Avaya Solution & Interoperability Test Lab

Application Notes for Visionutveckling Vision 80/20 and Avaya IP Office – Issue 1.0

Abstract

These Application Notes describe the conformance testing of the Visionutveckling Vision 80/20 with Avaya IP Office. These Application Notes contain an extensive description of the configurations for both Vision 80/20 and Avaya IP Office which were used for testing. The testing which was performed tested the major functions of the Vision 80/20 product.

Information in these Application Notes has been obtained through DevConnect compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.

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1. Introduction

These Application Notes describe the configuration used to test Vision 80/20 with Avaya IP Office. Vision 80/20 is a widely used application for managing presence information as well as to provide attendant functionality and voicemail for small companies and large enterprises. Vision 80/20 is a complete application combining attendant console, APBX/PBX-integration and an interface for users to administer their extension/profile via a web application.

The following diagram illustrates the configuration which was used for testing.

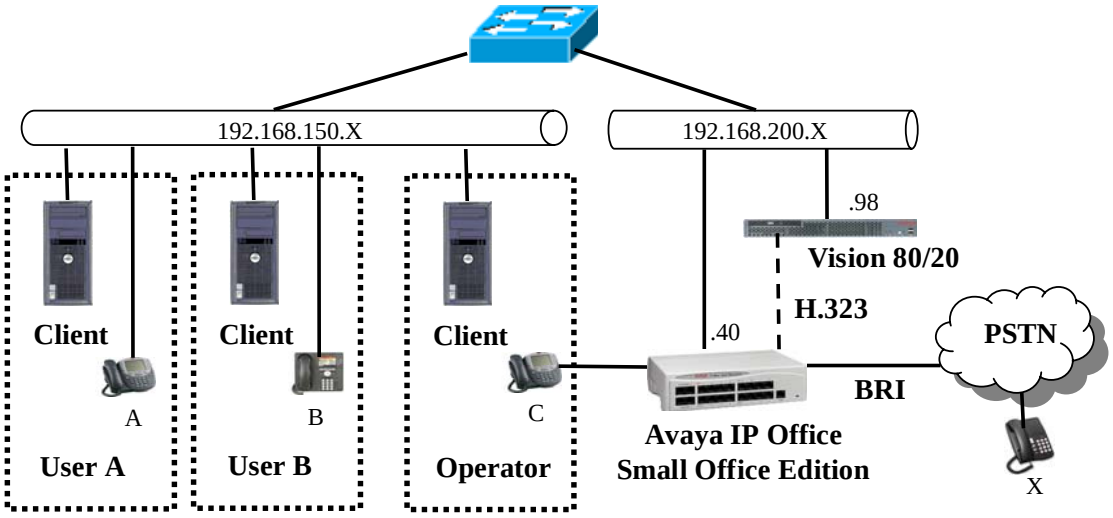

Figure 1: System Configuration

In the above diagram, Avaya IP Telephones are registered with the Avaya IP Office. Avaya 4610 IP Telephones configured for H.323 were used for testing.

The following table shows the extensions which were used for testing.

Phone	User Name	Model	Extension	PSTN
A	Patrik Olsson	4610SW IP	50121	069 907 yyyyy 50121
B	Peter Olsson	4610SW IP	50192	069 907 yyyyy 50192
C	The Operator	2410	50007	069 907 yyyyy 50007
X				069 xxxx 6174
Hunt Group	Helpdesk		50010	069 907 yyyyy 50010

Table 1: Extensions Used for Testing

2. Equipment and Software Validated

The following equipment and software were used for the sample configuration provided:

Equipment	Version
Avaya IP Office 500	4.2(4)
Avaya IP TAPI Driver	3.2.15
Avaya 46xxSW IP Telephone (H.323)	2.887
Vision 80/20 Server Platform	MSWIN Server 2003 SP 2
MySQL	5.0.24a
YATE (Yet Another Telephony Engine)	2.0
Visionutveckling Vision 80/20	2.2

Table 2: Equipment and Version Validated

3. Configuration

3.1. Avaya IP Office

All configuration steps for Avaya IP Office were performed using the IP Office Manager program.

Note that the configuration of the BRI interface to the Public Switched Telephone Network (PSTN) is not described in detail in this document, as this is not required for the operation of Vision 80/20.

3.1.1. Licenses

A license is required for CTI Link Pro, which can be confirmed by selecting the “Licenses” icon.

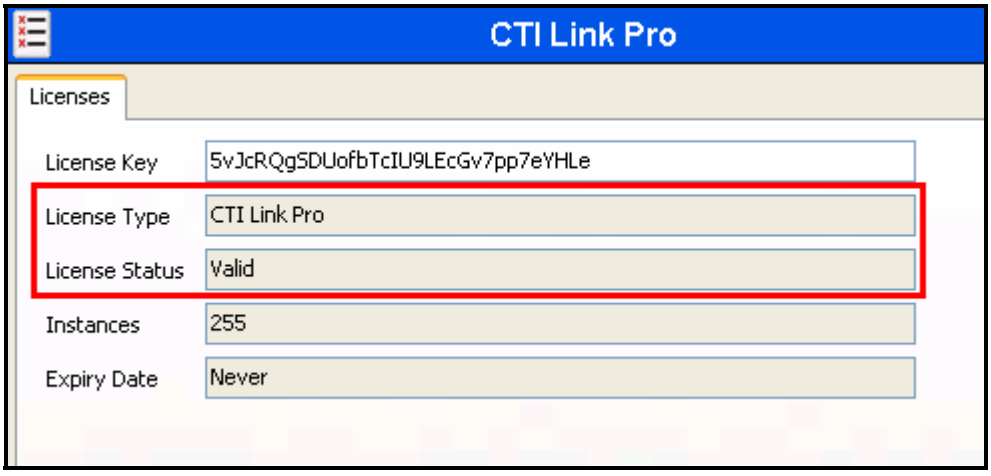

Figure 2: IP Office License for CTI Link Pro

3.1.2. System

Select the "System" icon and enter the parameters shown in the following table.

Tab	Parameter	Usage
LAN1	IP Address	Enter the IP address assigned to IP Office.
	IP Mask	Enter the network mask assigned to IP Office.
Telephony	Dial Delay Time	Enter the inter-digit dial delay time. A value of "1" seconds was used for the test.
	Dial Delay Count	Enter "4".

