



Microsoft Exchange 2007 version 8.1 to Nortel CS1000 Release 4.0 using Cisco IOS Gateway with SIP-to-QSIG interworking

May 28, 2008

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Introduction

- This application note details the connectivity between Microsoft Exchange 2007 Unified Messaging platform (Voicemail) and Nortel CS1000 Release 4.0 using QSIG/SIP interworking achieved by Cisco IOS voice gateway.
- In order for Microsoft Exchange 2007 to perform unsolicited MWI Notify signaling (required for Cisco IOS SIP-to-QSIG MWI interoperability), GEOMANT MWI Software must be installed on Microsoft Exchange 2007 server.
- The network topology diagram (Figure 1) shows the test setup for end-to-end interoperability with Nortel CS1000 Release 4.0 connected to Cisco IOS voice gateway using PRI-QSIG and Cisco IOS voice gateway integrated to Microsoft Exchange 2007 via SIP trunk. Voicemail diverted calls and MWI signaling notifications from MSFT Exchange to Nortel CS1000 Release 4.0, and vice versa, are handled by the Cisco IOS voice gateway by performing the interworking between QSIG and SIP signaling. Calls were made to test basic call connectivity, Voicemail box access, transfer, MWI as well as Specific Microsoft Exchange 2007 features.
- This Application Note uses one Cisco 3825 IOS voice gateway. However, the use of other Cisco voice gateways is also an option. The listed gateway families, below, can run Cisco IOS voice gateway functionality, but each have their own VoIP capacity/capability. Please check the product specifications to ensure you are obtaining the proper device to support your intended VoIP deployment.

[Cisco 2801 Integrated Services Router](#)

[Cisco 2811 Integrated Services Router](#)

[Cisco 2821 Integrated Services Router](#)

[Cisco 2851 Integrated Services Router](#)

[Cisco 3800 Integrated Services Router](#)

Network Topology

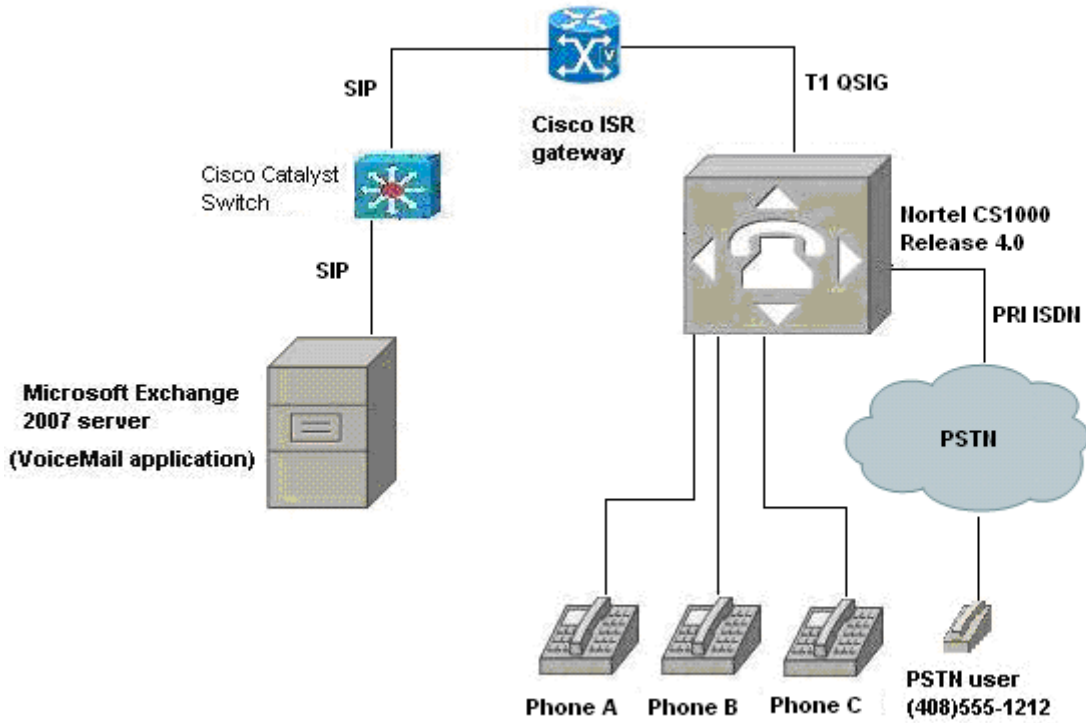


Figure 1. Network Topology or Test setup



Limitations

- Exchange 2007 has a known bug of Microsoft Office Communicator (MOC) gateways hanging when FQDN is used for ISR type GW's. Under these conditions, an IP address must be used for the ISR. With no MOC integration, the FQDN/ DNS works as expected.
- Exchange 2007 has a 13hr delay for GW registration.

System Components

Hardware requirements

- Microsoft Exchange 2007 Server (MCS 7800)
- Cisco 3560 powered Ethernet switch
- Cisco 3825 (Cisco IOS voice gateway)

Nortel equipment

- Nortel CS1000
- (3) Meridian M2616

Software Requirements

- Cisco IOS software: c3825-ipvoicek9-mz.124-15.T5.bin
- PBX Software: Nortel CS1000 – Release 4.0



Features

Features Supported

- Personalized voice mail access
- Forwarded message on no answer/busy - local phone
- Forwarded message on no answer/busy - PSTN phone
- MWI de/activation on voicemail access
- UM auto attendant features - general greeting, directory lookup, and transfer request.
- Specific MSFT Exchange features: Call Sender, Reply, Previous, Mark as new, Envelope info, and undelete message.



