



Nortel CS1000M Release 4.0 to a Cisco IAD243X using T1-ISDN DMS-100 with SIP

January 12, 2007 Initial Version

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Introduction

This is an application note for connectivity to Nortel CS1000 Succession 4.0 PBX with Cisco IAD243X Gateway via T1 ISDN DMS100-to-SIP communication (10/100baseT).

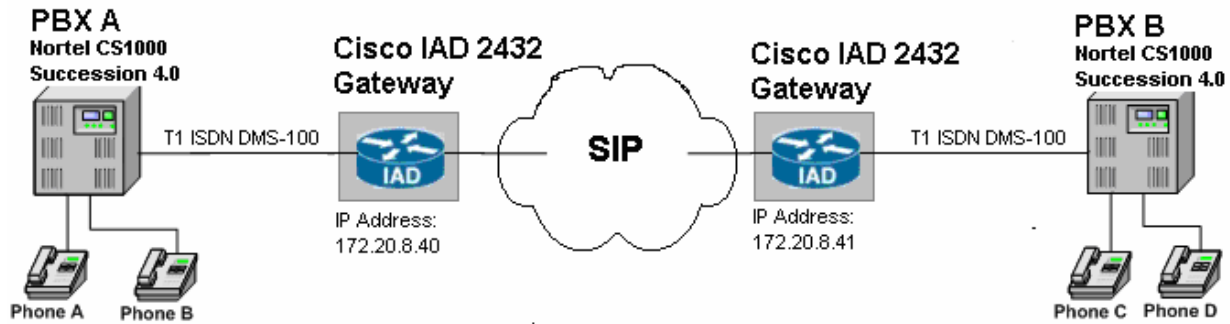
The network topology diagram (Figure 1) shows the test setup for end-to-end interoperability with the Cisco IAD243X Gateway connected to the PBX via ISDN DMS-100 (T1 PRI). IP trunk connectivity between the IAD243X's is achieved by using SIP protocol.



Network Topology

Figure 1. Network Topology

Basic Call Setup End-to-End Configuration



Limitations

Name update information via Q931 NOTIFY message is not supported, this affects Connected Name and Call Forward name update features. This issue is a Cisco IAD2432 limitation.

Calling Name restriction is not supported. This issue is a Cisco IAD2432 limitation.

When a 3-way call conference is initiated by the external calling phone to conference a local phone (e.g. Phone A calls Phone C, Phone C answers. Phone A conferences in Phone D), the call will be dropped on all phones if the external calling phone hangs-up.



Hardware Requirements

- 2 Cisco IAD2432 24FXS
- 2 Nortel CS1000M PBX
- 2 Nortel 2616 Digital phones
- 1 Cisco Catalyst switch

Software Requirements

- Nortel PBX: Succession 4.0
- Cisco IOS Release: c2430-ik9o3s-mz-124-9.T1

Features

Features Supported

- Basic end-to-end calls with CLNP and CLIP (Calling Name and Number)
- Calling Number Restricted
- Call Transfer – Local and Network/External
- Call on-hold
- Call Forward (Unconditional, Busy and No answer) – local and Network/External with Redirecting Number IE, on Call Forward All, Busy and No Answer
- 3-way Conference

Features Not Supported

- Connected Name presentation
- Calling Name Restriction
- Alerting Name presentation

Configuration

Configuring the Nortel Meridian 1 Option 11C PBX

Configure in the following sequence:

1. Configure common equipment
2. Configure the D-Channel
3. Configure the Route Data Block.
4. Configure the Trunk Data Block
5. Configure the Coordinated Dialing Plan
6. Configure the Digital Station Phone

Common Equipment Configuration

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	02	23	ESF NO	B8S		FDL	-	00
	05	23	ESF NO	B8S		FDL	-	00
	06	23	ESF NO	B8S		FDL	-	00
	07	23	ESF NO	B8S		FDL	-	00

PRI2 04
DTI2
MISP

D-channel Configuration

REQ prt
TYPE adan dch 5

ADAN DCH 5
CTYP MSDL
CARD 05
PORT 1
DES T1DMS100
USR PRI
DCHL 5
OTBF 32
PARM RS422 DTE
DRAT 64KC
CLOK EXT
IFC D100
SIDE USR
CNEG 1
RLS ID **
RCAP ND2
MBGA NO
OVLN NO
OVLS NO
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
DES T1-DMS100
TKTP DID
NPID_TBL_NUM 0
SAT NO
RCLS EXT
VTRK NO
NODE
DTRK YES
BRIP NO
DGTP PRI
ISDN YES
MODE PRA
IFC D100
SBN NO
PNI 00000
NCNA YES
NCRD NO
CHTY BCH
ISAR NO
CPUB OFF
DAPC NO
BCOT 0
DSEL VOD
PTYPR PRI
AUTO NO
DNIS NO
DCDR NO
ICOG IAO
RANX NO
SRCH LIN
TRMB YES
STEP
ACOD 505
TCPP NO
PII NO
TARG 01
CLEN 1
BILN NO
OABS
INST
ICIS YES
TIMR ICF 512
OGF 512