Table 3: IP Office System Parameters

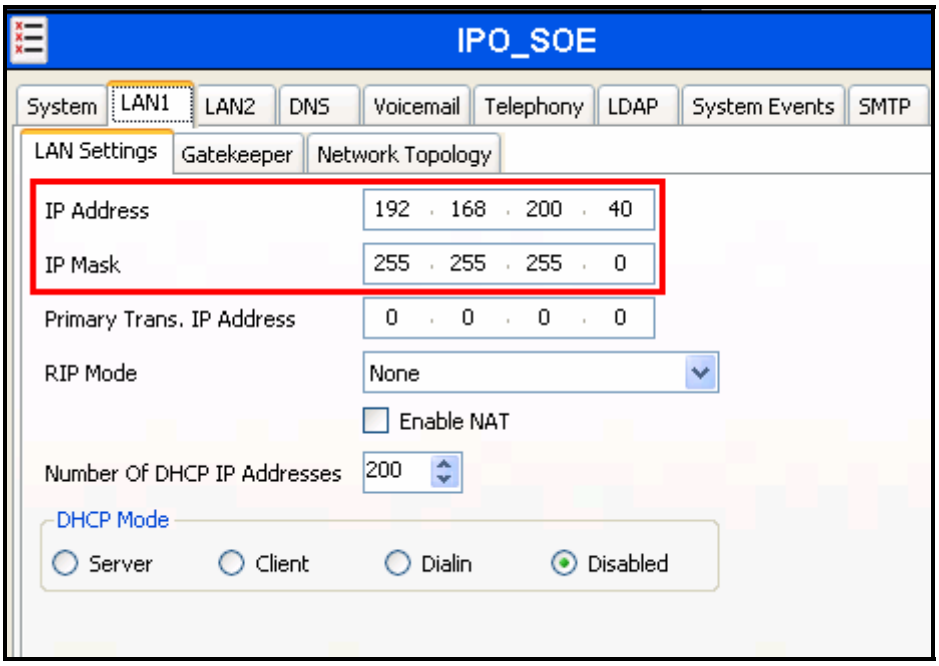

Figure 3: IP Office System: LAN Settings Tab

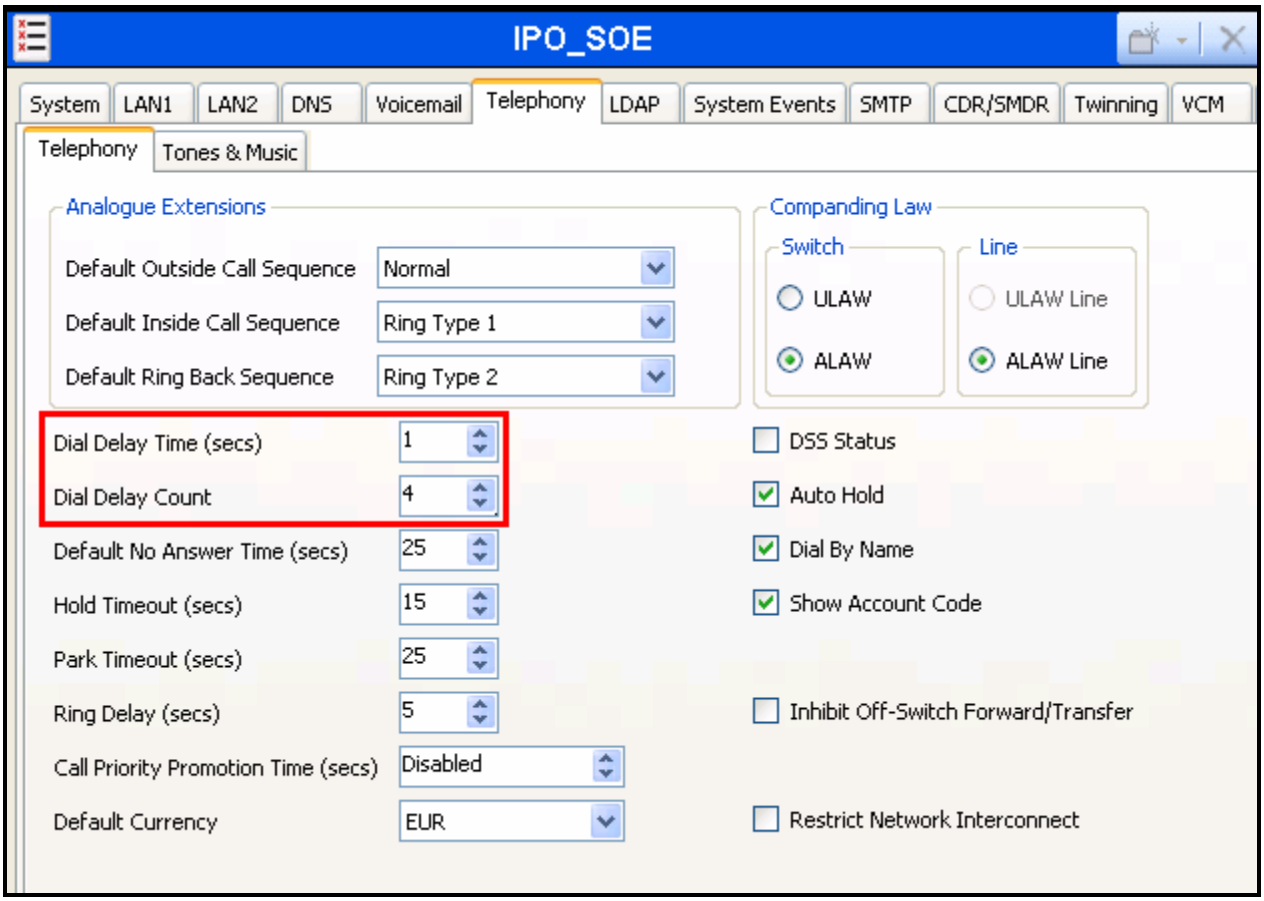

Figure 4: IP Office System: Telephony Tab

3.1.3. Default Gateway

Select the “IP-Route” icon and create a route with the parameters shown in the following table.

Parameter	Usage
IP Address	Enter “0.0.0.0”.
IP Mask	Enter “0.0.0.0”.
Gateway IP Address	Enter the address of the router which is used to attach IP Office to the Visionutveckling VoIP Network.
Destination number	Select “LAN1” from the drop-down list.

Table 4: Default Gateway Parameters

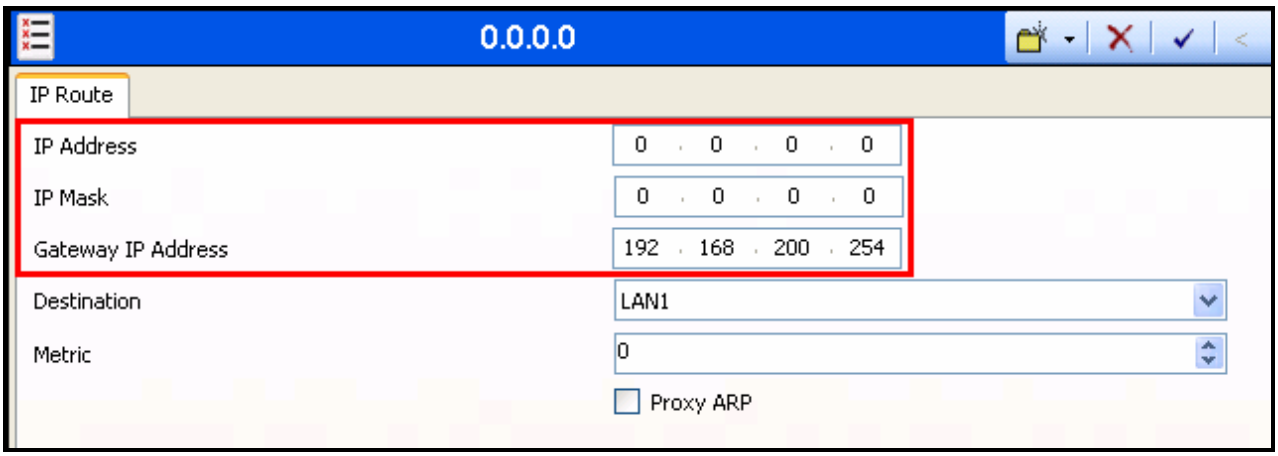

Figure 5: IP Office Route: Default Gateway

3.1.4. H.323 Line

Select the "IP-Route" icon and create a route with the parameters shown in the following table.

Tab	Parameter	Value
VoIP Line	Line Number	Use the next available line number.
	Incoming Group ID	Assign the same value as the line number.
	Outgoing Group ID	Assign the same value as the line number.
VoIP Settings	Gateway IP Address	Enter the IP address of the Vision 80/20 Server.
	Compression Mode	Select "G.711 ALAW 64K" from the drop-down list.
	Enable Faststart	Check this box.

Table 5: H.323 VoIP Line Parameters

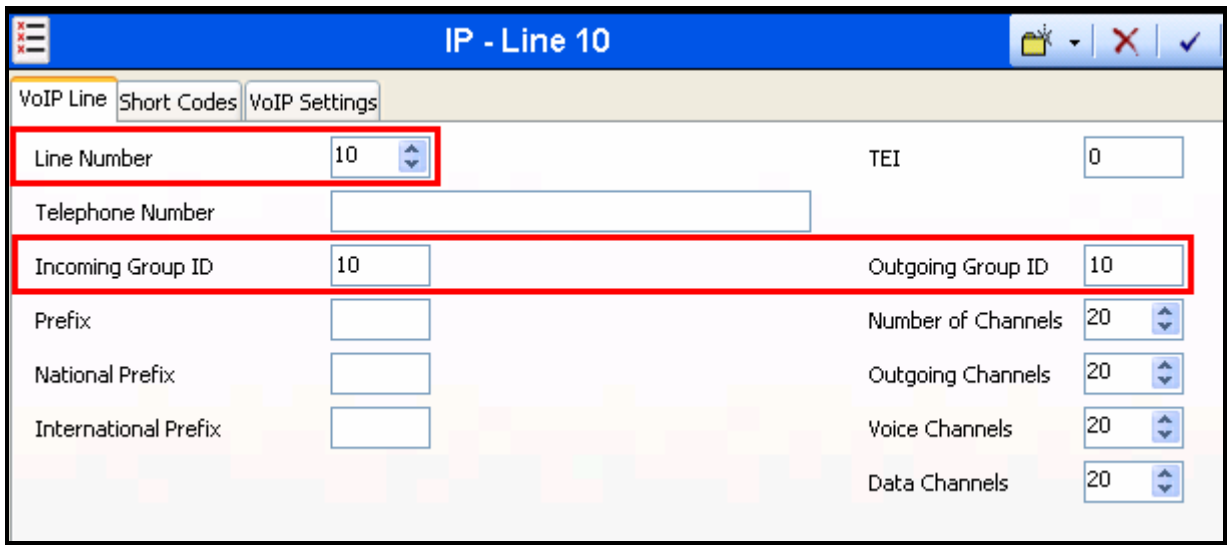

Figure 6: VoIP Line to Vision 80/20: VoIP Line Tab

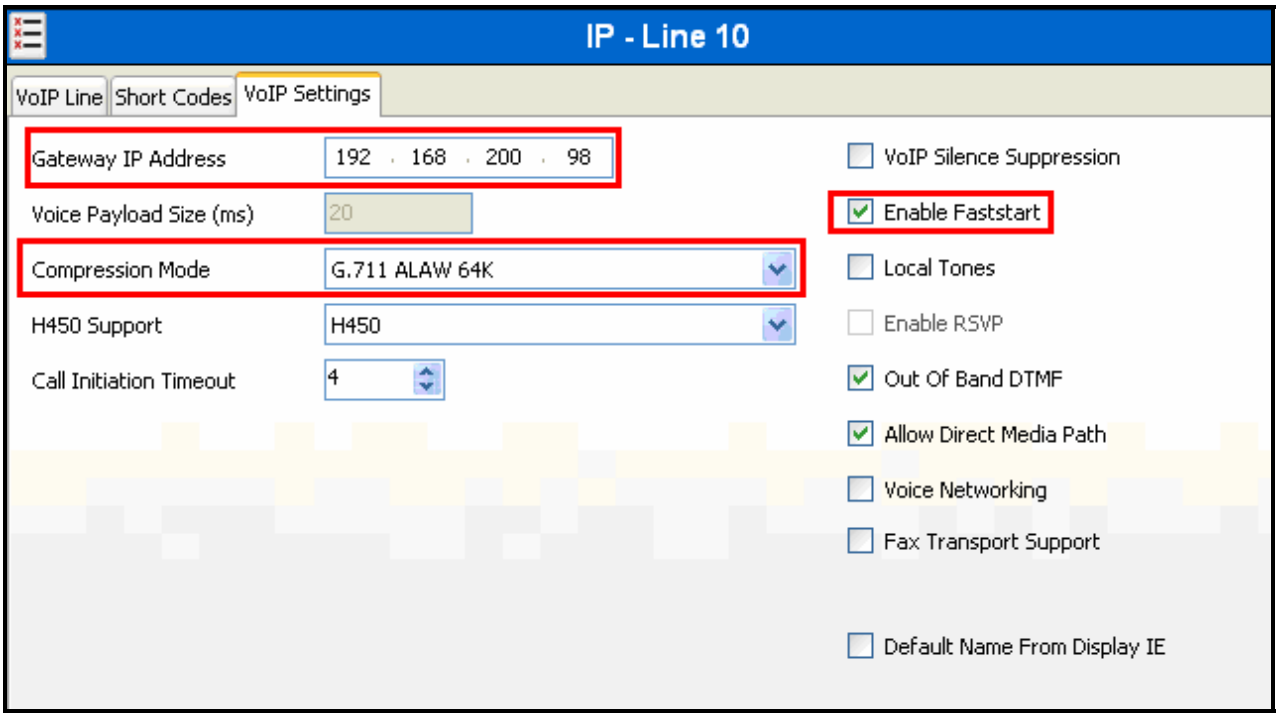

Figure 7: VoIP Line to Vision 80/20: VoIP Settings Tab

3.1.5. Local Telephone

From the "Extensions" icon, create an extension for each the User and Operator extensions shown in **Table 1** and enter the extension in the "Base Extension" field.