Configuration

Nortel CS1000 Release 4.0

1. LD 87 - Configuring CDP Steering codes
2. LD 86 - Configuring the Route List Block for the Virtual Trunk route
3. LD 11 - Digital Telephone Administration
4. LD 22 - Configuring the IP D-channel (signaling channel) between the Call Server and the Signaling Server
5. LD 21 - Configuring the QSIG route
6. LD 14 - Configuring the SIP virtual trunks to the Signaling Server (One trunk = one line connection)
7. LD 22 - Displaying Package (PKG) information
8. LD 22 - Displaying Issue and Release (ISS)

LD 87 - Configuring CDP Steering codes

```
>LD 87
ESN000

MEM AVAIL: (U/P): 2717248  USED U P: 344386 51325  TOT: 3112959
DISK RECS AVAIL: 1152
REQ prt
CUST 0
FEAT cdp
TYPE dsc
DSC 75 <--this is to 75000 MSFT Exchange
DSC 75
FLEN 0
DSP LSC
RLI 7
NPA
NXX
```

=====

LD 86 - Configuring the Route List Block for the Virtual Trunk route

```
>ld 86
ESN000

MEM AVAIL: (U/P): 2717248  USED U P: 344386 51325  TOT: 3112959
DISK RECS AVAIL: 1152
REQ prt
CUST 0
FEAT RLB
RLI 7

RLI 7
ENTR 0
LTER NO
ROUT 107
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 7
```



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

ISET 0
NALT 5
MFRL 0
OVLL 2

LD 11 - Digital Telephone Administration

>LD 11
SL1000
MEM AVAIL: (U/P): 2717248 USED U P: 344386 51325 TOT: 3112959
DISK RECS AVAIL: 1152
DIGITAL TELEPHONES AVAIL: 0 USED: 8 TOT: 8
IP USERS AVAIL: 1 USED: 7 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: 2303 USED: 197 TOT: 2500
DATA PORTS AVAIL: 2500 USED: 0 TOT: 2500

REQ: PRT
TYPE: 2616

TN 1003
DATE
PAGE
DES

DES CS102
TN 00100003
TYPE 2616
CDEN 8D
CUST 0
AOM 0
FDN 7500
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 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 FLXD FTTC DNDY DNO3 MCBN CDMR
CPND_LANG ENG
RCO 0
EFD 7500
HUNT 7500
EHT 7500
LHK 0
PLEV 02
CSDN
AST
IAPG 0
AACS NO
ITNA NO
DGRP
MLWU_LANG 0
DNDR 0
KEY 00 SCR 55016 0 MARP
CPND
NAME Cecily_55016
XPLN 13
DISPLAY_FMT FIRST, LAST
01 RGA
02
03 CFW 4 2500
04 AO6
05 TRN
06
07
08
09
10
11
12
13 MIK
14 MCK
15 TRN
DATE 15 MAY 2008

NACT

=====
LD 22 - Configuring the IP D-channel (signaling channel) between the Call Server and the Signaling Server

>LD 22
PT2000

REQ PRT
TYPE ADAN DCH 7

ADAN DCH 7
CTYP MSDL
CARD 07
PORT 1



```
DES QSIGforCecily
USR PRI
DCHL 7
OTBF 32
PARM RS422 DTE
DRAT 64KC
CLOK EXT
IFC ISGF
  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
  CTR2 2 3
PR_RTN NO
MBGA NO
OVLN NO
OVLS NO
T310 120
T200 3
T203 10
N200 3
N201 260
K 7
```

