

BellCommander ShoreTel Configuration Guide

ShoreTel Configuration

1. Configure ShoreTel to use multiple RTP ports. Open ShoreTel Director in a web browser and select Call Control...|Options. In the Options, uncheck "Always Use Port 5004 for RTP" if it's checked:

ShoreTel
Director
Build 18.8.6604.0
Logoff Administrator

Administration

- Users...
- Trunks...
- **IP Phones...**
- Platform Hardware...
- Call Control...
 - Account Codes
 - Bridged Call Appearances
 - Hunt Groups
 - Paging Groups
 - Pickup Groups
 - Route Points
 - Supported Codecs
 - Codec Lists
 - **Options**
 - Voice Mail...
 - Auto-Attendant Menus
 - Workgroups
 - Schedules
 - Communicator...
 - System Directory
 - Application Servers...
 - SIP Servers...
 - Sites
 - System Parameters...
 - Preferences

Maintenance

- Quick Look
- Connectivity
- Voice Mail Servers
- Make Me Conferencing
- Audio / Web Conferencing
- IM

Enable Silent Coach Warning Tone.

Generate an event when a trunk is in-use for minutes.

Park Timeout (1-100000) after seconds.

Hang up Make Me Conference after minutes of silence.

Delay before sending DTMF to Fax Server: msec

DTMF Payload Type (96 - 127):

SIP:

Realm:

Enable SIP Session Timer.

Session Interval (90 - 3600): sec

Refresher: ▾

Voice Encoding and Quality of Service:

Maximum Inter-Site Jitter Buffer (20 - 400): msec

DiffServ / ToS Byte (0-255): (DSCP = 0x0)

Media Encryption: ▾

Admission control algorithm assumes RTP header compression is being used.

Always Use Port 5004 for RTP

Video Quality of Service:

DiffServ / ToS Byte (0-255): (DSCP = 0x0)

Trunk-to-Trunk Transfer and Tandem Trunks:

Hang up after minutes of silence.

Hang up after minutes.

2. If ShoreTel is configured with multiple sites, make sure that the IP address range includes the BellCommander server's IP address. To do this, select IP Phones|IP Phone Address Map. Then, edit the corresponding site where BellCommander is located and update the IP range if the BellCommander server's IP address is outside the range. If there is only a single site, then an IP range isn't required to be defined.

The screenshot displays the ShoreTel Director web interface. On the left is a navigation menu with the following items:

- Director
- Build 18.8.6604.0
- Logoff Administrator
- Administration
 - Users...
 - Trunks...
 - IP Phones...
 - Individual IP Phones
 - IP Phone Address Map** (highlighted with a red circle)
 - SIP Profiles
 - Phone Applications
 - Options
 - Platform Hardware...
 - Call Control...
 - Voice Mail...
 - Auto-Attendant Menus
 - Workgroups
 - Schedules
 - Communicator...
 - System Directory
 - Application Servers...
 - SIP Servers...
 - Sites
 - System Parameters...
 - Preferences

The main content area is titled "IP Phone Address" and contains an "IP Address Map List" table:

<input type="checkbox"/>	Site	Low IP Address
<input type="checkbox"/>	Headquarters	192.168.2.1

Below the table is a "IP Phone Address Map Info" form for the "Headquarters" site. The form includes the following fields:

- Site: Headquarters (dropdown menu)
- Low IP Address: 192.168.2.1 (text input, highlighted with a red circle)
- High IP Address: 192.168.2.254 (text input, highlighted with a red circle)
- Caller's Emergency Service Identification (CESID): (text input) (e.g. +1 (408) 331-3300)
- Teleworkers

At the bottom of the form are buttons for "Save", "Close", "Previous", and "Next". A copyright notice at the bottom reads: "© 1998-2012 ShoreTel, Inc. All rights reserved."

- Configure a ShoreTel switch to provide the SIP proxy service. Select Platform Hardware | Voice Switches/Service Appliances and select Primary. Then, select the switch that will provide the SIP service. Then, select an available port and set the port type to "100 SIP Proxy".

