

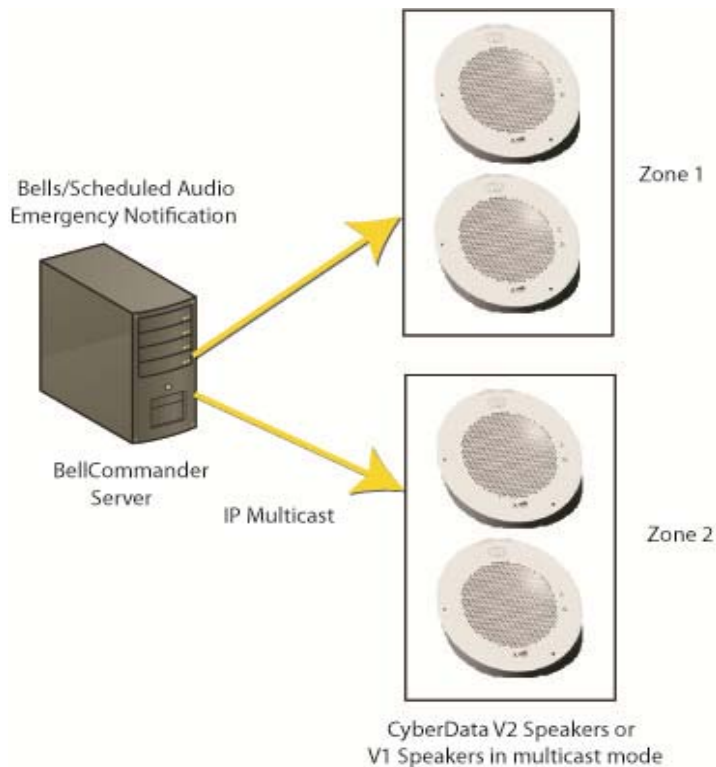
# BellCommander Configuration Guide – CyberData and 3Com VCX

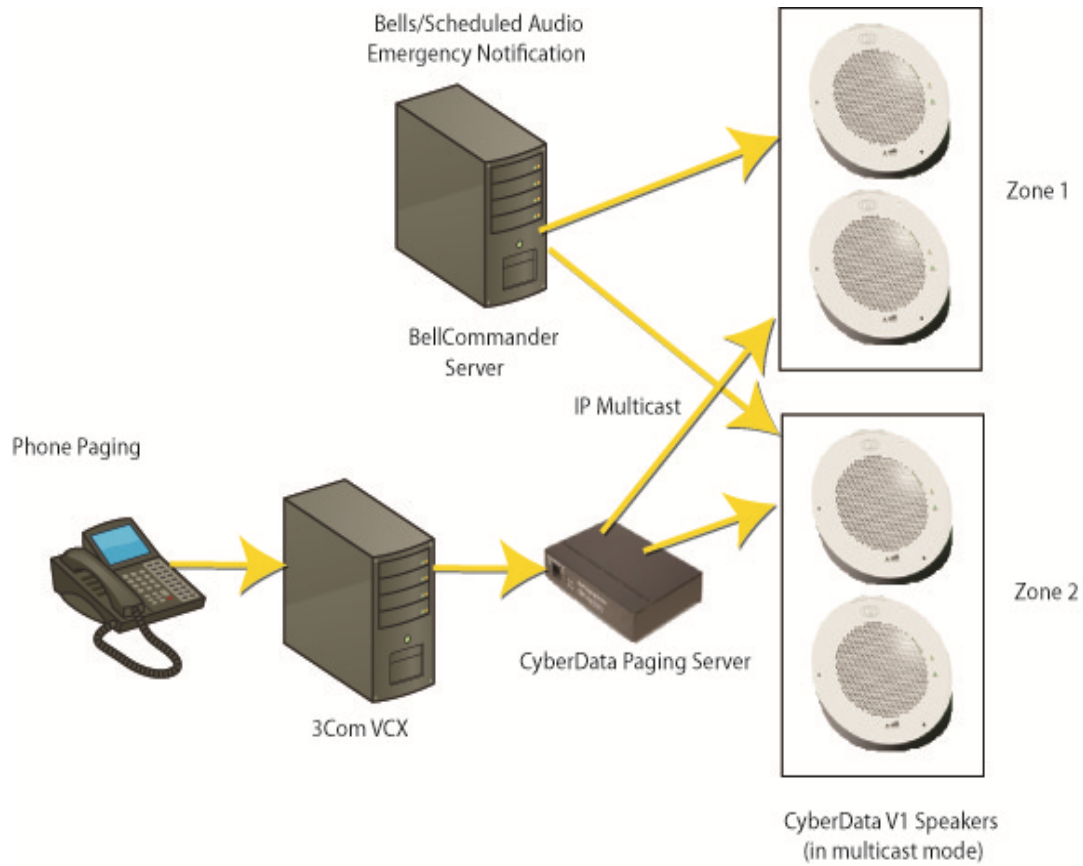
**Overview:** BellCommander work with 3Com VCX 7000 series systems to provide a complete scheduled audio, paging, and emergency notification solution. Audio can be sent via a multicast or SIP configuration.

## Multicast Configuration

In this configuration of BellCommander, the BellCommander software is used for audio scheduling and emergency notification, while a CyberData Paging Server provides a paging interface to the speakers. This configuration is recommended for version 1 CyberData products. V2 products from CyberData function well with BellCommander in either SIP or multicast and can support simultaneous SIP and multicast functionality, so the CyberData Paging Server is not required with V2 speakers.

