User Guide
Nyquist C4000 Series

Version 3.0

BOGEN®
COMMUNICATIONS, INC.

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Introducing the C4000 System

Nyquist C4000 is an Internet Protocol-based (IP) solution for commercial paging and audio distribution applications. It provides a quick way to manage music programming, pages, announcements, and display messages—all can be easily configured to meet your facility's unique needs.

C4000 features an easy-to-use, web-based graphical user interface (GUI) that is accessible through almost any personal computer (PC), tablet, or mobile device from any location in the connected world. It provides convenient communication, control, and interoperability with third-party devices and systems, such as access control, fire alarm, clock, and PBX systems.

C4000 also features a built-in streaming Internet radio service—airable by TuneIn and optional, custom-tailored music selections from SOUNDMACHINE, the premier music subscription service for business. Both services are perfect for a wide variety of background music applications.

> *Note:* Your system administrator should already have configured your system for your environment and created a login account for you. Depending on the role and permissions that your system administrator has assigned to you, you may not be able to perform all of the tasks described in this guide. For information about configuring the C4000 system, refer to the *Nyquist C4000 System Administrator Guide*.

Using the Web-Based User Interface

The web-based UI is an interactive dashboard that you can use to perform paging, audio distribution, and other tasks from a personal computer, tablet, or cell phone. The web-based UI presents system information and parameters in an easy-to-read and use format. The view of the dashboard varies depending upon the permissions (the role) you are assigned.

> *Note:* Do not use third-party Chrome browser extensions with the Nyquist C4000 user interface.

Client Requirements

The Nyquist web-based UI is accessed through a client, which can run on PCs, tablets, and Android, Apple, and Windows mobile devices that support the full Google Chrome web browser. In addition to supporting Chrome, the client must have a sound card, a microphone port, and the Certificate Authority (CA) that issued the server's Secure Sockets Layer (SSL) certificate, also known as a digital certificate.

The server's digital certificate is sent to the client (e.g., a web browser) to authenticate the identity of the C4000 web server. The client then uses the CA to authenticate the server's digital certificate, which verifies that the client is connecting to a valid server. If you do not install the CA, the browser will display a warning that it was unable to authenticate the server by displaying a red "Not secure" warning immediately to the left of the browser's address bar when you attempt to access the C4000 system server.

Installing Certificate Authority on Windows System

To download and install the Certificate Authority on a Windows device:

1 From your Chrome browser, type `http://<server>/ssl/bogenCA.crt` in the address bar, where <server> is the Nyquist system server's IP address (for example, `http://192.168.1.0/ssl/bogenCA.crt`).

2 Select the downloaded file and select **Open**.

3 Select Open when prompted with "Do you want to open this file?"

4 Select the **Install Certificate…** button. The Certificate Import Wizard starts.

5 Select **Current User**, and then select **Next**.

Note: To allow all users on this Windows client to access the Nyquist server, select **Local Machine** instead of **Current User**. You may be prompted for administrator credentials.

6 Select "Place all certificates in the following store", then select **Browse**.

7 Select **Trusted Root Certification Authorities**, and then select **OK**.

8 Select **Next**.

9 Select **Finish**.

10 Restart the Chrome browser and log in to the C4000 web server.

> *Note:* You can also download and install the Certificate Authority using a PowerShell command prompt or script, which involves fewer steps.
>
> Execute the following PowerShell commands, replacing *<server>* with the IP address of the Nyquist server:
>
> - ```
>   Invoke-WebRequest -Uri http://<server>/ssl/bogenCA.crt -OutFile
>   $env:TEMP\bogenCA.crt
>   ```
> - ```
>   Import-Certificate -CertStoreLocation cert:\CurrentUser\Root -FilePath
>   $env:TEMP\bogenCA.crt
>   ```
>
> These commands install the CA into the CurrentUser certificate store, which only applies to the current user. To install for all users on this machine, which requires administrator privileges to execute, replace **CurrentUser** with **LocalMachine** in the preceding commands.
>
> These commands can also be executed remotely using PowerShell Remoting, which may be helpful if the certificate needs to be installed on many client machines.

Installing Certificate Authority on Mac System

To download and install the Certificate Authority on a Mac:

1   From your Chrome browser, type `http://<server>/ssl/bogenCA.crt` in the address bar, where <server> is the Nyquist system server's IP address (for example, `http://192.168.1.0/ssl/bogenCA.crt`).

2   Save the downloaded bogenCA.crt file to the desktop.

3   Double-click the certificate file on the desktop.
    The Keychain Access App opens.

4   Double-click the certificate to reveal the trust settings.

5   Change the top trust setting to **Always Trust**.

6   Close the Trust Setting window and enter the computer administrative password to save.

7   Restart the Chrome browser and log in to the Nyquist web server.

Installing Certificate Authority on an Android Device

> *Note:* The Android device WiFi must be connected to the same network as the C4000 system server.

To download and install the Certificate Authority on an Android device:

1   From your Chrome browser, type `http://<server>/ssl/bogenCA.crt` in the address bar, where <server> is the Nyquist system server's IP address (for example, `http://192.168.1.0/ssl/bogenCA.crt`).

2   When prompted, select **Download**.

3   If prompted, verify your identity and enter your Personal Identity Number (PIN).

4   Type the certificate name and select **OK** to install it.

5   Verify the installation by selecting **Settings > Lock Screen and Security > Other Security Settings** >**View Security Certificates**.

6   Select the **User** column, select the certificate, and then select **Certificate details**.

Installing Certificate Authority on an iOS Device

Note: The iOS device WiFi must be connected to the same network as the C4000 system server.

To download and install the Certificate Authority on an iPhone Operating System (iOS) device:

1   From your Chrome browser, type `http://<server>/ssl/bogenCA.crt` in the address bar, where <server> is the Nyquist system server's IP address (for example, `http://192.168.1.0/ssl/bogenCA.crt`).

2   Select **Continue**.

3   When the Install Profile window appears, select **Install**.

4   When the Warning screen appears, select **Install**.

5   Select **Install** again to install the profile.

6   Select **Done**.

7   Verify the installation by selecting **Settings > General > Profile**.

8   Select **Details**.

9   Select the certificate.

Accessing the Dashboard

To access your dashboard:

1   From your Chrome browser, type the C4000 server's IP address in the address bar (for example, https://192.168.1.0) and press **Enter.**

2   On the *Login* page, type your username and password.

3 Select **Login**
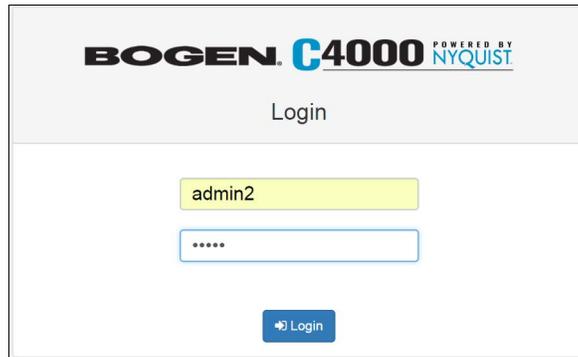
Figure 1. Login Page
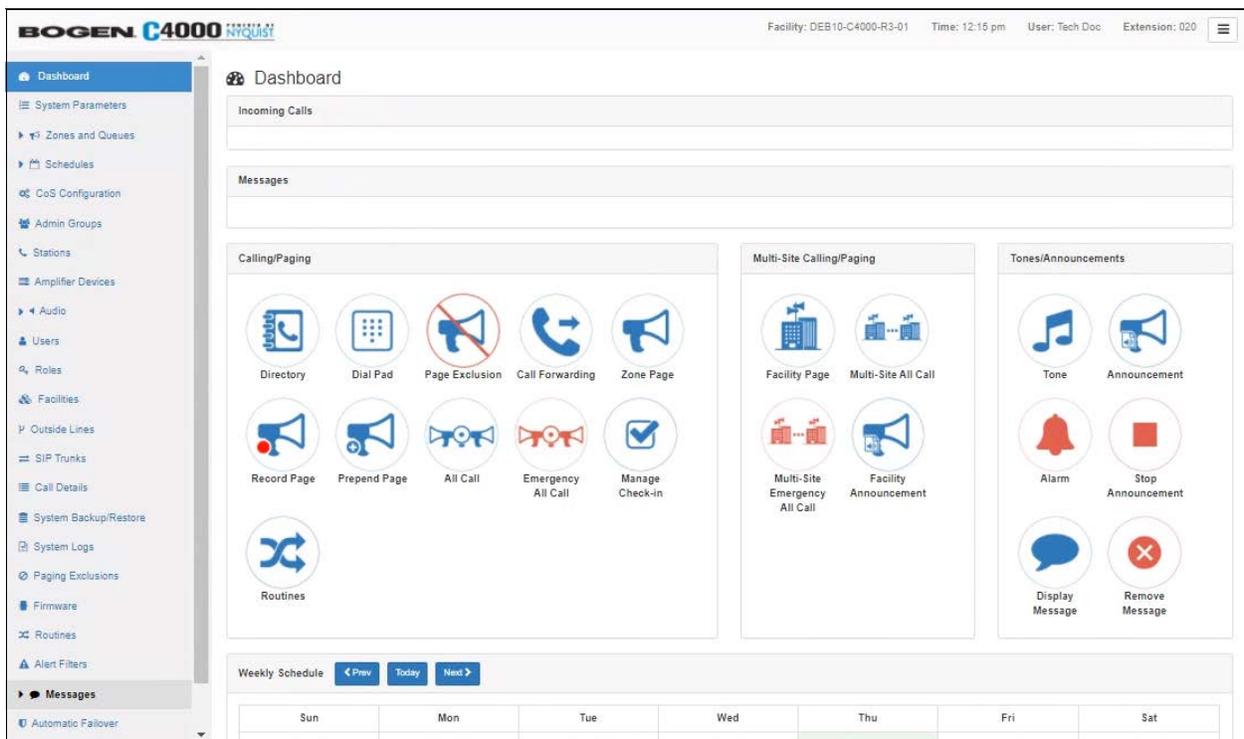
Figure 2. C4000 Dashboard

Note: The Nyquist system does not support opening multiple instances, or tabs, of the Nyquist Web UI for the same user.
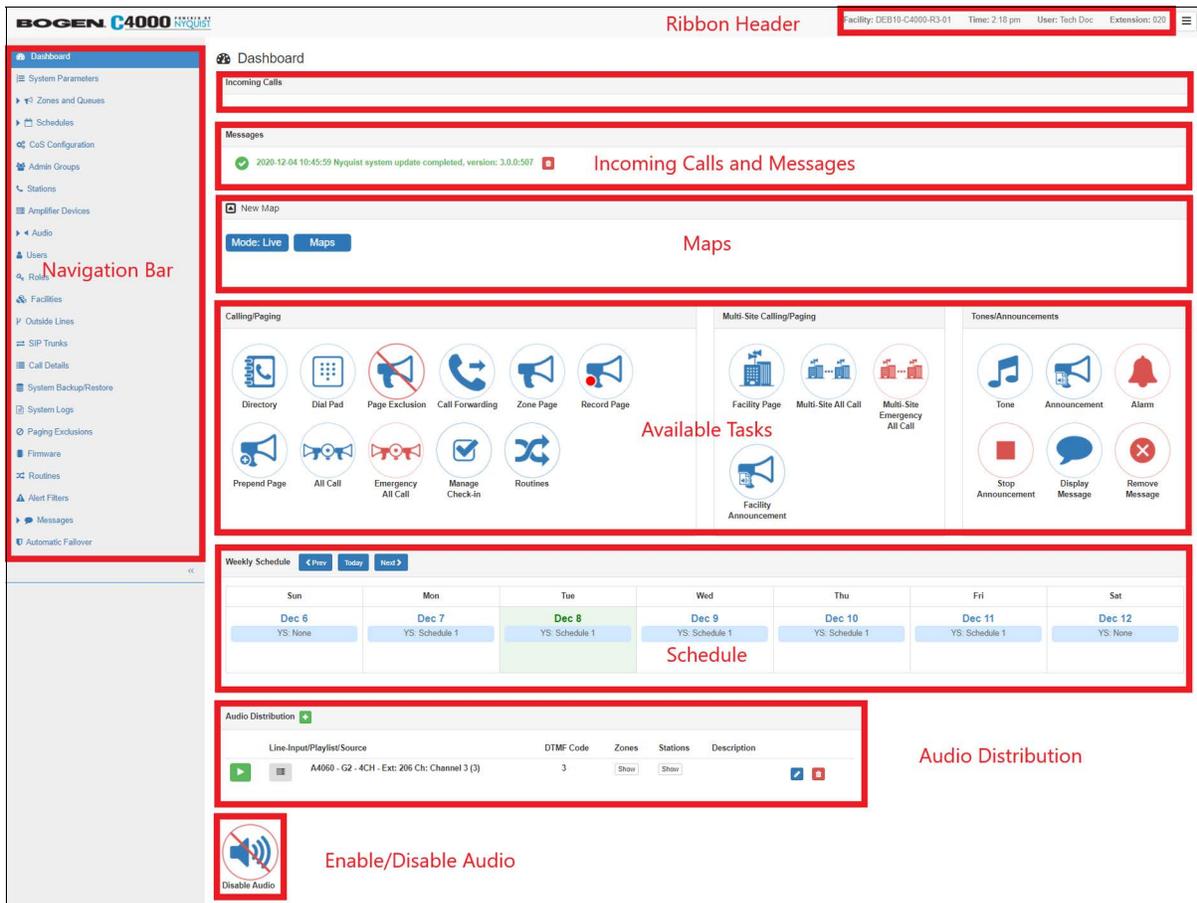
Figure 3. Dashboard Areas

The Dashboard allows you to perform communications activities, view this week's schedules, and perform audio distribution.

The navigation bar (left) on the dashboard (*Figure 3, "Dashboard Areas"*), lists only those areas and features of the C4000 system that you can access based on your assigned role.

> *Note:* The navigation bar does not appear if you are not authorized to make changes to the C4000 configuration. Instead, you see only common tasks, such as making a page. If you are authorized to make changes to the C4000 configuration, refer to the *Nyquist C4000 System Administrator Guide* for information about performing these tasks.

The ribbon header (upper right) provides the facility name, server time in hours and minutes, the username for the account, and the extension for the station. The facility name and time do not appear if the screen is reduced in size, such as when viewing from a phone or tablet.

Incoming Calls and Messages appear on the top right dashboard pane.

When Maps is licensed and configured for a C4000 system and you have the proper permissions, you can view the Maps panel from the dashboard, below the Messages panel.

At the top of the dashboard, displayed messages provide system information, such as any stations or devices connected to your server that now appear to be disconnected or unavailable.
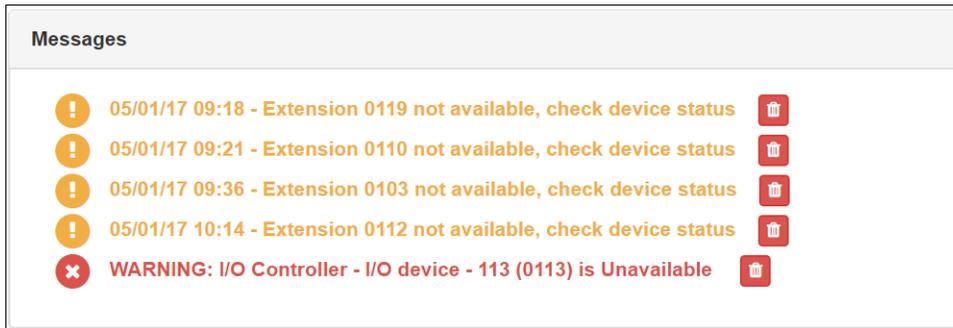
Figure 4. Dashboard Messages

On the lower part of the dashboard are options for Audio Distribution and an **Enable/Disable Audio** button that you can toggle to enable or disable audio.
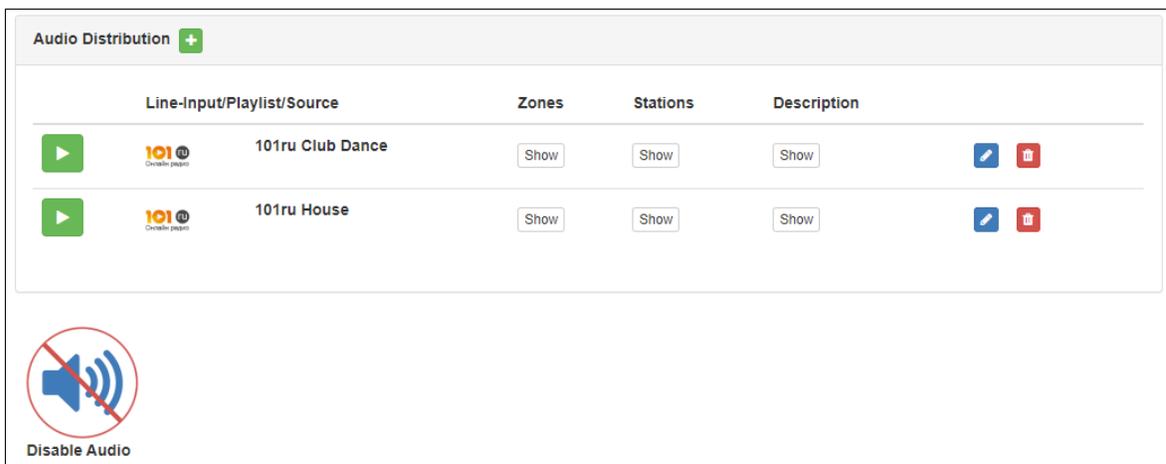
Figure 5. Audio Distribution Section of Dashboard

Making UI Selections

You can navigate and make UI selections by mouse click or touchscreen function. The UI buttons appear as named graphics or as icons (graphics only).

Table 1. UI Icons

Icon	Description
	Add icon – Select this icon to add an item.
	Edit icon – Select this icon to edit an item.
	Delete icon – Select this icon to delete an item.
	Information icon – Select this icon for additional information, such as viewing release notes for firmware.
	Link icon – Links to a web page that contains related information or functionality.

Getting Help

Help is available through the C4000 Admin Web UI and through Bogen's Technical Support. Technical Support is available between 8:30 am and 6:00 pm, and on-call until 8 pm, Monday through Friday. Technical Support contact information is as follows:

Tel: 1-800-999-2809
Fax: 201-934-6532
Email: Bogen Technical Support at applications@bogen.com
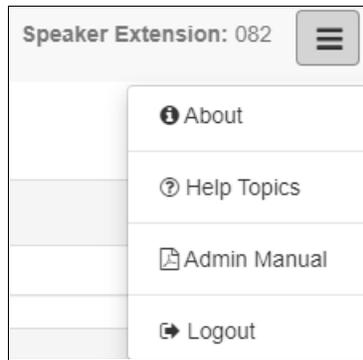
Figure 6. Help Menu

Online help is accessed from the menu that appears in the upper right portion of the Admin Web UI's navigation pane. The menu contains the following options:

- **About**—Displays the version number and contact information for Bogen Communications, Inc.

- **Help Topics**—Provides help topics on using the C4000 system.

- **Admin Manual**—Accesses the *Nyquist C4000 System Administrator Guide*. The *Nyquist C4000 System Administrator Guide* provides configuration and task information that you may not be authorized to perform.

- **Logout**—Logs you out of the C4000 system.

Managing Audio

Audio programs for distribution to stations or zones can include line-input from the Matrix Mixer Pre-Amplifier (MMPA), Nyquist 2-channel or 4-channel amplifiers, user-supplied songs or playlists, and Internet Radio Services. The Audio Distribution, tones, and announcement files added through the audio file management feature can be set through the Schedules feature to automatically play during specified times.

Through the Internet Radio Services, you can listen to live radio stations and add media catalogs and music services without updating devices or software.

Default tone and song files include white noise and pink noise that allows you to tune paging and Audio Distribution volumes.

> *Note:* Before using the Audio Distribution feature, make sure that stations and zones have been configured and that the station you are using to launch Audio Distribution has the appropriate Class of Service (CoS) parameters set. The navigation bar does not appear if you are not authorized to make changes to the C4000 configuration. Contact your system administrator or refer to the *Nyquist C4000 System Administrator Guide*.

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Audio Distribution

Suppose you want to use an audio source, such as a radio station accessed via the Internet, in a cafeteria but prevent that source from being played in a conference room. This feature, called Audio Distribution, can be turned on by zone (an area or group of stations) or stations (group of devices such as VoIP speakers). You can add the speakers, or stations, in the cafeteria to a zone that allows Audio Distribution while the speakers in a conference room would not be placed into that zone.

Audio Distribution involves creating a playlist or selecting an input source and specifying which zones hear the playlist or input source. Through the Scheduled Audio feature, Audio Distribution can be tied to a specific event in a schedule. (For information about creating events, refer to the *Nyquist C4000 System Administrator Guide*.)
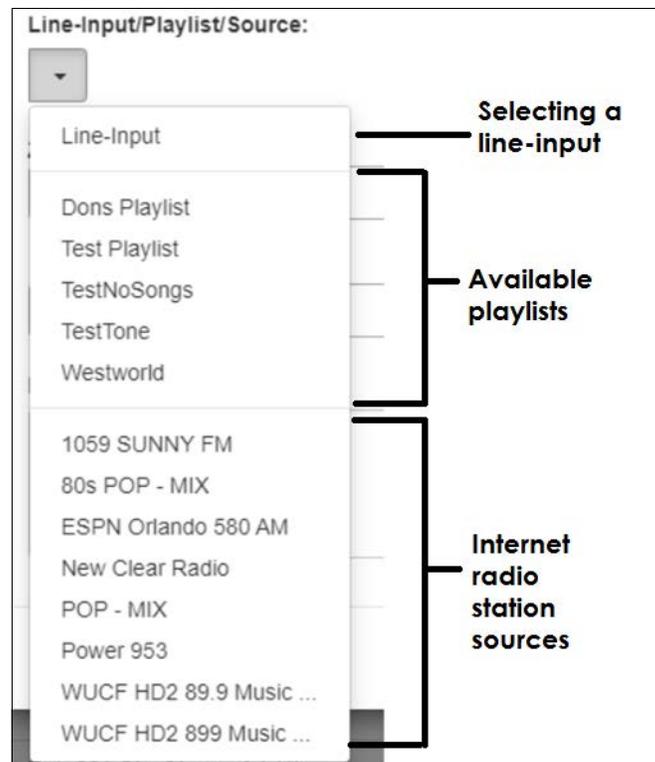
Figure 7. Audio Distribution Sources

Audio Distribution sources can include:

- Audio from two-channel or four-channel audio power amplifiers or MMPAs Line Inputs
- User-supplied music (songs and playlists)
- Internet Radio Services
- SoundMachine Stations

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Managing Line-Input Sources

Figure 8. Line-Input Sources

If your Nyquist system uses two-channel or four-channel audio power amplifiers or MMPAs, these stations appear as sources for Line-Input when creating Audio Distribution.
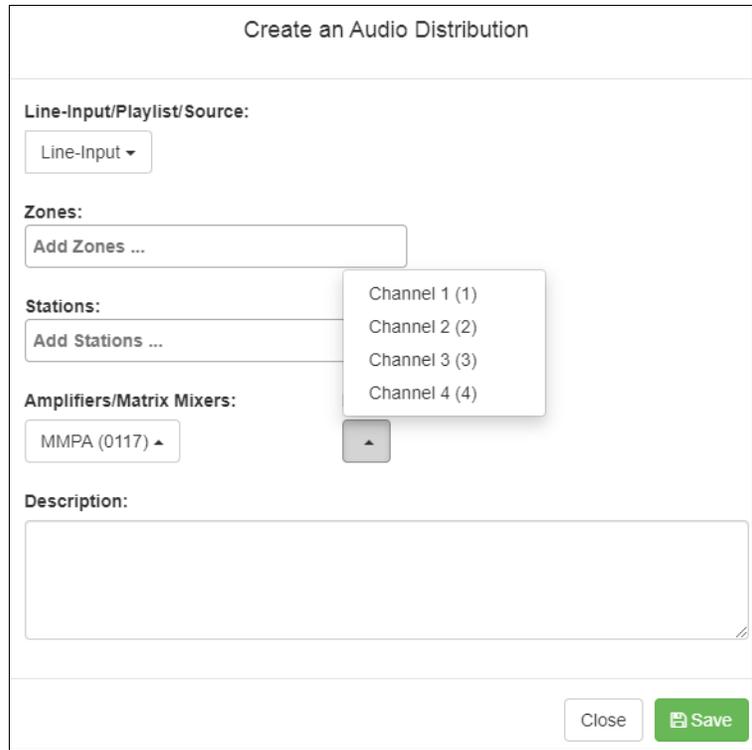
Figure 9. Available Channels for an MMPA

The available Input Channel selections can range from 1 or 2 for an amplifier or 1 to 4 for an MMPA.
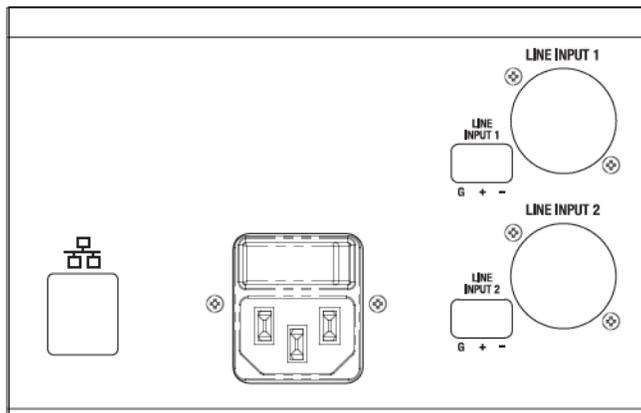
Figure 10. Line Input for NQ-A4300 Audio Power Amplifier

The amplifiers and MMPAs must be configured at the device, using either XLR or Phoenix (but not both) as the input.