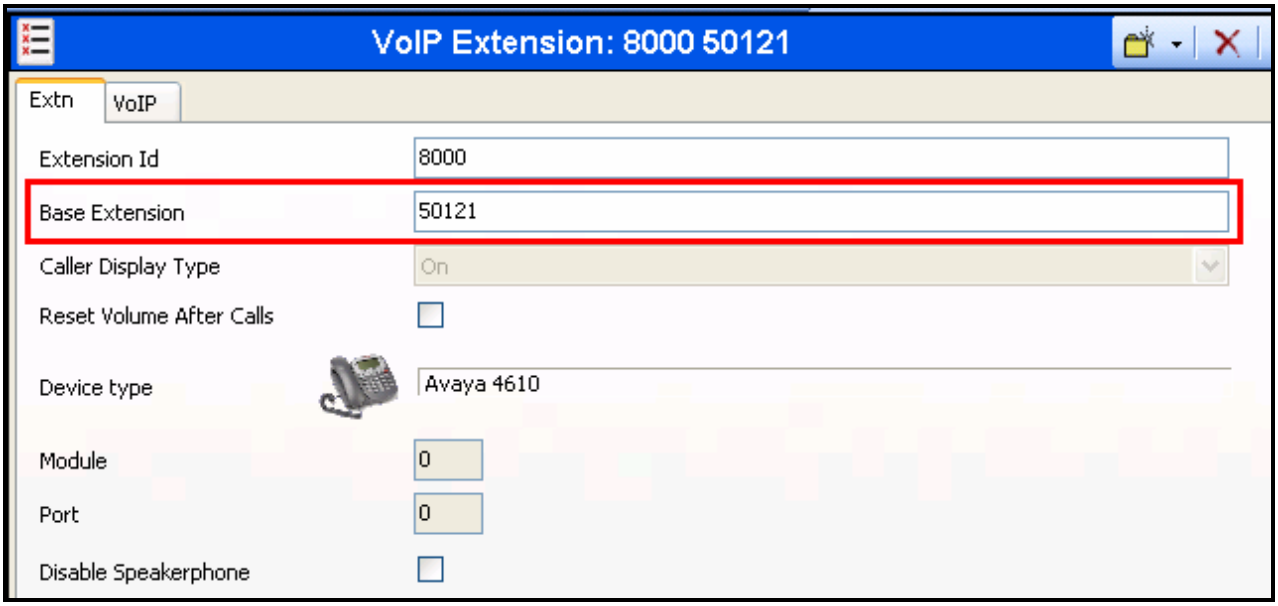

Figure 8: IP Office Local Telephone Extension: Extn Tab

From the “User” tab, add a new user for each of the local telephones show in **Table 1**, using the parameters shown in the following table.

Parameter	Usage
Name	Enter the name of the user.
Extension	Enter the local extension to be assigned to the user.

Table 6: System-Parameters Features Parameters

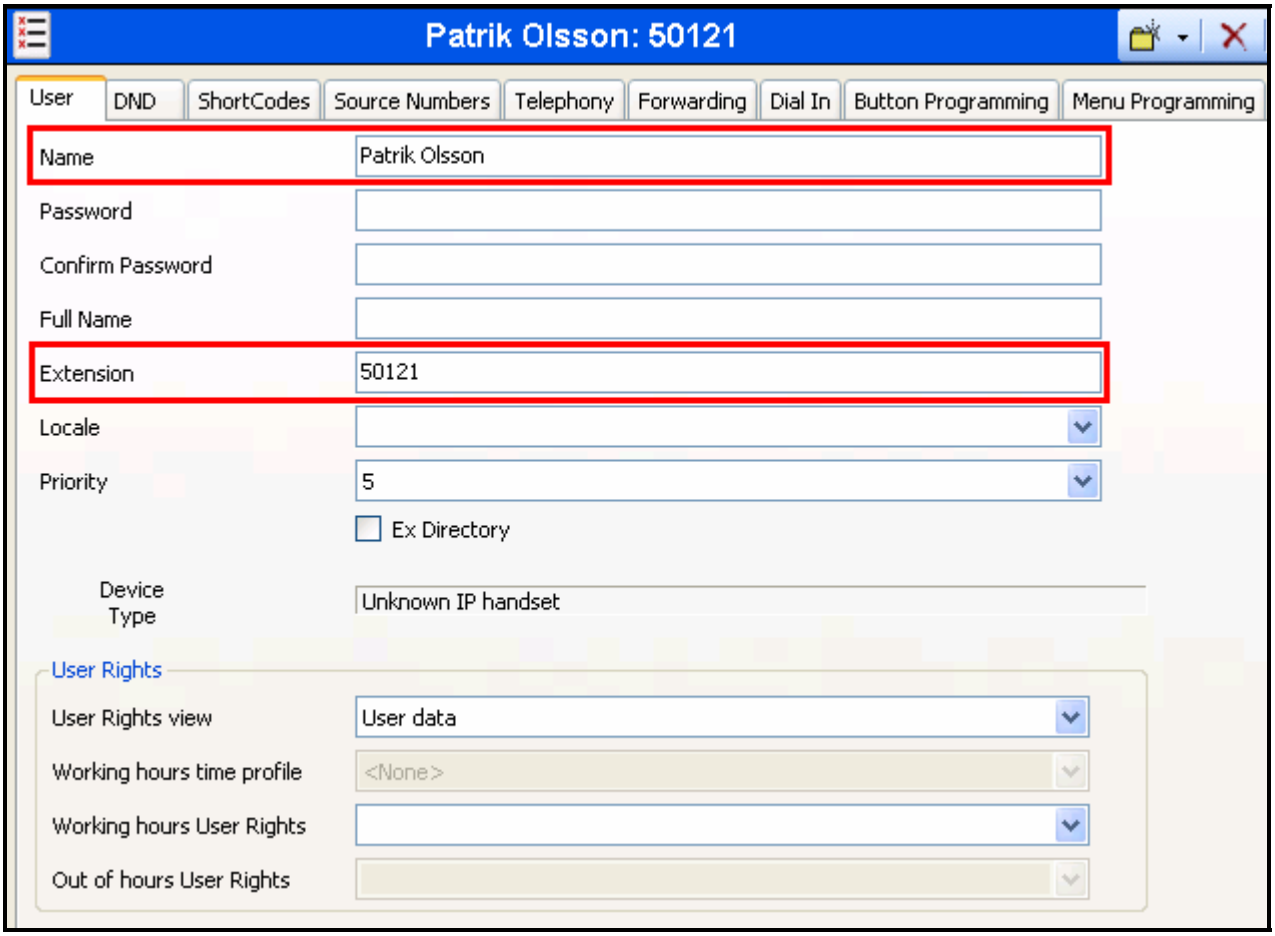

Figure 9: IP Office User: User Tab

3.1.6. Hunt Groups

Create a hunt group for a helpdesk number, using the values shown in the following table.

Parameter	Usage
Name	Enter the name “Helpdesk”.
Extension	Enter “50010”, the extension to be assigned to the hunt group.

Table 7: Helpdesk Hunt Group Parameters

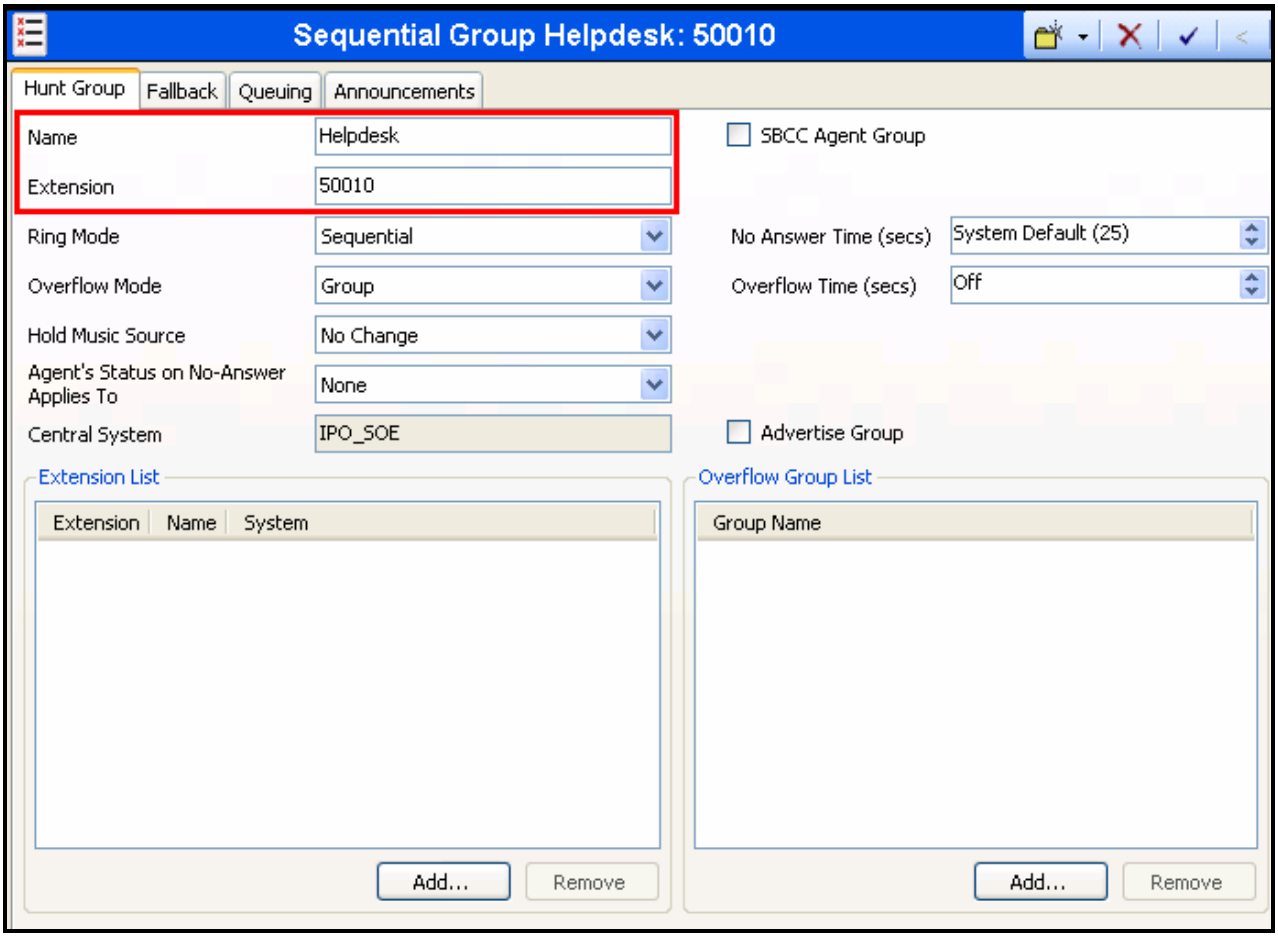

Figure 10: Helpdesk Hunt Group Screen

Create a hunt group for operators, using the values shown in the following table.

Parameter	Usage
Name	Enter the name “Main Visionutv”.
Extension	Enter the extension “50000” which is used in **Figure 18**.
Extension List	Enter the extension of “The Operator” from **Table 1** in this list. If additional operators are added to the system, include them in this hunt group.