In this configuration, 3Com VCX would not interface directly with BellCommander and BellCommander would send audio directly to CyberData IP speakers or g.711u multicast compatible endpoints. The BellCommander software would run on a Windows PC or server and send audio at scheduled times via multicast to the CyberData speakers.

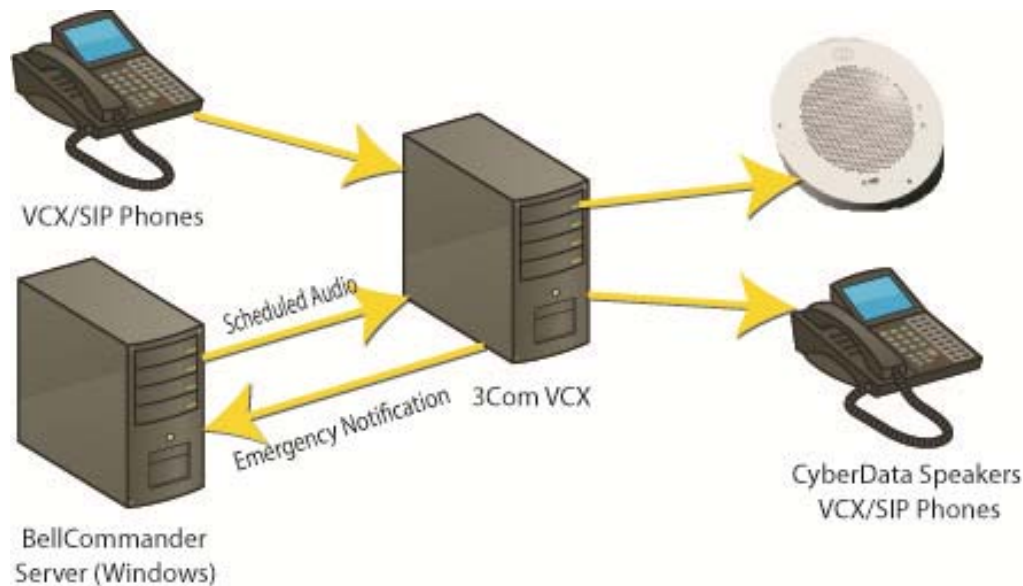




## SIP Configuration

In the SIP Configuration of BellCommander, BellCommander registers with 3Com VCX as a SIP extension and communicates over the network. BellCommander works with 3Com VCX to provide bells, paging, and emergency notification. In this configuration, paging extensions can be defined in 3Com VCX that will allow audio to be broadcasted to CyberData speakers, 3Com phones, SIP phones, or to a combination of each. **CyberData V2 products are recommended for this configuration.**

In this configuration of BellCommander, BellCommander registers with 3Com VCX as a SIP extension and it calls paging extensions to reach paging groups. CyberData speakers should be registered in SIP mode with 3Com VCX and assigned to paging extensions to allow BellCommander to call a paging extension and have audio sent to the CyberData speaker. Paging is also implemented fully by 3Com VCX in this configuration and users can use a SIP phone to call a 3Com VCX paging extension to reach a group of phones, CyberData speakers, or combination of speakers and phones.



# Multicast Setup Guide

1. Install the latest firmware for the CyberData devices.
2. Set CyberData speakers/amplifiers in MGROUPS mode.
3. Under MGROUPS settings, add a multicast address for each zone that the speaker will be part of. In the example above, the top speaker could be assigned one multicast address for Zone 1 and a second multicast address for an all-call to reach all speakers.

**CyberData Corporation**  
**VOIP CEILING SPEAKER**

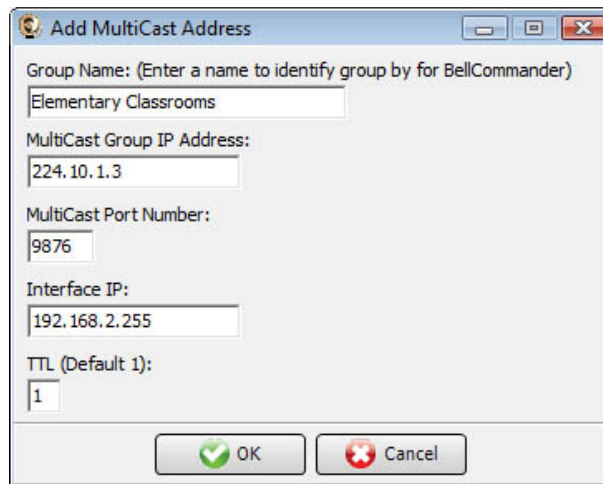
### MGROUPTS Setup

Device Name: Ceiling Speaker

	Multicast IP Address	Port: 2000-65535	Priority: High	MGROUPTS Name	Beep
MG-Emergency	224.10.1.1	4567	9	Emergency	<input checked="" type="checkbox"/>
MG-1	224.10.1.2	9876	5	BC-All Call	<input type="checkbox"/>
MG-2	224.10.1.3	9876	4	BC-Elementary Classrooms	<input type="checkbox"/>
MG-3	224.10.1.4	9876	3	Paging - Elementary	<input checked="" type="checkbox"/>
MG-4	224.10.1.5	9876	2	Paging - All Call	<input checked="" type="checkbox"/>
MG-5	224.10.1.6	9876	1	Paging - Classroom	<input checked="" type="checkbox"/>
MG-6					<input type="checkbox"/>
MG-7					<input type="checkbox"/>
MG-8					<input type="checkbox"/>
MG-Background	224.10.1.10	9876	0	BGM	<input type="checkbox"/>

*In the configuration above two multicast addresses are created for BellCommander for reaching the elementary school and for reaching the full campus. This allows bells and scheduled audio to be broadcasted across the campus or just to the elementary school classrooms. Separate zones were also created for the CyberData Paging Server to provide paging to the full campus, elementary classrooms, and to the individual classroom.*

4. 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.



