



Nortel Communication Server 1000M, Release 4.0 to Cisco IOS Voice Gateway using T1 QSIG with H.323

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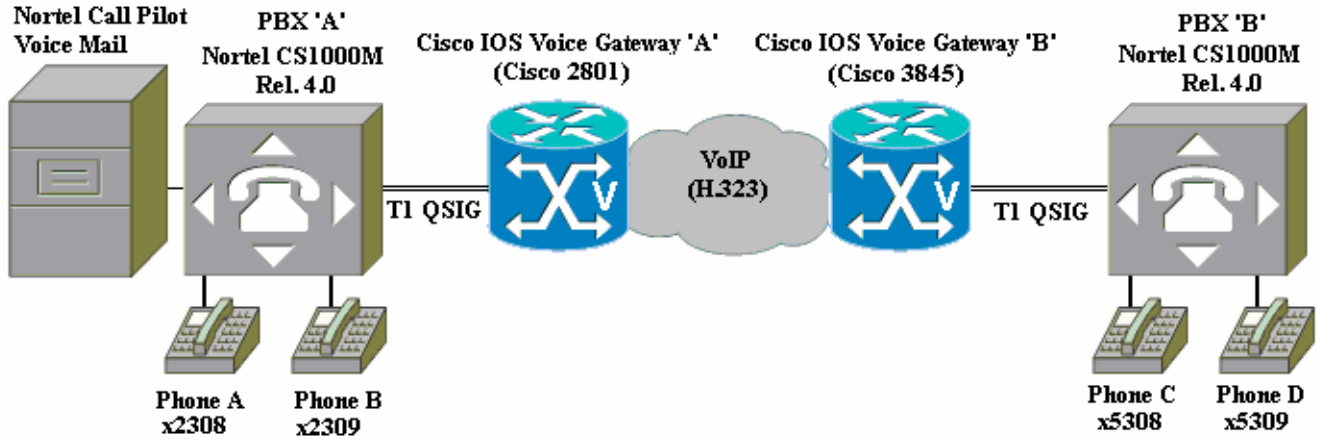
Introduction

- Although specific gateway router models were used to validate its content, this application note also applies to all Cisco 1700/2600/3600/3700/2800/3800 series Cisco IOS voice gateways.
- This application note provides configuration guidelines for a toll-bypass network using Cisco IOS voice gateways to connect Nortel Communication Server 1000M, Release 4.0 PBXs. The PBXs are connected to the Cisco IOS voice gateways by T1 QSIG trunk circuits. The Cisco IOS voice gateways “extend” the T1 QSIG trunk circuits with VoIP, using the H.323 protocol.
- Two Nortel Communication Server 1000M, Release 4.0 PBXs were connected via T1 QSIG trunk to two Cisco IOS voice gateways. The voice gateways were connected via IP over Ethernet, and configured for VoIP using H.323. End-to-end calls were placed between the PBXs to exercise and test basic calls as well as QSIG supplementary services such as MWI, call hold, call transfer, call conference, and call forward.
- Using the Nortel PBX configurations and Cisco IOS voice gateway configurations in this application note, successful toll bypass integration was achieved. This includes basic call, call transfer, call conference, and call forward, with some limitations on Caller ID features during transfer, forward, hold and conference scenarios. These limitations are detailed in the following sections and most were found to be inherent to the Nortel PBXs.



Network Topology

Figure 1. Network Topology or Test Setup



Hardware Requirements

- (2) Cisco IOS voice gateways with T1 VWICs (voice/WAN interface cards)
- (2) Nortel Communication Server 1000M PBXs
- (1) Nortel Call Pilot Voice Mail System
- (4) Nortel digital station telephones

Software Requirements

- Nortel CS1000M Release 4.0
- Cisco IOS voice gateways: Cisco IOS Release Version 12.4(2.10) or later.



