

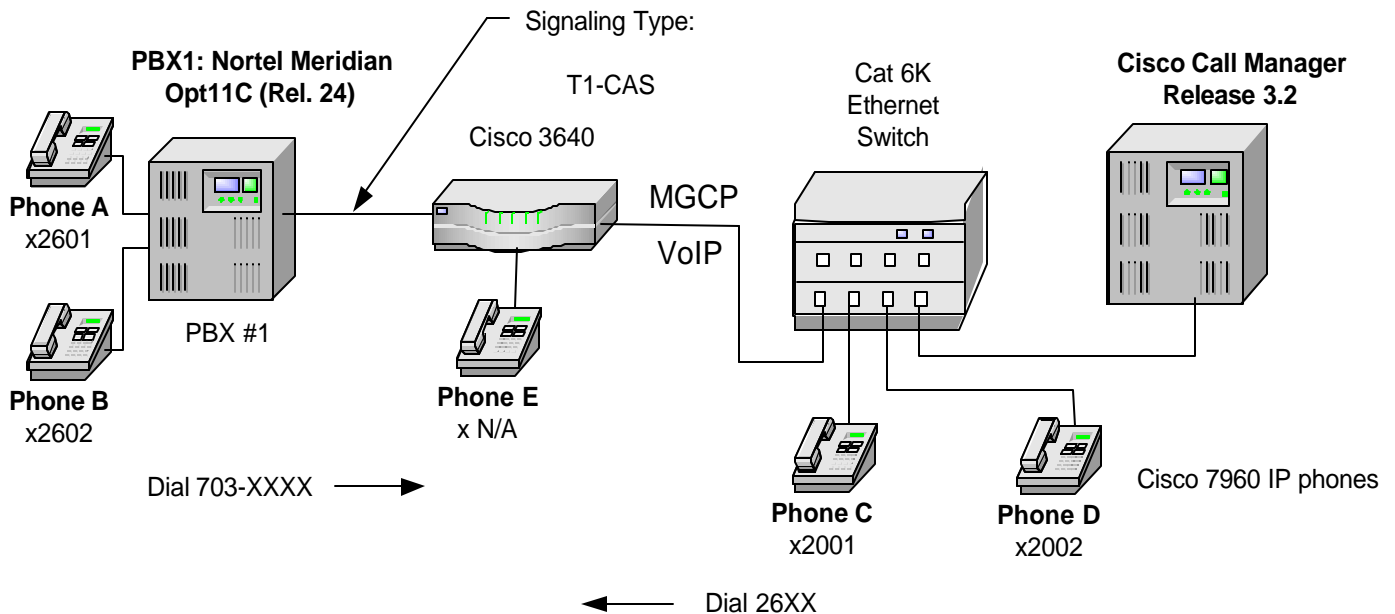
Cisco 3600 Series-PBX Interoperability: Nortel Meridian 011c with Cisco CallManager Using T1 CAS for a MGCP Gateway

Introduction

- This note describes the connectivity for the Nortel Meridian Opt11C Release 24 PBX with Cisco CallManager using Cisco 3640 series router with a multiflex trunk (MFT) card with T1-CAS type signaling protocol links, as a MGCP gateway.
- The network topology diagram shows the test set-up for end-to-end interoperability between the Cisco CallManager connected to the PBX with Cisco 3640 series router with T1-CAS type signaling protocol links, as a MGCP gateway.
- Connectivity is achieved by the T1-CAS type signaling protocol links, on the MGCP gateway and the Nortel PBX.

Network Topology

Basic Call Setup End-to-End Configuration





Limitations

- E&M-Immediate-start signaling type is not supported on Cisco CallManager (CCM) gateway configuration graphical user interface (GUI).

System Components

Hardware Requirements

- Cisco Hardware
 - Cisco 3640 series router with dual multiflex trunk (2MFT) card with T1 type signaling protocol links
 - Cisco Catalyst 6000 series Ethernet switch
 - Cisco CallManager Release 3.2
- Nortel Meridian Opt11C PBX.
 - Hardware: NTAK09BA, 1.5 Mb DTI/PRI

Software Requirements

- Cisco IOS Software Releases 12.2(11)T
- PBX Software Release 24.
- Cisco CallManager Release 3.2

Configuration

Configuring the Nortel Meridian Opt11C PBX

Common Equipment

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
XCT 000
CONF 029 030 031 062
      094 095

```

