BellCommander Configuration Guide – Jive

Overview:

BellCommander integrates with the Jive hosted VoIP system to provide a complete scheduled audio, paging, and emergency notification solution. BellCommander's advanced audio scheduling system sends audio files at scheduled times and can be used for school bells, factory shift change horns, retail announcements, hospital notifications, or any application that requires audio scheduling. The BellCommander scheduler supports up to 300 events per day schedule and schedules can be defined for a full year in advance and quickly modified, like in the case of weather related school schedule changes.

BellCommander also can receive calls to launch emergency notifications and to page to Polycom phones and multicast capable phones and IP speakers. BellCommander would integrate as a generic SIP extension to Jive and users could call into BellCommander just like calling another phone on the Jive system. BellCommander allows customizable extensions that could answer and immediately start a page or notification or wait for the user to enter a code through their phone.

In a hosted VoIP scenario, BellCommander would typically be installed on the local network and it would send audio via multicast directly over the local network to Polycom phones and to phones and IP speakers that use standard G.711u multicast. This would typically provide the best network utilization, since BellCommander would send audio to the phones and speakers only over the local network. If BellCommander will be hosted outside the local network, BellCommander can also register as a SIP extension to Jive and place calls at scheduled times for bells and other audio.

System Requirements:

The BellCommander software would be installed on a Windows PC or server. A Windows PC or server with the following specs should be used:

Windows 8, 7, Vista, XP, Server 2012, Server 2008, or Server 2003
1.4 GHz or higher processor (dual core or higher recommended)
Recommended amount of memory for Windows version installed

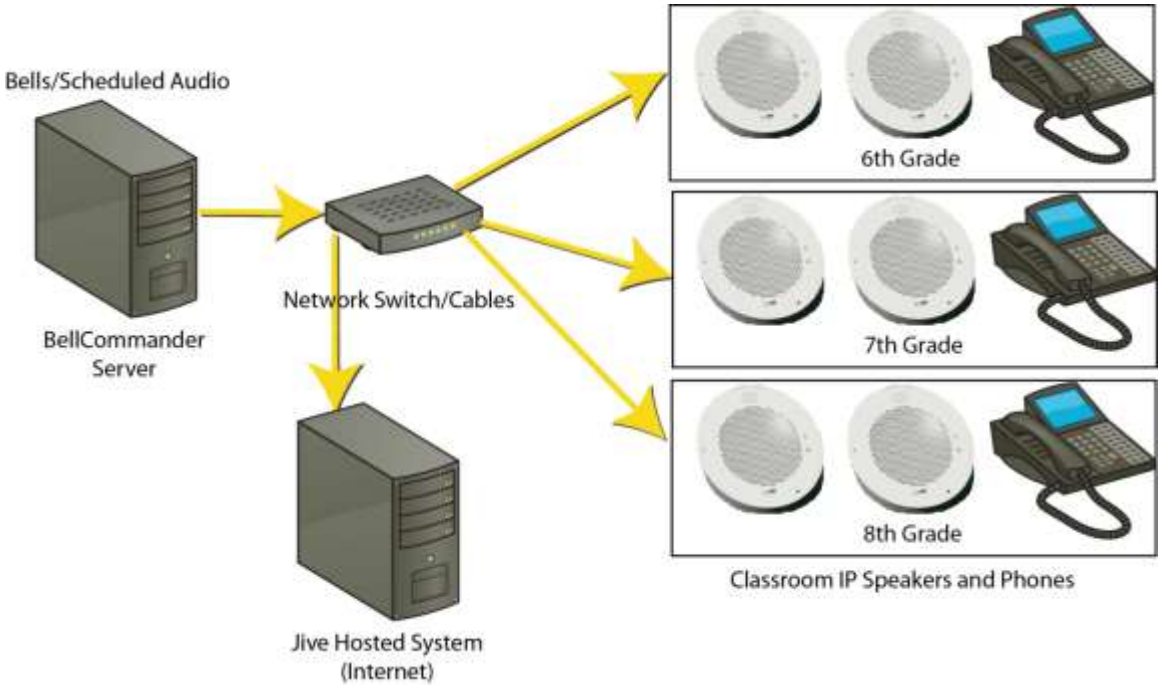
If BellCommander will send multicast audio over the local network, the network should be configured to allow multicast. This may require updating switch or router settings to forward multicast traffic if BellCommander and the phones are on different subnets.

