

MITEL – SIP CoE

Technical Configuration Notes



Configure Ascom i62 phones for
use with MiVoice Office

SIP CoE 14-4940-00310

NOTICE

The information contained in this document is believed to be accurate in all respects but is not warranted by Mitel Networks™ Corporation (MITEL®). The information is subject to change without notice and should not be construed in any way as a commitment by Mitel or any of its affiliates or subsidiaries. Mitel and its affiliates and subsidiaries assume no responsibility for any errors or omissions in this document. Revisions of this document or new editions of it may be issued to incorporate such changes.

No part of this document can be reproduced or transmitted in any form or by any means - electronic or mechanical - for any purpose without written permission from Mitel Networks Corporation.

TRADEMARKS

Mitel is a trademark of Mitel Networks Corporation.

Windows and Microsoft are trademarks of Microsoft Corporation.

Other product names mentioned in this document may be trademarks of their respective companies and are hereby acknowledged.

Mitel Technical Configuration Notes – Configure MiVoice Office (formerly Mitel 5000 CP) for use
with Ascom i62 SIP telephones.
March 2014, 14-4940-00310

®,™ Trademark of Mitel Networks Corporation
© Copyright 2014, Mitel Networks Corporation
All rights reserved

Contents

OVERVIEW	1
Interop History.....	1
Interop Status	1
Software & Hardware Setup.....	1
Tested Features.....	2
Device Limitations.....	3
Network Topology	4
GENERAL CONFIGURATION NOTES.....	5
MiVoice Office Configuration Notes.....	5
Network Requirements.....	5
Assumptions for the MiVoice Office Programming	5
Software License – SIP Licensing.....	6
Add a SIP Phone in MiVoice Office.....	7
SIP Phone' configuration details	7
Voice Mailbox Creation	10
SIP Phone Groups	14
Call Configurations	17
Music-on-Hold (MOH) Configuration.....	18
Ascom i62 WiFi Configuration Notes.....	20

Overview


This document provides a reference to Mitel Authorized Solutions providers for configuring the MiVoice Office to host the Ascom i62 SIP telephones. Different SIP devices can be configured in various configurations depending on your VoIP solution. This document covers a basic Ascom i62 SIP telephones' setup with required options setup.

Interop History

Version	Date	Reason
1	March 2014	Initial Interop with MiVoice Office and the Ascom i62 SIP telephones

Interop Status

The Interop of the Ascom i62 SIP telephones has been given a Certification status. This device will be included in the SIP CoE Reference Guide. The status the Ascom i62 SIP telephones achieved is:

 COMPATIBLE	<p>The most common certification which means the device/service has been tested and/or validated by the Mitel SIP CoE team. Product support will provide all necessary support related to the interop, but issues unique or specific to the 3rd party will be referred to the 3rd party as appropriate</p>
---	--

Software & Hardware Setup

This was the test setup to generate a basic SIP call between the Ascom i62 SIP telephones and MiVoice Office.

Manufacturer	Variant	Software Version
Mitel	MiVoice Office (formerly 5000 CP)	6.0.9.61
Ascom	i62 WiFi SIP telephone	5.1.22
Mitel	5340 (SIP)	05.02.03.01
Mitel	5360 (IP)	05.02.02.08

Tested Features

This is an overview of the features tested during the Interop test cycle and not a detailed view of the test cases. Please see the SIP Line Side Interoperability Test Plans for detailed test cases.

Feature	Feature Description	Issues
Basic Call	Making and Receiving basic calls	<input checked="" type="checkbox"/>
DTMF Signal	Sending DTMF after call setup (i.e. mailbox password)	<input checked="" type="checkbox"/>
Call Hold	Putting a call on hold	<input checked="" type="checkbox"/>
Call Transfer	Transferring a call to another destination	<input checked="" type="checkbox"/>
Call Forward	Forwarding a call to another destination	<input checked="" type="checkbox"/>
Conference	Conferencing multiple calls together	<input checked="" type="checkbox"/>
Redial	Last Number Redial	<input checked="" type="checkbox"/>
MWI	Message Waiting Indication	<input checked="" type="checkbox"/>
Dynamic Extension	Multiple sets ringing when one number dialed	<input checked="" type="checkbox"/>
T.38 Fax	Fax Messages	Not Supported
G.711 Fax	Fax Messages	Not Supported



- No issues found



- Issues found, cannot recommend to use



- Issues found

Device Limitations

This is a list of problems or not supported features when Ascom i62 SIP telephones are connected to the MiVoice Office.

Feature	Problem Description
In-band DTMF on i62 WiFi	Currently, Ascom i62 WiFi SIP phone does not support in-band DTMF. Recommendation: Use RFC 2833.

Network Topology

This diagram shows how the testing network is configured for reference.

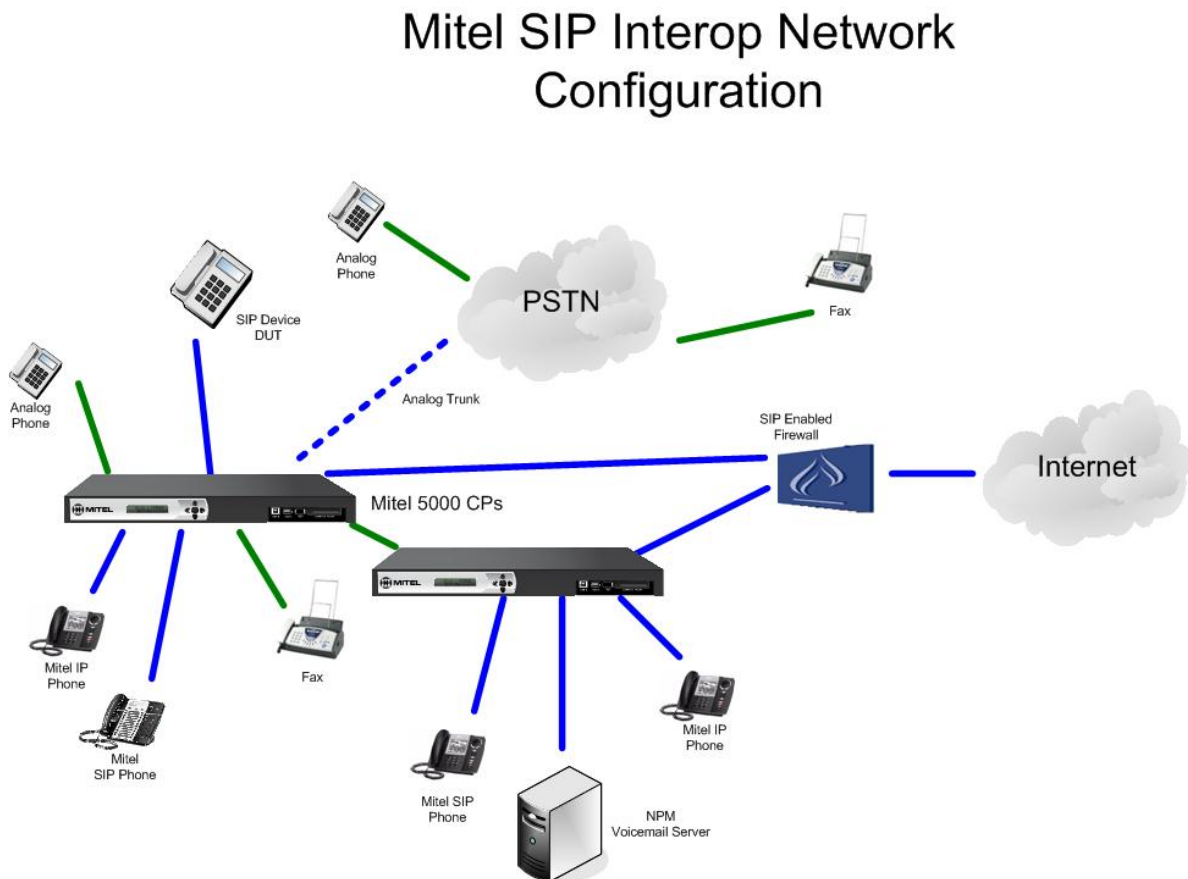


Figure 1 – Network Topology

General Configuration Notes

These notes offer basic guidelines how a device can be configured in a customer environment and how the Ascom i62 SIP telephones were configured in our test environment.

For more detailed information on the programming of MiVoice Office, please refer to the [Mitel 5000 CP Features and Programming Guide](#).

Disclaimer: Although Mitel has attempted to setup the interop testing facility as closely as possible to a customer premise environment, implementation setup could be different onsite. YOU MUST EXERCISE YOUR OWN DUE DILIGENCE IN REVIEWING, planning, implementing, and testing a customer configuration.

MiVoice Office Configuration Notes

The following steps show how to program MiVoice Office to connect with the Ascom i62 SIP telephones.

Network Requirements

- There must be adequate bandwidth to support the voice over IP. As a guide, the Ethernet bandwidth is approx 85 Kb/s per G.711 voice session and 29 Kb/s per G.729 voice session (assumes 20ms packetization). As an example, for 20 simultaneous SIP sessions, the Ethernet bandwidth consumption will be approx 1.7 Mb/s for G.711 and 0.6Mb/s. Almost all Enterprise LAN networks can support this level of traffic without any special engineering. Please refer to the 5000 Engineering guidelines for further information.
- For high quality voice, the network connectivity must support a voice-quality grade of service (packet loss <1%, jitter < 30ms, one-way delay < 80ms).

Assumptions for the MiVoice Office Programming

- The SIP signaling connection uses UDP on Port 5060.

Software License – SIP Licensing

Ensure that MiVoice Office is equipped with enough Category 'F' Phones licenses for the connection of SIP end points. This can be verified within the Software License Feature section form.

Software License Feature	Value
System Type	5000 CP
ACD Hunt Group	Yes
Additional T1/E1/PRI Ports	3
Agent Help	Yes
Analog Voice Mail Hunt Group	Yes
Category 'A' Phones	100
Category 'B' Phones	100
Category 'C' Phones	100
Category 'D' Phones	100
Category 'E' Phones	32
Category 'F' Phones	32
Desktop Interface	Yes
Dynamic Extension Express	Yes
File-Based MOH Sources	100
Hot Desking	Yes
IP Networking	Unlimited
Meet-Me Conferencing	Yes
Remote ACD Hunt Groups	Yes
SIP Trunks	100
SIP Voice Mail Ports	100
System Health Report	Yes
System OAI Events	Yes
System OAI Third Party Call Control	Yes
Voice Processor Messaging Networking	Yes
Unified Voice Messaging Ports	32
Unified Voice Messaging Blackberry® Integration	Yes
Unified Voice Messaging E-mail Synchronization	Yes
User Web Portal	Yes

Node 1 Online 5000 CP North America Dot51 192.168.101.51

Figure 2 – Software License

Add a SIP Phone in MiVoice Office

Navigate to *System->Device and Feature Codes->Phones->Local (for networked configurations)*.

Right click on the free space in right hand side pane and select Create SIP Phone as shown in **Figure 3**.

Pick (or type in) the extension number for the new SIP phone and click OK.