```

DLOP NUM DCH FRM LCMT YALM T1TE TRSH
PRI 003 24 ESF B8S FDL - 00

```



```
004 24 ESF B8S FDL - 00
005 24 ESF B8S FDL - 00
006 24 ESF B8S FDL - 00
```

```
PRI2 07
DTI2
MISP
```

```
REQ ****
>
```

Configure Route Data Block

```
>LD 21
```

```
PT1000
```

```
REQ: PRT
```

```
TYPE: RDB
```

```
CUST 0
```

```
ROUT 105
```

```
TYPE RDB
CUST 00
DMOD
ROUT 103
DES T1_CAS
TKTP TIE
ESN NO
CNVT NO
SAT NO
RCLS EXT
DTRK YES
BRIP NO
DGTP DTI
ISDN NO
DSEL VCE
PTYP DTT
AUTO NO
DNIS NO
ICOG IAO
SRCH RRB
TRMB YES
STEP
ACOD 703
TARG 01
```



CLEN 1
BILN NO
OABS
INST
ANTK
SIGO STD
STYP SDAT
TIMR ICF 512
OGF 512
EOD 13952
DSI 34944
NRD 10112
DDL 70
ODT 4096
RGV 640
GRD 896
SFB 3
TFD 0
SST 5 0
NEDC **ETH**
FEDC **ETH**
CPDC NO
DLTN NO
HOLD 02 02 40
SEIZ 02 02
SVFL 02 02
DRNG NO
CDR NO
MUS NO
MANO NO
EQAR NO
OHQ NO
OHQT 00
CBQ NO
AUTH NO
TTBL 0
OHTD NO
PLEV 2
ALRM NO

PAGE 002

ART 0
SGRP 0
AACR NO

REQ: *****
>



Configure Trunk (Wink-Start)

>ld 20

PT0000
MARP NOT ACTIVATED

REQ: PRT

TYPE: TNB

TN 3 1

DATE

PAGE

DES

TN 003 01
TYPE TIE
CUST 0
TRK DTI
PDCA 1
PCML MU
NCOS 0
RTMB 103 1
A/B BIT SIGNALING
TGAR 1
SIGL **EM4**
STRI/STRO **WNK WNK**
SUPN YES
AST NO
IAPG 0
CLS UNR DTN CND ECD WTA LPR APN THFD HKD
P10 VNL
TKID
DATE 4 APR 2002

NACT *****

>

Configure Trunk (Delay-Dial)

>ld 20

PT0000



MARP NOT ACTIVATED

REQ: PRT

TYPE: TNB

TN 3 1

DATE

PAGE

DES

TN 003 01

TYPE TIE

CUST 0

TRK DTI

PDCA 1

PCML MU

NCOS 0

RTMB 103 1

A/B BIT SIGNALING

TGAR 1

SIGL **EM4**

STRI/STRO **DDL DDL**

SUPN YES

AST NO

IAPG 0

CLS UNR DTN CND ECD WTA LPR APN THFD HKD

P10 VNL

TKID

DATE 4 APR 2002

NACT *****

>



Configuring Cisco CallManager

3640-MGCP Gateway Configuration

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

Product: Cisco 364X
MGCP : 3640_B_MGCP

Status: Ready

MGCP Domain Name*

Description

Cisco CallManager Group*

Installed Voice Interface Cards	Endpoint Identifiers
Module in Slot 0 <input type="text" value="<None >"/>	
Module in Slot 1 <input type="text" value="NM-HDV"/>	
Sub-Unit 0 <input type="text" value="VVIC-2MFT-T1"/>	(1/0) (1/1)
Module in Slot 2 <input type="text" value="NM-2V"/>	
Sub-Unit 0 <input type="text" value="VIC-2FXS"/>	(2/0/0) (2/0/1)
Sub-Unit 1 <input type="text" value="<None >"/>	
Module in Slot 3 <input type="text" value="<None >"/>	



Cisco CallManager 3.2 Administration - MGCP Configuration - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <http://kingon/CCMAdmin/mgcpconfig.asp?MGCP={B9EB7EDF-42B6-47F9-A308-D2144F20C566}>

Update Delete Reset Gateway Cancel Changes

MGCP Domain Name*

Description

Cisco CallManager Group*

Installed Voice Interface Cards		Endpoint Identifiers	
Module in Slot 0	<None >		
Module in Slot 1	NM-HDV		
	Sub-Unit 0	<input type="text" value="VVIC-2MFT-T1"/>	(1/0) <small>trks</small> (1/1)
Module in Slot 2	NM-2V		
	Sub-Unit 0	<input type="text" value="VIC-2FXS"/>	(2/0/0) <small>ports</small> (2/0/1)
	Sub-Unit 1	<None >	
Module in Slot 3	<None >		

Product Specific Configuration ⓘ

Global ISDN Switch Type

Switchback Timing*

Switchback uptime-delay (min)

Switchback schedule (hh:mm)

* indicates required item

[Back to Find/List Gateways](#)

Done Local intranet



Digital Access T1-CAS Configuration

System **Route Plan** **Service** **Feature** **Device** **User** **Application** **Help**

Cisco CallManager Administration
For Cisco IP Telephony Solutions

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

Ports

- <Add a New Port>
- Port 1
- Port 2
- Port 3
- Port 4
- Port 5
- Port 6
- Port 7
- Port 8
- Port 9
- Port 10
- Port 11
- Port 12
- Port 13
- Port 14
- Port 15
- Port 16
- Port 17

Product : Cisco 364X
Gateway : S1/DS1-0@3640_B_MGCP
Device Protocol: Digital Access T1
Registration: Not Registered
IP Address: 10.1.1.73

Status: Ready

End-Point Name*
Description
Device Pool*
Media Resource Group List
Network Hold Audio Source
User Hold Audio Source
Calling Search Space
Location
Load Information
Port Selection Order*
Digit Plan*

Done Local intranet



Cisco CallManager 3.2 Administration - Gateway Configuration - Microsoft Internet Explorer

Address: http://kingon/CCMAdmin/gatewayconfig.asp?pkid={64BBB71C-87D2-4FA6-A3B3-78DA9DC5CB27}&Action=Update&Type=52&MGCP={B9EB7EDF-42B6-47F9-A308-D2144F20C566}

Port 5	
Port 6	
Port 7	
Port 8	
Port 9	
Port 10	
Port 11	
Port 12	
Port 13	
Port 14	
Port 15	
Port 16	
Port 17	
Port 18	
Port 19	
Port 20	
Port 21	
Port 22	
Port 23	
Port 24	

End-Point Name* S1/DS1-0@3640_B_MGCP

Description S1/DS1-0@3640_B_MGCP

Device Pool* Default

Media Resource Group List < None >

Network Hold Audio Source < None >

User Hold Audio Source < None >

Calling Search Space < None >

Location < None >

Load Information

Port Selection Order* Top Down

Digit Sending* DTMF

Network Locale United States

Product Specific Configuration

Line Coding* B8ZS

Framing* ESF

Clock* External

* indicates required item

[Back to MGCP Configuration](#)

[Back to Find/List Gateways](#)

Local intranet



T1-CAS Port Configuration

Cisco CallManager 3.2 Administration - Port Configuration - Microsoft Internet Explo...

Port Configuration

S1/DS1-0@3640_B_MGCP Port Type: E&M Port Number: 1
Status: Ready

New Update Update and Close Delete Cancel Changes

Port Details

Port Direction*	Bothways
Calling Party Selection*	Originator
Caller ID Type*	ANI
Caller ID DN	
Prefix DN	
Num Digits*	4
Expected Digits*	4

Product Specific Configuration

Signaling Type*	Wink Start
-----------------	------------

* indicates required item

Done Local intranet



Route Pattern Configuration

[Add a New Route Pattern](#)
[Back to Find/List Route Patterns](#)

Route Pattern: 26XX
Status: Ready
Note: Any update to this route pattern automatically resets the associated gateway/route list

Copy Update Delete Cancel Changes

Pattern Definition

Route Pattern*
Partition
Numbering Plan*
Route Filter
Gateway/Route List* (Edit)
Route Option Route this pattern Block this pattern
 Provide Outside Dial Tone Urgent Priority

Calling Party Transformations

Use Calling Party's External Phone Number Mask
Calling Party Transform Mask
Prefix Digits (Outgoing Calls)

Called Party Transformations

Discard Digits
Called Party Transform Mask
Prefix Digits (Outgoing Calls)

* indicates required item.

Configuring the Cisco 3640 Router