Features

Features Supported

- Basic Call (ENBLOC and Overlap)
- Call Transfer: Supervised Local Transfer
- Call Transfer: Supervised Network/External Transfer
- Call Conference: Local
- Call Conference: Network/External
- Call Forward: Local
- Call Forward: Network/External
- Call Hold
- MWI

Limitations

- For basic calls, both overlap and ENBLOC, the called number is not passed to the originating phone in the ALERTING message. Initially the dialed number (prior to CONNECT) is displayed. After CONNECT, the connected number is displayed on the originating phone. This is inherent to the PBXs and also occurs with the PBXs connected directly via a T1 QSIG trunk.
- During call transfers, the original calling name and number were displayed on the final destination phone only after the transfer was complete. This is inherent to the PBXs and also occurs with the PBXs connected directly via a T1 QSIG trunk.
- For conference calls, connected name and number were not updated on the originating phone when a conferee dropped out. This is inherent to the PBXs and also occurs with the PBXs connected directly via a T1 QSIG trunk.
- For conference calls, the calling name and number were generally not passed to the remaining conferee when the conferencing phone dropped out. The only exceptions were conference calls accomplished by an external call followed by a local conference from the original called party (e.g., phone A calls phone C, then phone C conferences in phone D). In the rest of the cases, either the conferencing phone's name / number is displayed, or the trunk number is displayed. This is inherent to the PBXs and also occurs with the PBXs connected directly via a T1 QSIG trunk.
- It is important to set EXTT parameter to "yes" under LD 15 in the PBX configuration to avoid dropped calls on certain conference scenarios when the initiating/conferencing party drops (e.g., Phone A calls Phone C, Phone A conferences in Phone D, and Phone A drops).
- For forwarded calls, the original calling name was generally not displayed on the final destination. Only the forwarding name was displayed. This is inherent to the PBXs and also occurs with the PBXs connected directly via a T1 QSIG trunk.
- For forwarded calls, the final destination number was updated at the original side before it connects. This is inherent to the PBXs and also occurs with the PBXs connected directly via a T1 QSIG trunk.
- For forwarded calls accomplished by a local call followed by an external forward (e.g., phone A calls phone B and phone B forwards to phone C), there was a long (~5sec) pause before the call was connected.
- For a call hold on a basic call, when the originating phone places the destination phone on hold, the final destination number disappears when hold is invoked and does not reappear when it is released. This does not occur if the destination phone places the originating phone on hold. This is inherent to the PBXs and also occurs with the PBXs connected directly via a T1 QSIG trunk.



Configuration

Configuring the Nortel CS1000M: Switch 1 PBX 'A' (ENBLOC)

Note: It is important to set EXTT parameter to "yes" under LD 15 to avoid dropped calls on certain conference scenarios when the initiating/conferencing party drops (e.g., Phone A calls Phone C, Phone A conferences in Phone D, and Phone A drops).

COMMON EQUIPMENT CONFIGURATION

ld 22

REQ prt

TYPE cequ

CEQU

MPED 8D
SUPL 000 004 008 012
016 032 036 040
044 048 064 068
072 V096 V100
TDS 000
CONF 029 030 031 062
094 095

DLOP NUM DCH FRM TMDI LCMT YALM T1TE TRSH
PRI 02 24 ESF NO B8S FDL - 00
06 23 ESF NO B8S FDL - 00 (T1 PRI card/slot used)
07 23 ESF NO B8S FDL - 00
PRI2 04 05
DTI2
MISP

REQ

DIGITAL DATA BLOCK CONFIGURATION

>ld 73

DDB000

MEM AVAIL: (U/P):p 2820901 USED U P: 206457 69217 TOT: 3096575

DISK RECS AVAIL: 1152

REQ prt

TYPE ddb

CC0 6



PREF CC0 6
SREF CC0 FREE RUN

TRSH 00
RALM 128
BIPC 0
LFAC 0
BIPV 4 4
SRTK 24 3600
SRNT 1024 1024
LFAL 10240 10240
SRIM 1
SRMM 2
ICS

REQ

D-CHANNEL CONFIGURATION

>ld 22

PT2000

REQ prt

TYPE adan dch 6

ADAN DCH 6
CTYP MSDL
CARD 06
PORT 1
DES
USR PRI
DCHL 6
OTBF 32
PARM RS422 DTE
DRAT 64KC
CLOK EXT
IFC **ISGF** (For ISO Q>SIG configuration with GF Platform)
PINX_CUST 0
ISDN_MCNT 300
CLID OPT0
CO_TYPE STD
SIDE NET
CNEG 1
RLS ID **
RCAP COLP NDI CCBI CCNI PRI DV3I CTI QMWI
PR_TRIGS DIV 2 3
CNG 2 3
CON 2 3



CTR1 2 3

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

ROUTE DATA BLOCK CONFIGURATION

>ld 21

PT1000

REQ: prt

TYPE: rdb

CUST 0

ROUT 106

TYPE RDB
CUST 00
DMOD
ROUT 106
DES CS01
TKTP TIE
NPID_TBL_NUM 0
ESN NO
CNVT NO
SAT NO
RCLS EXT
VTRK NO
NODE
DTRK YES
BRIP NO
DGTP PRI
ISDN YES
MODE PRA
IFC ISGF
SBN NO
PNI 00000
NCNA NO
NCRD NO
CHTY BCH
CTYP UKWN



