



Cisco Unified CallManager Express Release 3.2 - PBX Interoperability: Nortel Communication Server 1000 Release 4.0 Using H.323 Trunk

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Introduction

This is an application note for interoperability connectivity of Nortel Communication Server 1000 (formerly known as Succession 1000) PBX with Cisco Unified CallManager Express Release 3.2 via H.323 trunk.

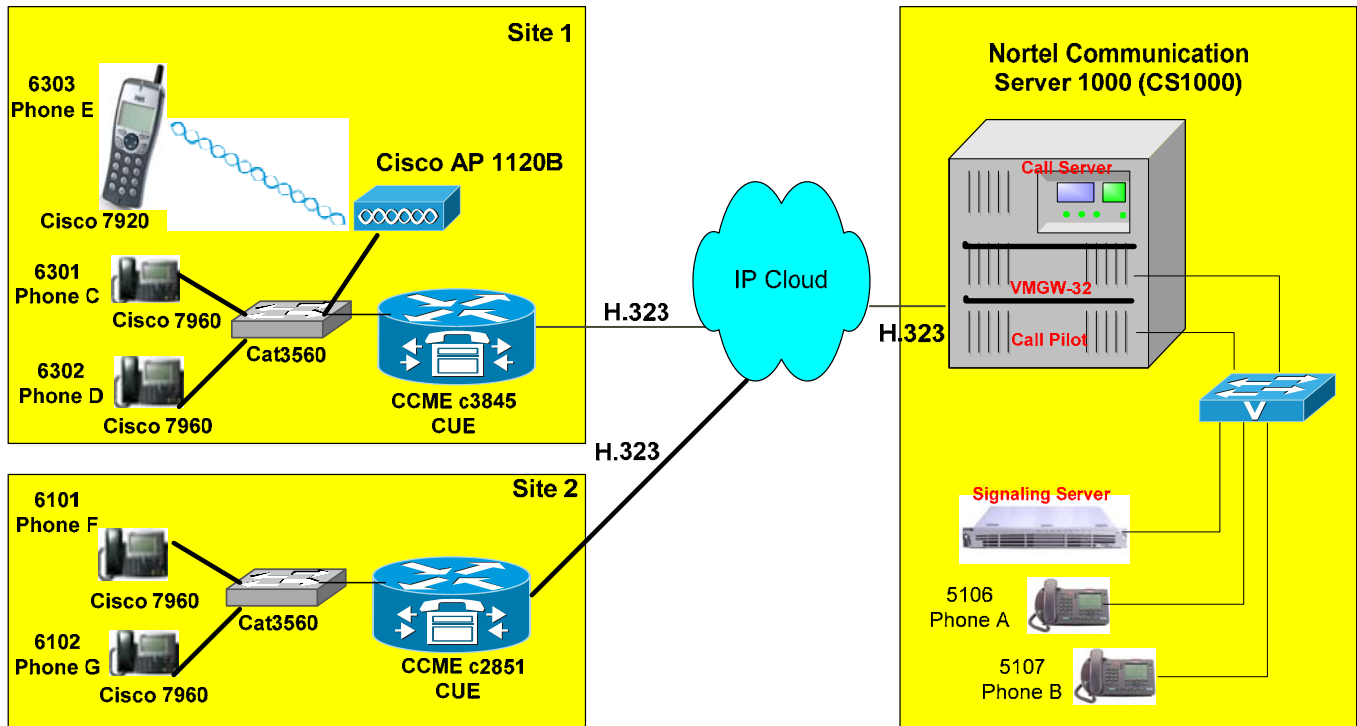
The network topology diagram (Figure 1) shows the test setup for end-to-end interoperability with two different sites of Cisco Unified CallManager Express that has Cisco Unity Express built in connected to Nortel PBX via H323 trunks.



Network Topology

Figure 1. Network Topology

H.323 Call Setup End-to-End Configuration



Limitations

Called and Calling Name and Number are not displayed on Nortel phone when calling from and to CCME phone

Calling Number only displayed on CCME phone when calling from Nortel phone

Dialed Number is displayed on Nortel and CCME phones rather than Connected Number when calling from Nortel or CCME Phone

H450.2 and H450.3 supplementary services must be disabled and "allow-connections H323 to H323" must be enabled on CCME to support call transfer and call forward to Nortel, Nortel currently does not support H.450 Supplementary Services

Call Transfer and call Forward calls fail if Nortel phone executes call transfer or forward to CCME phone across H323 trunk

Full Blind Transfer call fails if CCME phone gets the call from Nortel Phone and executes the full Blind transfer to any phone



System Components

Hardware Requirements

Cisco Unified CallManager Express Cisco 3845 with NM-CUE
Cisco Unified CallManager Express Cisco 2851 with NM-CUE
Cisco Catalyst Switch 3560 48 ports
Cisco Aironet 1100 Series Access Point
Cisco 7960 and 7920 phones
Nortel Communication System 1000 (which includes Call Server, Signaling Server and Media gateway)
Nortel i2004/i2000 IP phones

Software Requirements

Cisco Unified CallManager Express Release 3.2
Cisco IOS software Release 12.3(11)T5
Cisco CatOS software Release 12.1(19)EA1d
Cisco 7960 IP phone Firmware P00305000301
Cisco 7920 IP phone Firmware cmterm_7920.4.0-01-08
Nortel Succession 4.0 Release
Nortel IP Phone firmware version 0604D49

Features

The following features are supported between the Nortel Communication System 1000 PBX using an H323 trunk with Cisco Unified CallManager Express Release 3.2. For more information, see the Limitations section.

CLIP-Calling Line (Number) Identification Presentation
CNIP-Calling Name Identification Presentation
CT-Call Transfer by Join
CFU-Call Forwarding Unconditional
CFB-Call Forwarding Busy
CFNR-Call Forwarding no reply
COLP-Connected Line (Number) Identification Presentation
CONP-Connected Name Identification Presentation
Transcoding-CT, CFU, CFB, and CFNR
UE VM- Integration
Call Hold / Resume and Call Waiting
3-Way Conference



Features Not Supported

- MWI- Message Waiting Indication (lamp ON, lamp OFF) across the H.323 Trunk
- Call Completion (Callback; Automatic Callback) across H323 Trunk
- Alerting Name and Number from CCME across H323 Trunk
- Connected Name and Number Restrictions on CCME

Configuration

Configuration Sequence and Tasks

- Configure Nortel Site which includes Call Server, Signaling Server and Media gateway
- Configure Site 1 which includes C3845, NM-CUE, Cat3560, and Cisco AP 1120B
- Configure Site 2 which includes C2851, NM-CUE, Cat3560

Nortel Communication Server 1000 PBX Configuration Sequence and Tasks

Call Server Setup via SSC card console

1. LD 17 – Configure the D-channel (signaling channel) between the Call Server and the Signaling Server
2. LD 97 – Configure the Super-loop for the Virtual Trunks
3. LD 14 – Configure the H.323 Virtual Trunks to the Signaling Server
4. LD 14 – Configure the Virtual Gateway Trunks
5. LD 11 – Configure for the Virtual lines for the Nortel IP phone (i200x series)
6. LD 16 – Configure the H.323 route
7. LD 86 – Configure the Route List Block for the Virtual Trunk route
8. LD 87 – Configure CDP steering codes

Signaling Server Setup via the Nortel Element Manager

9. Configure the Zones
10. Configure a new IP Telephony Node summary
11. Configure the Node
12. Configure the VGW and IP phone codec profile
13. Configure the Quality of Service (QoS)
14. Configure LAN Configuration
15. Configure the H323 GW Setting
16. Configure the Card section for the MC-32 VGMC card
17. Configure the Signaling Server

NRS (Network Routing Server)

18. Configure the System Wide Settings
19. Configure the NRS Server Settings
20. Configure a Service Domain
21. Configure a L1 Domain (UDP)
22. Configure a L0 Domain (CDP)
23. Configure a H.323 gateway
24. Configure the Routing Entries



Configuration Menus and Commands

Nortel Communication Server 1000 (CS1000) Configuration

Call Server Setup:

1. LD 17 – Configure the D-channel (signaling channel) between the Call Server and the Signaling Server

```
>ld 22
PT2000

REQ prt
TYPE adan dch 3

ADAN DCH 3
CTYP DCIP
DES IP_Trunk_DCH
USR ISLD
ISLM 4000
SSRC 1800
OTBF 32
NASA NO
IFC SL1
CNEG 1
RLS ID 4
RCAP ND2
MBGA NO
H323
OVLN NO
OVLN NO
```