The screenshot shows the ShoreTel Director web interface. On the left is a navigation menu with categories: Administration, Maintenance, and Reporting. Under Administration, 'Voice Switches / Service Appliances...' is expanded, and 'Primary' is selected. The main content area is titled 'Voice Switches' and 'Edit ShoreGear 30 Switch'. It contains a form for editing the switch record with fields for Name, Description, Site, IP Address, Ethernet Address, Server to Manage Switch, Caller's Emergency Service Identification (CESID), and Built-in Capacity. Below the form is a photograph of the ShoreTel ShoreGear 30 switch. At the bottom, a table lists the switch's ports and their configurations.

Port	Port Type	Trunk Group	Description
1	Available		P01
2	5 IP Phones		P02
11	100 SIP Proxy		P03
12	Available		P04

4. Configure the site's SIP proxy. Select Sites and then click the site's name to edit its settings. In the settings for the site, update the following settings under "SIP Proxy":

Virtual IP Address: Enter an available IP address. The SIP proxy will operate on a separate IP address than the main ShoreTel server. In the example below, the ShoreTel server was at 192.168.2.85 and 192.168.2.84 was available and it was set as the SIP proxy. This address should be noted, since it will be entered in BellCommander.

Proxy Switch 1: Select the switch where the SIP proxy was added.

Proxy Switch 2: Optionally select a second switch for redundancy

The screenshot displays the ShoreTel Director web interface. On the left is a navigation menu with categories: Administration, Maintenance, Reporting, and Documentation. The 'Administration' section is expanded, and 'Sites' is highlighted with a red circle. The main content area shows the configuration for a site, with the 'SIP Proxy' section highlighted by a red box. The settings in this section are: Virtual IP Address: 192.168.2.84; Proxy Switch 1: Main Switch; Proxy Switch 2: None. Other settings visible include Caller's Emergency Service Identification (CESID), Time Zone, Night Bell Extension, Paging Extension, Operator Extension, FAX Redirect Extension, SMTP Relay, Network Time Protocol Server, Bandwidth (Admission Control, Intra-Site, Inter-Site, and FAX and Modem Calls), and Emergency Number List.

Caller's Emergency Service Identification (CESID):	<input type="text" value=""/>	(e.g. +1 (408) 331-3300)
Time Zone:	[UTC-06:00] Central Time (US & Canada), Central Standard Time	
Night Bell Extension:	<input type="text" value=""/>	
Night Bell Switch:	None	Edit Night Bell Call Handling
Paging Extension:	<input type="text" value=""/>	
Paging Switch:	None	
Operator Extension:	<input type="text" value=""/>	<input type="button" value="Search"/>
FAX Redirect Extension:	<input type="text" value=""/>	<input type="button" value="Search"/>
SMTP Relay:	<input type="text" value=""/>	<input type="button" value="Ping"/>
Network Time Protocol Server:	<input type="text" value=""/>	
Bandwidth:		
Admission Control Bandwidth:	<input type="text" value="0"/>	kbps
Intra-Site Calls:	High Bandwidth Codecs	
Inter-Site Calls:	Low Bandwidth Codecs	
FAX and Modem Calls:	Fax Codecs - High Bandwidth	
SIP Proxy:		
Virtual IP Address:	<input type="text" value="192.168.2.84"/>	
Proxy Switch 1:	Main Switch	
Proxy Switch 2:	None	
Emergency Number List:		
<input type="checkbox"/> Trunk Access Code Required	<input type="text" value="911"/>	<input type="button" value="Add More..."/>
Edit IP Phone Address Map		

5. Create a new user for BellCommander to use. Select Users | Individual Users. Then, add a user with the following settings:

First Name: BellCommander

Last Name: Outbound1

First and last name can be changed. For the last name, for a simple naming scheme, we recommend “Outbound” followed by a number for the extension. “Outbound1” would be for the BellCommander first extension to call outbound for paging/bells. If audio/bells will be scheduled simultaneously to different extensions/groups, then additional users should be added (ex. Outbound2) to allow BellCommander to page out using two different extensions/lines at the same time. For emergency notification and paging, additional “Inbound” extensions should be added.

Number: The extension number. This will be entered in BellCommander.

Client Username: Should be the same as the extension number

SIP Password: Enter a password for the extension. This will also be entered in BellCommander.

