



Nortel Meridian Option 11, Releases 21 and 25.15 to Cisco IOS Voice Gateway using E1 NET5 with H.323

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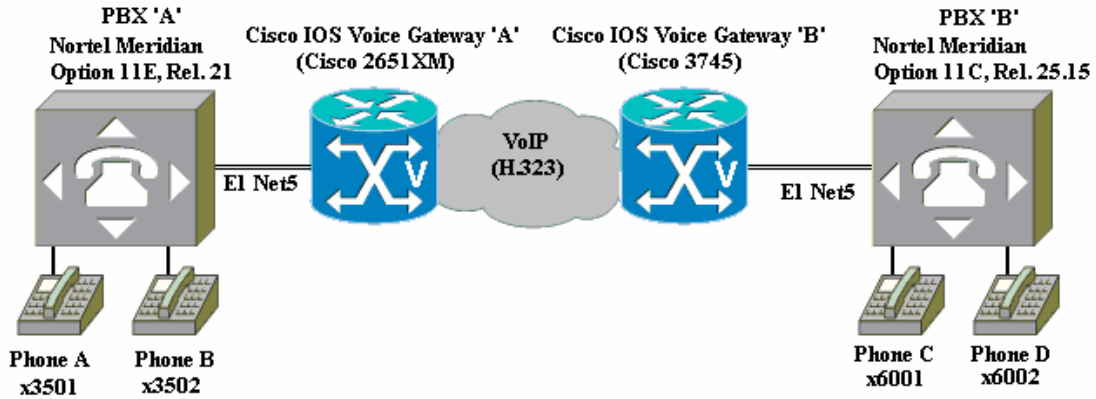
Introduction

- 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 Meridian Option 11 PBXs. The PBXs are connected to the Cisco IOS voice gateways by E1 Net5 trunk circuits. The Cisco IOS voice gateways “extend” the E1 Net5 trunk circuits with VoIP, using the H.323 protocol.
- Two Nortel Meridian Option 11 PBXs were connected via E1 NET5 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 NET5 services such as calling number, called (connected) number, 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 limitations on Caller ID (calling/connected number) features during transfer, forward, hold and conference scenarios. These limitations are detailed in the following sections and all were found to be inherent to the Nortel PBXs. Thus, H.323 toll bypass introduced no new restrictions to the available features or performance.



Network Topology

Figure 1. Network Topology or Test Setup



Hardware Requirements

- (2) Cisco IOS voice gateways with E1 VWICs (voice/WAN interface cards)
- (2) Nortel Meridian Option 11 PBXs
- (4) Nortel digital station telephones

Software Requirements

- Nortel Meridian Option 11E, Release 21
- Nortel Meridian Option 11C, Release 25.15
- Cisco IOS voice gateways: Cisco IOS Release Version 12.3(7)T or later.



Features

Features Supported

- Basic Call (ENBLOC and Overlap)
- Calling Number
- Connected Number
- 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