INAC NO
ISAR NO
CPFXS YES
DAPC NO
INTC NO
DSEL VOD
PTYPR PRI
AUTO NO
DNIS NO
DCDR NO
ICOG IAO
SRCH RRB
TRMB YES
STEP
ACOD 206
TCPP NO
TARG 01
CLEN 1
BILN NO
OABS
INST
ANTK
SIGO STD
ICIS YES
TIMR ICF 512
OGF 512
EOD 13952
NRD 10112
DDL 70
ODT 4096
RGV 640
GRD 896
SFB 3
NBS 2048
NBL 4096

IENB 5
TFD 0
VSS 0
VGD 6

DRNG NO
CDR NO
VRAT NO
MUS NO
FRL 0 0
FRL 1 0
FRL 2 0
FRL 3 0
FRL 4 0
FRL 5 0
FRL 6 0
FRL 7 0
OHQ NO
OHQT 00



CBQ NO
 AUTH NO
 TTBL 0
 ATAN NO
 PLEV 2
 ALRM NO
 ART 0
 SGRP 0
 AACR NO

 TRUNK DATA BLOCK CONFIGURATION

>ld 20

PT0000
 REQ: prt

TYPE: tnb

TN 6 1

DATE

PAGE
 DES

DES
 TN 006 01
 TYPE TIE
 CDEN SD
 CUST 0
 TRK PRI
 PDCA 1
 PCML MU
 NCOS 0
 RTMB 106 1
 B-CHANNEL SIGNALING
 TGAR 1
 AST NO
 IAPG 0
 CLS UNR DTN WTA LPR APN THFD HKD
 P10 VNL
 TKID
 AACR NO
 DATE 18 MAY 2005

 COORDINATED DIALING PLAN CONFIGURATION (TO DIAL 53xx)



>ld 87

REQ prt

CUST 0

FEAT cdp

TYPE dsc

DSC 53

DSC 53

FLEN 0

DSP LSC

RLI 6

NPA

NXX

MEM AVAIL: (U/P): 2820901 USED U P: 206457 69217 TOT: 3096575

DISK RECS AVAIL: 1152

REQ

ROUTE LIST BLOCK CONFIGURATION

>ld 86

ESN000

MEM AVAIL: (U/P): 2820901 USED U P: 206457 69217 TOT: 3096575

DISK RECS AVAIL: 1152

REQ prt

CUST 0

FEAT rlb

RLI 6

RLI 6

ENTR 0

LTER NO

R

OUT 106

TOD 0 ON 1 ON 2 ON 3 ON

4 ON 5 ON 6 ON 7 ON

VNS NO

CNV NO

EXP NO



FRL 0
DMI 0
FCI 0
FSNI 0
SBOC NRR
IDBB DBD
IOHQ NO
OHQ NO
CBQ NO

ISET 0
NALT 5
MFRL 0
OVLL 2

MEM AVAIL: (U/P): 2820901 USED U P: 206457 69217 TOT: 3096575
DISK RECS AVAIL: 1152
REQ *****

OVL000

DIGITAL STATION CONFIGURATION

>ld 11

SL1000
MEM AVAIL: (U/P): 2820901 USED U P: 206457 69217 TOT: 3096575
DISK RECS AVAIL: 1152
DIGITAL TELEPHONES AVAIL: 4 USED: 4 TOT: 8
IP USERS AVAIL: 4 USED: 4 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: 2302 USED: 198 TOT: 2500
DATA PORTS AVAIL: 2500 USpED: 0 TOT: 2500

REQ: prt
TYPE: 2616

TN 001 0 0 0



DATE

PAGE

DES

DES CS101A
TN 001 0 00 00
TYPE 2616
CDEN 8D
CUST 0
AOM 0
FDN 2500
TGAR 1
LDN NO
NCOS 0
SGRP 0
RNPG 0
SCI 0
SSU
XLST
CLS CTD FBA WTA LPR MTD FNA HTA ADD HFD
MWA LMPN RMMD SMWD AAD IMD XHD IRD NID OLD VCE DRG1
POD DSX VMD CMSD SLKD CCSD SWD LND CNDA
CFTA SFD MRD DDV CNID CDCA MSID DAPA BFED 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 OCB
D FLXD FTTC DNDY DNO3 MCBN CDMR
CPND_LANG ENG
RCO 0
EFD 2500
HUNT 2500
EHT 2500
LHK 0
PLEV 02
CSDN
AST
IAPG 0
AACS NO
ITNA NO
DGRP
MLWU_LANG 0
DNDR 0
KEY 00 SCR 2308 0 MARP
CPND
NAME ZEUS8
XPLN 5
DISPLAY_FMT FIRST, LAST
01
02
03 CFW 4 2309



