



# Cisco Unified CallManager Release 4.1(3) - PBX Interoperability: Nortel Succession 1000 Release 4.0 to a Cisco 2851 Using T1 PRI DMS-100 with MGCP

## Table of Contents

Introduction .....	1
Network Topology.....	2
Limitations.....	2
System Components .....	3
Hardware Requirements .....	3
Software Requirements .....	3
Features .....	5
Features not Supported .....	5
Configuration.....	5
Configuration Menus and Commands .....	5
Acronyms .....	42

## Introduction

This is an application note for interoperability connectivity of Nortel Communication Server 1000 (formerly known as Succession 1000) PBX with Cisco Unified CallManager Release 4.1(3) using a Cisco 2851 MGCP Gateway configured with T1 PRI DMS-100 switch-type.

The network topology diagram (Figure 1) shows the test setup for end-to-end interoperability between the Nortel CS1000 PBX and Cisco Unified CallManager using ISDN PRI DMS-100 switch-type protocol.

Cisco Unified CallManager must be configured as ISDN network-side signaling since Nortel CS1000 PBX only allows for ISDN user-side signaling for PRI DMS-100 switch-type protocol.

Basic calls worked fine in both directions with calling/connected name feature. Both Cisco Unified CallManager and Nortel use the DISPLAY IE with the ISDN signaling messages to pass the phone's name information across to each other. Ensure that the following boxes are checked:

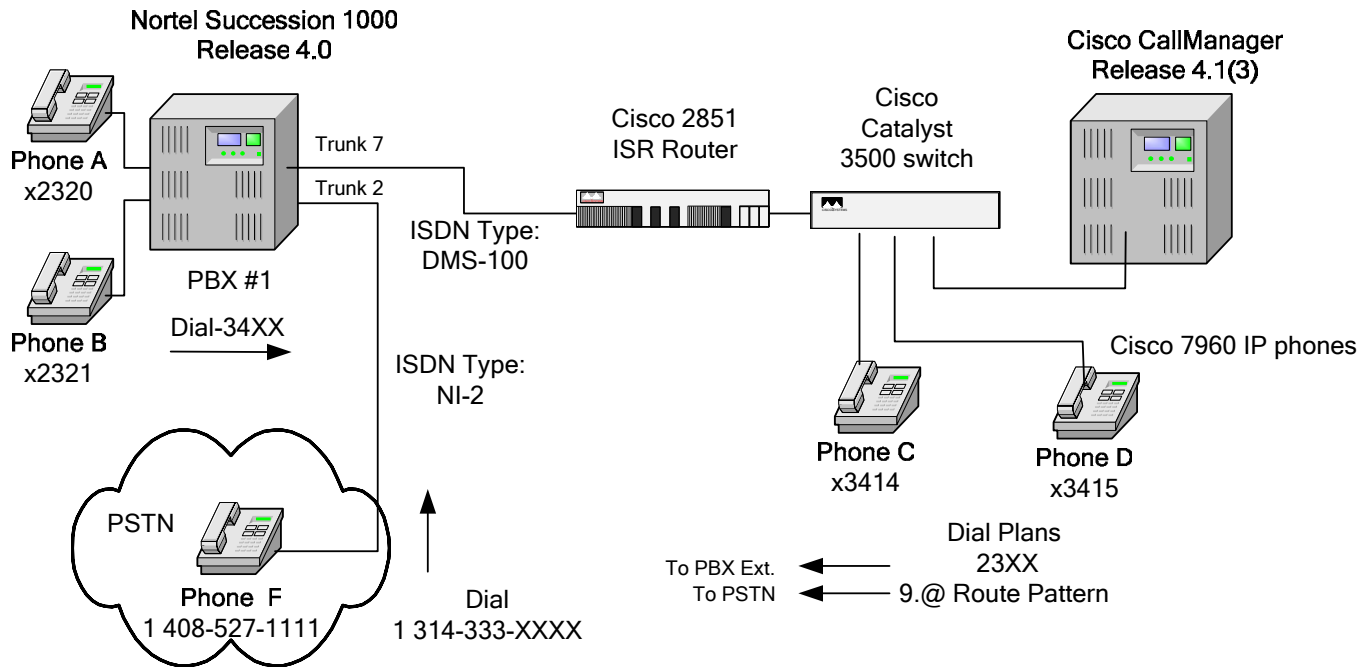
- Display IE Delivery
- Send Extra Leading Character In DisplayIE
- MCDN Channel Number Extension Bit Set to Zero



## Network Topology

Figure 1. Network Topology

### Basic Call Setup End-to-End Configuration



## Limitations

Both Cisco Unified CallManager and Nortel PBX support the passing of calling/called party name information across to each other. However, Nortel does not send out additional ISDN Notify message to update the display information once the call have entered the Connected state. Therefore, for call scenarios such as Call Transfer and Call Forward, called name information does not get updated on the originating side after the call-transfer/call-forward is completed when if Nortel PBX is the transferring/forwarding node.

Cisco Unified CallManager support the passing of the Connected Number IE within the ISDN Notify message during the Alerting or Connected state of the call, however, Nortel PBX doesn't support this feature. This is an optional information element for DMS-100 switch-type protocol.

For CLIR and CNIR features, both Cisco Unified CallManager and Nortel PBX just omit the sending of the Display IE information completed from the ISDN signaling messages. The reason is that the Display IE field doesn't have any Presentation Bit indicator value associated with it.

Cisco Unified CallManager must have the following boxes checked from the Gateway Configuration web page:

Display IE Delivery

Send Extra Leading Character In DisplayIE

MCDN Channel Number Extension Bit Set to Zero



The Nortel Meridian Opt11C supports “User” side only when switch type is set to DMS-100 but will support both User-side and Network-side when switch type is set to S100. Therefore, the Cisco Unified CallManager should be configured as ISDN network-side signaling and ISDN user-side signaling for Nortel when ISDN PRI DMS-100 switch-type is used.

Cisco Unified CallManager does not support ISDN Overlapping Sending/Receiving feature with DMS-100 switch-type protocol.

## System Components

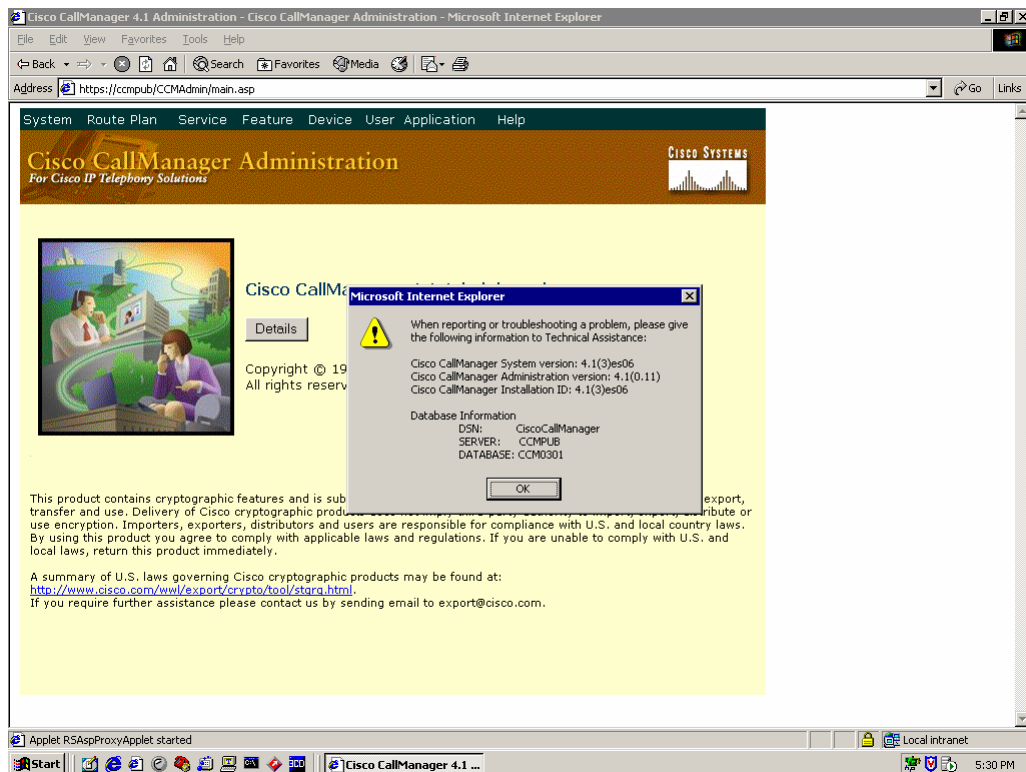
### Hardware Requirements

Cisco Unified CallManager MCS server, Cisco 2851 ISR router and Cisco 7960 IP phones