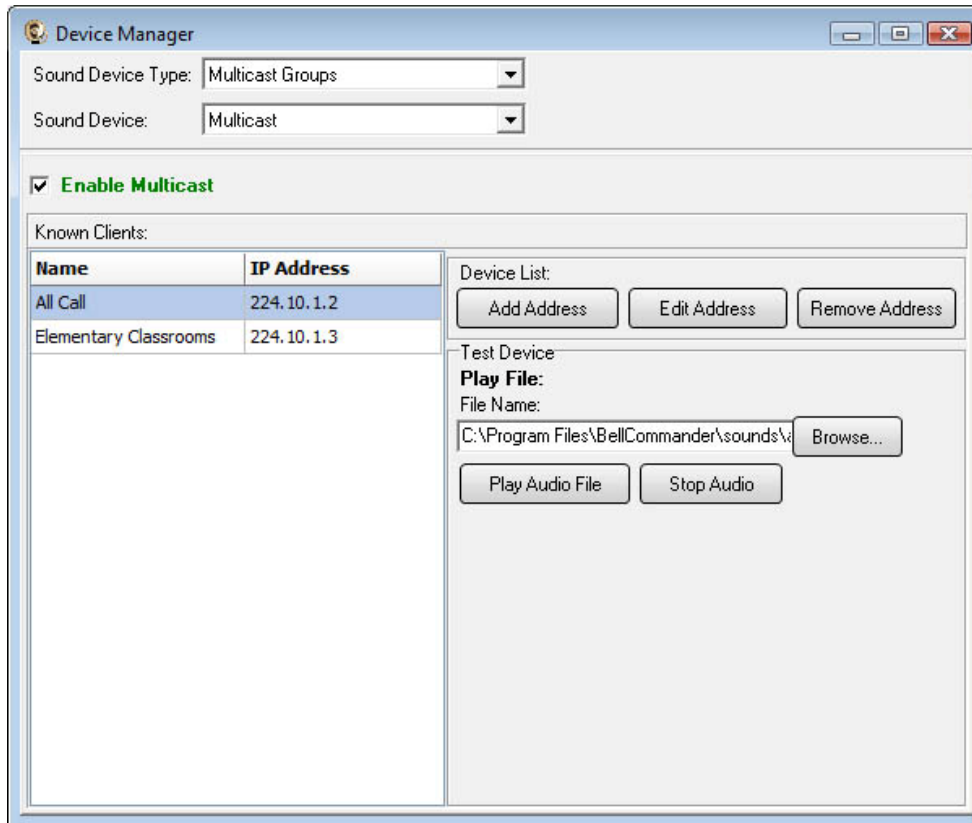
The screenshot shows a dialog box titled "Add MultiCast Address". It contains the following fields and values:

- Group Name: (Enter a name to identify group by for BellCommander)
- MultiCast Group IP Address:
- MultiCast Port Number:
- Interface IP:
- TTL (Default 1):

At the bottom of the dialog box are two buttons: "OK" (with a green checkmark icon) and "Cancel" (with a red X icon).

- e. Repeat steps c and d for each multicast address.
- f. To test a multicast address, select a multicast address from the list

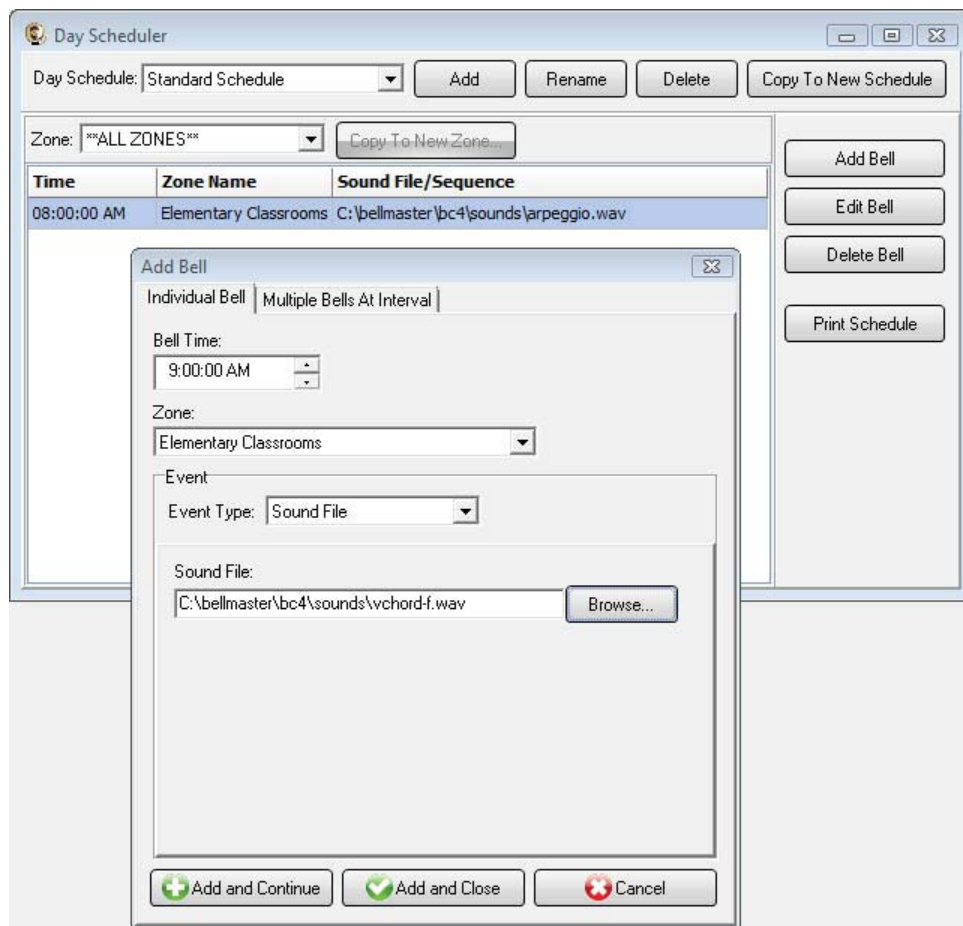
5. Test each multicast address, by selecting the multicast group from the list. Then, click the Browse... button to locate a WAV file and click the Play Audio File button to play the WAV file. The WAV file should play after the button is pressed.



