# BellCommander Configuration Guide – Valcom IP Configuration

**Overview:** BellCommander works directly with Valcom IP speakers and amplifiers for audio scheduling and emergency notification. This document details how to configure BellCommander with Valcom products for optimal performance.

## Multicast Configuration

In this configuration of BellCommander, the BellCommander software is used for audio scheduling and emergency notification. The BellCommander software communicates directly to the Valcom IP units using multicast. Optionally, a SIP phone server, like 3CX or Trixbox/Asterisk, could be used to allow phones to communicate directly to the speakers. The Valcom configuration software could be used to add Valcom IP units to SIP based paging groups.

**Example Configuration:**

The example configuration below is for a middle school with Valcom speakers and IP units. The BellCommander software communicates with the Valcom units directly using multicast and the Valcom units also register with a SIP phone system to receive SIP calls/pages from phones. The speakers are logically organized by grades below, but the physical connection would be a standard network connection, typically using a PoE cable to each device.
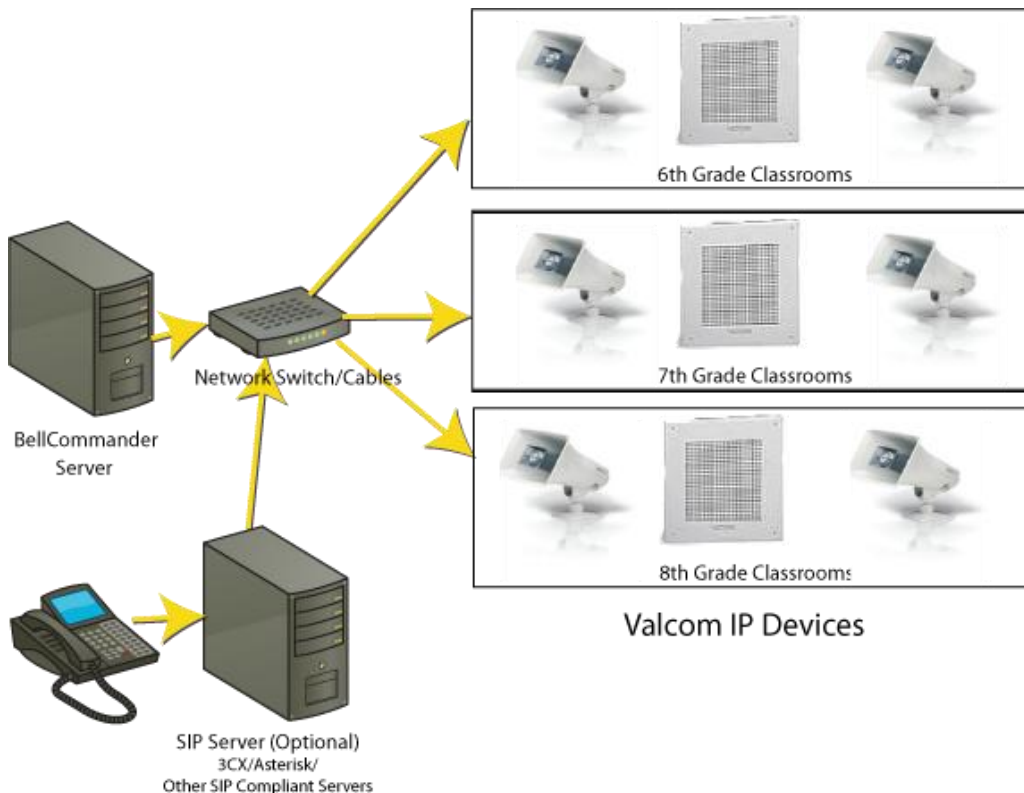