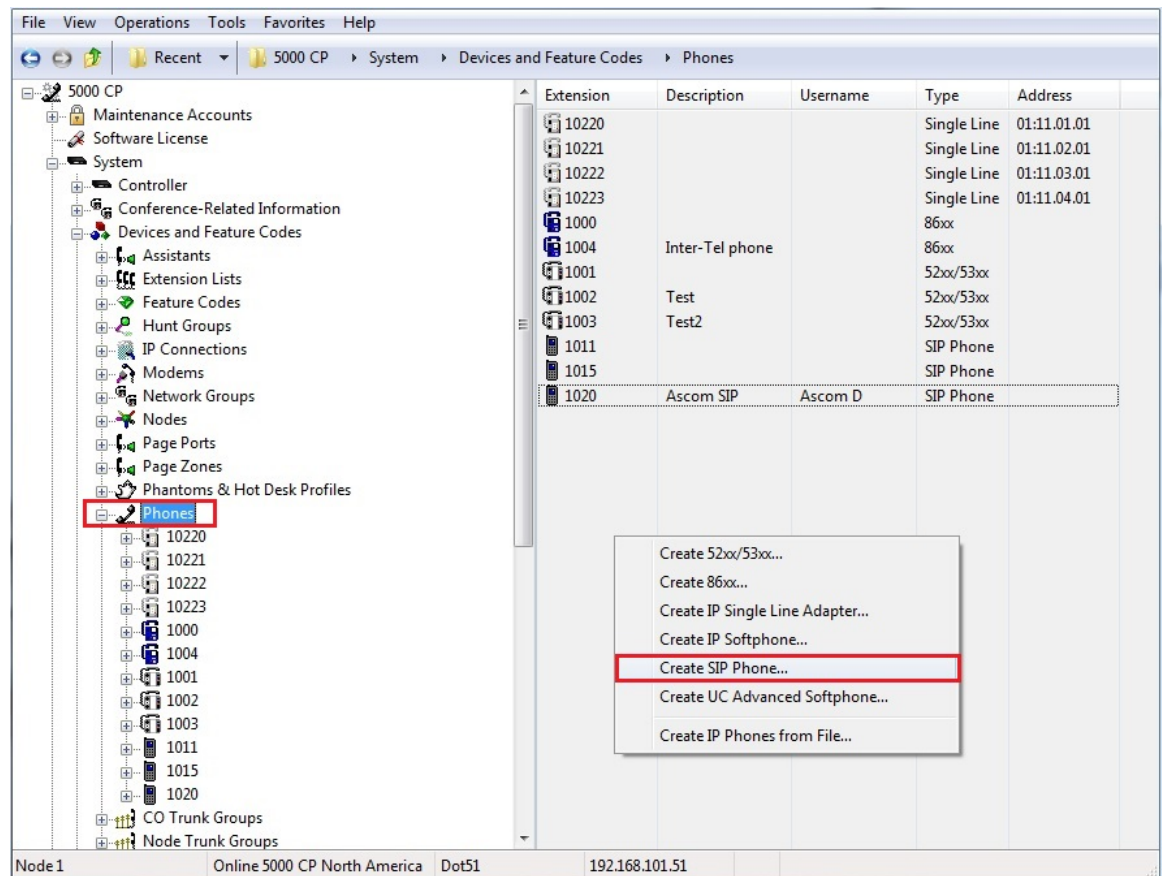


Figure 3 – SIP phone creation

SIP Phone' configuration details

After successful creation of a new SIP phone, double click on it. The default configuration settings will be displayed as shown in **Figure 4**.

In this screen, you may need to change some of the settings:

1. Passcode – this passcode is used for Remote Programming feature such as call forward to the public network. The default passcode is the extension number of the phone.

2. Configure Audio settings for camped, held and ringing calls as required. For instance, you can change the audio playback ringing, camped or holding scenarios to [File-Based Music-on-Hold](#) and described later in this document.
3. Take a note of SIP Phone Group number since we will need it later.

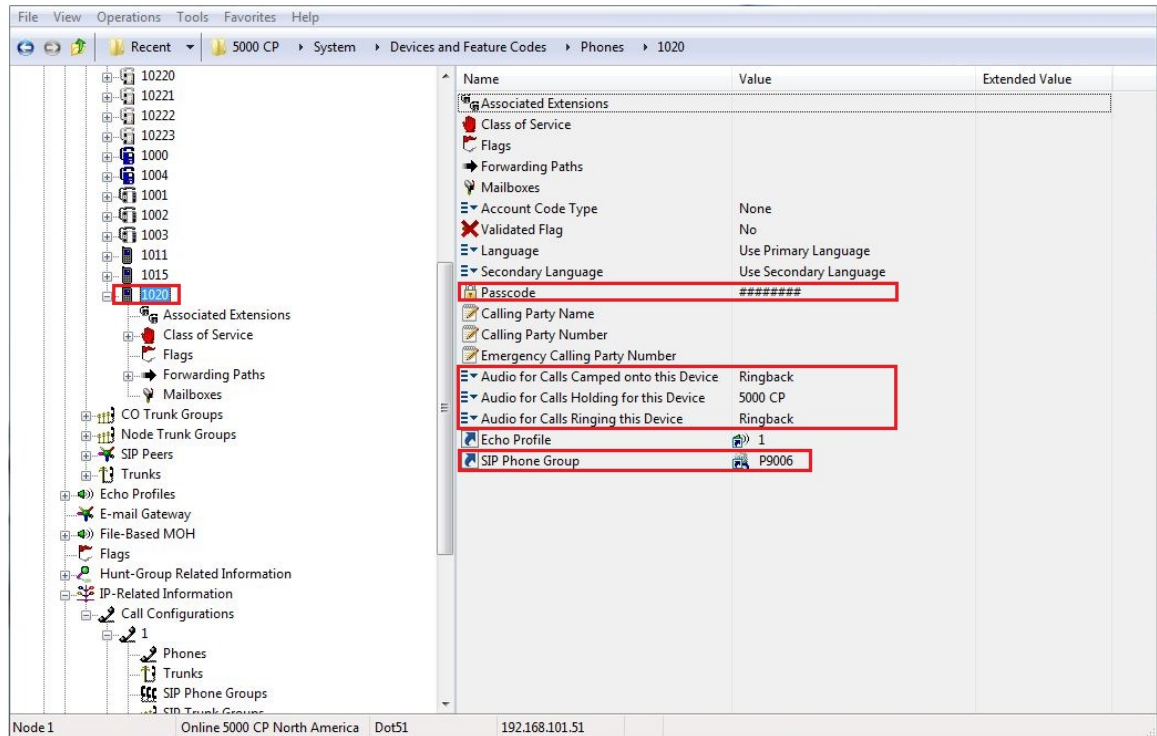


Figure 4 – SIP phone configuration overview

Associated Extensions

Click Associated Extensions node as shown in **Figure 5**.

Configure Voice Mail extension according to the site configuration. Also, configure Outgoing Extension to allow this SIP phone to seizure some definite trunk line when making an outbound call.

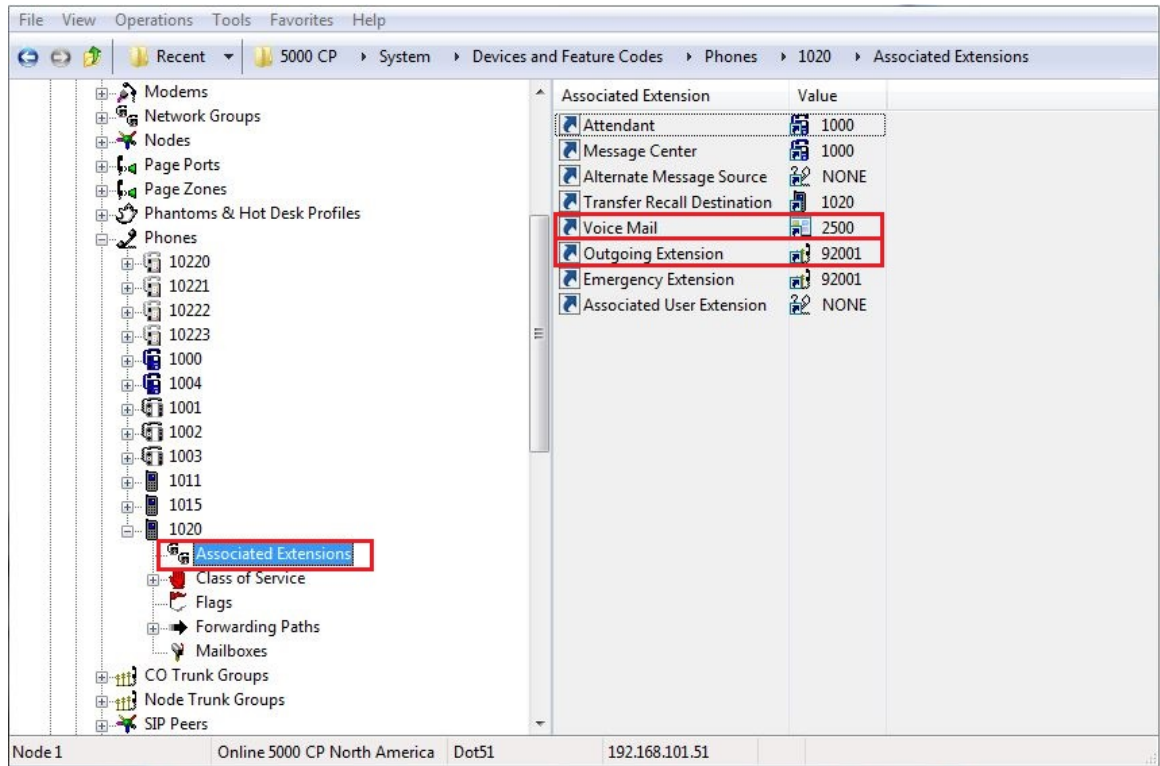


Figure 5 – Settings for Associated Extensions

Flags

The use of Flags can differ from site to site. In our test environment, we use the settings as shown in **Figure 6**.

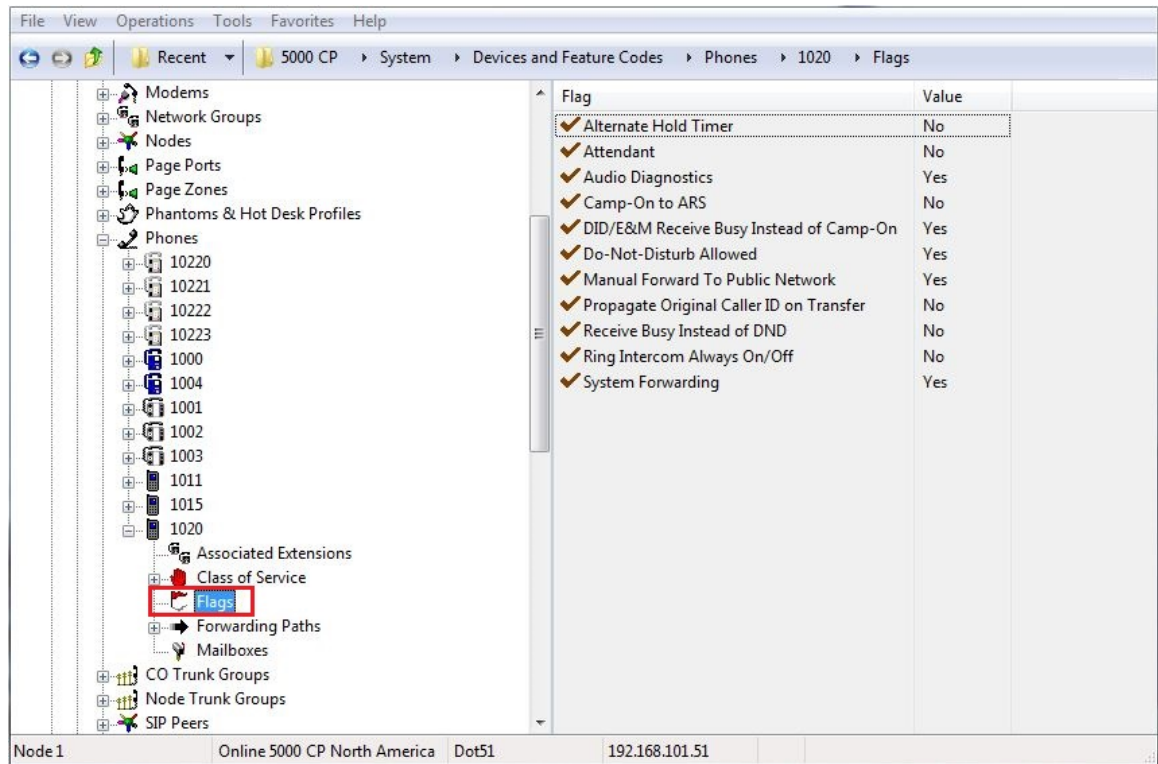


Figure 6 – Flag settings (an example)

Voice Mailbox Creation

By default, when the new phone has been added to MiVoice Office, there was no voicemail box created for this extension.