#### 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.

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”.

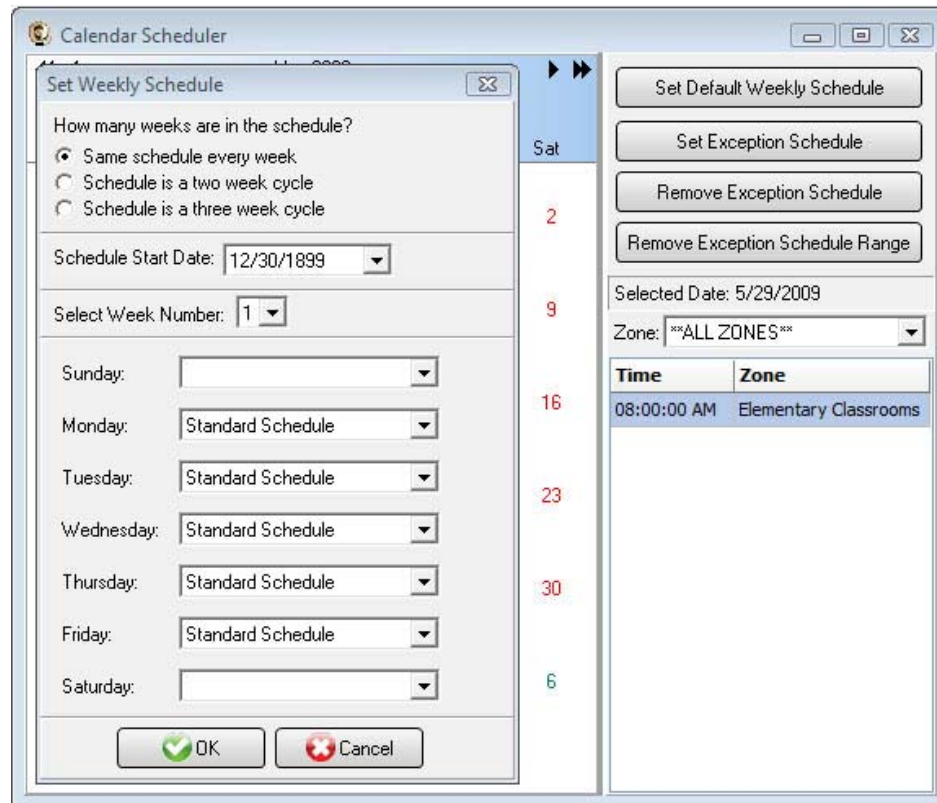
If schedule repeats bi-weekly, select “Schedule is a two week cycle”.

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.