Features Not Supported

- Calling/Called/Connected Name
- MWI



Limitations

- The EURO package (261) must be installed on the Nortel PBXs to support E1 Net5.
- CALLING/CALLED/CONNECTED NAME are not supported over the E1 Net5 trunks. This is inherent to the PBXs and also occurs with the PBXs connected directly via an E1 NET5 trunk.
- CONNECTED NUMBER was supported in lieu of CALLED (ALERTING) NUMBER. This is inherent to the PBXs and also occurs with the PBXs connected directly via an E1 NET5 trunk.
- On Supervised Transfers, the CONNECTED NUMBER is not displayed on the originating phone after the transfer is complete. Rather, the originating phone continues to display the transferring phone's number or the trunk number as defined in the originating phone's PBX. This is inherent to the PBXs and also occurs with the PBXs connected directly via an E1 NET5 trunk.
- On Supervised Network/External Transfers (e.g., Phone C calls Phone A, and Phone A transfers to Phone D), the original CALLING NUMBER is not displayed on the final destination phone. Rather, the transferring phone number is displayed. This is inherent to the PBXs and also occurs with the PBXs connected directly via an E1 NET5 trunk.
- On Supervised Local Transfers (e.g., Phone C calls Phone A, and Phone A transfers to Phone B), the original CALLING NUMBER is 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 an E1 NET5 trunk.
- On Conference Calls, the CONNECTED NUMBER is not updated on the original calling phone when a conferee drops out. Either the conferencing/dropping phone's number or the trunk number as defined in the originating phone's PBX is displayed. This is inherent to the PBXs and also occurs with the PBXs connected directly via an E1 NET5 trunk.
- On Conference Calls, the CALLING NUMBER is generally not passed to the remaining conferee when the conferencing phone drops out. The only exceptions are conference calls accomplished by a network/external call followed by a local conference from the destination of the original call (e.g., Phone C calls Phone A, and Phone A conferences in Phone B, and then Phone A drops out). In remaining cases when the destination of the original call is the conferencing/dropping phone (e.g., Phone C calls Phone A, Phone A conferences in Phone D, and then Phone A drops), the conferencing/dropping phone's number (A in this example) is displayed. In other cases, the trunk number as defined in the remaining conferee's PBX is displayed. This is inherent to the PBXs and also occurs with the PBXs connected directly via an E1 NET5 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).
- On Network/External Call Forwards (e.g., Phone A calls Phone B, which forwards to Phone C), the forwarding CALLED NAME and NUMBER is not passed to the final destination. The forwarding CALLED NAME and NUMBER are passed to the final destination for locally forwarded calls (e.g., Phone C calls Phone B, which forwards to Phone A). This is inherent to the PBXs and also occurs with the PBXs connected directly via an E1 NET5 trunk.
- 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 an E1 NET5 trunk.
- MWI was not tested, as Net5 does not support MWI.



Configuration

Configuring the Nortel Meridian Option 11E, Release 21 PBX 'A'

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  
MARP NOT ACTIVATED
```

```
REQ PRT  
TYPE CEQU
```

```
CEQU  
MPED 8D  
SUPL 000 004 008 012  
    016 032 036 040  
    048  
DDCS 09  
DTCS  
XCT 000  
CONF 029 030 031
```

```
DLOP NUM DCH FRM LCMT YALM TRSH  
PRI 006 23 ESF B8S FDL 15  
PRI2 05  
APVL  
DTI2  
MISP  
MTYP 384K
```

```
REQ
```



DIGITAL DATA BLOCK CONFIGURATION

>LD 73
DDB000
UDATA: 066688 0 PDATA: 087360 2
DISK RECS AVAIL: 512

REQ PRT
TYPE PRI2
FEAT LPTI
LOOP 5
MFF CRC
ACRC NO
ALRM REG
RAIE NO
G1OS YES
SLP 255 24 H 255 1 H
BPV 128 122
CRC 255 20
FAP 28 1
RATS 10
GP2 20 100 S 12 S 12 S 4 S
MNG1 15 M
NCG1 15 M
OSG1 15 M
MNG2 15 S
NCG2 15 S
OSG2 15 S
PERS 50
CLRS 50
OOSC 5

UDATA: 066688 0 PDATA: 087360 2
DISK RECS AVAIL: 512



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