## Multicast Setup Guide

**Valcom Configuration:**

1. Connect Valcom units to network and open Valcom VIP-102B IP Solutions software.
2. Access each device that BellCommander will send audio to and verify that firmware 2.17 or later is installed.   For units using the VIP-LLE, the 2.18 firmware is recommended.   Updated firmware can be obtained by contacting Valcom or AcroVista.
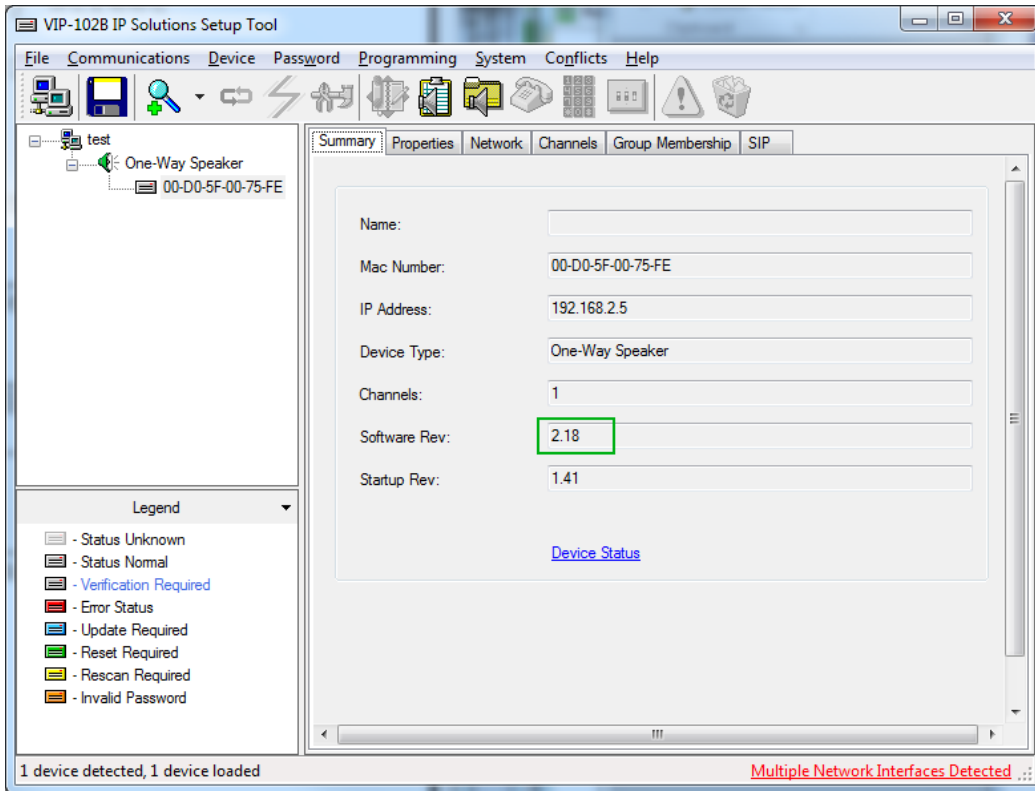