The BellCommander software will need to be running **version 5.0 build 14g or higher**.

Outbound Calling/Bell Scheduling:

BellCommander would typically communicate directly over the local network to Polycom phones or to phones or IP speakers that support generic g.711u multicast for bell scheduling.

Different multicast addresses would be shared by different groups of phones or IP speakers. An example configuration is shown below with IP speakers logically organized by zones. The endpoints could be CyberData IP speakers or any IP speaker or phone that supports generic g.711u multicast, like the Cisco SPA500 series. Polycom phones would use a similar configuration.



Multicast Setup Guide

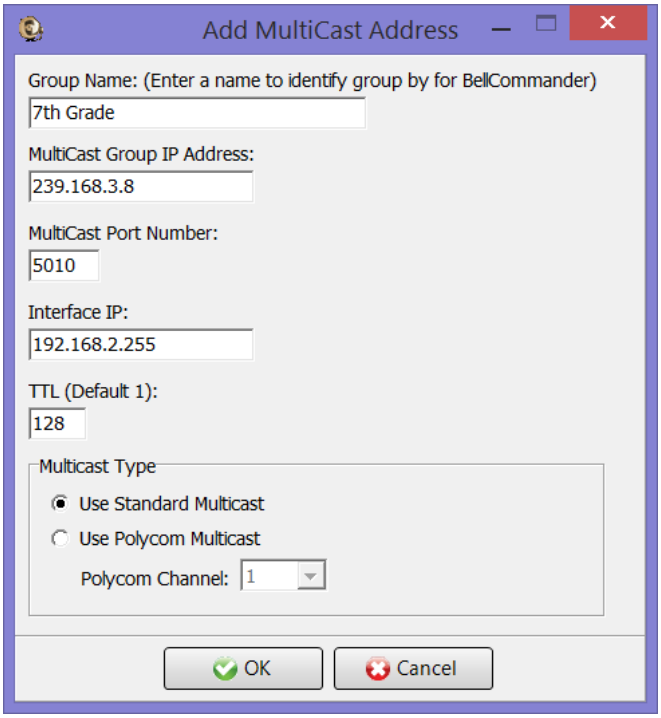
After designing the layout of the zones of the system, the phones and IP speakers would need to have the multicast listening addresses assigned. The screen shot below shows a CyberData V2 IP speaker's multicast configuration:

In the configuration above three multicast addresses will be used by BellCommander for reaching the individual classroom, 7th grade classrooms, and the full campus. All speakers should share the "BC All Call" multicast address and port and all 7th grade classrooms should share the "BC 7th Grade" multicast address and port.

Other speakers and phones may support a smaller number of multicast addresses. Cisco SPA phones just support two multicast addresses.

BellCommander Configuration:

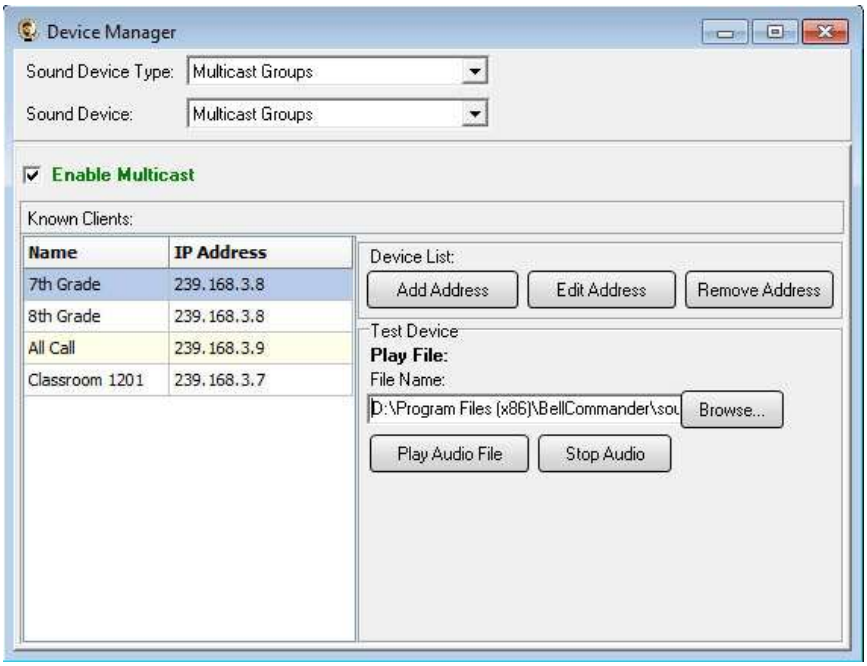
1. In BellCommander, add the multicast addresses:
    a. Open the BellCommander Device Manager by clicking the Devices button.
    b. Select Multicast Groups from the Sound Device Type drop-down.
    c. Click the Add… button.
    d. Enter the following values:
    Group Name – A name to identify the group by in BellCommander.
    Multicast Group IP Address – The multicast IP address
    Multicast Port Number – Corresponding port number
    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 or a higher value, like 128, for crossing subnets.
    Multicast Type:
    Use Standard Multicast – Select this for standard g.711u multicast devices, like IP speakers and Cisco SPA 500 series phones and other phones with multicast support, except Polycom
    Use Polycom Multicast – Select this for sending to Polycom phone channels
    Polycom Channel – Select the Polycom channel to send to (1-25 with 25 normally set as emergency)



This example shows adding the 7th grade multicast address/port to BellCommander.

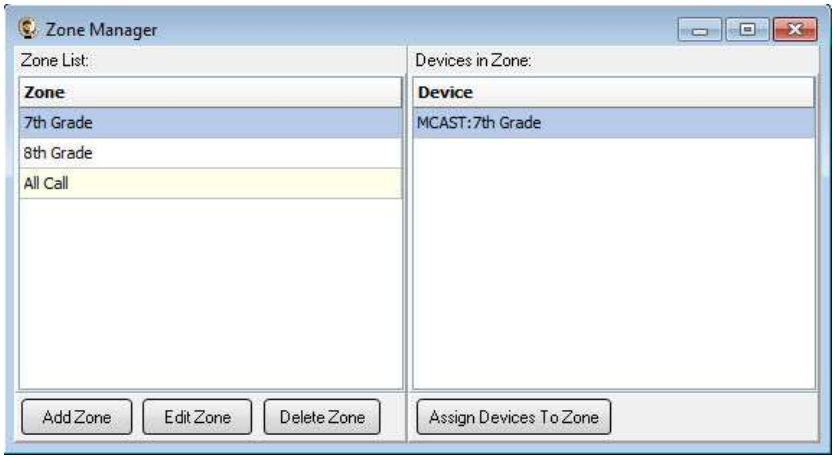
    e. Repeat steps c and d for each multicast address.

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.