2. LD 97 – Configure the Super-loop for the Virtual Trunks

```
>ld 97
SCSYS000
MEM AVAIL: (U/P): 2854769 USED U P: 182454 59352 TOT: 3096575
DISK RECS AVAIL: 1152
REQ prt
TYPE supl
SUPL

SUPL SUPT SLOT XPEC0 XPEC1

000 STD LEFT 01 0 1 ---
004 STD LEFT 02 0 1 ---
008 STD LEFT 03 0 1 ---
012 STD LEFT 04 0 1 ---
016 STD LEFT 05 0 1 ---
032 STD LEFT 06 0 3 ---
036 STD LEFT 07 0 3 ---
040 STD LEFT 08 0 3 ---
044 STD LEFT 10 0 3 ---
048 STD LEFT 09 0 3 ---
064 STD LEFT 11 0 3 ---
```



068 STD LEFT 12 0 3 ---
072 STD LEFT 13 0 3 ---
096 VIRTUAL CARDS 61 - 64 81 - 84
128 STD LEFT 32 0 1 33 2 3
132 STD LEFT 34 0 1 35 2 3
136 STD LEFT 36 0 1 37 2 3
140 STD LEFT 38 0 1 39 2 3
144 STD LEFT 40 0 1 41 2 3
148 STD LEFT 42 0 1 43 2 3
152 STD LEFT 44 0 1 45 2 3
156 STD LEFT 46 0 1 47 2 3

3. LD 14 – Configure the H.323 Virtual Trunks to the Signaling Server (One trunk = one line connection)

>ld 20
REQ: prt
TYPE: tnb
TN 63 0 0 0
DATE
PAGE
DES

→ H323 Virtual trunk to Signaling Server

DES H323_IP_VTRK
TN 063 0 00 00 VIRTUAL
TYPE IPTI
CDEN 8D
CUST 0
XTRK VTRK
ZONE 000
LDOP BOP
TIMP 600
BIMP 600
AUTO_BIMP NO
TRK ANLG
NCOS 0
RTMB 11 1
CHID 101
TGAR 1
STRI/STRO IMM IMM
SUPN YES
AST NO
IAPG 0
CLS CTD DTN WTA LPR APN THFD
P10 NTC MID
TKID
AACR NO
DATE 25 FEB 2005

4. LD 14 – Configure the Virtual Gateway Trunks (up to 32 trunks per MC-32)

>ld 20
REQ: prt
TYPE: tnb
TN 3



CDEN
CUST
DATE
PAGE
DES

DES MediaGW
TN 003 0 00 00
TYPE VGW
CUST 0
XTRK MC32
ZONE 000

DES MediaGW
TN 003 0 00 01
TYPE VGW
CUST 0
XTRK MC32
ZONE 000

5. LD 11 – Configure for the Virtual lines for the Nortel IP phones (phone A and phone B)
Phone A (i2004)

>ld 11
SL1000
MEM AVAIL: (U/P): 2854769 USED U P: 182454 59352 TOT: 3096575
DISK RECS AVAIL: 1152
DIGITAL TELEPHONES AVAIL: 6 USED: 2 TOT: 8
IP USERS AVAIL: 6 USED: 2 TOT: 8
BASIC IP USERS AVAIL: 7 USED: 1 TOT: 8
ACD AGENTS AVAIL: 10 USED: 0 TOT: 10
PCA AVAIL: 0 USED: 0 TOT: 0
AST AVAIL: 1 USED: 0 TOT: 1
TNS AVAIL: 2405 USED: 95 TOT: 2500
DATA PORTS AVAIL: 2500 USED: 0 TOT: 2500

REQ: prt
TYPE: tnb

TN 61 0 0 05
DATE
PAGE
DES

DES I2004
TN 061 0 00 05 VIRTUAL
TYPE I2004
CDEN 8D
CUST 0
ZONE 000
FDN 5107
TGAR 1
LDN NO
NCOS 0
SGRP 0



RNPG 0
SCI 0
SSU
LNRS 16
XLST
CLS CTD **FBA** WTA LPR MTD **FNA HTA** TDD HFD CRPD
MWA LMPN RMMD SMWD AAD IMD XHD IRA NID OLD VCE DRG1
POD DSX VMD CMSD SLKD CCSD SWD LNA **CNDA**
CFTA SFD MRD DDV CNIA 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 OCBF FLXD FTTC DNDY DNO3 MCBN
VOLA VOUD CDMR
CPND_LANG ENG
RCO 0
EFD 5107
HUNT 5107
EHT 5107
LHK 0
LPK 1
PLEV 02
CSDN
AST
IAPG 0
AACS NO
ITNA NO
DGRP
MLWU_LANG 0
DNDR 0
KEY 00 SCR 5106 0 MARP
CPND
NAME ATHENA6_L1
XPLN 13
DISPLAY_FMT FIRST, LAST
01 SCR 5206 0 MARP
CPND
NAME ATHENA6_L2
XPLN 13
DISPLAY_FMT FIRST, LAST
02
03 MIK
04 MCK
05
06
07
08
09
10
11
12
13



14
15
16 MWK 2500
17 TRN
18 AO6
19 CFW 16 6202
20 RGA
21 PRK
22 RNP
23
24 PRS
25 CHG
26 CPN
27
28
29
30
31
DATE 22 JUN 2005
NACT

Phone B (i2002):
REQ: prt
TYPE: tnb

TN 61 0 0 05
DATE
PAGE
DES

DES I2004
TN 061 0 00 05 VIRTUAL
TYPE I2004

CDEN 8D
CUST 0
ZONE 000
FDN 5107

TGAR 1
LDN NO
NCOS 0
SGRP 0
RNPG 0
SCI 0
SSU
LNRS 16

XLST

CLS CTD **FBA** WTA LPR MTD **FNA HTA** TDD HFD CRPD
MWA LMPN RMMD SMWD AAD IMD XHD IRA NID OLD VCE DRG1
POD DSX VMD CMSD SLKD CCSD SWD LNA **CNDA**
CFTA SFD MRD DDV CNIA CDCA MSID DAPA BFED RCB
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
VOLA VOUD CDMR
CPND_LANG ENG
RCO 0
EFD 5107
HUNT 5107
EHT 5107
LHK 0
LPK 1
PLEV 02
CSDN
AST
IAPG 0
AACS NO
ITNA NO
DGRP
MLWU_LANG 0
DNDR 0
KEY 00 SCR 5107 0 MARP
CPND
NAME ATHENA7_L1
XPLN 13
DISPLAY_FMT FIRST, LAST
01 SCR 5207 0 MARP
CPND
NAME ATHENA7_L2
XPLN 13
DISPLAY_FMT FIRST, LAST
02
03 MIK
04 MCK
05
06
07
08
09
10
11
12
13
14
15
16 MWK 2500
17 TRN
18 AO6
19 CFW 16 6202
20 RGA
21 PRK
22 RNP
23
24 PRS
25 CHG



26 CPN
27
28
29
30
31
DATE 22 JUN 2005
NACT

6. LD 16 – Configure the H.323 route

>ld 21
PT1000

REQ: prt
TYPE: rdb
CUST 0
ROUT 11

TYPE RDB
CUST 00
DMOD
ROUT 11
DES H323_TIE
TKTP TIE
NPID_TBL_NUM 0
ESN NO
CNVT NO
SAT NO
RCLS EXT
VTRK YES
ZONE 000
PCID H323
CRID NO
NODE 101
DTRK NO
ISDN YES
MODE ISLD
DCH 3
IFC SL1
PNI 00001
NCNA YES
NCRD YES
TRO NO
FALT NO
CTYP UKWN
INAC NO
ISAR NO
DAPC NO
PTYP ATT
AUTO NO
DNIS NO
DCDR NO
ICOG IAO



SRCH LIN
TRMB YES
STEP
ACOD 611
TCPP NO
TARG 01
CLEN 1
BILN NO
OABS
INST
ANTK
SIGO STD
STYP SDAT
ICIS YES
TIMR ICF 512
OGF 512
EOD 13952
DSI 34944
NRD 10112
DDL 70
ODT 4096
RGV 640
GRD 896
SFB 3
NBS 2048
NBL 4096