04 AO6
05 TRN
06
07
08
09
10
11
12
13
14
15 RGA
DATE 6 JUL 2005

NACT ****

OVL000

PBX SOFTWARE RELEASE

ld 22

REQ iss

CALL SERVER/MAIN CAB
VERSION 2121
RELEASE 4
ISSUE 00 T +
IDLE_SET_DISPLAY NORTEL

PACKAGES INSTALLED



REQ prt

TYPE pkg

OPTF	1
CUST	2
CDR	4
CTY	5
RAN	7
TAD	8
DNDI	9
EES	10
INTR	11
ANI	12
ANIR	13
BRTE	14
DNDG	16
MSB	17
SS25	18
DDSP	19
ODAS	20
DI	21
CHG	23
CAB	24
BAUT	25
CASM	26
CASR	27
BQUE	28
NTRF	29
NCOS	32
CPRK	33
SSC	34
IMS	35
UST	35
UMG	35
ROA	36
NSIG	37
MCBQ	38
NSC	39
BACD	40
ACDB	41
ACDC	42
LMAN	43
MUS	44
ACDA	45
MWC	46
AAB	47
GRP	48
NFCR	49
LNK	51
FCA	52
SR	53
AA	54
HIST	55
AOP	56



BARS	57
NARS	58
CDP	59
PQUE	60
FCBQ	61
OHQ	62
NAUT	63
SNR	64
NXFR	67
HOT	70
DHLD	71
LSEL	72
SS5	73
DRNG	74
PBXI	75
DLDN	76
CSL	77
OOD	79
SCI	80
CCOS	81
CDRQ	83
TENS	86
FTDS	87
DSET	88
TSET	89
LNR	90
DLT2	91
PXLT	92
SUPV	93
CPND	95
DNIS	98
BGD	99
RMS	100
MR	101
AWU	102
PMSI	103
LLC	105
MCT	107
ICDR	108
APL	109
TVS	110
TOF	111
IDC	113
DCP	115
PAGT	116
CBC	117
CCDR	118
EMUS	119
PLDN	120
SCMP	121
FTC	125
BKI	127
DTI2	129
TBAR	132



ENS	133
FFC	139
DCON	140
MPO	141
ISDN	145
PRA	146
ISL	147
NTWK	148
IEC	149
DNXP	150
CDRE	151
FXS	152
IAP3P	153
PRI2	154
THF	157
FGD	158
NAS	159
FNP	160
ISDN_INTL_SUP	161
SAR	162
MINT	163
LAPW	164
GPRI	167
ARIE	170
CPGS	172
ECCS	173
AAA	174
NMS	175
EOVF	178
HVS	179
DKS	180
SACP	181
VNS	183
OVLP	184
EDRG	185
POVR	186
SECL	191
ORC-RVQ	192
AINS	200
IPRA	202
XPE	203
XCT0	204
XCT1	205
MLWU	206
HSE	208
MLM	209
MAID	210
VAWU	212
EAR	214
ECT	215
BRI	216
IVR	218
MWI	219
MSDL	222



FC68	223
SSAU	229
BRIT	233
FCDR	234
BRIL	235
MCMO	240
MULTI_USER	242
ALRM_FILTER	243
SYS_MSG_LKUP	245
VMBA	246
CALL_ID	247
DPNA	250
SCDR	251
ARFW	253
PHTN	254
ADMINSET	256
ATX	258
CDRX	259
QSIG	263
NI-2	291
IPEX	295
MAT	296
CPP	301
QSIGGF	305
CPRKNET	306
PAGENET	307
CPCI	310
TATO	312
OPEN_ALARM	315
QSIG-SS	316
NGEN	324
RANBRD	327
MUSBRD	328
ESA	329
ESA_SUPP	330
ESA_CLMP	331
CNUMB	332
CNAME	333
NI-2_CBC	334
MEET	348
MC32	350
DBA	351
FDID	362
NMCE	364
STS_MSG	380
CDIR	381
VIRTUAL_OFFICE	382
ATAN	384
NI2NAME	385
M3900_PROD_ENH	386
VIR_OFF_ENH	387
OAS	394
ICON	397
PCA	398



H323_VTRK	399
LOCX	400
PVQM	401
SIP	406



Configuring the Nortel CS1000M: Switch 2 PBX 'B'

Note: It is important to set EXTT parameter to "yes" under LD 15 to avoid dropped calls on certain conference scenarios when the initiating/conferencing party drops (e.g., Phone A calls Phone C, Phone A conferences in Phone D, and Phone A drops).