Table 8: Operator Hunt Group Parameters

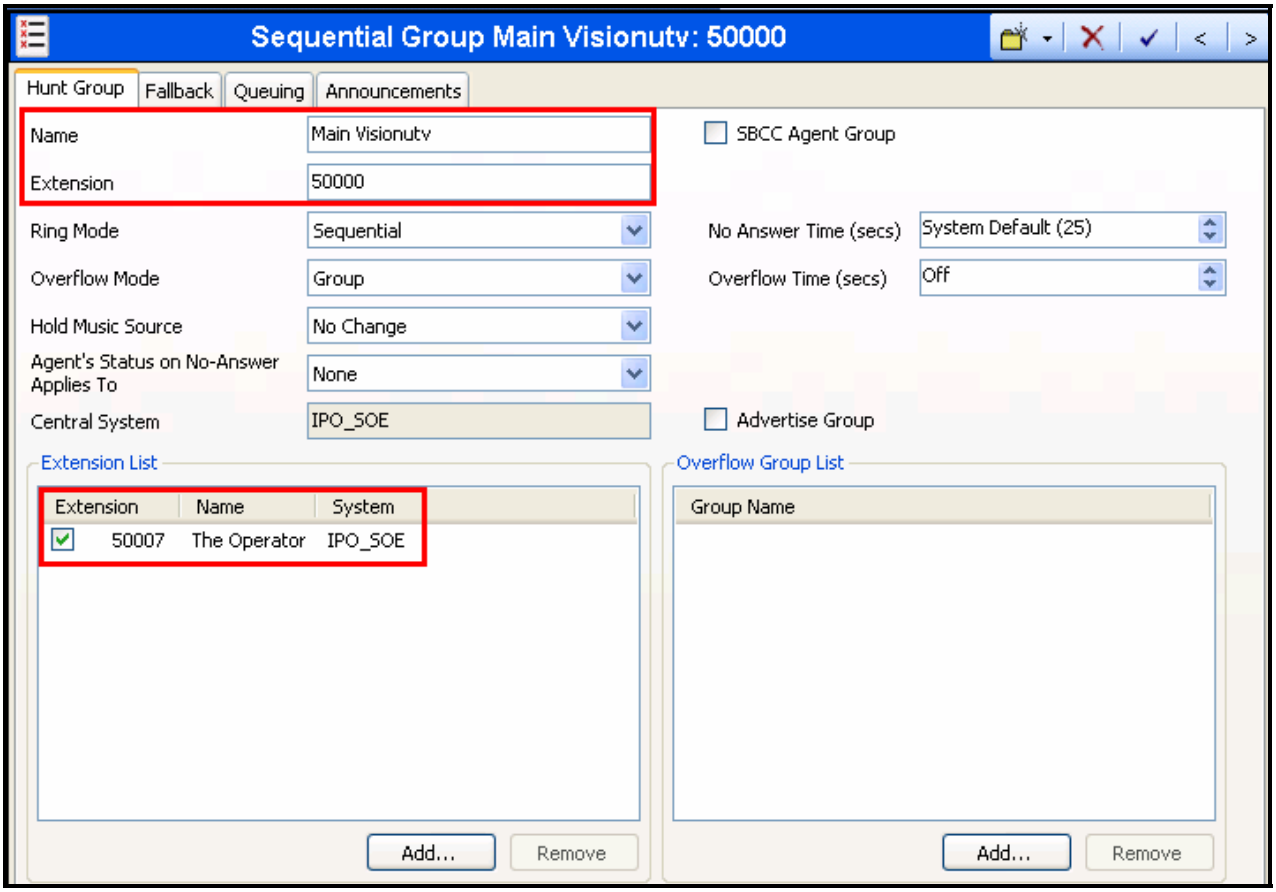

Figure 11: Operator Hunt Group Screen

Create a primary voicemail hunt group using the parameters in the following table.

Parameter	Usage
Name	Enter an appropriate name to identify the voicemail hunt group.
Extension	Enter the extension "50001" which is referenced in **Figure 22**.

Table 9: Primary Voicemail Hunt Group Parameters

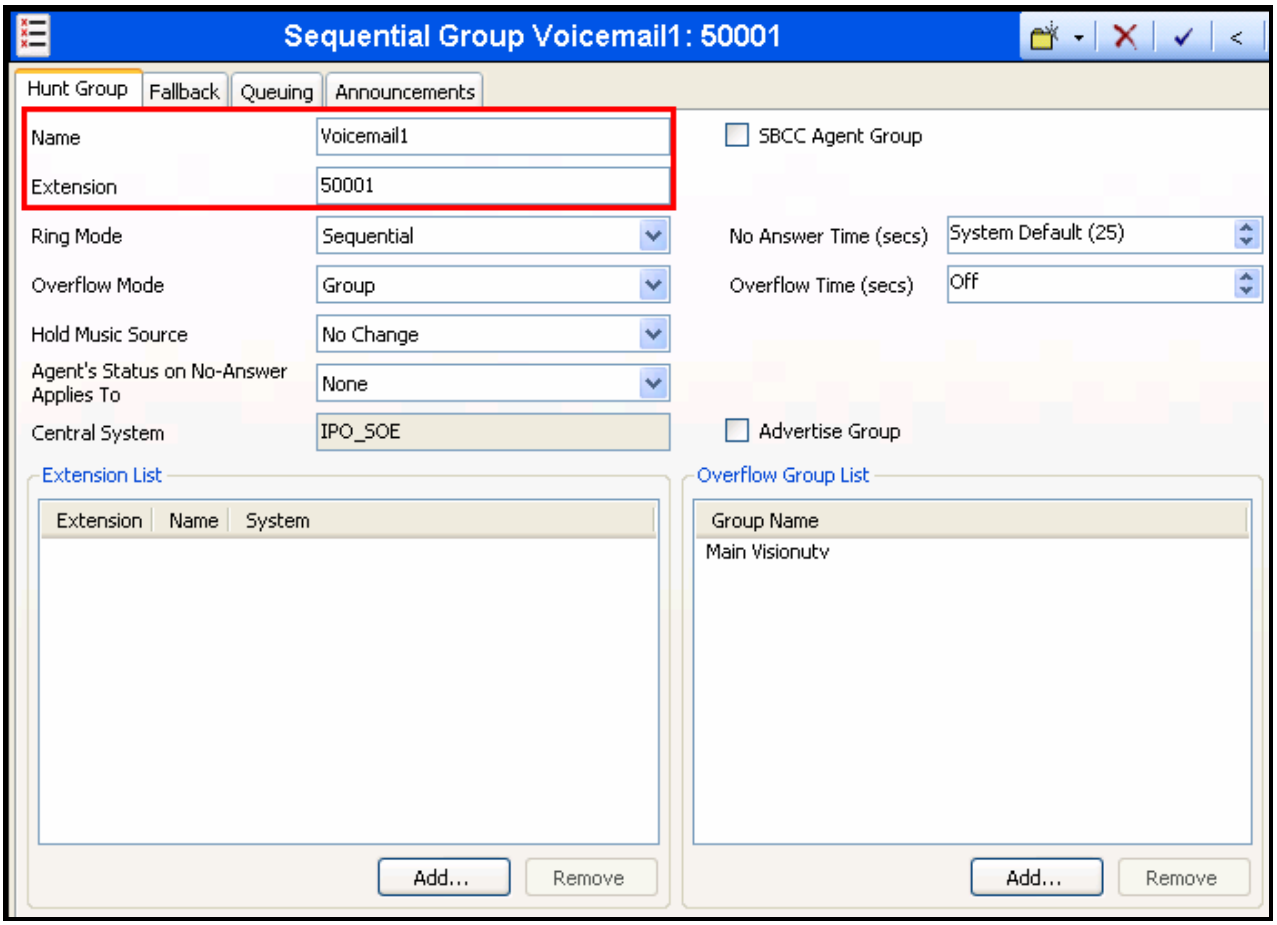

Figure 12: Primary Voicemail Hunt Group Screen

Create a secondary voicemail hunt group using the parameters in the following table.

Parameter	Usage
Name	Enter an appropriate name to identify the voicemail hunt group.
Extension	Enter the extension "50002" which is referenced in **Figure 22**.