That's why, if you click Mailboxes node as in **Figure 6**, you don't see any mailboxes associated with this new extension. So, we have to create the user's voice mailbox manually.

Navigate to *Voice Processor->Devices->Mailboxes->Local (for networked configurations)*.

Right click on the free space in right hand side pane and select Create Associated Mailboxes as shown in **Figure 7**.

Select the phone type – SIP Phone, and click Next.
Click on newly created SIP phone and click Add Items button.
Then click Finish button.

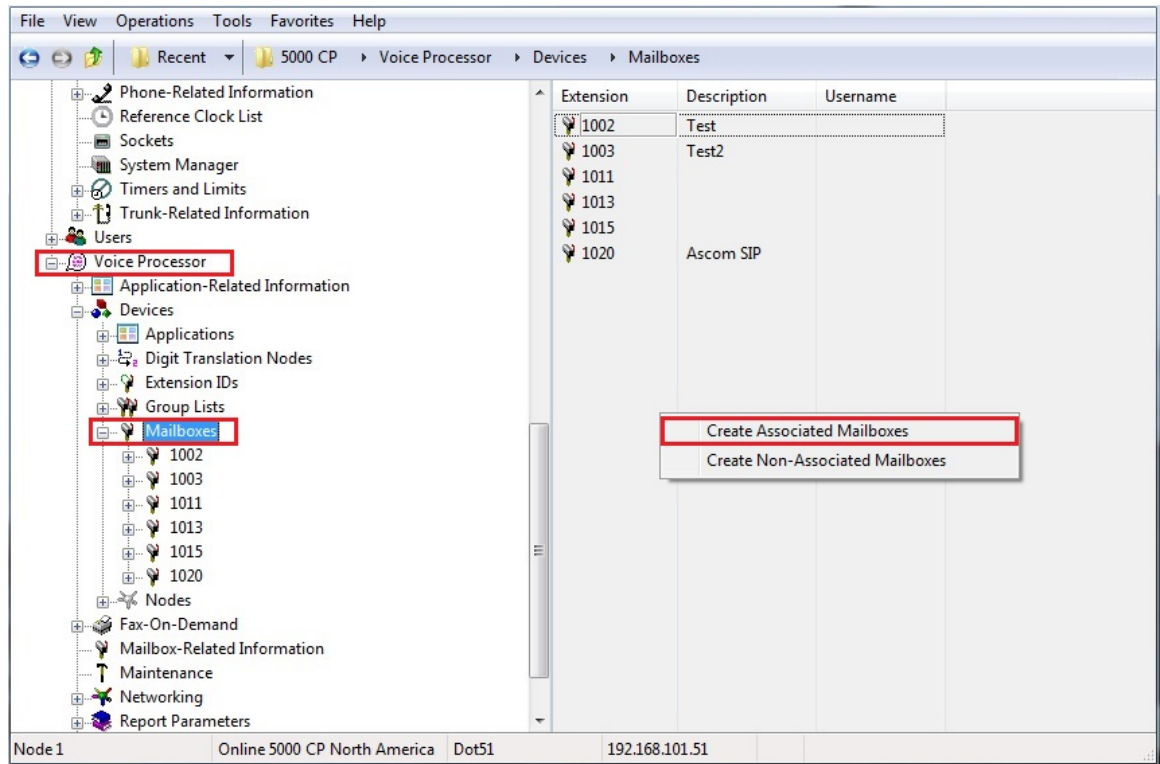


Figure 7 – Mailbox creation

After successful creation of the new voice mailbox, double click on it to view its settings. Since the associated user has never accessed the voicemail before, the default mailbox initialization status is set to No and the System Greeting is being used as the default one. The default passcode to access voice mailbox is 1111.

So, make a call from Ascom i62 into the voicemail pilot number to initialize the mailbox. (You need to change the passcode and record the voicemail box' name and greetings). Configure some other options as required. See the example in **Figure 8**.

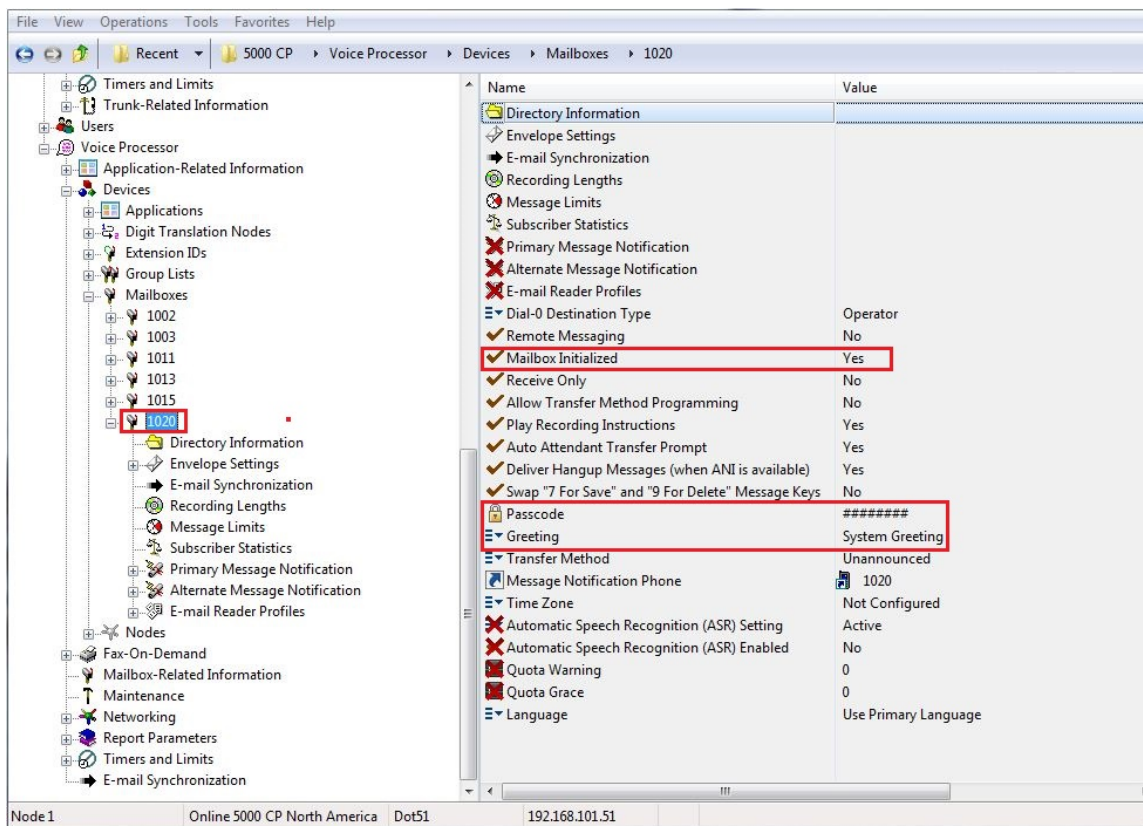


Figure 8 – Voice mailbox settings

When configuring call forwarding to a voicemail box, it is not enough to create the mailbox and assign it to the phone. You also have to define the Forwarding Path and assign it to the phone. To do this:

1. Navigate to *System->Phone Related Information->System Forwarding Paths*
2. Define at least Forwarding Point 1 for the selected path. In the example in **Figure 9**, we defined extension 2500 as the forwarding point for the path #1.
Extension 2500 represents the pilot number to dial Basic voicemail (BVM).

NOTE: You can create many Forwarding Paths for various circumstances. For easier identification later on, we would recommend to enter a text in the Description field as shown in **Figure 9**.

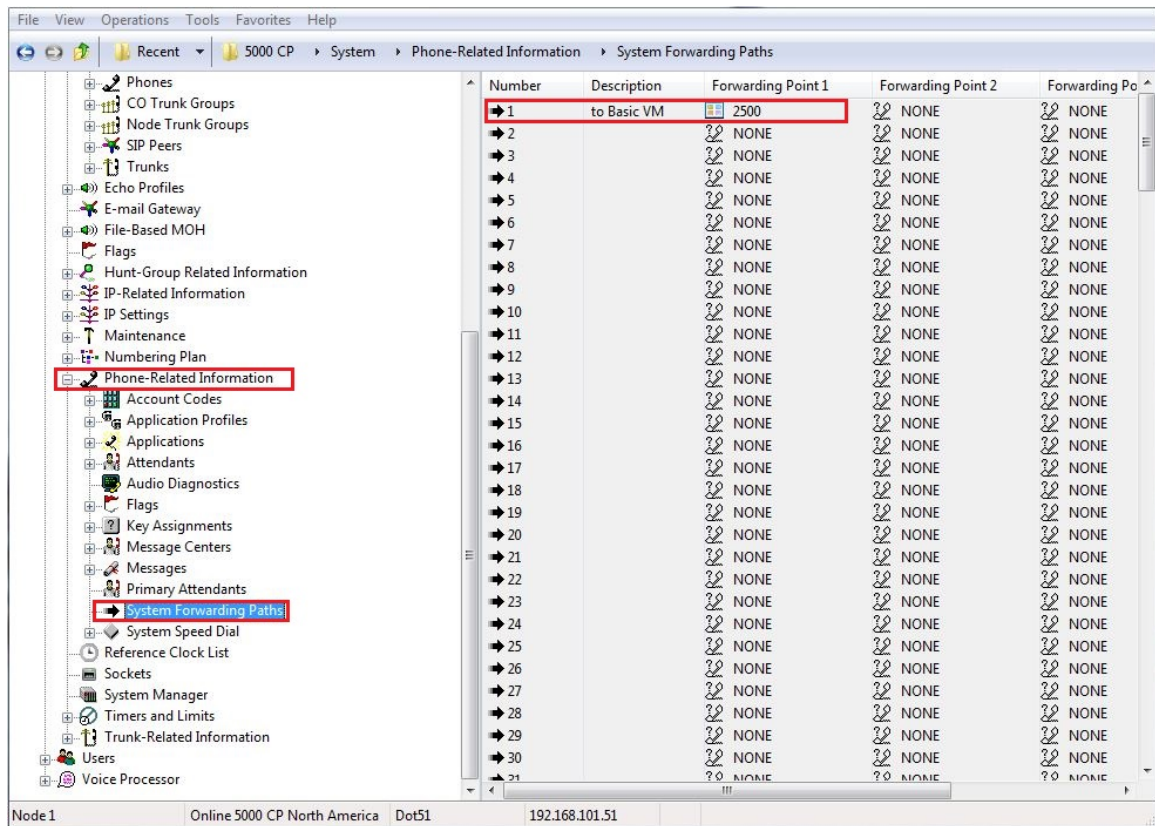


Figure 9 - Example of Forwarding Path definition

Now, when Forwarding Path #1 is configured, we can assign it the phone:

1. Navigate to *System->Device and Feature Codes->Phones-><Phone's extension number>->Forwarding Paths*
2. Right click in right hand pane and select **Add to Forwarding Paths List**
3. Select the Forwarding Paths and click Next
4. Select the required Forwarding Path's number (#1) and click **Add Items** button
5. Click Finish

NOTE: If you wish to forward unanswered internal calls to the defined Forwarding Point, set parameter **Fwd Call Type – IC Calls** to “Yes” as shown on **Figure 10**.