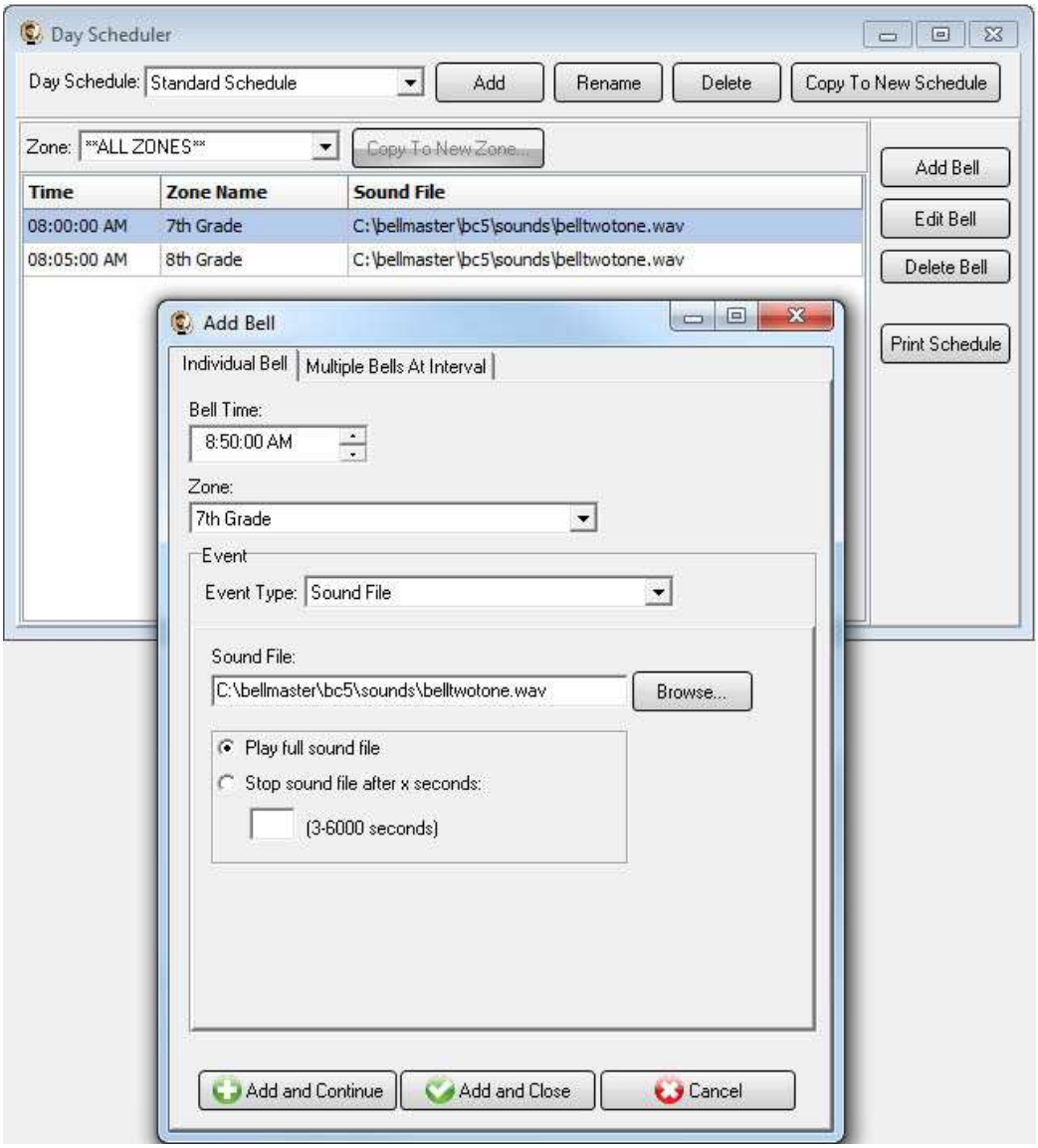


Scheduling For Multicast Groups:

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".