Nortel Communication System 1000 (which includes Call Server, Signaling Server and Media gateway) and Nortel’s 2616 digital phones

### Software Requirements

Cisco Unified CallManager Release 4.1(3)





Nortel Succession 4.0 Release

>ld 22  
PT2000

REQ iss

CALL SERVER/MAIN CAB  
VERSION 2121  
RELEASE 4  
ISSUE 00 T +  
IDLE\_SET\_DISPLAY NORTEL

Cisco IOS Software for 2851 ISR Router: c2800nm-ipvoicek9-mz.124-1a.bin



## Features

CLIP-Calling Line (Number) Identification Presentation (Please see the Limitation section)

CLIR-Calling Line (Number) Identification Restriction (Please see the Limitation section)

CNIP-Calling Name Identification Presentation (Please see the Limitation section)

CNIR-Calling Name Identification Restriction (Please see the Limitation section)

Alerting Name

## Features not Supported

COLP-Connected Line (Number) Identification Presentation (Please see the Limitation section)

COLR- Connected Line (Number) Identification Restriction

CONP-Connected Name Identification Presentation (Please see the Limitation section)

CONR-Connected Name Identification Presentation

MWI- Message Waiting Indication (lamp ON, lamp OFF) across the T1 PRI DMS-100 Trunk

## Configuration

### Nortel Communication Server 1000 PBX Configuration Sequence and Tasks

#### Call Server Setup via SSC Card Console

1. LD 17 – Configure the Common Equipment (CEQU) on the Call Server
2. LD 17 – Configure the D-channel signaling for T1 PRI and PSTN PRI
3. LD 16 – Configure the Route Data Block for the T1 PRI and PSTN PRI
4. LD 14 – Configure the Trunks Data Block for the PRI and PSTN PRI
5. LD 86 – Configure the Route List Block for the T1 PRI and PSTN PRI
6. LD 87 – Configure CDP steering codes
7. LD 90 – Configure AC1 for Tandem Trunk calls
8. LD 11 – Configure the Nortel 2616 digital phones

#### Cisco Unified CallManager Setup

1. Add an MGCP gateway for the Cisco 2851 ISR router with T1 PRI to Nortel CS1000 PBX under the Device pull-down menu
2. Add a Route Pattern to reach the Nortel's phone DN extensions and to access PSTN via the Nortel PBX
3. Configure Cisco 7960 phone and line DN
4. Configure the Cisco 2851 ISR router to communicate with Cisco Unified CallManager using MGCP protocol

#### Configuration Menus and Commands

#### Nortel Communication Server 1000 (CS1000) Call Server Configuration

1. LD 17 – Configure the Common Equipment (CEQU) on the Call Server

```
>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 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 → PSTN NI-2 PRI line
      06 23 ESF NO B8S FDL - 00
      07 23 ESF NO B8S FDL - 00 → CCM DMS-100 PRI line
PRI2 04 05
DTI2
MISP
```

## 2. LD 17 – Configure the D-channel Signaling for T1 PRI and PSTN PRI

```
REQ prt
TYPE adan dch 7
```

```
ADAN      DCH 7          → Assign tag 7 to the dchannel
CTYP MSDL          → MSDL card type
CARD 07           → MSDL card located in slot 7
PORT 1
DES dms100
USR PRI
DCHL 7           → Slot7, D-channel to Cisco Unified CallManager
OTBF 32
PARM RS422 DTE
DRAT 64KC        → 64K clear channel for the d-channel
CLOK EXT
IFC D100         → DMS-100 Switchtype
SIDE USR         → user-side signaling
CNEG 1
RLS ID **
RCAP ND2         → Name Display Method 2
MBGA NO
```



OVLR NO  
OVLS NO  
T200 3  
T203 10  
N200 3  
N201 260  
K 7

REQ prt  
TYPE adan dch 12

<b>ADAN</b>	<b>DCH 12</b>	→ Assign tag 12 to the d-channel
<b>CTYP</b>	<b>MSDL</b>	→ MSDL card type
<b>CARD</b>	<b>02</b>	→ MSDL card located in slot 2
<b>PORT</b>	<b>1</b>	
<b>DES</b>	<b>T1_NI2</b>	
<b>USR</b>	<b>PRI</b>	
<b>DCHL</b>	<b>2</b>	→ slot2, D-channel to the PSTN
<b>OTBF</b>	<b>32</b>	
<b>PARM</b>	<b>RS422 DTE</b>	
<b>DRAT</b>	<b>64KC</b>	→ 64K clear channel
<b>CLOK</b>	<b>EXT</b>	
<b>IFC</b>	<b>NI2</b>	→ NI-2 switchtype protocol
<b>ISDN_MCNT</b>	<b>300</b>	
<b>CLID</b>	<b>OPT0</b>	→ Caller id type
<b>CO_TYPE</b>	<b>STD</b>	→ Central Office switch type, Bellcore standard
<b>SIDE</b>	<b>USR</b>	→ user-side signaling
<b>CNEG</b>	<b>1</b>	
<b>RLS</b>	<b>ID **</b>	
<b>RCAP</b>	<b>COLP NDS</b>	→ Connection Line Presentation (COLP), NI-2 Name Display (NDS)
<b>MBGA</b>	<b>NO</b>	
<b>OVLR</b>	<b>NO</b>	
<b>OVLS</b>	<b>NO</b>	
<b>T310</b>	<b>120</b>	
<b>T200</b>	<b>3</b>	
<b>T203</b>	<b>10</b>	
<b>N200</b>	<b>3</b>	



```
N201 260
K 7
BSRV NO
```

REQ

### 3. LD 16 – Configure the Route Data Block for the T1 PRI and PSTN PRI

```
>ld 21
PT1000
```

```
REQ: prt
TYPE: rdb
CUST 0
ROUT 107
```

```
TYPE RDB
CUST 00
DMOD
```

```
ROUT 107 → Route Data Block to Cisco Unified CallManager
```

```
DES D100
```

```
TKTP TIE → Tie-line trunk type
```

```
NPID_TBL_NUM 0
```

```
ESN NO
```

```
CNVT NO
```

```
SAT NO
```

```
RCLS EXT
```

```
VTRK NO
```

```
NODE
```

```
DTRK YES → Digital Trunk
```

```
BRIP NO
```

```
DGTP PRI → ISDN PRI Digital Trunk Type for the route
```

```
ISDN YES
```

```
MODE PRA
```

```
IFC D100 → ISDN DMS-100 switchtype
```

```
SBN NO
```

```
PNI 00001
```

```
NCNA YES → Network Calling Name Allow
```