The Amplifiers/Matrix Mixers and Input Channel selections are made when creating an audio distribution.

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Managing Songs

The songs feature allows you to select songs that can be added to a playlist; the playlist can then be selected to play manually or during scheduled events such as lunch time. You can store songs on a USB memory stick; these songs can then be played via the playlists feature (see "*Playing Songs Directly from a USB Memory Stick" on page 14*).

By default, white noise and pink noise songs are provided to help tune the volume of an Audio Distribution zone. (Refer to the *Nyquist C4000 System Administrator Guide.*)

Viewing the Song List

From the Songs page, you can add, edit, or delete a song. If you delete a song that is in a Playlist, the song is automatically removed from the Playlist.
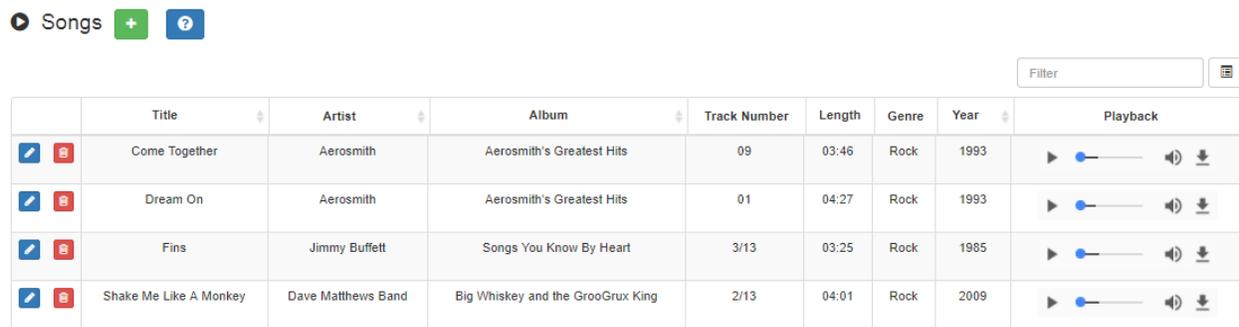
		Title	Artist	Album	Track Number	Length	Genre	Year	Playback
✏️	🗑️	Come Together	Aerosmith	Aerosmith's Greatest Hits	09	03:46	Rock	1993	▶ ● ◀) ⬇
✏️	🗑️	Dream On	Aerosmith	Aerosmith's Greatest Hits	01	04:27	Rock	1993	▶ ● ◀) ⬇
✏️	🗑️	Fins	Jimmy Buffett	Songs You Know By Heart	3/13	03:25	Rock	1985	▶ ● ◀) ⬇
✏️	🗑️	Shake Me Like A Monkey	Dave Matthews Band	Big Whiskey and the GrooGrux King	2/13	04:01	Rock	2009	▶ ● ◀) ⬇

Figure 11. Songs Page

To view the song list:

1 On the navigation bar, expand **Audio**.

2 Select **Songs**.

The following table describes the information provided about each song:

Table 2. Songs Page Parameters

Title	Displays the user-provided song title.
Artist	Displays the name of the musician performing the song.
Album	Displays the name of the album the song is from.
Track Number	Displays the track on the album for the song.
Length	Provides the length of the song in seconds.

Table 2. Songs Page Parameters (Continued)

Genre	Displays the music genre, or category, for the song.
Year	Displays the year the song was recorded.
Playback	Allows you to manually play the song. Selecting the **Menu** icon in this field also allows you to download and save the song.

Playing Songs Directly from a USB Memory Stick

You can use a USB memory stick as storage for songs that can be played via the playlists feature.

To add songs and create a playlist for a USB memory stick, you must create a root file on the USB memory stick called MusicLibrary.txt. This file can contain the following entries:

* playlistname=<text entered by customer>
* createplaylist=no
* useexistingplaylist=yes

If **createplaylist=no** is found in MusicLibrary.txt, a playlist is not created for the imported files.

If **useexistingplaylist=yes** is used, new songs will be added to the playlist defined by the playlistname option.

Music files must be on the root directory of the USB memory stick. Valid formats for these files are mp3, wav, and aac.

The Nyquist server automatically mounts the USB memory stick, adds all songs found in the root directory to the songs list, and creates a playlist for the added songs. The default name for the playlist is **USB Music Library**.

> *Note:* If you use a USB memory stick as storage for songs on a playlist and the USB memory stick is removed from the USB drive, the meta data for the songs and the playlist still resides in the C4000 song list and playlist, but Audio Distribution cannot play. For this reason, we recommend never removing the memory stick from the computer.

Uploading Songs from a USB Memory Stick

You can upload songs to the Nyquist system from a USB memory stick.

To upload songs from a USB memory stick:

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1. On the navigation bar, expand **Audio**.

2. Select **Songs**.

3. Select the **Add** icon.

4. From the Add Song page, ensure **Multiple Songs** is set to **Yes**.

5. Insert the memory stick.

6. For the **File Upload** parameter, select **Choose file** and navigate to the USB memory stick.

7. Select **Save**.

8. Select **Save**.

Adding Songs

You can add songs from your local computer or from removable media, such as a flash drive. You can add a song to playlists as part of the Add Song process, or you can add a song to a playlist later through the **Playlists** menu.

You can select to add one song or multiple songs.

C4000 can use any ID3 tag data and save that automatically. An ID3 tag acts as a container file within an MP3 audio file and commonly contains the title, artist name, album, track data, year, and genre.

Figure 12. Add Song Page

To add a song file:

1 On the navigation bar, expand **Audio**.

2 Select **Songs**.

3 On the Songs page, select the **Add** icon.

Note: If the imported song file contains metadata, Nyquist automatically fills in the Title, Artist, Album, Track Number, Year, and Genre after you click **Save**. If no metadata exists, the song **Title** is set to **Untitled** and the other parameters are left blank. Most MP3 files do contain metadata. You also can choose not to fill in the parameters.

On the Add Song page, complete the parameters (see *Table 3*). If you want to add multiple songs, ensure that you select **Yes** for **Multiple Songs**. Then, use the Shift or Control keys when selecting multiple files. Parameters do not appear when using the **Multiple Songs** option.
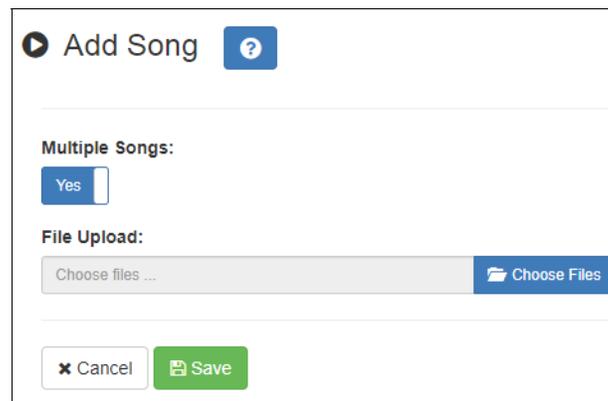
Figure 13. Adding Multiple Songs

4   After completing all changes, select **Save**. The song or songs will be copied onto the Nyquist system.

Table 3. Add Song Page Parameters

Multiple Songs	Allows you to select multiple songs.
Title	Displays the user-provided song title.
Artist	Displays the name of the musician performing the song.
Album	Displays the name of the album the song is from.
Track Number	Displays the track on the album for the song.
Year	Displays the year the song was recorded.
Genre	Displays the music genre, or category, for the song.
File Upload	Allows you to select the song that you want to upload.

Playlists	Select the playlists that you want to add the song to. You can select multiple playlists, select all playlists by selecting **Add All**, or use the **Clear** button to remove the playlists.
File Upload	Select **Choose file** and navigate to select the file to upload. This option allows you to select files not only from your computer but also from a USB flash drive inserted in your computer.

Editing Song Information

Through the Edit Song page, you can edit the information that appears on the Songs page for a particular song or replace the downloaded file with another.

To edit the information associated with the song file:

1 On the navigation bar, expand **Audio**.

2 Select **Songs**.

3 On the Songs page, select the **Edit** icon next to the song that you want to edit information for.

4 On the Edit Song page, make changes to the parameters (see *Table 4*).

5 After completing all changes, select **Save**.

Table 4. Edit Song Page Parameters

Title	Displays the user-provided song title.
Artist	Displays the name of the musician performing the song.
Album	Displays the name of the album the song is from.
Track Number	Displays the track on the album for the song.
Year	Displays the year the song was recorded.
Genre	Displays the music genre, or category, for the song.
File Upload	Allows you to select the song that you want to upload.
Playlists	Allows you to add or remove the song from playlists.

Deleting a Song

Through the Songs page, you can delete a song from your C4000 system. If you delete a song that is in a Playlist, the song is automatically removed from the Playlist.

To delete a song:

1   On the navigation bar, expand **Audio**.

2   Select **Songs**.

3   On the Songs page, select the **Delete** icon next to the song that you want to delete.

4   When prompted, select **Delete**.

Managing Playlists

You can create and manage playlists that contain multiple songs to use for scheduled events and dashboard Audio Distribution entries. You can select a playlist when creating an event. (For information about creating events, refer to the *Nyquist C4000 System Administrator Guide.*)

Viewing Playlists

Through the Playlists page, you can view all playlists available to your C4000 system and create, delete, and manage a playlist. With the Manage Playlist feature, you can add, delete, or change the order of a playlist's songs.

Figure 14. Playlists Page

To view playlists:

1   On the navigation bar, expand **Audio**.

2   Select **Playlists**.

The Playlists page appears. *Table 5 on page 20* describes the information that appears on this page:

Table 5. Playlists Page Parameters

Manage	When selected, this option displays the songs that can be dragged and dropped to and from the playlist.
Name	Displays the user-provided name for the playlist. *Note:* Valid characters include uppercase letters (A-Z), lowercase letters (a-z), numerals (0-9), space, and the following special characters: **!@$*?-.,**.
Description	When **Show** is selected, the user-provided description of the playlist appears. *Note:* Valid characters include uppercase letters (A-Z), lowercase letters (a-z), numerals (0-9), space, and the following special characters: **!@$*?-.,**.
Scheduled Audio Repeat	When enabled, the playlist audio repeats after all songs have been played. When disabled, Scheduled Audio automatically stops after the last song has been played from the playlist. When disabled, a corresponding stop event is not needed when Scheduled Audio is started via the schedule. *Note:* When playlists are being used by the Audio Distribution feature, the Scheduled Audio options are ignored.
Scheduled Audio Shuffle	When enabled, the order in which the songs are played is shuffled. When disabled, the playlist songs play in the order that they appear in the playlist. *Note:* When playlists are being used by the Audio Distribution feature, the Scheduled Audio options are ignored.

Creating a Playlist

When you add a playlist, you first create the playlist container and then you use the Manage tool to add songs to the playlist. To add songs to a playlist, you must have access to songs that have been downloaded to your C4000 network or to removable media, such as a flash drive.

Figure 15. Add Playlist Page

To add a playlist:

1 On the navigation bar, expand **Audio**.

2 Select **Playlists**.

3 Select the **Add** icon.

4 On the Add Playlist page, complete parameters for this playlist. (See *Table 6, "Add Playlist Parameters," on page 22*.)

5 Select **Save**.

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Table 6. Add Playlist Parameters

Name	Displays the user-provided name for the playlist.
	Note: Valid characters include uppercase letters (A-Z), lowercase letters (a-z), numerals (0-9), space, and the following special characters: **!@$*?-.,**.
Scheduled Audio Repeat	When enabled, the playlist audio repeats after all songs have been played. When disabled, Scheduled Audio automatically stops after the last song has been played from the playlist. When disabled, a corresponding stop event is not needed when Scheduled Audio is started via the schedule.
	Note: When playlists are being used by the Audio Distribution feature, the Scheduled Audio options are ignored.
Scheduled Audio Shuffle	When enabled, the order in which the songs are played is shuffled. When disabled, the playlist songs play in the order that they appear in the playlist.
	Note: When playlists are being used by the Audio Distribution feature, the Scheduled Audio options are ignored.
Description	When **Show** is selected, the user-provided description of the playlist appears.
	Note: Valid characters include uppercase letters (A-Z), lowercase letters (a-z), numerals (0-9), space, and the following special characters: **!@$*?-.,**.

Adding Songs to a Playlist

After you create a playlist, use the Manage tool to add songs to the playlist.
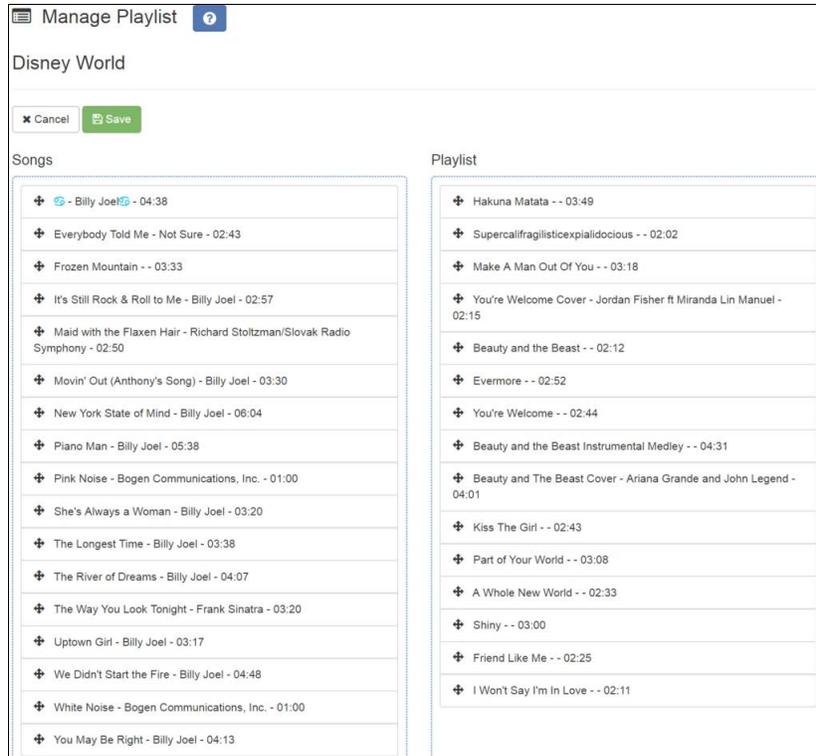
Figure 16. Manage Playlist Page

To add songs to a playlist:

1   On the navigation bar, expand **Audio**.

2   Select **Playlists**.

3   On the Playlists page, select the **Manage** icon next to the playlist that you want to add songs to.

4   On the Manage Playlist page, drag and drop the song you want to add from the Songs field to the Playlist field.

5   After all desired songs have been added to the Playlist, select **Save**.

Changing Song Order in a Playlist

You can use the Manage tool to change the order of songs in a playlist.

To change the song order:

1   On the navigation bar, expand **Audio**.

2   Select **Playlists**.

3   On the Playlists page, select the **Manage** icon next to the playlist for which you want to change song order.

4   On the Manage Playlist page, drag and drop the songs into the order that you want.

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5 Select **Save**.

Deleting a Song from a Playlist

You can use the Manage tool to remove a song from a playlist.

To delete a song from a playlist:

1 On the navigation bar, expand **Audio**.

2 Select **Playlists**.

3 On the Playlists page, select the **Manage** icon next to the playlist.

4 Drag and drop the song from the Playlist field to the Songs field.

5 After all desired changes are completed, select **Save**.

Editing a Playlist

The **Edit** icon allows you to edit the parameters for a playlist. To change the order of songs in a playlist, see *"Adding Songs to a Playlist" on page 22*. To delete a song from a song list, see *"Deleting a Song from a Playlist" on page 24*.

To edit a playlist:

1 On the navigation bar, expand **Audio**.

2 Select **Playlists**.

3 Select the **Edit** icon next to the playlist.

4 On the Edit Playlist page, make desired changes to the parameters. (For more information about the parameters, see *"Add Playlist Parameters" on page 22*.)

5 Select **Save**.

Deleting a Playlist

You can delete a playlist provided the playlist is not being used with an I/O Controller Input or Output Rule.

To delete a playlist:

1 On the navigation bar, expand **Audio**.

2 Select **Playlists**.

3 Select the **Delete** icon next to the playlist.

4 When prompted, select **Delete**.

Using Internet Radio Services

Through the Internet Radio Services, you can add online content, such as music services and Internet radio, using Airable by TuneIn. With this service, you can listen to live radio stations and add media catalogs and music services without updating devices or software.

You can navigate through the catalog of radio stations by:

- Genre
- Language
- Location
- Quality
- Popularity

You also can search the catalog for particular artists or songs.

Being able to use the Internet Radio Services feature depends on the permissions assigned to the role with which you are associated.

For information about assigning permissions to roles, refer to the *Nyquist C4000 System Administrator* Guide.

Viewing Internet Radio Services

If you have **View** permission for the Internet Radio Services, you can view a list of radio stations that can be accessed through your system, as well as information about each station. Through the Internet Radio Services page, you also can select to manage credentials for services such as SOUNDMACHINE. (See *"Managing Credentials" on page 29*.)

Figure 17. Internet Radio Services View

To view Internet Radio Services added to your system:

1   On the navigation bar, expand **Audio**.

2 Select **Internet Radio Services**.

The following parameters in *Table 7* appear for each source configured for your C4000 system:

Table 7. Internet Radio Services

Station	Displays the icon, name, and description of the radio station.
Codec	Displays how the streaming media is compressed and decompressed.
Sample Rate	Displays the number of samples of audio carried per second.
Mono/Stereo	Displays if the signal is being transmitted by a single channel (mono) or by two channels (stereo).
Bit Rate	Displays the bit rate used to transmit the streaming media.

Adding a Source

You can select to add an Internet radio source or a service, such as SOUNDMACHINE. The screen that appears when you select **Add Source** also allows you to manage credentials or sign up for SOUNDMACHINE.
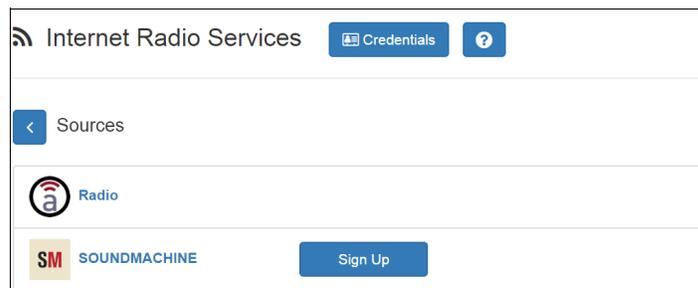
Figure 18. Add Source Page

To add a source:

1 On the navigation bar, expand **Audio**.

2 Select **Internet Radio Services**.

3 On the Internet Radio Services page, select **Add Source**.

4 Select from the list of Sources.

5 If you select **Radio**, do the following:

   a) Select how you want to select a source. Options are:

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Table 8. Radio Source Parameters

Local stations   Select to view a list of stations near your location.

Popular stations   Select to view stations considered to be the most popular.

Trending   Select to view the stations that are gaining momentum.

High quality   Select to view the stations with a high sound quality.

New stations   Select to filter the list of stations by new stations added to Internet Radio Services.

Filter   Select to filter the list of stations by **Location**, **Language**, or **Genre**.

Search   Select to enter a search term.

    b) When the list of stations that meet the selected criteria appears, select the station that you want.

    c) Select **Add Source** for each source (aac or mp3) that you want.

6 If you select **SOUNDMACHINE**, do the following:

    a) Select how you want to open a source. Selections are:

Genres	Displays a list of genres, such as **Blues** and **Pop**, which you can select to drill down genre choice even further.
Stations	Displays categories for stations, such as **Country**, which you can select to drill down to select a specific album or song.
My Stations	Displays radio stations that you added through the SOUNDMA-CHINE website.
Mixes	Displays categories of stations that combine, or mix, music genres. You can select to drill down to a specific album or song.
Music Selection Schedules	Displays the schedules that have been created through SOUND-MACHINE. (See *"Using SOUNDMACHINE Music Selection Schedules" on page 32*.)
	Schedules allow the playing of specific stations or mixes during specific times of the day. For example, you can play soft jazz music during morning hours and select a different genre mix for mid-day.
	When you create a Music Selection Schedule, you cannot have any empty time periods or Audio Distribution will stop when the empty time period is encountered.
	The Music Selection Schedules that you create appear as **Line-Input/Playlist/Source** selections for Audio Distribution.
Logout	Select to log out of SOUNDMACHINE.

    b) Drill down until you can select a specific album or song.

    c) Select **Add Source**.

Deleting a Source

To delete a source:

1 On the navigation bar, expand **Audio**.

2 Select **Internet Radio Services**.

3 On the Internet Radio Services window, select the **Delete** icon next to the source that you want to delete.

4 When prompted, select **Delete**.

Managing Credentials

If you have been assigned permissions, you can view, add, edit, and delete logon credentials needed to access the SOUNDMACHINE service.

For information about roles and permissions, refer to the *Nyquist C4000 System Administrator Guide*.

View Credentials

The Credentials list allows a quick view of the users who have logon credentials.

To view the Credentials list:

1   On the navigation bar, expand **Audio**.

2   Select **Internet Radio Services**.

3   Select **Credentials**.

Table 9 describes the parameters on the Credentials page:

Table 9. Credentials Parameters

Name	Displays the name of the service, such as SOUNDMACHINE.
Enabled	Indicates if the account is enabled for this service.
Username	Provides the **Username** for the account.

Add Credentials

You can create a user account that allows a user to use an Internet Radio Service, such as SOUNDMACHINE. You also can use the Add Credential page to sign up for SOUNDMACHINE.

Figure 19. Add Credential

To create an account:

1 On the navigation bar, expand **Audio**.

2 Select **Internet Radio Services**.

3 Select **Credentials**.

4 Select the **Add** icon.

5 Complete the parameters on the Add Credential page (see *Table 10*).

6 Select **Save**.

Table 10. Add Credential Parameters

Name	Use the drop-down arrow to select the name of the service.
Username	Enter the username for this account.
Password	Enter the password for this account.
Enabled	Select **Yes** to enable this account.

Edit Credential

If you have the appropriate permissions, you can edit a user's credentials for accessing SOUNDMACHINE, including viewing or changing a user's password and enabling or disabling the user's use of the service.

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Figure 20. Edit Credential

To edit an account:

1   On the navigation bar, expand **Audio**.

2   Select **Internet Radio Services**.

3   Select **Credentials**.

4   Select the **Edit** icon next to the account that you want to edit.

5   Make the desired changes on the Edit Credential page (see *Table 11*).

6   Select **Save**.

Table 11. Edit Credentials Parameters

Name	Use the drop-down arrow to select the name of the service.
Username	Enter the username for this account.
Password	Enter the password for this account.
	Select **Show Saved Password** to view an existing password for the account being edited.
Enabled	Select **Yes** to enable this account.

Delete Credentials

You can delete a user's credentials to access SOUNDMACHINE.

To delete an account:

1   On the navigation bar, expand **Audio**.

2 Select **Internet Radio Services**.

3 Select **Credentials**.

4 Select the **Delete** icon next to the account that you want to edit.

5 When prompted, select **Delete**.

SOUNDMACHINE Sign Up

You can sign up for SOUNDMACHINE via the Add Source (see "*Adding a Source" on page 26*) or Add Credential (see "*Add Credentials" on page 29*) windows.

To sign up for SOUNDMACHINE:

1 On the navigation bar, expand **Audio**.

2 Select **Internet Radio Services**.

3 Do one of the following:

- Select **Add Source**.
- Select **Credentials**; then select the **Add** icon.

4 Select **Sign Up**.

5 When the SOUNDMACHINE and BOGEN page appears, follow the on-screen instructions.

Using SOUNDMACHINE Music Selection Schedules

Schedules that you create using the SOUNDMACHINE web-based UI appear as **Music Selection Schedules** in the C4000 Admin Web UI. You can select a Music Selection Schedule to play as Audio Distribution.

When you create a Music Selection Schedule, you cannot have any empty time periods or Audio Distribution will stop when the empty time period is encountered.

You cannot name a Music Selection Schedule using all special characters; the name must contain at least one alpha or numeric character or the Music Selection Schedule will not appear.

Scheduled Audio takes priority over a Music Selection Schedule.