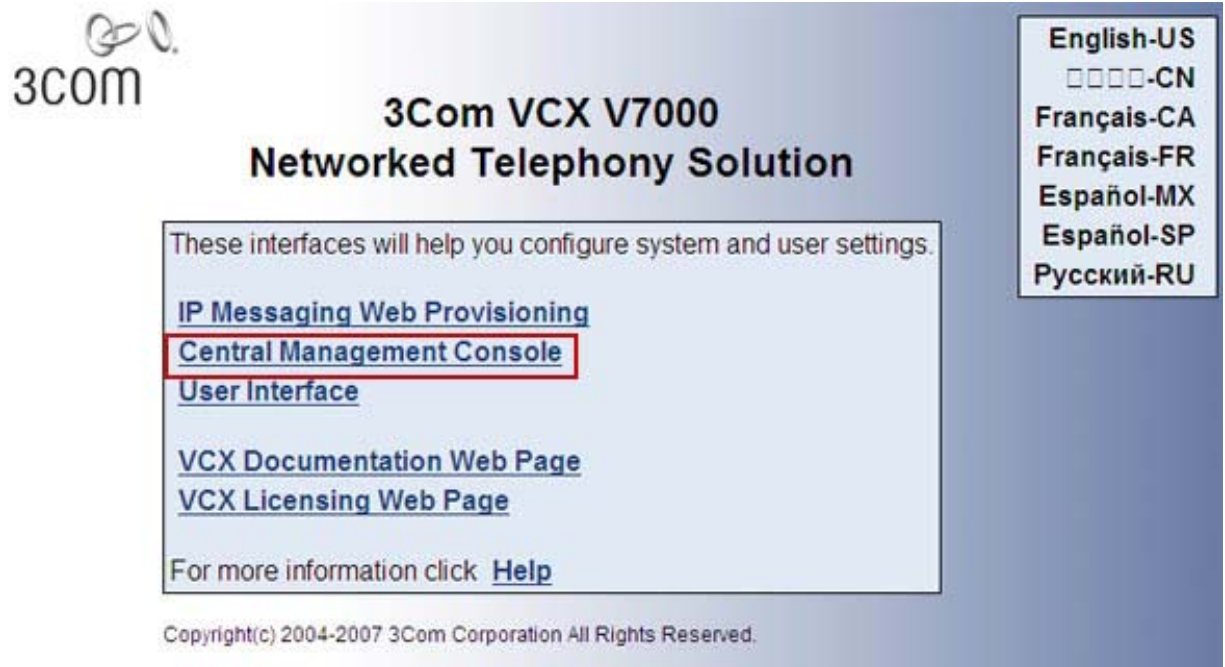


- c. To set different schedules by date, add additional schedules in the Day Scheduler and select dates on the calendar and click the Set Exception Schedule button to set different schedules by date.

# SIP Setup Guide

For the SIP configuration of BellCommander, an extension will need to be added to 3Com VCX and to BellCommander for outbound calling for paging. This extension will allow BellCommander to make outgoing calls through 3Com VCX to CyberData speakers , 3Com phones, and SIP phones. To add the extension:

1. Open the 3Com VCX web interface:



2. Click the Central Management Console link.
3. Log in to the console using the user name and password.

4. Click on the site name:

3COM VCX™ V7000 Central Manager

Display information and links to the Regional and Branch offices.

Click the Modify button below to edit the Site Names. When you have finished, click the Save button to store the names or click the Cancel button to cancel your edits.

Help

Site ID	Site Type	Site Name	Site Access	Pri IP Messaging Server	Sec IP Messaging Server
1	Regional	3comdemo	Allowed	172.16.16.190	

Modify

Log Out

5. Click Phones on the left side of the page.  
6. Click Add Phone and enter the following settings:

3COM 3Com® VCX™ V7000 Networked Telephony Solution

Data Server: 1@172.16.16.190  
Copyright © 2004-2007 3Com Corporation. All Rights Reserved.

USERS DIRECTORY SEARCH PREFERENCES MAIN LOG OUT

**Add Phone**

Phone Information

\* Number of Phones to create: 1

\* Starting Phone Extension: 2100

\* Display Name: BellCommanderOut1

\* Phone Password: [masked]

\* Confirm Password: [masked]

Location: [text box]

Exclude from Phone Book:

Profile Information

Phone Profile: Demo Profile

Save Cancel Reset

Fields marked with an asterisk \* are required  
Note: The time taken to create the phones is dependant on the "Number of Phones to create" value and may take a while.

Users  
Phone Book  
Phones  
Hunt Groups  
Page Groups  
Call Pickup  
Groups  
Attendant  
Console  
Media Access  
Control

System  
Speed Dials  
Phone  
Profiles  
Type of  
Service  
Button  
Mappings  
Patterns  
Class of  
Service  
Elements  
Dial Plans  
Dial  
Rules  
Emergency

Starting phone extension – Will be the extension that BellCommander registers  
Phone password – Will be used as the SIP password when registered in BellCommander  
Click the Save button to save the phone.

7. Click the Users link from the left side of the page.
8. Click the Add User button and enter the following settings:

**3Com® VCX™ V7000 Networked Telephony Solution**  
Data Server: 1@172.16.16.190  
Copyright © 2004-2007 3Com Corporation. All Rights Reserved.

**USERS DIRECTORY SEARCH PREFERENCES MAIN LOG OUT**

**Users**  
Phone  
Book  
Phones  
Hunt  
Groups  
Page  
Groups  
Call Pickup  
Groups  
Attendant  
Console  
Media  
Access  
Control  
System  
Speed  
Dials  
Phone  
Profiles  
Type of  
Service  
Button  
Mappings  
Patterns  
Class of  
Service  
Elements

### Add User

Personal Information	
Title	<input type="text"/>
* First Name	<input type="text" value="BellCommander"/>
Middle Name	<input type="text" value="Lab"/>
* Last Name	<input type="text" value="Outbound-1"/>
Country	<input type="text" value="United States of America"/>
E-mail	<input type="text"/>

Phone Features	
Phone Language	<input type="text" value="English"/>
Phone Font Size	<input type="text" value="Standard"/>

Web Login Information	
* Weblogin User Name	<input type="text" value="boutboun"/>
* Password	<input type="password" value="*****"/>
* Confirm Password	<input type="password" value="*****"/>

First Name, Middle Name, Last Name – Use a name similar this

9. Click the Save button.

10. From the Users page, click the Phones link for the new user.

The screenshot displays the 3Com VCX V7000 Networked Telephony Solution interface. At the top, the header includes the 3Com logo, the product name '3Com® VCX™ V7000 Networked Telephony Solution', and server information: 'Data Server: 1@172.16.16.190'. Below this is the copyright notice 'Copyright © 2004-2007 3Com Corporation. All Rights Reserved.' and navigation links: 'USERS', 'DIRECTORY', 'SEARCH', 'PREFERENCES', 'MAIN', and 'LOG OUT'.

The left sidebar contains a navigation menu with the following items: 'Users', 'Phone', 'Book', 'Phones', 'Hunt', 'Groups', 'Page', 'Groups', 'Call Pickup', 'Groups', 'Attendant', 'Console', 'Media', 'Access', 'Control', 'System', 'Speed', 'Dials', 'Phone', 'Profiles', 'Type of', 'Service', 'Button', 'Mappings', 'Patterns', 'Class of', 'Service', and 'Elements'.