**NCRD YES** → Network Redirecting Name Allow  
**CHTY BCH** → Channel Type = B-channel  
CTYP UKWN  
INAC NO  
ISAR NO  
CPUB OFF  
DAPC NO  
BCOT 0  
**DSEL VOD** → Data Select = Voice or Data (VOD)  
PTYP PRI  
AUTO NO  
DNIS NO  
DCDR NO  
**ICOG IAO** → Incoming and Outgoing Trunk  
**SRCH RRB** → Round-ribbon search order  
**TRMB YES** → Trombone call allow  
STEP  
**ACOD 207** → Trunk Access code  
TCPP NO  
PII 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

PAGE 002

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

REQ:



>ld 21

PT1000

REQ: prt

TYPE: rdb

CUST 0

ROUT 102

TYPE RDB

CUST 00

DMOD

**ROUT 102**

➔ Route Data Block to the PSTN Switch

DES T1\_NI2

**TKTP DID**

➔ Direct-Inward-Dial trunk type

NPID\_TBL\_NUM 0

SAT NO

RCLS EXT

VTRK NO

NODE

**DTRK YES**

➔ Digital Trunk

BRIP NO

**DGTP PRI**

➔ ISDN PRI Digital Trunk type

**ISDN YES**

**MODE PRA**

**IFC NI2**

➔ ISDN NI-2 switchtype

CBCR NO

NCOS 0

SBN NO

PNI 00000

**NCNA YES**

➔ Network Calling Name Allow

**NCRD YES**

➔ Network Redirecting Name Allow

**CHTY BCH**

➔ Channel Type = B-channel

CPFXS YES

CPUB OFF

DAPC NO

BCOT 0

INTC NO



DSEL VOD → Data Selection = Voice or Data (VOD)  
PTYP PRI  
AUTO NO  
DNIS NO  
DCDR NO  
ICOG IAO → Incoming and Outgoing Trunk  
RANX NO  
SRCH RRB → Round-ribbon search order  
TRMB YES → Trombone call allow  
STEP  
ACOD 202 → Trunk Access code  
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

PAGE 002



```
      VGD  6
DRNG NO
CDR  NO
VRAT NO
MUS  NO
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
TTBL  0
ATAN NO
PLEV  2
MCTS NO
ALRM NO
ART   0
SGRP  0
AACR NO
```

```
REQ: ****
```

#### 4. LD 14 – Configure the Trunk Data Block for the T1 PRI and PSTN PRI

```
>ld 20
```

```
PT0000
```

```
REQ: prt
```

```
TYPE: tnb
```

```
TN  7 1
```

➔ Trunk Data Block for T1 PRI to Cisco Unified CallManager

```
DATE
```

```
PAGE
```



DES

DES D100

**TN 007 01** → Terminal Number, need to configure 23 TNs(one for each b-ch)

TYPE TIE

CDEN SD

CUST 0

TRK PRI

PDCA 1

**PCML MU** → u-law encoding scheme

NCOS 0

**RTMB 107 1** → Route Number and Member number

B-CHANNEL SIGNALING

TGAR 0

AST NO

IAPG 0

CLS **UNR DTN** WTA LPR APN THFD HKD → UNR = Unrestricted Digital, DTN = Digitone

P10 VNL

TKID

AACR NO

DATE 31 MAY 2005

NACT



>ld 20

PT0000

REQ: prt

TYPE: tnb

**TN 2 1**

➔ **Trunk Data Block for T1 PRI to the PSTN**

DATE

PAGE

DES

DES T1\_NI2

**TN 002 01**

➔ **Terminal Number, need to configure 23 TNs(one for each b-ch)**

**TYPE DID**

➔ **Direct-Inward-Dial Trunk Type**

CDEN SD

CUST 0

TRK PRI

PDCA 1

**PCML MU**

NCOS 0

**RTMB 102 1**

➔ **Route Number and Member number**

B-CHANNEL SIGNALING

NITE

STRI/STRO OWK OWK

AST NO

IAPG 0

CLS **UNR DTN** WTA LPR APN THFD HKD

➔ **UNR = Unrestricted Digital, DTN = DigiTone**

P10 VNL

TKID

AACR NO

DATE 10 JUN 2005

NACT



## 5. LD 86 – Configure the Route List Block for the T1 PRI and PSTN PRI

```
>ld 86
```

```
ESN000
```

```
MEM AVAIL: (U/P): 2821735    USED U P: 206155 68685    TOT: 3096575
```

```
DISK RECS AVAIL: 1152
```

```
REQ prt
```

```
CUST 0
```

```
FEAT rlb
```

```
RLI 7
```

```
RLI 7 → Route List Number
```

```
ENTR 0 → Route List Entry Number for CDP
```

```
LTER NO
```

```
ROUT 107 → Route Number
```

```
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 0
```

```
MEM AVAIL: (U/P): 2821735    USED U P: 206155 68685    TOT: 3096575
```





DISK RECS AVAIL: 1152

REQ prt

CUST 0

FEAT rlb

RLI 2

**RLI 2**

➔ **Route List Number**

**ENTR 0**

➔ **Route List Entry Number for CDP**

LTER NO

**ROUT 102**

➔ **Route Number**

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 0

## 6. LD 87 – Configure the CDP DSC steering codes

>ld 87

ESN000

MEM AVAIL: (U/P): 2821735 USED U P: 206155 68685 TOT: 3096575

DISK RECS AVAIL: 1152

REQ prt



CUST 0

**FEAT cdp**

→ CDP Dialplan

**TYPE dsc**

→ Digit Steering Code

**DSC 34**

→ Route for extension prefix beginning with 34

DSC 34

FLEN 0

DSP LSC

**RLI 7**

→ Send call to Route List 7 which use Rout 107

NPA

NXX

MEM AVAIL: (U/P): 2821735 USED U P: 206155 68685 TOT: 3096575

DISK RECS AVAIL: 1152

REQ

## 7. LD 90 – Configure the AC1 for the Tandem Trunk calls

>ld 90

ESN000

MEM AVAIL: (U/P): 2821735 USED U P: 206155 68685 TOT: 3096575

DISK RECS AVAIL: 1152

REQ prt

CUST 0

**FEAT net**

→ Network Translation Table

**TRAN ac1**

→ Access code 1 (NARS/BARS)

TYPE npa

NPA

**NPA 1408**

→ NPA begins with 1408

**RLI 2**

→ send to Route List 2 which use Rout 102

SDRR NONE

ITEI NONE

MEM AVAIL: (U/P): 2821735 USED U P: 206155 68685 TOT: 3096575



DISK RECS AVAIL: 1152

REQ

## 8. LD 11 – Configure the Route Nortel 2616 Digital Phones

>>ld 11

SL1000

MEM AVAIL: (U/P): 2821735      USED U P: 206155 68685      TOT: 3096575

DISK RECS AVAIL: 1152

DIGITAL TELEPHONES AVAIL:      4      USED:      4      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:      2304      USED:      196      TOT:      2500

DATA PORTS AVAIL:      2500      USED:      0      TOT:      2500

REQ: prt

TYPE: 2616

TN    1 0 0 2

DATE

PAGE

DES

DES    CS101A

**TN    001 0 00 02**

**TYPE 2616**

CDEN 8D

CUST 0

AOM 0

FDN 2321

TGAR 1

LDN NO

NCOS 0

SGRP 0



RNPG 0  
SCI 0  
SSU  
XLST  
CLS CTD **FBA** WTA LPR MTD **FNA HTA** ADD HFD  
MWD LMPN RMMD SMWD AAD IMD XHD IRD NID OLD VCE DRG1  
POD DSX VMD CMSD SLKD CCSD SWD LND **CNDA**  
**CFTD** SFD MRD DDV **CNIA** CDCA MSID DAPA BFED RCBF  
ICDD CDMA 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 CDMR  
CPND\_LANG ENG  
RCO 0  
HUNT 2321  
LHK 0  
PLEV 02  
CSDN  
AST  
IAPG 0  
AACS NO  
ITNA NO  
DGRP  
MLWU\_LANG 0  
DNDR 0  
**KEY 00 SCR 2320 0 MARP**  
**CPND**  
**NAME ZEUS20**  
XPLN 6  
DISPLAY\_FMT FIRST, LAST  
01  
02  
03 CFW 4 3415  
04 A06  
05 TRN  
06