EOD 13952
NRD 10112
DDL 70
ODT 4096
RGV 640
FLH 510
GRD 896
SFB 3
NBS 2048
NBL 4096

IENB 5
VSS 0
VGD 6
DRNG NO
CDR NO

PAGE 002

VRAT NO
MUS NO
EQAR NO
OHQ NO
OHQT 00
TTBL 0
ATAN NO
PLEV 2
MCTS NO
ALRM NO
ART 0
SGRP 0
AACR NO



Trunk Data Block Configuration

REQ: prt
TYPE: tnb
TN 5 1
DATE
PAGE
DES

DES T1-DMS100
TN 005 01
TYPE DID
CDEN SD
CUST 0
TRK PRI
PDCA 1
PCML MU
NCOS 0
RTMB 105 1
B-CHANNEL SIGNALING
NITE
STRI/STRO OWK OWK
AST NO
IAPG 0
CLS UNR DIP WTA LPR APN THFD HKD
P10 VNL
TKID 105
AACR NO
DATE 17 OCT 2006



CDP Configuration

>ld 87
ESN000

MEM AVAIL: (U/P): 2827806 USED U P: 200312 68457 TOT: 3096575

DISK RECS AVAIL: 1152

REQ prt

CUST 0

FEAT cdp

TYPE dsc

DSC 533

DSC 533

FLEN 0

DSP LSC

RLI 6

NPA

NXX



Station Data Configuration

REQ: prt
TYPE: 2616

TN 19
DATE
PAGE
DES

DES CS101A
TN 001 0 00 09
TYPE 2616
CDEN 8D
CUST 0
AOM 0
FDN 2332
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 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 CDMR
CPND_LANG ENG
RCO 0
EFD 2332
HUNT 2332
EHT 2332
LHK 0
PLEV 02
CSDN
AST
IAPG 0
AACS NO
ITNA NO
DGRP
MLWU_LANG 0
DNDR 0
KEY 00 SCR 2333 0 MARP
CPND
NAME ZEUS_2333
XPLN 9
DISPLAY_FMT FIRST, LAST
01



02
03 CFW 4 2332
04 AO6
05 TRN
06
07
08
09
10
11
12
13
14
15 RGA

Configuring the Cisco IAD2432 24FXS

```
IAD_cs102#sh run
Building configuration...
```

```
Current configuration : 2342 bytes
!
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname IAD_cs102
!
boot-start-marker
boot system flash:c2430-ik9o3s-mz-124-9.T1.bin
boot-end-marker
!
card type t1 1
```



```
logging buffered 10000000 debugging
no logging console
enable secret 5 $1$39sy$WJXNyjgXw.0HypvItDAMD/
!
no aaa new-model
!
resource policy
!
network-clock-participate T1 1/0
network-clock-participate T1 1/1
network-clock-select 1 T1 1/0
!
!
no ip domain lookup
!
!
!
isdn switch-type primary-qsig
isdn gateway-max-interworking
!
voice-card 0
!
!
!
!
!
voice service voip
  notify redirect ip2pots
!
!
!
!
!
controller T1 1/0
  framing esf
  linecode b8zs
  pri-group timeslots 1-24
!
controller T1 1/1
  framing esf
  linecode b8zs
!
!
!
interface FastEthernet0/0
  ip address 172.20.8.41 255.255.255.0
  duplex auto
  speed auto
!
interface FastEthernet0/1
  no ip address
  shutdown
  duplex auto
  speed auto
!
interface Serial1/0:23
  no ip address
  encapsulation hdlc
  isdn switch-type primary-dms100
```



```
isdn protocol-emulate network
isdn incoming-voice voice
isdn send-alerting
isdn channel-id invert extend-bit
no cdp enable
!
ip default-gateway 172.20.8.1
ip http server
no ip http secure-server
!
ip route 0.0.0.0 0.0.0.0 172.20.8.1
!
!
!
!
control-plane
!
!
!
voice-port 1/0:23
!
voice-port 2/0
!
voice-port 2/1
!
voice-port 2/2
!
voice-port 2/3
!
voice-port 2/4
!
voice-port 2/5
!
voice-port 2/6
!
voice-port 2/7
!
voice-port 2/8
!
voice-port 2/9
!
voice-port 2/10
!
voice-port 2/11
!
voice-port 2/12
!
voice-port 2/13
!
voice-port 2/14
!
voice-port 2/15
!
voice-port 2/16
!
voice-port 2/17
!
voice-port 2/18
```



```
!  
voice-port 2/19  
!  
voice-port 2/20  
!  
voice-port 2/21  
!  
voice-port 2/22  
!  
voice-port 2/23  
!  
!  
!  
!  
dial-peer voice 2330 voip  
destination-pattern 2...  
session protocol sipv2  
session target ipv4:172.20.8.40  
dtmf-relay rtp-nte  
supplementary-service pass-through  
!  
dial-peer voice 5330 pots  
destination-pattern 5...  
supplementary-service pass-through  
direct-inward-dial  
port 1/0:23  
forward-digits all  
!  
dial-peer voice 4000 pots  
destination-pattern 4...  
supplementary-service pass-through  
direct-inward-dial  
port 1/0:23  
forward-digits all  
!  
!  
!  
!  
line con 0  
password cisco  
login  
line aux 0  
line vty 0 4  
exec-timeout 0 0  
password cisco  
login  
!  
end
```

IAD_cs102#



Acronyms

Acronym	Definitions
IAD	Integrated Access Device
SIP	Session Initiation Protocol



Important Information

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Printed in the USA