Table 10: Secondary Voicemail Hunt Group Parameters

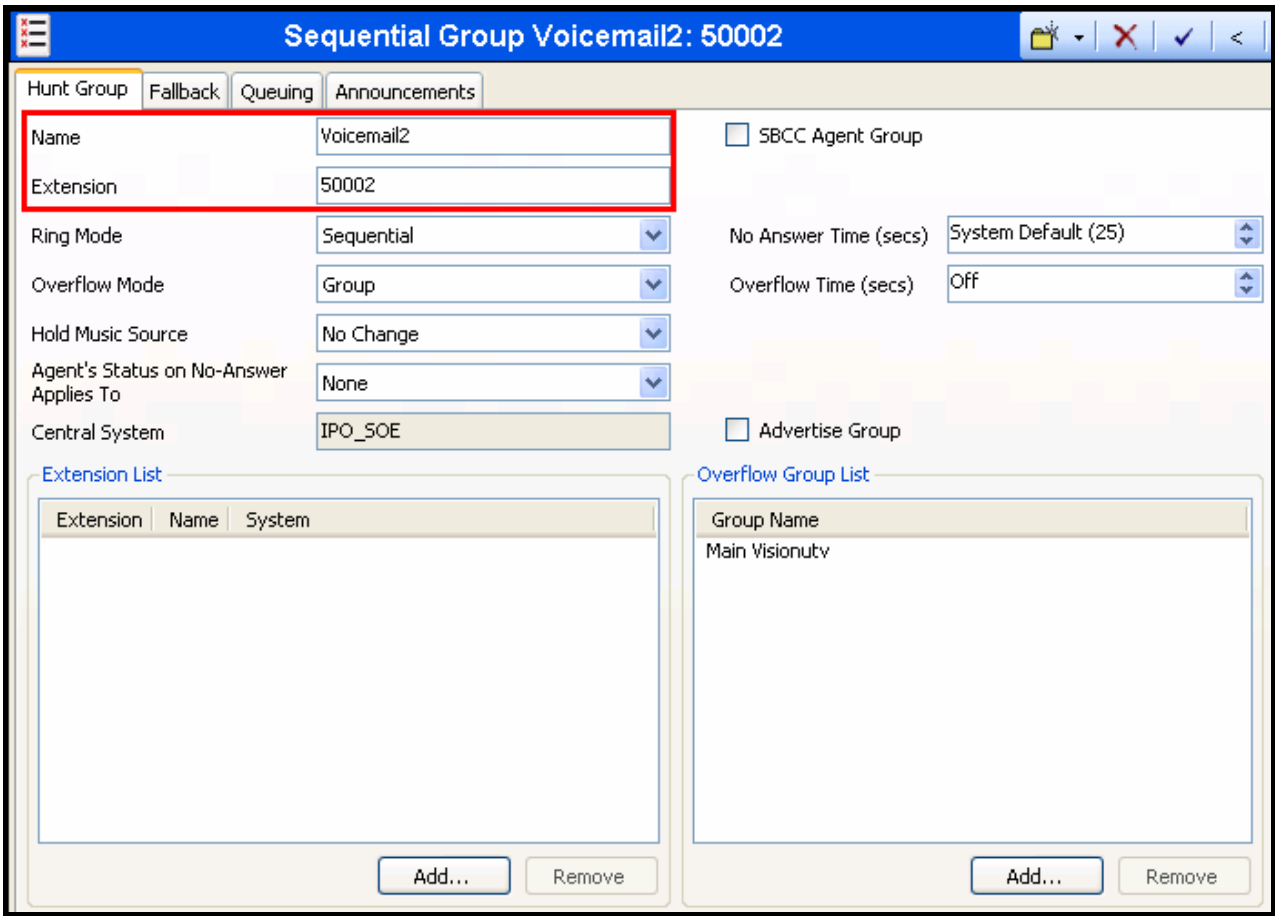

Figure 13: Secondary Voicemail Hunt Group Screen

3.1.7. Shortcodes

Create a shortcode to route outgoing calls to Vision 80/20 when user diversions are configured.

Parameter	Usage
Code	Enter “*23*N#”.
Feature	Select “Dial” from the drop-down menu.
Telephone Number	Enter “.”

Table 11: Diversion Shortcode Parameters

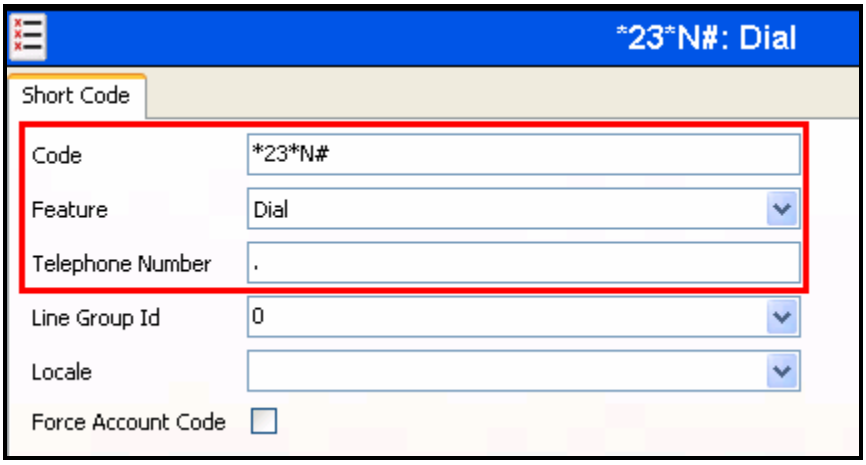

Figure 14: Diversion Shortcode Screen

Create a shortcode to route voicemail calls to the Vision 80/20 Server via the H.323 trunk. This shortcode is also referenced in **Figure 18**.

Parameter	Usage
Code	Enter “99xxxxx”.
Feature	Select “Dial” from the drop-down menu.
Telephone Number	Enter “.”.
Line Group Id	Enter the line group number assigned to H.323 trunk, which is defined in **Figure 6**.

Table 12: Voicemail Shortcode Parameters

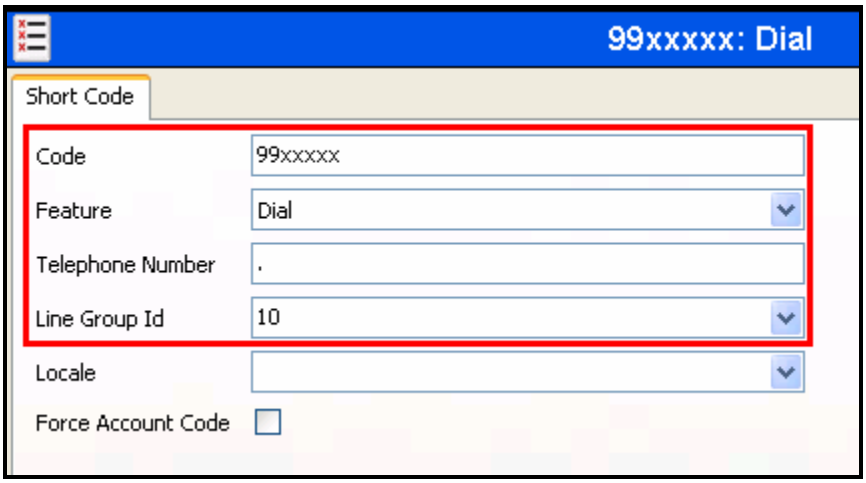

Figure 15: Voicemail Shortcode Screen

3.2. Configure TAPI Client

Install Avaya IP Office TAPI client on each workstation which is to be used as Vision 80/20 client.

Parameter	Usage
Switch IP Address	Enter the IP address of the Avaya IP Office main unit.
Third Party	Select this radio button.
Switch Password	Enter the password assigned to Avaya IP Office.
ACD Queues	Check this box.

Table 13: TAPI Client Configuration Parameters

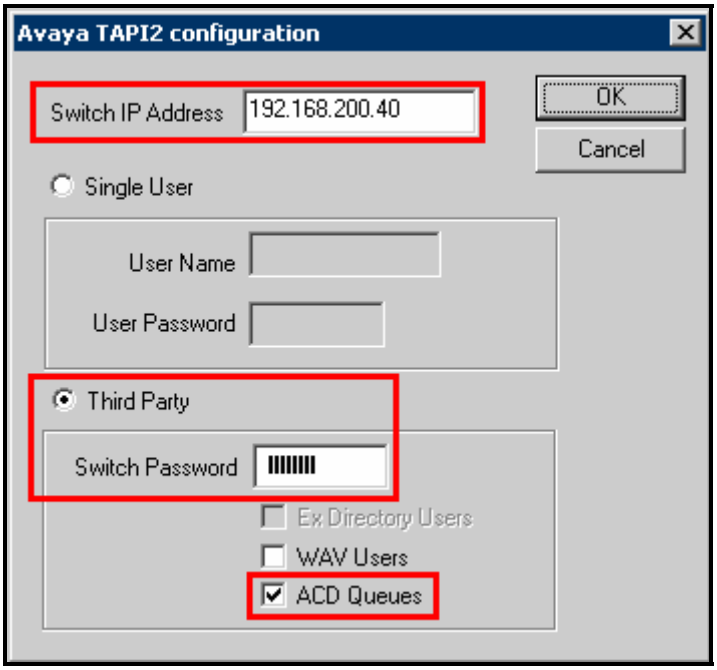

Figure 16: TAPI Client Configuration Screen

3.3. Configure Vision 80/20 Server

Install the Vision 80/20 application and database from the installation media, accepting all the default settings.

3.3.1. Configure Administrera

Start the Vision 80/20 administration program "Administrera" by starting the "C:\vision8020\Admin.exe" program, select the "PBX Configuration" menu point in the left frame, and configure the menu fields as shown in the following table.

Parameter	Usage
Kind of PBX	Select "Avaya IPO" from the drop-down menu.
Extension number length	Enter "5", which corresponds to the length of the extensions shown in **Table 1**.
Name on PBX	Enter an appropriate name to identify the PBX.
Message Waiting	Select "Always" from the drop-down menu.
IP address to PBX	Enter the IP address of the IP Office system.
Password to PBX	Enter the IP Office system password.

Table 14: PBX Configuration Settings

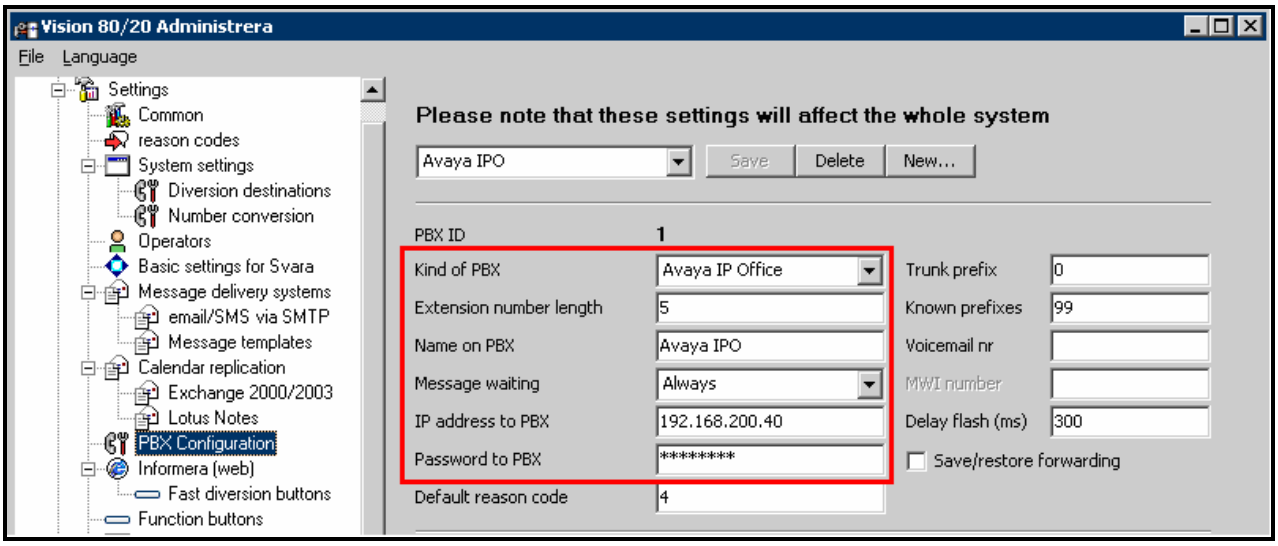

Figure 17: PBX Configuration Screen

Select the “System settings->Diversion destinations” menu point in the left frame. Add an entry for the “Voicemail” using the shortcode which was assigned to voice mail in **Figure 15**, followed by “[$roll_anknr]”. Add an entry for “Operator” with the “Destination” value that was assigned to the Operator Hunt Group in **Figure 11.**