=====

LD 21 - Configuring the QSIG route

```
LD 21
PT1000

REQ: PRT
TYPE: RDB
CUST 0
ROUT 107

TYPE RDB
CUST 00
DMOD
ROUT 107
DES QSIGFORCECILY
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 707
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

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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

=====
LD 14 - Configuring the SIP virtual trunks to the Signaling Server (One trunk = one line connection)

>LD 20

PT0000
REQ: PRT
TYPE: TNB
TN 7 1
DATE
PAGE
DES

DES QSIGFORCECILY
TN 007 01
TYPE TIE
CDEN SD
CUST 0
TRK PRI
PDCA 1
PCML MU
NCOS 0
RTMB 107 1
B-CHANNEL SIGNALING
TGAR 0
AST NO
IAPG 0
CLS UNR DTN WTA LPR APN THFD HKD
P10 VNL
TKID
AACR NO
DATE 16 APR 2008

NACT

=====
LD 22 - Displaying Package (PKG) information

>LD 22
PT2000

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
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TSET	89
LNR	90
DLT2	91
PXLT	92
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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
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NMS 175
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HVS 179
DKS 180
SACP 181
VNS 183
OVL P 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
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ESA	329
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M3900_PROD_ENH	386
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OAS	394
ICON	397
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H323_VTRK	399
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=====
LD 22 - Displaying Issue and Release (ISS)

REQ iss

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



Microsoft Exchange 2007

Server Configuration

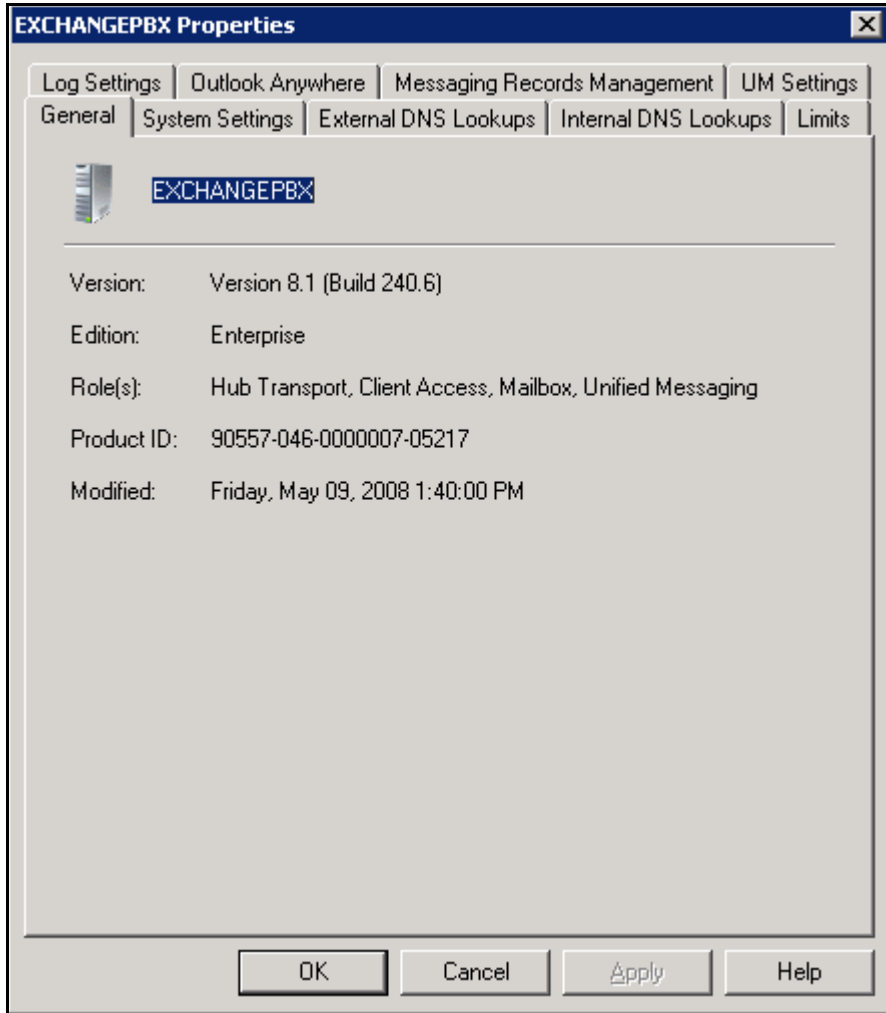
The screenshot shows the Exchange Management Console interface. The left pane displays a tree view of the Microsoft Exchange configuration hierarchy, with 'Server Configuration' selected. The main pane shows the 'Server Configuration' page for the 'EXCHANGEPBX' object, displaying a table with the following data:

Name	Role	Version
EXCHANGEPBX	Hub Transport, Client Access, Mailbox, Unified Messaging	Version 8.1 (Build 240.6)

The right pane shows the 'Actions' menu for the selected object, including options like 'Modify Configuration Domain Contr...', 'Export List...', 'View', 'Refresh', 'Help', and 'Manage Mailbox Server Role'.



Sever Configuration –Properties





EXCHANGEPBX Properties [X]

Log Settings | Outlook Anywhere | Messaging Records Management | JM Settings
General | System Settings | External DNS Lookups | Internal DNS Lookups | Limits

Active Directory servers _____

Domain controller servers being used by Exchange:
ocspdc.pbxcos.com

Global catalog servers being used by Exchange:
ocspdc.pbxcos.com

Error reporting _____

Automatically send fatal service error report to Microsoft

OK Cancel Apply Help

EXCHANGEPBX Properties [X]

Log Settings | Outlook Anywhere | Messaging Records Management | UM Settings
General | System Settings | External DNS Lookups | Internal DNS Lookups | Limits

Internal DNS servers are used to locate servers inside the organization. Specify use of the DNS server configured on the network adapter or manually configure a DNS server IP address.

Use network card DNS settings:

(All available IPv4 addresses) [v]

This adapter contains the following DNS server entries:

[Empty list box]

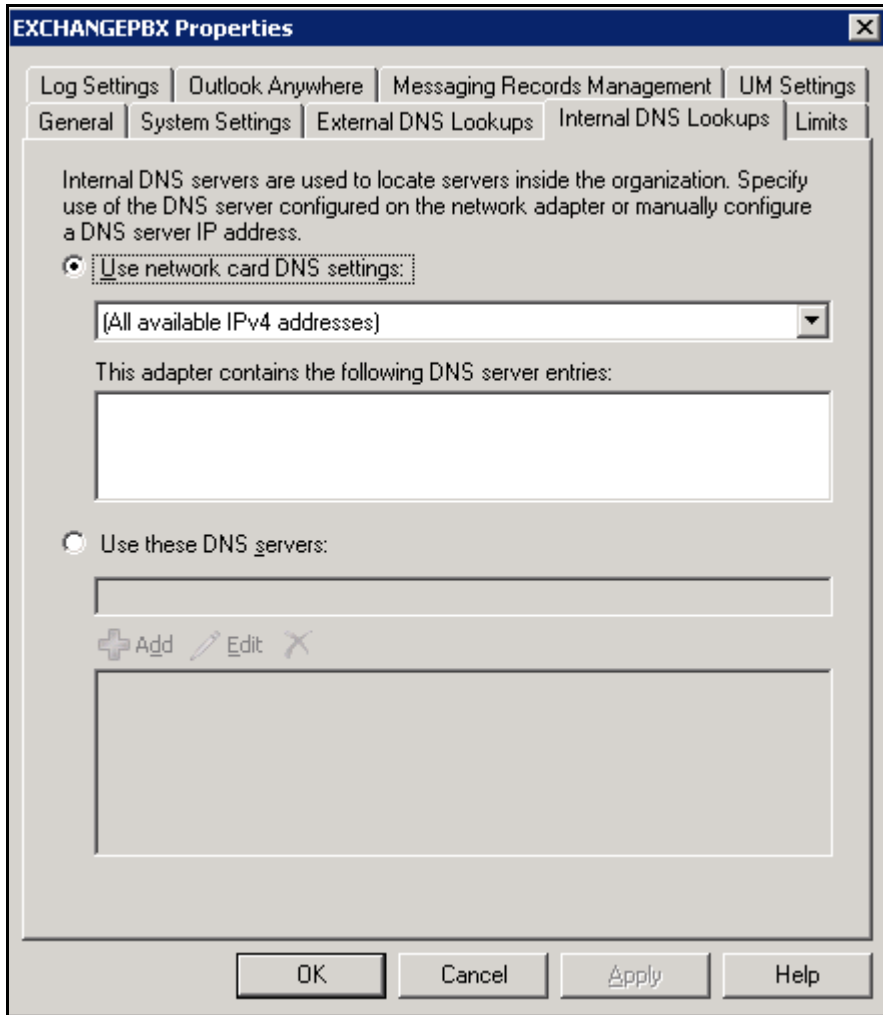
Use these DNS servers:

[Empty text box]

+ Add / Edit X

[Empty list box]

OK Cancel Apply Help





EXCHANGEPBX Properties [X]

Log Settings | Outlook Anywhere | Messaging Records Management | UM Settings |
General | System Settings | External DNS Lookups | Internal DNS Lookups | Limits

Retries

Outbound connection failure retry interval (minutes):

Transient failure retry interval (seconds):

Transient failure retry attempts:

Message expiration

Maximum time since submission (days):

Notifications

Notify sender when message is delayed more than (hours):

Connection restrictions

Maximum concurrent outbound connections:

Maximum concurrent outbound connections per domain:

OK Cancel Apply Help



EXCHANGEPBX Properties [X]

General | System Settings | External DNS Lookups | Internal DNS Lookups | Limits
Log Settings | Outlook Anywhere | Messaging Records Management | UM Settings

Message tracking log

Enable message tracking logging

Message tracking log file path:
C:\Program Files\Microsoft\Exchange Server\TransportRol [Browse...]

Connectivity logging

Enable connectivity logging

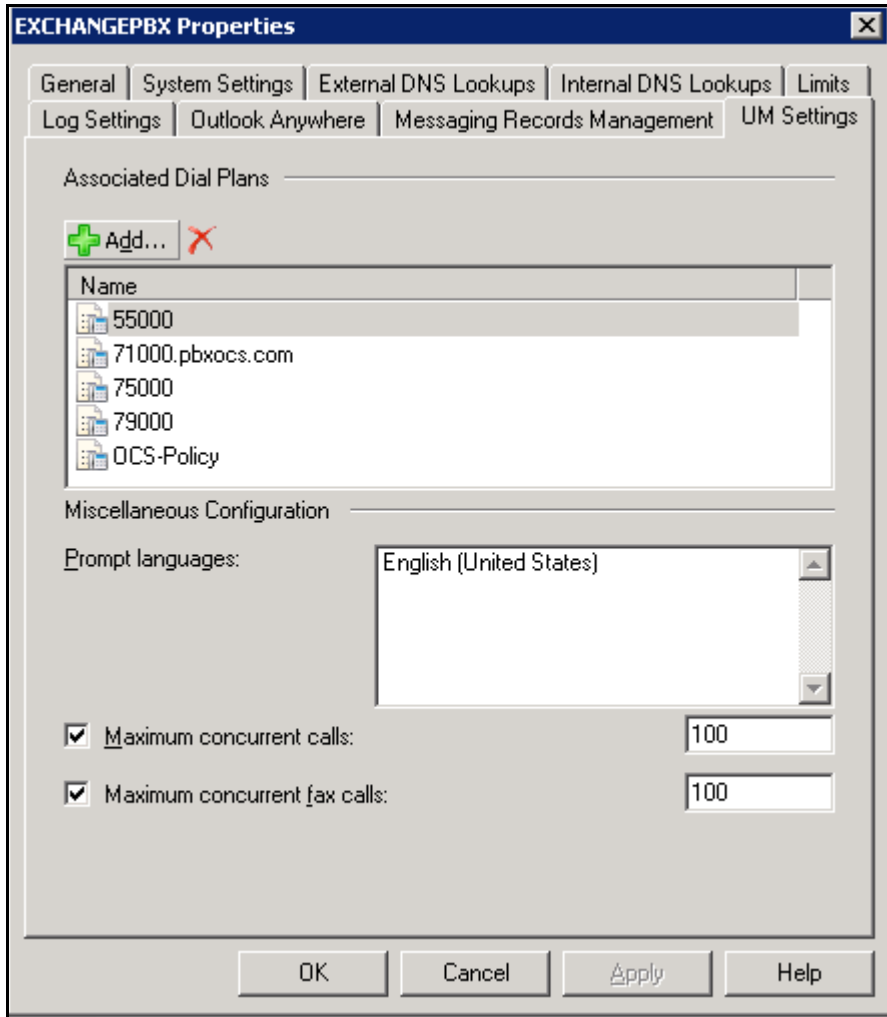
Connectivity log file path:
C:\Program Files\Microsoft\Exchange Server\TransportRol [Browse...]

Protocol log

Send connector protocol log file path:
C:\Program Files\Microsoft\Exchange Server\TransportRoles\ [Browse...]

Receive connector protocol log file path:
C:\Program Files\Microsoft\Exchange Server\TransportRoles\ [Browse...]

OK Cancel Apply Help



Note: 75000 is the VM pilot number used for the tested CUCME (GW), the other four pilot numbers are four other gateways not covered in this note. This proves the multiple gateway capability of MSFT Exchange 2007



UM Dial Plan

Exchange Management Console

File Action View Help

Microsoft Exchange

- Organization Configuration
 - Mailbox
 - Client Access
 - Hub Transport
 - Unified Messaging
 - Server Configuration
 - Mailbox
 - Client Access
 - Hub Transport
 - Unified Messaging