```
>LD 22  
PT2000
```

```
REQ PRT
```

```
TYPE ADAN DCH 5
```

```
ADAN DCH 5  
CTYP MSDL  
CARD 05  
PORT 1  
DES EURO  
USR PRI  
DCHL 5  
OTBF 32  
PARM RS422 DTE  
DRAT 64KC  
CLOK EXT  
NASA NO  
IFC EURO  
CNTY ETSI  
SIDE NET  
CNEG 1  
RLS ID **  
RCAP  
MBGA NO  
OVLN YES  
DIDD 0  
OVLS YES  
OVLN 0  
T310 30  
T200 3  
T203 10  
N200 3  
N201 260  
K 7
```



ROUTE DATA BLOCK CONFIGURATION

>LD 21
PT1000

REQ: PRT
TYPE: RDB
CUST 0
ROUT 105

TYPE RDB
CUST 00
DMOD
ROUT 105
TKTP TIE
ESN NO
RPA NO
CNVT NO
SAT NO
RCLS EXT
DTRK YES
BRIP NO
DGTP PRI2
ISDN YES
MODE PRA
IFC EURO
CNTY ETSI
SBN NO
PNI 00000
NCNA NO
NCRD NO
CTYP UKWN
INAC NO
ISAR NO
TGAR 0
PTYD DTT
AUTO NO
DNIS NO
DCDR NO
ICOG IAO
SRCH RRB
TRMB YES
STEP
ACOD 705
TCPP NO
TARG
BILN NO
OABS
INST
IDC NO
DCNO 0 *
NDNO 0
DEXT NO
SIGO STD



TIMR ICF 1920
 OGF 1920
 EOD 13952
 LCT 256
 NRD 10112
 DDL 70
 ODT 4096
 RGV 640
 GTO 896
 GTI 896
 SFB 3
 PRPS 800
 NBS 2048
 NBL 4096
 NRAG 30
 IENB 5
 TFD 0
 VSS 0
 VGD 6
 DTD NO
 SCDT NO
 2 DT NO
 DRNG NO
 CDR NO
 NATL YES
 SSL
 CFWR NO
 IDOP NO
 VRAT NO
 MUS NO
 PANS YES
 EQAR 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
 PLEV 2
 ALRM NO
 ART 0
 PECL NO
 DCTI 0
 TIDY 705 105
 SGRP 0

 TRUNK DATA BLOCK CONFIGURATION



>LD 20

PT0000
MARP NOT ACTIVATED

REQ: PRT
TYPE: TNP
SCH0099 TNP?
TYPE: TNB
TN 5 1
DATE
PAGE
DES

TN 005 01
TYPE TIE
CDEN SD
CUST 0
TRK PRI2
PDCA 1
PCML A
NCOS 0
RTMB 105 1
B-CHANNEL SIGNALING
TGAR 0
CLS UNR DTN WTA LPR APN XREP
P10 VNL
TKID
DATE 7 APR 1993



DIGITAL STATION CONFIGURATION

>LD 11
SL1000
MARP NOT ACTIVATED

UDATA: 066688 0 PDATA: 087360 2
DISK RECS AVAIL: 512

TNS AVAIL: 287 USED: 113 TOT: 400
ACD AGENTS AVAIL: 10 USED: 0 TOT: 10
AST SET AVAIL: 100 USED: 0 TOT: 100

REQ: PRT
TYPE: 2615
SCH0099 2615?
TYPE: 2616

MARP NOT ACTIVATED

TN 001 0 0 0
DATE
PAGE
DES

DES TEST1
TN 001 0 00 00
TYPE 2616
CDEN 8D
CUST 0
AOM 0
FDN
TGAR 0
LDN NO
NCOS 0
SGRP 0
RNPG 0
SCI 0
SSU
LNRS 16
XLST
SCPW
CLS CTD FBD WTA LPR MTD FND HTD ADD HFA
MWA AAD IMD XHD IRD NID OLD VCE DRG1
POD DSX VMD CMSD CCSD SWD LNA CNDA
CFTA SFD MRD PDN DDV CNIA
ICDD CDMD MCTD CLBD AUTU
GPUD DPUD DNDA CFXA ARHD CLTD ASCD
ABDD CFHD FICD NAID
UDI HBTB AHD DDGA NAMA MIND PRSD NRWD NRCD NROD
EXR0
USRD ULAD OCBP
CPND_LANG ENG
RCO 0
EFD



HUNT
EHT
PLEV 02
AST
IAPG 0