07

08

09

10

11

12

13

14

15 RGA

DATE 8 JUN 2005

NACT

REQ: prt

TYPE: 2616

TN 1 0 0 3

DATE

PAGE

DES

DES CS101A

**TN 001 0 00 03**

**TYPE 2616**

CDEN 8D

CUST 0

AOM 0

FDN

TGAR 1

LDN NO

NCOS 0

SGRP 0

RNPG 0

SCI 0

SSU

XLST

CLS CTD **FBA** WTA LPR MTD **FNA HTA** ADD HFD

MWD LMPN RMMD SMWD AAD IMD XHD IRD NID OLD VCE DRG1

POD DSX VMD CMSD SLKD CCSD SWD LND **CNDA**



CFTD 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 OCBD FLXD FTTC DNDY DNO3 MCBN CDMR

CPND\_LANG ENG

HUNT

PLEV 02

CSDN

AST

IAPG 0

AACS NO

ITNA NO

DGRP

MLWU\_LANG 0

DNDR 0

**KEY 00 SCR 2321 0      MARP**

**CPND**

**NAME ZEUS21**

XPLN 6

DISPLAY\_FMT FIRST, LAST

01

02

03 CFW 4

04 AO6

05 TRN

06

07

08

09

10

11

12

13

14

15 RGA



DATE 6 JUN 2005

NACT

REQ :

## Cisco Unified CallManager Configuration

Add an MGCP gateway for the Cisco 2851 ISR router with T1 PRI

The screenshot shows the Cisco CallManager Administration web interface in Microsoft Internet Explorer. The browser address bar shows the URL: `https://ccmpub/CCMAAdmin/gatewayconfig.asp?pkid={6DA9B9AD-F748-4E78-A267-851C6908F6EE}&Action=Update&Type=52&MGCP={89C11B57-E8D9-4B93-84E9-EE6288F1}`. The page title is "Gateway Configuration".

**Gateway Configuration**

[Back to MGCP Configuration](#)  
[Back to Find/List Gateways](#)  
[Dependency Records](#)

**Product :** Cisco 2851  
**Gateway :** S0/SU0/DS1-1@Router2851  
**Device Protocol:** Digital Access PRI  
**Registration:** Registered with Cisco CallManager 172.20.150.253  
**IP Address:** 172.20.150.201

Status: Ready

**Device Information**

End-Point Name *	S0/SU0/DS1-1@Router2851
Description	S0/SU0/DS1-1@Router2851
Device Pool *	Default
Call Classification *	Use System Default
Network Locale	< None >
Signal Packet Capture Mode	None
Packet Capture Duration	60
Media Resource Group List	< None >

The screenshot also shows the Windows taskbar at the bottom with the Start button, several application icons, and the system tray showing the time as 4:54 PM on 6/6/2005.



Cisco CallManager 4.1 Administration - Gateway Configuration - Microsoft Internet Explorer

Address: https://ccmpub/CCMAdmin/gatewayconfig.asp?pkid={6DA9B9AD-F748-4E78-A267-851C6908F6EE}&Action=Update&Type=52&MGCP={89C11B57-E8D9-4B93-84E9-EE6288F1}

Media Resource Group List: <None >

Location: <None >

AAR Group: <None >

Load Information:

V150 (subset):

**Multilevel Precedence and Preemption (MLPP) Information**

MLPP Domain (e.g., "0000FF\*"):

MLPP Indication: Default

MLPP Preemption: Default

**Interface Information**

PRI Protocol Type\*: PRI DMS-100

Protocol Side\*: Network

Channel Selection Order\*: Bottom Up

Channel IE Type\*: Use Number when 1B

PCM Type\*: u-law

Delay for first restart (1/8 sec ticks): 32

Delay between restarts (1/8 sec ticks): 4

Inhibit restarts at PRI initialization

Enable status poll

**Call Routing Information**

**Inbound Calls**

Applet RSAspProxyApplet started

Local intranet

Start | Cisco CallManager 4.1 ... | 4:54 PM

Cisco CallManager 4.1 Administration - Gateway Configuration - Microsoft Internet Explorer

Address: https://ccmpub/CCMAdmin/gatewayconfig.asp?pkid={6DA9B9AD-F748-4E78-A267-851C6908F6EE}&Action=Update&Type=52&MGCP={89C11B57-E8D9-4B93-84E9-EE6288F1}

**Call Routing Information**

**Inbound Calls**

Significant Digits\*:

Calling Search Space:

AAR Calling Search Space:

Prefix DN:

**Outbound Calls**

Calling Line ID Presentation\*:

Calling Party Selection\*:

Called party IE number type unknown\*:

Calling party IE number type unknown\*:

Called Numbering Plan\*:

Calling Numbering Plan\*:

Number of digits to strip\*:

Caller ID DN:

SMDI Base Port\*: 0

**PRI Protocol Type Specific Information**

Display IE Delivery

Redirecting Number IE Delivery - Outbound

Redirecting Number IE Delivery - Inbound

Send Extra Leading Character In DisplayIE\*\*\*

Local intranet

Start | Cisco CallManager 4.1 ... | 4:56 PM





Cisco CallManager 4.1 Administration - Gateway Configuration - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address [ccmpub/CCMAdmin/gatewayconf.jsp?plid={6DA9B2AD-F748-4E78-A267-851C6908F3EE}&Action=Update&Type=523/MSCP={69C11B57-E809-4B93-84E9-EE6268F19743}](http://ccmpub/CCMAdmin/gatewayconf.jsp?plid={6DA9B2AD-F748-4E78-A267-851C6908F3EE}&Action=Update&Type=523/MSCP={69C11B57-E809-4B93-84E9-EE6268F19743})

Setup non-ISDN Progress Indicator IE Enable\*\*\*\*

MCDN Channel Number Extension Bit Set to Zero\*\*

Send Calling Name In Facility IE

Interface Identifier Present\*\*

Interface Identifier Value\*\*

Connected Line ID Presentation (QSIG Inbound Call)\*

**UUIE Configuration**

Passing Precedence Level Through UUIE

Security Access Level

**Product Specific Configuration**

Line Coding\*

Framing\*

Clock\*

Input Gain (-6..14 db)\*

Output Attenuation (-6..14 db)\*

Echo Cancellation Enable\*

Echo Cancellation Coverage (ms)\*

\* indicates required item  
\*\* applicable to DMS-100 protocol only  
\*\*\* applicable to DMS-100 protocol and DMS-250 protocol only

Local intranet

Start | Cisco CallManager 4.1 ... | 4:57 PM



## Add a Route Pattern to reach Nortel's digital phone DN extensions and to access the PSTN via the Nortel PBX

The screenshot displays the Cisco CallManager 4.1 Administration interface for configuring a route pattern. The browser window title is "Cisco CallManager 4.1 Administration - Route Pattern Configuration - Microsoft Internet Explorer". The address bar shows the URL: [https://ccmpub/CCMAdmin/routepatternconfig.asp?pkid=\(E2884F93-4838-4EE8-A409-959F768697B9\)](https://ccmpub/CCMAdmin/routepatternconfig.asp?pkid=(E2884F93-4838-4EE8-A409-959F768697B9)). The page header includes "System Route Plan Service Feature Device User Application Help" and the Cisco Systems logo. The main heading is "Route Pattern Configuration" with sub-links: "Add a New Route Pattern" and "Back to Find/List Route Patterns".