Creating an Audio Distribution

Figure 21. Audio Distribution Portion of Dashboard

To use the Audio Distribution feature, you must have the Audio Distribution CoS configuration on your station and must be assigned a role that has permissions to create Audio Distribution.
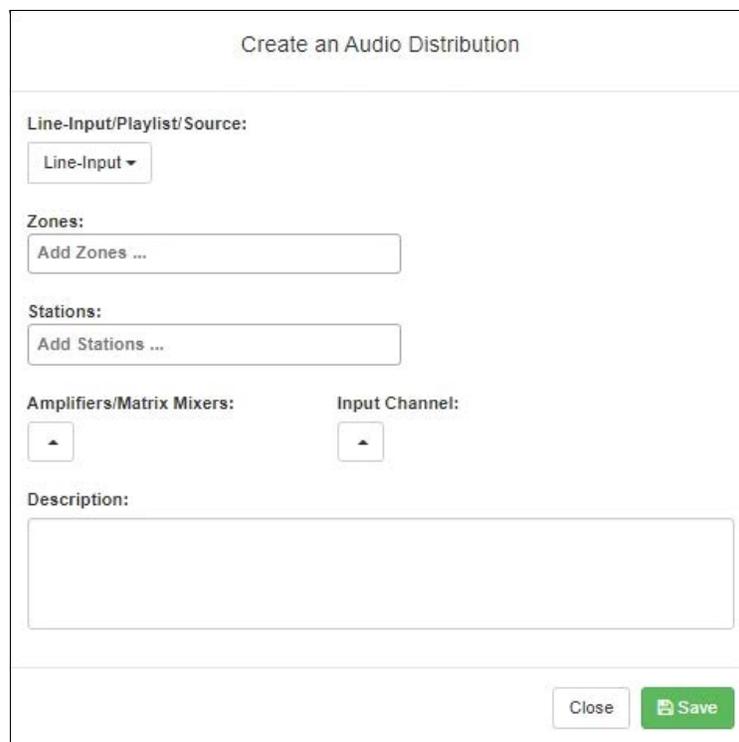
Figure 22. Create an Audio Distribution

To create an Audio Distribution:

1   If not already on your dashboard, select **Dashboard** from the navigation bar.

2   Select the **Add** icon next to **Audio Distribution**.

3   Complete the Create an Audio Distribution parameters (see *Table 12*).

> *Note:* If you are using at least one C4000 Matrix Mixer Pre-Amp, Line-Input appears as a Line-Input/Playlist/Source option.

4 Select the **Zones** and **Stations**.

5 If you select **Line-Input** as the Input Source/Playlist, select the **Amplifiers/Matrix Mixers** and **Input Channel**.

6 If you select a playlist and want to shuffle the song order, set **Shuffle** to **Yes**.

7 Select **Save**.

8 To end the playing of audio, select the **Stop** icon next to the playlist.

Table 12. Create an Audio Distribution Parameters

Line-Input/Playlist/Source	Use the **Line-Input/Playlist/Source** drop-down menu to select the audio source. Audio sources can include a line-input from an MMPA or amplifier, available playlists previously created for your system, or Internet radio station sources.
Zones	Select **All Speakers** or a specific zone or zones where you want the audio to play.
Stations	Select the stations where you want the audio to play.
Amplifiers/Matrix Mixers	Select the Amplifier or Matrix Mixer to use as the audio source.
Input Channel	Select the Input Channel to be used as the audio source.
Shuffle	If you select a playlist and want to shuffle the song order, set **Shuffle** to **Yes**.
Description	Add a description for the Audio Distribution. For example, you may want to note that the audio is for lunchtime.

Starting and Stopping Audio Distribution

Starting and stopping Audio Distribution can be done either manually (via the Nyquist web interface dashboard or Zone Control feature) or automatically (via scheduled events, NQ-E7010 I/O controller input-contact closure rules, or Routines).

A list of existing Audio Distributions appears on the dashboard. You can edit/delete an existing Audio Distribution, provided it is not currently playing, by selecting the **Edit** or **Delete** icon next to the Audio Distribution.

Figure 23. Audio Distribution Play Icon

To manually start and stop Audio Distribution:

1 If not already on your dashboard, select **Dashboard** from the navigation bar.

2 Select the **Play** icon next to the Audio Distribution that you want to launch.

3 To end the playing of audio, select the **Stop** icon next to the playlist.

Figure 24. Adding Scheduled Audio

To automatically schedule audio as part of an event, follow the steps for creating an event, ensuring that you set the **Scheduled Audio** for the playlist, MMPA channel, or amplifier to be used for this event. For information about creating an event, refer to the *Nyquist C4000 System Administrator Guide*.

You also can select to stop the **Scheduled Audio** by selecting **Stop Playlist** or **Stop Line-Input**.

If an Airable/SOUNDMACHINE source is selected, the Scheduled Audio list includes selections to start or stop the audio stream. This list only includes Airable/SOUNDMACHINE selections that apply to the specific zone. If the Audio Distribution zone selected includes a time zone and another zone type, such as Paging, that is not for time, the audio distribution does not appear in this **Scheduled Audio** list.
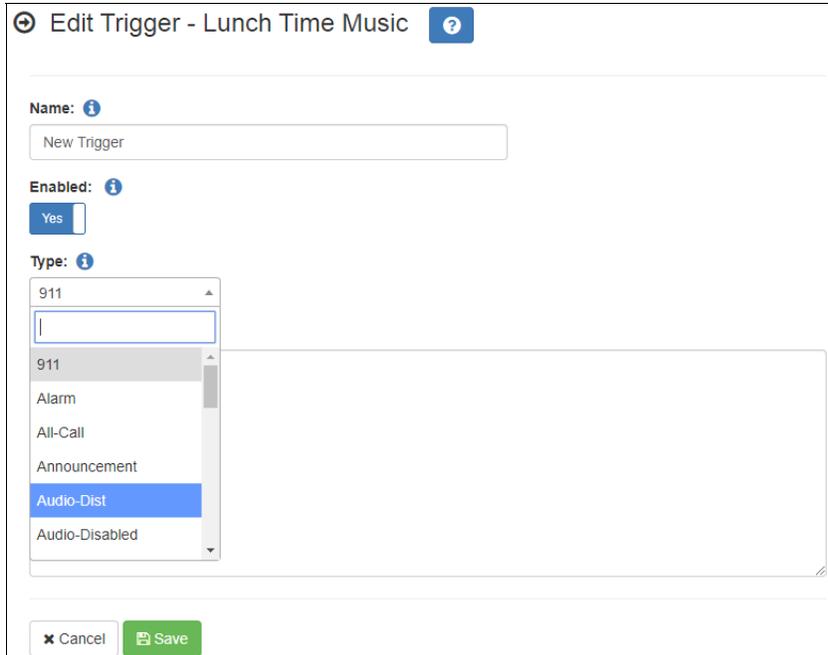
Figure 25. Adding Audio-Dist Trigger

The Routines feature lets you automatically launch one or more actions using Audio Distribution (Audio-Dist) as a trigger. For example, maybe you want a bell or tone to sound in the kitchen when the lunchtime music begins to alert kitchen staff that orders will soon be coming. To do this, you can create a routine, add an **Audio-Dist** trigger **Type**, and then create an action that plays a tone. For information about creating a routine, refer to the *Nyquist C4000 System Administrator Guide.*
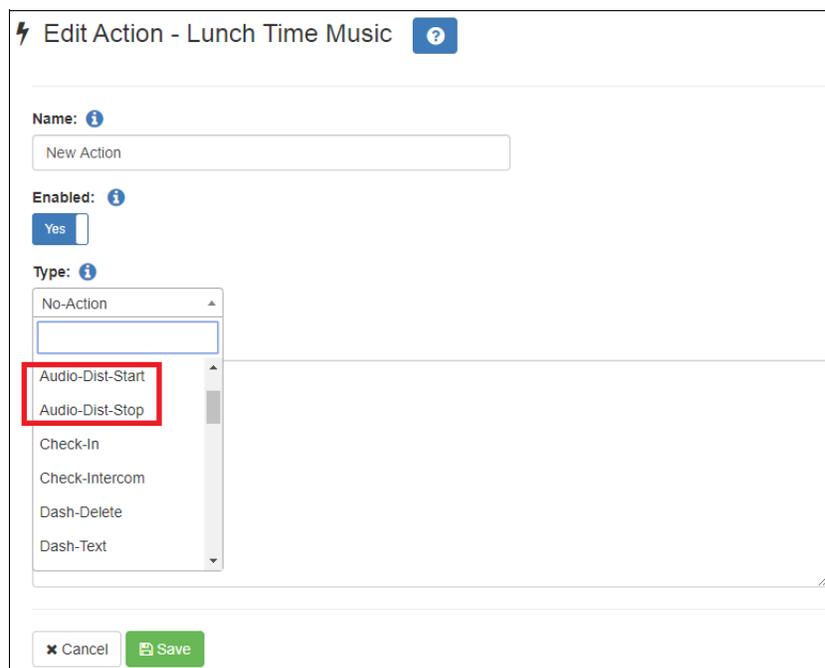
Figure 26. Audio Distribution Actions

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You can create a routine with an action of either **Audio-Dist-Start** to start audio distribution or **Audio-Dist-Stop** to stop audio distribution.

You also can allow third-party systems, such as access control systems, to launch a routine via I/O Controller Input Contact closure, or you can remotely launch a routine using the Routines API.

Other Features and Audio Distribution

Audio Distribution pauses automatically when a higher priority feature activates (for example, All-Call Page, Paging, Tones), and automatically resumes when the higher priority feature is finished.

Audio Distribution volume to all speakers can be changed by setting **Audio Distribution Cut Level (dB)**, available in **System Parameters**. The Audio Distribution volume to zones can be changed by setting **Audio Distribution Cut Level (dB)** in **Edit Zone**. For more information, refer to the *Nyquist C4000 System Administrator Guide*.

All C4000 stations are pre-programmed to receive Audio Distribution to All Stations. To disable Audio Distribution to a specific station, change **Multicast Audio Distribution** to **No** on the Edit Station page (refer to the *Nyquist C4000 System Administrator Guide*).

Any Admin web UI user may stop the Audio Distribution if his or her station has the **Audio Distribution** CoS Configuration parameter enabled.

Scheduled Audio has a higher priority than Audio Distribution. If you are playing Audio Distribution and an event with Scheduled Audio interrupts, the Audio Distribution briefly plays between the tone and the Scheduled Audio.

A playlist will keep playing until manually stopped.

Audio Distribution Status

When you start Audio Distribution, a popup window appears letting you know that Audio Distribution was enabled.
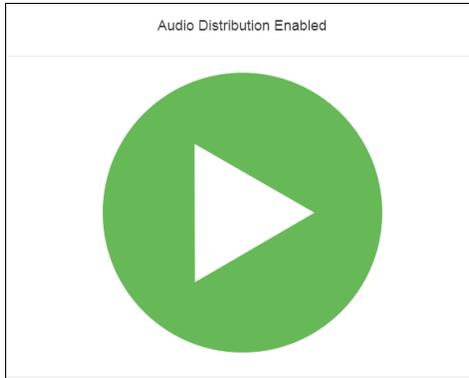
Figure 27. Audio Distribution Enabled

A popup window also appears when you stop Audio Distribution.
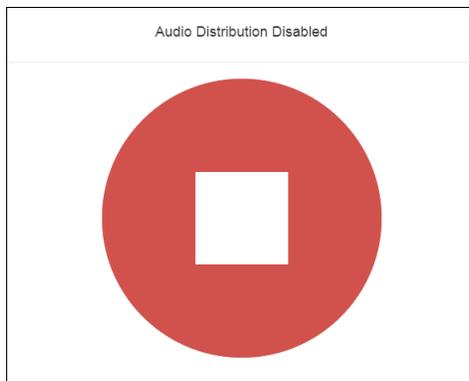
Figure 28. Audio Distribution Disabled

When Audio Distribution is enabled, an informational message appears in the Messages window of the Admin Web UI dashboard, indicating the song that is currently playing and to which speakers (all or selected) and zones audio is playing.

Figure 29. Audio Distribution Status

Using Announcements

Announcements are prerecorded audio files that can be scheduled to play during specific times and in specific zones, played manually via the dashboard, or played via routine actions. Announcements can be either normal announcements, such as prerecorded announcements about upcoming site events, or emergency announcements, such as pre-recorded shelter-in-place announcements that can be played during events such as tornado warnings or active shooter scenarios.

Announcements can also precede a page.

> *Note:* Make sure that stations and zones have been configured and that the station you are using to launch an announcement has the appropriate Class of Service (CoS) parameters set. The navigation bar does not appear if you are not authorized to make changes to the C4000 configuration. Contact your system administrator or refer to the *Nyquist C4000 System Administrator Guide.*

Starting and Stopping Announcements

You can launch previously recorded announcements from the dashboard and select the zone where the announcement will play.

To start and stop an announcement:

1 If not already on your dashboard, select **Dashboard** from the navigation bar.
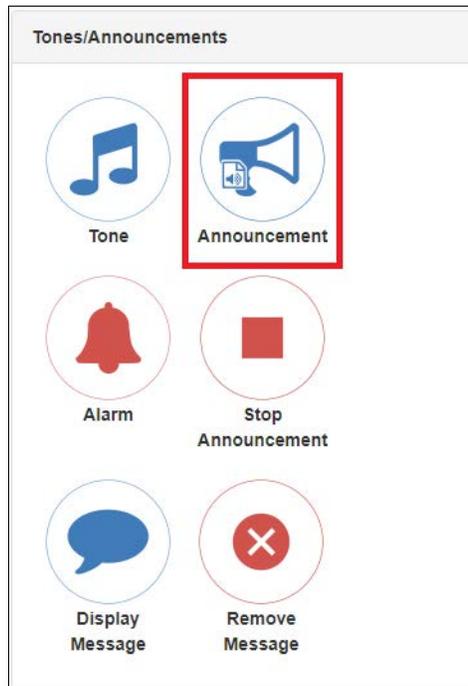
Figure 30. Announcement Icon

2 Under **Tones/Announcements**, select **Announcement**.
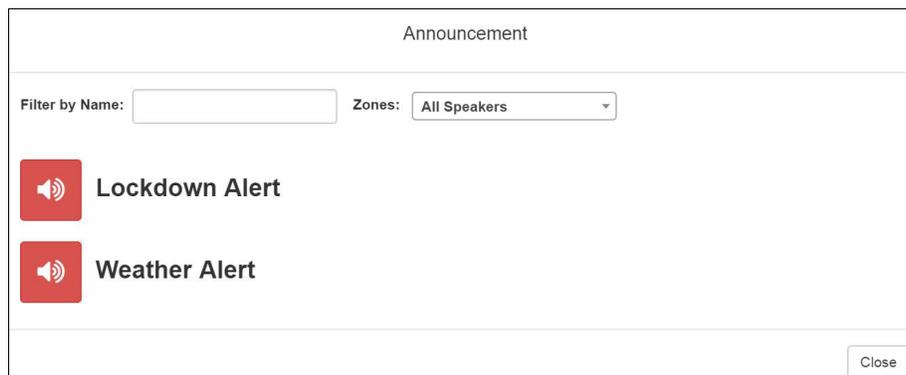
Figure 31. Announcement Page

3 On the Announcement page, use the **Zones** drop-down menu to select the zone where the announcement will play.

4 Select the announcement that you want to launch.

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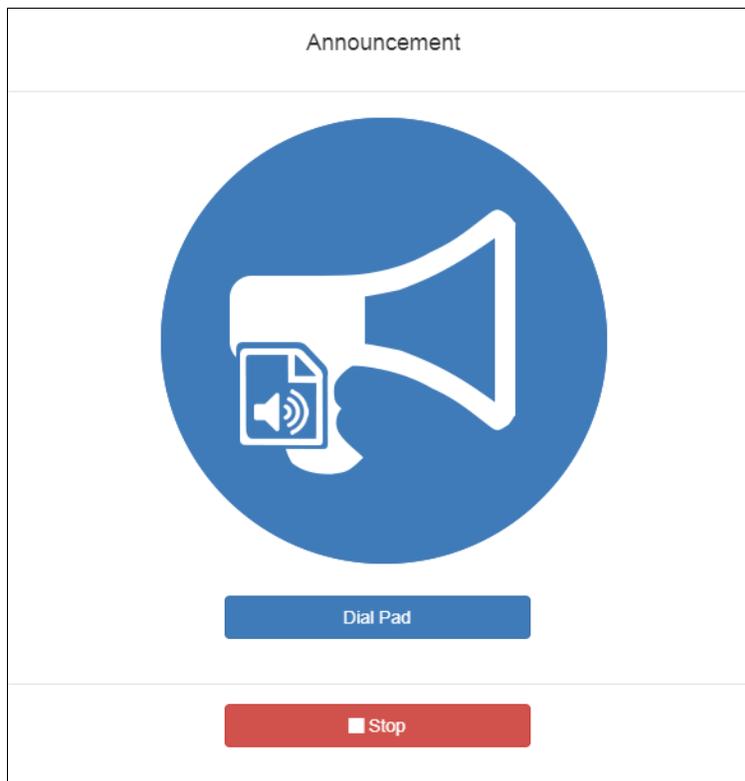
Figure 32. Announcement Page with Stop Button

5 If you must enter a password to complete this task, select **Dial Pad** and enter the 4-digit password.

6 If prompted, enter **1** for confirmation.

7 To end the announcement, select **Stop** (or **Close**, if the **Dial Pad** is displayed).

8 You also can stop an announcement by performing the following steps:

   a) Under **Tones/Announcements**, select **Stop Announcement**.

   b) Follow screen prompts.

An announcement ends automatically after it has reached its number of times to play.

If multiple announcements are playing, you can select to stop a specific announcement or stop all active announcements.

To stop an announcement when multiple announcements are running:

1 If not already on your dashboard, select **Dashboard** from the navigation bar.

2 Under **Tones/Announcements**, select **Stop Announcement**.

3 On the Stop Announcement page, select the announcement that you want to stop or select **Stop All Announcements**.

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4   If you must enter a password to complete this task, select **Dial Pad** and enter the 4-digit password.

Facility Announcement

If your system is configured with multiple facilities, you can use the Facility Announcement feature to play a predefined announcement at any one or more facilities.

Because the announcement will play simultaneously but independently at each facility, there are several behaviors of which the user should be aware:

- The announcement will *not* be synchronized across speakers from different facilities. If there are locations that are within hearing range of speakers from more than one facility, this could result in overlapping but unsynchronized audio playback.

- When playing announcements at remote facilities, the actual Announcement Audio to be played at each facility is determined by the DTMF code of the selected announcement. If a remote facility is configured with a different Announcement Audio for that DTMF code than that of the local facility, that facility will play a different audio announcement.

- Stopping the announcement through the Dashboard will only stop the audio for the current facility. To stop the announcement at other facilities, the user must log into the Dashboard of each facility and stop the announcement using the Stop Announcement button. For this reason, it is strongly recommended announcements *not* be configured

for continuous play (i.e., "Times to Play" equal to zero) if they will be used for multi-facility announcements.

Figure 33. Facility Announcement

To start a facility announcement:

1 If not already on your dashboard, select **Dashboard** from the navigation bar.

2 Under Multi-Site Calling/Paging, select **Facility Announcement**.

3 Select the announcement that you want to play from the Announcement drop-down.

4 Select one or more of the specified facilities at which the announcement is to be played. Selecting **All Facilities** will select all the facilities for you. Note that you can sort and filter the list of facilities by Name or Number.

5 Select the **Start Announcement** button.

Tip: As an alternative to the previous two steps, you can select the green announcement button next to a listed facility to immediately start the announcement at that one single facility.

6 If you must enter a password to complete this task, select **Dial Pad** and enter the 4-digit password.

7 If prompted, enter 1 for confirmation.

Warning	If you turn off the microphone on your computer, you cannot start audio distribution, tones, alarms, and so on. When attempting to make a call with the computer's microphone turned off, Nyquist automatically hangs up the call. If you make a second call, the dashboard displays a message that the phone is in use. Also, when the microphone is off and a bell tone comes in, Nyquist rings as opposed to auto answering.

8   If prompted, allow C4000 to use the microphone associated with your station.

Note: See *"Facility Announcement Priorities" on page 46* for details on how to determine if the announcement was successfully played.

9   To end the announcement at the current facility, select Stop (or Close, if the Dial Pad is displayed).

Announcements, Facilities, Zones, and Priorities

You can select a zone for an announcement to play or select to play an announcement to all speakers. The C4000 system also supports the simultaneous playing of multiple announcements to different zones.

However, there are some set rules and priorities that govern how and when announcements play. For example, announcements played via an I/O controller can be played to a selected zone but not to **All Speakers**.

When you attempt to play a non-emergency, or **Normal**, announcement to a zone, you will receive a busy signal if any of the following is true:

• An announcement, page, or recorded page is being played on the zone.

• An announcement is being played to **All Speakers**.

• An Alarm, Tone, All-Call, or Emergency All-Call is being played.

A **Normal** announcement plays to **All Speakers** only if all zones are idle and no higher level audio is playing. You will receive a busy signal if any of the following is true:

• A **Normal** or **Emergency** announcement is already playing to **All Speakers**.

• An announcement is already playing to a zone.

• A page or queued page is already playing to a zone.

• An Emergency All-Call, All-Call, Alarm, or Tone is already playing.

If you attempt to play an emergency announcement to a zone or to **All Speakers**, you will receive a busy signal if any of the following is true:

• An emergency announcement is already playing to the zone or to **All Speakers**.

- An Emergency All-Call is already playing.

If you attempt to play an emergency announcement to a zone or to **All Speakers** that is already playing a non-emergency announcement, an alarm or tone, a page or queued page, or an All-Call, the emergency announcement takes priority. A currently playing non-emergency announcement, alarm or tone, page or queued page, or All-Call will stop playing.

An **Emergency** announcement can be played on a zone while a Normal announcement plays on a different zone. Multiple **Emergency** and **Normal** announcements can be played to different zones (but not to **All Speakers**).

Facility Announcement Priorities

When making announcements to remote facilities, there is the possibility that one or more facilities may be unable to make the announcement due to higher priority features that are currently executing at that facility.

When you attempt to play a non-emergency, or **Normal**, announcement to remote facilities, you will receive a busy signal for any of the following scenarios.

- The local facility is targeted and it is executing a higher priority feature.
- Only one remote facility is targeted and it is executing a higher priority feature.

For all other scenarios, you will hear "Announcement on" and any facilities that were unable to play the announcement will record a busy status in the Call Details Record. This implies that when the local facility and one or more remote facilities are targeted, the busy signal and "Announcement on" indicators reflect the status of the local facility only; the announcement may or may not have played at the remote facilities.

Setting Up Facility Announcements

For announcements that will be played across remote facilities, ensure that the announcement has been added to each remote facility and that each has the same DTMF Code.

Because remote facility announcements cannot be stopped the same way as local announcements, announcements configured for continuous play (i.e., "Times to Play" property equal to zero) should not be used as facility announcements.

Tip: If you wish to play an announcement continuously on the local facility, yet use the same announcement remotely via Facility Announcements, configure two versions of the announcement at each facility: one for continuous play (i.e., "Times to Play" equals zero) and one for non-continuous play (i.e., "Times to Play" is non-zero). Ensure the DTMF code for the non-continuous announcements have the same value at each facility. Only the non-continuous version of the announcement will be displayed for play to remote facilities.

Adding an Announcement

If the permission and CoS settings allow, you can upload an announcement, which can be an audio recording, such as a message or tone. The announcement can be scheduled to play at certain times and in certain zones.

Through the Add Announcement page, you also can enter text to be converted into speech provided you have the feature license that allows this option.

> *Note:* The navigation bar does not appear if you are not authorized to make changes to the C4000 configuration. Contact your system administrator or refer to the *Nyquist C4000 System Administrator Guide*.
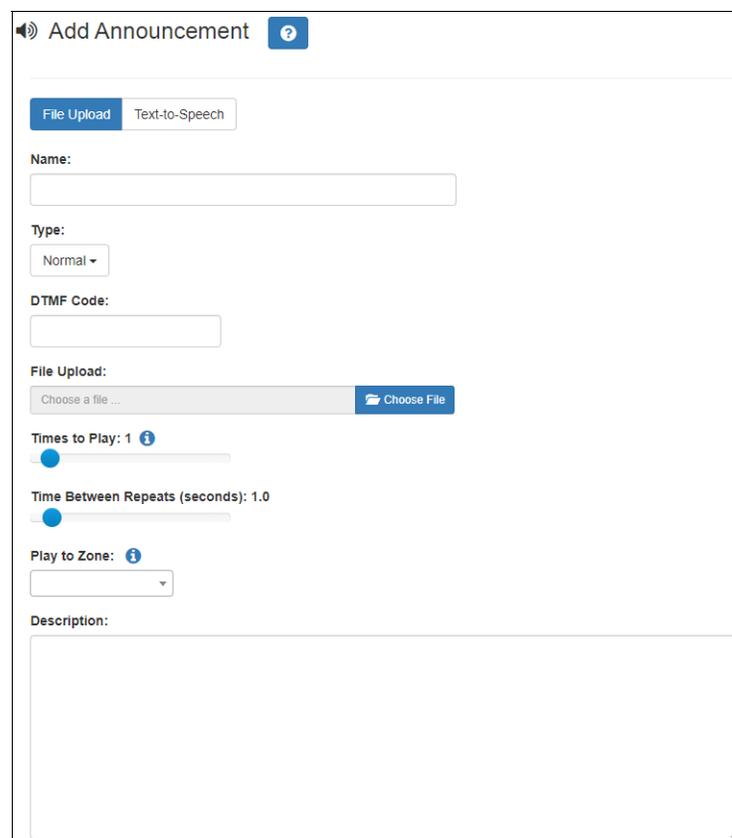
Figure 34. Add Announcement Page

To upload an announcement file:

1   On the navigation bar, expand **Audio**.

2   Select **Announcements**.

3   On the Announcements page, select the **Add** icon.

4   Complete the parameters on the Add Announcement page (see *Table 13*).

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5 Select **Save**.

Table 13. Add Announcement Page Parameters

Name

Provide a name for the announcement.

Note: Valid characters include uppercase letters (A-Z), low-ercase letters (a-z), numerals (0-9), space, and the following special characters: **!@$*?-.,**.