 - Recipient Configuration
 - Mailbox
 - Distribution Group
 - Mail Contact
 - Disconnected Mailbox
 - Toolbox

Unified Messaging 6 objects

UM Dial Plan	UM IP Gateways	UM Mailbox Policies	UM Auto Attendants
55000			
79000			
71000.pbxocs.com			
70000			
OCS-Policy			
75000			

UM Dial Plan	# Digits	Associated UM Servers	Associated UM IP Gateways
55000	5	EXCHANGEPBX	Test1
79000	5	EXCHANGEPBX	Test2
71000.pbxocs.com	5	EXCHANGEPBX	No gateways associated
70000	5	No servers associated	No gateways associated
OCS-Policy	5	EXCHANGEPBX	pool10,pool11
75000	5	EXCHANGEPBX	Test3

Actions

Unified Messaging

- New UM Dial Plan...
- New UM IP Gateway...
- New UM Mailbox Policy...
- New UM Auto Attendant...
- Export List...
- View
- Refresh
- Help
- 79000
 - Remove
 - Properties
 - Help



UM Dial Plan –Properties

75000 Properties [X]

Settings | Dialing Rule Groups | Dialing Restrictions

General | Subscriber Access | Dial Codes | Features

75000

Associated UM servers: EXCHANGEPBX

Associated UM IP gateways: Test3

URI type: Telephone Extension

Number of digits in the extension: 5

Modified: Thursday, May 15, 2008 2:55:08 PM

Send a non-delivery report if message delivery fails

Allow users to receive faxes

VoIP security: Unsecured [v]

OK Cancel Apply Help



75000 Properties [X]

Settings	Dialing Rule Groups	Dialing Restrictions	
General	Subscriber Access	Dial Codes	Features

Allow callers to transfer to users

Allow callers to send voice messages

Callers can contact:

Users within this dial plan

Anyone in the default global address list

Only this extension:

Only this auto attendant:

Anyone in this address list:

Matched name selection method:



75000 Properties [X]

General | Subscriber Access | Dial Codes | Features

Settings | Dialing Rule Groups | Dialing Restrictions

Dial by name primary method: Last First

Dial by name secondary method: SMTP Address

Audio codec: WMA

Operator extension: []

Logon failures before disconnect: 3

Timeouts and Retries

Maximum call duration (min): 30

Maximum recording duration (min): 20

Recording idle time-out (sec): 5

Input idle timeout (sec): 5

Input retries: 3

Input failures before disconnect: 3

Language Settings

Default language: English (United States)

OK Cancel Apply Help



UM IP Gateways

The screenshot shows the Exchange Management Console interface. The left pane displays the 'Unified Messaging' folder under 'Microsoft Exchange'. The main pane shows a table of IP Gateways under the 'UM IP Gateways' tab. The table has columns for Name, UM Dial Plans, Pilot Identifier, and Address. The right pane shows the 'Actions' menu for the selected 'pool10' gateway.

Name	UM Dial Plans	Pilot Identifier	Address
pool10	OCS-Policy	OCS-Policy	pool10.pbxcos.com
pool11	OCS-Policy	OCS-Policy	pool11.pbxcos.com
Test1	Default Hunt Group 55000		172.20.88.254
Test2	Default Hunt Group 79000		172.20.8.26
Test3	Default Hunt Group 75000		172.20.172.20

Actions

- New UM Dial Plan...
- New UM IP Gateway...
- New UM Mailbox Policy...
- New UM Auto Attendant...
- Expand All UM IP Gateways
- Collapse All UM IP Gateways
- Export List...
- View
- Refresh
- Help

pool10


- New UM Hunt Group...
- Disable after completing calls
- Disable immediately
- Remove
- Properties
- Help

Note: Mutiple gateways can be supported by Exchange 2007 using DNS server.



Test3 Properties [X]

General



Status: Enabled

Modified: Friday, May 09, 2008 4:37:50 PM

IP Address:

Example: 192.168.10.10

Fully qualified domain name (FQDN):

Example: smarthost.company.com

Allow outgoing calls through this UM IP gateway

OK Cancel Apply Help



UM mailbox policies

The screenshot shows the Exchange Management Console interface. The left pane displays the navigation tree with 'Unified Messaging' selected. The main pane shows the 'Unified Messaging' console with the 'Mailbox Policies' tab active. A table lists the policies, and the right pane shows the 'Actions' menu for the selected policy.

Name	Associated UM Dial Plan	Min PIN Length	Logon Failures
55000 Default Policy	55000	6	5
70000 Default Policy	70000	6	5
71000.pbxocs.com Default Policy	71000.pbxocs.com	6	5
75000 Default Policy	75000	6	5
79000 Default Policy	79000	6	14
OCS-Policy Default Policy	OCS-Policy	4	5

Actions

- New UM Dial Plan...
- New UM IP Gateway...
- New UM Mailbox Policy...
- New UM Auto Attendant...
- Export List...
- View
- Refresh
- Help

75000 Default Policy


- Remove
- Properties
- Help



UM mailbox policies –Properties

75000 Default Policy Properties [X]

General | Message Text | PIN Policies | Dialing Restrictions



Associated UM dial plan: 75000

Modified: Thursday, May 15, 2008 12:15:25 PM

Maximum greeting duration (minutes):

Allow missed call notifications

OK Cancel Apply Help



75000 Default Policy Properties [X]

General | Message Text | PIN Policies | Dialing Restrictions

Fax identity:
Microsoft Exchange

Text sent when a UM mailbox is enabled:
[Empty text box with scroll arrows]

Text sent when a PIN is reset:
[Empty text box with scroll arrows]

Text included with a voice message:
[Empty text box with scroll arrows]

Text included with a fax message:
[Empty text box with scroll arrows]

OK Cancel Apply Help



75000 Default Policy Properties [X]

General | Message Text | **PIN Policies** | Dialing Restrictions

Minimum PIN length:

PIN lifetime (days):

Number of previous PINs to disallow:

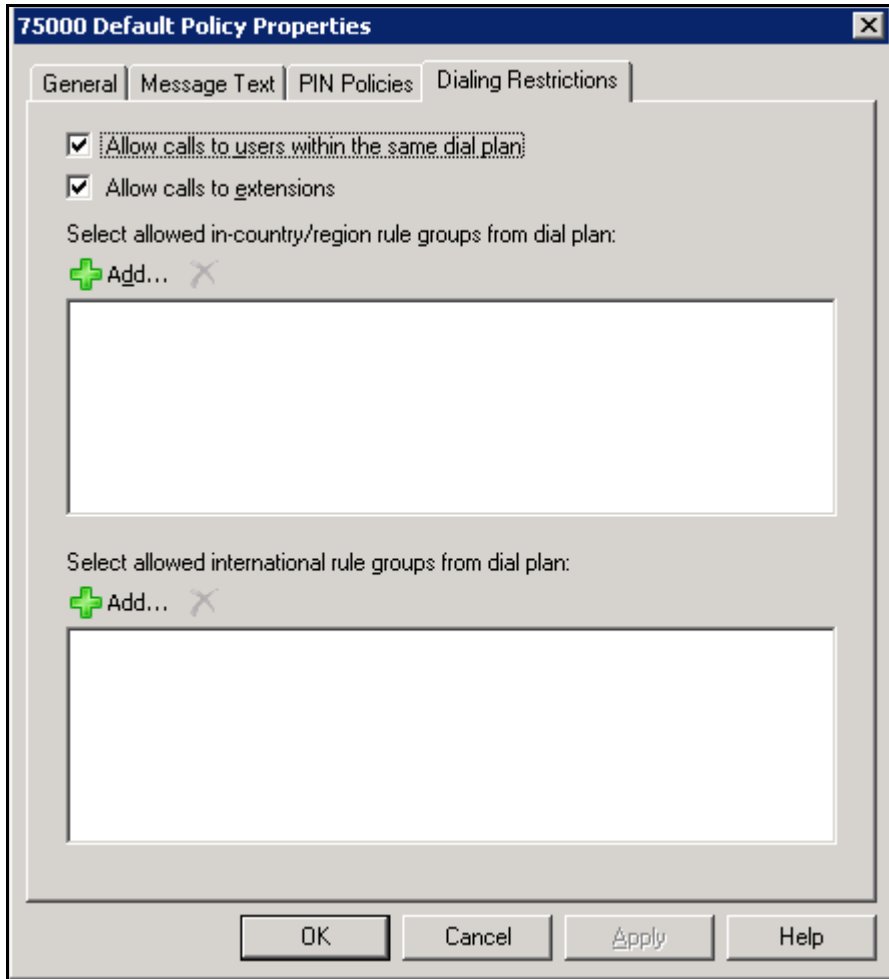
Allow common patterns in PIN

Failed Logons