COMMON EQUIPMENT CONFIGURATION

>ld 22
PT2000

REQ prt

TYPE cequ

CEQU

MPED 8D
SUPL 000 004 008 012
016 032 036 040
044 048 064 068
072 V096
TDS 000
CONF 029 030 031 062
094 095

DLOP NUM DCH FRM TMDI LCMT YALM T1TE TRSH
PRI 06 23 ESF NO B8S FDL - 00
MISP

DIGITAL DATA BLOCK CONFIGURATION

>ld 73

DDB000
MEM AVAIL: (U/P): 2757315 USED U P: 317254 38390 TOT: 3112959
SCH5066

REQ prt

TYPE ddb

CC0 6
PREF CC0 6
SREF CC0 FREE RUN

TRSH 00



```
RALM 128
BIPC 0
LFAC 0
BIPV 4 4
SRTK 24 3600
SRNT 1024 1024
LFAL 10240 10240
SRIM 1
SRMM 2
ICS
```

```
*****
D-CHANNEL CONFIGURATION
*****
```

```
>ld 22
```

```
PT2000
```

```
REQ prt
TYPE adan dch 6
```

```
ADAN      DCH 6
  CTYP MSDL
  CARD 06
  PORT 1
  DES CS102
  USR PRI
  DCHL 6
  OTBF 32
  PARM RS422 DTE
  DRAT 64KC
  CLOK EXT
  IFC ISGF
    PINX_CUST 0
    ISDN_MCNT 300
  CLID OPT0
  CO_TYPE STD
  SIDE USR
  CNEG 1
  RLS ID 4
  RCAP COLP NDI CCBI CCNI PRI DV3I CTI QMWI
  PR_TRIGS DIV 2 3
    CNG 2 3
    CON 2 3
    CTR2 2 3
  PR_RTN NO
  MBGA NO
  OVLN YES
  DIDD 0
```



OVLS YES
OVLTL 0
T310 120
T200 3
T203 10
N200 3
N201 260
K 7

ROUTE DATA BLOCK CONFIGURATION

>ld 21

PT1000

REQ: prt
TYPE: rdb
CUST 0

ROUT 106

TYPE RDB
CUST 00
DMOD
ROUT 106
DES
TKTP TIE
NPID_TBL_NUM 0
ESN NO
CNVT NO
SAT NO
RCLS EXT
VTRK NO
NODE
DTRK YES
BRIP NO
DGTP PRI
ISDN YES
MODE PRA
IFC ISGF
SBN NO
PNI 00001
NCNA NO
NCRD NO
CHTY BCH
CTYP UKWN
INAC NO
ISAR NO
CPFXS YES
DAPC NO



```
INTC NO
DSEL VOD
PTYP PRI
AUTO NO
DNIS NO
DCDR NO
ICOG IAO
SRCH RRB
TRMB YES
STEP
ACOD 506
TCPP NO
TARG 01
CLEN 1
BILN NO
OABS
INST
ANTK
SIGO STD
ICIS YES
TIMR ICF 512
      OGF 512
      EOD 13952
      NRD 10112
      DDL 70
      ODT 4096
      RGV 640
      GRD 896
      SFB 3
      NBS 2048
      NBL 4096

      IENB 5
      TFD 0
      VSS 0
      VGD 6
DRNG NO
CDR NO
VRAT NO
MUS NO
OHQ NO
OHQT 00
CBQ NO
AUTH NO
TTBL 0
ATAN NO
PLEV 2
ALRM NO
ART 0
SGRP 0
AACR NO
```