**Route Pattern: 232X**  
Status: Ready  
Note: Any update to this Route Pattern automatically resets the associated gateway or Route List

Buttons: Copy, Update, Delete

**Pattern Definition**

Route Pattern*	232X
Partition	< None >
Description	
Numbering Plan*	North American Numbering Plan
Route Filter	< None >
MLPP Precedence	Default
Gateway or Route List*	S0/SU0/DS1-1@Router2851 (Edit)
Route Option	<input checked="" type="radio"/> Route this pattern <input type="radio"/> Block this pattern (Not Selected)
Call Classification*	OffNet

Checkboxes:  
 Provide Outside Dial Tone  
 Allow Overlap Sending  
 Allow Device Override  
 Urgent Priority  
 Require Forced Authorization Code

Taskbar: Applet RSAspProxyApplet started, Local intranet, Cisco CallManager 4.1 ... 2:33 PM



Cisco CallManager 4.1 Administration - Route Pattern Configuration - Microsoft Internet Explorer

Address: https://ccmpub/CCMAAdmin/routepatternconfig.asp?pkid=(E2B84F93-4838-4EE8-A409-959F768697B9)&status=uc

Provide Outside Dial Tone     Allow Overlap Sending     Urgent Priority

Require Forced Authorization Code

Authorization Level:

Require Client Matter Code

**Calling Party Transformations**

Use Calling Party's External Phone Number Mask

Calling Party Transform Mask:

Prefix Digits (Outgoing Calls):

Calling Line ID Presentation:

Calling Name Presentation:

**Connected Party Transformations**

Connected Line ID Presentation:

Connected Name Presentation:

**Called Party Transformations**

Discard Digits:

Called Party Transform Mask:

Prefix Digits (Outgoing Calls):

**ISDN Network-Specific Facilities Information Element**

Carrier Identification Code:

Network Service Protocol:

Network Service	Service Parameter Name	Service Parameter Value
<input type="text" value="--- Not Selected ---"/>	<input type="text" value="&lt; Not Exist &gt;"/>	<input type="text"/>

\* indicates required item.

Applet RSAspxProxyApplet started

Local intranet

2:35 PM

Cisco CallManager 4.1 Administration - Route Pattern Configuration - Microsoft Internet Explorer

Address: https://ccmpub/CCMAAdmin/routepatternconfig.asp?pkid=(E2781AC3-03D1-4B8F-85EC-C6C2F708501C)&status=uc

Provide Outside Dial Tone     Allow Overlap Sending     Urgent Priority

Require Forced Authorization Code

Authorization Level:

Require Client Matter Code

**Calling Party Transformations**

Use Calling Party's External Phone Number Mask

Calling Party Transform Mask:

Prefix Digits (Outgoing Calls):

Calling Line ID Presentation:

Calling Name Presentation:

**Connected Party Transformations**

Connected Line ID Presentation:

Connected Name Presentation:

**Called Party Transformations**

Discard Digits:

Called Party Transform Mask:

Prefix Digits (Outgoing Calls):

**ISDN Network-Specific Facilities Information Element**

Carrier Identification Code:

Network Service Protocol:

Network Service	Service Parameter Name	Service Parameter Value
<input type="text" value="--- Not Selected ---"/>	<input type="text" value="&lt; Not Exist &gt;"/>	<input type="text"/>

\* indicates required item.

Applet RSAspxProxyApplet started

Local intranet

3:23 PM



## Add a Cisco 7960 IP phone and assigned the DN extension (3414 and 3415)

The screenshot shows the Cisco CallManager Administration web interface in Microsoft Internet Explorer. The browser title is "Cisco CallManager 4.1 Administration - Directory Number Configuration - Microsoft Internet Explorer". The address bar shows the URL: <https://ccmpub/CCMAdmin/directorynumber.asp?NumPlanMapID={C189A2A2-AF03-49D0-BC52-18FB1E7A5DA}>. The page title is "Directory Number Configuration".

The main content area is titled "Directory Number Configuration" and includes the following sections:

- Associated With:** SEP00124362BF79 (Line 1) 7960
- Directory Number:** 3414
- Status:** Ready
- Note:** Any update to this Directory Number automatically resets the associated devices
- Buttons:** Update, Remove from Device, Reset Devices
- Directory Number:** Directory Number\* (3414), Partition (<None>)
- Directory Number Settings:** Voice Mail Profile (Default), Calling Search Space (<None>), AAR Group (<None>), User Hold Audio Source (<None>), Network Hold Audio Source (<None>), Auto Answer (Auto Answer Off)
- Call Forward and Pickup Settings:** Forward All (checkbox), Coverage/Destination (<None>), Calling Search Space (<None>)

The bottom of the browser window shows the taskbar with the Start button, several application icons, and the system tray displaying "Local intranet" and "5:01 PM".



Cisco CallManager 4.1 Administration - Directory Number Configuration - Microsoft Internet Explorer

Address: https://ccmpub/CCMAdmin/directorynumber.asp?NumPlanMapID={C189A2A2-AF03-49D0-BC52-18FB1E7A5DA}&status=uc

### Call Forward and Pickup Settings

	Voice Mail	Coverage/ Destination	Calling Search Space
Forward All	<input type="checkbox"/>	<input type="text"/>	<None >
Forward Busy Internal	<input checked="" type="checkbox"/>	<input type="text"/>	<None >
Forward Busy External	<input checked="" type="checkbox"/>	<input type="text"/>	<None >
Forward No Answer Internal	<input checked="" type="checkbox"/>	<input type="text"/>	<None >
Forward No Answer External	<input checked="" type="checkbox"/>	<input type="text"/>	<None >
Forward No Coverage Internal	<input checked="" type="checkbox"/>	<input type="text"/>	<None >
Forward No Coverage External	<input checked="" type="checkbox"/>	<input type="text"/>	<None >
No Answer Ring Duration	<input type="text"/>	(seconds)	
Call Pickup Group	<input type="text"/>	<None >	(View Details)

### MLPP Alternate Party Settings

Target (Destination)

Calling Search Space

No Answer Ring Duration  (seconds)

### Line Settings for all Devices

Alerting Name

### Line Settings for this Device

Display (Internal Caller ID)

Line Text Label

External Phone Number Mask

Message Waiting Lamp Policy

Applet: RSAspxProxyApplet started

Local intranet 5:03 PM

Cisco CallManager 4.1 Administration - Directory Number Configuration - Microsoft Internet Explorer

Address: https://ccmpub/CCMAdmin/directorynumber.asp?NumPlanMapID={C189A2A2-AF03-49D0-BC52-18FB1E7A5DA}&status=uc

No Answer Ring Duration  (seconds)

### Line Settings for all Devices

Alerting Name

### Line Settings for this Device

Display (Internal Caller ID)

Line Text Label

External Phone Number Mask

Message Waiting Lamp Policy

Ring Setting (Phone Idle)

Ring Setting (Phone Active)\*\*

### Multiple Call / Call Waiting Settings

Maximum Number of Calls\*  (1 - 200)

Busy Trigger\*  (<= Max. Calls)

### Forwarded Call Information Display

Caller Name  Caller Number

Redirected Number  Dialed Number

\* indicates required item; changes to Line or Directory Number settings require restart.  
\*\* Ring Setting (Phone Active) applies to this line when any line on the phone has a call in progress.