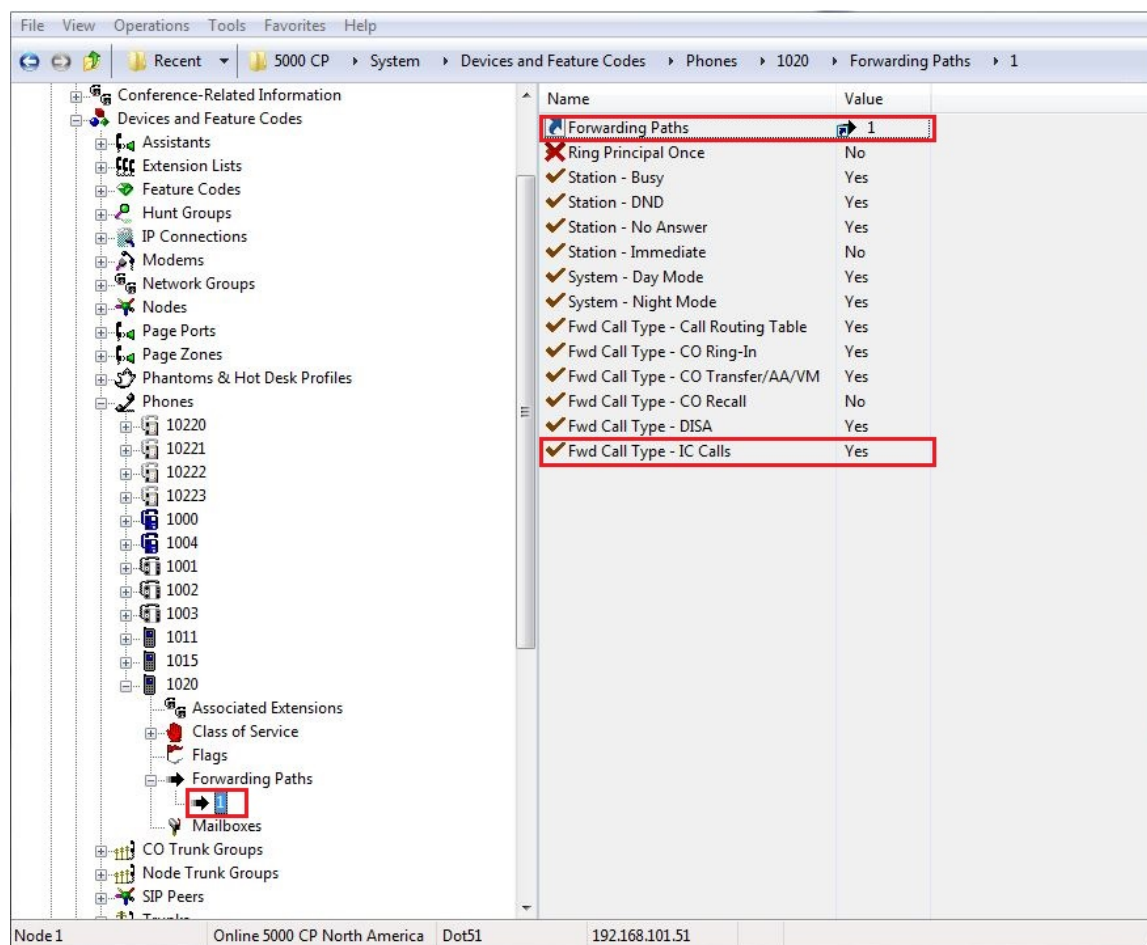


Figure 10 - Example of the properties for defined Forwarding Path

SIP Phone Groups

Previously, we noticed the SIP Phone Group' number in [SIP Phone' configuration details](#) section. Now, we need to configure some settings there.

Navigate to *System->Device and Feature Codes->SIP Peers->SIP Phone Groups* and collapse the node where our SIP phone resides (P9006 in our test environment). Click Configuration as shown in **Figure 11**.

In Configuration screen, we can see in which Call Configuration this SIP phone resides in. You can access the Call Configuration for this Phone Group by double clicking on it. See section [Call Configuration](#) section later in this document for details.

Here, we also can define whether Camp-on allowed or not and change the phones' operational status to e.g. Out-of-Service – Maintenance.

Make sure that Maximum Number of Calls is set to 2! Otherwise, Call Forwarding on Busy will not work.

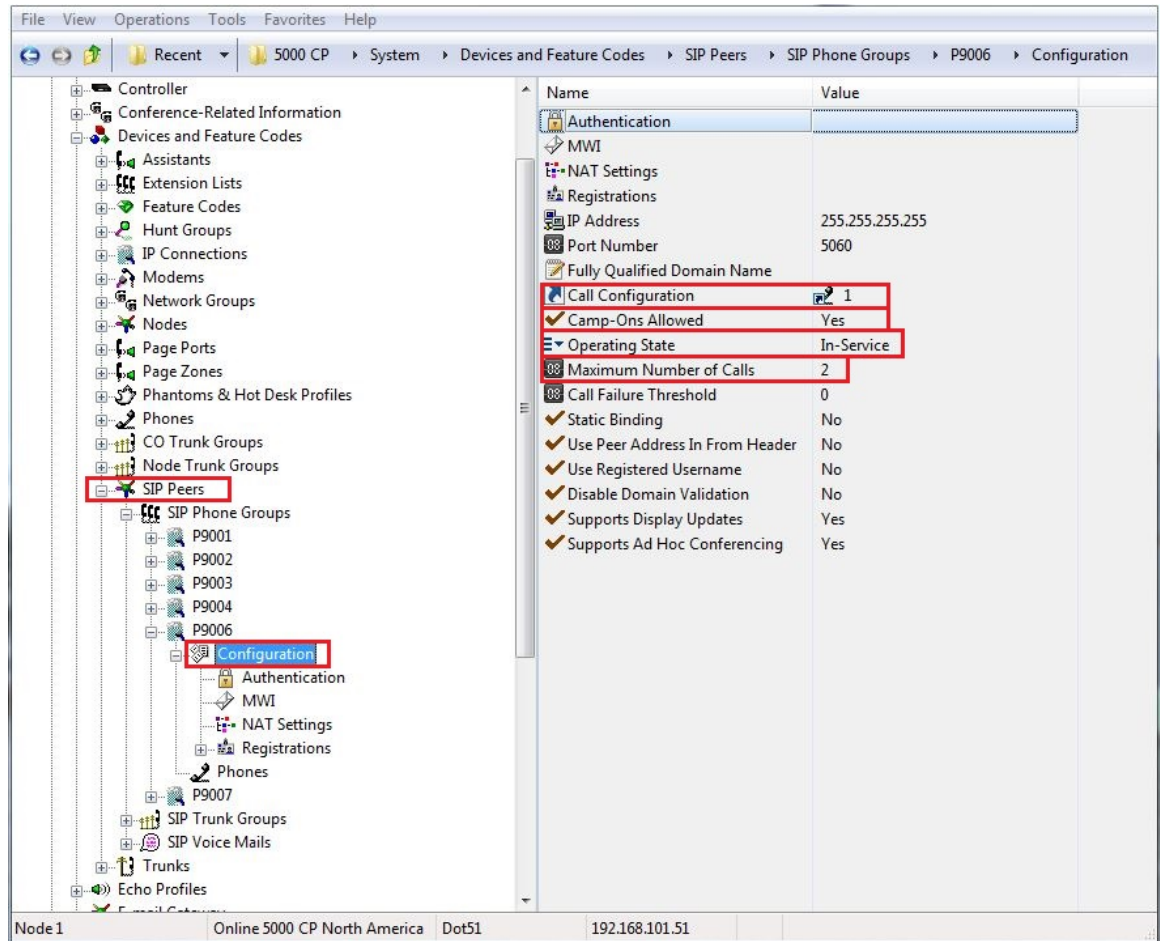


Figure 11 – SIP Phone Groups' configuration

Authentication

To increase the security of SIP devices Mitel recommends enabling In-Bound Authentication where possible.

Click Authentication and ensure that option Enable In-bound Authentication is set to "Yes" as shown in **Figure 12**.

Enter alphanumerical details in the In-Bound Authentication Username and Password fields.

NOTE: Make sure that these Username and Password match the settings for the SIP authentication in your Ascom i62 SIP phone.

Making these changes will provide an increased level of security as the SIP device is challenged for logon, and its username and password checked against those you have configured.

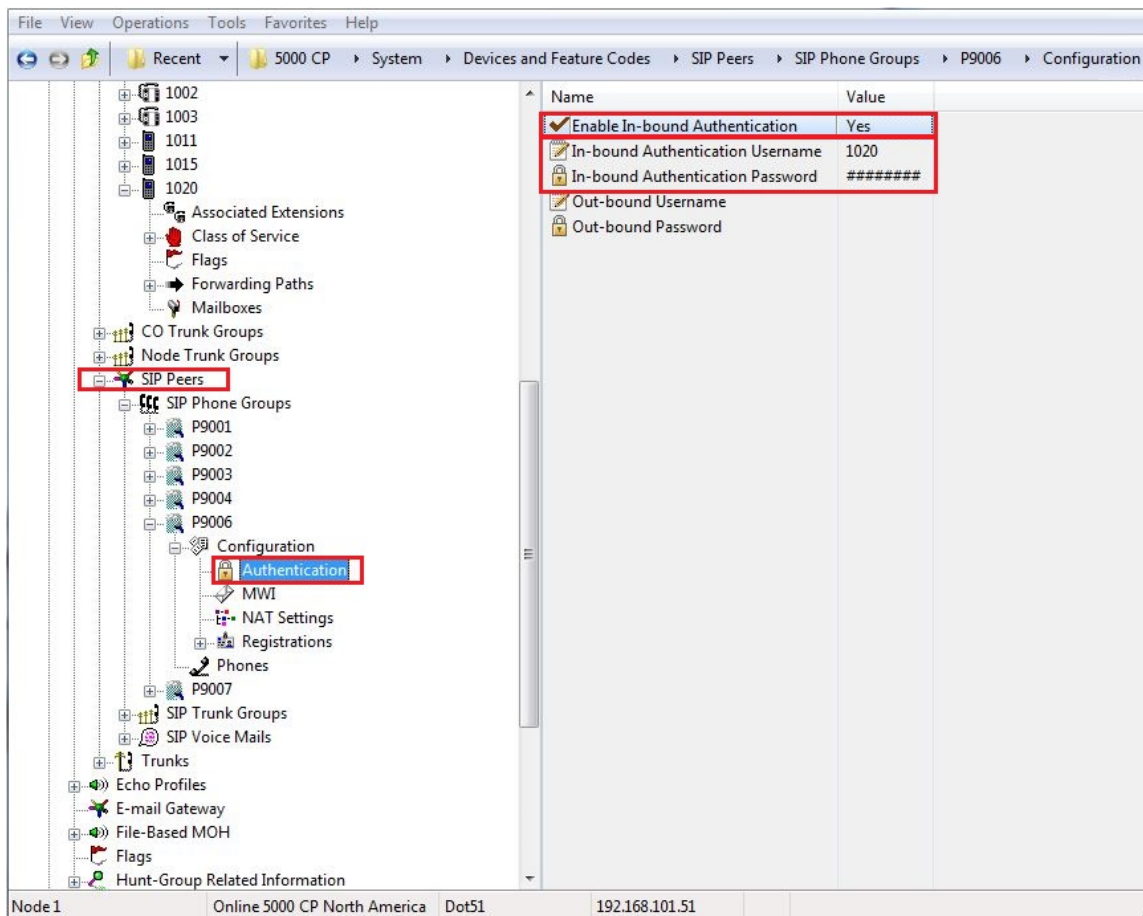


Figure 12 – Authentication setting for the SIP Phone Group

MWI

The MWI field determines whether the phone accepts Message Waiting Indication (MWI) from MiVoice Office.