ITNA NO
DGRP
DNDR 0
KEY 00 SCR 3501 MARP
CPND
NAME BIG BIRD
XPLN 8
DISPLAY_FMT FIRST, LAST
01
02
03 CFW 16 3502
04 AO6
05 TRN
06 DSP
07
08 ADL 16
09 ADL 16
10 ADL 16
11 ADL 16
12 ADL 16
13 ADL 16
14 ADL 16
15
DATE 1 APR 1993

PBX SOFTWARE RELEASE

>LD 22
PT2000
MARP NOT ACTIVATED

REQ ISS

VERSION 1411
RELEASE 21
ISSUE 54



PACKAGES INSTALLED

REQ	PRT
TYPE	PKG
OPTF	1
CUST	2
CDR	4
CTY	5
RAN	7
TAD	8
DNDI	9
EES	10
INTR	11
BRTE	14
DNDG	16
MSB	17
SS25	18
DDSP	19
ODAS	20
DI	21
DISA	22
CHG	23
CAB	24
BAUT	25
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
ACDD	50
LNK	51
FCA	52
SR	53
AA	54
HIST	55
AOP	56
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
SCI	80
CCOS	81
RSDB	82
CDRQ	83
TENS	86
DSET	88
LNR	90
PXLT	92
CPND	95
DNIS	98
BGD	99
RMS	100
MR	101
AWU	102
PMSI	103
MCT	107
ICDR	108
APL	109
TVS	110
TOF	111
IDC	113
AUXS	114
DCP	115
PAGT	116
CCDR	118
EMUS	119
PLDN	120
COMDT	122
IDA	122
DPNSS	123
DASS2	124
FTC	125
BKI	127
DTI2	129
SUPP	131
TBAR	132
ENS	133
AFNA	134
LSCM	137
DTD	138
FFC	139
DCON	140
MPO	141
ABCD	144



ISDN	145
PRA	146
ISL	147
NTWK	148
DNXP	150
CDRE	151
IAP3P	153
PRI2	154
ACNT	155
NAS	159
FNP	160
ISDN INTL SUP	161
SAR	162
MINT	163
LAPW	164
COOP	169
ARIE	170
CPGS	172
ECCS	173
AAA	174
NMS	175
EOVF	178
HVS	179
DKS	180
SACP	181
VNS	183
OVLP	184
EDRG	185
RPA	187
UK	190
SECL	191
ORC-RVQ	192
RCK	193
AINS	200
IPRA	202
XPE	203
XCT0	204
XCT1	205
NACD	207
HSE	208
MLM	209
MAID	210
VAWU	212
EAR	214
ECT	215
BRI	216
IVR	218
MSDL	222
CWNT	225
SSAU	229
DNWK	231
FCDR	234
BRIL	235
ACRL	236
MCMO	240
ALRM_FILTER	243
CALL ID	247
DPNA	250
SCDR	251



ARFW	253
PHTN	254
ADMINSET	256
ATX	258
CDRX	259
EURO	261¹
SAMM	262
QSIG	263
UIGW	283
DPNSS189I	284
DPNSS_ES	288
ADSP	289
MQA	297
CPP	301
TATO	312

¹ It is important to note that the EURO package is required to enable Net5.



Configuring the Nortel Meridian Option 11C, Release 25.15 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  
MARP NOT ACTIVATED
```

```
REQ PRT  
TYPE CEQU
```

```
CEQU
```

```
MPED 8D  
SUPL 000 004 008 012  
      016 032 036 040  
      044 048 064 068  
      072  
DDCS 04  
DTCS  
XCT 000  
CONF 029 030 031 062  
      094 095
```

```
DLOP NUM DCH FRM LCMT YALM T1TE TRSH  
PRI 007 24 ESF B8S FDL - 00  
     008 24 ESF B8S FDL - 00  
PRI2 03 05 06  
APVL  
DTI2  
MISP 002
```