TRUNK DATA BLOCK CONFIGURATION

REQ: prt

TYPE: tnb

TN 6 1

DATE

PAGE

DES

DES

TN 006 01

TYPE TIE

CDEN SD

CUST 0

TRK PRI

PDCA 1

PCML MU

NCOS 0

RTMB 106 1

B-CHANNEL SIGNALING

TGAR 1

AST NO

IAPG 0

CLS UNR DTN WTA LPR APN THFD HKD

P10 VNL

TKID

AACR NO

DATE 18 MAY 2005

COORDINATED DIALING PLAN CONFIGURATION (TO DIAL 23xx)

>ld 87

ESN000

MEM AVAIL: (U/P): 2757315 USED U P: 317254 38390 TOT: 3112959

SCH5066



REQ prt
CUST 0
FEAT cdp

TYPE dsc

DSC 23

DSC 23
FLEN 0
DSP LSC
RLI 6
NPA
NXX

ROUTE LIST BLOCK CONFIGURATION

OVL000
>ld 86
ESN000

MEM AVAIL: (U/P): 2757315 USED U P: 317254 38390 TOT: 3112959
SCH5066

REQ prt
CUST 0

FEAT rlb
RLI 6

RLI 6
ENTR 0
LTER NO
ROUT 106
TOD 0 ON 1 ON 2 ON 3 ON
4 ON 5 ON 6 ON 7 ON
VNS NO
CNV NO
EXP NO
FRL 0
DMI 0
FCI 0
FSNI 0
SBOC NRR
IDBB DBD
IOHQ NO
OHQ NO
CBQ NO



ISET 0
NALT 5
MFRL 0
OVLL 2

DIGITAL STATION PHONE CONFIGURATION

>ld 11

REQ: prt
TYPE: 2616

TN 001 0 0 0

DATE

PAGE
DES

DES CS102
TN 001 0 00 00
TYPE 2616
CDEN 8D
CUST 0
AOM 0
FDN 2500
TGAR 1
LDN NO
NCOS 0
SGRP 0
RNPG 0
SCI 0
SSU



```

XLST
CLS  CTD FBA WTA LPR MTD FNA HTA ADD HFD
    MWA LMPN RMMD SMWD AAD IMD XHD IRD NID OLD VCE DRG1
    POD DSX VMD CMSD SLKD CCSD SWD LND CNDA
    CFTA SFD MRD DDV CNID CDCA MSID DAPA BFED RCBF
    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 FLXD FTTC DNDY DNO3 MCBN CDMR
CPND_LANG ENG
RCO  0
EFD  2500
HUNT 2500
EHT  2500
LHK  0
PLEV 02
CSDN
AST
IAPG 0
AACS NO
ITNA NO
DGRP
MLWU_LANG 0
DNDR 0
KEY  00 SCR 5308 0      MARP
      CPND
      NAME ATHENA8
      XPLN 13
      DISPLAY_FMT FIRST, LAST
01
02
03 CFW 4  2308
04 AO6
05 TRN
06
07
08
09
10
11
12
13
14
15 RGA
DATE  1 JUN 2005

```

```

*****
PBX SOFTWARE RELEASE
*****

```

```
>ld 22
```



PT2000

REQ iss

CALL SERVER/MAIN CAB
VERSION 2121
RELEASE 4
ISSUE 00 T +
IDLE_SET_DISPLAY NORTEL

PACKAGES INSTALLED

REQ prt

TYPE pkg

OPTF	1
CUST	2
CDR	4
CTY	5
RAN	7
TAD	8
DNDI	9
EES	10
INTR	11
ANI	12
ANIR	13
BRTE	14
DNDG	16
MSB	17
SS25	18
DDSP	19
ODAS	20
DI	21
CHG	23
CAB	24
BAUT	25
CASM	26
CASR	27
BQUE	28
NTRF	29
NCOS	32
CPRK	33
SSC	34
IMS	35
UST	35
UMG	35
ROA	36
NSIG	37
MCBQ	38
NSC	39



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



ICDR	108
APL	109
TVS	110
TOF	111
IDC	113
DCP	115
PAGT	116
CBC	117
CCDR	118
EMUS	119
PLDN	120
SCMP	121
FTC	125
BKI	127
DTI2	129
TBAR	132
ENS	133
FFC	139
DCON	140
MPO	141
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Configuring the Cisco 2801

2801_East#sho ver

Cisco IOS Software, 2801 Software (C2801-IPVOICE-M), Version 12.4(2.10), INTERIM SOFTWARE

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

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

Compiled Mon 13-Jun-05 12:55 by hqluong

ROM: System Bootstrap, Version 12.3(8r)T6, RELEASE SOFTWARE (fc1)

ROM: Cisco IOS Software, 2801 Software (C2801-IPVOICE-M), Version 12.4(1.8)T, INTERIM SOFTWARE

2801_East uptime is 6 days, 43 minutes

System returned to ROM by reload at 23:43:23 UTC Thu Jun 30 2005

System image file is "flash:c2801-ipvoice-mz.124-2.10"

Cisco 2801 (revision 4.1) with 116736K/14336K bytes of memory.