Verify that option **Accept MWI** is set to **Yes**. See **Figure 13** for details.

Leave the configuration option for **NAT Settings** at its default value.

Registrations – All fields there are read-only and will appear after SIP device registered with MiVoice Office.

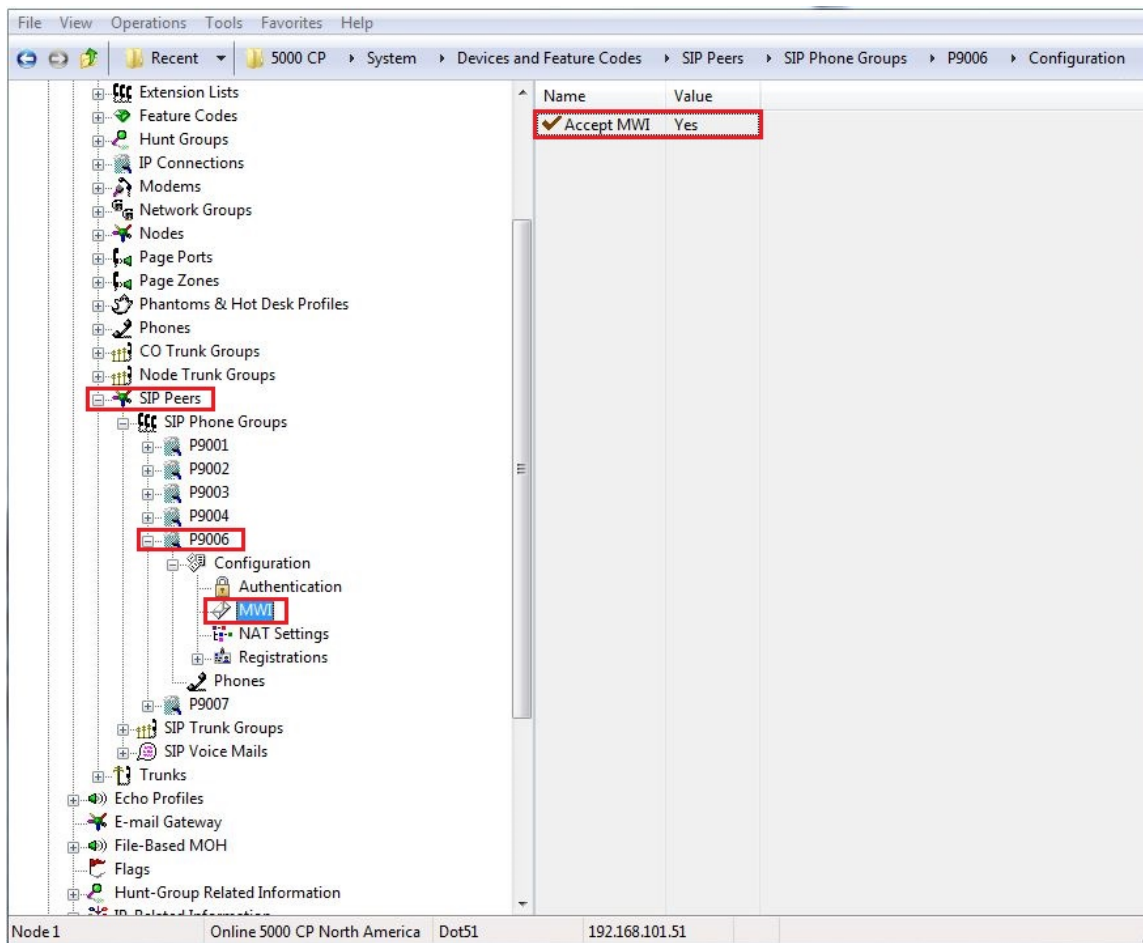


Figure 13 – MWI settings

Call Configurations

Call configurations define the settings that IP and SIP phones use when connected to calls. You can assign multiple devices to a specific call configuration.

By default, all IP devices are being placed in Call Configuration 1, which is programmable. For the SIP phones, you assign the Call Configuration to the [SIP Phone Groups](#).

You can program up to 25 different Call Configurations.

Set **Audio Frames/IP Packet** to “2” which corresponds to the RTP packet rate of 20ms.

Ensure that **DTMF Encoding Setting** and **Transmit Lever** are set according to the site requirements.

NOTE: Since Ascom i62 WiFi does not support in-band DTMF, we recommend setting DTMF Encoding to “RFC2833”.

Also set the required **Speech Encoding Setting**.

See an example in **Figure 14**.

To view the list of the SIP Phone Groups that are currently assigned to the call configuration, navigate to:

6. *System->IP-Related Information->Call Configurations->SIP Phone Groups*
7. Click the SIP Phone's group number.

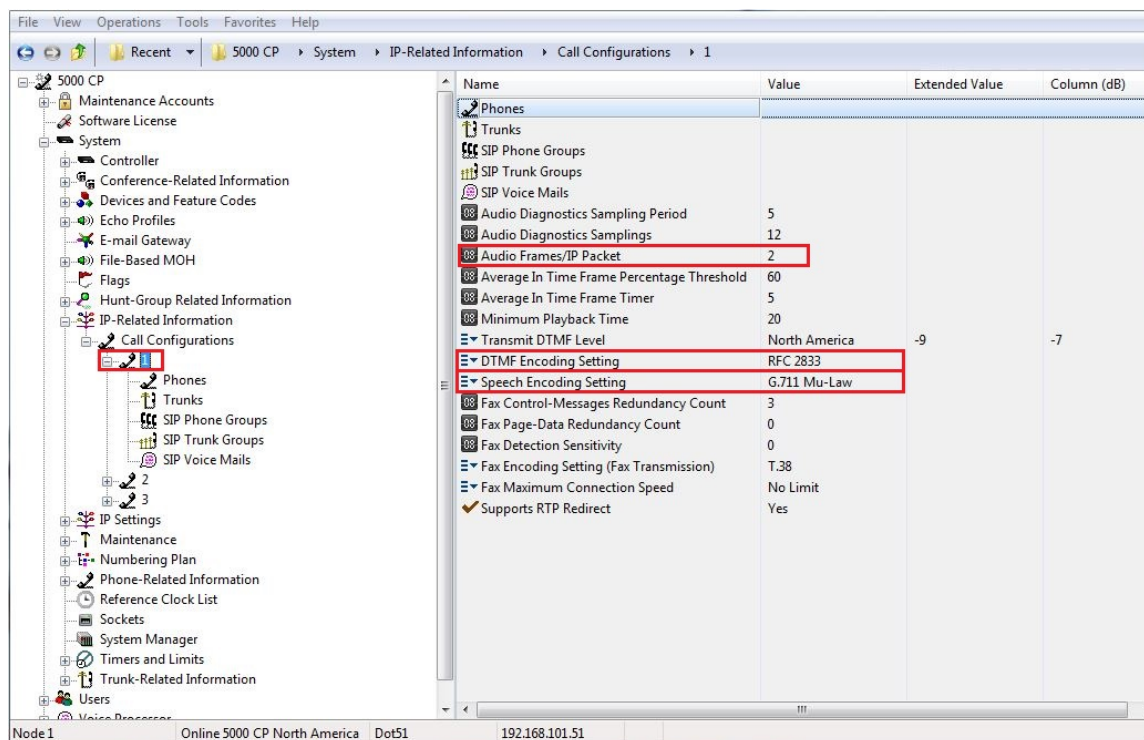


Figure 14 – Call Configuration

Music-on-Hold (MOH) Configuration

There is a built-in port located on the back of MiVoice Office chassis where you can connect an external music source.

Alternatively, you can use File-Based MOH which plays the audio file stored in system memory.

NOTE: This feature requires the File-Based MOH Source software license.

Before File-Based MOH will be enabled in MiVoice Office, you have to convert your music file into 8bit, Mono, non-proprietary G.711 format.

The converted file must have extension **.n64u**.

After file conversion step, you have to upload this .n64u audio file to MiVoice Office using the web connection (and not through the Mitel DB Programming!). For details, please refer to the [Mitel 5000 CP Features and Programming Guide](#).

When preparation steps are completed, you can enable File-Based MOH for the SIP phone.

Navigate to SIP phone's main configuration page as in **Figure 4**.

As an example, let's set File-Based MOH for the **Calls Holding for this Device**. Click corresponding line in Value column and select "File-Based MOH" as shown in **Figure 15**.

Right click on Extended Value and follow the wizard to pick and assign the newly uploaded audio file as the source of music.