Type

Use the drop-down menu to select if the announcement is **Normal** or **Emergency**.

DTMF Code

Provide a Dual-Tone Multi-Frequency (DTMF) code for this announcement to use when manually starting the announcement from an Admin Phone. The number can have from 1 to 10 digits. You cannot assign the same DTMF code to multiple announcements.

Note: When you record an announcement by dialing *990 or by selecting **Record Announcement** on the Admin phone's **Announce** menu, the initial DTMF Code for the recorded and saved announcement will be set to the announcement's row ID. You can change the DTMF Code after the announcement is saved by editing the announce-ment in the Admin Web Interface **Announcements** view.

The saved announcement has **Play to Zone** set to blank (no zone selected). This means that when you play an announcement via an IP phone **Announcement** menu selection, you will be asked to enter a zone number (where 0 = All Speakers). You can define a permanent zone number for the saved announcement by updating **Play to Zone** after the recorded announcement has been saved.

File Upload

Select **Choose File**, navigate to the audio file for this announcement, and then select the file. C4000 supports both WAV and MP3 file formats.

Note: This option appears only if you have selected the **File Upload** tab.

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Table 13. Add Announcement Page Parameters (Continued)

Times to Play	Select the number of times the announcement will play. Parameters are between 0 and 10. *Note:* A setting of 0 results in the playing continuously until it is manually stopped via the dashboard. *Note:* Announcements configured for continuous playback should not be used with the Facility Announcement feature.
Time Between Repeats (seconds)	Select the time in seconds between replaying of the announcement. You can select between 0.5 to 5 in 0.5 increments.
Text-To-Speech	Type the text that you want converted to speech for this announcement. Ensure that the **File Upload** parameter is blank. The system will generate a .wav file. *Note:* This field appears only if you have the Text-To-Speech feature license.
Play to Zone	Select either **All Speakers** or a specific zone for this announcement to play. *Note:* If the **Type** for the station is set to **Admin Web Interface**, **Admin Phone**, **IP Phone**, **Analog Phone**, or **Mobile Device** and an **Announcement Zone** was set for the station, the **Announcement Zone** overrides the **Play to Zone**.
Description	Provide a description of the announcement. *Note:* Valid characters include uppercase letters (A-Z), lowercase letters (a-z), numerals (0-9), space, and the following special characters: **!@$*?-.,**.

Using SSML for Text-to-Speech Entries

You can use Speech Synthesis Markup Language (SSML), an XML-based markup language for speech synthesis applications, when typing text that you want converted to speech for announcements. You can use SSML formatting to insert pauses, adjust speech rate, adjust voice pitch, adjust output volume, add emphasis to speech, or spell words phonetically. The following table provides examples of SSML formats that can be used when adding announcements.

Table 14. SSML Formats for Text-to-Speech Entries

Insert Silence/Pauses

- This is not <break strength='none' /> a pause.
- This is a <break strength='x-weak' /> phrase break.
- This is a <break strength='weak' /> phrase break.
- This is a <break strength='medium' /> sentence break.
- This is a <break strength='strong' /> paragraph break.
- This is a <break strength='x-strong' /> paragraph break.
- This is a <break time='3s' /> three second pause.
- This is a <break time='4500ms' /> 4.5 second pause.
- This is a <break /> sentence break.

Adjust Speech Rate

- I am now <prosody rate='x-slow'>speaking at half speed.</prosody>
- I am now <prosody rate='slow'>speaking at 2/3 speed.</prosody>
- I am now <prosody rate='medium'>speaking at normal speed.</prosody>
- I am now <prosody rate='fast'>speaking 33% faster.</prosody>
- I am now <prosody rate='x-fast'>speaking twice as fast</prosody>
- I am now <prosody rate='default'>speaking at normal speed.</prosody>
- I am now <prosody rate='.42'>speaking at 42% of normal speed.</prosody>
- I am now <prosody rate='2.8'>speaking 2.8 times as fast</prosody>
- I am now <prosody rate='-0.3'>speaking 30% more slowly.</prosody>
- I am now <prosody rate='+0.3'>speaking 30% faster.</prosody>

Table 14. SSML Formats for Text-to-Speech Entries (Continued)

Adjust Voice Pitch

- <prosody pitch='x-low'>This is half-pitch</prosody>
- <prosody pitch='low'>This is 3/4 pitch.</prosody>
- <prosody pitch='medium'>This is normal pitch.</prosody>
- <prosody pitch='high'>This is twice as high.</prosody>
- <prosody pitch='x-high'>This is three times as high.</prosody>
- <prosody pitch='default'>This is normal pitch.</prosody> <prosody pitch='-50%'>This is 50% lower.</prosody>
- <prosody pitch='+50%'>This is 50% higher.</prosody>
- <prosody pitch='-6st'>This is six semitones lower.</prosody>
- <prosody pitch='+6st'>This is six semitones higher.</prosody>
- <prosody pitch='-25Hz'>This has a pitch mean 25 Hertz lower.</prosody>
- <prosody pitch='+25Hz'>This has a pitch mean 25 Hertz higher.</prosody>
- <prosody pitch='75Hz'>This has a pitch mean of 75 Hertz.</prosody>

Table 14. SSML Formats for Text-to-Speech Entries (Continued)

Adjust Output Volume	• `<prosody volume='silent'>This is silent.</prosody>` • `<prosody volume='x-soft'>This is 25% as loud.</prosody>` • `<prosody volume='soft'>This is 50% as loud.</prosody>` • `<prosody volume='medium'>This is the default volume.</prosody>` • `<prosody volume='loud'>This is 50% louder.</prosody>` • `<prosody volume='x-loud'>This is 100% louder.</prosody>` • `<prosody volume='default'>This is the default volume.</prosody>` • `<prosody volume='-33%'>This is 33% softer.</prosody>` • `<prosody volume='+33%'>This is 33% louder.</prosody>` • `<prosody volume='33%'>This is 33% louder.</prosody>` • `<prosody volume='33'>This is 33% of normal volume.</prosody>`
Add Emphasis to Speech	• This is `<emphasis level='strong'>stronger</emphasis>` than the rest. • This is `<emphasis level='moderate'>stronger</emphasis>` than the rest. • This is `<emphasis level='none'>the same as</emphasis>` than the rest.
Spell Words Phonetically	You say `<phoneme ph='t ah0 m ey1 t ow0'>tomato</phoneme>`, I say `<phoneme ph='t ah0 m aa1 t ow0'>tomato</phoneme>`

Viewing Announcements

Through the Announcements page, you can view a list of all announcements that are available for scheduling, delete an announcement, and select to edit or add an announcement.

> *Note:* The navigation bar does not appear if you are not authorized to make changes to the C4000 configuration. Contact your system administrator or refer to the *Nyquist C4000 System Administrator Guide.*

Figure 35. Announcements Page

To view a list of all announcements that are available for scheduling:

1 On the navigation bar, expand **Audio**.

2 Select **Announcements**.

The following parameters in *Table 15* appear for each announcement file:

Table 15. Announcements Page Parameters

Name	Displays the user-provided name of the announcement file.
	Note: Valid characters include uppercase letters (A-Z), lowercase letters (a-z), numerals (0-9), space, and the following special characters: **!@$*?-.,**.
Type	Displays if the announcement is a **Normal** or an **Emergency** announcement.
DTMF Code	Displays the DTMF code used with manual dial pad announcement or tone activation.
Creation Date/Time	Displays when the announcement was created.
Created By	Displays the extension that is to be considered the source of the announcement for CoS considerations.

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Table 15. Announcements Page Parameters (Continued)

Times to Play	Displays the number of times the announcement will play. This number can range from 0 through 10. *Note:* A setting of 0 results in the announcement playing continuously until it is manually stopped via the dashboard.
Times Between Repeats (seconds)	Displays the time in seconds before replaying the announcement.
Play to Zone	Displays either **All Speakers** or a specific zone for this announcement to play. *Note:* If the **Type** for the station is set to **Admin Web Interface**, **Admin Phone**, **IP Phone**, **Analog Phone**, or **Mobile Device** and an **Announcement Zone** was set for the station, the **Announcement Zone** overrides the **Play to Zone**.
Description	Provides a description of the announcement. *Note:* Valid characters include uppercase letters (A-Z), lowercase letters (a-z), numerals (0-9), space, and the following special characters: **!@$*?-.,**.
Playback	Allows you to manually play the announcement. Selecting the **Menu** icon and then the down arrow in this field also allows you to download and save the announcement.

Editing Announcements

> *Note:* The navigation bar does not appear if you are not authorized to make changes to the C4000 configuration. Contact your system administrator or refer to the *Nyquist C4000 System Administrator Guide*.

From the Edit Announcement page, you can edit an audio file's parameters such as times to play.

To edit an announcement:

1 On the navigation bar, expand **Audio**.

2 Select **Announcements**.

3 On the Announcements page, select the **Edit** icon next to the announcement that you want to edit.

4 Make the desired changes (see *Table 16*).

5 Select **Save**.

Table 16. Edit Announcement Page Parameters

Name	Displays the user-provided name of the announcement file. *Note:* Valid characters include uppercase letters (A-Z), low-ercase letters (a-z), numerals (0-9), space, and the following special characters: **!@\$*?-.,**.
Type	Indicates if the announcement is a **Normal** or an **Emergency** announcement.
DTMF Code	DTMF code for this announcement to use when manually starting the announcement from an Admin Phone. The number can have from 1 to 10 digits. You cannot assign the same DTMF code to multiple announcements. *Note:* When you record an announcement by dialing *990 or by selecting **Record Announcement** on the Admin phone's **Announce** menu, the initial DTMF Code for the recorded and saved announcement will be set to the announcement's row ID. You can change the DTMF Code after the announcement is saved by editing the announcement in the Admin Web Interface **Announcements** view. The saved announcement has **Play to Zone** set to blank (no zone selected). This means that when you play an announcement via an IP phone **Announcement** menu selection, you will be asked to enter a zone number (where 0 = All Speakers). You can define a permanent zone number for the saved announcement by updating **Play to Zone** after the recorded announcement has been saved.
Created By	Displays the number for the station used to create or down-load the announcement. *Note:* This field cannot be edited.
Times to Play	Select the number of times the announcement will play. Parameters are between 0 and 10. *Note:* A setting of 0 results in the playing continuously until it is manually stopped via the dashboard. *Note:* Announcements configured for continuous playback should not be used with the Facility Announcement feature.

Table 16. Edit Announcement Page Parameters (Continued)

Times Between Repeats (seconds)	Select the time in seconds between replaying of the announcement. You can select between 0.5 to 5 in 0.5 increments.
Play to Zone	Select either **All Speakers** or a specific zone for this announcement to play. You can leave this field blank if you want the Nyquist server to prompt for a zone number to use whenever an announcement is started from an IP phone. This will allow callers to direct the announcement to any zone desired at the time it is played. *Note:* If the **Type** for the station is set to **Admin Web Interface**, **Admin Phone**, **IP Phone**, **Analog Phone**, or **Mobile Device** and an **Announcement Zone** was set for the station, the **Announcement Zone** overrides the **Play to Zone**.
Description	Provides a description of the announcement. *Note:* Valid characters include uppercase letters (A-Z), lowercase letters (a-z), numerals (0-9), space, and the following special characters: **!@$*?-.,**.

Deleting an Announcement

To delete an announcement that is associated with a schedule, you must delete the schedule announcement first and then delete the announcement. To delete a schedule, contact your system administrator or refer to the *Nyquist C4000 System Administrator Guide*.

Note: You cannot delete an announcement that is used in a routine with an **Announcement** action **Type**. (For more information about routines, refer to the *Nyquist C4000 System Administrator Guide*.)

Note: The navigation bar does not appear if you are not authorized to make changes to the C4000 configuration. Contact your system administrator or refer to the *Nyquist C4000 System Administrator Guide*.

To delete an announcement:

1 On the navigation bar, expand **Audio**.

2 Select **Announcements**.

3   On the Announcements page, select the **Delete** icon next to the announcement that you want to delete.

4   When prompted, select **Delete**.

Managing Alarms and Tones

C4000 provides tones for use with events, such as schedules, or as audio indicators, such as alarms. You also can download and generate customized tones or select to use a line input channel as the tone source. Default tones include white noise and pink noise that you can use to tune paging volumes for time-based zones.

> *Note:* Make sure that stations and zones have been configured and that the station you are using to launch an alarm or tone has the appropriate Class of Service (CoS) parameters set. The navigation bar does not appear if you are not authorized to make changes to the C4000 configuration. Contact your system administrator or refer to the *Nyquist C4000 System Administrator Guide*.

Stopping and Starting Alarms

Alarms are audio files used to indicate a situation, such as a fire. When you elect to sound an alarm, only the tones with a type of **Alarm** appear in the selection list.

To start and stop an alarm:

1   On the navigation bar, select **Dashboard**.
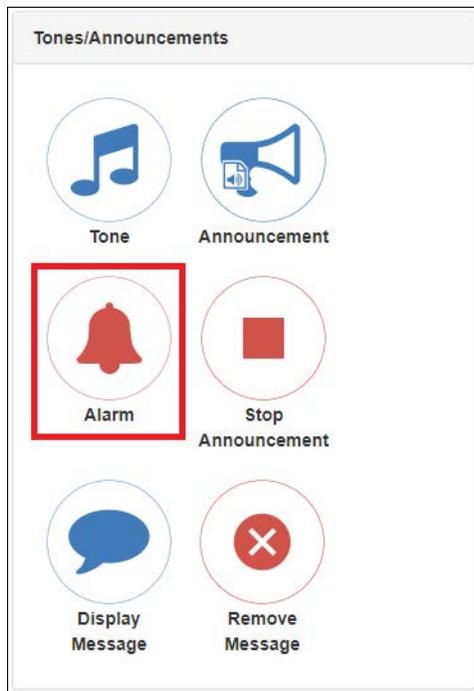
Figure 36. Alarm Button

2   Under Tones/Announcements, select **Alarm**.
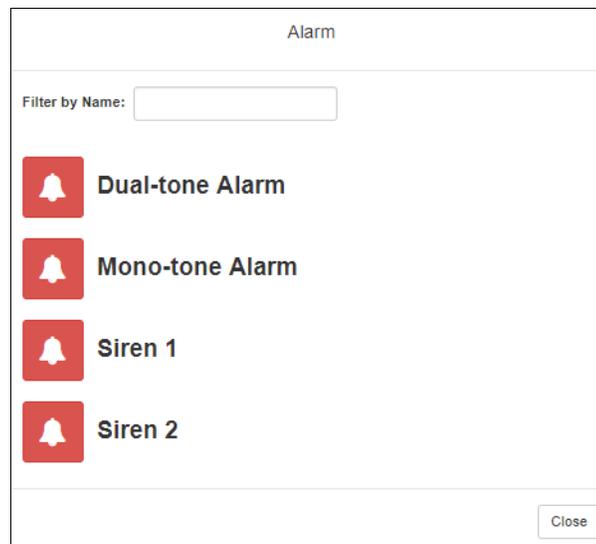
Figure 37. Alarm Page

3   On the Alarm page, select the alarm that you want to sound.

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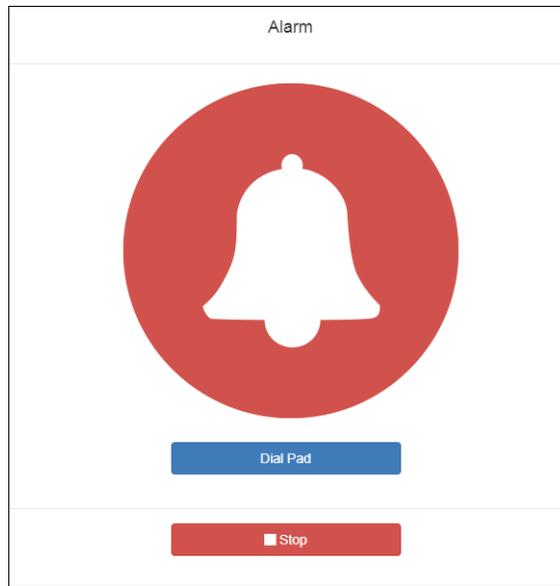
Figure 38. Alarm Page with Stop Option

4 If you must enter a password to complete this task, select **Dial Pad** and enter the 4-digit password.

5 If prompted, enter **1** for confirmation.

6 To end the alarm, select **Stop**.

Starting and Stopping Tones

Tones are similar to alarms, but are usually used to signal an announcement or a time-based event. Launching a tone sends a tone to all zones with a **Type** of **Time** or a combination of **Time** and **Paging**, **Audio**, or both.

To start and stop a tone:

1 If not already on your dashboard, select **Dashboard** from the navigation bar.
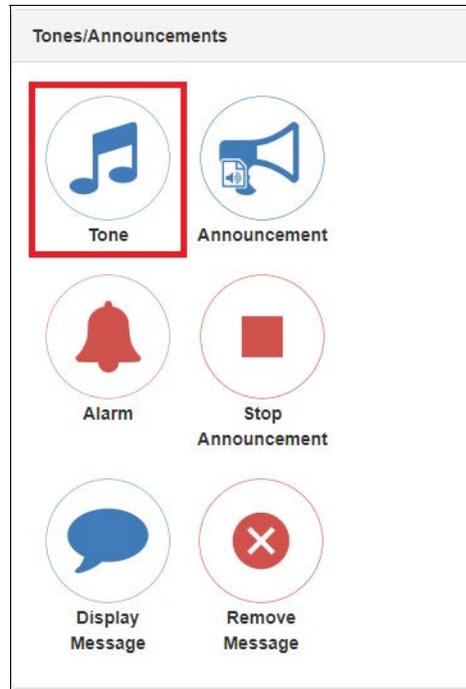
Figure 39. Tone Icon

2   Under Tones/Announcements, select **Tone**.
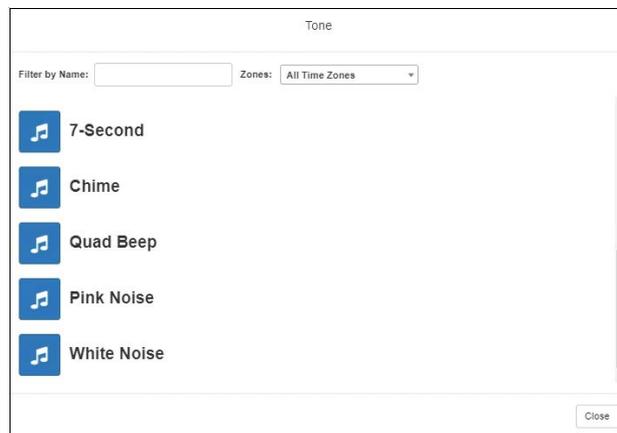
Figure 40. Tone Page

3   Select the zone at which you want the tone to play, or select All Time Zones.

Note: The only zones that are available are those with a Type of Time.

4   On the Tone page, select the tone that you want to sound.

Only tones that have not been hidden appear.

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Note: When a tone is started, the Tone icon on the Dashboard changes from a blue note to a red box to indicate that pressing the button will stop the Tone that is currently playing.

Note: Tones play continuously if one of three conditions exists: Its **Type** is **Alarm**, times to play is set to 0, or length is set to 0.
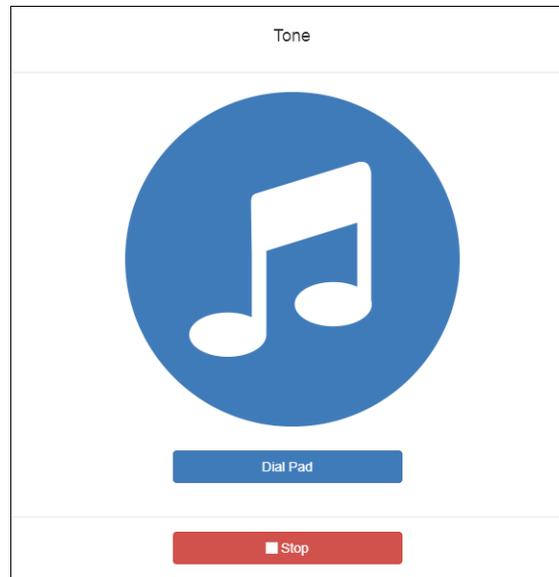
Figure 41. Tone Page with Options

5   If you must enter a password to complete this task, select **Dial Pad** and enter the 4-digit password.

6   If prompted, enter **1** for confirmation.

7   Select the **Tone** icon to end the tone. A tone will stop playing automatically after it has reached its number of times to play.

Viewing Available Tones

Through the Tones page, you can view a list of available tones, delete user-provided tones, or select to add or edit a tone. You cannot delete a default tone, but you can prevent it from being viewed on the dashboard or on Admin Phones that have a tones/alarms menu. A hidden tone still appears on the Tones page.

Figure 42. Tones Page

To view tones:

1 On the navigation bar, expand **Audio**.

2 Select **Tones**.

Table 17 describes the tones parameters that appear.

Table 17. Tones Page Parameters

Name	Provides a name for the announcement file.
	Note: Valid characters include uppercase letters (A-Z), lowercase letters (a-z), numerals (0-9), space, and the following special characters: **!@$*?-.,**.
Type	Displays the tone type as **Normal** or **Alarm**.

Table 17. Tones Page Parameters (Continued)

Hide	Specifies if the tone should be hidden from the dashboard view or Admin Phone menu.
DTMF Code	Provides the DTMF code used with manual dial pad announcement or tone activation.
Length	Time in seconds that the tone plays.
Times to Play	Displays the number of times the tone plays. Parameters are 0 to 10. *Note:* A setting of 0 results in the tone playing continuously until it is manually stopped via the dashboard.
Time Between Repeats (seconds)	Displays the time in seconds before the tone is replayed. You can select between 0.5 to 5 in 0.5 increments.
Playback	Allows you to manually play the tone. Selecting the **Menu** icon in this field also allows you to download and save the announcement.

Adding Tones

C4000 provides three ways of adding a tone:

• Uploading a file that has been copied to a location on your network, local computer, or to removable media, such as a flash drive, to which you have access

• Generating a one-frequency tone that can be saved (See *"Generating Tones" on page 65.*)

• Selecting a two-channel or four-channel audio power amplifier or MMPA and the input channel to generate a tone

In each scenario, you are adding a tone to your C4000 system that can be used later via either a schedule or manual tone activation.

Note: The navigation bar does not appear if you are not authorized to make changes to the C4000 configuration. Contact your system administrator or refer to the *Nyquist C4000 System Administrator Guide.*

Uploading Tones

Figure 43. Add Tone – Upload File

To upload a tone:

1 On the navigation bar, expand **Audio**.

2 Select **Tones**.

3 On the Tones page, select the **Add** icon.

4 On the Add Tone page, ensure **Upload File** is selected.

5 Complete the parameters (see *Table 18*).

6 Select **Save**.

<div align="center">

Table 18. Add Tone Page Parameters (Upload)

</div>

Name	Provide a name for this tone.
	Note: Valid characters include uppercase letters (A-Z), lowercase letters (a-z), numerals (0-9), space, and the following special characters: **!@$*?-.,**.
Type	Use the drop-down menu to select if the tone is **Normal** or **Alarm**.
Hide	Specify if the tone is to be hidden or displayed on the dashboard view.
Times to Play	Select the number of times the tone will play. Parameters are 0 through 10.
	Note: A setting of 0 results in the tone playing continuously until it is manually stopped via the dashboard.
Time Between Repeats (Seconds)	Select the time in seconds between replaying of the tone. You can select between 0.5 and 5 in 0.5 increments.
DTMF Code	Provide the DTMF code used when manually activating the tone via dashboard dial pad or IP phone keypad.
File Upload	Select **Choose File**, navigate to the audio file, and then select the file.

Generating Tones

Generating a one-frequency tone is another way to add a tone if you do not want to use the default tones and do not have a way to upload a tone from a network or removable media location.

Figure 44. Add Tone – Generate Tone

To generate a tone:

1 On the navigation bar, expand **Audio**.

2 Select **Tones**.

3 On the Tones page, select the **Add** icon.

4 On the Add Tone page, select **Generate Tone**.

5 Complete the parameters (see *Table 19*).

6 Select **Save**.

Table 19. Add Tone Page Parameters (Generate)

Name	Provide a name for this tone.
	Note: Valid characters include uppercase letters (A-Z), lowercase letters (a-z), numerals (0-9), space, and the following special characters: **!@$*?-.,**.
Type	Select if the announcement to follow is a normal or an emergency announcement.
Hide	Specify if the tone is to be hidden or displayed on the dashboard view.
Frequency (Hz)	Enter the frequency for the tone. You can select a frequency from 300 to 2000 Hz.
Duration (seconds)	Enter the time in seconds that the tone is to play.
Times to Play	Select the number of times the file will play. Parameters are 0 through 10.
	Note: A setting of 0 results in the file playing continuously until it is manually stopped via the dashboard.
Time Between Repeats (seconds)	Select the time in seconds between replaying of the file. You can select between 0.5 and 5 in 0.5 increments.
DTMF Code	Provide the DTMF code used when manually activating the tone via dashboard dial pad or IP phone keypad.

Using Line Input for Tones

Selecting Line Input from the Add Tone page allows you to select a two-channel or four-channel audio power amplifier or MMPA channel to use as a source for a tone.