The main content area is titled 'User - Assigned Phones' and shows the configuration for 'User: BellCommander Lab Outbound-1'. It indicates 'Found 1 Phone(s)'. There are three buttons: 'Assign Phones' (highlighted with a red box), 'Unassign Selected', and 'Delete Selected', along with a 'Cancel' button. Below these is a filter section with 'Filter : Phone Address' and a 'Go' button.

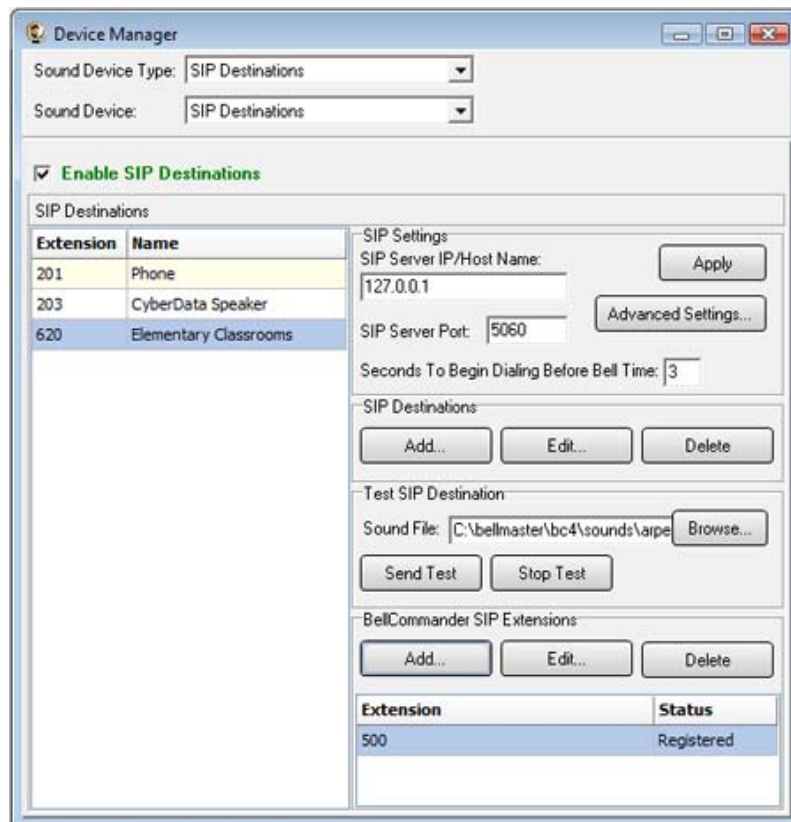
The main table lists the assigned phone with the following columns: 'Phone Address', 'Display Name', 'Phone Profile', 'MAC', 'Status', and 'Actions'. The table contains one row:

Phone Address	Display Name	Phone Profile	MAC	Status	Actions
<input type="checkbox"/> 2100	BellCommander Outbound-1	<a href="#">Demo Profile</a>		Enabled	<a href="#">Features</a> <a href="#">Call Coverage</a> <a href="#">Button Mappings</a> <a href="#">Call Restrictions</a> <a href="#">Registrations</a> <a href="#">Call History</a> <a href="#">Selective Ringing</a> <a href="#">Bridge</a> <a href="#">Permissions</a> <a href="#">Bridged</a> <a href="#">Phones</a> <a href="#">Hunt Groups</a> <a href="#">Settings</a> <a href="#">Unassign</a> <a href="#">Delete</a>

At the bottom of the table, there is a pagination control: 'Prev Page 1 of 1 Next'.