3. In the VIP-102B IP Solutions software, select System|Audio Groups… from the menu.
4. Define an audio group for each group of units and assign each group a name and multicast address and port.  The multicast address and port for each group will be used by BellCommander.
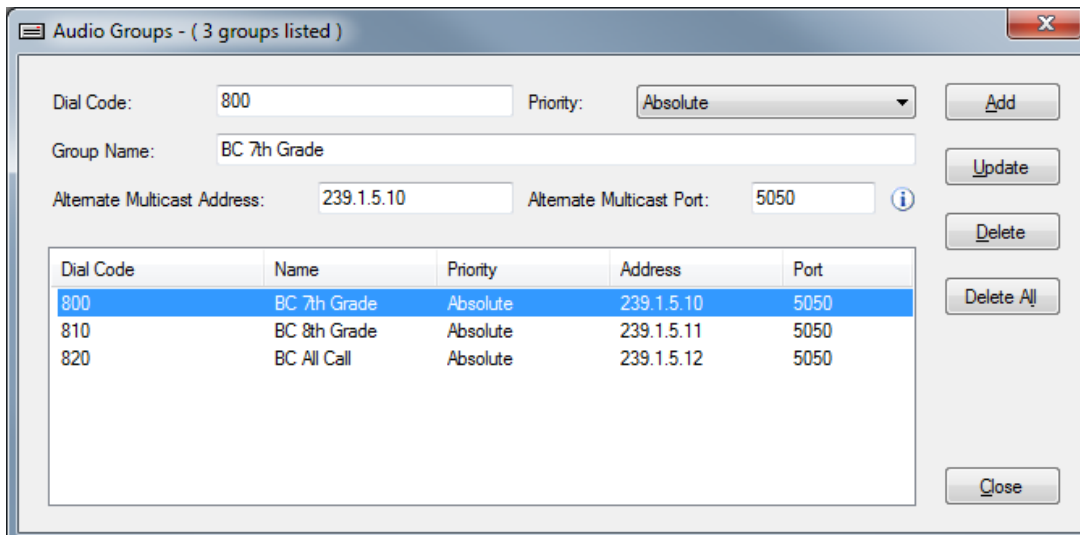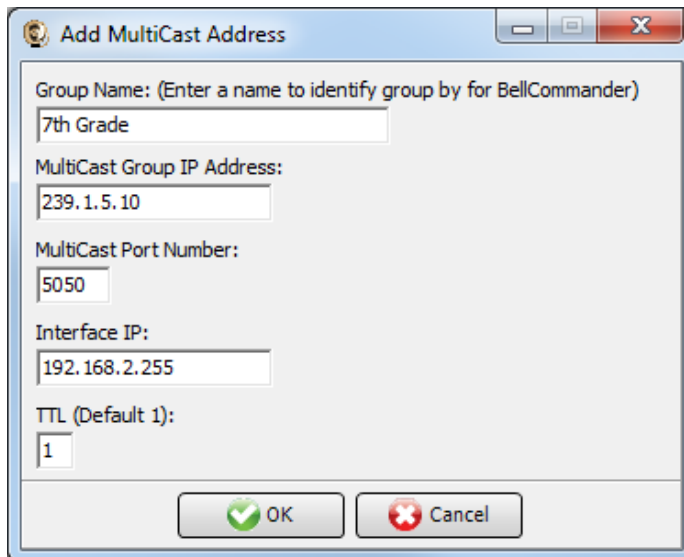
5. In the VIP-102B IP Solutions software, select System|Audio Group Membership…
6. Select each Audio Group and check the devices that should be assigned to the group.   For example, for the 7th grade audio group, select all devices that will broadcast audio to the 7th grade.

For optimal performance, the system should be configured where BellCommander will send to a single multicast address for each scheduled bell/audio event.   In the above configuration, bell events could be scheduled to the 7th grade, 8th grade, or to all grades using the audio groups defined in the VIP-102B software.

**BellCommander Configuration:**

1. In BellCommander, add the multicast addresses:
   a. Open the BellCommander Device Manager by clicking the Devices button.
   b. Select Multicast Groups from the Sound Device Type drop-down.
   c. Click the Add… button.
   d. Enter the following values:
      **Group Name** – A name to identify the group by in BellCommander.
      **Multicast Group IP Address** – The multicast address of the audio group
      **Multicast Port Number** – Corresponding port number for the audio group
      **Interface IP** – Generally, the computer's IP with .255 at the end.  If the computer is 192.168.2.132, then enter 192.168.2.255
      **TTL** – Time-To-Live for packets.  Generally, set to 1 if on the same subnet.



*This example shows adding the 7th grade multicast address/port to BellCommander.*
   e. Repeat steps c and d for each multicast address.
   f. To test a multicast address, select a multicast address from the list

2. Test each multicast address, by selecting the multicast group from the list.  Then, click the Browse… button to locate a WAV file and click the Play Audio File button to play the WAV file.   The WAV file should play after the button is pressed.
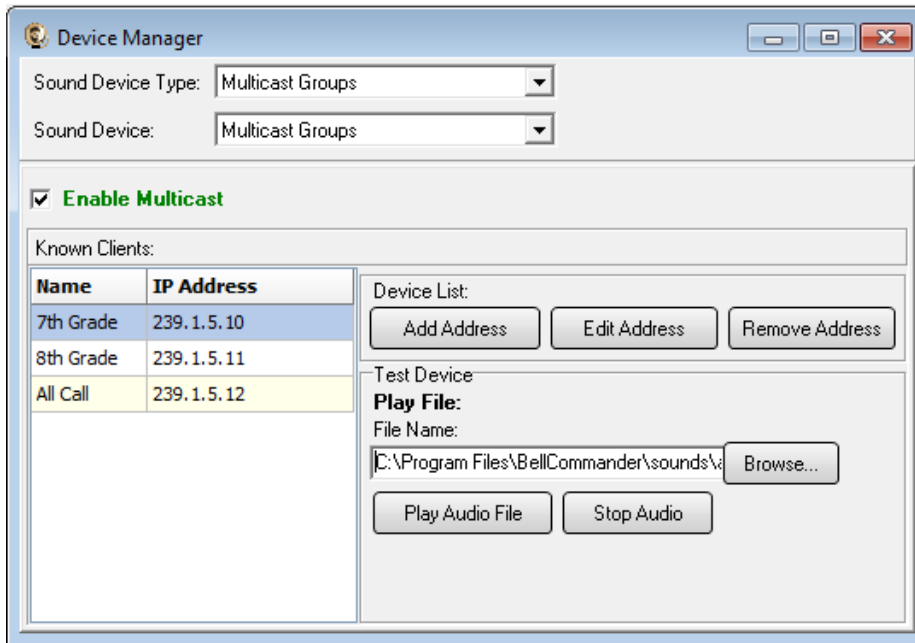
**Scheduling For Multicast Groups:**