Note: The navigation bar does not appear if you are not authorized to make changes to the C4000 configuration. Contact your system administrator or refer to the *Nyquist C4000 System Administrator Guide.*

Figure 45. Add Tone – Line Input

To add a line input tone:

1 On the navigation bar, expand **Audio**.

2 Select **Tones**.

3 On the Tones page, select the **Add** icon.

4 On the Add Tone page, select **Line Input**.

5 Complete the parameters (see *Table 20*).
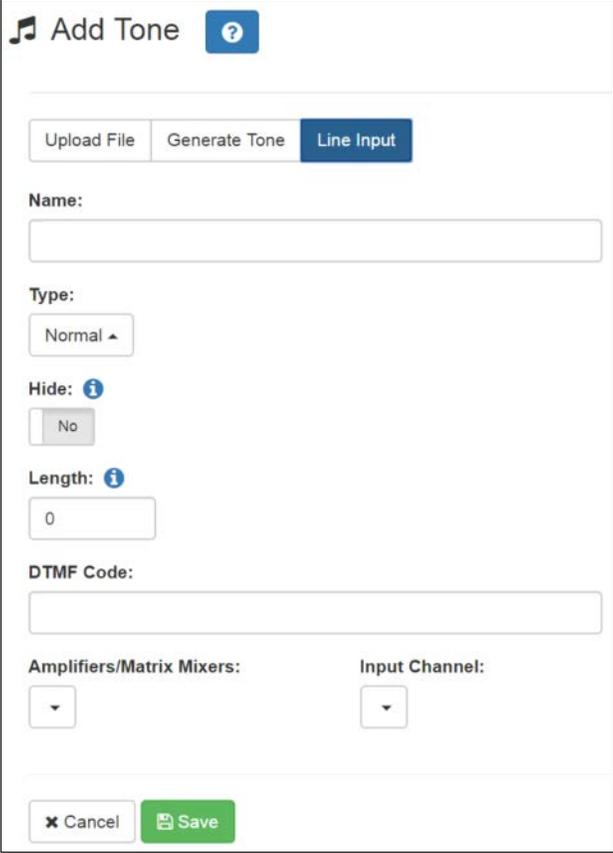
6 Select **Save**.

Table 20. Add Tone Page Parameters (Line Input)

Name	Provide a name for this tone. *Note:* Valid characters include uppercase letters (A-Z), lowercase letters (a-z), numerals (0-9), space, and the following special characters: **!@$*?-.,**.
Type	Select if the announcement to follow is a normal or an emergency announcement.
Hide	Specify if the tone is to be hidden or displayed on the dashboard view.
Length	Enter the number of seconds for the tone to play. The length can range from 0 to 999999. *Note:* A setting of 0 results in the file playing continuously until it is manually stopped via the dashboard.
DTMF Code	Provide the DTMF code used when manually activating the tone via dashboard dial pad or IP phone keypad.
Amplifiers/Matrix Mixers	Use the drop-down menu to select the two-channel or four-channel audio power amplifier or MMPA and its associated station number.
Input Channel	Specify the matrix channel being used for input.

Editing Tones

You can edit parameters of existing tones, but which parameters can be changed depends on whether the tone is a default tone or a user-added tone. For example, you cannot change the **Name** for a default tone, but you can change that parameter for a tone that you added. Some parameters appear only for Line Input tones.

Note: The navigation bar does not appear if you are not authorized to make changes to the C4000 configuration. Contact your system administrator or refer to the *Nyquist C4000 System Administrator Guide*.
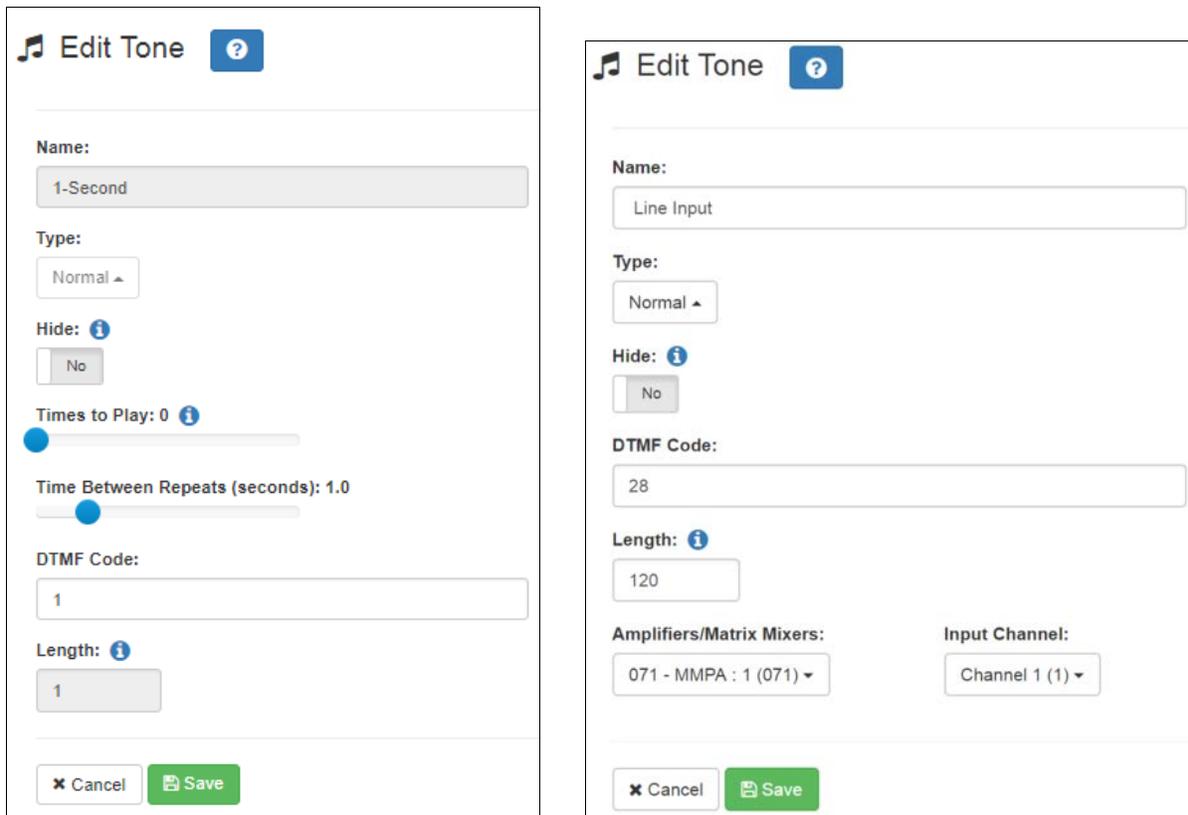
Figure 46. Edit Tone Pages

To edit a tone:

1   On the navigation bar, expand **Audio**.

2   Select **Tones**.

3   On the Tones page, select the **Edit** icon.

4   On the Edit Tone page, make changes to the parameters (see *Table 21*).

5   After completing all changes, select **Save**.

Table 21. Edit Tone Page Parameters

Name	Displays the name for this tone.
	Note: This parameter cannot be changed for default system tones.
	Note: Valid characters include uppercase letters (A-Z), lowercase letters (a-z), numerals (0-9), space, and the following special characters: **!@$*?-.,**.
Type	Indicates if the tone type is **Normal** or **Alarm**.
Hide	Specifies if the tone is to be hidden from the dashboard view.
Times to Play	Displays the number of times the tone will play. Parameters are 0 through 10.
	Note: A setting of 0 results in the tone playing continuously until it is manually stopped via the dashboard. This parameter does not appear for Line Input tones.
Time Between Repeats (second)	Displays the time in seconds between replaying of the tone. You can select between 0.5 to 5 in 0.5 increments.
	Note: This parameter does not appear for Line Input tones.
DTMF Code	Provides the DTMF code used with manual dial pad announcement or tone activation.
Length	Provides the length of the tone.
	Note: This parameter cannot be changed except for Line Input tones.
File Upload	Select **Choose File**, navigate to the audio file, and then select the file if you want to choose a new file.
	Note: This parameter appears only for user-provided tones but not for Line Input tones.
Amplifiers/Matrix Mixers	Specifies the two-channel or four-channel audio power amplifier or MMPA and its associated station number.
	Note: This parameter appears only for Line Input tones.
Input Channel	Specifies the matrix channel being used for input.
	Note: This parameter appears only for Line Input tones.

Tone Operational Notes and Limitations

- The system supports a single Manual tone playing at a time. If a tone is already playing (regardless of destination), a caller that attempts to start a second manual tone will receive a busy signal.

- If a specific zone is not specified, the tone will play to all Time type zones. In this case, if a queued page is playing in a Time type zone, the queued page will be stopped and re-queued.

- If a specific zone is specified, the tone will play to the specified zone. In this case, if a queued page is playing in the specified zone, the queued page will be stopped and re-queued. If queued pages are playing in time type zones not equal to the specified zone, those queued pages will continue to play, along with the manual tone to the specified zone.

- If a specific zone is specified, the dashboard message will use the following format:

    Tone (<station_extension> -> <zone_name>): <tone_name>

  For example:

    Tone (100 -> Library): Chime

- Routine triggers that use the tone trigger type do not include a zone filter, thus tone based routine triggers are activated whenever a tone is played to any zone.

- Specifying a zone to manually play a tone is not supported by Nyquist I/O Controller Rules. If you need to direct a manual tone to a specific zone in response to an I/O Controller input closure, use a routine for that purpose. The routine should trigger based on the I/O controller input closure, and include an action to start the manual tone to a specified zone.

Making Pages and Calls

Paging and telephone call features appear in the Calling/Paging section of the dashboard.
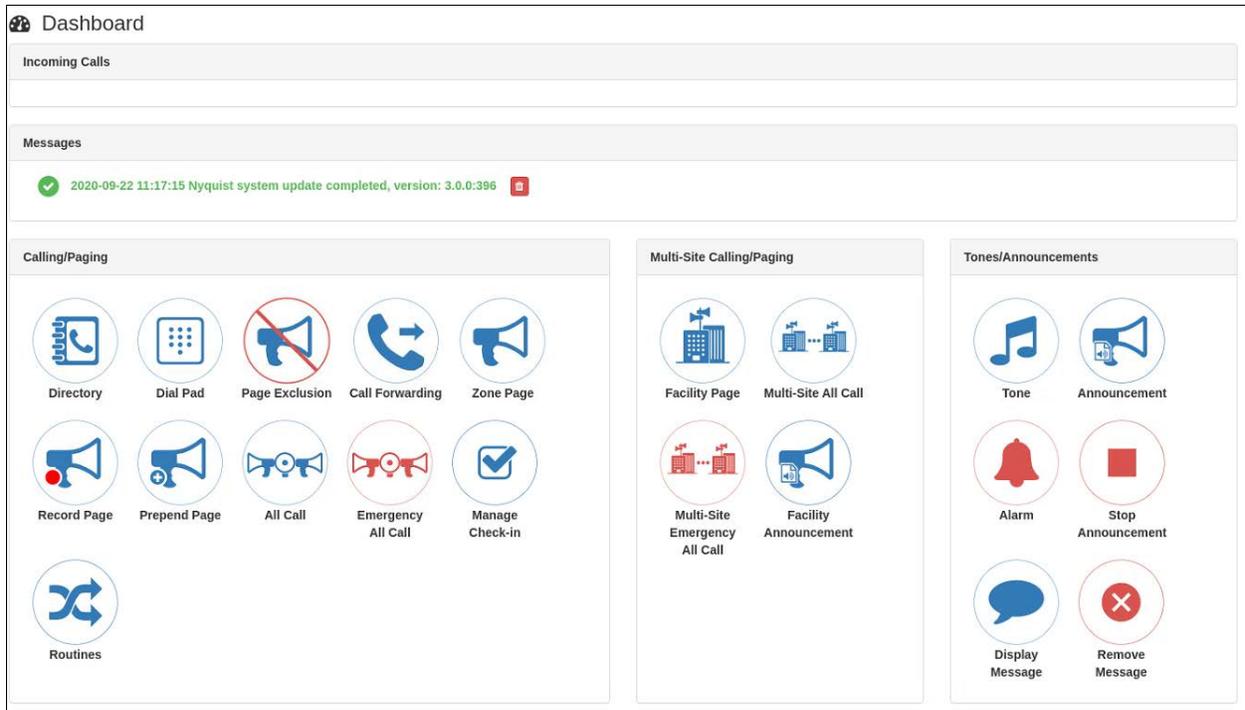
Figure 47. C4000 Dashboard

Managing Calls

C4000 provides two ways to place a call via the dashboard:

* Through the use of a directory
* Through the use of a dial pad

Note: Placing intercom calls requires an Intercom License.

Placing Call Using Directory

The C4000 directory is a list of all stations that can receive calls. These can include computers with the Admin Web UI, computers with the Web UI, telephones, VoIP speakers, or digital call switches and speakers.

To place a call using the directory:

1 If not already on your dashboard, select **Dashboard** from the navigation bar.
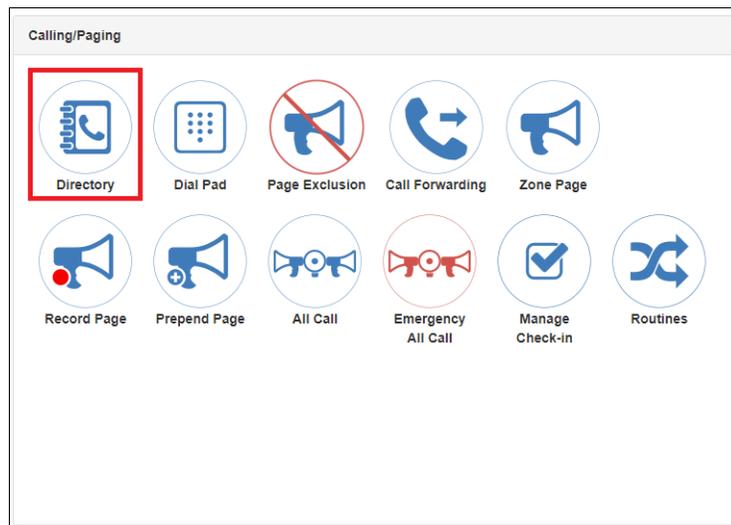
Figure 48. Directory Button

2 Under Calling/Paging, select **Directory**.
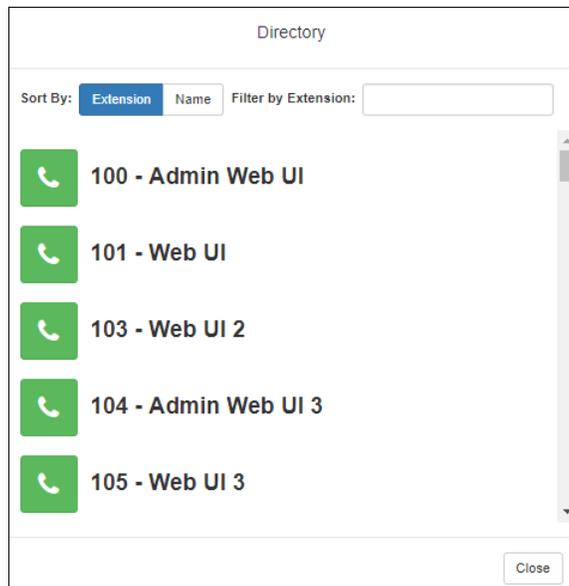
Figure 49. Directory Page

3 On the Directory popup, select the extension that you want to call.
Note that you can sort the list of extensions by extension number or name.
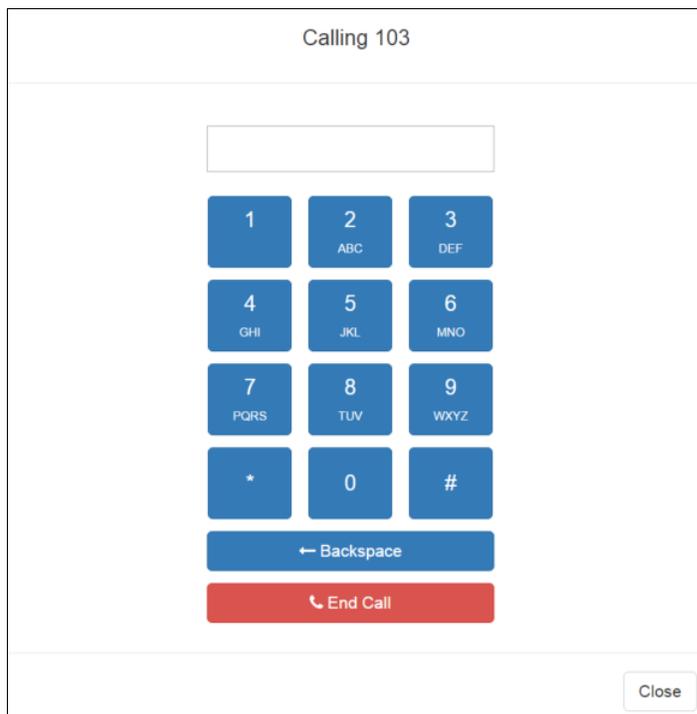
Figure 50. Calling Extension

4 Select **End Call** to end the call.

Placing Call Using Dial Pad

To place a call using the Dial Pad:

1 If not already on your dashboard, select **Dashboard** from the navigation bar.
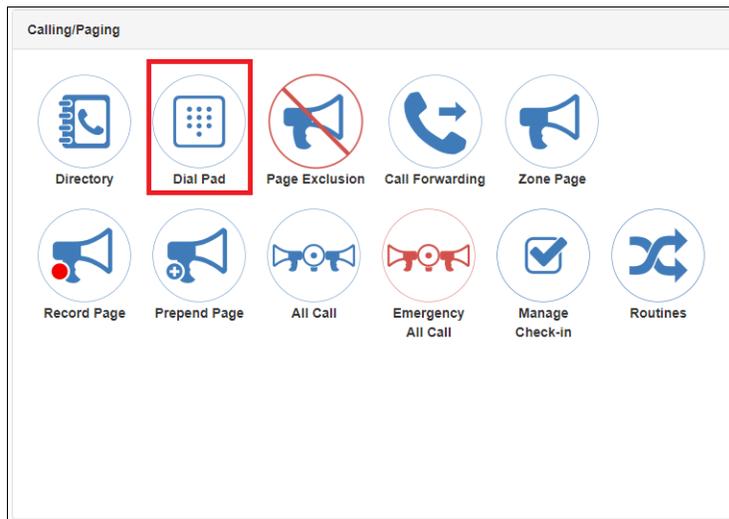
Figure 51. Dial Pad Button

2 Under Calling/Paging, select **Dial Pad**.
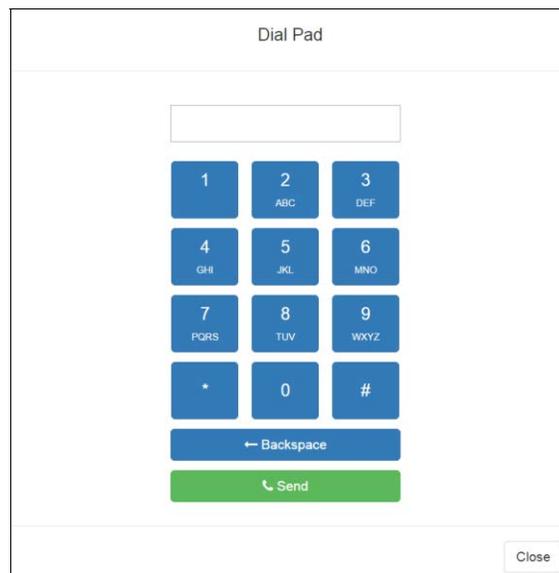
Figure 52. Dial Pad

3 Dial the extension or number that you want and select **Send**.

4 Select **End Call** to end the call.

To answer a call from another extension:

1 If not already on your dashboard, select **Dashboard** from the navigation bar.

2 Select **Answer**.

3 Select **End Call** to end the call.

Using Page Exclusion

You can exclude stations from paging except for Emergency-Level-All-Call pages. Emergency-Level-All-Call pages will be sent and heard at a station even if that station is set to exclude paging.

To exclude a station from paging via the dashboard:

1 If not already on your dashboard, select **Dashboard** from the navigation bar.
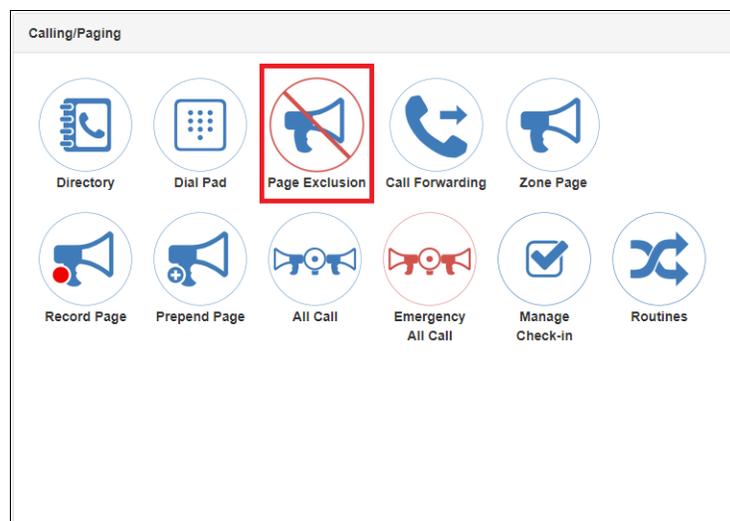
Figure 53. Page Exclusion Button

2 Under Calling/Paging, select **Page Exclusion**.
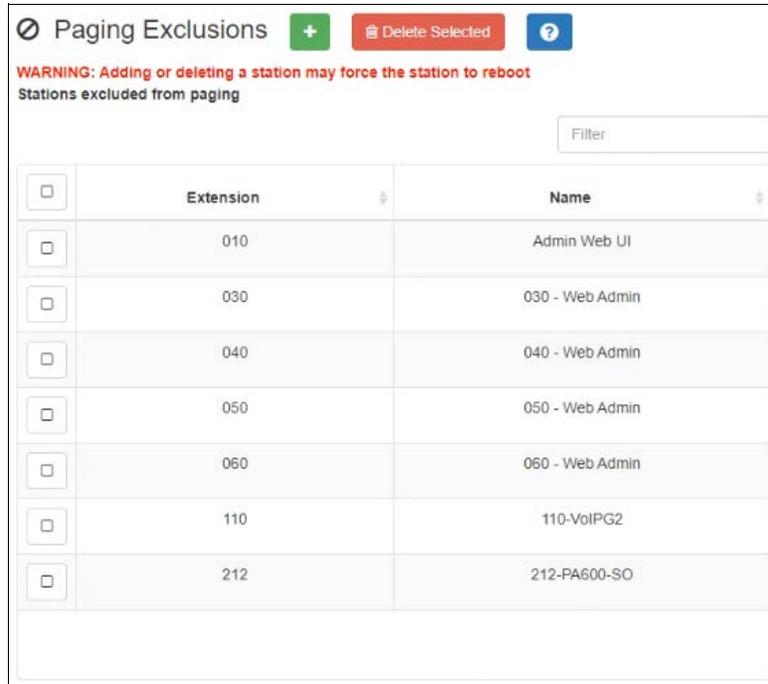
Figure 54. Paging Exclusions Page

3 Optionally, filter the displayed list of stations by extension or name.

4 Select one or more stations to be excluded. Click **Toggle All** to select (or deselect) the entire list of stations.

5 Select the **Add Exclusions** button to add the selected stations to the Paging Exclusions list.
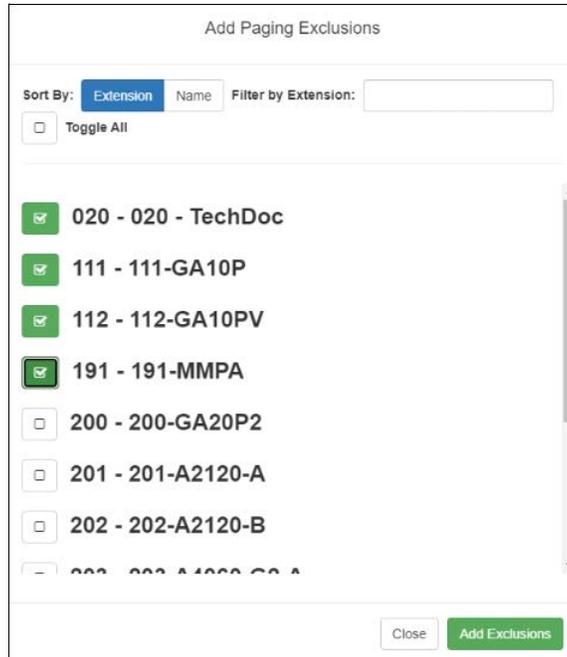
Figure 55. Add Paging Exclusion Page

Warning	Adding or deleting a station from the Paging Exclusions list may force the station to reboot.

Deleting From Paging Exclusions List

To delete an extension from the Paging Exclusions list:

1 If not already on your dashboard, select **Dashboard** from the navigation bar.

2 Under Calling/Paging, select **Page Exclusion**.

3 Select one or more extensions to be deleted from the exclusion list.

    a) Optionally, toggle the checkbox in the header row above the selection checkboxes to select (or deselect) the entire list of stations.

4 When all selections are ready, click **Delete Selected** to remove the selected extensions from the list.

Using Call Forwarding

If your station has been configured for call forwarding, you can forward your calls to another extension.

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Note that call forwarding is not the same as having your extension set to ring at an Admin Station during day or night hours. Your Nyquist system administrator sets the Day Admin and Night Admin for your station. Call forwarding is an option that you can set for your station.