DIGITAL DATA BLOCK CONFIGURATION

```
>LD 73
DDB000
MEM AVAIL: (U/P): 1251497    USED U P: 99110 42032    TOT: 1392639
DISK RECS AVAIL: 458
REQ  PRT
TYPE PRI2
FEAT LPTI
LOOP 3
MFF      CRC
ACRC     NO
ALRM     REG
RAIE     NO
GLOS     YES
SLP      5      24 H      30      1 H
BPV     128     255
CRC     255     20
FAP     28      1
RATS    10
GP2     20     100 S     12 S     12 S     4 S
MNG1    15 M
NCG1    15 M
OSG1    15 M
MNG2    15 S
NCG2    15 S
OSG2    15 S
PERS    50
CLRS    50
OOSC    5
```

```
MEM AVAIL: (U/P): 1251497    USED U P: 99110 42032    TOT: 1392639
DISK RECS AVAIL: 458
REQ
```



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

```
>LD 22  
REQ PRT  
TYPE ADAN DCH 3
```

```
ADAN      DCH 3  
  CTYP MSDL  
  CARD 03  
  PORT 1  
  DES e1_euro  
  USR PRI  
  DCHL 3  
  OTBF 32  
  PARM RS422 DTE  
  DRAT 64KC  
  CLOK EXT  
  IFC EURO  
  CNTY ETSI  
  ISDN_MCNT 300  
  CLID OPT1  
  PROG NCHG  
  CO_TYPE STD  
  SIDE USR  
  CNEG 1  
  RLS ID **  
  RCAP COLP  
  MBGA NO  
  OVLN YES  
  DIDD 0  
  OVLS YES  
  OVLT 0  
  T310 120  
  INC_T306 120  
  OUT_T306 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 103

ROUT 103
DES E1_EURO
TKTP TIE
NPID_TBL_NUM 0
ESN NO
RPA NO
CNVT NO
SAT NO
RCLS EXT
DTRK YES
BRIP NO
DGTP PRI2
ISDN YES
MODE PRA
IFC EURO
CNTY ETSI
SBN NO
PNI 00000
NCNA NO
NCRD NO
CTYP UKWN
INAC NO
ISAR NO
CPFXS YES
DAPC NO
INTC NO

DSEL VOD
PTYP DTT
AUTO NO
DNIS NO
DCDR NO
ICOG IAO
SRCH RRB
TRMB YES
STEP
ACOD 503
TCPP NO
TARG 01
BILN NO
OABS
INST
SIGO STD



MFC NO
ICIS YES
OGIS YES
TIMR ICF 1920
OGF 1920
EOD 13952
LCT 256
NRD 10112
DDL 70
ODT 4096
RGV 640
GTO 896
GTI 896
SFB 3
PRPS 800
NBS 2048
NBL 4096
IENB 5
TFD 0
VSS 0
VGD 6
DTD NO
SCDT NO
2 DT NO
DRNG NO
CDR NO
NATL YES
SSL
CFWR NO
IDOP NO
VRAT NO
MUS NO
PANS YES
OHQ NO
OHQT 00
CBQ NO
AUTH NO
TTBL 0
PLEV 2
OPR NO
ALRM NO
ART 0
PECL NO
DCTI 0
TIDY 503 103
SGRP 0
AACR NO



TRUNK DATA BLOCK CONFIGURATION

>LD 20

PT0000
MARP NOT ACTIVATED

REQ: PRT
TYPE: TNB
TN 3 1
DATE
TIM000 21:48 10/8/2005 CPU 0

PAGE
DES

TN 003 01
TYPE TIE
CDEN SD
CUST 0
TRK PRI2
PDCA 1
PCML A
NCOS 0
RTMB 103 1
B-CHANNEL SIGNALING
TGAR 1
AST NO
IAPG 0
CLS UNR DTN CND WTA LPR APN THFD XREP BARD
P10 VNL
TKID
DATE 4 AUG 2005



DIGITAL STATION PHONE CONFIGURATION

>LD 11
SL1000
MARP NOT ACTIVATED

MEM AVAIL: (U/P): 1251497 USED U P: 99110 42032 TOT: 1392639
DISK RECS AVAIL: 458
TNS AVAIL: 2290 USED: 210 TOT: 2500
ACD AGENTS AVAIL: 10 USED: 0 TOT: 10
AST AVAIL: 1000 USED: 0 TOT: 1000
DATA PORTS AVAIL: 2500 USED: 0 TOT: 2500
DIGITAL TELEPHONES AVAIL: 44 USED: 4 TOT: 48
INTERNET TELEPHONES AVAIL: 0 USED: 0 TOT: 0

REQ: PRT
TYPE: 2616
SCH0099 2615?
TYPE: 2616

MARP NOT ACTIVATED

TN 001 0 0 0
DATE
PAGE
DES

DES TEST1
TN 001 0 00 00
TYPE 2616
CDEN 8D
CUST 0
AOM 0
FDN
TGAR 0
LDN NO
NCOS 0
SGRP 0
RNPG 0
SCI 0
SSU
XLST
SFLT NO
CAC_MFC 0

CLS CTD FBA WTA LPR MTD FNA HTD ADD HFD
MWA LMPN RMMD SMWD AAD IMD XHD IRD NID OLD VCE DRG1
POD DSX VMD CMSD CCSD SWD LND CNDA
CFTD SFD MRD DDV CNID CDCA MSID DAPA BFED RCB
ICDD CDMD MCTD CLBD AUTU
GPUD DPUD DNDA CFXA ARHD CLTD ASCD
ABDD CFHD FICD NAID BUZZ AGRD MOAD