```
version 12.2
no parser cache
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
no service dhcp
!
hostname 3640_B_mgcp
!
!
voice-card 1
!
ip subnet-zero
!
!
```



```
no ip domain lookup
!
!
!
voice call carrier capacity active
!
!
!
!
!
!
!
!
!
!
fax interface-type fax-mail
mta receive maximum-recipients 0
ccm-manager mgcp
ccm-manager music-on-hold
ccm-manager config server 10.1.1.2
ccm-manager config
!
controller T1 1/0
 framing esf
 linecode b8zs
 ds0-group 1 timeslots 1-24 type e&m-wink-start
!
controller T1 1/1
 framing sf
 linecode ami
!
!
!
!
interface Ethernet0/0
 ip address 10.1.1.78 255.255.255.0
 half-duplex
 no cdp enable
!
interface Ethernet0/1
 no ip address
 shutdown
 half-duplex
 no cdp enable
!
ip classless
ip http server
ip pim bidir-enable
!
!
!
call rsvp-sync
!
voice-port 1/0:1
!
voice-port 2/0/0
!
voice-port 2/0/1
!
```



```
mgcp
mgcp call-agent 10.1.1.2 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
mgcp package-capability sst-package
no mgcp timer receive-rtcp
mgcp sdp simple
!
mgcp profile default
!
dial-peer cor custom
!
!
!
dial-peer voice 201 pots
  application mgcpapp
  port 2/0/1
!
dial-peer voice 200 pots
  application mgcpapp
  port 2/0/0
!
dial-peer voice 300 pots
  application mgcpapp
!
dial-peer voice 101 pots
  application mgcpapp
!
dial-peer voice 999101 pots
  application mgcpapp
  port 1/0:1
!
!
line con 0
line aux 0
line vty 0 4
  login
!
!
end
```



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