Number of incorrect PIN entries before PIN is automatically reset:

Number of incorrect PIN entries before UM mailbox is locked out:

OK Cancel Apply Help





UM Auto Attendants

The screenshot shows the Exchange Management Console interface. The left pane displays the 'Unified Messaging' folder under 'Server Configuration'. The main pane shows a table of Auto Attendants with the following data:

Name	UM Dial Plan	Status
AA55000	55000	Enabled
AA71000	71000.pbxocs.com	Enabled
AA75000	75000	Enabled
AA79000	79000	Enabled
AAOCS	OCS-Policy	Enabled


The right pane shows the 'Actions' menu for the selected 'AA75000' object, including options like 'Disable', 'Remove', 'Properties', and 'Help'.



UM Auto Attendants –Properties

AA75000 Properties [X]

General | Greetings | Times | Features | Key Mapping | Dialing Restrictions

 AA75000

Status: Enabled

Associated dial plan: 75000

Modified: Thursday, May 15, 2008 3:34:15 PM

Extension number to associate:

+ Add / Edit X

Auto attendant is speech-enabled

Use this DTMF fallback auto attendant:

OK Cancel Apply Help



AA75000 Properties [X]

General | **Greetings** | Times | Features | Key Mapping | Dialing Restrictions

Greetings

Business hours greeting:

Non-Business hours greeting:

Informational announcement:

Main Menu Prompt

Business hours main menu prompt:

Non-Business hours main menu prompt:



AA75000 Properties [X]

General | Greetings | Times | Features | Key Mapping | Dialing Restrictions

Language: English (United States) [v]

Operator extension: []

Allow caller to transfer to users

Allow callers to send voice messages

Callers can contact:

Users within dial plan

Anyone in the default global address list

Anyone in this address list:

[] [Browse...]

Matched name selection method:

Inherit from dial plan [v]

Allow transfer to operator during business hours

Allow transfer to operator after business hours

[OK] [Cancel] [Apply] [Help]



UM Recipient Configuration (users)

The screenshot shows the Exchange Management Console window titled "Exchange Management Console". The main area displays "Recipient Configuration - pbxocs.com" with 22 objects. A table lists the recipients with columns for Display Name, Alias, Recipient Type Details, and Primary SMTP Address. The "Nortel One" and "Nortel Two" rows are selected. The right-hand pane shows the "Actions" menu for "Recipient Configuration", with "2 items selected" (Nortel One and Nortel Two) and options like "Disable", "Remove", and "Move Mailbox...".


Display Name	Alias	Recipient Type Details	Primary SMTP Address
Administrator	Administrator	User Mailbox	Administrator@pbxocs.com
Avaya One	AvayaOne	User Mailbox	AvayaOne@pbxocs.com
Avaya Two	AvayaTwo	User Mailbox	AvayaTwo@pbxocs.com
MeetingPlace LAB	MeetingPlace	User Mailbox	MeetingPlace@pbxocs.com
Nortel One	NortelOne	User Mailbox	NortelOne@pbxocs.com
Nortel Two	NortelTwo	User Mailbox	NortelTwo@pbxocs.com
Outlook1 Test	Outlook1	User Mailbox	Outlook1@pbxocs.com
SimRing Five	SimRingFive	User Mailbox	SimRingFive@pbxocs.com
SimRing Four	SimRingFour	User Mailbox	SimRingFour@pbxocs.com
SimRing One	SimRingOne	User Mailbox	SimRingOne@pbxocs.com
SimRing Three	SimRingThree	User Mailbox	SimRingThree@pbxocs.com
Simring Two	Simringtwo	User Mailbox	Simringtwo@pbxocs.com
SimRing Zero	SimRingZero	User Mailbox	SimRingZero@pbxocs.com
Test54 CCM	Test54	User Mailbox	Test54@pbxocs.com
test54001	test54001	User Mailbox	test54001@pbxocs.com
UMTEST1 PBX	UMTEST1	User Mailbox	UMTEST1@pbxocs.com
UMTEST10 Blair	UMTEST10	User Mailbox	UMTEST10@pbxocs.com
UMTEST11 Blair	UMTEST11	User Mailbox	UMTEST11@pbxocs.com
UMTEST12 Blair	UMTEST12	User Mailbox	UMTEST12@pbxocs.com
UMTEST2 Lab	UMTEST2	User Mailbox	UMTEST2@pbxocs.com
UMTEST20 Liu	UMTEST20	User Mailbox	UMTEST20@pbxocs.com
UMTEST21 Liu	UMTEST21	User Mailbox	UMTEST21@pbxocs.com



User –Properties

Nortel One Properties [X]

Account	Member Of	E-Mail Addresses	
Mailbox Settings	Mail Flow Settings	Mailbox Features	
General	User Information	Address and Phone	Organization



Organizational unit: pbxocs.com/Users

Last logged on by:

Total items: 11

Size (KB): 220

Exchange server: exchangepbx

Mailbox database: First Storage Group\Mailbox Database

Modified: Tuesday, May 27, 2008 4:00:44 PM

Alias:

Hide from Exchange address lists

View and modify custom attributes.



Nortel One Properties [X]

Account	Member Of	E-Mail Addresses	
Mailbox Settings	Mail Flow Settings	Mailbox Features	
General	User Information	Address and Phone	Organization

First name: Initials:

Last name:

Name:

Simple display name:

Web page:

Notes:

OK Cancel Apply Help



Nortel One Properties [X]

Mailbox Settings | Mail Flow Settings | Mailbox Features

General | User Information | Address and Phone | Organization

Account | Member Of | E-Mail Addresses

Each e-mail address type has one default reply address. The default reply address is displayed in bold. To change the default reply address, select an entry in the list, and then click 'Set as Reply'.

E-mail addresses:

+ Add... | Edit... | Set as Reply

Address
EUM
55016;phone-context=75000.pbxocs.com
MWI/EUM
55016;CN=Test3,CN=UM IPGateway Container,CN=PbxLab,CN=Microso...
SMTP
NortelOne@pbxocs.com

Automatically update e-mail addresses based on e-mail address policy

OK | Cancel | Apply | Help



Nortel One Properties [X]

Mailbox Settings	Mail Flow Settings	Mailbox Features	
General	User Information	Address and Phone	Organization
Account	Member Of	E-Mail Addresses	

User logon name (User Principal Name):