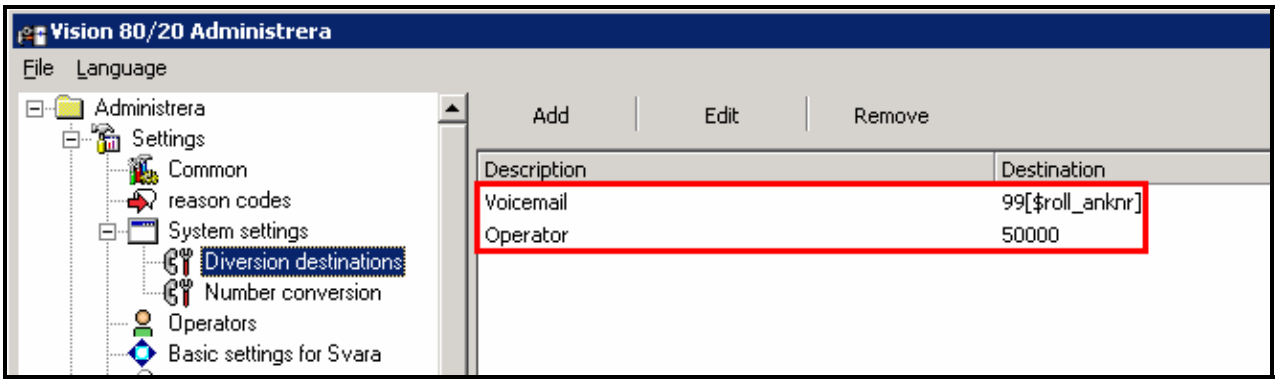

Figure 18: Diversion Destinations Screen

Select the “Operators” menu point in the left frame, and add a “Username” for each of the “users” shown in **Table 1**. Add an entry for “Operator ID” entry for the operators shown in **Table 1.**

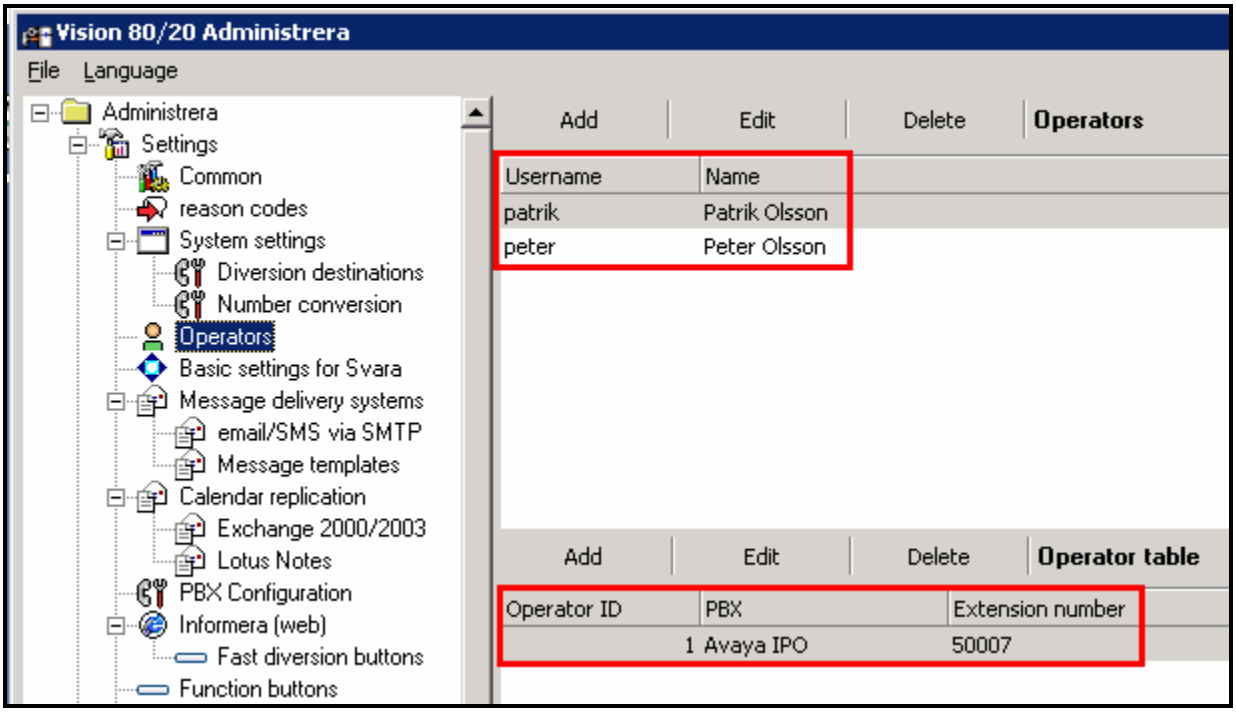

Figure 19: Operators Screen

Select the “Reason codes” menu point from the left frame and add the user absence reason codes shown in the following screen, which are used to inform the operator. These reason codes are then input after the shortcode “*23*” to indicate a reason for the absence, which is defined in **Figure 14**.

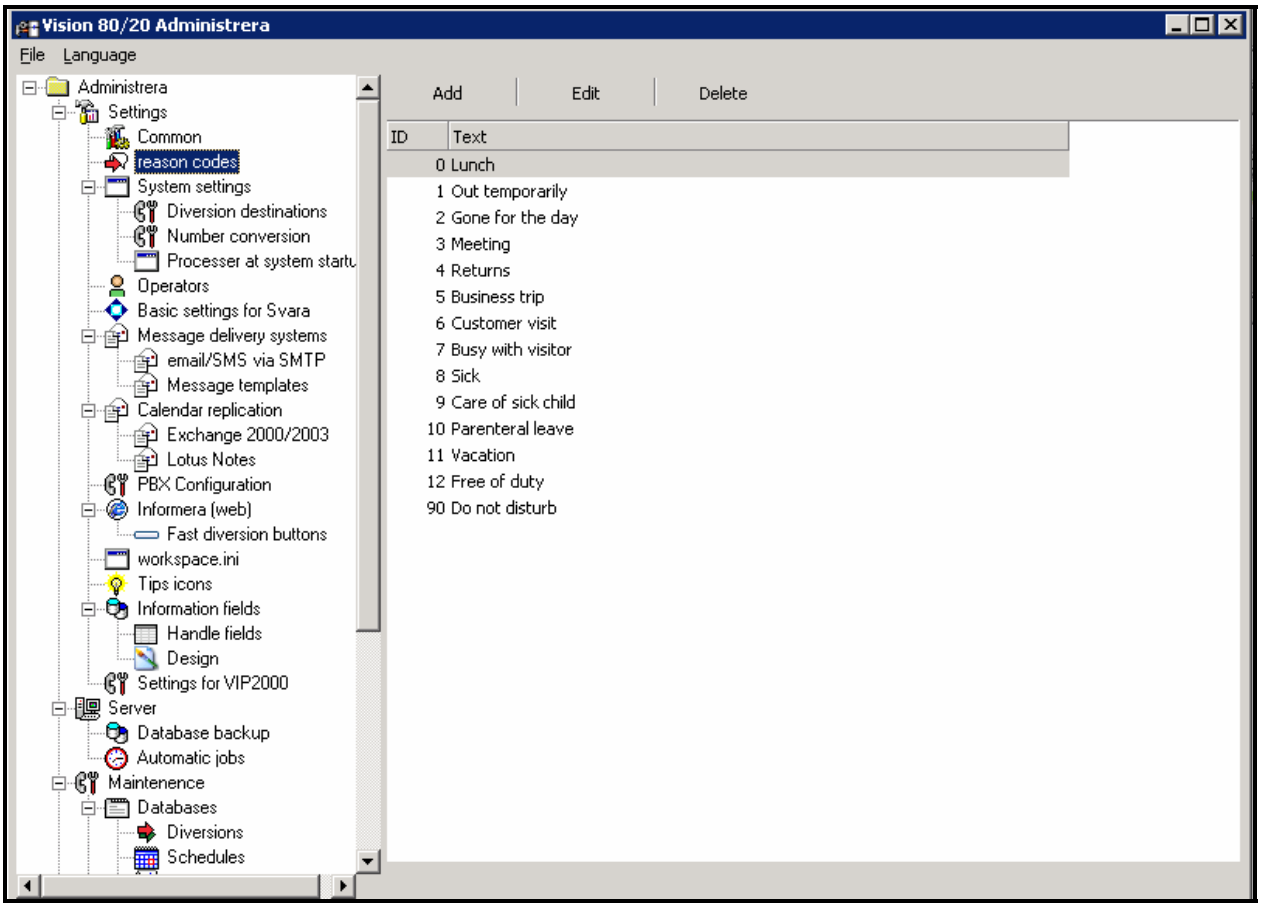

Figure 20: Reason Codes Screen

Select “Customer name” from the left frame and configure the parameters as shown in the following table.

Parameter	Usage
Computer Name	Enter an appropriate name to identify the Vision 80/20 server.
Default action for diversions	Select “Voicemail” from the drop-down menu.
Default PBX	Select “Avaya IPO” from the drop-down menu.
IP address Vision 80/20 server	Enter the IP address of the Vision 80/20 server.