IENB 5

PAGE 002

TFD 0
VSS 0
VGD 6
SST 5 0
NEDC ORG
FEDC ORG
CPDC NO
DLTN NO
HOLD 02 02 40
SEIZ 02 02
SVFL 02 02
DRNG NO
CDR NO
VRAT NO
MUS NO
MANO 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
OHTD NO
PLEV 2
ALRM NO
ART 0
SGRP 0
AACR NO

7. LD 86 – Configure the Route List Block for the Virtual Trunk route

>ld 86
ESN000

MEM AVAIL: (U/P): 2854769 USED U P: 182454 59352 TOT: 3096575
DISK RECS AVAIL: 1152

REQ prt
CUST 0
FEAT rlb

RLI 11

RLI 11

ENTR 0

LTER NO

ROUT 11

TOD 0 ON 1 ON 2 ON 3 ON
4 ON 5 ON 6 ON 7 ON

VNS NO

SCNV NO

CNV NO

EXP NO

FRL 0

DMI 0

ISDM 0

FCI 0

FSNI 0

SBOC NRR

IDBB DBD

IOHQ NO

OHQ NO

CBQ NO

ISET 0

NALT 5

MFRL 0

OVLL 1

8. LD 87 – Configure CDP steering codes



>ld 87
ESN000

MEM AVAIL: (U/P): 2854769 USED U P: 182454 59352 TOT: 3096575
DISK RECS AVAIL: 1152

REQ prt
CUST 0
FEAT cdp
TYPE dsc
DSC

DSC 62 → Dial 62xx send it via H323 route

FLEN 0
DSP LSC

RLI 11 → H323 Route

NPA
NXX



Signaling Server Setup:

9. Configure the Zones

Site: 172.20.219.101 > Configuration > Call Server Configuration > Zone List > Zone 0 >

Zone Basic Property and Bandwidth Management

Input Description	Input Value
Zone Number (ZONE):	0
Intrazone Bandwidth (INTRA_BW):	10000
Intrazone Strategy (INTRA_STGY):	Best Quality (BQ) ▾
Interzone Bandwidth (INTER_BW):	10000
Interzone Strategy (INTER_STGY):	Best Quality (BQ) ▾
Resource Type (RES_TYPE):	Shared (SHARED) ▾
Branch Office Support (ZBRN):	☐
Description (ZDES):	

10. Configure a new IP Telephony Node summary

Site: 172.20.219.101 > Configuration > IP Telephony Configuration >

Node Summary

New Node

Node: 102	Node IP: 172.20.217.100	Edit	Transfer / Status	Delete
Voice LAN (TLAN) IP address TN				
Signaling Server				
172.20.217.103				
Pentium Card				
Succession Media Card				
172.20.217.102				
3 0 VGW Channels				

11. Configure the Node

Site: 172.20.219.101 > Configuration > IP Telephony Configuration > Node Summary > IP Telephony: Node ID 102 >

Edit

Save and Transfer Cancel

Node

Node ID	102
Voice LAN (TLAN) Node IP address	172.20.217.100 *
Management LAN (ELAN) gateway IP address	172.20.219.1
Management LAN (ELAN) subnet mask	255.255.255.0
Voice LAN (TLAN) subnet mask	255.255.255.0

> SNMP Add

> VGW and IP phone codec profile

> QoS

> LAN configuration

> SNTP

> H323 GW Settings

> Firmware

> SIP GW Settings

> SIP URI Map

> SIP CD Services

12. Configure the VGW and IP phone codec profile

- System Status
 - Call Server
 - IP Telephony
- Configuration
 - Call Server
 - IP Telephony
- Network Numbering Plan
- Software Upgrade
- Patching
- System Utility
- Administration
- Support
- Tools
- Logout

SNMP
Add

VGW and IP phone codec profile

Enable Echo canceller ☒

Echo canceller tail delay

Voice activity detection threshold Range: -20 to +10

Idle noise level Range: -327 to +327

DTMF Tone detection ☒

Enable V.21 FAX tone detection ☒

FAX maximum rate (bps)

FAX playout nominal delay Range: 0 to 300

FAX no activity timeout Range: 10 to 32000

FAX packet size

Codec G711
Select ☒

Codec Name G711

Voice payload size (ms/frame)

Voice playout (jitter buffer) nominal delay

Modifications may cause changes to dependent settings

Voice playout (jitter buffer) maximum delay

Modifications may cause changes to dependent settings

VAD ☐

Codec G729A
Select ☐

Codec G723.1
Select ☐

Codec T38 FAX
Select ☒



System Status

Call Server

IP Telephony

Configuration

Call Server

IP Telephony

Network Numbering Plan

Call Server

Network Routing Service

Software Upgrade

Patching

System Utility

Administration

Support

Tools

Logout

Codec G711

Select ☒

Codec Name

G711

Voice payload size (ms/frame)

20

Voice playout (jitter buffer) nominal delay

40

Modifications may cause changes to dependent settings

Voice playout (jitter buffer) maximum delay

80

Modifications may cause changes to dependent settings

VAD

☐

Codec G729A

Select ☒

Codec Name

G729A

Voice payload size (ms/frame)

20

Voice playout (jitter buffer) nominal delay

40

Modifications may cause changes to dependent settings

Voice playout (jitter buffer) maximum delay

80

Modifications may cause changes to dependent settings

VAD

☐

Codec G723.1

Select ☐

Codec T38 FAX

Select ☒

Codec Name

T38 FAX



13. Configure the QoS

System Status

Call Server

IP Telephony

Configuration

Call Server

IP Telephony

Network Numbering Plan

Software Upgrade

Patching

System Utility

Administration

Support

Tools

Logout

Codec Name

T38 FAX

QoS

Diffserv Codepoint(DSCP) Control packets

40

Range: 0 to 63

Diffserv Codepoint(DSCP) Voice packets

46

Range: 0 to 63

Enable 802.1Q support

☐

802.1Q Bits value (802.1p)

6

Range: 0 to 7

LAN configuration

Management LAN (ELAN) configuration

Call server IP address

172.20.219.101

Survivable Succession Media Gateway IP address

0.0.0.0

Signaling port

15000

Range: 1024 to 65535

Broadcast port

15001

Range: 1024 to 65535

Voice LAN (TLAN) configuration

Signaling port

5000

Range: 1024 to 65535

Voice port

5200

Range: 1024 to 65535

Routes

Add

SNTP

H323 GW Settings

Firmware

SIP GW Settings

SIP URI Map



14. Configure LAN Configuration

Configure LAN Configuration

System Status

Call Server

IP Telephony

Configuration

Call Server

IP Telephony

Network Numbering Plan

Software Upgrade

Patching

System Utility

Administration

Support

Tools

Logout

Codec Name

T38 FAX

QoS

Diffserv Codepoint(DSCP) Control packets

40

Range: 0 to 63

Diffserv Codepoint(DSCP) Voice packets

46

Range: 0 to 63

Enable 802.1Q support

☐

802.1Q Bits value (802.1p)

6

Range: 0 to 7

LAN configuration

Management LAN (ELAN) configuration

Call server IP address

172.20.219.101

Survivable Succession Media Gateway IP address

0.0.0.0

Signaling port

15000

Range: 1024 to 65535

Broadcast port

15001

Range: 1024 to 65535

Voice LAN (TLAN) configuration

Signaling port

5000

Range: 1024 to 65535

Voice port

5200

Range: 1024 to 65535

Routes

Add

SNTP

H323 GW Settings

Firmware

SIP GW Settings

SIP URI Map



15. Configure the H323 GW Setting

System Status

Call Server

IP Telephony

Configuration

Call Server

IP Telephony

Network Numbering Plan

Software Upgrade

Patching

System Utility

Administration

Support

Tools

Logout

H323 GW Settings

Primary gatekeeper IP address

Alternate gatekeeper IP address

Primary Network Connect Server IP address

Primary Network Connect Server Port number Range: 1024 to 65535

Alternate Network Connect Server IP address

Alternate Network Connect Server Port number Range: 1024 to 65535

Primary Network Connect Server timeout Range: 1 to 30

Firmware

Firmware download server IP address

Firmware file path

User ID

Password

SIP GW Settings

SIP URI Map

SIP CD Services

Cards Add

Signaling Servers Add

Save and Transfer

Cancel

16. Configure the MC-32 VGMC card

[Home](#)
[About](#)
[Contact](#)