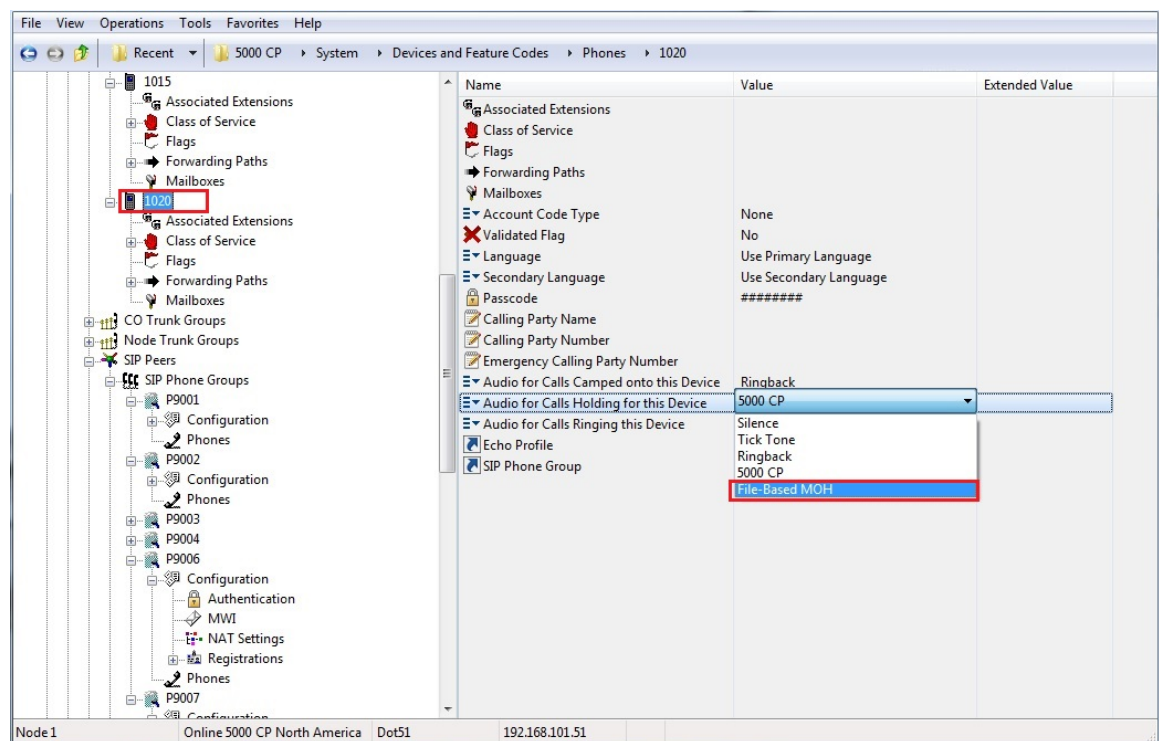


Figure 15 – Select File-Based MOH

Ascom i62 WiFi Configuration Notes

The following steps show the basics of how to program the Ascom i62 WiFi phones to interconnect with the MiVoice Office.

The configuration settings below are the main reference points and by no means be considered as the comprehensive configuration instructions.

The Portable Device Manager (PDM) is used for administration and programming of the i62 WiFi handsets and exists in two versions, the *PDM Windows version* and the *PDM System version*.

Below note describes configuration with PDM Windows version. All settings and updates are in this case done via the DP1 Desktop Programmer for i62.

The following steps show how to program the Ascom i62 WiFi phone to interconnect with the MiVoice Office. In the Windows' Start menu, select *All Programs -> Ascom WinPDM -> Ascom WinPDM*.

1. Navigate to File -> Site Management
2. In Site Management window, click New button and enter the site details as it is shown on **Figure 16**.

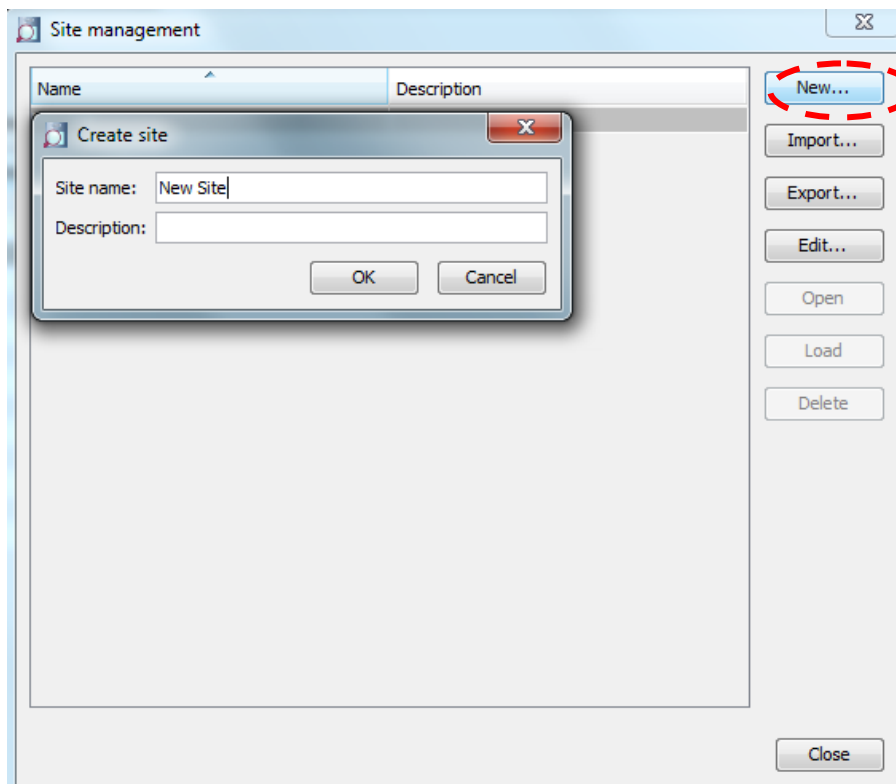


Figure 16 – Create new site

3. Import the package containing the definition file and the software, File>File Management

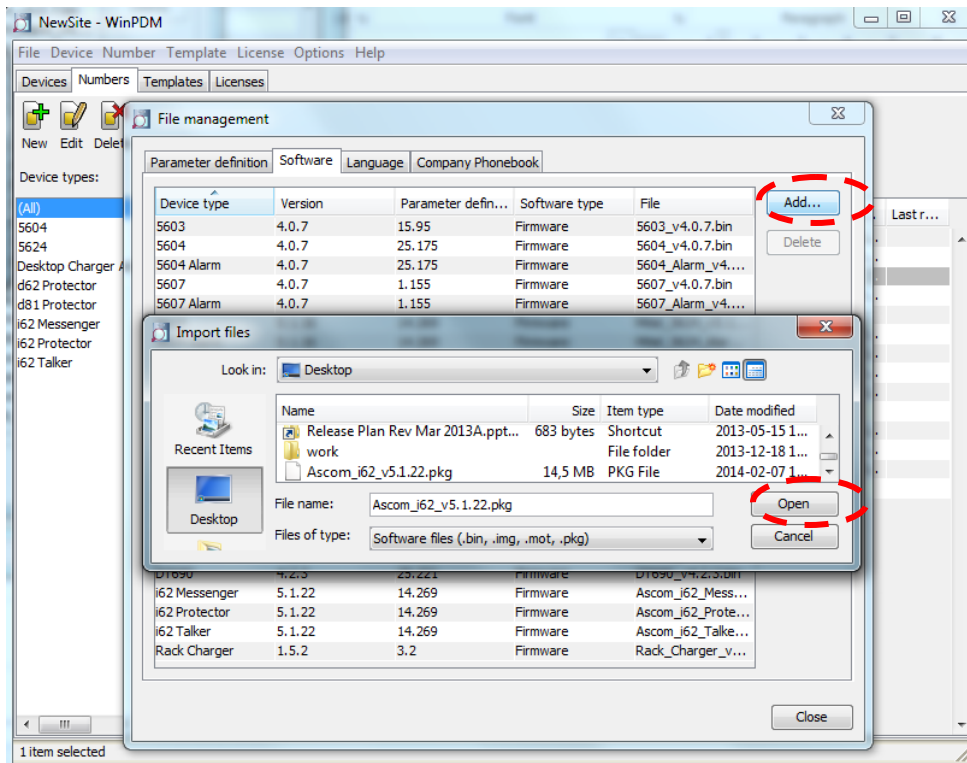


Figure 17 – Add new package

4. Click Numbers tab and then click New button. Enter the handset number, which matches the extension number created in the Mitel MiVoice Office, and ensure that Device type is correct (see Figure 18).

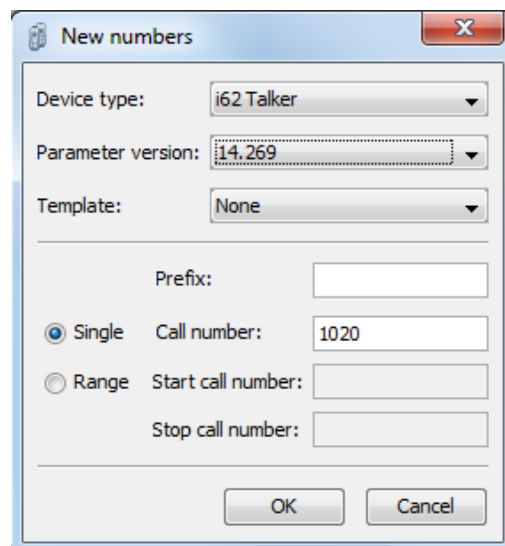


Figure 18 – Add new number

5. Insert Ascom i62 WiFi phone into USB cradle. As soon as new device is detected by USB port, the New Device Wizard window will popup offering to “Associate this handset with number”, “Run template” or “Do nothing”. Select “Associate this handset with number” and then select the number that you have just added (see **Figure 19**).

The prompt to enter user name and password should appear on the phone’s screen. Since this phone has not been configured yet, leave it for now.

NOTE: The new configuration settings will come into effect as soon as you remove the handset from USB cradle.

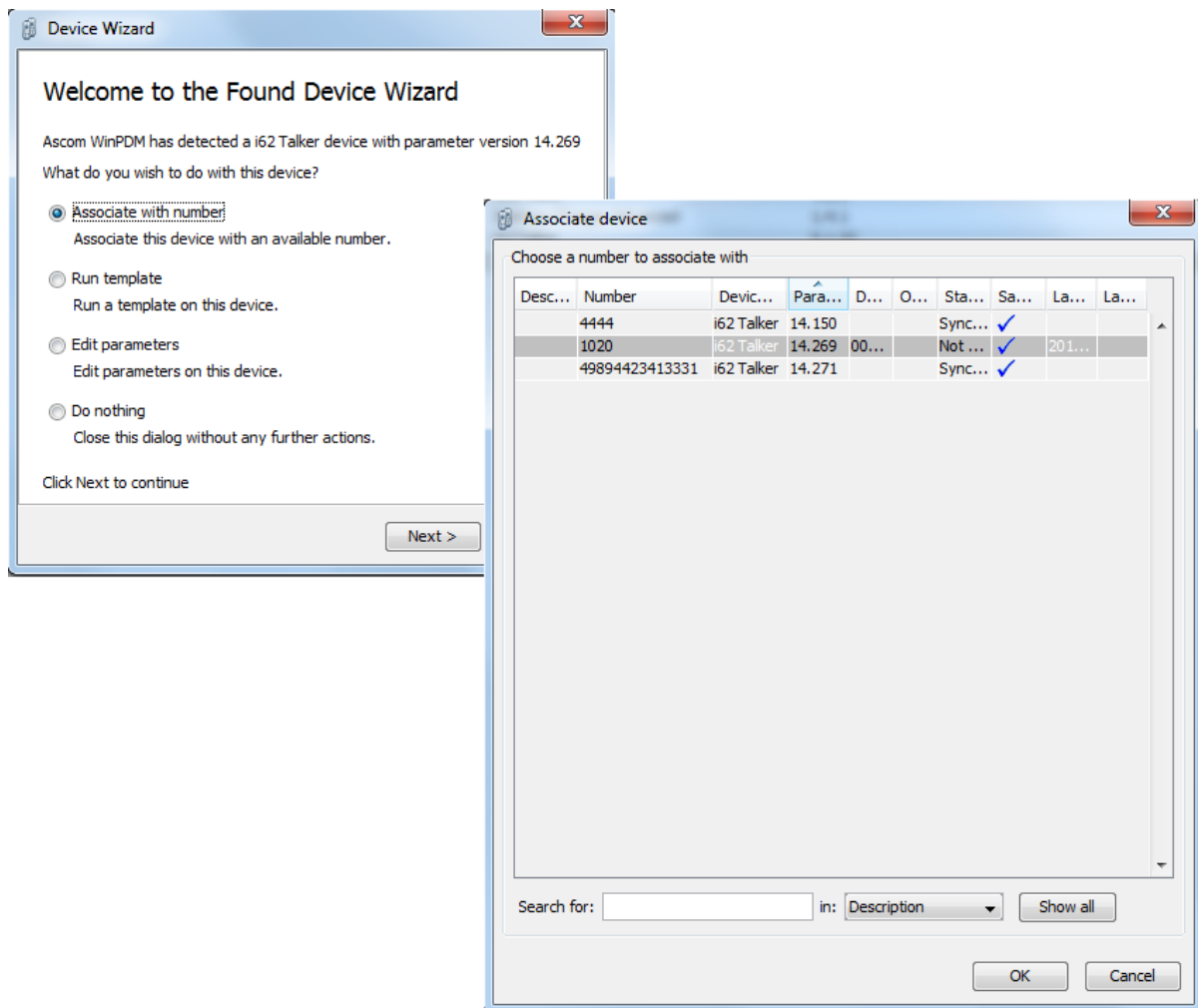


Figure 19 – Associate number with device

6. Click again Numbers tab and right click on the number in right hand pane. Select Edit.

NOTE: Alternatively, you can select the number in the right hand pane and then click “Edit” button at the tab’s top.