Note:  
If you are using a language other than English for Display (Internal Caller ID) or Line Text Label text, make sure the correct character set (shown below) is selected. Text displays incorrectly if the wrong character set is selected. (English characters are included in all character sets.)

Character Set

Applet: RSAspxProxyApplet started

Local intranet 5:03 PM



Cisco CallManager 4.1 Administration - Directory Number Configuration - Microsoft Internet Explorer

Address: https://ccmpub/CCMAdmin/directorynumber.asp?NumPlanMapID=(C1A1E315-58C4-47EC-AC76-79273792B068)

### Directory Number Configuration

Configure Device (SEP003094C290B3)  
Dependency Records

**Associated With**  
SEP003094C290B3  
7900 (Line 1)

**Directory Number: 3415**  
Status: Ready  
Note: Any update to this Directory Number automatically resets the associated devices

Update Remove from Device Reset Devices

**Directory Number**  
Directory Number\* 3415  
Partition <None>

**Directory Number Settings**  
Voice Mail Profile Default  
(Choose <None> to use default)  
Calling Search Space <None>  
AAR Group <None>  
User Hold Audio Source <None>  
Network Hold Audio Source <None>  
Auto Answer Auto Answer Off

**Call Forward and Pickup Settings**

	Voice Mail	Coverage/ Destination	Calling Search Space
Forward All	<input type="checkbox"/>	<input type="text"/>	<None>

Applet RSAspxProxyApplet started

Local intranet

Start Cisco CallManager 4.1 ... 5:06 PM

Cisco CallManager 4.1 Administration - Directory Number Configuration - Microsoft Internet Explorer

Address: https://ccmpub/CCMAdmin/directorynumber.asp?NumPlanMapID=(C1A1E315-58C4-47EC-AC76-79273792B068)

**Call Forward and Pickup Settings**

	Voice Mail	Coverage/ Destination	Calling Search Space
Forward All	<input type="checkbox"/>	<input type="text"/>	<None>
Forward Busy Internal	<input checked="" type="checkbox"/>	<input type="text"/>	<None>
Forward Busy External	<input checked="" type="checkbox"/>	<input type="text"/>	<None>
Forward No Answer Internal	<input checked="" type="checkbox"/>	<input type="text"/>	<None>
Forward No Answer External	<input checked="" type="checkbox"/>	<input type="text"/>	<None>
Forward No Coverage Internal	<input checked="" type="checkbox"/>	<input type="text"/>	<None>
Forward No Coverage External	<input checked="" type="checkbox"/>	<input type="text"/>	<None>

No Answer Ring Duration 10 (seconds)  
Call Pickup Group <None> (View Details)

**MLPP Alternate Party Settings**  
Target (Destination)   
Calling Search Space <None>  
No Answer Ring Duration  (seconds)

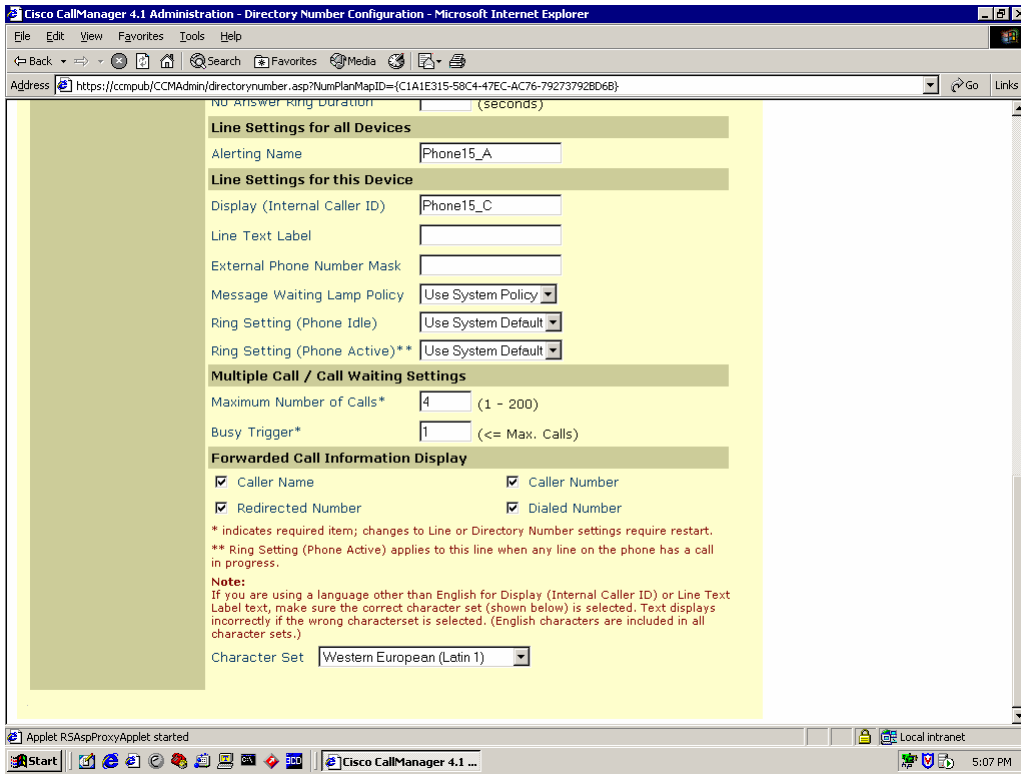
**Line Settings for all Devices**  
Alerting Name Phone15\_A

**Line Settings for this Device**  
Display (Internal Caller ID) Phone15\_C  
Line Text Label   
External Phone Number Mask   
Message Waiting Lamp Policy Use System Policy

Applet RSAspxProxyApplet started

Local intranet

Start Cisco CallManager 4.1 ... 5:06 PM



## Configure the Cisco 2851 ISR router to communicate with Cisco Unified CallManager using MGCP protocol

```
Router2851> enable
```

```
Password:
```

```
Router2851# show version
```

```
Cisco IOS Software, 2800 Software (C2800NM-IPVOICEK9-M), Version 12.4(1a), RELEASE SOFTWARE (fc2)
```

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

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

```
Compiled Fri 27-May-05 21:02 by hqluong
```

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

```
Router2851 uptime is 6 days, 5 hours, 45 minutes
```

```
System returned to ROM by reload at 10:07:59 PST Tue Jun 7 2005
```

```
System restarted at 10:08:49 PST Tue Jun 7 2005
```

```
System image file is "flash:c2800nm-ipvoicek9-mz.124-1a.bin"
```

This product contains cryptographic features and is subject to United



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

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

If you require further assistance please contact us by sending email to [export@cisco.com](mailto:export@cisco.com).

Cisco 2851 (revision 53.51) with 249856K/12288K bytes of memory.

Processor board ID FHK0847F03X

16 FastEthernet interfaces

2 Gigabit Ethernet interfaces

48 Serial interfaces

2 Channelized T1/PRI ports

4 Voice FXO interfaces

2 Voice FXS interfaces

DRAM configuration is 64 bits wide with parity enabled.

239K bytes of non-volatile configuration memory.