1. Create a zone in BellCommander for each multicast address.
   a. Click the Zones button to view the Zone Manager window.
   b. Click the Add Zone button to add a new zone.  Enter a name for the zone, ex. Elementary Classrooms.
   c. Select the new zone and click the Edit Device List button.  Select the corresponding multicast group from the Available Devices and click the ">>" button to add it to the zones.  Multiple multicast groups can also be added to create a zone consisting of multiple smaller zones; though, for the best results with audio timing and network traffic, use a single multicast group per zone.
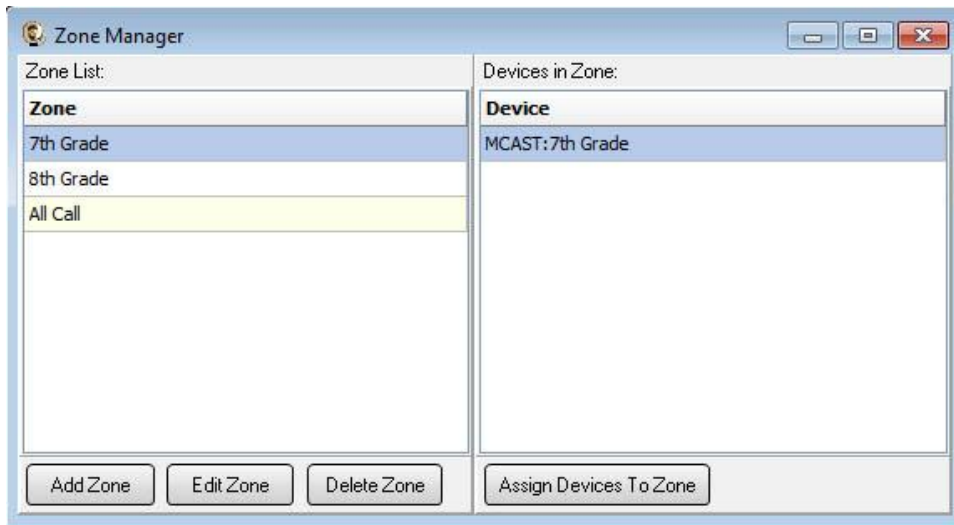
2. Create a day schedule.  A day schedule represents a single day's 24 hour schedule that can be applied to dates on the BellCommander calendar.  To create a Day Schedule:
   a. Click the Day Scheduler button.
   b. Click the top Add button to add a new day schedule.  Enter a name to identify the schedule, ex. Standard Schedule
   c. Click the Add Bell button to add a new bell to the schedule.  In the Add Bell window,
      i. Select the time for the bell.
      ii. Select the zone that the bell should play to.
      iii. For a single sound file select, select "Sound File" for the event type and select a WAV audio file.
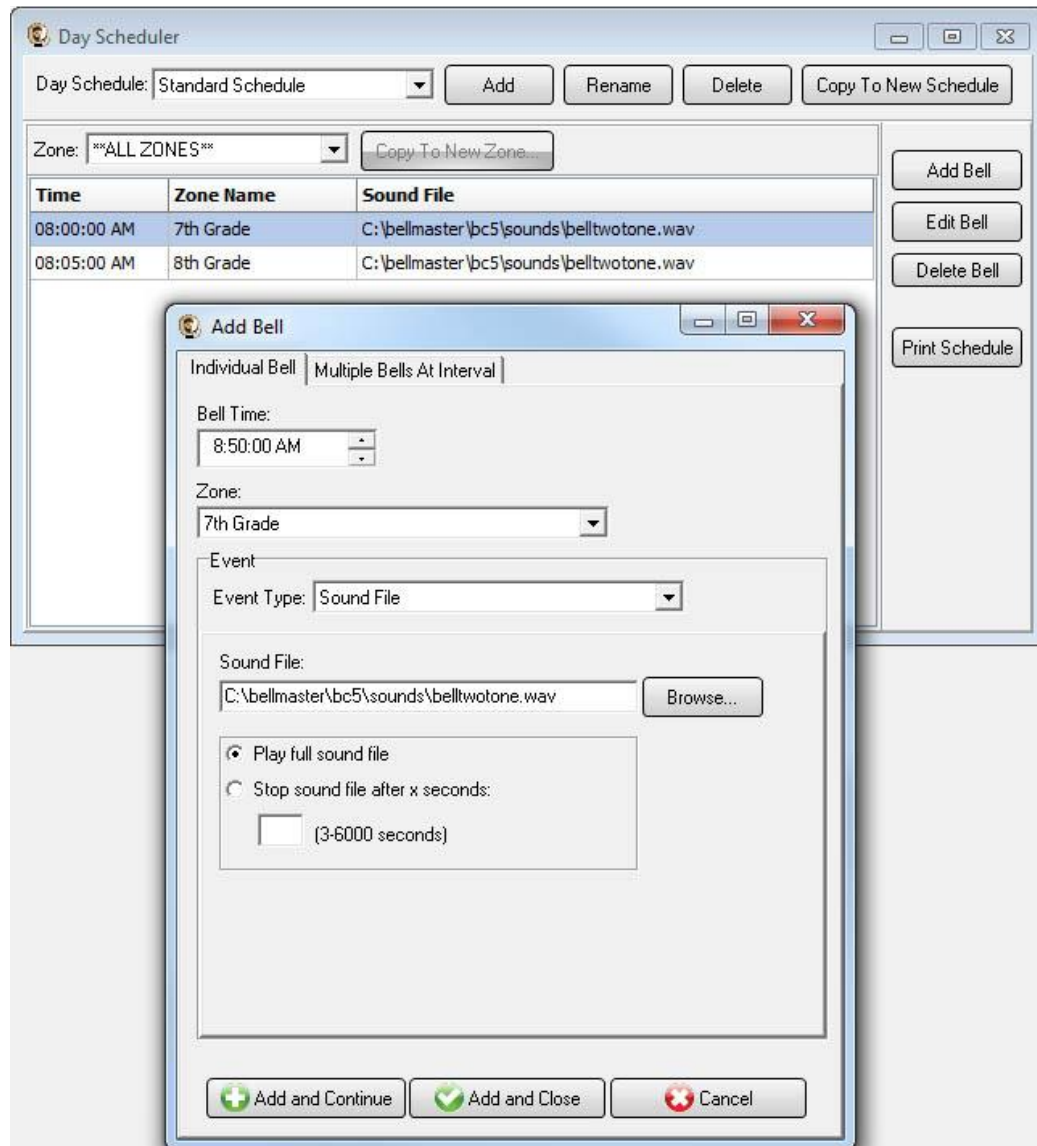
3. Assign the day schedule(s) to the Calendar Scheduler.  To assign schedules to the Calendar Scheduler:
   a. Click the Calendar button to view the Calendar Scheduler window.
   b. Click the Set Default Weekly schedule button to set the default schedule and set the following values:

   **Weeks in the schedule:**

   If schedule is the same every week, select "Same schedule every week".

   If schedule repeats bi-weekly, select "Schedule is a two week cycle".

   If schedule repeats tri-weekly, select "Schedule is a three week cycle".

   **Schedule Start Date** – If schedule starts in the future select a future date; otherwise, the default value (12/30/1899) will start the schedule immediately.

   **Select Week Number** – If using a bi-weekly or tri-weekly schedule, this allows the first, second, or third week to be selected for the days of the week listed.  Select 1 to program the first week, 2 to program the second week, 3 to program the third week.

   **Days of the week** – Use the drop-down for each day of the to select a schedule.  If no audio should be scheduled for the day of the week, leave the day name blank.
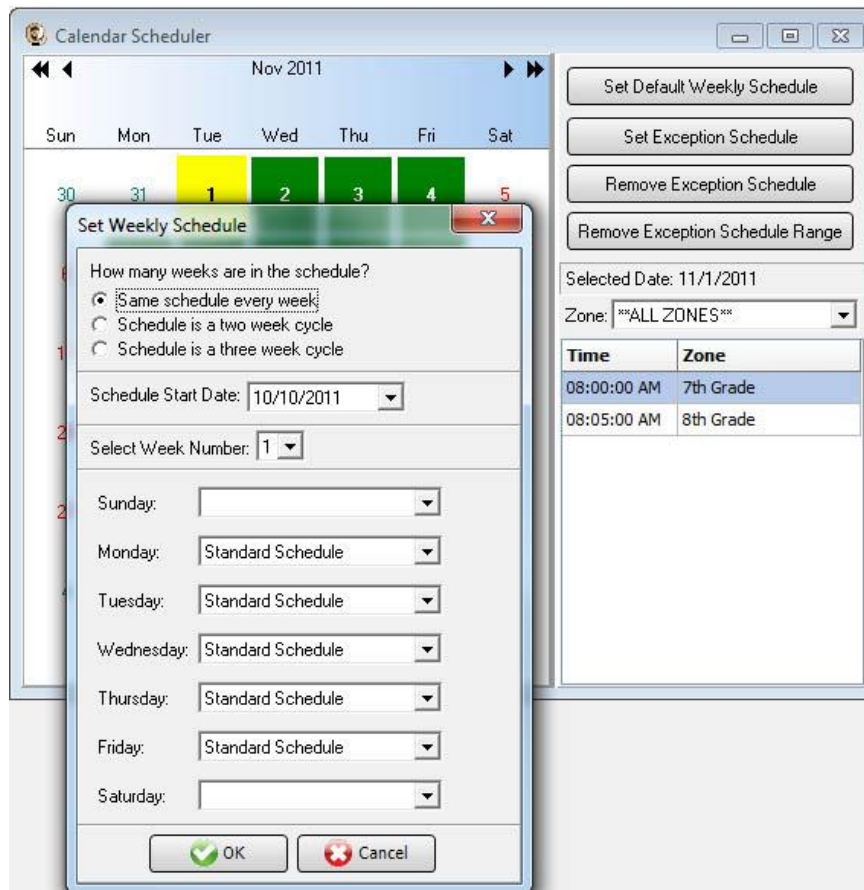


   c. To set different schedules by date, add additional schedules in the Day Scheduler and select dates on the calendar and click the Set Exception Schedule button to set different schedules by date.

**Notifications:**

To configure notifications to broadcast to Valcom units, first configure an audio group in the VIP-102B software. This would typically be a group that broadcasts to all speakers. If an audio group was already added for scheduling, then the existing audio group can also be used for notifications.

To configure the notifications in BellCommander to use the multicast address, first add the multicast address to the Device Manager in BellCommander. Then, create a zone in the Zone Manager and assign the multicast address to the zone. Then, click the Notifications button on the BellCommander toolbar to open the Notifications window. Select one of the notifications and edit the action which plays the sound file. Change the zone for the action from "Sound Card" to the zone with the multicast address that will broadcast to the desired audio group:
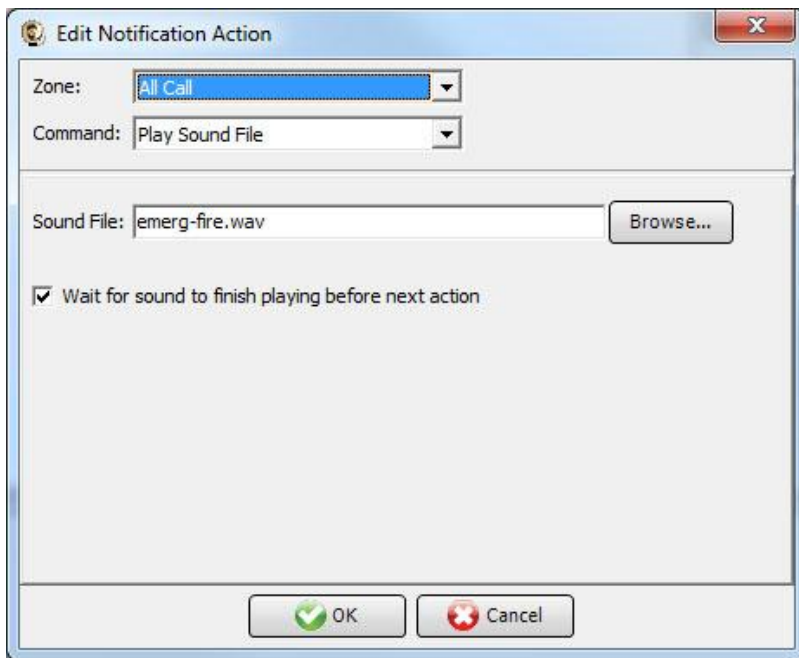