- ▼ System Status
 - Call Server
 - IP Telephony
- ▼ Configuration
 - Call Server
 - IP Telephony
 - ▶ Network Numbering Plan
 - ▶ Software Upgrade
 - ▶ Patching
 - ▶ System Utility
 - ▶ Administration
 - ▶ Support
 - Tools
 - Logout

SIP CD Services
Add

Cards
Add

Card 172.20.219.102 Properties
Remove

Role	Follower
Management LAN (ELAN) IP address	172.20.219.102 *
Management LAN (ELAN) MAC address	00:11:F9:E4:D5:09 *
Voice LAN (TLAN) IP address	172.20.217.102 *
Voice LAN (TLAN) gateway IP address	172.20.217.1
Hostname	MC_Node102 *
Card TN	3 *
Card processor type	Succession Media Card
H323 ID	MC_Node102
Enable set TPS	☒
System name	
System location	
System contact	

Signaling Servers
Add

Save and Transfer
Cancel

* Mandatory fields of current configuration

17. Configure the Signaling Server

- System Status
- Call Server
- IP Telephony
- Configuration
 - Call Server
 - IP Telephony
- Network Numbering Plan
- Software Upgrade
- Patching
- System Utility
- Administration
- Support
- Tools
- Logout

Signaling Server 172.20.219.103 Properties
Remove

Role	Leader
Management LAN (ELAN) IP address	172.20.219.103
Management LAN (ELAN) MAC address	00:02:b3:f7:33:76
Voice LAN (TLAN) IP address	172.20.217.103
Voice LAN (TLAN) gateway IP address	172.20.217.1
Hostname	SS_Node102
H323 ID	SS_Node102
Enable set TPS	☒
Enable virtual trunk TPS	H.323 and SIP
Enable SIP Proxy / Redirect Server	☒
SIP Transport Protocol	TCP
Local SIP Port	5060
SIP Domain name	cisco.com
SIP Gateway Endpoint Name	SS_Node102
SIP Gateway Authentication Password	Autoback
Enable H323 Gatekeeper	☒
Network Routing Service Role	Primary
System name	SS_Node102
System location	
System contact	



Network Routing Server Setup:

18. Configure the System Wide Settings

Network Routing Service

[Home](#) [Configuration](#) [Tools](#) [Reports](#) [Administration](#) [Help](#) | [Logout](#)

NRS Overview

=> System Wide Settings

NRS Server Settings

Location: Home > System Wide Settings >

System Wide Settings

DB sync interval for alternate [Hours]

24

SIP registration time to live timer [Seconds]

30

H.323 gatekeeper registration time to live timer [Seconds]

30

H.323 alias name

H323NRS102

*

Alternate NRS server is permanent

☐

Auto backup time [HH:MM]

23:59

Auto backup to FTP site enabled

☐

Auto backup FTP site IP address

Auto backup FTP site path

Auto backup FTP username

Auto backup FTP password

Save

19. Configure the NRS Server Settings

Home

Configuration

Tools

Reports

Administration

Help

Logout

Network Routing Service

Location: Home > NRS Server Settings >

NRS Overview

System Wide Settings

=> NRS Server Settings

NRS Settings

Host name

SS_Node102 *

Primary IP (TLAN)

172.20.217.103 *

Alternate IP (TLAN)

0.0.0.0 *

Control priority

40

H.323 Gatekeeper Settings

Location request (LRQ) response timeout [Seconds]

3

SIP Server Settings

Mode

Redirect

UDP transport enabled

☒

UDP port

5060

UDP maximum transmission unit (MTU)

1500

TCP transport enabled

☒

TCP port

5060



Network Routing Service

[Home](#)[Configuration](#)[Tools](#)[Reports](#)[Administration](#)[Help](#) | [Logout](#)Location request (LRQ) response timeout [Seconds] [NRS Overview](#)[System Wide Settings](#)[=> NRS Server Settings](#)

SIP Server Settings

Mode UDP transport enabled ☒UDP port UDP maximum transmission unit (MTU) TCP transport enabled ☒TCP port TCP maximum transmission unit (MTU)

Network Connection Server (NCS) Settings

Primary NCS port Alternate NCS port Primary NCS timeout [Seconds] ** Mandatory field indicator*



20. Configure a Service Domain

Network Routing Service

[Home](#) | [Configuration](#) | [Tools](#) | [Reports](#) | [Administration](#) | [Active DB view](#) (set Standby DB view) | [Help](#) | [Logout](#)

Location: Configuration > Service Domains > View Service Domain Property >

View Service Domain Property

=> Service Domains
L1 Domains (UDP)
L0 Domains (CDP)
Gateway Endpoints
User Endpoints
Routing Entries
Default Routes
Collaborative Servers

Domain name	cisco.com *
Domain description	Cisco Systems, Inc

** Mandatory field indicator*



21. Configure a L1 Domain (UDP)

Network Routing Service

Home **Configuration** Tools Reports Administration **Active DB view** (set Standby DB view) Help | Logout

Location: Configuration > L1 Domains (UDP) > View L1 Domain Property >

Service Domains

- => L1 Domains (UDP)
- L0 Domains (CDP)
- Gateway Endpoints
- User Endpoints
- Routing Entries
- Default Routes
- Collaborative Servers

View L1 Domain Property (cisco.com)

Domain name	SanJose	*
Domain description	San Jose Site	
Endpoint authentication enabled	Authentication off	
Authentication password		
E.164 country code	1	
E.164 area code	408	
International dialing access code	011	
L1 domain dialing access code		
National dialing access code		
Local dialing access code		
Special number 1		
Special number 2		

22. Configure a L0 Domain (CDP)

Network Routing Service	
Home	Configuration
Tools	Reports
Administration	Help Logout

view Lu Domain Property (cisco.com / SanJose)

Service Domains

L1 Domains (UDP)

=> L0 Domains (CDP)

Gateway Endpoints

User Endpoints

Routing Entries

Default Routes

Collaborative Servers

Domain name pbx *

Domain description PBX Interop

Special number label

Unqualified number label

Endpoint authentication enabled Not configured

Authentication password

E.164 country code 1

E.164 area code 408

International dialing access code 011

L1 domain dialing access code

National dialing access code

Local dialing access code

Special number 1

Special number 2



23. Configure a H.323 gateway

Network Routing Service

[Home](#) [Configuration](#) [Tools](#) [Reports](#) [Administration](#) [Active DB view](#) (set Standby DB view) [Help](#) | [Logout](#)

Location: Configuration > Gateway Endpoints > View Gateway Endpoint Property >

View Gateway Endpoint Property (cisco.com / SanJose / pbx)

Service Domains

- L1 Domains (UDP)
- L0 Domains (CDP)
- => **Gateway Endpoints**
- User Endpoints
- Routing Entries
- Default Routes
- Collaborative Servers

Endpoint name *

Endpoint description

Tandem endpoint name [Look up](#)

Endpoint authentication enabled

Authentication password

E.164 country code

E.164 area code

International dialing access code

L1 domain dialing access code

National dialing access code

Local dialing access code

Special number 1



Network Routing Service

[Home](#) [Configuration](#) [Tools](#) [Reports](#) [Administration](#) [Active DB view](#) (set Standby DB view) [Help](#) | [Logout](#)

Service Domains

L1 Domains (UDP)

L0 Domains (CDP)

=> **Gateway Endpoints**

User Endpoints

Routing Entries

Default Routes

Collaborative Servers

E.164 area code	
International dialing access code	
L1 domain dialing access code	
National dialing access code	
Local dialing access code	
Special number 1	
Special number 2	
Static endpoint address type	IP version 4
Static endpoint address	172.20.172.254
H.323 Support	Not RAS H.323 endpoint
SIP support	Static SIP endpoint
SIP transport	TCP
SIP port	5060
Network Connection Server enabled	☐

* Mandatory field indicator



24. Configure the Routing Entries

Network Routing Service

Home

Configuration

Tools

Reports

Administration

Active DB view

(set Standby DB view)

Help

Logout

Location: Configuration > Routing Entries > View Routing Entry Property >

View Routing Entry Property (cisco.com / SanJose / pbx / Tala1_CME1)

DN type

Level0 regional

Default route

☐

DN prefix

62

Route cost (1 -255)

1

*

Service Domains

L1 Domains (UDP)

L0 Domains (CDP)

Gateway Endpoints

User Endpoints

=> Routing Entries

Default Routes

Collaborative Servers

* Mandatory field indicator



CCME Site 1 Configuration

C3845 Configuration

Site-1#

Site-1# **show version**

Cisco IOS Software, 3800 Software (C3845-IPVOICE-M), Version 12.3(11)T5, RELEASE SOFTWARE (fc1)

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

Copyright (c) 1986-2005 by Cisco Systems, Inc.