To forward calls to another extension:

1 If not already on your dashboard, select **Dashboard** from the navigation bar.
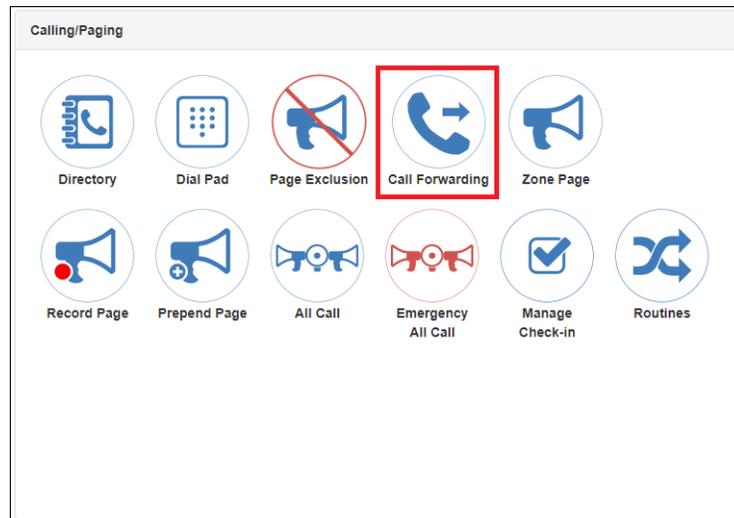
Figure 56. Call Forwarding Button

2 Under Calling/Paging, select **Call Forwarding.**
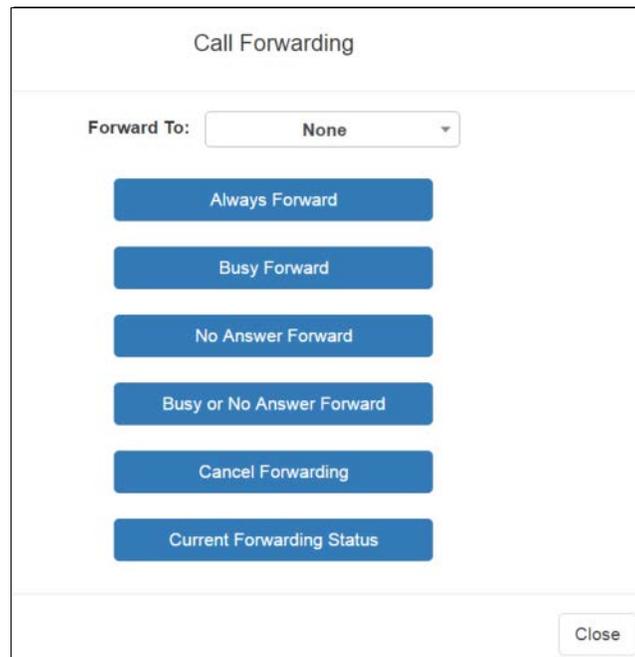
Figure 57. Call Forwarding Popup Menu

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3   If prompted that the station wants to use your microphone, select **Allow**.

Warning	If you turn off the microphone on your computer, you cannot launch audio distribution, tones, alarms, and so on. When attempting to make a call with the computer's microphone turned off, Nyquist automatically hangs up the call. If you make a second call, the dashboard displays a message that the phone is in use. Also, when the microphone is off and a bell tone comes in, Nyquist rings instead of auto-answering.

4   Use the drop-down menu to select the extension to which you want calls to be forwarded.

5   Select one of the following options:

- Always Forward
- Busy Forward
- No Answer Forward
- Busy or No Answer Forward
- Cancel Forwarding
- Current Forwarding Status

Starting Pages

Depending on how your C4000 system is set up, you can launch Normal, All Call, and Emergency All Call pages for a specific zone, the entire facility, or multiple sites. You also can select an announcement to play before you make a page.

Single-Zone Paging

To make a single-zone page via the dashboard:

1   If not already on your dashboard, select **Dashboard** from the navigation bar.
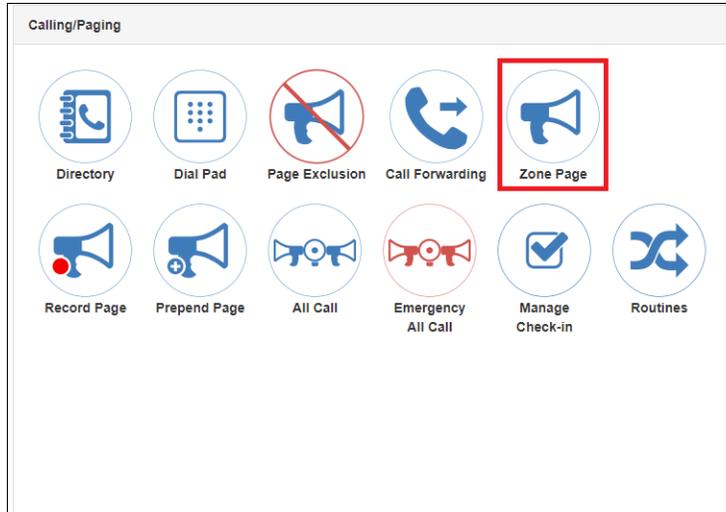
Figure 58. Zone Page Button

2   Under Calling/Paging, select **Zone Page**.

Figure 59. Paging Single Zone

3   On the Page popup, select the zone that you want to page.

Note: You can sort the zones by Name or Number.

**4**   If you must enter a password to complete this task, select **Dial Pad** and enter the 4-digit password.

5   If prompted, enter **1** for confirmation.

6   If prompted, allow C4000 to use the microphone associated with your station.

> **Warning** **If you turn off the microphone on your computer, you cannot launch audio distribution, tones, alarms, and so on. When attempting to make a call with the computer's microphone turned off, C4000 automatically hangs up the call. If you make a second call, the dashboard displays a message that the phone is in use. Also, when the microphone is off and a bell tone comes in, C4000 rings instead of auto-answering.**

7 After you hear the tone, speak into the microphone.

8 Select **End Call** to end the page.
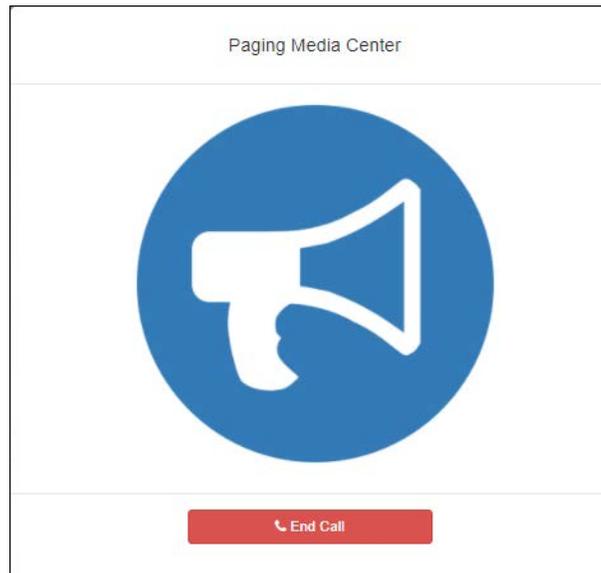
Figure 60. End Call

Record Page

You can record a page to be added to a zone queue. The maximum recording time for a page is 60 minutes. If the recording exceeds 60 minutes, it will time out and not be saved. If the recording is silent for 60 seconds, it will time out and not be saved.

The pages in the zone's queue are played in the order that they are placed in the queue.

A live page started on a zone that is playing a recorded page causes the recorded page to be terminated and sent back to the queue. The interrupted message will play again, from the beginning of the message, when the zone becomes idle. Multi-Site Emergency-All-Call, Multi-Site All-Call, Emergency All-Call, All-Call, Alarm, Tone, and Emergency Announcement also interrupt any playing recorded zone messages. All re-queued interrupted messages will play again, from the beginning of the message, when the zones becomes idle.

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Selecting **Disable Audio** causes all recorded messages to stop. The messages will resume play from the beginning when audio is re-enabled.

To record a page for page queuing:

1   If not already on your dashboard, select **Dashboard** from the navigation bar.
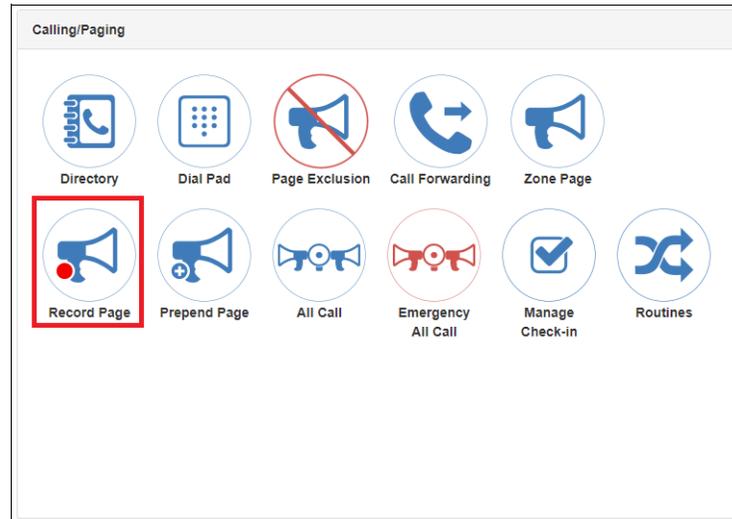
Figure 61. Record Page Button

2   Under Calling/Paging, select **Record Page**.
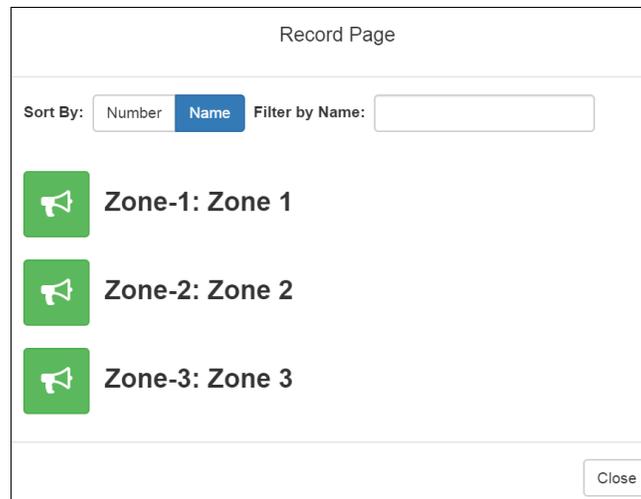
Figure 62. Record Page

3   On the Record Page popup, select the queue that you want to page.

Note: You can sort the queues by Name or Number.

4   Wait for the tone and then record your message.

5 Hang up to end the recording.

> *Note:* Pressing any key terminates the recording without adding the page to the queue.

Prepend Page

You can prepend a page with a special announcement. For example, if you have a pre-recorded weather alert announcement, you can prepend that announcement file so that it plays first as you prepare to make a page.

To prepend a page:

1 If not already on your dashboard, select **Dashboard** from the navigation bar.
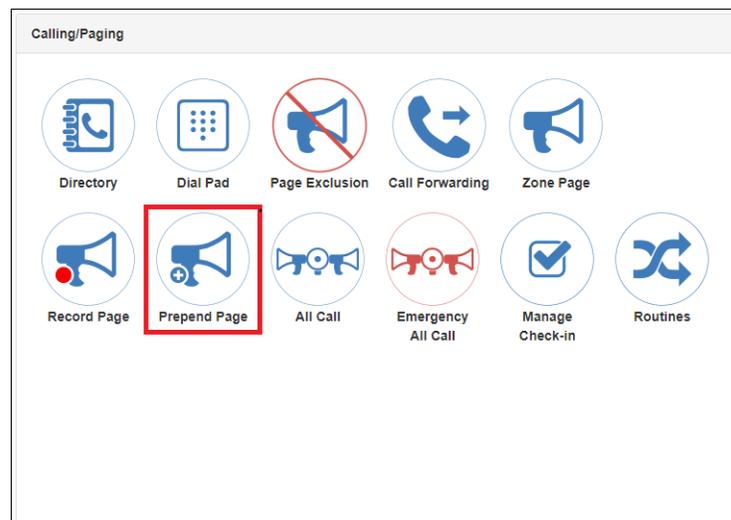
Figure 63. Prepend Page Button

2 Under Calling/Paging, select **Prepend Page**.

Figure 64. Prepend Page

3   On the Prepend Page popup, select the zone that you want to page.

> *Note:* You can sort the zones by Name or Number.

4   If you must enter a password to complete this task, select **Dial Pad** and enter the 4-digit password.

5   If prompted, enter **1** for confirmation.

6   If prompted, allow C4000 to use the microphone associated with your station.

7   After the prepend announcement ends, speak into the microphone.

8   Select **End Call** to end the page.

All Call Paging

All Call paging is a simultaneous page to all facility stations, unless the station has been excluded from pages. An All Call page takes higher priority over normal paging.

To launch an All Call page:

1   If not already on your dashboard, select **Dashboard** from the navigation bar.
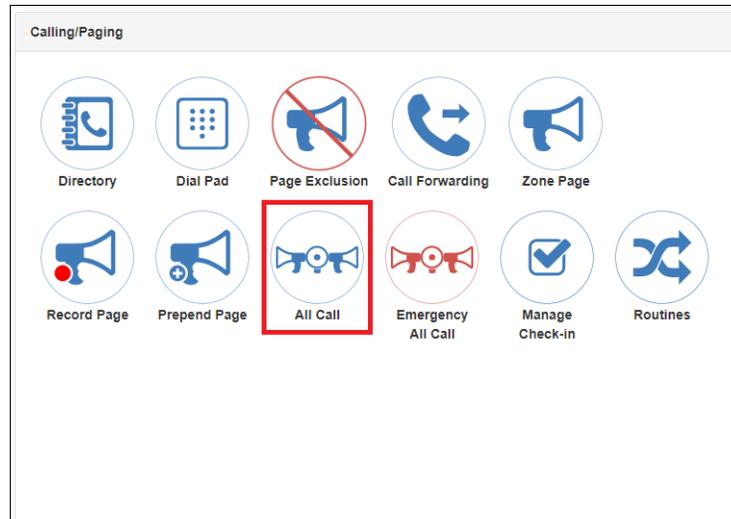
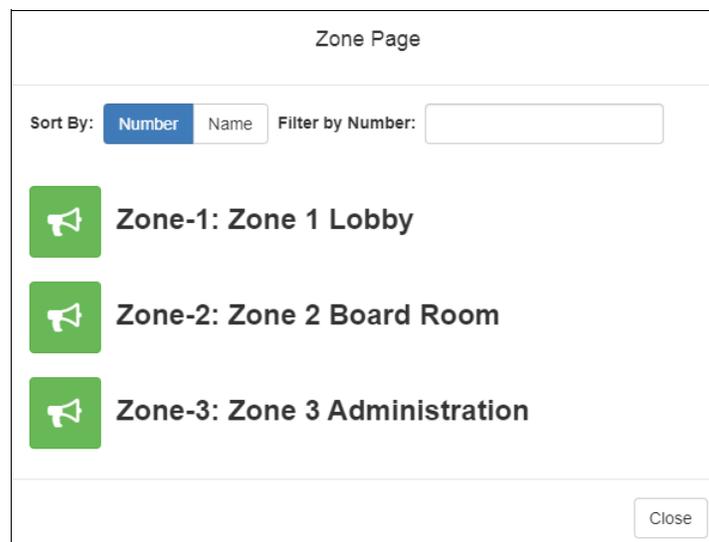**Figure 65. All Call Button**

2 Under Calling/Paging, select **All Call**.

Figure 66. All Call

3 If you must enter a password to complete this task, select **Dial Pad** and enter the 4-digit password.

4 If prompted, enter **1** for confirmation.

5 If prompted, allow C4000 to use the microphone associated with your station.

> **Warning** **If you turn off the microphone on your computer, you cannot launch audio distribution, tones, alarms, and so on. When attempting to make a call with the computer's microphone turned off, C4000 automatically hangs up the call. If you make a second call, the dashboard displays a message that the phone is in use**. **Also, when the microphone is off and a bell tone comes in, C4000 rings instead of auto-answering.**

6 After you hear the tone, speak into the microphone.

**7** Select **End Call** to end the page.

Emergency All Call Paging

An Emergency All Call page is a high priority page that is transmitted to all stations, even to those stations that have been set up for page exclusion.

To launch an Emergency All Call page:

1 If not already on your dashboard, select **Dashboard** from the navigation bar.
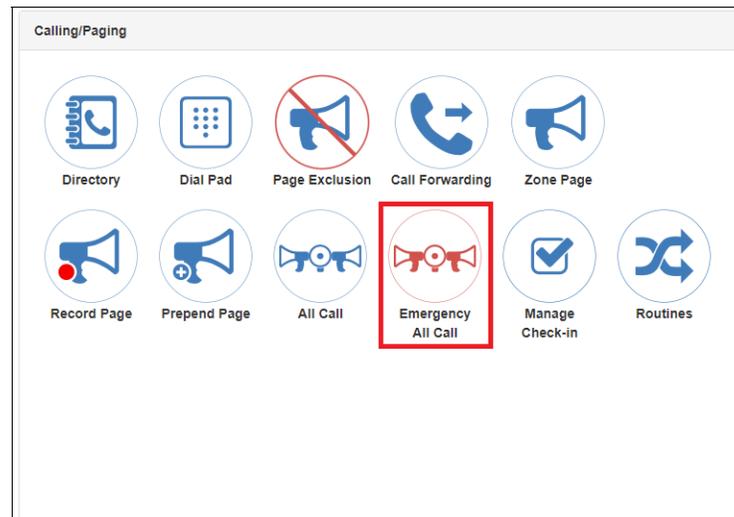
Figure 67. Emergency All Call Button

2 Under Calling/Paging, select **Emergency All Call**.

Figure 68. Emergency All Call

3   If you must enter a password to complete this task, select **Dial Pad** and enter the
4-digit password.

4   If prompted, enter **1** for confirmation.

5   If prompted, allow C4000 to use the microphone associated with your station.

Warning	**If you turn off the microphone on your computer, you cannot launch audio distribution, tones, alarms, and so on. When attempting to make a call with the computer's microphone turned off, C4000 automatically hangs up the call. If you make a second call, the dashboard displays a message that the phone is in use. Also, when the microphone is off and a bell tone comes in, C4000 rings instead of auto-answering.**

6   After you hear the tone, speak into the microphone.

7   Select **End Call** to end the page.

Facility Paging

If your system is configured to use multiple facilities, you can launch a Facility Page.

To launch a facility page:

1   If not already on your dashboard, select **Dashboard** from the navigation bar.
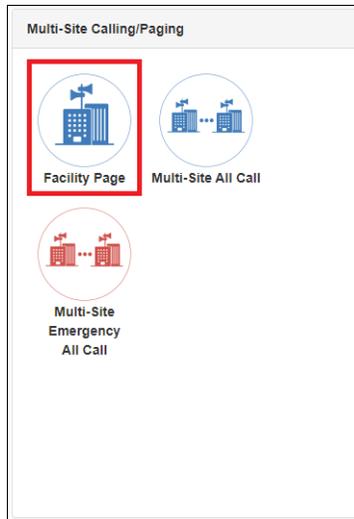
Figure 69. Facility Page Button

2 Under Multi-Site Calling/Paging, select **Facility Page**.
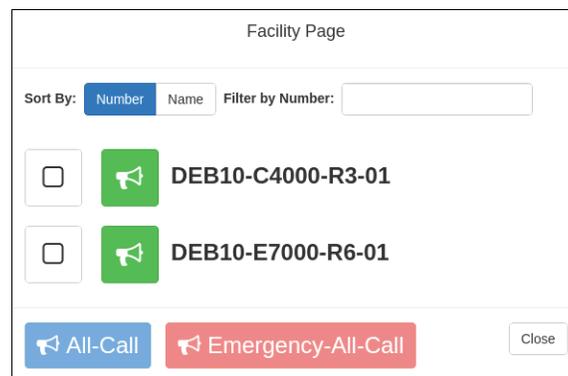
Figure 70. Facility Page

3 On the Facilities page, select one or more facilities that you want to page. Note that you can sort and filter the facilities by Name or Number.

4 Select All-Call or Emergency-All-Call, depending on whether you want to make a normal or emergency page.

Tip: As an alternative to the previous two steps, you can select the green announcement button for a specific facility to place an immediate non-emergency page to only that facility.

5 If you must enter a password to complete this task, select **Dial Pad** and enter the 4-digit password.

6 If prompted, enter **1** for confirmation.

7 If prompted, allow C4000 to use the microphone associated with your station.

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> **Warning** **If you turn off the microphone on your computer, you cannot launch audio distribution, tones, alarms, and so on. When attempting to make a call with the computer's microphone turned off, C4000 automatically hangs up the call. If you make a second call, the dashboard displays a message that the phone is in use. Also, when the microphone is off and a bell tone comes in, C4000 rings instead of auto-answering.**

8 After you hear the tone, speak into the microphone.

9 Select **End Call** to end the page.

Multi-Site All Call Paging

If your station's CoS allows multi-site paging, you can launch a Multi-Site All Call page.

To launch a Multi-Site All Call page:

1 If not already on your dashboard, select **Dashboard** from the navigation bar.
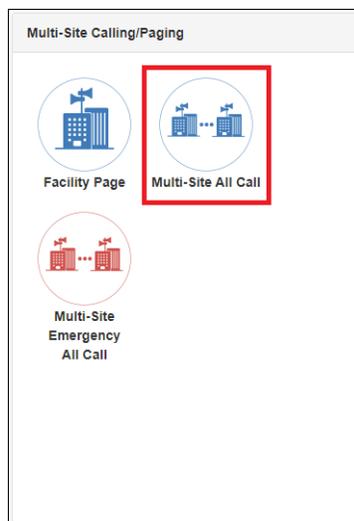
Figure 71. Multi-Site All Call Button

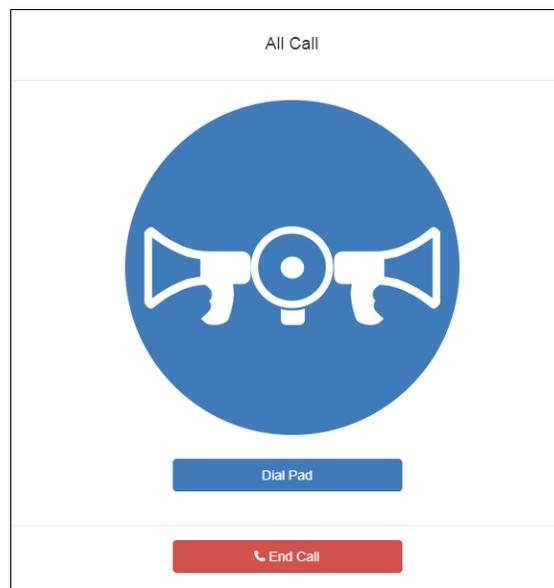**2** Under Multi-Site Calling/Paging, select **Multi-Site All Call**.

3 If you must enter a password to complete this task, select **Dial Pad** and enter the 4-digit password.

4 If prompted, enter **1** for confirmation.

5 If prompted, allow C4000 to use the microphone associated with your station.

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> **Warning**   **If you turn off the microphone on your computer, you cannot launch audio distribution, tones, alarms, and so on. When attempting to make a call with the computer's microphone turned off, C4000 automatically hangs up the call. If you make a second call, the dashboard displays a message that the phone is in use. Also, when the microphone is off and a bell tone comes in, C4000 rings instead of auto-answering. After you hear the tone, speak into the microphone.**

6 Select **End Call** to end the page.

Multi-Site Emergency All Call

If your station's CoS allows multi-site paging, you can launch a Multi-Site Emergency All Call page. A Multi-Site Emergency All Call page has priority over any other pages.

To launch a Multi-Site Emergency All Call page:

**1** If not already on your dashboard, select **Dashboard** from the navigation bar.
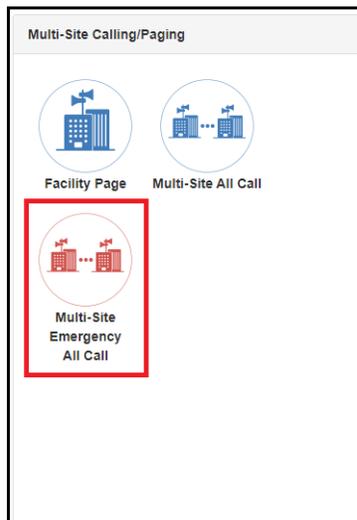
Figure 72. Multi-Site Emergency All Call Button

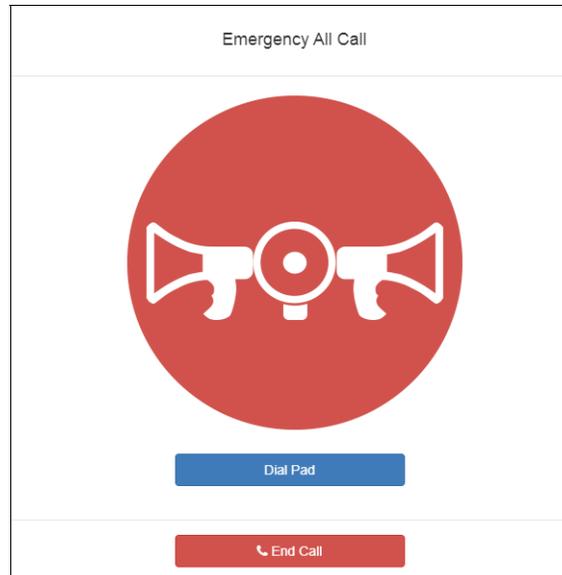**2** Under Multi-Site Calling/Paging, select **Multi-Site Emergency All Call**.