```

UDI RCC HBTB AHD IPND DDGA NAMA MIND PRSD NRWD NRCB NROD
DRDD EXR0
USRD ULAD RTDD RBDD RBHD PGND FLXD FTTC DNDY DNO3 MCBN
CPND_LANG ENG
RCO 0
HUNT
PLEV 02
AST
IAPG 0
AACS NO
ITNA NO
DGRP
MLWU_LANG 0
DNDR 0
KEY 00 SCR 6001 0 MARP
      CPND
          CPND_LANG ROMAN
          NAME BIG BIRD
          XPLN 13
          DISPLAY_FMT FIRST, LAST
01 SCR 6011 0 MARP
02 MIK
03 CFW 12 7002
04 AO6
05 TRN
06 DSP
07
08 ADL 16
09 ADL 16
10 ADL 16
11 ADL 16
12 ADL 16
13 ADL 16
14 RGA
15 MCK
DATE 3 DEC 2004

```

```

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

```

```

>LD 22
PT2000
MARP NOT ACTIVATED

```

```

REQ ISS

VERSION 2111
RELEASE 25
ISSUE 15 +
PSWV VERSION: PSWV 33

```




PACKAGES INSTALLED

>LD 22
PT2000
MARP NOT ACTIVATED

REQ	PRT
TYPE	PKG
OPTF	1
CUST	2
CDR	4
CTY	5
RAN	7
TAD	8
DNDI	9
EES	10
INTR	11
BRTE	14
DNDG	16
MSB	17
SS25	18
DDSP	19
ODAS	20
DI	21
DISA	22
CHG	23
CAB	24
BAUT	25
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
ACDD	50
LNK	51
FCA	52
SR	53
AA	54
HIST	55
AOP	56
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
OPAO	104
MCT	107
ICDR	108
APL	109
TVS	110
TOF	111
IDC	113
AUXS	114
DCP	115
PAGT	116
CCDR	118



EMUS	119
PLDN	120
COMDT	122
IDA	122
DPNSS	123
DASS2	124
FTC	125
BKI	127
MFC	128
DTI2	129
SUPP	131
TBAR	132
ENS	133
AFNA	134
LSCM	137
DTD	138
FFC	139
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² It is important to note that the EURO package is required to enable Net5.



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REQ
TIM000 22:00 10/8/2005 CPU 0



Configuring the Cisco IOS Voice Gateway 'A' (Cisco 2651XM)

```
2651XM_West#sho ver
Cisco IOS Software, C2600 Software (C2600-ADVENTERPRISEK9-M), Version 12.3(7)T,
RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2004 by Cisco Systems, Inc.
Compiled Sat 21-Feb-04 14:41 by eaarmas
```

```
ROM: System Bootstrap, Version 12.2(8r) [cmong 8r], RELEASE SOFTWARE (fc1)
```

```
2651XM_West uptime is 6 days, 20 hours, 11 minutes
System returned to ROM by reload
System image file is "flash:c2600-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.

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<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 2651XM (MPC860P) processor (revision 0x300) with 124928K/6144K bytes of me
mory.
```

```
Processor board ID JAE0817EK5Z (1672255744)
M860 processor: part number 5, mask 2
2 FastEthernet interfaces
31 Serial interfaces
2 Channelized E1/PRI ports
32K bytes of NVRAM.
49152K bytes of processor board System flash (Read/Write)
```

```
Configuration register is 0x2102
```

```
2651XM_West#sho run
Building configuration...
```

```
Current configuration : 1825 bytes
!
version 12.3
service timestamps debug datetime msec
service timestamps log datetime msec
```




```
no crypto isakmp enable
!
!
!
!
interface FastEthernet0/0
 ip address 172.20.4.7 255.255.255.0
 duplex auto
 speed auto
!
interface FastEthernet0/1
 no ip address
 shutdown
 duplex auto
 speed auto
!
interface Serial1/0:15
 description D-channel for ECN-4
 no ip address
 no logging event link-status
 isdn switch-type primary-net5
 isdn overlap-receiving
 isdn incoming-voice voice
 isdn send-alerting
 isdn bchan-number-order ascending
 isdn sending-complete
 no cdp enable
!
ip classless
ip route 0.0.0.0 0.0.0.0 FastEthernet0/0
!
ip http server
no ip http secure-server
!
!
!
!
!
control-plane
!
!
!
voice-port 1/0:15
 description voice port for ECN-4
!
!
!
!
!
dial-peer voice 323 voip
 destination-pattern 6...
 session target ipv4:172.20.4.9
!
dial-peer voice 1015 pots
```