Compiled Sat 02-Apr-05 15:14 by yiyan

ROM: System Bootstrap, Version 12.3(11r)T1, RELEASE SOFTWARE (fc1)

Site-1 uptime is 17 weeks, 5 days, 4 hours, 22 minutes

System returned to ROM by power-on

System image file is "flash:c3845-ipvoice-mz.123-11.T5.bin"

Cisco 3845 (revision 1.0) with 225280K/36864K bytes of memory.

Processor board ID FHK0847F0W7

2 Gigabit Ethernet interfaces

1 terminal line

1 cisco service engine(s)

DRAM configuration is 64 bits wide with parity enabled.

479K bytes of NVRAM.

Configuration register is 0x2102

Site-1#

Site-1#

Site-1#

Site-1#

Site-1# **show running-config**

Building configuration...

Current configuration : 4769 bytes

!

version 12.3

service timestamps debug datetime msec

service timestamps log datetime msec

no service password-encryption

!

hostname Site-1

!

boot-start-marker

boot system flash:c3845-ipvoice-mz.123-11.T5.bin

boot-end-marker

!

```
logging buffered 10000 debugging
no logging console
enable password cisco
!
username 3
username user1 password 0 6201
username user2 password 0 6202
clock timezone PST -8
clock summer-time PST recurring
no aaa new-model
ip subnet-zero
ip cef
!
!
ip dhcp excluded-address 172.20.172.1
ip dhcp excluded-address 172.20.172.254
ip dhcp excluded-address 172.20.172.20
!
ip dhcp pool phone
    network 172.20.172.0 255.255.255.0
    option 150 ip 172.20.172.254
    default-router 172.20.172.1
!
!
no ip domain lookup
no ftp-server write-enable
!
!
!
!
voice service voip
allow-connections h323 to h323
allow-connections h323 to sip
no supplementary-service h450.2
no supplementary-service h450.3
supplementary-service h450.12
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
!
interface GigabitEthernet0/0
ip address 172.20.172.254 255.255.255.0
duplex auto
speed auto
media-type rj45
h323-gateway voip interface
h323-gateway voip id site1 ipaddr 172.28
h323-gateway voip h323-id cme-site1
h323-gateway voip tech-prefix 1#
```



```
h323-gateway voip bind srcaddr 172.20.172.254
!
interface GigabitEthernet0/1
no ip address
duplex auto
speed auto
media-type rj45
!
interface Service-Engine1/0
ip address 192.168.1.1 255.255.255.0
service-module ip address 192.168.1.2 255.255.255.0
service-module ip default-gateway 192.168.1.1
!
ip classless
ip route 0.0.0.0 0.0.0.0 172.20.172.1
!
ip http server
ip http authentication local
ip http path flash:
!
!
!
tftp-server flash:ATA030100SCCP040211A.zup
tftp-server flash:CP7902040000SCCP040701A.sbin
tftp-server flash:CP7905040000SCCP040701A.sbin
tftp-server flash:P00403020214.bin
tftp-server flash:CP7912040000SCCP040701A.sbin
tftp-server flash:S00103020002.bin
tftp-server flash:P00503010100.bin
tftp-server flash:cmterm_7936.3-3-5-0.bin
tftp-server flash:P00303020214.bin
tftp-server flash:P00305000301.sbn
tftp-server flash:cmterm_7920.4.0-01-08.bin
!
control-plane
!
!
!
!
!
!
dial-peer voice 10 pots
destination-pattern 9T
!
dial-peer voice 11 pots
destination-pattern 9T
!
dial-peer voice 12 pots
destination-pattern 9T
!
dial-peer voice 13 pots
destination-pattern 9T
!
dial-peer voice 1 voip
destination-pattern 510.
session target ipv4:172.20.217.100
dtmf-relay h245-alphanumeric
codec g711ulaw
no vad
```



```
!  
dial-peer voice 2 voip  
destination-pattern 63..  
session target ipv4:172.20.173.254  
dtmf-relay h245-alphanumeric  
codec g711ulaw  
no vad  
!  
dial-peer voice 3 voip  
destination-pattern 6200  
session protocol sipv2  
session target ipv4:192.168.1.2  
dtmf-relay sip-notify  
codec g711ulaw  
no vad  
!  
dial-peer voice 4 voip  
shutdown  
destination-pattern ....  
session target ras  
dtmf-relay h245-alphanumeric  
codec g711ulaw  
no vad  
!  
!  
telephony-service  
load 7910 P00403020214  
load 7935 P00503010100  
load 7960-7940 P00303020214  
load 7914 S00103020002  
load ATA ATA030100SCCP040211A.zup  
load 7905 CP7905040000SCCP040701A.sbin  
load 7902 CP7902040000SCCP040701A.sbin  
load 7920 cmterm_7920.4.0-01-08.bin  
load 7912 CP7912040000SCCP040701A.sbin  
max-ephones 96  
max-dn 192  
ip source-address 172.20.172.254 port 2000  
system message ABC Corp  
create cnf-files version-stamp Jan 01 2002 00:00:00  
voicemail 6200  
max-conferences 8  
call-forward pattern .T  
moh music-on-hold.au  
web admin system name cisco password cisco  
dn-webedit  
time-webedit  
transfer-system full-blind  
transfer-pattern ....  
transfer-pattern 72.. blind  
secondary-dialtone 9  
!  
!  
ephone-dn 1 dual-line  
number 6201  
label 6201  
description Site 1 Phone1  
name Site 1 Phone1  
huntstop channel
```



```
!  
!  
ephone-dn 2 dual-line  
number 6202  
label 6202  
description Site 1 Phone2  
name Site 1 Phone2  
huntstop channel  
!  
!  
ephone-dn 3 dual-line  
number 6203  
label 6203  
name Site 1 Phone3  
huntstop channel  
!  
!  
ephone-dn 10  
number 8000....  
mwi on  
!  
!  
ephone-dn 11  
number 8001....  
mwi off  
!  
!  
ephone-dn 99  
number 72..  
call-forward all 6200  
!  
!  
ephone 1  
username "user1" password 6201  
mac-address 000B.BEF9.E87D  
type 7960  
keep-conference  
button 1:1  
!  
!  
!  
ephone 2  
username "user2" password 6202  
mac-address 000D.2890.C92E  
type 7960  
keep-conference  
button 1:2  
!  
!  
!  
ephone 3  
username "user3" password 6203  
mac-address 00D0.59D3.5144  
type 7920  
keep-conference  
button 1:3  
!  
!  
!
```



```
line con 0
exec-timeout 0 0
password cisco
logging synchronous
stopbits 1
line aux 0
stopbits 1
line 66
no activation-character
no exec
transport preferred none
transport input all
transport output all
line vty 0 4
exec-timeout 0 0
password cisco
login
!
scheduler allocate 20000 1000
!
end
```

```
Site-1#
Site-1#
Site-1#
```

NM-CUE Configuration

```
se-192-168-1-2# show version
CPU Model:           Pentium III (Coppermine)
CPU Speed (MHz):     498.674
CPU Cache (KByte):   256
Chassis Type:        UNKNOWN
Chassis Serial:      FHK0847F0W7
Module Type:         NM
Module Serial:       FOC08230LM7
CF info:             IC25N020ATMR04-0
se-192-168-1-2#
se-192-168-1-2# sh software versions
Installed Packages:
- Core 1.1.2
- Auto Attendant 1.1.2
- Voice Mail 1.1.2
- Boot Loader 1.0.17

Installed Languages:
- US English 1.1.2

se-192-168-1-2#
```