11. Click the Assign Phones button and assign the BellCommanderOut1 phone to the user.

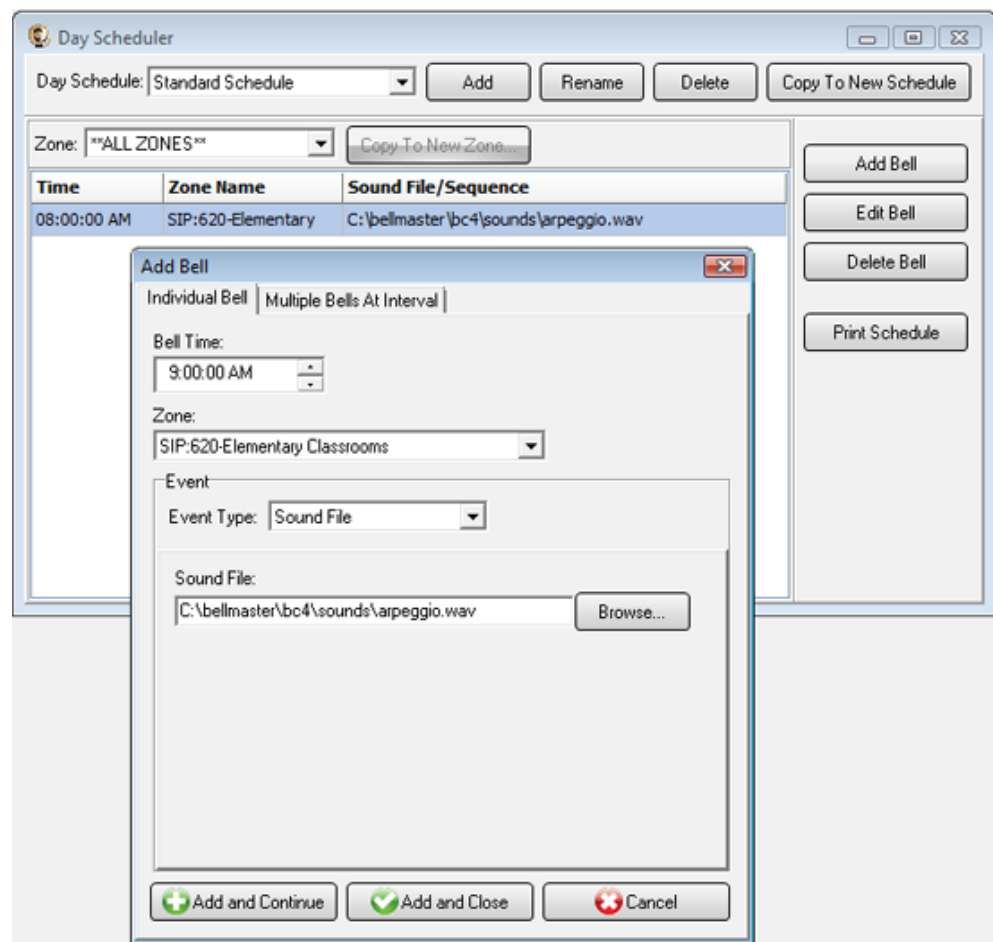
12. At this point the user and phone extension that BellCommander will register are created in 3Com VCX and now the extension needs to be added to BellCommander. To add the new extension to BellCommander:
- Open the BellCommander Device Manager and select SIP Destinations from the Sound Device Type drop-down.
  - Enter the SIP Server IP. This should be the IP of the 3Com VCX. Enter the corresponding SIP port. This should normally be 5060. Click the Apply button.
  - Click the Add... button under BellCommander SIP Extensions to add the extension that BellCommander will register. Enter the extension number and password for the phone added to VCX. Typically, the default local port number can be used. After adding the extension, the extension should appear in the list with a status of "Registered"
  - Click the Add... button under SIP Destinations and add the 3Com VCX Paging Group extensions that BellCommander will call.
  - Test each SIP destination, by selecting a SIP destination from the SIP Destinations list. Then, click the Browse... button to locate a WAV file and click the Play Audio File button to play the WAV file. BellCommander will then call the extension through 3Com VCX and play the WAV file.



## Scheduling for SIP Extensions:

BellCommander automatically creates a zone for each SIP destination that allows different schedules to be sent to different extensions. To create a schedule, follow the steps below:

1. 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. SIP zones will have a name of "SIP:" followed by the extension number and name.
    - iii. For a single sound file select, select "Sound File" for the event type and select a WAV audio file.



2. 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”.

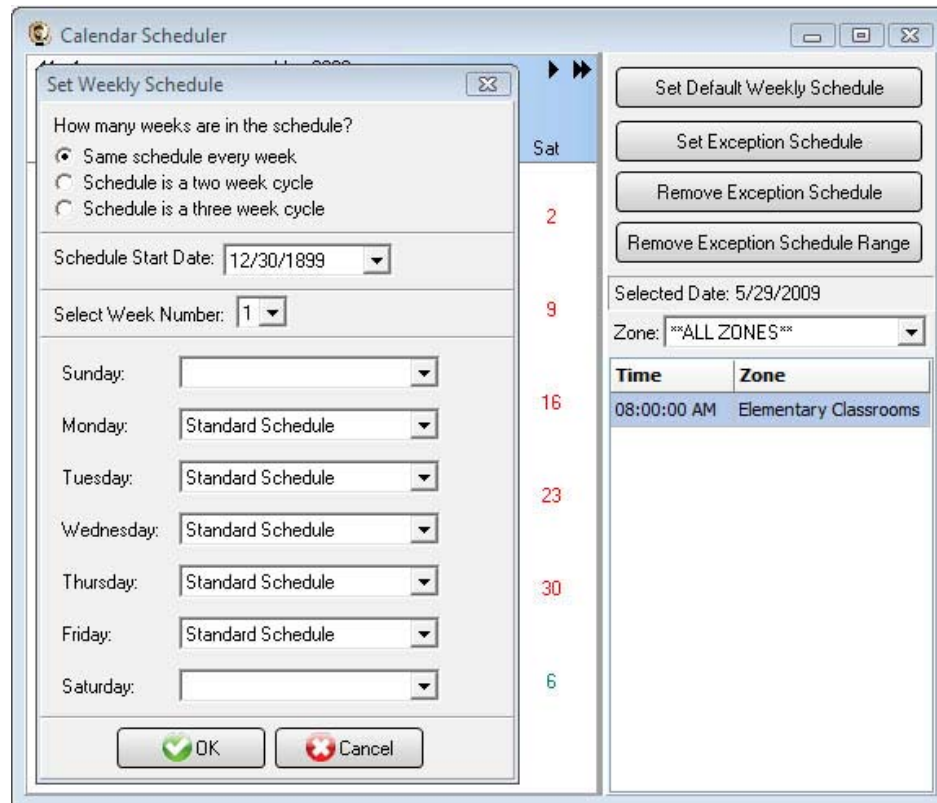
If schedule repeats bi-weekly, select “Schedule is a two week cycle”.

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.

**Special Considerations for SIP Scheduling:**

If two or more audio events will be scheduled at the same time, then additional SIP extensions will need to be registered by BellCommander. This will require adding the additional extensions in 3Com VCX and having BellCommander register the SIP extensions following the same steps above.