NortelOne @pbxocs.com

User logon name (pre-Windows 2000):
NortelOne

User must change password at next logon

OK Cancel Apply Help



Geomant MWI software configuration

- Administration
 - MWI Service
 - MWI Users
- Configuration
- Information
- Real-time Report
- Historical Report
- Troubleshooting

PRODUCT INFORMATION

Product Name	MWI SERVICE FOR EXCHANGE 2007		
Current Version	1.9.3.5	GUI Version	1.9.3.5
Company Name	MWI2007 - GEOMANT	Email Address	SOFTWARE DEVELOPMENT UNIT
Domain locked	PBXOCS.COM	Licensed to	CISCO
License expires	12/31/2020	Number of users	50
Support expires	4/21/2009	Support type	1 (SUPPORT TYPE 0:NONE, 1:TIER1-2, 2:TIER3-4)
Current State	RUNNING	State Since	6/2/2008 11:33:45 AM
Memory Usage	72 MB	CPU Usage	1 %
Host Name	EXCHANGEPBX	Uptime	1 DAYs 04:00:26
UM users	20	MWI users	7
MWI OFF	7342	MWI ON	3357
Messages sent	10699	SMS sent	0

Pause Service



CURRENTLY AVAILABLE UNIFIED MESSAGING USERS

- Administration
 - MM Service
 - MM Users**
- Configuration
 - Status Engine
 - Active Directory
 - Exchange Server
 - SIP Gateway
 - SMS Gateway
 - Mapping Rules
- Information
- Real-time Report
- Historical Report
- Troubleshooting

Refreshed: 6/3/2008 3:38:47 PM	Page size: 10 50 100 250 500 1000 ALL	Searching Criteria: [Unspecified]
Refresh now!	Refresh time: 30 150 600 seconds	Column's visibility: all default user
Users: 0-20*		

Lamp	VM / F / MC	Display name ▲	E-mail	Extension1	Extension2	GSM Number	MWI Service Enabled	MWI on Voicemails	MWI on Fax	MWI on Missed Calls	SMS on Voicemails
	0 / 0 / 0	AVAYA ONE	AVAYAONE@PBX0CS.COM	77001@TEST1	NOT SET	[UNSPECIFIED]	YES	YES	YES	YES	No
	1 / 0 / 2	AVAYA TWO	AVAYATWO@PBX0CS.COM	77002@TEST1	NOT SET	[UNSPECIFIED]	YES	YES	YES	YES	No
	0 / 0 / 0	NORTEL ONE	NORTELONE@PBX0CS.COM	55016@TEST3	NOT SET	[UNSPECIFIED]	YES	YES	YES	YES	No
	- / - / -	NORTEL TWO	NORTELTWO@PBX0CS.COM	55017@TEST1	NOT SET	[UNSPECIFIED]	No	No	No	No	No



SETTINGS FOR ACTIVE DIRECTORY ACCESS

- Administration
 - MWI Service
 - MWI Users
- Configuration
 - Status Engine
 - Active Directory
 - Exchange Server
 - SIP Gateway
 - SMS Gateway
 - Mapping Rules
- Information
- Real-time Report
- Historical Report
- Troubleshooting

Host	<input type="text"/>
Port	<input type="text" value="389"/>
Base DN	<input type="text" value="DC=pbxocs,DC=com"/>
Append host	<input checked="" type="checkbox"/>
Delegate	<input checked="" type="checkbox"/>
Anonymous	<input type="checkbox"/>
User	<input type="text"/>
Password	<input type="text"/>
Domain	<input type="text"/>
Encrypt	<input type="checkbox"/>
Sign	<input type="checkbox"/>
Refresh period	<input type="text" value="18000"/>
Gateway List Size	<input type="text" value="50"/>
Search Filter	<input type="text" value="(&(objectClass=user)(msExchUMEnabledFlags:1.2.840.1135"/>
<input type="button" value="Update Parameters"/>	
<input type="button" value="Start Synchronization To AD Content"/>	



SETTINGS FOR EXCHANGE SERVER ACCESS

- Administration
 - MWM Service
 - MWM Users
- Configuration
 - Status Engine
 - Active Directory
 - Exchange Server
 - SIP Gateway
 - SMS Gateway
 - Mapping Rules
- Information
- Real-time Report
- Historical Report
- Troubleshooting

Protocol	WebService - Push
Delegate	<input checked="" type="checkbox"/>
User	
Password	
Domain	
Default sender	
Event sink IP	
Event sink port	15201
Create VM folder	<input checked="" type="checkbox"/>
Exchange VM folder	Voice Mail
Secure layer	<input checked="" type="checkbox"/>
Impersonate user	<input checked="" type="checkbox"/>
Impersonate Access Type	SID
Enable Dial Out	<input type="checkbox"/>
Use Autodiscovery	<input type="checkbox"/>
Failure Penalty	10
Force Exchange Subscription Manually	0

Update Parameters



SETTINGS FOR SIP GATEWAY ACCESS

- Administration
 - MM Service
 - MM Users
- Configuration
 - Status Engine
 - Active Directory
 - Exchange Server
 - SIP Gateway
 - SMS Gateway
 - Mapping Rules
- Information
- Real-time Report

Display Name	Transport	Gateway Port	MWI Ports	Domain Name	Outbound Proxy	Subscription	Authentication	Username	Password	Local Port
TEST1	TCP	5060	1	[Not available]		<input type="checkbox"/>	<input checked="" type="checkbox"/>	[Not available]	[Not available]	5060
TEST2	TCP	5060	1	[Not available]		<input type="checkbox"/>	<input checked="" type="checkbox"/>	[Not available]	[Not available]	5060
POOL11	TCP	5060	1	[Not available]		<input type="checkbox"/>	<input checked="" type="checkbox"/>	[Not available]	[Not available]	5060
POOL10	TCP	5060	1	[Not available]		<input type="checkbox"/>	<input checked="" type="checkbox"/>	[Not available]	[Not available]	5060
TEST3	TCP	5060	1	[Not available]		<input type="checkbox"/>	<input checked="" type="checkbox"/>	[Not available]	[Not available]	5060
Update Gateways										



CURRENTLY AVAILABLE VOLUME LICENSES

Category Name	Size	Expiration	Restricted to	Description
MWM ENABLED UM USERS	50	12/31/2020	PBXOCS.COM	NUMBER OF MWM2007 USERS
MWM ONLINE SUPPORT	1	4/21/2009	PBXOCS.COM	SUPPORT TYPE 0:NONE, 1:TIER1-2, 2:TIER3-4
MWM LOGFILE VIEWER	1	12/31/2020	PBXOCS.COM	LOGFILE VIEWER APPLICATION FOR MWM2007
MWM VISTA GADGET	50	12/31/2020	PBXOCS.COM	NUMBER OF USERS OF MWM2007 VISTA GADGET

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UPLOAD A NEW LICENSE FILE

Start Upload

The following commands are required and are entered in the Exchange Management Shell prompt, for each MWI DN subscriber, in order to activate MWI services between Geomant software and Exchange VM subscribers.