3 If you must enter a password to complete this task, select **Dial Pad** and enter the 4-digit password.

4 If prompted, enter **1** for confirmation.

5 If prompted, allow C4000 to use the microphone associated with your station.

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> **Warning** If you turn off the microphone on your computer, you cannot launch audio distribution, tones, alarms, and so on. When attempting to make a call with the computer's microphone turned off, C4000 automatically hangs up the call. If you make a second call, the dashboard displays a message that the phone is in use. Also, when the microphone is off and a bell tone comes in, C4000 rings instead of auto-answering.

6 When the Emergency page appears, select **OK**.

7 After you hear the tone, speak into the microphone.

8 Select **End Call** to end the page.

Managing Check-In

Manage Check-In allows staff to quickly verify (via a normal call to the Admin Station) that they are aware that a check-in situation is underway and are reporting check-in status for their assigned classrooms or areas. Examples of check-in events include:

- Weather-related lockdown
- Safety-related lockdown
- Fire evacuation (Staff member performs check-in to indicate room has been evacuated.)
- Room occupancy (Staff member checks room in with start of each class period.)

During a check-in event, users check in by initiating a Normal call to their assigned Admin Station, such as the front office, using either their Nyquist phone or a digital or analog call switch associated with their intercom speaker or station.

During Check-In, a Normal call placed by a station to the Admin Station places a station in check-in status. Additional Normal calls made following a check-in are processed as Normal calls to the Admin Station.

You also can elect to use audio feedback that tells the staff member they have successfully checked in.

Calls placed to perform **Manage Check-In** are not processed as part of the call count. Urgent and Emergency calls can still be placed by stations and are not included as part of Manage Check-In.

As long as Privacy Mode is not enabled and a room's device allows two-way transmission, you can select to use Spy Mode (listen to) the room.

Viewing Check-In Status

For administrators, the Manage Check-In feature provides a color-coded view of what classrooms have checked in, classrooms or stations that are not part of the check-in process, and those that should check-in but have not yet done so.

To view check-in status:

1   If not already on your dashboard, select **Dashboard** from the navigation bar.
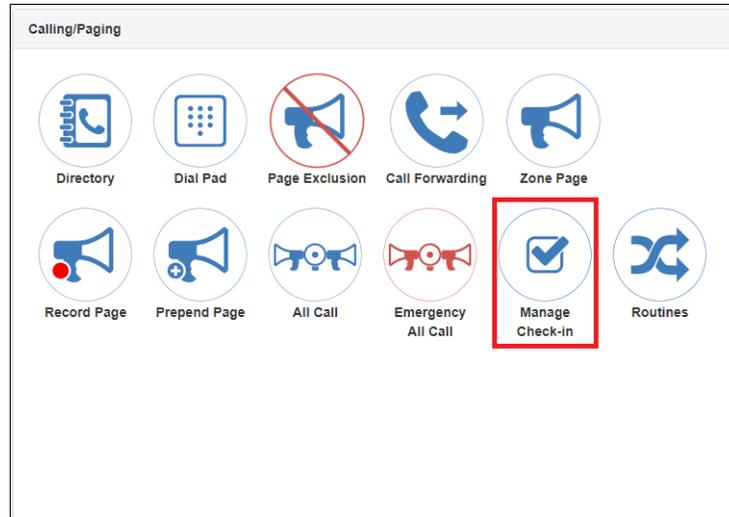
Figure 73. Manage Check-In Button

2   Under Calling/Paging, select **Manage Check-In**.
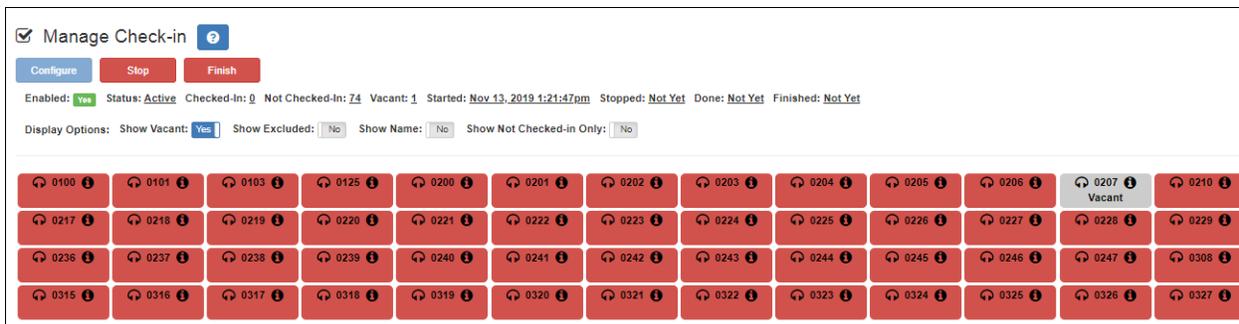
Figure 74. Manage Check-In

The status of each station appears in a color-coded box. *Table 22* explains the use of colors to describe status:

Table 22. Color-coded Check-In Status

Color	Status
Green	Checked in
Red	Not checked in
Gray	Check-in is not expected because the station is either on the vacant or excluded lists.

You also can select the following **Display Options**:

Table 23. Check-In Display Options

Show Vacant	When enabled, stations in the Vacancy List appear in the color-coded display.
Show Excluded	When enabled, stations in the Exclusion List appear in the color-coded display.
Show Name	When enabled, the station's name appears along with the station's extension number. Displaying the name is useful if you are not sure where a station is located when only the extension number is displayed.
Show Not Checked In Only	*Note:* **Show Vacant** and **Show Excluded** options are disabled when this option is selected. When enabled, only the stations that have not checked in are listed. This option may be preferable if a large number of stations are managed by your Nyquist server, and you want to quickly view which stations have not checked in.

The Manage Check-In window also includes the following information:

- Status of check-in process such as **Active**
- Number of stations that have checked in
- Number of stations that have not yet checked in
- Number of vacant stations
- Date and time check-in started
- If check-in has been manually stopped or is done

Manage Check-in also allows you to use Spy Mode on a station or room, provided the privacy feature has not been activated and the station device allows two-way transmission.

Stations that are not part of the check-in process would include stations assigned to hallway speakers or amplifiers or areas that were scheduled to be vacant when the check-in procedure began. For more information, see "*Managing Exclusion and Vacancy Lists" on page 100*.

Starting Check-In

You can manually start the Check-In procedure from the dashboard. Check-In also can be started via the Routines feature.

Check-In does not play any audio instruction announcements or send any text instructions to web interface stations or GA10PV display stations. If you want audio instruction announcements or text instructions on web interface stations or GA10PV display stations, refer to the *Nyquist C4000 System Administrator Guide* for instructions on setting up a routine that includes audio instructions in an announcement or text instructions to be sent to web interface dashboards and GA10PV displays. The routine can be triggered by a Check-in **Start**, or the Check-in can be started by the routine.

Figure 75. Manage Check-In When Idle

To manually start Check-In:

1   If not already on your dashboard, select **Dashboard** from the navigation bar.

2   Under Calling/Paging, select **Manage Check-In**.

3   On the Manage Check-In page, select **Start**.

When Check-In starts, the **Start** button changes to a **Stop** button and the red squares that represent occupied classrooms or areas begin changing to green squares as staff members begin checking in.

Station Check-In

During Check-In, a Normal call placed by a station to the Admin Station places a station in check-in status. If two-part check-in is used, a second Normal call verifies the check-in status.

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After a station has successfully checked in, additional Normal calls will go through as normal calls to the Admin station. Stations can still place Urgent or Emergency calls during the Check-in process, even if the station has not checked in.

If audio prompt feedback is enabled and a station checks in, the caller hears a confirmation prompt. If audio feedback is disabled, stations checking in with digital call switches will still see a ringing status (flashing green) for about 2 seconds while checking in. Stations checking in with IP phones will notice a call lasting about 2 seconds before automatic hang-up.

A **VoIP Speaker Only** station that does not have a call switch can still participate in the check-in process if an I/O controller Input contact is connected to a switch present in the room that contains the **VoIP Speaker Only** station. In this case, the I/O controller Input contact closure can trigger a Routine that performs a check-in.

In this scenario, the routine Trigger **Type** is set to **Input-Contact-Closed** and the routine Action **Type** is **Check-In** with **Station** set to the VoIP Speaker Only station extension.

If a station with call switch is configured to place only Urgent or Emergency calls, the station cannot participate in the Check-in process. This station should either be added to the Exclusion List (see "*Managing Exclusion and Vacancy Lists" on page 100*). Or if you wish to include the station in the Check-in process, the station's CoS configuration should be changed to allow Normal calls to be placed by the station.

Check-In Done and Finish

After all stations included in the Check-In process have checked in, the Manage Check-In **Status** changes to **Done**.

Since stations that were not expected to check in may do so, check-in is not completed until you select the **Finish** button.

Selecting the **Finish** button can trigger a routine if you have a routine that uses **Check-In** as the trigger **Type** and **Finished** as **Check-In**.

Stopping the Check-In Process

You can end an active Check-In process by selecting the **Stop** button on the Station Check-in view. An active Check-In process also can be stopped by a Routine action.

When stopping Check-In via a routine, the Action **Type** is **Check-In** and the **Check In** option is **Stop**.

After the Check-in process has been stopped, all Normal station calls resume as normal calls to the Admin Station, and the Check-in process **Status** becomes **Idle**.

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Resetting the Check-In Process

During either an active or idle Check-In process, you can clear all station check-in statuses and allow all Normal calls to resume as normal calls to the Admin Station by selecting the **Reset** button on the Station Check-in view.

Using Spy Mode

You can use Spy Mode to listen to a station as long as Privacy Mode is not enabled and the station device allows two-way transmission.

This feature adds another step toward verifying that the room's occupants are safe.

Figure 76. Listen In, or Spy Mode, Button

To activate Spy Mode:

1 If not already on your dashboard, select **Dashboard** from the navigation bar.

2 Under Calling/Paging, select **Manage Check-In**.

3 On the Manage Check-In page, select the **Listen In** icon for the station you want to monitor.

4 When the dial pad appears, dial 978.

Note: Spy Mode monitoring cannot be used on a station that has been set to Privacy Mode.

Configuring Check-In

Figure 77. Configure Check-in

To use the check-in process, the user must have appropriate permissions assigned.

To configure check-in options:

1 If not already on your dashboard, select **Dashboard** from the navigation bar.

2 Under Calling/Paging, select **Manage Check-In**.

3 On the Manage Check-In page, select **Configure**.

4 Complete the configuration options.

5 Select **Save**.

Table 24. Check-In Configuration Options

Enabled	Specifies if Manage Check-In can be used. If **Disabled**, you can configure Manage Check-In options, but you cannot start the check-in process.
Enable audio prompts and confirmation messages	Specifies if audio files will be used as part of Manage Check-In. When enabled, audio prompts and audio feedback play at stations when the stations perform check-in. If disabled, no audio prompts or audio feedback are played on the station. When feedback is disabled, stations checking in with digital call switches see a ringing status (flashing green) for about 2 seconds while checking in. Stations checking in with IP phones notice a call lasting about 2 seconds.

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Table 24. Check-In Configuration Options

Automatically Stop Audio Distribution	When enabled, all currently playing audio distributions will be stopped when a check-in process is started.
Vacancy List	Specifies the stations to be added to the Vacancy List (see "*Managing Exclusion and Vacancy Lists" on page 100*).
Exclusion List	Specifies the stations to be added to the Exclusion List (see "*Managing Exclusion and Vacancy Lists" on page 100*).

Managing Exclusion and Vacancy Lists

A station added to the Vacancy List and a station added to the Exclusion List both appear gray on the Admin Station's Check-In page if the Check-In page is configured to display these lists. The difference between the two lists, though, is that stations on the Exclusion List should always be excluded from the check-in process. Those on the Vacancy List, are stations (classrooms or areas) that normally would be checking in but may be vacant when the check-in process is started.

A station on the vacancy list can still check in. This could occur during an emergency situation where a normally vacant classroom becomes the closest temporary shelter. An occupant could perform a check-in to let administrators know that the room is occupied and secure.

Excluded stations should include stations not physically located in a classroom, such as speakers located in a hallway. Excluded stations also include stations assigned to appliances, such as power amplifiers and MMPAs.

You can add or delete a station to the Exclusion or Vacancy Lists by:

• Using **Manage Check-In** via the dashboard

• Using the **Routines** feature

For information about using Routines to add or delete a station from a list, refer to the *Nyquist C4000 System Administrator Guide*.

To add a station to the Exclusion List via dashboard:

1 If not already on your dashboard, select **Dashboard** from the navigation bar.

2 Under Calling/Paging, select **Manage Check-In**.

3 On the Manage Check-In page, select **Configure**.

4 Add desired station or stations to the Exclusion List.

5 Select **Save**.

To remove a station from the Exclusion List via the dashboard:

1   If not already on your dashboard, select **Dashboard** from the navigation bar.

2   Under Calling/Paging, select **Manage Check-In**.

3   On the Manage Check-In page, select **Configure**.

4   Remove the desired station or stations from the Exclusion List.

5   Select **Save**.

To add a station to the Vacancy List via the dashboard:

1   If not already on your dashboard, select **Dashboard** from the navigation bar.

2   Under Calling/Paging, select **Manage Check-In**.

3   On the Manage Check-In page, select **Configure**.

4   Add desired station or stations to the Exclusion List.
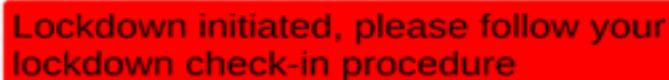
5   Select **Save**.

To delete a station from the Vacancy List via the dashboard:

1 If not already on your dashboard, select **Dashboard** from the navigation bar.

2 Under Calling/Paging, select **Manage Check-In**.

3 On the Manage Check-In page, select **Configure**.

4 Select the stations that you want to remove from the Vacancy List.

5 Select **Save**.

Managing GA10PV Display Messages

It is possible to send messages and images to one or more NQ-GA10PV devices, either manually or through a triggered Routine. Messages containing text and sent manually can be defined and sent as needed. To send messages using triggered Routines, and to define messages that can be used at a later time, you can create **Message Templates**. If a message is to include an image, whether to be sent immediately or within a template, you must first define a **Message Image**, which can then be used in the message or message template.

The Display Message option allows you to create messages that display on monitors connected to NQ-GA10PV devices in a selected zone, in multiple zones, or to specific devices. When creating the message, you can set several options, including when and how long the message is displayed and the appearance of the message. You can also remove messages from the message queue.

Figure 78. Example of Priority Message in Fullscreen

The station's **Display Configuration** option controls the overall appearance of the display (for example, what type of clock appears, whether an event or the date appears, and the background color of the screen). For information about setting the display configuration for an NQ-GA10PV, refer to the *Nyquist C4000 System Administrator Guide*.

The **Message Templates** option allows you to create and save messages in advance, which can be easily sent later. Sending a **Message Template** simply fills in a form with the saved message data. You must specify the zone and/or stations where the message will appear, override any other properties from the **Message Template** (if desired), and send it.

Saved **Message Templates** can also be used in **Routines**, which allows messages to be sent automatically in response to various system events. When used this way, the Routine

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definition specifies the zone and/or stations where the message will appear and can optionally override other template properties.

This discussion refers to GA10PV Display Messages, not the Messages section shown at the top of the Dashboard. For information on these Dashboard Messages, see *Figure 4, "Dashboard Messages," on page 7*.

Message Priorities and Precedence

Multiple messages can be displayed on an NQ-GA10PV at the same time. It is even possible to queue up more messages than can be displayed at one time. Because of this, we need to determine a message's precedence. Messages with a higher precedence are displayed before messages with lower precedence, and can even override and interrupt a lower precedence message.

Note: The term "priority", as used here, refers to a numeric value assigned to a message. The term "precedence" refers to the determination of which message will be displayed over another message after evaluation of the assigned message priorities and other related factors, as described below.

There are several factors that affect the precedence and display of a message.

The first factor is the message **Priority**. This is a number from zero (0) through six (6), where zero is the lowest priority and six the highest.

The second factor is the **Image Priority**, which applies only to Image type messages, and is applied when two messages have the same message priority. This is either **Text Over Image** or **Image Over Text**. The first implies that text messages have precedence over this image message, while the second implies this image message has precedence over text messages.

The third factor does not actually affect the precedence, but is relevant in that it determines where an image is displayed, which can affect whether or not other messages can be seen. The **Image Type** of a message can be either **Right**, **Left**, or **Full Screen**. **Right** and **Left** specify on which half of the screen the image will be displayed, while **Full Screen** specifies that the image will cover the entire screen. Since text messages display on the right side of the screen, an image displayed on the left side can show both messages simultaneously, while an image displayed on the right side or full screen will be subject to the precedence rules.

Message Precedence Rules

The following set of rules determine which messages have precedence and how they are to be displayed:

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- Text messages are sorted in descending order by priority, and otherwise in the order they were sent.

- If two messages of the same type (Image or Text) have the same priority, the newer one has precedence.

- If an image message and a text message have the same priority, the Image message's **Image Priority** property determines which has precedence:

  - **Text Over Image**: Text message has precedence.

  - **Image Over Text**: Image message has precedence.

- Full Screen image messages take precedence over everything except another Full Screen image message, for which normal rules of precedence are applied.

- Priority five (Exclusive) messages always display alone, which prevents all lower precedence messages from being displayed.

- For Analog Clock view:

  - An image message can display simultaneously on the left while another message is displayed on the right. Multiple image messages are prioritized according to normal rules. If there are no image messages displayed on the left, the clock will be displayed.

  - Image messages displayed on the right along with text messages based on normal rules of precedence.

- For multi-column and Digital Clock views:

  - Only text or Full Screen image messages are displayed.

Note: Even when a message is not visible, usually due to a higher priority message being displayed, its expiration timer is still ticking, so it may display for shorter than the intended duration or not at all.

Creating a Display Message

> *Note:* You also can add display messages through routine actions. For information about creating routines, refer to the *Nyquist C4000 System Administrator Guide*.

To create a display message:

1 If not already on your dashboard, select **Dashboard** from the navigation bar.
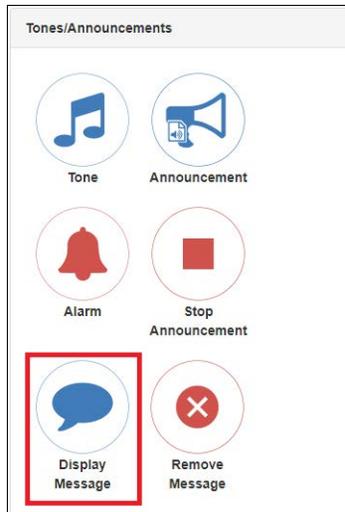
Figure 79. Display Message Button

2 Under **Tones/Announcements**, select **Display Message**.

Figure 80. Display Message

3 On the Display Message page, complete the options for the new message (see *Table 25 on page 106*).

4 To save the message and send it immediately, select **Send and Save**. The **Name** field must be specified to save a message.

5 To send the message immediately without saving it, select **Send**.

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Note: The options set through the Display Message page apply to the message only. If you want to change how the clock, date, and other display features appear, you must set configuration options for the NQ-GA10PV station. Refer to the *Nyquist C4000 System Administrator Guide.*

Table 25. Display Message Options

Name	Specifies a name for this message. This is used if the message is to be saved.
Identifier	Used to identify the message so it can be deleted by a Routine action.
Type	Select the type of message to be sent:
	• **Text**: A text message will be displayed.
	• **Image**: An image will be displayed.
Text	Type the message that is to appear on the display monitor.
	You can format text using basic HTML tags, such as:
	• **bold**
	• <i>*italic*</i>
	• <u>underline</u>
	• styled text
	• Be aware that entering a new line, even within HTML tags, will create a new line in the final message.
Expiration Mode	Select the mode for setting the message's expiration. Options are:
	• **Display Time**. Uses **Display Time (seconds)** to set the expiration.
	• **Manually Removed**. Sets the expiration time to Never. You must use the **Remove Message** button to remove a message from the message queue, or the message can be removed by a Routine Action using the display message **Identifier**.
	• **Date/Time**. By default, the current date and time appear in the **Date/Time** field.
Display Time (seconds)	Appears only if **Expiration Mode** is set to **Display Time**. Sets the length of time for the message to be displayed before it expires. Time can range from 1 to 99999.

Table 25. Display Message Options (Continued)

Date/Time
Appears only if **Expiration Mode** is set to **Date/Time**. The default is set to the current date and time. To change the date, select the calendar and pick the date and time.

Zones
Select the zone or zones. Messages will be sent to the display devices in the selected zones.

Stations
The message is sent to the specified stations and any stations that belong to the specified zones.

Identifier
Used to identify the message so it can be deleted by a Routine action.

Priority
Select the message priority, which can range from **0 (Lowest)** to **6 (Fullscreen)**. Priority **6 (Fullscreen)** is the highest priority, and when a message is assigned this priority, only the messages with this priority appear on the display with the Scheduled Event Name and Date being temporarily removed. If Priority **5 (Exclusive)** is selected, the Scheduled Event Name and Date remain on the display, but all other messages with lower priorities are removed.

Image Type
If the Type field was set to **Image**, select one of the following values to specify how the image will be displayed:

- **Full Screen (1920x1080)**: Image will be displayed full screen.
- **Left (925x1040)**: Image will be displayed on the left side of the screen.
- **Right (925x1040)**: Image will be displayed on the right side of the screen.

Image Priority
Select the image priority for this message, which determines precedence when an Image message and Text message have the same message priority:

- **Text Over Image**: Text message will be given precedence.
- **Image Over Text**: Image message will be given precedence.

Message Image
The name of the saved **Message Image** to be displayed. For more information, see *"Create or Edit a Message Image" on page 117*.

Table 25. Display Message Options (Continued)

Background Color   Select the color for the message background. You can select a color by:

- Using the color picker
- Entering a hex color (for example: #000000, for black)
- Entering an RGB color (for example: rgb(0,0,0) for black)
- Entering a color alias name (for example: red, blue, etc.)

For more information, see *"Using Color in Display Messages" on page 108*.

Font   Select the down arrow to view a list of available fonts and then select the desired font for the message text. Available fonts are:

Comic-Relief

Courier-Prime

Gelasio

Liberation Sans

Linux Libertine

Font Size   Enter the desired font size.

Font Color   Select the color for the message text.

You can select a color by:

- Using the color picker
- Entering a hex color (for example: #000000, for black)
- Entering an RGB color (for example: rgb (0,0,0) for black)
- Entering a color alias name (for example: red, blue, etc.)

For more information, see *"Using Color in Display Messages" on page 108*.

Font Styles   Place your cursor in the **Add Styles** box to select **Bold** or **Italic**. Otherwise, the **Font Style** remains at Regular.

Using Color in Display Messages

You can select colors for display messages three different ways:

- Background, text, and time colors via GA10PV **Display Configuration**

- Background and font colors for individual messages by selecting **Display Message** from the dashboard
- Background and font colors for individual messages via the **Display-Msg** routine action **Type**

You can select colors by:

- Using the color picker
- Entering a hex color (for example: #000000, for black)
- Entering an RGB color (for example: rgb(0,0,0) for black)
- Entering a color alias name (for example: red, blue, etc.)