After changing the notification, test the notification by clicking the notification button in the notification bar on the left side of the main BellCommander window. Clicking the button once will activate the notifications. Clicking the button a second time will de-activate the notification. While a notification is active, no bell events will play.

To configure the notifications to be launched from a SIP phone, a SIP code should be defined for the notification. To set the SIP code, edit the notification and enter a SIP code:



BellCommander should also register a SIP extension that authorized users can dial to trigger emergency notifications.   An extension should first be added to the phone system that BellCommander will register.   The procedure to add the extension will vary by phone system.   See http://www.acrovista.com/bellcommander/sip-version.html for phone system guides.  Most systems should be similar to Trixbox, if not listed.   After adding the BellCommander extension to the phone system, add the extension to BellCommander:

    a.   Open the BellCommander Device Manager by clicking the Devices button.

    b.   In the Sound Device Type drop-down select "SIP Extension"

    c.   Check "Enable SIP Extensions"

    d.   Enter the SIP server IP and port number.

    e.   Click the Apply button.

    f.   Add a SIP extension for BellCommander to register:

         i.   Click the Add… button under Local SIP Extensions.

            SIP Extension - Extension that was added to .

            Extension Password – Password for the extension that was added to the phone system.

            Local Port Number – Can typically use the default value

            Map To Zone – Leave this blank for emergency notification.

            SIP Server Options – Select "Connect to default SIP server"

        ii.   After adding the extension, the extension should appear in the Local SIP Extension list with a status of "Registered"

    g.   Add the extensions that are allowed to call BellCommander for emergency notification.

         i.   Click the Add… button under Allowed Extensions.

        ii.   Enter a phone extension that will be allowed to call BellCommander.

iii. Repeat for additional extensions. BellCommander is licensed by the number for allowed extensions, so the number of allowed extensions may be restricted by the license.
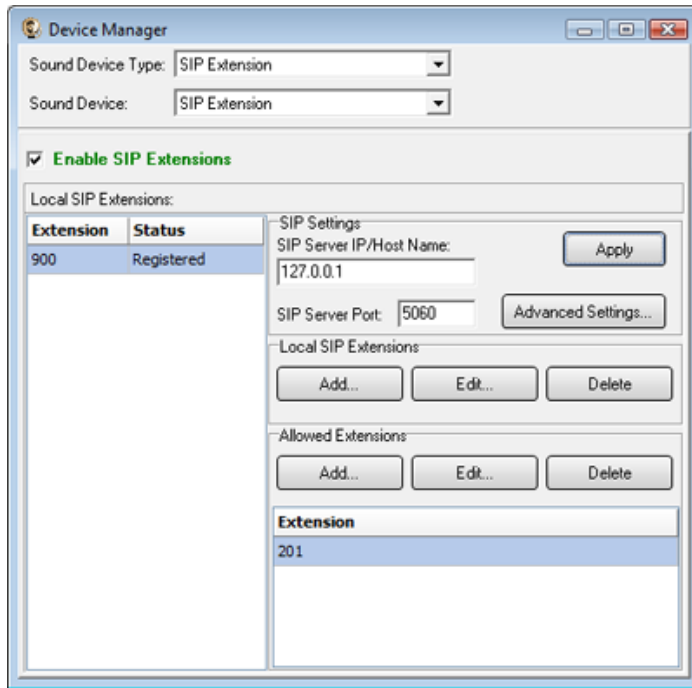


To launch a notification from a phone, use a phone that is listed under the Allowed Extensions list and dial the extension that was added under SIP Extensions. Enter the SIP code followed by the # key to start the notification (ex. 991#). Enter the 999# to stop an active notification.