|



```
se-192-168-1-2#  
se-192-168-1-2# show running-config  
Generating configuration:
```

```
clock timezone America/Los_Angeles
```

```
hostname se-192-168-1-2
```

```
ip domain-name unspecified
```

```
groupname Administrators create  
groupname hunt1 create  
groupname hunt2 create
```

```
username admin create  
username user2 create  
username user3 create  
username user1 create
```

```
groupname hunt1 phonenumber "190"  
groupname hunt2 phonenumber "111"
```

```
username user2 phonenumberE164 "7202"  
username user3 phonenumberE164 "7203"  
username user1 phonenumberE164 "7201"  
username user2 phonenumber "6202"  
username user3 phonenumber "6203"  
username user1 phonenumber "6201"
```

```
groupname hunt1 owner admin  
groupname hunt2 owner admin  
groupname Administrators member admin  
groupname Administrators member user2  
groupname hunt1 member user2  
groupname hunt2 member user2  
groupname Administrators privilege superuser  
groupname Administrators privilege ManagePrompts
```

```
backup server url "ftp://127.0.0.1/ftp" credentials hidden "EWlTygcMhYmjazXhE/VN  
XHckplVV4KjescbDaLa4fl4WLSPFvv1rWUnfGWTYHfmPSd8ZZNgd+Y9J3xlk2B35jwAAAAA="
```

```
ccn application autoattendant  
description "autoattendant"  
enabled  
maxsessions 8  
script "aa.aef"  
parameter "MaxRetry" "3"  
parameter "operExtn" "6111"  
parameter "welcomePrompt" "AAWelcome.wav"  
end application
```

```
ccn application ciscoMWIapplication  
description "ciscoMWIapplication"  
enabled  
maxsessions 8  
script "setmwi.aef"  
parameter "strMWI_OFF_DN" "8001"
```



```
parameter "strMWI_ON_DN" "8000"  
parameter "CallControlGroupID" "0"  
end application
```

```
ccn application customaa  
description "customaa"  
enabled  
maxsessions 8  
script "s1_main-officehours.aef"  
parameter "MainOperExt" "100"  
end application
```

```
ccn application promptmgmt  
description "promptmgmt"  
enabled  
maxsessions 1  
script "promptmgmt.aef"  
end application
```

```
ccn application voicemail  
description "voicemail"  
enabled  
maxsessions 8  
script "voicebrowser.aef"  
parameter "logoutUri" "http://localhost/voicemail/vxmlscripts/mbxLogout.jsp"  
parameter "uri" "http://localhost/voicemail/vxmlscripts/login.vxml"  
end application
```

```
ccn engine  
end engine
```

```
ccn subsystem jtapi  
ccm-manager address  
end subsystem
```

```
ccn subsystem sip  
gateway address "192.168.1.1"  
end subsystem
```

```
ccn trigger sip phonenumber 112  
application "autoattendant"  
enabled  
locale "en_US"  
maxsessions 8  
end trigger
```

```
ccn trigger sip phonenumber 113  
application "customaa"  
enabled  
locale "en_US"  
maxsessions 8  
end trigger
```

```
ccn trigger sip phonenumber 114  
application "promptmgmt"  
enabled  
locale "en_US"  
maxsessions 1  
end trigger
```



```
ccn trigger sip phonenumber 200
application "voicemail"
enabled
locale "en_US"
maxsessions 8
end trigger
```

```
ccn trigger sip phonenumber 6200
application "voicemail"
enabled
locale "en_US"
maxsessions 8
end trigger
```

```
ccn trigger sip phonenumber 6222
application "autoattendant"
enabled
locale "en_US"
maxsessions 8
end trigger
```

```
voicemail default expiration time 30
voicemail default language en_US
voicemail default mailboxsize 3000
voicemail recording time 900
voicemail default messagesize 60
voicemail operator telephone 100
voicemail capacity time 6000
voicemail mailbox owner "hunt1" size 3000
description "hunt1 mailbox"
zerooutnumber "100"
end mailbox
```

```
voicemail mailbox owner "hunt2" size 3000
description "hunt2 mailbox"
end mailbox
```

```
voicemail mailbox owner "user1" size 3000
zerooutnumber "100"
end mailbox
```

```
voicemail mailbox owner "user2" size 3000
end mailbox
```

```
voicemail mailbox owner "user3" size 3000
zerooutnumber "100"
end mailbox
```

```
end
```

|



Cisco Catalyst 3560 Series Configuration

```
Cat3560#
Cat3560# show version
Cisco Internetwork Operating System Software
IOS (tm) C3560 Software (C3560-I9-M), Version 12.1(19)EA1d, RELEASE SOFTWARE (fc
1)
Copyright (c) 1986-2004 by Cisco Systems, Inc.
Compiled Mon 05-Apr-04 21:53 by antonino
Image text-base: 0x00003000, data-base: 0x007CBD28

ROM: Bootstrap program is C3560 boot loader
BOOTLDR: C3560 Boot Loader (C3560-HBOOT-M) Version 12.1(19r)EA1b, RELEASE SOFTWA
RE (fc2)

Cat3560 uptime is 17 weeks, 5 days, 22 hours, 3 minutes
System returned to ROM by power-on
System image file is "flash:c3560-i9-mz.121-19.EA1d/c3560-i9-mz.121-19.EA1d.bin"

cisco WS-C3560-48PS (PowerPC405) processor (revision H0) with 118776K/12288K byt
es of memory.
Processor board ID CAT0846Y16Y
Last reset from power-on
2 Virtual Ethernet/IEEE 802.3 interface(s)
48 FastEthernet/IEEE 802.3 interface(s)
4 Gigabit Ethernet/IEEE 802.3 interface(s)
The password-recovery mechanism is enabled.

512K bytes of flash-simulated non-volatile configuration memory.
Base ethernet MAC Address      : 00:12:80:10:FC:00
Motherboard assembly number    : 73-9298-02
Power supply part number       : 341-0029-03
Motherboard serial number      : CAT08460N5X
Power supply serial number     : LIT084204MS
Model revision number          : H0
Motherboard revision number    : A0
Model number                   : WS-C3560-48PS-S
System serial number           : CAT0846Y16Y
SFP Module assembly part number : 73-7757-02
SFP Module revision Number     : A0
SFP Module serial number       : CAT084504FS
Top Assembly Part Number       : 800-24787-02
Top Assembly Revision Number   : B0
Version ID                     : N/A
Hardware Board Revision Number : 0x0C
```

Switch	Ports	Model	SW Version	SW Image
* 1	52	WS-C3560-48PS	12.1(19)EA1d	C3560-I9-M



Configuration register is 0xF

Cat3560#

Cat3560#

Cat3560# **show running-config**

Building configuration...