Table 15: Parameters for System Settings File

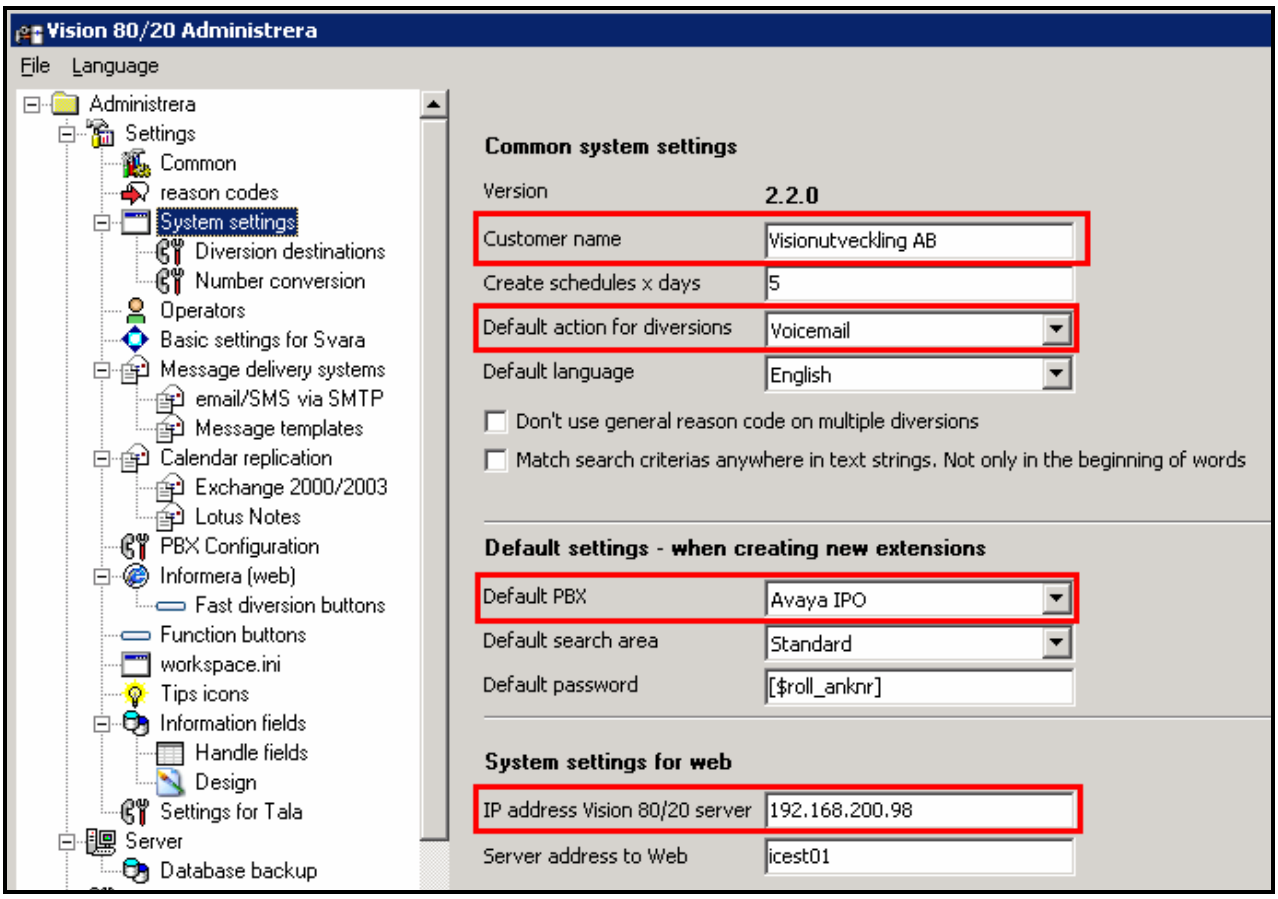

Figure 21: System Settings Screen

Select “Settings for Tala” from the left frame and configure the “System settings” tab parameters as shown in the following table.

Parameter	Usage
Protocol	Select “H323” from the drop-down box.
IP-address to PBX	Enter the IP address of Avaya IP Office.
PBX kind	Select “Get information from prefix” from the drop-down list.
Prefix for [always]	Enter “99”. This should match the voicemail short code which was allocated in **Figure 15**.
How to get reroute cause	Select “Ask Vision 80/20” from the drop-down list.
Number for external login	Enter “99999”. This is just a number to call into the system from the outside, so it should be a number within the customer’s PSTN dialplan.
Delay before answer	Enter ”1000”.
Lines to operator	Enter the voicemail hunt group extensions which are allocated in **Figure 12** and **Figure 13**.

Table 16: Tala Settings Parameters: System Settings Tab

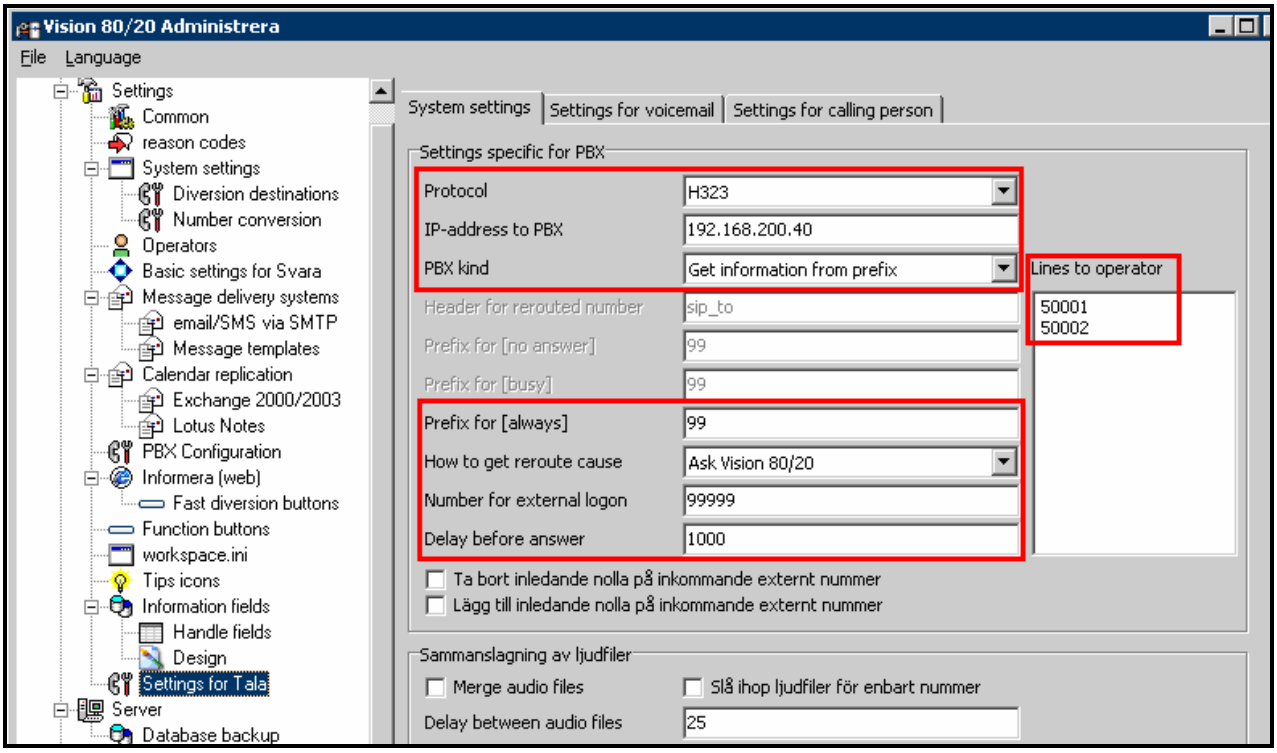

Figure 22: Tala Settings: System Settings Tab

Select “Settings for Tala” from the left frame and configure the “Settings for voicemail” tab parameters as shown in the following table.

Parameter	Usage
Allow automatic login (mobile)	Check this box.
Allow automatic login (internal)	Check this box.
Allow [reroute to sender]	Check this box.

Table 17: Tala Settings Parameters: Settings for Voicemail Tab

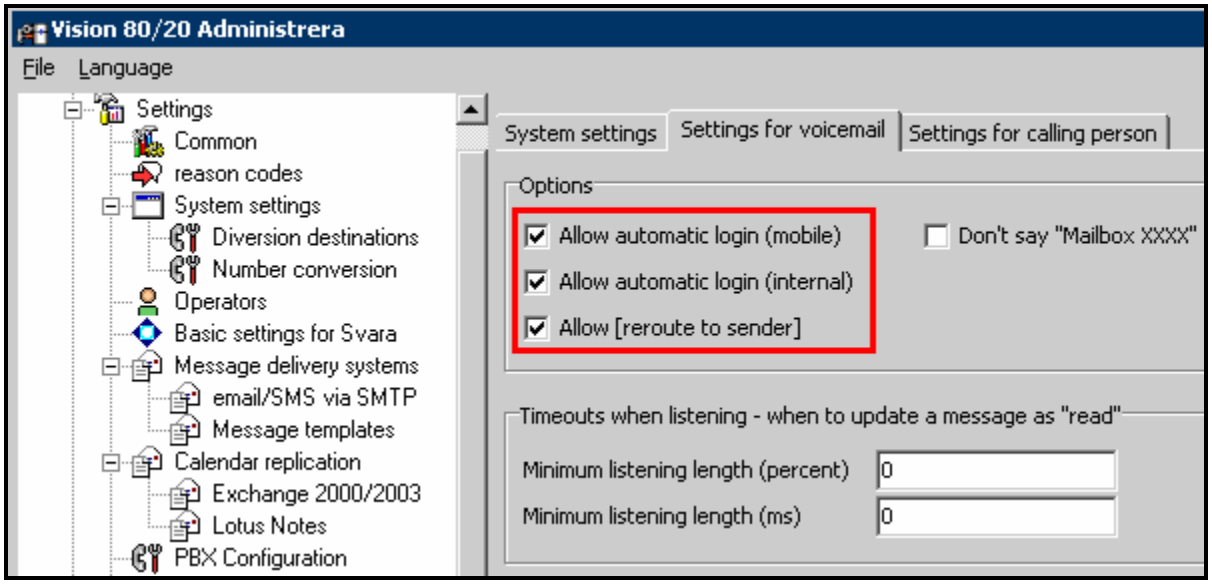

Figure 23: Tala Settings: Settings for Voicemail Tab

Select “Settings for Tala” from the left frame and configure the “Settings for calling person” tab parameters as shown in the following table.

Parameter	Usage
Allow [reroute to operator]	Check this box.
Allow [reroute to mobile]	Check this box.
Play extension number	Check this box.
Play “ring” on incoming call	Check this box.
Use general reason code when missing phrases	Check this box.