62592K bytes of ATA CompactFlash (Read/Write)

Configuration register is 0x2102

```
Router2851#term len 0
```

```
Router2851# show running-config
```

```
Building configuration...
```

```
Current configuration : 5036 bytes
```

```
!
```

```
! Last configuration change at 13:22:53 PST Wed Jun 8 2005
```

```
!
```

```
version 12.4
```

```
service timestamps debug datetime msec
```

```
service timestamps log datetime msec
```





```
service password-encryption
!
hostname Router2851
!
boot-start-marker
boot system flash:c2800nm-ipvoicek9-mz.124-1a.bin
boot-end-marker
!
logging buffered 5000000 debugging
enable secret 5 $1$v0tv$DYoywWasCG5us.lpzy6Th.
!
no aaa new-model
!
resource policy
!
clock timezone PST -8
network-clock-participate wic 0
network-clock-select 1 T1 0/0/0
ip subnet-zero
!
!
ip cef
no ip dhcp use vrf connected
!
!
no ip ftp passive
ip ftp username cisco
ip ftp password 7 01100F175804575D72
no ip domain lookup
isdn switch-type primary-ni
!
voice-card 0
  no dspfarm
!
!
!
!
!
```



```
!  
!  
!  
!  
!  
!  
!  
!  
username chinh password 7 104D000A0618  
!  
!  
controller T1 0/0/0  
  shutdown  
  framing esf  
  linecode b8zs  
  cablelength short 133  
  pri-group timeslots 1-24 service mgcp  
!  
controller T1 0/0/1  
  framing esf  
  linecode b8zs  
  cablelength short 133  
  pri-group timeslots 1-24 service mgcp  
!  
translation-rule 1  
!  
!  
!  
!  
interface GigabitEthernet0/0  
  ip address 172.20.150.201 255.255.255.0  
  duplex auto  
  speed auto  
!  
interface GigabitEthernet0/1  
  no ip address  
  shutdown  
  duplex auto  
  speed auto
```



```
!  
interface Serial0/0/0:23  
  no ip address  
  isdn switch-type primary-qsig  
  isdn incoming-voice voice  
  isdn bind-13 ccm-manager  
  no cdp enable  
!  
interface Serial0/0/1:23  
  no ip address  
  isdn switch-type primary-dms100  
  isdn protocol-emulate network  
  isdn incoming-voice voice  
  isdn bind-13 ccm-manager  
  isdn channel-id invert extend-bit  
  no cdp enable  
!  
interface FastEthernet1/0  
  shutdown  
!  
interface FastEthernet1/1  
  shutdown  
!  
interface FastEthernet1/2  
  shutdown  
!  
interface FastEthernet1/3  
  shutdown  
!  
interface FastEthernet1/4  
  shutdown  
!  
interface FastEthernet1/5  
  shutdown  
!  
interface FastEthernet1/6  
  shutdown  
!  
interface FastEthernet1/7
```



```
shutdown
!
interface FastEthernet1/8
shutdown
!
interface FastEthernet1/9
shutdown
!
interface FastEthernet1/10
shutdown
!
interface FastEthernet1/11
shutdown
!
interface FastEthernet1/12
shutdown
!
interface FastEthernet1/13
shutdown
!
interface FastEthernet1/14
shutdown
!
interface FastEthernet1/15
shutdown
!
interface Vlan1
no ip address
!
ip classless
ip route 0.0.0.0 0.0.0.0 172.20.150.1
!
ip http server
no ip http secure-server
!
!
!
tftp-server flash:c2800nm-ipvoice-mz.123-12.11.T1
!
```



```
control-plane
!
!
!
voice-port 0/0/0:23
!
voice-port 0/1/0
  station-id name FXS_PhoneE
  station-id number 14085232200
  caller-id enable
!
voice-port 0/1/1
!
voice-port 0/0/1:23
!
voice-port 0/2/0
!
voice-port 0/2/1
!
voice-port 0/2/2
!
voice-port 0/2/3
!
ccm-manager mgcp
ccm-manager music-on-hold
ccm-manager config server 172.20.150.253
ccm-manager config
!
mgcp
mgcp call-agent 172.20.150.253 2427 service-type mgcp version 0.1
mgcp dtmf-relay voip codec all mode out-of-band
mgcp rtp unreachable timeout 1000 action notify
mgcp modem passthrough voip mode nse
mgcp package-capability rtp-package
no mgcp package-capability res-package
mgcp package-capability sst-package
no mgcp package-capability fxr-package
mgcp package-capability pre-package
no mgcp timer receive-rtcp
```



```
mgcp sdp simple
mgcp fax t38 inhibit
mgcp rtp payload-type g726r16 static
!
mgcp profile default
!
!
!
line con 0
line aux 0
line vty 0 4
  exec-timeout 0 0
  password 7 0822455D0A16
  login
line vty 5 10
  exec-timeout 0 0
  password 7 0822455D0A16
  login
!
scheduler allocate 20000 1000
ntp clock-period 17179609
ntp server 171.68.10.80
ntp server 171.68.10.150
!
end
```

Router2851# **show mgcp**

```
MGCP Admin State ACTIVE, Oper State ACTIVE - Cause Code NONE
MGCP call-agent: 172.20.150.253 2427 Initial protocol service is MGCP 0.1
MGCP validate call-agent source-ipaddr DISABLED
MGCP block-newcalls DISABLED
MGCP send SGCP RSIP: forced/restart/graceful/disconnected DISABLED
MGCP quarantine mode discard/step
MGCP quarantine of persistent events is ENABLED
MGCP dtmf-relay voip codec all mode out-of-band
MGCP dtmf-relay for voAAL2 is SDP controlled
MGCP voip modem passthrough mode: NSE, codec: g711ulaw, redundancy: DISABLED,
MGCP voaal2 modem passthrough disabled
MGCP voip modem relay: Disabled.
```



MGCP TSE payload: 100  
MGCP T.38 Named Signalling Event (NSE) response timer: 200  
MGCP Network (IP/AAL2) Continuity Test timer: 200  
MGCP 'RTP stream loss' timer disabled  
MGCP request timeout 500  
MGCP maximum exponential request timeout 4000  
MGCP rtp unreachable timeout 1000 action notify  
MGCP gateway port: 2427, MGCP maximum waiting delay 3000  
MGCP restart delay 0, MGCP vad DISABLED  
MGCP rtrcac DISABLED  
MGCP system resource check DISABLED  
MGCP xpc-codec: DISABLED, MGCP persistent hookflash: DISABLED  
MGCP persistent offhook: ENABLED, MGCP persistent onhook: DISABLED  
MGCP piggyback msg ENABLED, MGCP endpoint offset DISABLED  
MGCP simple-sdp ENABLED  
MGCP undotted-notation DISABLED  
MGCP codec type g711ulaw, MGCP packetization period 20  
MGCP JB threshold lwm 30, MGCP JB threshold hwm 150  
MGCP LAT threshold lwm 150, MGCP LAT threshold hwm 300  
MGCP PL threshold lwm 1000, MGCP PL threshold hwm 10000  
MGCP CL threshold lwm 1000, MGCP CL threshold hwm 10000  
MGCP playout mode is adaptive 60, 40, 200 in msec  
MGCP Fax Playout Buffer is 300 in msec  
MGCP media (RTP) dscp: ef, MGCP signaling dscp: af31  
MGCP default package: trunk-package  
MGCP supported packages: gm-package dtmf-package trunk-package line-package  
hs-package rtp-package atm-package ms-package dt-package  
mo-package mt-package sst-package pre-package  
MGCP Digit Map matching order: shortest match  
SGCP Digit Map matching order: always left-to-right  
MGCP VoAAL2 ignore-lco-codec DISABLED  
MGCP T.38 Max Fax Rate is DEFAULT  
MGCP T.38 Fax is DISABLED  
MGCP T.38 Fax ECM is ENABLED  
MGCP T.38 Fax NSF Override is DISABLED  
MGCP T.38 Fax Low Speed Redundancy: 0  
MGCP T.38 Fax High Speed Redundancy: 0  
MGCP control bind :DISABLED  
MGCP media bind :DISABLED



MGCP Upspeed payload type for G711ulaw: 0, G711alaw: 8  
MGCP Static payload type for G.726-16K codec  
MGCP Dynamic payload type for G.726-24K codec  
MGCP Dynamic payload type for G.Clear codec  
MGCP Guaranteed scheduler time is disabled