Current configuration : 5191 bytes

```
!  
version 12.1  
no service pad  
service timestamps debug uptime  
service timestamps log uptime  
no service password-encryption  
!  
hostname Cat3560  
!  
!  
ip subnet-zero  
!  
no ip domain-lookup  
!  
spanning-tree mode pvst  
no spanning-tree optimize bpdu transmission  
spanning-tree extend system-id  
!  
!  
interface FastEthernet0/1  
switchport trunk native vlan 82  
switchport mode dynamic desirable  
no ip address  
duplex full  
speed 100  
no mdix auto  
!  
interface FastEthernet0/2  
switchport access vlan 171  
no ip address  
no mdix auto  
!  
interface FastEthernet0/3  
switchport access vlan 171  
no ip address  
no mdix auto  
!  
interface FastEthernet0/4  
switchport access vlan 172  
no ip address  
no mdix auto  
spanning-tree portfast  
!  
interface FastEthernet0/5  
switchport access vlan 172  
no ip address  
no mdix auto
```



```
spanning-tree portfast
!
interface FastEthernet0/6
switchport access vlan 172
no ip address
no mdix auto
spanning-tree portfast
!
interface FastEthernet0/7
switchport access vlan 172
no ip address
no mdix auto
!
interface FastEthernet0/8
switchport access vlan 172
no ip address
no mdix auto
!
interface FastEthernet0/9
switchport access vlan 172
no ip address
no mdix auto
!
interface FastEthernet0/10
switchport access vlan 172
no ip address
no mdix auto
!
interface FastEthernet0/11
switchport access vlan 172
no ip address
no mdix auto
!
interface FastEthernet0/12
switchport access vlan 172
no ip address
no mdix auto
!
interface FastEthernet0/13
switchport access vlan 173
no ip address
no mdix auto
!
interface FastEthernet0/14
switchport access vlan 173
no ip address
no mdix auto
spanning-tree portfast
!
interface FastEthernet0/15
switchport access vlan 173
no ip address
no mdix auto
spanning-tree portfast
!
interface FastEthernet0/16
switchport access vlan 173
no ip address
no mdix auto
```



```
!  
interface FastEthernet0/17  
  switchport access vlan 173  
  no ip address  
  no mdix auto  
!  
interface FastEthernet0/18  
  switchport access vlan 173  
  no ip address  
  no mdix auto  
!  
interface FastEthernet0/19  
  switchport access vlan 173  
  no ip address  
  no mdix auto  
!  
interface FastEthernet0/20  
  switchport access vlan 173  
  no ip address  
  no mdix auto  
!  
interface FastEthernet0/21  
  switchport access vlan 173  
  no ip address  
  no mdix auto  
  spanning-tree portfast  
!  
interface FastEthernet0/22  
  switchport access vlan 174  
  no ip address  
  no mdix auto  
!  
interface FastEthernet0/23  
  switchport access vlan 174  
  no ip address  
  no mdix auto  
!  
interface FastEthernet0/24  
  switchport access vlan 174  
  no ip address  
  no mdix auto  
!  
interface FastEthernet0/25  
  switchport access vlan 174  
  no ip address  
  no mdix auto  
!  
interface FastEthernet0/26  
  switchport access vlan 174  
  no ip address  
  no mdix auto  
!  
interface FastEthernet0/27  
  switchport access vlan 174  
  no ip address  
  no mdix auto  
!  
interface FastEthernet0/28  
  switchport access vlan 174
```



```
no ip address
no mdix auto
!
interface FastEthernet0/29
switchport access vlan 174
no ip address
no mdix auto
!
interface FastEthernet0/30
switchport access vlan 174
no ip address
no mdix auto
!
interface FastEthernet0/31
switchport access vlan 175
no ip address
no mdix auto
!
interface FastEthernet0/32
switchport access vlan 175
no ip address
no mdix auto
!
interface FastEthernet0/33
switchport access vlan 175
no ip address
no mdix auto
!
interface FastEthernet0/34
switchport access vlan 175
no ip address
no mdix auto
!
interface FastEthernet0/35
switchport access vlan 175
no ip address
no mdix auto
!
interface FastEthernet0/36
switchport access vlan 175
no ip address
no mdix auto
!
interface FastEthernet0/37
switchport access vlan 175
no ip address
no mdix auto
!
interface FastEthernet0/38
switchport access vlan 175
no ip address
no mdix auto
!
interface FastEthernet0/39
switchport access vlan 175
no ip address
no mdix auto
!
interface FastEthernet0/40
```



```
switchport access vlan 176
no ip address
no mdix auto
!
interface FastEthernet0/41
switchport access vlan 176
no ip address
no mdix auto
!
interface FastEthernet0/42
switchport access vlan 176
no ip address
no mdix auto
!
interface FastEthernet0/43
switchport access vlan 176
no ip address
no mdix auto
!
interface FastEthernet0/44
switchport access vlan 176
no ip address
no mdix auto
!
interface FastEthernet0/45
switchport access vlan 176
no ip address
no mdix auto
!
interface FastEthernet0/46
switchport access vlan 176
no ip address
no mdix auto
!
interface FastEthernet0/47
switchport access vlan 176
no ip address
no mdix auto
!
interface FastEthernet0/48
switchport access vlan 176
no ip address
no mdix auto
!
interface GigabitEthernet0/1
no ip address
!
interface GigabitEthernet0/2
no ip address
!
interface GigabitEthernet0/3
no ip address
!
interface GigabitEthernet0/4
no ip address
!
interface Vlan1
no ip address
shutdown
```



```
!  
interface Vlan171  
ip address 172.20.171.20 255.255.255.0  
!  
ip default-gateway 172.22.20.1  
ip classless  
ip route 0.0.0.0 0.0.0.0 172.20.171.1  
ip http server  
!  
!  
line con 0  
logging synchronous  
line vty 0 4  
login  
line vty 5 15  
login  
!  
!  
monitor session 1 source interface Fa0/4 - 7 , Fa0/46 - 47  
monitor session 1 destination interface Fa0/48  
end  
  
Cat3560#
```

CCME Site 2 Configuration

C2851 Configuration

```
Site-2#  
Site-2# show version  
Cisco IOS Software, 2800 Software (C2800NM-IPVOICE-M), Version 12.3(11)T5, RELEA  
SE SOFTWARE (fc1)  
Technical Support: http://www.cisco.com/techsupport  
Copyright (c) 1986-2005 by Cisco Systems, Inc.  
Compiled Sat 02-Apr-05 15:43 by yiyian
```

ROM: System Bootstrap, Version 12.3(8r)T7, RELEASE SOFTWARE (fc1)

Site-2 uptime is 32 minutes
System returned to ROM by reload at 18:31:24 PST Wed Sep 7 2005
System image file is "flash:c2800nm-ipvoice-mz.123-11.T5.bin"

Cisco 2851 (revision 53.51) with 249856K/12288K bytes of memory.
Processor board ID FHK0853F18Q
9 FastEthernet interfaces
2 Gigabit Ethernet interfaces
1 terminal line
1 cisco service engine(s)
DRAM configuration is 64 bits wide with parity enabled.
239K bytes of non-volatile configuration memory.
62720K bytes of ATA CompactFlash (Read/Write)

Configuration register is 0x2102

Site-2#



Site-2#

Site-2# **show running-config**

Building configuration...

Current configuration : 5682 bytes

!

version 12.3

service timestamps debug datetime msec

service timestamps log datetime msec

no service password-encryption

!

hostname Site-2

!

boot-start-marker

boot system flash:c2800nm-ipvoice-mz.123-11.T5.bin

boot-end-marker

!

logging buffered 500000 debugging

no logging console

enable password cisco

!

clock timezone PST -8

clock summer-time PST recurring

no aaa new-model

ip subnet-zero

!

!

ip cef

ip dhcp excluded-address 172.20.173.1

ip dhcp excluded-address 172.20.173.20

ip dhcp excluded-address 172.20.173.254

!

ip dhcp pool phone

network 172.20.173.0 255.255.255.0

option 150 ip 172.20.173.254

default-router 172.20.173.1

!

!

no ip domain lookup

no ftp-server write-enable

!

voice-card 0

dspfarm

dsp services dspfarm

!

!

!