The screenshot shows the ShoreTel Director web interface. On the left is a navigation menu with categories like Administration, Maintenance, and Users. The 'Users' section is expanded, and 'Individual Users' is selected. The main area is titled 'Users Edit User' and contains several tabs: General, Personal Options, Distribution Lists, and Workgroups. The 'General' tab is active, showing fields for First Name (BellCommander), Last Name (Outbound1), and Number (500). Other fields include License Type (Extension and Mailbox), Access License (Professional), Caller ID, DID Range, DID Number, PSTN Failover (None), and User Group (Executives). Below these are fields for Site (Headquarters), Language (English(US)), Primary Phone Port (IP Phones, Any IP Phone), Current Port (Any IP Phone), and Jack #.



Director

Build 18.8.6604.0

Logoff Administrator

Administration

- Users...
 - Individual Users
 - User Groups
 - Class of Service
 - Anonymous Telephones
 - Extension Lists
 - Batch Update Utility
 - Call Handling Mode Defaults...
- Trunks...
- IP Phones...
- Platform Hardware...
- Call Control...
- Voice Mail...
- Auto-Attendant Menus
- Workgroups
- Schedules
- Communicator...
- System Directory
- Application Servers...
- SIP Servers...
- Sites
- System Parameters...
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Maintenance

- Quick Look
- Connectivity
- Voice Mail Servers
- Make Me Conferencing
- Audio / Web Conferencing
- IM
- Event Filters
- HQ Event Log...
- HQ Services

Accept Broadcast Messages

Include in System Dial By Name Directory

Make Number Private

Fax Support:

Allow Video Calls:

Allow Telephony Presence

Shared Call Appearances

Associated BCA:

Allow Use of Soft Phone

Allow Phone API

Allow Mobile Access

Delayed Ringdown

Extension:

External Number: (e.g. 9+1 (408) 331-3300)

Ringdown Delay: sec

Client Username:

Client Password:

Voice Mail Password: Must Change On Next Login

SIP Password:

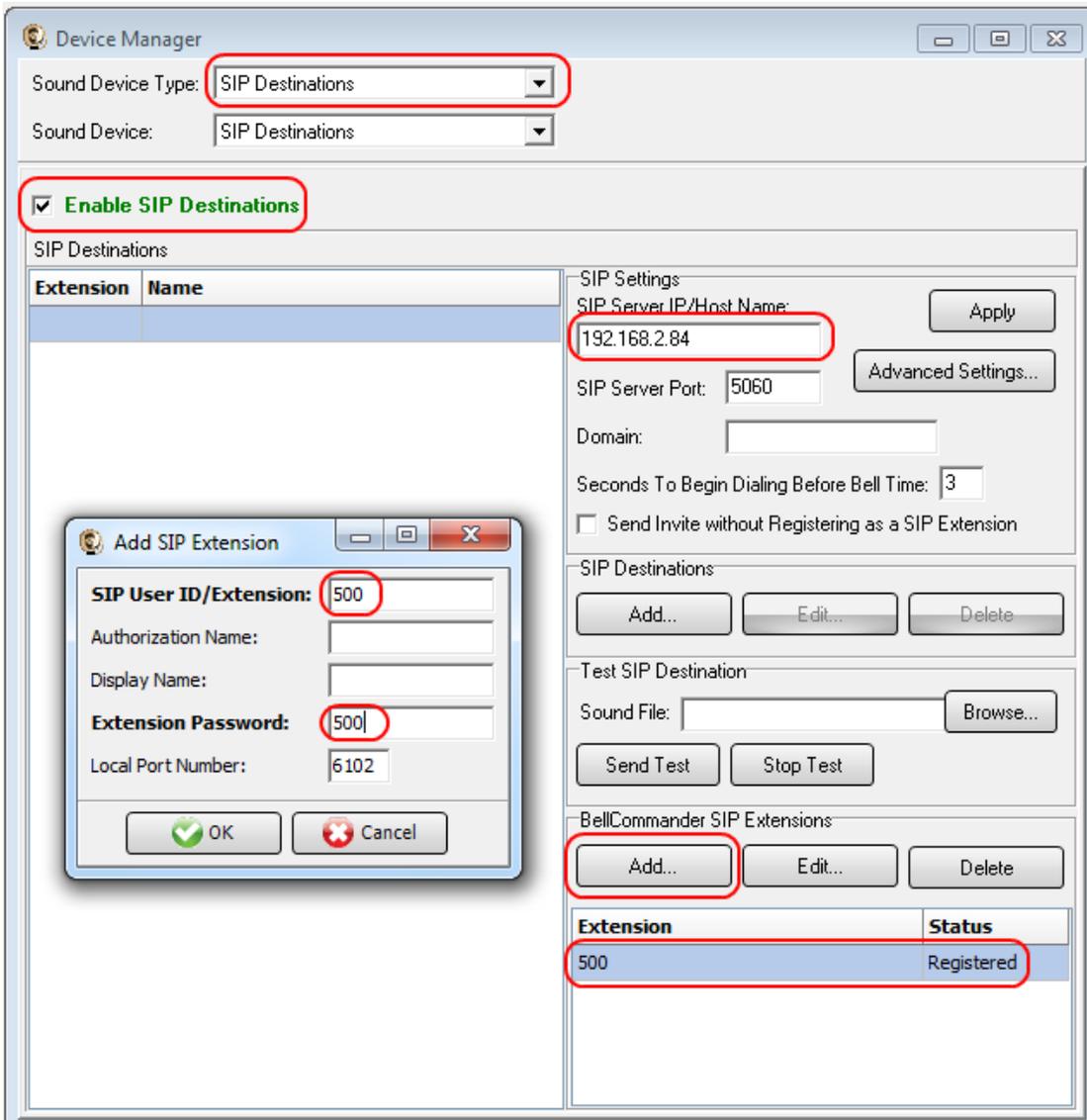
Email Address:

Conferencing Settings:

Appliance:

Instant Messaging Settings:

6. Add the extension to BellCommander:
 - a. Open BellCommander and click the Devices button to open the Device Manager.
 - b. Select "SIP Destinations" for the Sound Device Type.
 - c. Check "Enable SIP Destinations"
 - d. Enter the SIP Server IP. This should be the SIP proxy that was added in step 4.
 - e. Click the Apply button.
 - f. Click the Add... button under BellCommander SIP Extensions.
 - g. In the Add SIP Extension window, enter the following:
 - SIP User ID/Extension: Enter the extension number that was added to ShoreTel
 - Extension Password: Enter the password for the extension
 - Local Port Number: Can use the default value, unless special configuration is needed to work around local firewalls or other application.
 - h. After adding the extension, the status should change to "Registered". If not, double check the settings or view the BellCommander logs (Options|View Log Folder)



- After the extension is registered, it should appear in the IP phone list in ShoreTel. Select IP Phones|Individual IP Phones. Then, look for the SIP extension that BellCommander registered and note the name.

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 - Phone Applications
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IP Phones

Filter IP Phones Find Now Clear

By Sites: All Sites
By Switches: All Switches

IP Phone List

Show Page: 1 : 00-10-49-27-E3-05 - SIP-BCFB957715B7AA4A8C79BE5ECE2BBF4F

Delete SIP Registration Main Switch (Headquarters) Move

<input type="checkbox"/>	Name	Site	Switch	MAC Address	IP Address
<input type="checkbox"/>	00-10-49-27-E3-05	Headquarters	Main Switch	00-10-49-27-E3-05	192.168.2.140
<input type="checkbox"/>	00-10-49-27-E3-23	Headquarters	Main Switch	00-10-49-27-E3-23	192.168.2.143
<input type="checkbox"/>	00-10-49-29-2C-61	Headquarters	Main Switch	00-10-49-29-2C-61	192.168.2.142
<input type="checkbox"/>	SIP-BCFB957715B7AA4A8C79BE5ECE2BBF4F	Headquarters	Main Switch		192.168.2.95

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- Assign the phone to the user. Select Users|Individual Users. Then, select the BellCommander user that was added. Check the Primary Phone Port and make sure that it is set to "IP Phones". Then, select the SIP phone registered by BellCommander if it's not selected by default.