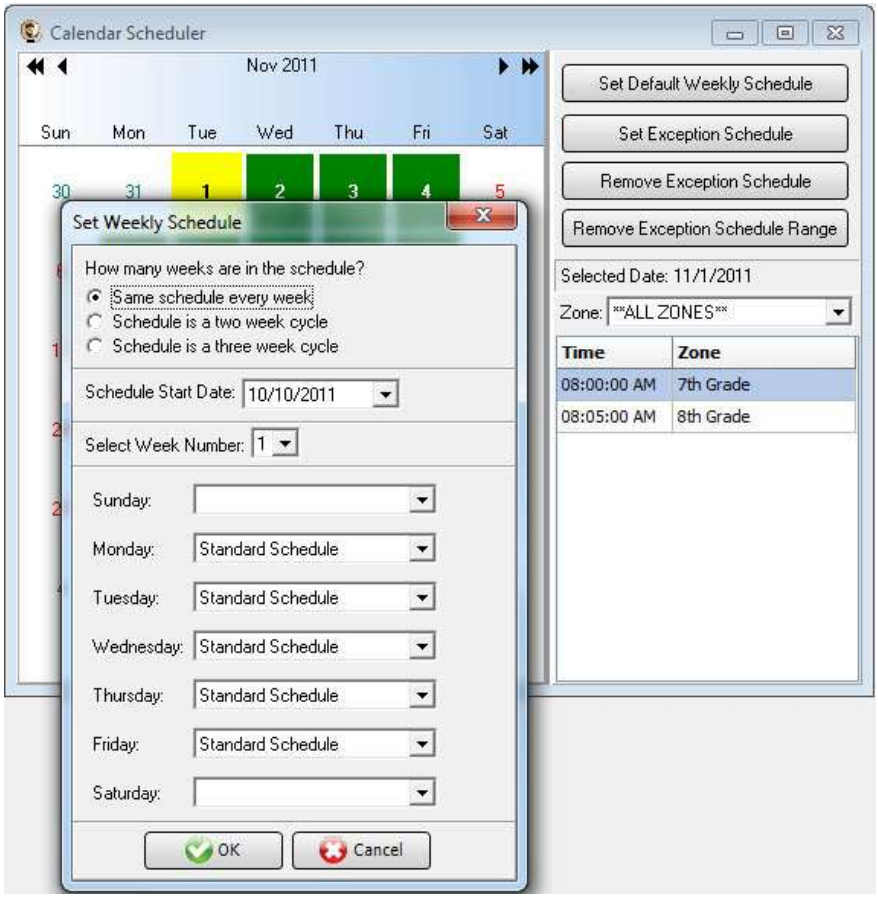
       If schedule repeats bi-weekly, select "Schedule is a two week cycle".

       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 alert messages to phones and/or IP speakers, first define a multicast address and port that will be shared between all devices of the same type. If you have a mix of Polycom and generic g.711u multicast devices, create one multicast group with all Polycom phones and one multicast group with all generic multicast devices and then assign both to the same zone. The multicast address should be one of the highest priority multicast addresses on the devices.

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 group(s) 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 all CyberData speakers:

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.

Launching Notifications by Phone:

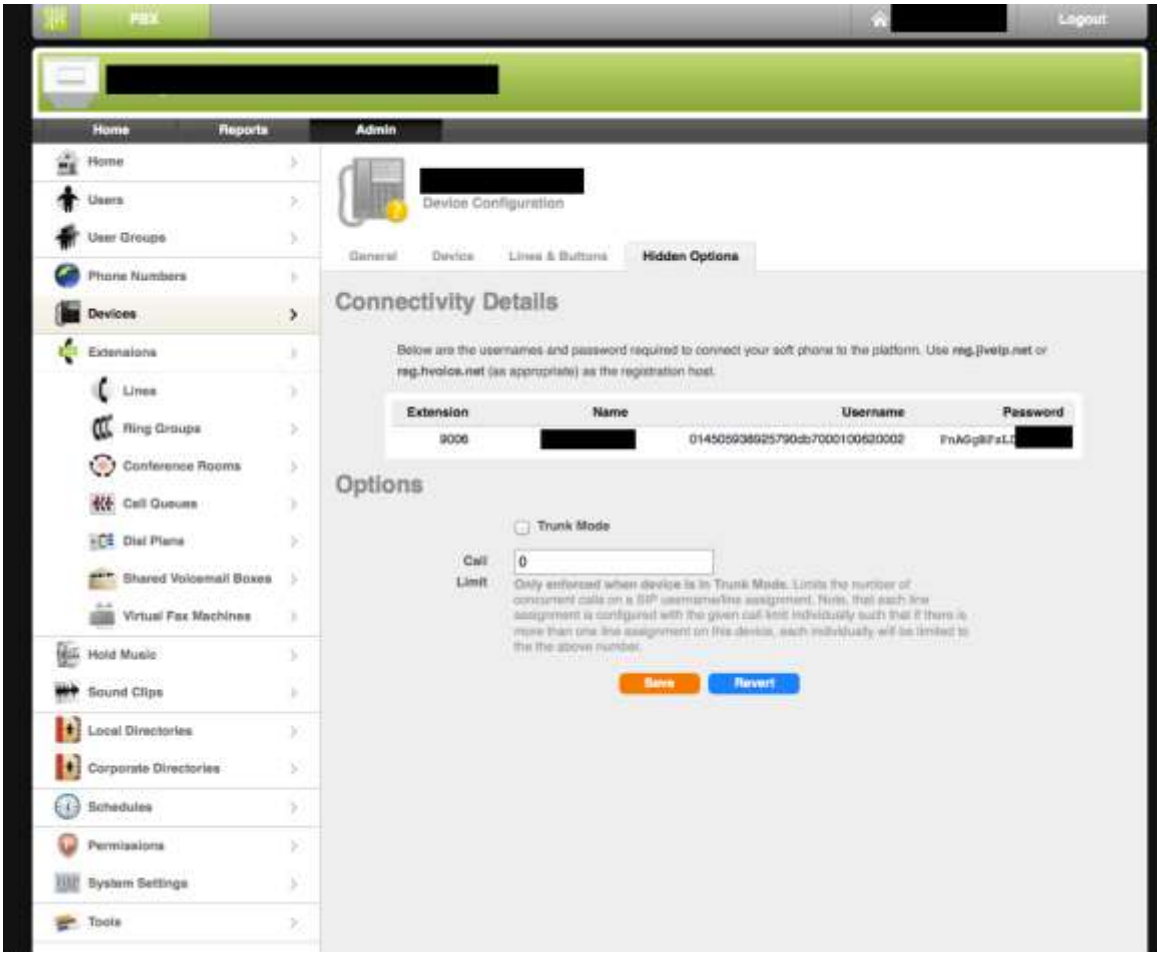
To configure the notifications to be launched from a phone, a SIP code should be defined for the notification. To set the SIP code, edit the notification and enter a SIP code:

BellCommander should also register a SIP extension that authorized users can dial to trigger emergency notifications. An extension should first be added to the Jive phone system that BellCommander will register. The device should be added as a generic SIP softphone to the Jive system with the intended model in Jive set to "Unspecified".

To configure the SIP extension, open the BellCommander Device Manager by clicking the Devices button.

a. In the Sound Device Type drop-down select "SIP Extension"
b. Check "Enable SIP Extensions"
c. Enter reg.jiveip.net for the SIP Server IP/Host Name.
d. Use the default port 5060.
e. Check the box for "Use Compact SIP Headers (Jive)"
f. Click the Apply button.

g. Get the SIP extension and password from Jive. Select the device in the Jive Admin and view the Hidden Options tab. Note the Username and Password:



h. Add the SIP extension to BellCommander:

Click the Add… button under Local SIP Extensions to bring up the window below:

Enter the following values and then click the OK button:

SIP Extension – Enter the Username from Jive (username and not the extension number).

Extension Password – Password for the extension in Jive.

Authorization Name – Should be left blank

Display Name – Should be left blank

Local Port Number – Use the default value

Play Sound on Connect – Check this box. A sound must play to establish the call audio with Jive.

Sound File – Select any WAV audio file. The answertone.wav file that comes with BellCommander is a simple two second tone.

Answer Option – Select one of the following:

Answer and wait for user to dial a SIP code – BellCommander will answer and wait for the user to enter an emergency code or a zone paging SIP code followed by the # key.

Page Zone – BellCommander will answer calls and immediately forward to the selected zone.

