 30$ 37 31 35 4C 30 38 50 FF FF FF FF FF FF FF FF

WIC Slot 0:

E1 (2 port) WAN daughter card



Hardware revision 1.0 Board revision B0

Serial number 17750448 Part number 800-04479-01

Test history 0x0 RMA number 00-00-00

Connector type PCI

EEPROM format version 1

EEPROM contents (hex):

0x20: 01 23 01 00 01 0E D9 B0 50 11 7F 01 00 00 00 00

0x30: 58 00 00 00 00 01 03 00 FF FF FF FF FF FF FF FF

Slot 2:

High Density Voice Port adapter

Port adapter is analyzed

Port adapter insertion time unknown

EEPROM contents at hardware discovery:

Hardware Revision : 1.1

Top Assy. Part Number : 800-03567-01

Board Revision : E0

Deviation Number : 0-0

Fab Version : 02

PCB Serial Number : JAB043409F7

RMA Test History : 00

RMA Number : 0-0-0-0

RMA History : 00

EEPROM format version 4

EEPROM contents (hex):

0x00: 04 FF 40 00 CC 41 01 01 CO 46 03 20 00 0D EF 01

 $0x10:\ 42\ 45\ 30\ 80\ 00\ 00\ 00\ 00\ 02\ 02\ C1\ 8B\ 4A\ 41\ 42\ 30$

 $0x20:\ 34\ 33\ 34\ 30\ 39\ 46\ 37\ 03\ 00\ 81\ 00\ 00\ 00\ 00\ 04\ 00$



WIC Slot 0:

E1 (2 Port) Multi-Flex Trunk WAN Daughter Card

Hardware revision 1.0 Board revision A0

Serial number 27242745 Part number 800-04479-03

Test history 0x0 RMA number 00-00-00

Connector type PCI

EEPROM format version 1

EEPROM contents (hex):

0x20: 01 23 01 00 01 9F B0 F9 50 11 7F 03 00 00 00 00

0x30: 50 00 00 00 01 11 13 00 FF FF FF FF FF FF FF FF

HDV firmware: Compiled Tue 10-Sep-02 19:12 by richc

HDV memory size 524280 heap free 142049

3745B4_E1#

3745B4_E1#sh controller e1

E1 0/0 is down.

Applique type is Channelized E1 - balanced

Far End Block Errors Detected

Receiver has loss of signal.

alarm-trigger is not set

Version info Firmware: 20031216, FPGA: 11

Framing is CRC4, Line Code is HDB3, Clock Source is Line.

CRC Threshold is 320. Reported from firmware is 320.

Data in current interval (141 seconds elapsed):

O Line Code Violations, O Path Code Violations

O Slip Secs, O Fr Loss Secs, O Line Err Secs, O Degraded Mins

0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 141 Unavail Secs

E1 0/1 is down.



```
Applique type is Channelized E1 - balanced
 Far End Block Errors Detected
 Receiver has loss of signal.
  alarm-trigger is not set
 Version info Firmware: 20031216, FPGA: 11
 Framing is CRC4, Line Code is HDB3, Clock Source is Line.
 CRC Threshold is 320. Reported from firmware is 320.
  Data in current interval (143 seconds elapsed):
     O Line Code Violations, O Path Code Violations
     O Slip Secs, O Fr Loss Secs, O Line Err Secs, O Degraded Mins
     0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 143 Unavail Secs
E1 2/0 is up.
 Applique type is Channelized E1 - balanced
 No alarms detected.
 alarm-trigger is not set
 Version info Firmware: 20031216, FPGA: 11
 Framing is CRC4, Line Code is HDB3, Clock Source is Line.
 CRC Threshold is 320. Reported from firmware is 0.
 Data in current interval (147 seconds elapsed):
     O Line Code Violations, O Path Code Violations
     O Slip Secs, O Fr Loss Secs, O Line Err Secs, O Degraded Mins
     0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 0 Unavail Secs
E1 2/1 is up.
 Applique type is Channelized E1 - balanced
 No alarms detected.
 alarm-trigger is not set
 Version info Firmware: 20031216, FPGA: 11
 Framing is CRC4, Line Code is HDB3, Clock Source is Line.
 CRC Threshold is 320. Reported from firmware is 0.
  Data in current interval (148 seconds elapsed):
     O Line Code Violations, O Path Code Violations
     4 Slip Secs, 0 Fr Loss Secs, 0 Line Err Secs, 0 Degraded Mins
```



4 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 0 Unavail Secs

3745B4_E1#

Acronyms

Acronym	Definitions
ANF-PR	Additional Network Feature Path Replacement
AOC	Advice-of-charge. Information element is sent with the connection setup information for
	incoming Euro-ISDN connections. The AOC IE is used for call charge calculation.
CCM	Cisco Unified 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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