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Users New Copy Save Delete Reset Help

Edit User * modified Refresh this page

General **Personal Options** **Distribution Lists** **Workgroups**

First Name: BellCommander
Last Name: Outbound1
Number: 500
License Type: Extension and Mailbox
Access License: Professional Enable Contact Center Integration
Caller ID: (e.g. +1 (408) 331-3300)
 DID Range: View System Directory
DID Number:
PSTN Failover: None
User Group: Executives Go to this User Group

Site: Headquarters
Language: English(US)
Primary Phone Port: IP Phones SIP-BCFB957715B7AA4A8C79BE5ECE2BBF4F
 Ports Main Switch - 12
 SoftSwitch SoftSwitch
Current Port: SIP-BCFB957715B7AA4A8C79BE5ECE2BBF4F Go Primary Phone
Jack #:

Configuring Paging Groups:

BellCommander can call paging groups at scheduled times to page to groups of phone. To set BellCommander to page to a group of phones, first add a paging group to ShoreTel if one is not already available.

To create a paging group, first add an extension list in ShoreTel. Select Users|Extension Lists. Then, add a new extension list. Assign the phones that should receive the page to the extension list. Multiple extension lists/paging groups may be configured for BellCommander. For example, a school may have a group with all phones and other groups for different grades or buildings. Make sure not to add the BellCommander extensions to the extension lists.

The screenshot displays the ShoreTel Director web interface. On the left is a navigation menu with the following items: Administration, Users..., Individual Users, User Groups, Class of Service, Anonymous, Telephones, Extension Lists (highlighted with a red circle), Batch Update Utility, Call Handling Mode Defaults..., Trunks..., IP Phones..., Platform Hardware..., Call Control..., Voice Mail..., Auto-Attendant Menus, Workgroups, Schedules, Communicator..., System Directory, Application Servers..., SIP Servers..., Sites, System Parameters..., and Preferences. The main content area is titled 'Users' and 'Edit Extension List'. It includes buttons for 'New', 'Copy', 'Save', 'Delete', and 'Reset', and a 'Help' link. The 'Name' field is set to 'All Call'. The 'Filter Users By' section has fields for 'First Name', 'Last Name', and 'Extension'. The 'Sort By' dropdown is set to 'Extension' with an 'Apply' button. The 'Choose Members' section shows a list of members with a 'Show Page' dropdown set to '1: 500 - 501' and navigation buttons. The 'Extension List Members' box (highlighted with a red border) contains the following entries: '230 : Sarah Miller' and '265 : John Alpha'. There are 'Add >>' and '<< Remove' buttons between the member lists.

Then, create a paging group by selecting Call Control | Paging Groups. For the new paging group, use the following settings:

Name: Add any name to help identify the group in ShoreTel

Extension: The extension that will be dialed for the paging group

Group Paging Server: Should typically be the server where the SIP paging gateway resides

Enable Priority Paging/Speakerphone: Will send pages through the speakerphones

Group Paging Synchronization Delay: Can be set to 1 to minimize delay.

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Paging Groups

Edit Paging Group

[New](#) [Copy](#) [Save](#) [Delete](#) [Reset](#)

[Edit this record](#) [Refresh this page](#)

Name:

Extension:

Group Paging Server:

Include in System Dial By Name Directory

Make Number Private

Enable Priority Paging

Deliver Group Page via

Speakerphone

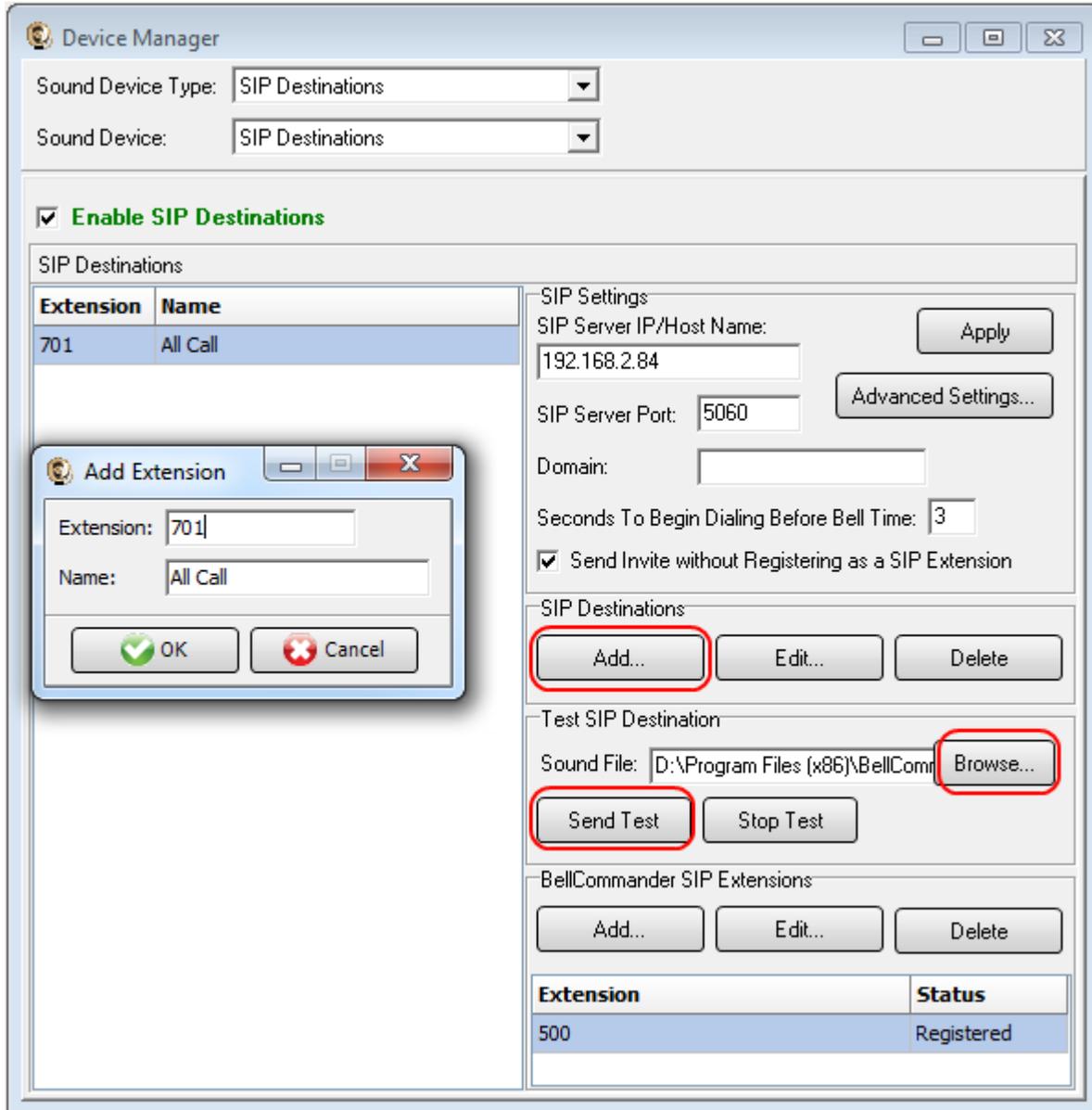
Active Audio Path

No Answer Number of Rings (1-255):

Extension List: [Edit this extension list](#)

Group Paging Synchronization Delay (0-255): sec

Finally, add the group as a SIP Destination in BellCommander. Click Add under SIP Destinations and enter the paging group extension and a name to identify the group/zone by in BellCommander. After adding the group try sending a test .WAV audio file. Click the Browse button, select a WAV audio file, then click the Send Test button. The phones in the group should first beep for the page and the sound should follow approximately 2-3 seconds later.



Configuring Emergency Notification:

BellCommander also allows users to call into BellCommander to trigger emergency notifications. The user would pick up a phone that is allowed to call into BellCommander, call a SIP extension registered by BellCommander, and enter the emergency code followed by the # key.

To configure emergency notification, follow the ShoreTel Configuration steps 1-4 if a SIP destination was not added to configure the ShoreTel system for SIP.