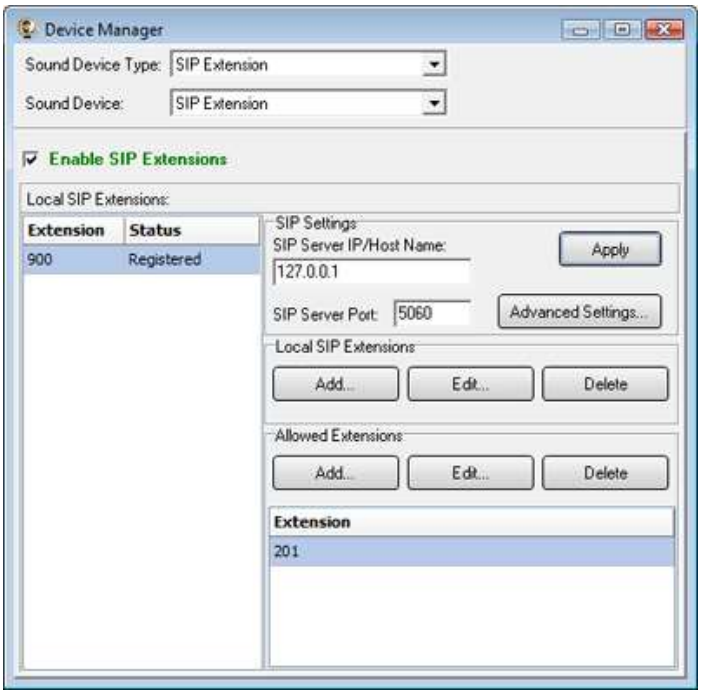
Launch Emergency Notification – BellCommander will answer the call and immediately start the selected notification.

Stop Active Notifications – BellCommander will answer and immediately stop the active notification.

SIP Server Options – Select “Connect to default SIP Server”, unless BellCommander is being used with multiple SIP servers

After adding the extension, the extension should appear in the Local SIP Extension list with a status of “Registered”

i. Add the extensions that are allowed to call BellCommander.
    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. If the extension is set to wait for the user to enter a code, enter the SIP code for the notification followed by the # key to start the notification (ex. 991#). Enter the 999# to stop an active notification.

Paging:

BellCommander can also provide paging capabilities by accepting calls from Jive and forwarding multicast audio to Polycom phones and to IP speakers and phones that support generic g.711u RTP multicast. BellCommander also performs the necessary steps to convert standard RTP audio from a SIP call into the proprietary format that Polycom uses. The paging capability saves bandwidth over the WAN, since BellCommander accepts a single regular call and then sends multicast over the local network. BellCommander can also handle mixed Polycom/generic SIP environments and a zone with both Polycom and generic multicast groups can be used to allow simultaneous paging to Polycom phones and generic multicast phones and IP speakers.

To use paging, add another local SIP extension. The SIP extension can be set to immediately page a zone when called or it can be set to wait for the user to dial the zone code. If the zone code option is used, use the Zone Manager window to view or edit the SIP code associated with each zone.

To page from a phone, if the SIP extension is set to immediately page, just call then extension from a phone in the Allowed Extensions list and BellCommander will play the connect sound and then the page will broadcast. If the SIP extension is set wait for a code, wait for the connect sound, then enter the code for the zone followed by the # key.

SIP Audio/Bell Scheduling

In a typical Jive configuration, BellCommander would send scheduled audio and bells using multicast locally. BellCommander can also be set to call extensions for scheduled audio and bells. To configure BellCommander to call extensions:

1. Open the BellCommander Device Manager and select “SIP Destinations” from the Sound Device Type drop-down list.
2. Check the box to Enable SIP Destinations.
3. Enter reg.jiveip.net for the SIP Server IP/Host Name.
4. Use the default port of 5060.
5. Click the Apply button.
6. Click the Advanced Settings button.
7. Check the box for “Use Compact SIP Headers (Jive)”
8. Click the OK button.
9. Click the Add button under “BellCommander SIP Extensions”
10. Enter the long numeric ID for the extension and the password provided in Jive.
11. Click the OK button.
12. The status should change to “Registered”
13. Click the Add button under SIP Destinations.
14. Enter a SIP extension number (short form) and a name for the extension.
15. Try sending a test by clicking the Browse button and locating a WAV file. Then, try sending it to an extension in the SIP Destinations list and verify that audio plays.
16. Follow the same steps on pages 5-7 for creating schedules and just select the SIP destination zone instead of a multicast zone when adding bell events.