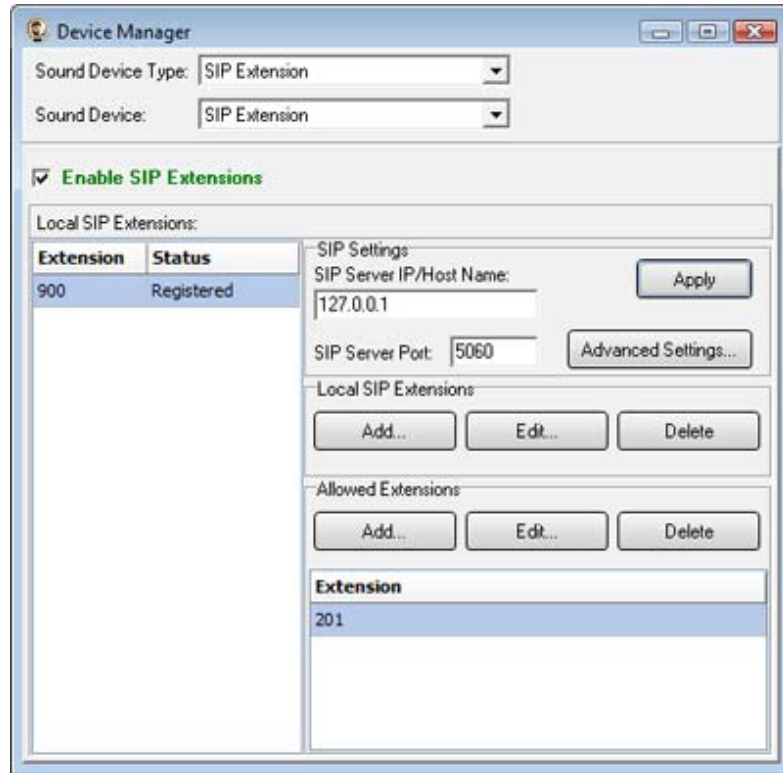
## SIP Extensions for Emergency Notification

SIP Extensions for Emergency Notification allows 3Com phones to dial BellCommander for emergency notifications. Emergency notifications loop audio alerts for several weather, school lockdowns, and other emergencies. Emergency notifications can be triggered by clicking emergency buttons in the BellCommander interface or by dialing emergency codes.

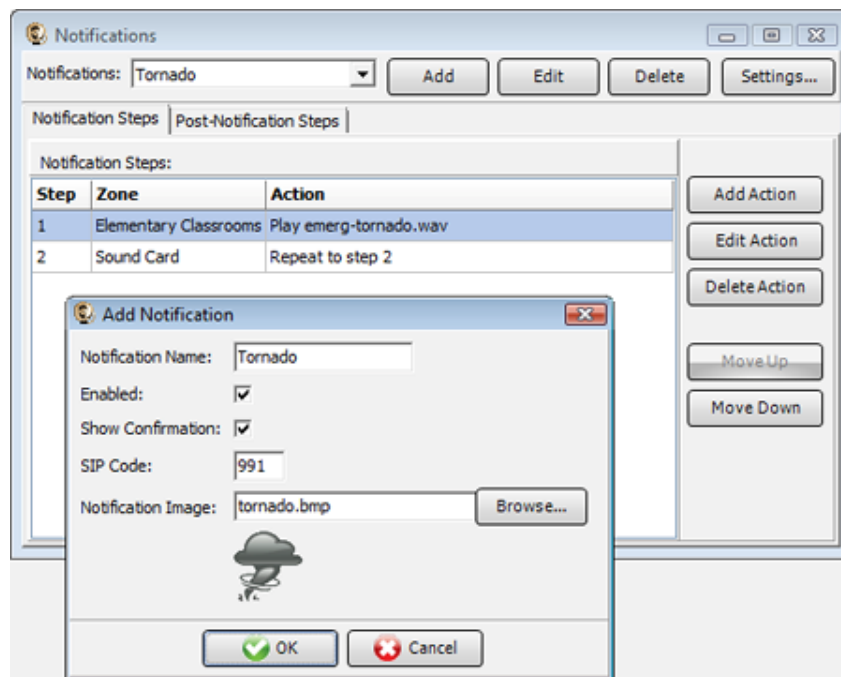
To setup emergency notifications:

1. Follow steps 1-11 and create a new phone and user for the inbound extension that BellCommander will register and users will call. For the phone name, enter a name like BellCommanderIn1.
2. Add SIP 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 3Com VCX server IP and port number. Port number should normally be 5060.
  - 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 VCX.  
Extension Password – Password for the extension that was added to VCX.  
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 3Com 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.



3. Define emergency notifications in BellCommander:
  - a. Click the Notifications button to view the Notifications window.
  - b. Click the top Add or Edit button to add or edit a notification. For the example, we'll edit the tornado notification.
  - c. In the edit window, note the SIP code. This is the code that the phone user should dial to trigger the emergency notification. The Show Confirmation option is for clicking notifications in the BellCommander interface. If Show Confirmation is checked, a message will popup to request confirmation of an emergency alert.
  - d. Assign actions to the emergency notification. Use the Add Action and Edit Action to add and edit actions in the alert scripts. Typically, a sound file would be played and looped. In the action, the zone should be set to a zone that broadcasts to all areas that should receive the notification.



4. To trigger an emergency notification by phone, first call the BellCommander extension, in the example above this would be 900. Wait for BellCommander to answer, then dial the emergency code followed by the # key. In the example above 991#. To stop the alert, dial 999# while connected to BellCommander. The alert can also be stopped by dialing the BellCommander extension again and entering 999#.