Table 18: Tala Settings Parameters: Settings for Calling Person Tab

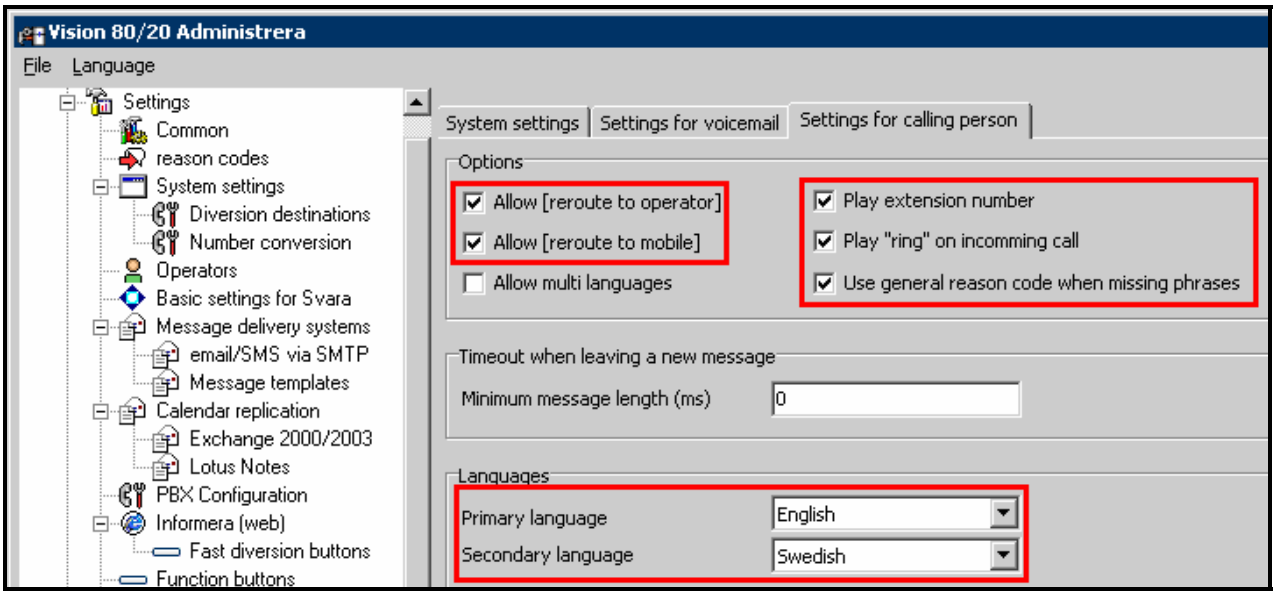

Figure 24: System Settings: Settings for Calling Person Tab

Select “Import/Export” -> “From PBX” from the left frame and click the “Import” button. Verify that the list of extension matches those which were allocated in **section 3.1.5**.

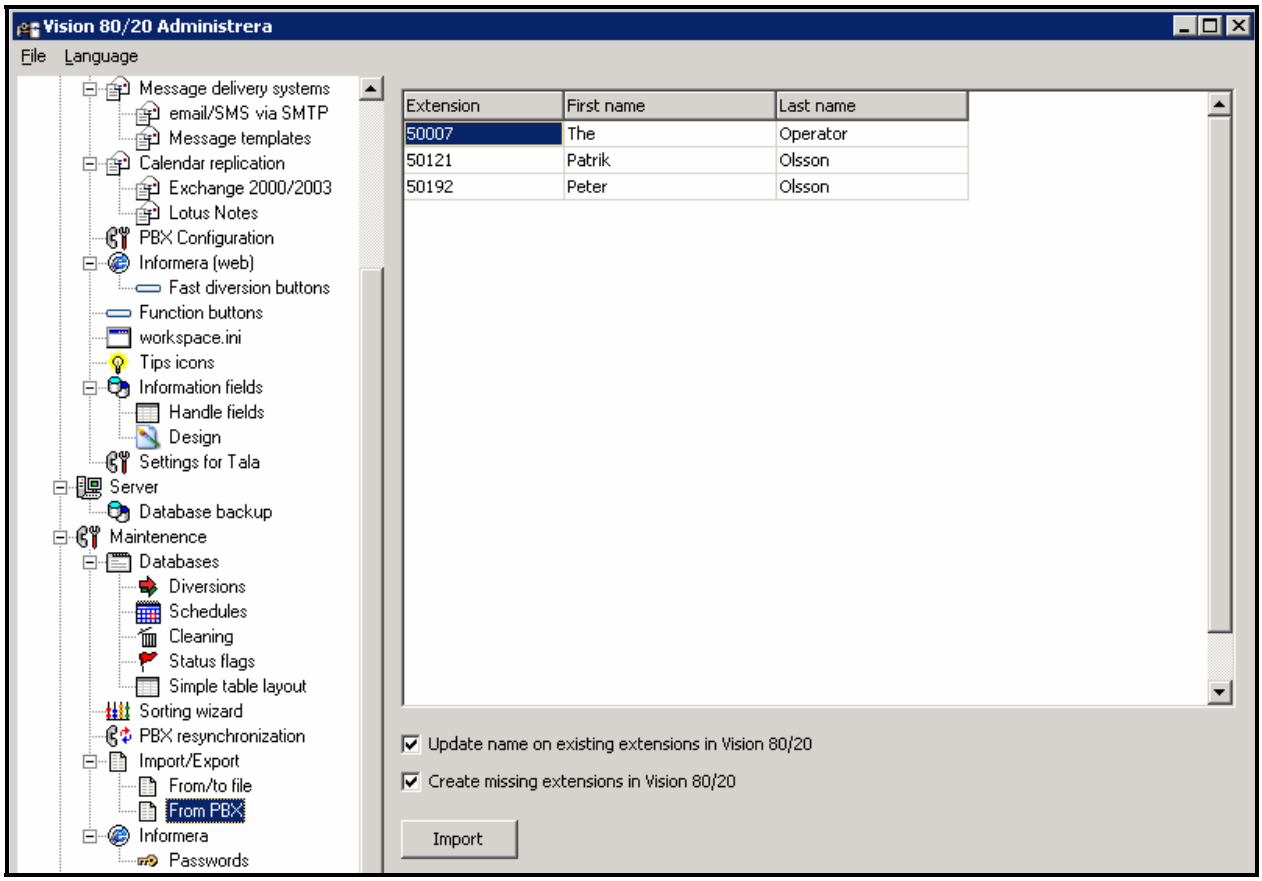

Figure 25: PBX Import/Export Values

3.3.2. Configure H.323 Interface

Use a text editor to edit the file C:\vision8020\tala\yate\conf.d\h323chan.conf, as shown in the following table.

Section	Parameter	Usage
general	alaw	Set this value to “enable”. This should match the setting in **Figure 7**.
ep	faststart	Set this value to “on”. This should match the setting in **Figure 7.**

Table 19: Configuration Settings for File h323chan.conf

```
[general]
skip_stoppedexternal_on_destroy=true
; needmedia: bool: Drop calls for which no common media could be negotiated
needmedia=yes

; alaw: bool: Companded-only G711 a-law (G.711-ALaw-64k)
alaw=enable

; g729: bool: ITU G.729 all variations (G.729)
g729=disable

[ep]
; Control the endpoint operation of the module

; ep: bool: True if you want to activate the h323 endpoint
ep = true

; gw: bool: Set to true if you want this endpoint to declare itself as gateway
gw = true

; alias: string: The alias used by h323 module to connect to gatekeeper
alias = yate

; ident: string: Sets the hostname part of the outgoing e.164 (numeric) aliases
ident = yate

; faststart: bool: Enable Fast Start mode (offer media channels early)
faststart=on

; silencedetect: keyword: Silence detection algorithm: none, fixed, adaptive
silencedetect = adaptive

; gkclient: bool: If h323 module endpoint should register to a gatekeeper
gkclient = false
```

Figure 26: Configuration File h323chan.conf Values

4. Interoperability Compliance Testing

The objective of the compliance testing done on the Visionutveckling Vision 80/20 product was to verify that it is compatible with Avaya IP Office. This includes verifying that the essential Vision 80/20 features function properly when used with Avaya IP Office, and that Avaya IP Office features are not hindered by the interaction with Vision 80/20. Furthermore, Vision 80/20's robustness was verified.

The following tests steps were performed:

- Avaya IP Office was configured to support various local IP telephones, as well as a networked PBX connection and a PSTN connection.
- A PSTN interface was attached to Avaya IP Office, which was used to communicate with external telephones.
- The major Vision 80/20 features and functions were verified using the above-mentioned local and external telephones.
- The following test scenarios were used to test the various Vision 80/20 features:
  - Tests of operations performed by Vision 80/20 server via TAPI (for both local and external endpoints)
    - Diversion to operator, unconditional, busy, DNA
    - Deactivate diversion
    - Leave a message and verify that MWI lamp changes to ON
    - Retrieve a message and verify that MWI lamp changes to OFF
    - Change state of local stations from on- to off-hook and verify that all clients are informed of the change.
    - Call local stations and verify that all clients are informed of the alerting condition.
    - From the operator console, re-route an alerting call to another user.
  - Tests of operations performed by operator (for both local and external endpoints)
    - Incoming basic call
    - Outgoing basic call
    - Initiate second call
    - Blind transfer
    - Blind transfer with timeout
    - Supervised transfer
    - Toggle call
    - Three-party conference
    - Call park
    - Park call terminates
    - Un-park call
    - Call diversion to operator unconditionally, busy, DNA
    - Call diversion to voicemail unconditionally, busy, DNA
    - Hunt group call diverted to operator
    - Hunt group call to busy operator is queued
    - Operator break-through to diverted destination
    - Operator intrusion to busy user
  - Tests of operations performed by user via web client (for both local and external endpoints)

        - Incoming basic call
        - Outgoing basic call
        - Initiate second call
        - Blind transfer
        - Blind transfer with timeout
        - Supervised transfer
        - Toggle between calls
        - Three-party conference
        - Call park
        - Park call terminates
        - Un-park call
        - Listen to voicemail messages, verify MWI change
        - Busy/available status
    - Voicemail
        - Verify that voicemail informs caller of correct reason for user absence
        - Use voicemail to connact back to operator.
        - Use voicemail to divert call to mobile endpoint
        - Use voicemail to call back via caller ID
    - The robustness of the Vision 80/20 was tested by verifying its ability to recover from interruptions to its LAN connection between and the Vision 80/20 and the network and to start up automatically.

All testing was performed manually. The tests were all functional in nature, and no performance testing was done.

4.1. Test Results

The tests all produced the expected results.

5. Verification Steps

The correct installation and configuration of Vision 80/20 can be verified by verifying the operation of the Vision 80/20 User and Operator clients:

- Verify that the client can detect on-hook/off-operations of other clients
- Verify that the unanswered calls to the client are correctly forwarded to voicemail and the caller is informed of the correct reason for the inability of the client to answer the call.
- Verify that the client can administer voicemail.
- Verify that the client can transfer calls and create conferences

6. Conclusion

These Application Notes contain instructions for configuring Avaya IP Office to connect to the Visionutveckling Vision 80/20 server. A list of instructions is provided to enable the user to verify that the various components have been correctly configured.

7. Additional References

This section references documentation relevant to these Application Notes. The Avaya product documentation is available at http://support.avaya.com.

[1] *Administrator Guide for Avaya IP Office*, January 2008, Issue 4.0, Document Number 03-300509.

[2] *Feature Description and Implementation for Avaya IP Office*, January 2008, Issue 6, Document Number 555-245-205.

[3] *4600 Series IP Telephone LAN Administrator Guide*, October 2007, Issue 7, Document Number 555-233-507

[4] Vision 80/20 Product Description: http://www.vision8020.se/misc/Vision%208020_eng_2008-11.pdf

Please e-mail any questions or comments pertaining to these Application Notes along with the full title name and filename, located in the lower right corner, directly to the Avaya DevConnect Program at devconnect@avaya.com.