voice service voip

allow-connections h323 to h323

allow-connections h323 to sip

```
no supplementary-service h450.2
no supplementary-service h450.3
supplementary-service h450.12
!
!
!
!
!
!
!
!
!
!
!
!
!
!
interface GigabitEthernet0/0
ip address 172.20.173.254 255.255.255.0
duplex auto
speed auto
h323-gateway voip interface
h323-gateway voip id site2 ipaddr 172.28.221.242 1719
h323-gateway voip h323-id cme-site2
h323-gateway voip tech-prefix 1#
h323-gateway voip bind srcaddr 172.20.173.254
!
interface GigabitEthernet0/1
no ip address
duplex auto
speed auto
!
interface FastEthernet0/1/0
switchport access vlan 10
no ip address
!
interface FastEthernet0/1/1
switchport access vlan 10
no ip address
!
interface FastEthernet0/1/2
switchport access vlan 10
no ip address
!
interface FastEthernet0/1/3
switchport access vlan 10
no ip address
!
interface FastEthernet0/1/4
switchport access vlan 10
no ip address
!
```



```
interface FastEthernet0/1/5
  switchport access vlan 10
  no ip address
!
interface FastEthernet0/1/6
  switchport access vlan 10
  no ip address
!
interface FastEthernet0/1/7
  switchport access vlan 10
  no ip address
!
interface FastEthernet0/1/8
  switchport access vlan 10
  no ip address
!
interface Service-Engine1/0
  ip address 192.168.1.1 255.255.255.0
  service-module ip address 192.168.1.2 255.255.255.0
  service-module ip default-gateway 192.168.1.1
!
interface Vlan1
  no ip address
!
ip classless
ip route 0.0.0.0 0.0.0.0 172.20.173.1
ip route 192.168.1.2 255.255.255.255 Service-Engine1/0
!
ip http server
ip http authentication local
ip http path flash:
!
!
!
tftp-server flash:ATA030100SCCP040211A.zup
tftp-server flash:CP7902040000SCCP040701A.sbin
tftp-server flash:CP7905040000SCCP040701A.sbin
tftp-server flash:P00403020214.bin
tftp-server flash:CP7912040000SCCP040701A.sbin
tftp-server flash:S00103020002.bin
tftp-server flash:P00503010100.bin
tftp-server flash:cmterm_7936.3-3-5-0.bin
tftp-server flash:P00303020214.bin
tftp-server flash:P00305000301.sbn
tftp-server flash:cmterm_7920.4.0-01-08.bin
!
control-plane
!
!
!
!
sccp local GigabitEthernet0/0
sccp ccm 172.20.173.254 identifier 1
```



```
sccp
!
sccp ccm group 1
  associate ccm 1 priority 1
  associate profile 1 register mtp0012d974a208
  keepalive retries 5
!
dspfarm profile 1 transcode
  codec gsmfr
  codec g711ulaw
  codec g711alaw
  codec g729ar8
  codec g729abr8
  codec g729r8
  codec g729br8
  maximum sessions 6
  associate application SCCP
!
!
dial-peer voice 10 pots
  destination-pattern 9T
!
dial-peer voice 11 pots
  destination-pattern 9T
!
dial-peer voice 12 pots
  destination-pattern 9T
!
dial-peer voice 13 pots
  destination-pattern 9T
!
dial-peer voice 1 voip
  destination-pattern 510.
  session target ipv4:172.20.217.100
  dtmf-relay h245-alphanumeric
  codec g711ulaw
  no vad
!
dial-peer voice 2 voip
  destination-pattern 62..
  session target ipv4:172.20.172.254
  dtmf-relay h245-alphanumeric
  codec g711ulaw
  no vad
!
dial-peer voice 4 voip
  shutdown
  destination-pattern ....
  session target ras
  dtmf-relay h245-alphanumeric
  codec g711ulaw
  no vad
!
```



```
dial-peer voice 3 voip
destination-pattern 6300
session protocol sipv2
session target ipv4:192.168.1.2
dtmf-relay sip-notify
codec g711ulaw
no vad
!
!
telephony-service
load 7910 P00403020214
load 7935 P00503010100
load 7960-7940 P00303020214
load 7914 S00103020002
load ATA ATA030100SCCP040211A.zup
load 7905 CP7905040000SCCP040701A.sbin
load 7902 CP7902040000SCCP040701A.sbin
load 7920 cmterm_7920.4.0-01-08.bin
load 7912 CP7912040000SCCP040701A.sbin
max-ephones 96
max-dn 192
ip source-address 172.20.173.254 port 2000
system message XYZ Corp
sdspfarm units 1
sdspfarm transcode sessions 8
sdspfarm tag 1 mtp0012d974a208
create cnf-files version-stamp Jan 01 2002 00:00:00
dialplan-pattern 1 6... extension-length 4
voicemail 6300
max-conferences 8
call-forward pattern .T
moh music-on-hold.au
web admin system name cmeadmin password cmeadmin
dn-webedit
time-webedit
transfer-system full-blind
transfer-pattern ....
transfer-pattern 73.. blind
secondary-dialtone 9
!
!
ephone-dn 1 dual-line
number 6301
label 6301
description Site 2 Phone 1
name Site 2 Phone 1
huntstop channel
!
!
ephone-dn 2 dual-line
number 6302
label 6302
description Site 2 Phone 2
```



```
name Site 2 Phone 2
huntstop channel
!
!
ephone-dn 10
number 8000....
mwi on
!
!
ephone-dn 11
number 8001....
mwi off
!
!
ephone-dn 99
number 73..
call-forward all 6300
!
!
ephone 1
username "user1" password 6301
mac-address 000B.BEF2.D824
type 7960
keep-conference
button 1:1
!
!
!
ephone 2
username "user2" password 6302
mac-address 000A.8A48.F9C9
type 7960
keep-conference
button 1:2
!
!
!
line con 0
exec-timeout 0 0
line aux 0
line 66
no activation-character
no exec
transport preferred none
transport input all
transport output all
line vty 0 4
exec-timeout 0 0
password cisco
login
!
scheduler allocate 20000 1000
!
```



end

Site-2#

NM-CUE Configuration

se-192-168-1-2#

se-192-168-1-2# **show version**

CPU Model: Pentium III (Coppermine)

CPU Speed (MHz): 498.674

CPU Cache (KByte): 256

Chassis Type: C2851

Chassis Serial: FHK0853F18Q

Module Type: NM

Module Serial: JAD07080GA7

se-192-168-1-2#

se-192-168-1-2#

se-192-168-1-2#

se-192-168-1-2#

se-192-168-1-2# sh software versions

Installed Packages:

- Bootloader (Primary) 1.0.17

- Global 2.1.1

- Voice Mail 2.1.0

- Bootloader (Secondary) 2.0.0

- Core 2.1.0

- Installer 2.1.0

- Auto Attendant 2.1.0

Installed Languages:

- US English 2.1.0

se-192-168-1-2#

se-192-168-1-2#

se-192-168-1-2# **show running-config**

Generating configuration:

clock timezone America/Los_Angeles

hostname se-192-168-1-2

ip domain-name localdomain

software download server url "ftp://127.0.0.1/ftp" credentials hidden "6u/dKTN/h
sEuSAEfw40XlF2eFHnZfyUTSd8ZZNgd+Y9J3xlk2B35j0nfGWTYHfmPSd8ZZNgd+Y9J3xlk2B35jwAAA
AA="

groupname Administrators create

groupname Broadcasters create

username admin create

username user1 create

username user2 create



```
username user1 phonenumberE164 "7301"
username user2 phonenumberE164 "7302"
username user1 phonenumber "6301"
username user2 phonenumber "6302"
```

```
groupname Administrators member admin
groupname Administrators privilege superuser
groupname Administrators privilege ManagePrompts
groupname Administrators privilege ManagePublicList
groupname Administrators privilege ViewPrivateList
groupname Broadcasters privilege broadcast
```

```
backup server url "ftp://127.0.0.1/ftp" credentials hidden "EWlTygcMhYmjazXhE/VN
XHCkplVV4KjesCbDaLa4flWLSPFv1rWUnfGWTYHfmPSd8ZZNgd+Y9J3xlk2B35jwAAAAA="
```

```
calendar biz-schedule systemschedule
open day 1 from 00:00 to 24:00
open day 2 from 00:00 to 24:00
open day 3 from 00:00 to 24:00
open day 4 from 00:00 to 24:00
open day 5 from 00:00 to 24:00
open day 6 from 00:00 to 24:00
open day 7 from 00:00 to 24:00
end schedule
```

```
ccn application autoattendant
description "autoattendant"
enabled
maxsessions 8
script "aa.aef"
parameter "busOpenPrompt" "AABusinessOpen.wav"
parameter "holidayPrompt" "AAHolidayPrompt.wav"
parameter "busClosedPrompt" "AABusinessClosed.wav"
parameter "allowExternalTransfers" "false"
parameter "MaxRetry" "3"
parameter "operExtn" "0"
parameter "welcomePrompt" "AAWelcome.wav"
parameter "businessSchedule" "systemschedule"
end application
```

```
ccn application ciscoMWIapplication
description "ciscoMWIapplication"
enabled
maxsessions 8
script "setmwi.aef"
parameter "strMWI_OFF_DN" "8001"
parameter "strMWI_ON_DN" "8000"
parameter "CallControlGroupID" "0"
end application
```

```
ccn application promptmgmt
description "promptmgmt"
enabled
maxsessions 1
script "promptmgmt.aef"
end application
```

```
ccn application voicemail
description "voicemail"
```



```
enabled
maxsessions 8
script "voicebrowser.aef"
parameter "logoutUri" "http://localhost/voicemail/vxmlscripts/mbxLogout.jsp"
parameter "uri" "http://localhost/voicemail/vxmlscripts/login.vxml"
end application

ccn engine
end engine

ccn subsystem jtapi
ccm-manager address 0.0.0.0
end subsystem

ccn subsystem sip
gateway address "192.168.1.1"
end subsystem

ccn trigger sip phonenumber 6300
application "voicemail"
enabled
maxsessions 8
end trigger

voicemail default mailboxsize 3000
voicemail broadcast recording time 300
voicemail mailbox owner "user1" size 3000
zerooutnumber "100"
end mailbox

voicemail mailbox owner "user2" size 3000
zerooutnumber "100"
end mailbox

end
se-192-168-1-2#
```



Acronyms

Acronym	Definitions
CCME	Cisco Unified CallManager Express
CUE	Cisco Unity Express
CFB	Call Forwarding on Busy
CFNR	Call Forwarding No Reply
CFU	Call Forwarding Unconditional
CLIP	Calling Line (Number) Identification Presentation
CNIP	Calling Name Identification Presentation
COLP	Connected Line (Number) Identification Presentation
CONP	Connected Name Identification Presentation
CT	Call Transfer
MWI	Message Waiting Indicator

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