Then, follow the steps below to add the SIP extension:

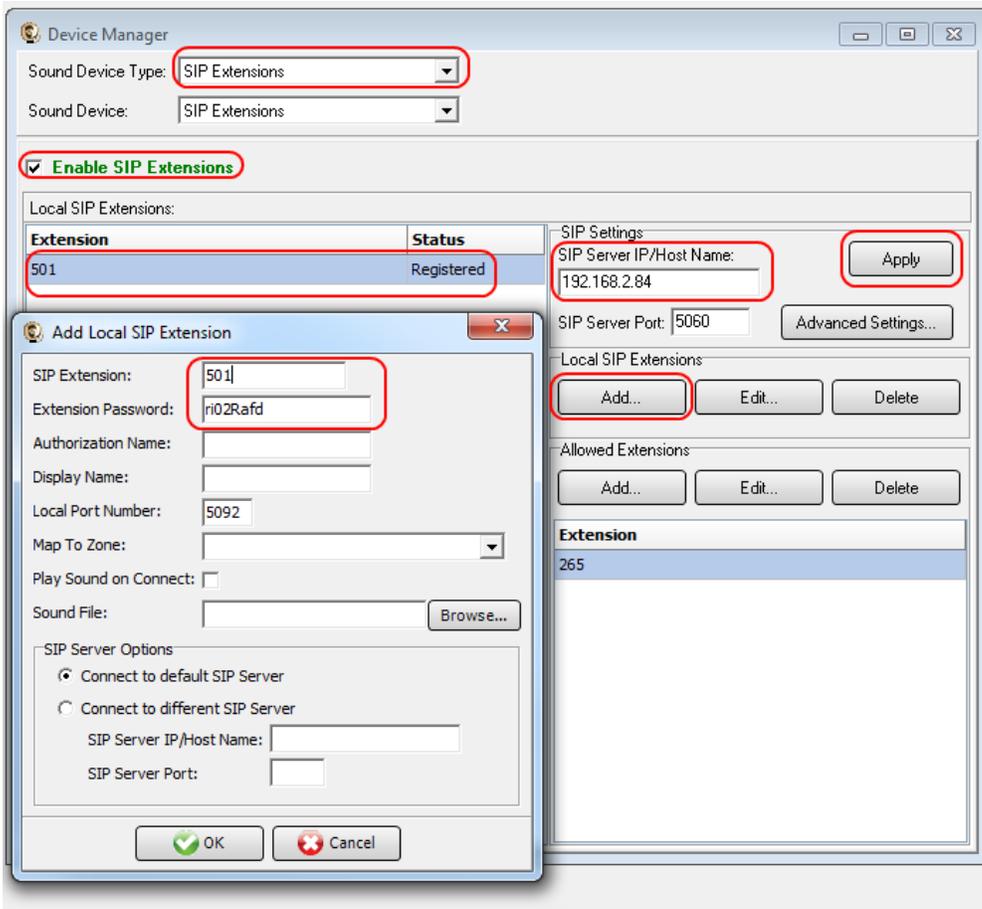
1. Follow [step 5](#) in the SIP Configuration to add a new user. For the last name, use “Inbound1” for the first inbound extension.
2. Add the SIP extension to BellCommander:
 - a. Open BellCommander and click the Devices button to open the Device Manager.
 - b. Select “SIP Extensions” for the Sound Device Type.
 - c. Check “Enable SIP Extensions”
 - d. Enter the SIP Server IP, which should be the ShoreTel SIP Proxy IP configured in [step 4](#) of the ShoreTel configuration.
 - e. Click the Add... button under Local SIP Extensions and enter the following information in the Add Local SIP Extension window:

SIP Extension: The extension number that was added to ShoreTel

Extension Password: The SIP password for the extension in ShoreTel

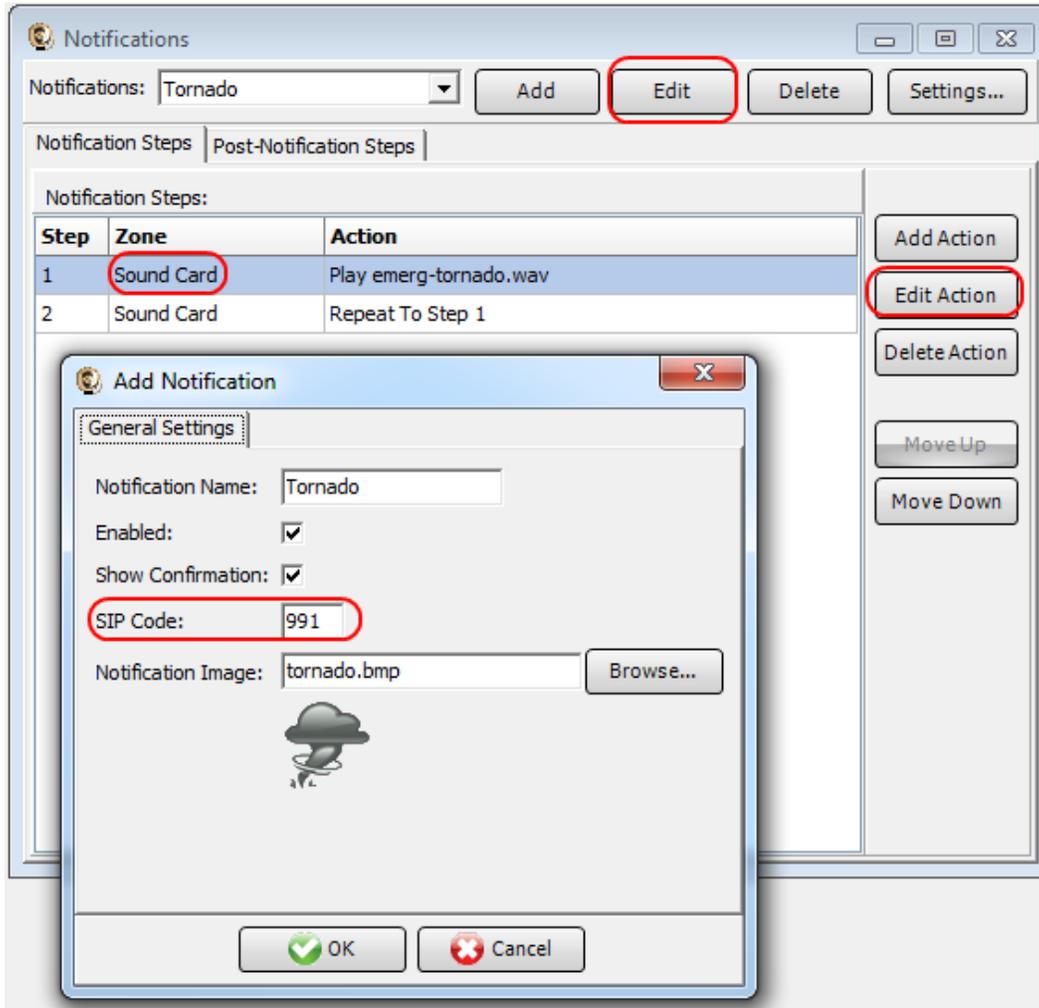
Map to Zone: Should be left unselected for emergency notification, but can be used for paging for directly paging to a zone with multicast devices or Barix devices.

Play Sound on Connect: Optionally play a WAV audio file to the user’s phone when BellCommander answers



3. Click the Add button under Allowed Extensions and add the extension numbers that will be allowed to call into BellCommander. The SIP license that was purchased controls the maximum number of allowed extensions.

4. Configure the notification in BellCommander with a SIP code and update the actions, if necessary. To determine which code will be used for a notification, add or edit a notification. The “SIP Code” is the numeric code that users should enter from a phone for the notification. In the notification actions, edit the actions if necessary to change the zone. By default, notifications will play through the sound card zone, but the zone can be changed to a SIP destination or zone with multicast or other devices.



5. Test the notification. To test the notification, first test it by clicking the notification button in the BellCommander window. The notification button should change to a red color when activated. The button can be clicked a second time to de-activate. If the notification functions as expected, try triggering it from a phone. Use a phone in the Allowed Extensions list and call the inbound extension that was registered under SIP Extensions. BellCommander should then answer. Once BellCommander answers, enter the code followed by the # key (ex. 991#). To de-activate the notification by phone enter 999#.