Router2851# **show ccm**

MGCP Domain Name: Router2851

Priority	Status	Host
=====		
Primary	Registered	172.20.150.253
First Backup	None	
Second Backup	None	

Current active Call Manager: 172.20.150.253  
Backhaul/Redundant link port: 2428  
Failover Interval: 30 seconds  
Keepalive Interval: 15 seconds  
Last keepalive sent: 15:54:11 PST Jun 13 2005 (elapsed time: 00:00:12)  
Last MGCP traffic time: 15:54:11 PST Jun 13 2005 (elapsed time: 00:00:12)  
Last failover time: None  
Last switchback time: None  
Switchback mode: Graceful  
MGCP Fallback mode: Not Selected  
Last MGCP Fallback start time: None  
Last MGCP Fallback end time: None  
MGCP Download Tones: Disabled

Backhaul Link info:

Link Protocol: TCP  
Remote Port Number: 2428  
Remote IP Address: 172.20.150.253  
Current Link State: OPEN

Statistics:

Packets recvd: 520  
Recv failures: 0  
Packets xmitted: 424  
Xmit failures: 0

PRI Ports being backhauled:





Slot 0, port 1

Slot 0, port 0

Configuration Auto-Download Information

=====

Current version-id: {DF50D6DF-A27D-4AFD-AAAD-2967DFD1DDBA}

Last config-downloaded:00:00:00

Current state: Waiting for commands

Configuration Download statistics:

Download Attempted	: 13
Download Successful	: 13
Download Failed	: 0
Configuration Attempted	: 1
Configuration Successful	: 1
Configuration Failed(Parsing)	: 0
Configuration Failed(config)	: 0

Last config download command: New Registration

Configuration Error History:

FAX mode: cisco

Router2851#s isdn status s0/0/1:23

Global ISDN Switchtype = primary-ni

%Q.931 is backhauled to CCM MANAGER 0x0003 on DSL 1. Layer 3 output may not apply

ISDN Serial0/0/1:23 interface

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

dsl 1, interface ISDN Switchtype = primary-dms100

L2 Protocol = Q.921 0x0000 L3 Protocol(s) = CCM MANAGER 0x0003

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 1 CCBs = 0

The Free Channel Mask: 0x807FFFFF

Number of L2 Discards = 0, L2 Session ID = 10

Total Allocated ISDN CCBs = 0

Router2851#



## Acronyms

<b>Acronym</b>	<b>Definitions</b>
ANF-PR	Additional Network Feature Path Replacement
CCM	Cisco Unified CallManager
CCBS	Call Completion to Busy Subscriber
CCNR	Call Completion on No Reply
CFB	Call Forwarding on Busy
CFNR	Call Forwarding No Reply
CFU	Call Forwarding Unconditional
CLIP	Calling Line (Number) Identification Presentation
CLIR	Calling Line (Number) Identification Restriction
CMM	Communication Media Module (CMM) is a Cisco Catalyst® 6500 Series and Cisco 7600 Series line card that provides flexible and high-density T1/E1 gateways
CNIP	Calling Name Identification Presentation
CNIR	Calling Name Identification Restriction
COLP	Connected Line (Number) Identification Presentation
COLR	Connected Line (Number) Identification Restriction
CONP	Connected Name Identification Presentation
CONR	Connected Name Identification Restriction
CT	Call Transfer
MWI	Message Waiting Indicator
PSTN	Public Switched Telephone Network



## Important Information

THE SPECIFICATIONS AND INFORMATION REGARDING THE PRODUCTS IN THIS MANUAL ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL STATEMENTS, INFORMATION, AND RECOMMENDATIONS IN THIS MANUAL ARE BELIEVED TO BE ACCURATE BUT ARE PRESENTED WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. USERS MUST TAKE FULL RESPONSIBILITY FOR THEIR APPLICATION OF ANY PRODUCTS.

IN NO EVENT SHALL CISCO OR ITS SUPPLIERS BE LIABLE FOR ANY INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOST PROFITS OR LOSS OR DAMAGE TO DATA ARISING OUT OF THE USE OR INABILITY TO USE THIS MANUAL, EVEN IF CISCO OR ITS SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.



### Corporate Headquarters

Cisco Systems, Inc.  
170 West Tasman Drive  
San Jose, CA 95134-1706  
USA  
www.cisco.com  
Tel: 408 526-4000  
800 553-NETS (6387)  
Fax: 408 526-4100

### European Headquarters

Cisco Systems International  
BV  
Haarlerbergpark  
Haarlerbergweg 13-19  
1101 CH Amsterdam  
The Netherlands  
www-europe.cisco.com  
Tel: 31 0 20 357 1000  
Fax: 31 0 20 357 1100

### Americas Headquarters

Cisco Systems, Inc.  
170 West Tasman Drive  
San Jose, CA 95134-1706  
USA  
www.cisco.com  
Tel: 408 526-7660  
Fax: 408 527-0883

### Asia Pacific Headquarters

Cisco Systems, Inc.  
Capital Tower  
168 Robinson Road  
#22-01 to #29-01  
Singapore 068912  
www.cisco.com  
Tel: +65 317 7777  
Fax: +65 317 7799

Cisco Systems has more than 200 offices in the following countries and regions. Addresses, phone numbers, and fax numbers are listed on the Cisco Web site at [www.cisco.com/go/offices](http://www.cisco.com/go/offices).

Argentina • Australia • Austria • Belgium • Brazil • Bulgaria • Canada • Chile • China PRC • Colombia • Costa Rica • Croatia • Czech Republic • Denmark • Dubai, UAE • Finland • France • Germany • Greece • Hong Kong SAR • Hungary • India • Indonesia • Ireland • Israel • Italy • Japan • Korea • Luxembourg • Malaysia • Mexico • The Netherlands • New Zealand • Norway • Peru • Philippines • Poland • Portugal • Puerto Rico • Romania • Russia • Saudi Arabia • Scotland • Singapore • Slovakia • Slovenia • South Africa • Spain • Sweden • Switzerland • Taiwan • Thailand • Turkey • Ukraine • United Kingdom • United States • Venezuela • Vietnam • Zimbabwe

© 2005 Cisco Systems, Inc. All rights reserved. CCSP, CCVP, the Cisco Square Bridge logo, Follow Me Browsing, and StackWise are trademarks of Cisco Systems, Inc.; Changing the Way We Work, Live, Play, and Learn, and iQuick Study are service marks of Cisco Systems, Inc.; and Access Registrar, Aironet, ASIST, BPX, Catalyst, CCDA, CCDP, CCIE, CCIP, CCNA, CCNP, Cisco, the Cisco Certified Internetwork Expert logo, Cisco IOS, Cisco Press, Cisco Systems, Cisco Systems Capital, the Cisco Systems logo, Cisco Unity, Empowering the Internet Generation, Enterprise/Solver, EtherChannel, EtherFast, EtherSwitch, Fast Step, FormShare, GigaDrive, GigaStack, HomeLink, Internet Quotient, IOS, IP/TV, iQ Expertise, the iQ logo, iQ Net Readiness Scorecard, LightStream, Linksys, MeetingPlace, MGX, the Networkers logo, Networking Academy, Network Registrar, Packet, PIX, Post-Routing, Pre-Routing, ProConnect, RateMUX, ScriptShare, SlideCast, SMARTnet, StrataView Plus, TeleRouter, The Fastest Way to Increase Your Internet Quotient, and TransPath are registered trademarks of Cisco Systems, Inc. and/or its affiliates in the United States and certain other countries.

All other trademarks mentioned in this document or Website are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (0502R)

Printed in the USA