```
destination-pattern 3...
direct-inward-dial
port 1/0:15
forward-digits all
!
dial-peer voice 519 voip
shutdown
destination-pattern 6...
session protocol sipv2
session target ipv4:172.20.4.9
supplementary-service pass-through
!
!
!
line con 0
line aux 0
line vty 0 4
exec-timeout 0 0
password cisco
login
transport input telnet
!
!
!
end
```

2651XM_West#



Configuring the Cisco IOS Voice Gateway 'B' (Cisco 3745)

```
3745_West#sho ver
Cisco IOS Software, 3700 Software (C3745-ADVENTERPRISEK9-M), Version 12.3(7)T, R
ELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2004 by Cisco Systems, Inc.
Compiled Sat 21-Feb-04 05:53 by eaarmas
```

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

```
3745_West uptime is 6 days, 20 hours, 21 minutes
System returned to ROM by reload
System image file is "flash:c3745-adventerprisek9-mz.123-7.T.bin"
```

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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 116736K/14336K bytes of memory.
Processor board ID JMX0813L0Z3
R7000 CPU at 350MHz, Implementation 39, Rev 3.3, 256KB L2, 2048KB L3 Cache
2 FastEthernet interfaces
31 Serial interfaces
4 Channelized E1/PRI ports
2 Voice FXS interfaces
DRAM configuration is 64 bits wide with parity disabled.
151K bytes of NVRAM.
31168K bytes of ATA System CompactFlash (Read/Write)
```

```
Configuration register is 0x2102
```

```
3745_West#
3745_West#sho run
Building configuration...
```

```
Current configuration : 2347 bytes
!
version 12.3
```



```
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname 3745_West
!
boot-start-marker
boot system flash
boot-end-marker
!
card type e1 1 1
logging buffered 5000000 debugging
!
no network-clock-participate slot 1
no network-clock-participate slot 2
no network-clock-participate slot 3
no network-clock-participate slot 4
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
no aaa new-model
ip subnet-zero
ip cef
!
!
!
!
no ip domain lookup
ip audit po max-events 100
no ftp-server write-enable
isdn switch-type primary-net5
voice-card 1
  dspfarm
!
!
!
voice call carrier capacity active
!
voice service voip
  h323
!
!
voice class codec 1
  codec preference 2 g711ulaw
  codec preference 3 g711alaw
!
!
!
!
!
```



```
!  
!  
!  
!  
!  
!  
controller E1 1/0  
  pri-group timeslots 1-31  
  description ECN10  
!  
controller E1 1/1  
!  
controller E1 1/2  
!  
controller E1 1/3  
!  
no crypto isakmp enable  
!  
!  
!  
!  
interface FastEthernet0/0  
  ip address 172.20.4.9 255.255.255.0  
  duplex auto  
  speed auto  
!  
interface FastEthernet0/1  
  no ip address  
  shutdown  
  duplex auto  
  speed auto  
!  
interface Serial1/0:15  
  description D-channel for ECN10  
  no ip address  
  no logging event link-status  
  isdn switch-type primary-net5  
  isdn overlap-receiving  
  isdn protocol-emulate network  
  isdn incoming-voice voice  
  isdn T310 120000  
  isdn send-alerting  
  isdn sending-complete  
  no isdn outgoing display-ie  
  no cdp enable  
!  
router eigrp 10  
  network 172.20.0.0  
  no auto-summary  
!  
ip classless  
ip route 0.0.0.0 0.0.0.0 FastEthernet0/0  
!  
ip http server
```



```
no ip http secure-server
!
!
!
!
!
!
control-plane
!
!
!
voice-port 1/0:15
  description voice port for ECN10
!
voice-port 3/0/0
!
voice-port 3/0/1
!
!
!
!
dial-peer cor custom
!
!
!
dial-peer voice 323 voip
  destination-pattern 3...
  session target ipv4:172.20.4.7
!
dial-peer voice 1015 pots
  destination-pattern 6...
  direct-inward-dial
  port 1/0:15
  forward-digits all
!
dial-peer voice 519 voip
  shutdown
  destination-pattern 3...
  session protocol sipv2
  session target ipv4:172.20.4.7
  supplementary-service pass-through
!
!
!
line con 0
line aux 0
line vty 0 4
  exec-timeout 0 0
  password cisco
  login
  transport input telnet
!
!
end
```




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