7. In Edit Parameters screen, collapse System node and select Network A. Configure the highlighted parameters (see **Figure 20**).

NOTE: In our test environment, we have chosen to use “DHCP mode” and leave the default IP settings intact.

NOTE: The setting for “SSID” must match exactly the one configured in your wireless access point. The Security mode of choice for the validation was WPA2-PSK AES.

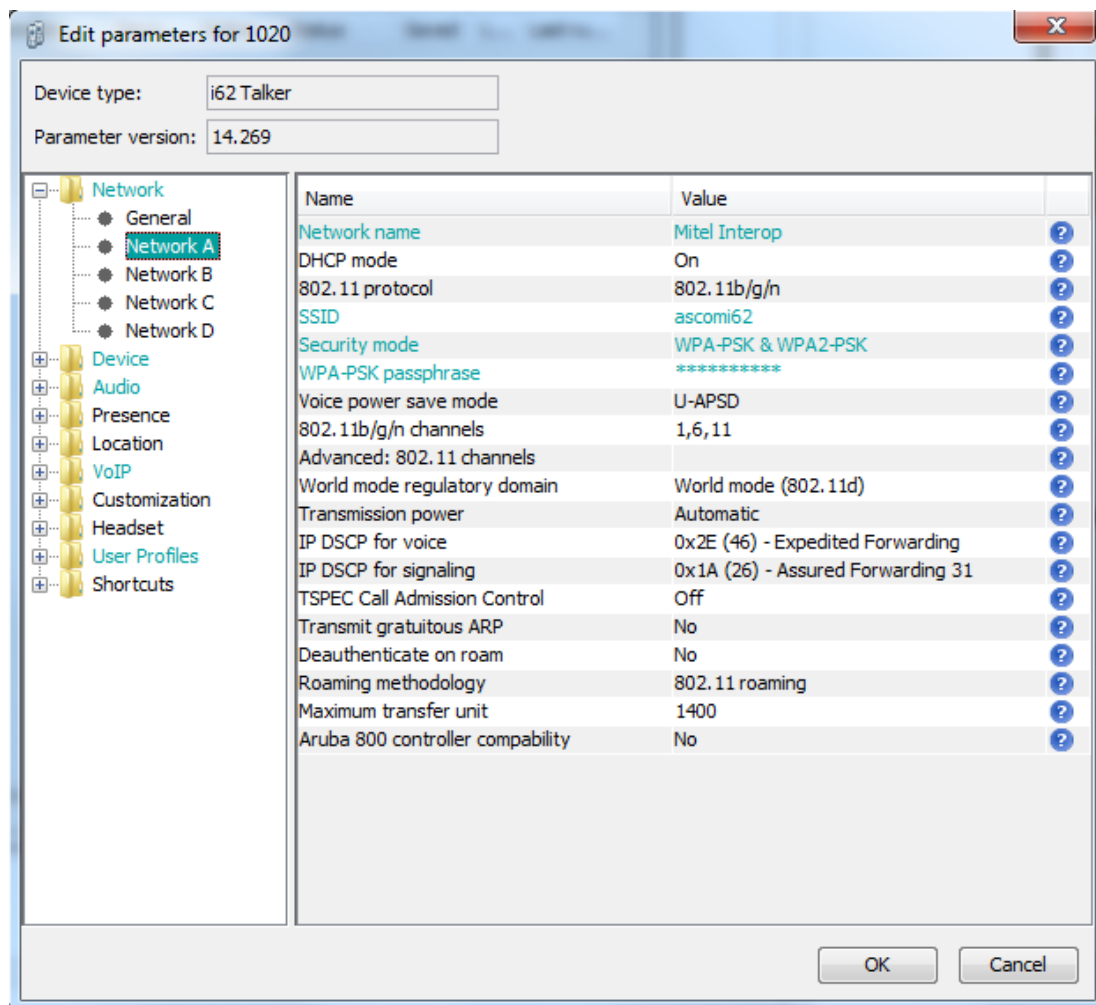


Figure 20 – Network Settings

- In Edit Parameters screen, expand VoIP node and click General. Select **SIP** as the **VoIP protocol** and ensure that the **Codec configuration** conforms to your Network deployment.

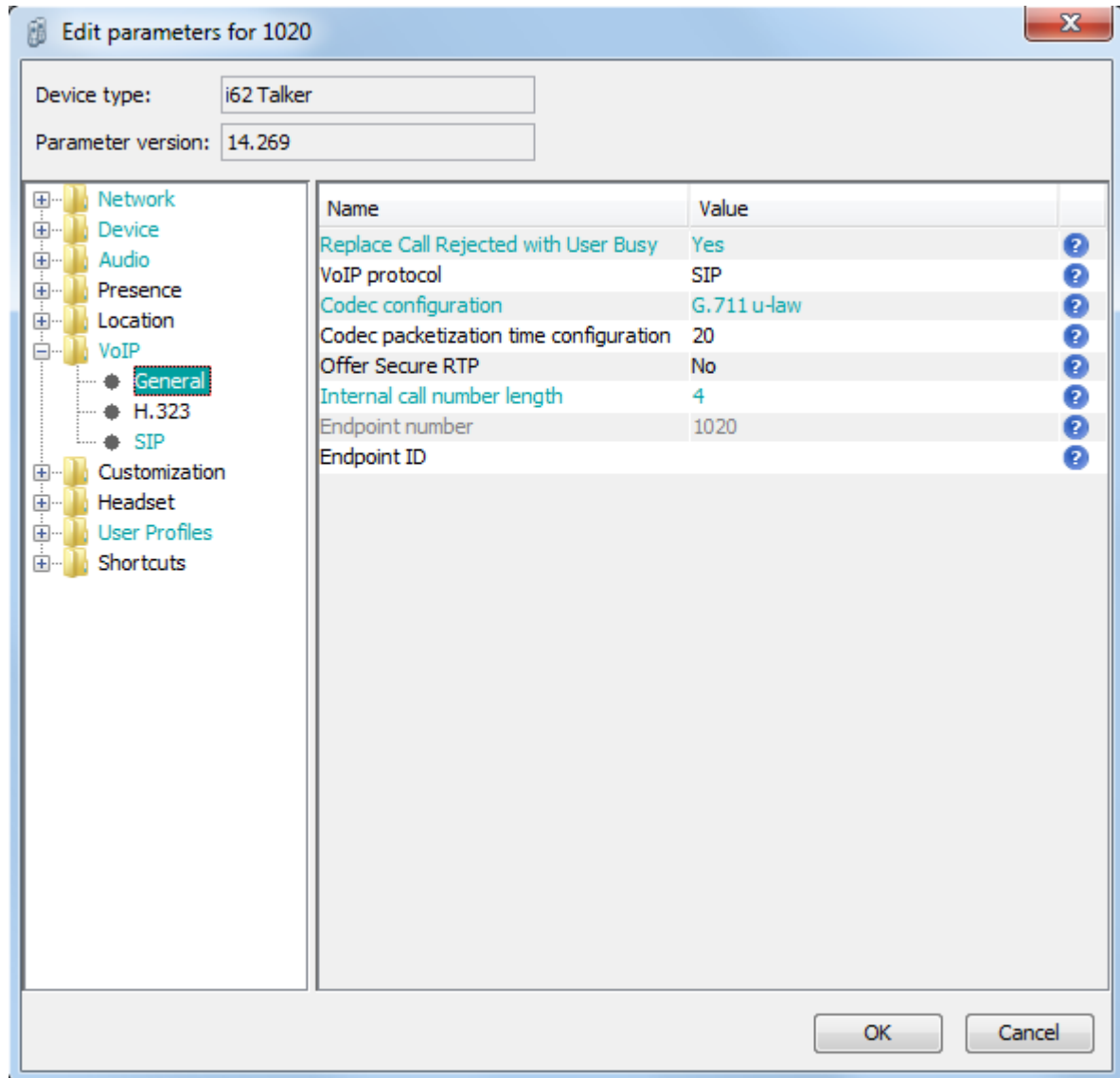


Figure 21 – VoIP: General

In left hand pane, click VoIP and then SIP. Enter the IP address/FQDN of the Mitel MiVoice Office. Enter the password of the device as previously configured on the MiVoice Office in the **'SIP proxy password'** field. Ensure that the Registration identity and Authentication identity are the same **Endpoint Number**. Set the Hold type to **SendOnly** as shown below. Make sure the **SIP proxy password** matches the password set in the MiVoice Office (See section [Authentication](#) and **Figure 12**).