```
add-mailboxpermission testtwo -accessright fullaccess -user administrator
add-mailboxpermission testtwo -accessright fullaccess -user NETWORKSERVICE
```

Note: Microsoft Exchange 2007 can support more than one Cisco IOS gateway by simply adding each Cisco IOS gateway as a separate GW end-point. See configuration section for more details.



Cisco IOS gateway configuration

Exchange-gateway#sh ver
Cisco IOS Software, 3800 Software (C3825-IPVOICEK9-M), Version 12.4(15)T5, RELEA
SE SOFTWARE (fc4)
Technical Support: <http://www.cisco.com/techsupport>
Copyright (c) 1986-2008 by Cisco Systems, Inc.
Compiled Wed 30-Apr-08 19:37 by prod_rel_team

ROM: System Bootstrap, Version 12.4(13r)T, RELEASE SOFTWARE (fc1)

Exchange-gateway uptime is 1 week, 6 days, 21 hours, 1 minute
System returned to ROM by reload at 20:48:50 UTC Thu May 15 2008
System image file is "flash:c3825-ipvoicek9-mz.124-15.T5.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.

Cisco 3825 (revision 1.2) with 489472K/34816K bytes of memory.
Processor board ID FTX1213A1LY
2 Gigabit Ethernet interfaces
24 Serial interfaces
2 Channelized T1/PRI ports
DRAM configuration is 64 bits wide with parity enabled.
479K bytes of NVRAM.
126976K bytes of ATA System CompactFlash (Read/Write)

Configuration register is 0x2102

=====
Exchange-gateway#sh run
Building configuration...

Current configuration : 2381 bytes
!
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname Exchange-gateway
!
boot-start-marker
boot system flash:c3825-ipvoicek9-mz.124-15.T5.bin
boot-end-marker
!
card type t1 0 1