Processor board ID FHK084410UA

2 FastEthernet interfaces

24 Serial interfaces

2 Channelized T1/PRI ports

4 DSPs, 64 Voice resources

DRAM configuration is 64 bits wide with parity disabled.

191K bytes of NVRAM.

62592K bytes of ATA CompactFlash (Read/Write)

Configuration register is 0x2102



2801_East#wr t

Building configuration...

Current configuration : 2034 bytes

```
!  
version 12.4  
service timestamps debug datetime msec  
service timestamps log datetime msec  
no service password-encryption  
!  
hostname 2801_East  
!  
boot-start-marker  
boot system flash c2801-ipvoice-mz.124-2.10  
boot-end-marker  
!  
logging buffered 51200 warnings  
enable secret 5 $1$VFMp$KDnzbZkIOvIWZ0tnLHnK40  
!  
no aaa new-model  
!  
resource policy  
!  
network-clock-participate wic 2  
mmi polling-interval 60  
no mmi auto-configure  
no mmi pvc  
mmi snmp-timeout 180
```



```
ip subnet-zero
ip cef
!
!
!
!
ip domain name yourdomain.com
isdn switch-type primary-qsig
!
voice-card 0
!
!
!
voice service voip
signaling forward unconditional
sip
!
!
!
username deepa
!
!
controller T1 0/2/0
framing esf
linecode b8zs
pri-group timeslots 1-24
description ECN-5
!
controller T1 0/2/1
```



```
framing esf
linecode b8zs
!
!
!
interface FastEthernet0/0
description $ETH-LAN$$ETH-SW-LAUNCH$$INTF-INFO-FE 0$
ip address 172.20.4.111 255.255.255.0
duplex auto
speed auto
!
interface FastEthernet0/1
ip address 10.10.10.1 255.255.255.0
shutdown
duplex auto
speed auto
!
interface Serial0/2/0:23
description D-channel for ECN-5
no ip address
no logging event link-status
isdn switch-type primary-qsig
isdn overlap-receiving
isdn incoming-voice voice
isdn supp-service name calling
isdn bchan-number-order ascending
isdn sending-complete
no cdp enable
!
```



```
ip classless
!
ip http server
ip http authentication local
!
disable-eadi
!
!
!
control-plane
!
!
!
voice-port 0/2/0:23
description voice port for ECN-5
!
!
dial-peer voice 323 voip
destination-pattern 5...
session target ipv4:172.20.4.109
!
dial-peer voice 2023 pots
destination-pattern 2...
direct-inward-dial
port 0/2/0:23
forward-digits all
!
dial-peer voice 5050 voip
destination-pattern 5050
```



```
session target ipv4:172.20.4.109
```

```
!
```

```
gateway
```

```
timer receive-rtp 1200
```

```
!
```

```
sip-ua
```

```
!
```

```
!
```

```
line con 0
```

```
line aux 0
```

```
line vty 0 4
```

```
privilege level 15
```

```
no login
```

```
transport input telnet
```

```
line vty 5 15
```

```
privilege level 15
```

```
no login
```

```
transport input telnet
```

```
line vty 16 51
```

```
no login
```

```
!
```

```
end
```



2801_East#sho isdn stat

Global ISDN Switchtype = primary-qsig

ISDN Serial0/2/0:23 interface

dsl 0, interface ISDN Switchtype = primary-qsig

**** Slave side configuration ****

Layer 1 Status:

ACTIVE

Layer 2 Status:

TEI = 0, Ces = 1, SAPI = 0, State = MULTIPLE_FRAME_ESTABLISHED

Layer 3 Status:

0 Active Layer 3 Call(s)

Active dsl 0 CCBs = 0

The Free Channel Mask: 0x807FFFFF

Number of L2 Discards = 0, L2 Session ID = 35

Total Allocated ISDN CCBs = 0

2801_East#



Configuring the Cisco 3845

3845_East#sho ver

Cisco IOS Software, 3800 Software (C3845-IPVOICE-M), Version 12.4(2.10), INTERIM
SOFTWARE

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

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

Compiled Mon 13-Jun-05 09:25 by hqluong

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

3845_East uptime is 6 days, 8 minutes

System returned to ROM by reload at 00:19:57 UTC Fri Jul 1 2005

System image file is "flash:c3845-ipvoice-mz.124-2.10"

Cisco 3845 (revision 1.0) with 224256K/37888K bytes of memory.