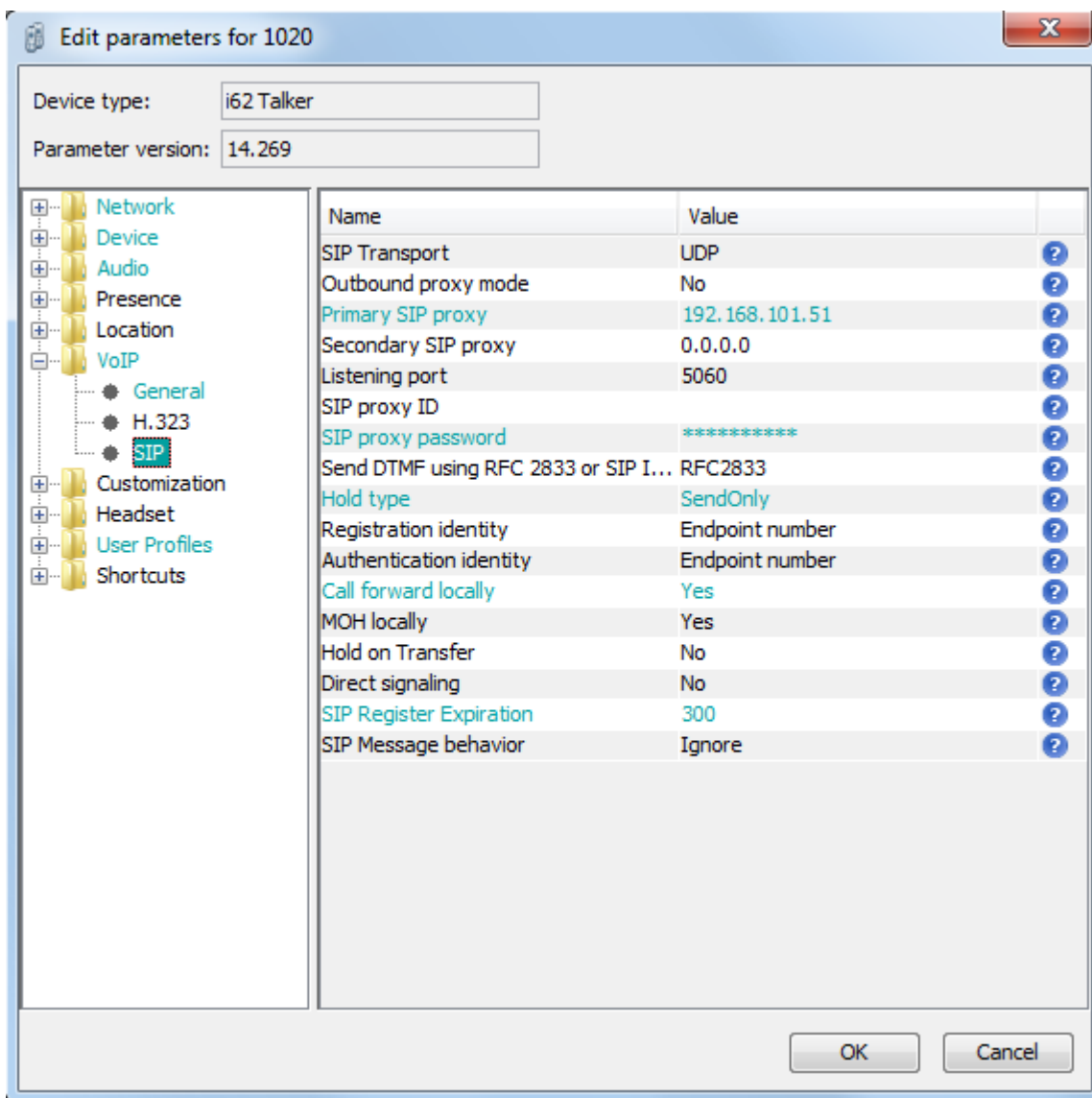


Figure 22 – VoIP: SIP settings

9. In left hand pane, click Device and then Message Centre.
 The **“Message Centre number”** is required in order the handset to send SUBSCRIBE message to the MiVoice Office (needed for MWI). Enter the extension of the Voice Mail in both the **“Message Centre number”** and the **“Voice mail number”**. See **Figure 23** for details.

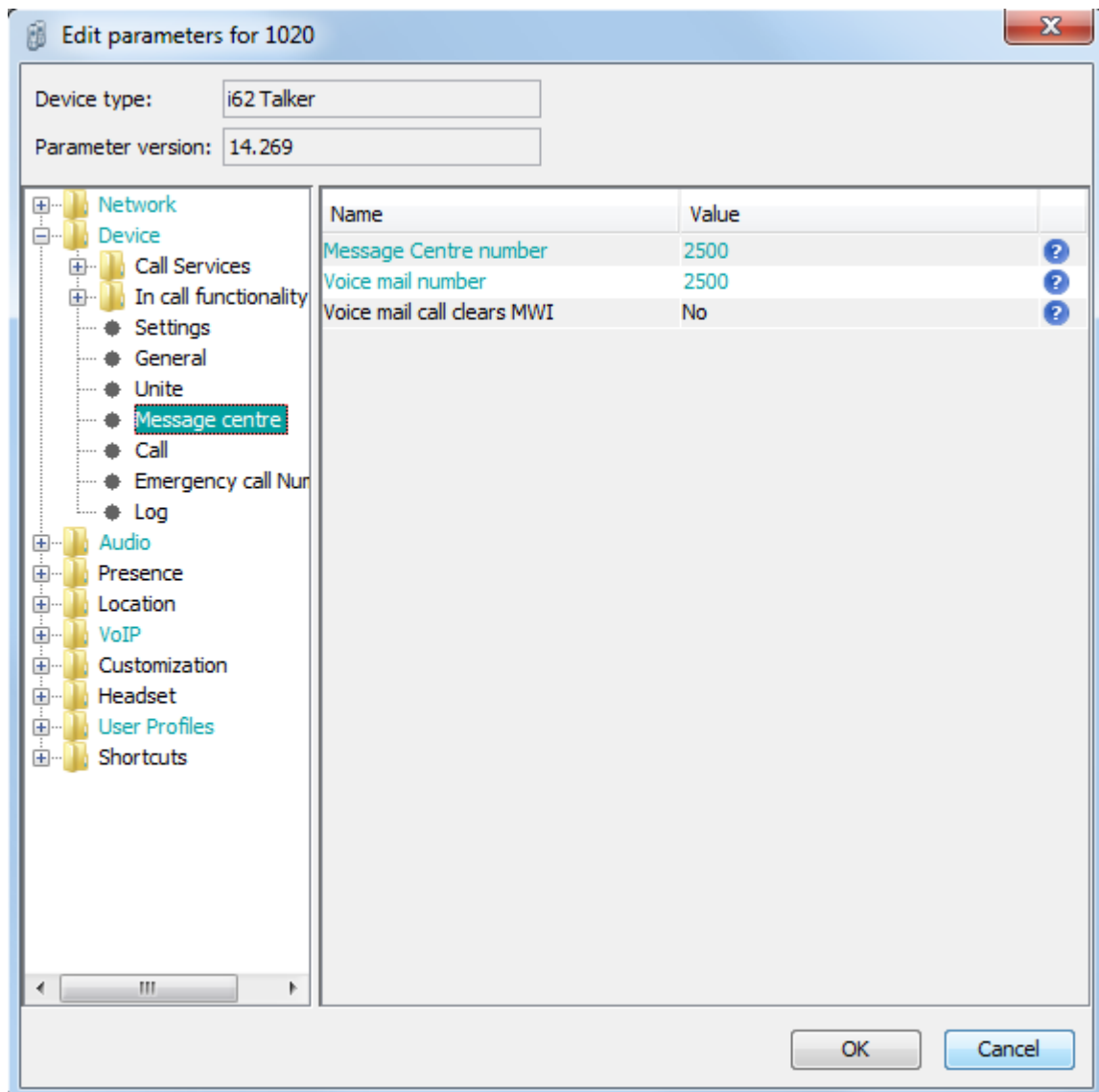
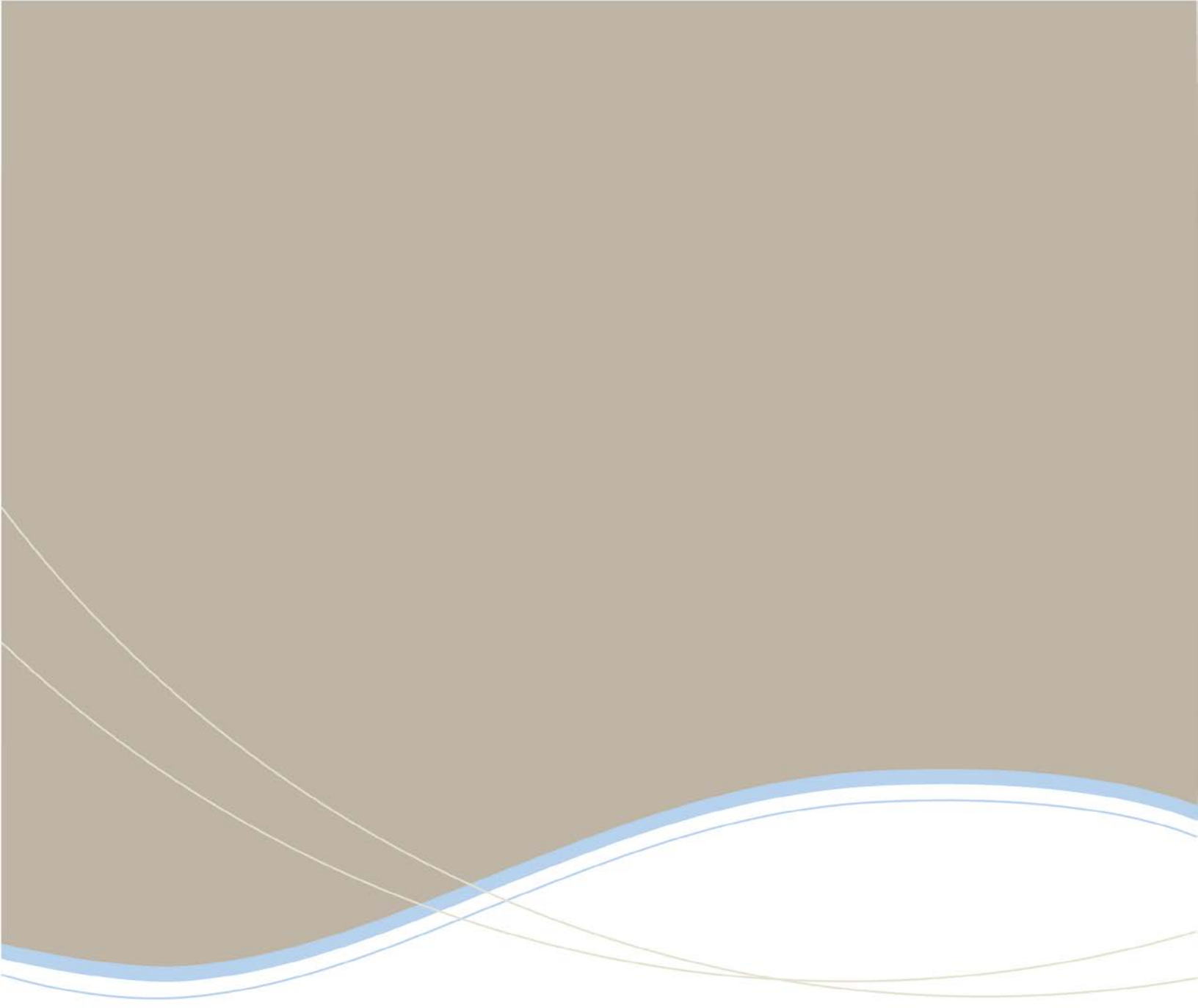


Figure 23 – Device settings: Message Centre



Global Headquarters	U.S.	EMEA	CALA	Asia Pacific
Tel: +1(613) 592-2122 Fax: +1(613) 592-4784	Tel: +1(480) 961-9000 Fax: +1(480) 961-1370	Tel: +44(0)1291-430000 Fax: +44(0)1291-430400	Tel: +1(613) 592-2122 Fax: +1(613) 592-7825	Tel: +852 2508 9780 Fax: +852 2508 9232

For more information on our worldwide office locations, visit our website at www.mitel.com/offices

www.mitel.com



THIS DOCUMENT IS PROVIDED TO YOU FOR INFORMATIONAL PURPOSES ONLY. The information furnished in this document, believed by Mitel to be accurate as of the date of its publication, is subject to change without notice. Mitel assumes no responsibility for any errors or omissions in this document and shall have no obligation to you as a result of having made this document available to you or based upon the information it contains.

M MITEL (design) is a registered trademark of Mitel Networks Corporation. All other products and services are the registered trademarks of their respective holders.

© Copyright 2008, Mitel Networks Corporation. All Rights Reserved.