```
logging buffered 10000000
!
no aaa new-model
network-clock-participate wic 1
dot11 syslog
ip cef
!
!
!
no ip domain lookup
ip domain name yourdomain.com
multilink bundle-name authenticated
!
isdn switch-type primary-qsig
voice-card 0
dspfarm
!
!
!
!
voice service voip
  qsig decode
  sip
!
!
voice class codec 1
  codec preference 1 g711ulaw
  codec preference 2 g729r8
!
!
archive
  log config
  hidekeys
!
!
controller T1 0/1/0
  framing esf
  linecode b8zs
  pri-group timeslots 1-24
  description QSIG to Nortel CS102
!
controller T1 0/1/1
  framing esf
  linecode b8zs
!
!
interface GigabitEthernet0/0
  ip address 172.20.172.20 255.255.255.0
  duplex auto
  speed auto
  media-type rj45
!
interface GigabitEthernet0/1
  no ip address
  shutdown
  duplex auto
  speed auto
  media-type rj45
```



```
!  
interface Serial0/1/0:23  
no ip address  
encapsulation hdlc  
isdn switch-type primary-qsig  
isdn overlap-receiving  
isdn incoming-voice voice  
isdn send-alerting  
no cdp enable  
!  
ip forward-protocol nd  
ip route 0.0.0.0 0.0.0.0 172.20.172.1  
!  
!  
ip http server  
ip http access-class 23  
ip http authentication local  
no ip http secure-server  
ip http timeout-policy idle 60 life 86400 requests 10000  
!  
!  
!  
control-plane  
!  
!  
!  
voice-port 0/1/0:23  
mwi1  
!  
!  
dial-peer voice 52210 pots  
description dial-peer to Nortel cs102  
destination-pattern 55...  
incoming called-number 55...  
direct-inward-dial  
port 0/1/0:23  
forward-digits all  
!  
dial-peer voice 75000 voip  
description dial-peer to MSFT Exchange  
destination-pattern 75000  
session protocol sipv2  
session target ipv4:172.20.85.254  
session transport tcp2  
incoming called-number 75000  
dtmf-relay rtp-nte  
codec g711ulaw  
!  
!  
sip-ua  
mwi-server ipv4:172.20.85.254 expires 3600 port 5060 transport udp unsolicited3  
!  
!
```

¹ Enable MWI on this port.

² This SIP dial peer uses the TCP transport layer protocol.

³ To specify voice-mail server settings on a voice gateway or user agent.



```
line con 0
exec-timeout 0 0
password cisco
logging synchronous
login
line aux 0
line vty 0 4
exec-timeout 0 0
privilege level 15
password cisco
logging synchronous
login
transport input telnet
line vty 5 15
access-class 23 in
privilege level 15
login local
transport input telnet
!
scheduler allocate 20000 1000
!
end
```



Acronyms

Acronym	Definitions
SIP	Session Initiation Protocol
MSFT	Microsoft
VM	VoiceMail
UM	Unified Messaging
PSTN	Public Switched Telephone Network



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