Processor board ID FHK0847F13F

2 Gigabit Ethernet interfaces

24 Serial interfaces

1 Channelized T1/PRI port

2 Voice FXS interfaces

DRAM configuration is 64 bits wide with parity enabled.

479K bytes of NVRAM.

62592K bytes of ATA System CompactFlash (Read/Write)

Configuration register is 0x2102



3845_East#wr t

Building configuration...

Current configuration : 2041 bytes

```
!  
version 12.4  
service timestamps debug datetime msec  
service timestamps log datetime msec  
no service password-encryption  
!  
hostname 3845_East  
!  
boot-start-marker  
boot system flash:c3845-ipvoice-mz.124-2.10  
boot-end-marker  
!  
logging buffered 51200 warnings  
enable secret 5 $1$s2pF$7EEyO5PpjtSJxm4Rfy2wQ1  
!  
no aaa new-model  
!  
resource policy  
!  
no network-clock-participate slot 1  
ip subnet-zero  
ip cef  
!  
!
```



```
!  
!  
ip domain name yourdomain.com  
isdn switch-type primary-qsig  
voice-card 0  
dspfarm  
!  
voice-card 1  
dspfarm  
!  
!  
!  
username deepa  
!  
!  
controller T1 1/0/0  
framing esf  
linecode b8zs  
cablelength short 133  
pri-group timeslots 1-24  
description ECN-11  
!  
!  
!  
interface GigabitEthernet0/0  
description $ETH-LAN$$ETH-SW-LAUNCH$$INTF-INFO-GE 0/0$  
ip address 10.10.10.1 255.255.255.248  
shutdown  
duplex auto
```



```
speed auto
media-type rj45
negotiation auto
!
interface GigabitEthernet0/1
ip address 172.20.4.109 255.255.255.0
duplex auto
speed auto
media-type rj45
negotiation auto
!
interface Serial1/0/0:23
description D-channel for ECN-11
no ip address
no logging event link-status
isdn switch-type primary-qsig
isdn overlap-receiving
isdn protocol-emulate network
isdn incoming-voice voice
isdn supp-service name calling
isdn T310 120000
isdn sending-complete
no cdp enable
!
ip classless
!
ip http server
ip http authentication local
!
```



```
!  
!  
!  
control-plane  
!  
!  
!  
voice-port 0/0/0  
!  
voice-port 0/0/1  
!  
voice-port 1/0/0:23  
description voice port for ECN-11  
!  
!  
!  
!  
!  
dial-peer voice 323 voip  
destination-pattern 2...  
session target ipv4:172.20.4.111  
!  
dial-peer voice 10023 pots  
destination-pattern 5...  
direct-inward-dial  
port 1/0/0:23  
forward-digits all  
!  
dial-peer voice 5050 pots
```



```
destination-pattern 5050
```

```
direct-inward-dial
```

```
port 1/0/0:23
```

```
forward-digits all
```

```
!
```

```
!
```

```
line con 0
```

```
stopbits 1
```

```
line aux 0
```

```
stopbits 1
```

```
line vty 0 4
```

```
privilege level 15
```

```
login local
```

```
transport input telnet
```

```
line vty 5 15
```

```
privilege level 15
```

```
login local
```

```
transport input telnet
```

```
!
```

```
scheduler allocate 20000 1000
```

```
!
```

```
end
```

```
3845_East#
```

```
3845_East#
```

```
3845_East#sho isdn stat
```

```
Global ISDN Switchtype = primary-qsig
```

```
ISDN Serial1/0/0:23 interface
```



***** Network side configuration *****

dsl 0, interface ISDN Switchtype = primary-qsig

**** Master side configuration ****

Layer 1 Status:

ACTIVE

Layer 2 Status:

TEI = 0, Ces = 1, SAPI = 0, State = MULTIPLE_FRAME_ESTABLISHED

Layer 3 Status:

0 Active Layer 3 Call(s)

Active dsl 0 CCBs = 0

The Free Channel Mask: 0x807FFFFF

Number of L2 Discards = 0, L2 Session ID = 106

Total Allocated ISDN CCBs = 0

3845_East#



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