When you enter a color alias name, the corresponding hex color code appears in the text portion of the color field and the swatch (color box) portion changes to the selected color. When entering a color alias, you cannot use spaces, and the system accepts only the default color alias listed in *Table 26*:

Table 26. Default Color Alias

Color Alias	Corresponding Hex Code	Color Alias	Corresponding Hex Code
aliceblue	f0f8ff	antiquewhite	faebd7
aqua	00ffff	aquamarine	7fffd4
azure	f0ffff	beige	f5f5dc
bisque	ffe4c4	black	#000000
blanchedalmond	ffebcd	blue	#0000ff
blueviolet	8a2be2	brown	a52a2a
burlywood	deb887	cadetblue	5f9ea0
chartreuse	7fff00	chocolate	d2691e
coral	ff7f50	cornflowerblue	6495ed
cornsilk	fff8dc	crimson	dc143c
cyan	00ffff	darkblue	00008b
darkcyan	008b8b	darkgoldenrod	b8860b
darkgray	a9a9a9	darkgreen	006400
darkkhaki	bdb76b	darkmagenta	8b008b
darkolivegreen	556b2f	darkorange	ff8c00

Table 26. Default Color Alias (Continued)

Color Alias	Corresponding Hex Code	Color Alias	Corresponding Hex Code
darkorchid	9932cc	darkred	8b0000
darksalmon	e9967a	darkseagreen	8fbc8f
darkslateblue	483d8b	darkslategray	2f4f4f
darkturquoise	00ced1	darkviolet	9400d3
deeppink	ff1493	deepskyblue	00bfff
dimgray	696969	dodgerblue	1e90ff
firebrick	b22222	floralwhite	fffaf0
forestgreen	228b22	fuchsia	ff00ff
gainsboro	dcdcdc	ghostwhite	f8f8ff
gold	ffd700	goldenrod	daa520
gray	#808080	green	#00ff00
greenyellow	adff2f	honeydew	f0fff0
hotpink	ff69b4	indianred	cd5c5c
indigo	4b0082	ivory	fffff0
khaki	f0e68c	lavender	e6e6fa
lavenderblush	fff0f5	lawngreen	7cfc00
lemonchiffon	fffacd	lightblue	add8e6
lightcoral	f08080	lightcyan	e0ffff
lightgoldenrodyellow	fafad2	lightgreen	90ee90
lightgrey	d3d3d3	lightpink	ffb6c1
lightsalmon	ffa07a	lightseagreen	20b2aa
lightskyblue	87cefa	lightslategray	778899
lightsteelblue	b0c4de	lightyellow	ffffe0
lime	00ff00	limegreen	32cd32
linen	faf0e6	magenta	ff00ff
maroon	800000	mediumaquamarine	66cdaa

Table 26. Default Color Alias (Continued)

Color Alias	Corresponding Hex Code	Color Alias	Corresponding Hex Code
mediumblue	0000cd	mediumorchid	ba55d3
mediumpurple	9370d8	mediumseagreen	3cb371
mediumslateblue	7b68ee	mediumspringgreen	00fa9a
mediumturquoise	48d1cc	mediumvioletred	c71585
midnightblue	191970	mintcream	f5fffa
mistyrose	ffe4e1	moccasin	ffe4b5
navajowhite	ffdead	navy	000080
oldlace	fdf5e6	olive	808000
olivedrab	6b8e23	orange	#ffa500
orangered	ff4500	orchid	da70d6
palegoldenrod	eee8aa	palegreen	98fb98
paleturquoise	afeeee	palevioletred	d87093
papayawhip	ffefd5	peachpuff	ffdab9
peru	cd853f	pink	ffc0cb
plum	dda0dd	powderblue	b0e0e6
purple	#800080	red	#ff0000
rosybrown	bc8f8f	royalblue	4169e1
saddlebrown	8b4513	salmon	fa8072
sandybrown	f4a460	seagreen	2e8b57
seashell	fff5ee	sienna	a0522d
silver	c0c0c0	skyblue	87ceeb
slateblue	6a5acd	slategray	708090
snow	fffafa	springgreen	00ff7f
steelblue	4682b4	tan	d2b48c
teal	008080	thistle	d8bfd8
tomato	ff6347	transparent	transparent

Table 26. Default Color Alias (Continued)

Color Alias	Corresponding Hex Code	Color Alias	Corresponding Hex Code
turquoise	40e0d0	violet	ee82ee
wheat	f5deb3	white	#ffffff
whitesmoke	f5f5f5	yellow	#ffff00
yellowgreen	9acd32		

Removing Messages

The Remove Message window allows you to remove any message from the display mes-sage queue. It also is the only way to expire a message that was created using **Manually Removed** as the **Expiration Mode**.

To remove a message:

1   If not already on your dashboard, select **Dashboard** from the navigation bar.
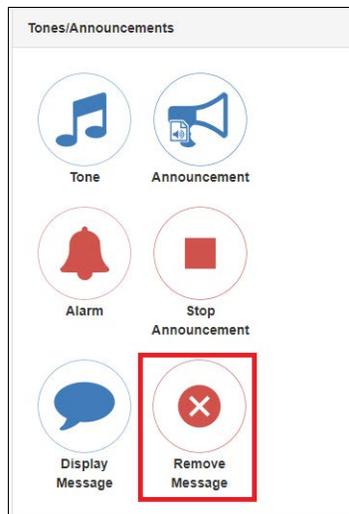
Figure 81. Remove Message Button

2   Under **Tones/Announcements**, select **Remove Message**.
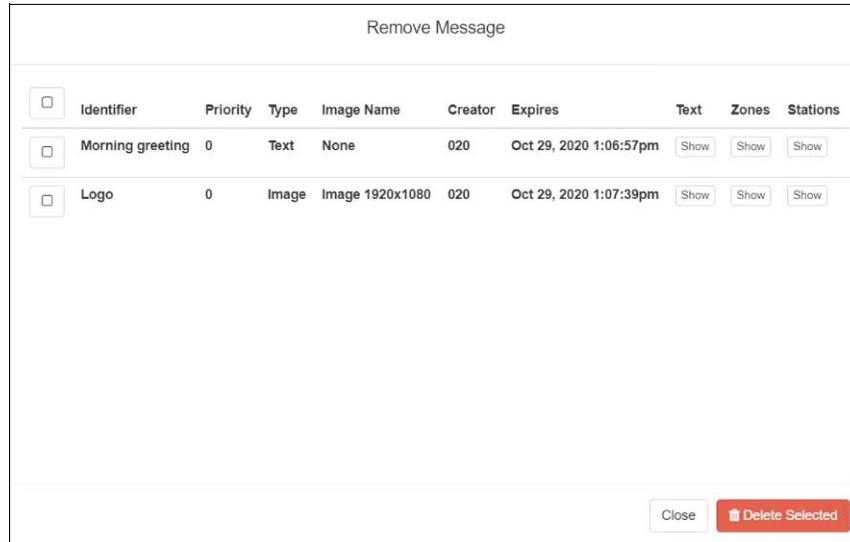
Figure 82. Remove Message

3 Select the **Remove** icon next to the message that you want to delete.

4 Select **Delete Selected**.

Removing an Event Name from a Display

If you create a scheduled event with **Display Event Name** enabled, the event remains on the display that is connected to an NQ-GA10PV until the next scheduled event replaces it.

To clear the event name from the display, create another scheduled event with the **Name** set to **No-Event**.

Viewing Message Templates

The **Message Templates** page allows you to quickly view saved message details; create a message to be added to the database; and edit, delete, or send a message. Messages appearing on the **Message Templates** page also include messages that were started using the **Send and Save** button on the Display Message popup (see "*Creating a Display Message" on page 104*).

Figure 83. Message Templates

To view saved message templates:

1   From the navigation bar, select **Messages** then **Message Templates**.

The **Message Templates** page displays the following fields for each saved message:

Table 27. Message Templates

Edit button	Edits the message template.
Delete button	Deletes the message template.
Send button	Displays the Display Message page, from which a message can be sent (see "*Display Message Options" on page 106* for further details).
Name	Specifies a name for this message.
Identifier	Used to identify the message so it can be deleted by a Routine action.
Type	The type of message to be sent: • **Text**: A text message will be displayed. • **Image**: An image will be displayed.
Text	Place the mouse over the **Show** icon to view the text message that is to appear on the display monitor. For Image messages, this does nothing.

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Table 27. Message Templates

Priority   Displays the message priority, which can range from **0 (Lowest)** to **6 - (Fullscreen)**. Priority **6 - (Fullscreen)** is the highest priority, and when a message is assigned this priority, only the messages with this priority appear on the display with the Scheduled Event Name and Date being temporarily removed. If Priority **5 (Exclusive)** is selected, the Scheduled Event Name and Date remain on the display, but all other messages with lower priorities are removed.

Duration   Sets the length of time in seconds for the message to be displayed before it expires. Time can range from 1 to 99999.

Background Color   Displays the color for the message background. For more information, see "*Using Color in Display Messages" on page 108*.

Font   Specifies the font for the message text.

Font Size   Specifies the font size for the message text.

Font Color   Displays the color for the message text.
For more information, see "*Using Color in Display Messages" on page 108*.

Font Styles   Displays the style (bold, italic) for the text. If blank, the message will use the regular style.

Image Type   If the Type field was set to Image, displays one of the following values to specify how the image will be displayed:

- **Full**: Image will be displayed full screen. This value is also shown for text message templates.
- **Left**: Image will be displayed on the left side of the screen.
- **Right**: Image will be displayed on the right side of the screen.

Table 27. Message Templates

Message Image	For text message templates, "None" is shown. For image templates, the Name of the image to be displayed.
Image Priority	Displays the image priority for this message, which determines precedence when an Image message and Text message have the same message priority: • **Text Over Image**: Text message will be given precedence. • **Image Over Text**: Image message will be given precedence.

Viewing Message Images

The **Message Images** page allows you to quickly view message image details; create a message to be added to the database; and edit, delete, or send a message. Messages appearing on the **Message Templates** page include messages that were started using the **Send and Save** button on the Display Message popup (see "*Creating a Display Message" on page 104*).

Figure 84. Message Images

To view saved message images:

1 From the navigation bar, select **Messages** then **Message Images**.

The **Message Images** page displays the following fields for each saved image:

Figure 85. Message Images properties

Edit button	Edits the message image.
Delete button	Deletes the message image.

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Figure 85. Message Images properties

Name	Name of the message image.
File Name	Name of the image file for this message image. This field is a link, which allows you to see a preview of the image.
Type	Format of the image. Allowed image formats include: • PNG • JPEG
Width	Image width (in pixels).
Height	Image height (in pixels).

Creating a Message Template via the Message Templates Page

You can create messages in advance which can be easily selected for use when needed. Selecting a saved message fills in a form with the message data. Information about which zones or stations will receive the message, though, is not included in this form. You specify the zone or station when you send the message.

These saved messages can also be used in Routines.

Create or Edit a Message Image

If the message is to display an image, you must first define one or more Message Images. An image can be used by one or more message templates, or even by an ad-hoc Display Message command.

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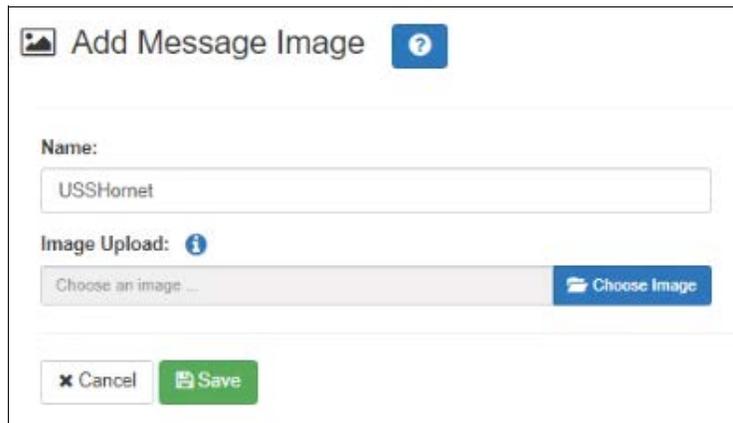
Figure 86. Add Message Image

To create (or edit) a message image:

1 On the navigation bar, select **Messages**, then **Message Images**.

2 Select the **Add** icon (or the Edit icon next to an existing **Message Image**).

3 Assign a name for this image.

4 Select the **Choose Image** button and select an image file to upload.

Note: An image to be used in a message must be in the PNG or JPEG format. The PNG format has the advantage of supporting transparency, which allows the background to display through the image.

Note: The image must have dimensions of either 925x1040 or 1920x1080, depending on whether it will be used full screen (1920x1080) or half screen (925x1040).

5 Select **Save**.

Create or Edit a Message Template

A Message Template predefines a message and all of its properties so that it can easily be sent at a later time, whether manually or from a triggered Action in a Routine.

Figure 87. Add Message Template

To create (or edit) a message template:

1 On the navigation bar, select **Messages**, then **Message Templates**.

2 Select the **Add** icon (or the Edit icon next to an existing **Message Template)**.

3 Provide a descriptive **Name** for the image.

4 Complete the options on the **Add Message Template** page.

5 Select **Save**.

Note: You can edit saved messages, but if the message is called by a routine, it won't be dynamically updated when the routine starts.

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Table 28. Add/Edit Message Template parameters

Name
Specifies a name for this message. This is used if the message is to be saved.

Identifier
Used to identify the message so it can be deleted by a Routine action.

Type
Select the type of message to be sent:

- **Text**: A text message will be displayed.
- **Image**: An image will be displayed.

This value will determine which of several following parameters will be displayed.

Text
Type the message that is to appear on the display monitor.

You can format text using basic HTML tags, such as:

- **bold**
- <i>*italic*</i>
- <u>underline</u>
- styled text

Note: Be aware that entering a new line, even within HTML tags, will create a new line in the final message.

Priority
Select the message priority, which can range from **0 (Lowest)** to **6 - (Fullscreen)**. Priority **6 - (Fullscreen)** is the highest priority, and when a message is assigned this priority, only the messages with this priority appear on the display with the Scheduled Event Name and Date being temporarily removed. If Priority **5 (Exclusive)** is selected, the Scheduled Event Name and Date remain on the display, but all other messages with lower priorities are removed.

Display Time (seconds)
Sets the length of time for the message to be displayed before it expires. Time can range from 1 to 99999.

Table 28. Add/Edit Message Template parameters

Image Type	Select the image type to specify how the image will be displayed: • **Full Screen (1920x1080)**: Image will be displayed full screen. • **Left (925x1040)**: Image will be displayed on the left side of the screen. • **Right (925x1040)**: Image will be displayed on the right side of the screen.
Image Priority	Select the image priority for this message, which determines precedence when an Image message and Text message have the same message priority: • **Text Over Image**: Text message will be given precedence. • **Image Over Text**: Image message will be given precedence.
Message Image	Select the image to be displayed for this message from the list of **Message Images**. Note that the dimensions of this image must match the dimensions implied by the **Image Type**.
Background Color	Select the color for the message background. You can select a color by: • Using the color picker • Entering a hex color (for example: #000000, for black) • Entering an RGB color (for example: rgb(0,0,0) for black) • Entering a color alias name (for example: red, blue, etc.) For more information, see "*Using Color in Display Messages" on page 108*.

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Table 28. Add/Edit Message Template parameters

Font	Select the down arrow to view a list of available fonts and then select the desired font for the message text. Available fonts are:

> Comic-Relief
>
> Courier-Prime
>
> Gelasio
>
> Liberation Sans
>
> Linux Libertine

Font Size	Enter the desired font size.
Font Color	Select the color for the message text. You can select a color by:

- Using the color picker
- Entering a hex color (for example: #000000, for black)
- Entering an RGB color (for example: rgb(0,0,0) for black)
- Entering a color alias name (for example: red, blue, etc.)

For more information, see *"Using Color in Display Messages" on page 108*.

Font Styles	Place your cursor in the **Add Styles** box to select **Bold** or **Italic**. Otherwise, the **Font Style** remains at Regular.

Sending a Message from the Message Templates Page

You can send a message based on a previously created Message Template from the **Message Templates** page.

To send a message based on a previously created Message Template:

1 On the navigation bar, select **Messages,** then **Message Templates**.

2 Select the **Send** icon next to the Message Template that you want your new message based on.

3 On the **Display Message** popup, select the zones or stations to which you want the message to be sent.

Note: The selected zones and station will not be saved.

4 Make changes to the message options as needed (see *"Display Message Options" on page 106*).

5 Select **Send**, or if you have made changes and want those changes to be saved to the Message Template, select **Send and Save**.

Deleting a Saved Message Template

To delete a saved Message Template:

1 On the navigation bar, select **Message Templates**.

2 Select the **Delete** icon next to the Message Template that you want to delete.

3 When prompted, select **Delete**.

Routines and Other Tasks

Other tasks that you can perform from the dashboard include:

- Starting or stopping routines

- Viewing schedules

- Manually controlling output contacts

Starting and Stopping Routines

A routine automatically launches a procedure, or sequence of actions, that the Nyquist system executes as a result of an input trigger. Routines can support your crisis plans for situations such as site lockdown, weather events, or emergency evacuation.

If you have the proper permissions and your station has the necessary CoS parameter set, you can manually launch a routine via the dashboard.

> *Note:* Routines are created from the Routines selection on the navigation bar. The navigation bar does not appear if you are not authorized to make changes to the C4000 configuration. For more information, refer to the *Nyquist C4000 System Administrator Guide*.

A routine also can be automatically launched:

- By an event, such as playing a specific announcement
- Via third-party switch contact closures recognized by the Nyquist I/O Controller
- Via a Routines API that can be used by third-party systems, including fire systems, access control systems, and video security systems

A routine that has **Allow DTMF** enabled does not need a trigger. However, most routines will have at least one associated trigger and one or more actions. For example, if an administrator manually triggers a lockdown routine, several actions could result, such as:

- Play a lockdown announcement
- Display lockdown instructions on monitors connected to NQ-GA10PV devices.
- Close I/O controller output contacts to trigger third-party systems that lock doors
- Initiate the check-in process
- Launch an emergency all-call announcement

To allow a third-party system to launch a routine via the Routines API, you must enable **Allow API** for the routine.

You can manually launch a routine that has **Allow DTMF** enabled and stop a running routine from the dashboard.

In addition to the routine needing **Allow DTMF** enabled, the dashboard must have **Execute Routines** CoS enabled.

To launch a routine from the dashboard:

1 If not already on your dashboard, select **Dashboard** from the navigation bar.
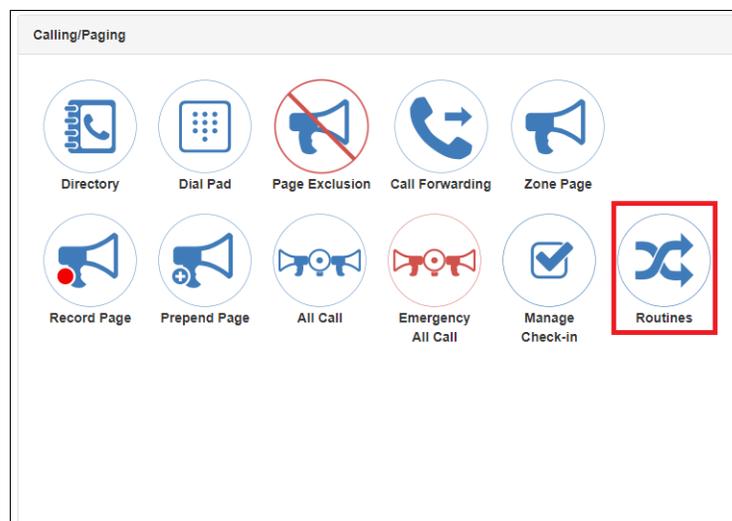
Figure 88. Routines Button

2 Under Calling/Paging, select **Routines**.

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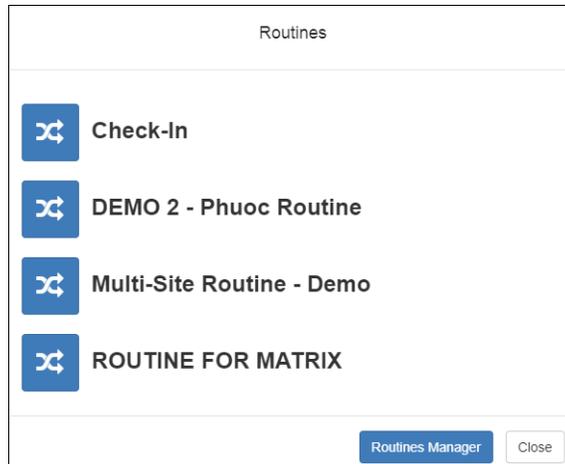
Figure 89. Routines List

3   Select one of the listed routines.
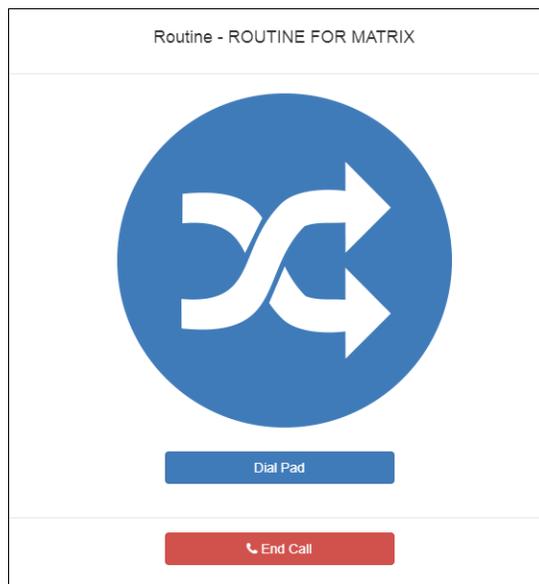
Figure 90. Routine Page

4   If you must enter a password to complete this task, select **Dial Pad** and enter the 4-digit password.

5   If prompted, enter **1** for confirmation.

6   To end the routine, select **Stop**.

You also can stop a routine using the Routines Manager.

To stop a routine via the Routines Manager:

1   If not already on your dashboard, select **Dashboard** from the navigation bar.

2   Under Calling/Paging, select **Routines**.

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3 Select **Routines Manager**.
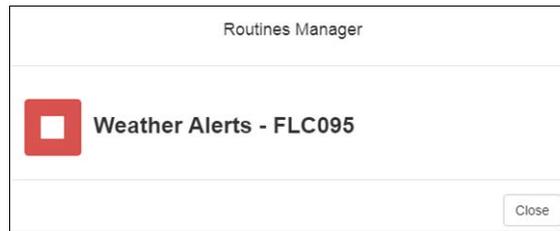
Figure 91. Routines Manager

4 Select the routine that you want to stop.

> *Note:* Stopping a routine does not reverse any actions that the routine has already started. You may need to clear the actions manually.

5 Select **Yes**.

Viewing the Schedule for the Week

From the dashboard, you can view this week's schedule or use the **Prev** and **Next** buttons to view the schedule for other weeks. If you select a specific schedule for a day, you also can view details of that schedule.

To view this week's schedule:

1 If not already on your dashboard, select **Dashboard** from the navigation bar.

Figure 92. Weekly Schedule Section of Dashboard

2 Scroll to the Weekly Schedule section.

3 To view details of a schedule, select a schedule listed for a day or use the **Prev** or **Next** buttons to navigate to the desired schedule and select that schedule.

The Schedule page appears.

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Figure 93. Schedule Page

4   Select **Close** when done viewing.

Manually Controlling Output Contacts

If you are using the C4000 I/O Controller to recognize third-party contact closures, you can manually control output contacts.

Prerequisites for using manual controls are adding an I/O Controller as a station and configuring a controller rule for at least one output contact with the Action set as Manual.
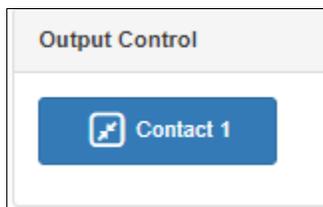
Figure 94. Output Control Section

Figure 95. Manual Control Buttons

To manually control an output contact:

1   If not already on your dashboard, select **Dashboard** from the navigation bar.

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2   In the Output Contact Control section, select the desired contact.

> *Note:* If you have set up a rule with a duration of 0, then selecting the contact displays two buttons—one for opening and one for closing the circuit. If duration is set to a number other than 0, you can only close the circuit.

3   Select the button for the action that you want. The button labels are set in the rule for the output contact.

Zone Control: Volume and Audio Distribution Panel

The Zone Control feature presents a simple user interface for controlling volume and audio distributions from any device that supports the Google Chrome browser. Small devices such as touch-screen tablets can be used to operate Zone Control via the Chrome browser.

The Zone Control feature can be used to perform the following:

- Change volume of Audio Distributions and Paging Zones
- Start and stop Audio Distributions

In addition, it has its own configuration settings view. It has two display page views:

- Settings / Zone Filter view (see *Figure 96, "Zone Control Settings and Zone Filter View," on page 130*)
- Zone View, including an Audio Distribution view (see *Figure 97, "Zone Control Zone View," on page 132*).

Initial Setup and Settings

The Zone Control feature does not use the same login model as the Nyquist application. All users share the same password. The first time a user logs in, they will be directed to the Settings page for initial setup.

To perform the initial user setup:

1   Using a Chrome-based web browser, enter:

```
https://<Server-IP-Address>/zone-control/login
```

where `<Server-IP-Address>` is replaced with the IP Address of your Nyquist server.

2   Enter a new username that has not previously been used.

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Tip: The username can correspond to an actual user, but if the Zone Control view is to be shared by multiple users, it could correspond to a group, or even a location (e.g., Lobby, Studio3, Library, etc.).

3   Enter the Zone Control Password provided by a C4000 administrator.

4   You are then presented with the Zone Control Settings and Zone Filter view (see *Figure 96, "Zone Control Settings and Zone Filter View," on page 130*).

5   Select the desired settings, as described in *Figure 29, "Zone Control Settings," on page 131*.

6   Use the Zone Filters to select the zones that you wish to display on the Zone View. The Zone Filter section displays a list of all audio distribution zones. Each includes a checkbox to enable or disable its display in the Zone View. The list also includes "All Speakers" zone (which controls Audio Distribution Cut Level in system settings). When an audio distribution zone is enabled, the audio distribution zone will be displayed on the Zone View.

7   If Display Paging Zones is enabled, you can select the Paging Zones that you wish to display on the Zone View. When a paging zone is enabled, the paging zone will be displayed on the Zone View.

8   When you are finished making changes to Settings and Zone Filters, press "Save".

9   The Zone View will then be displayed (see *Figure 97, "Zone Control Zone View," on page 132*).

Figure 96. Zone Control Settings and Zone Filter View

Table 29. Zone Control Settings

Station	The Admin Web Interface Station to be associated with this Zone Control login.
	The Station selected will be used to determine the CoS settings to be used to grant audio distribution permissions. The station extension will also appear in the Call Detail Records when an Audio Distribution is started or stopped.
Display Audio Distributions	When enabled, the Zone View will display available audio distributions for all zones that are selected in the Zone Filter. The audio distributions list is displayed under the related audio distribution zone.
	When disabled, an audio icon (i.e., a musical note) will be displayed next to each audio zone. Selecting the icon will display a page that shows the audio distributions for that zone.
Display Paging Zones	When enabled, the Zone Filter list will include Paging Zones, to allow selected Paging Zones to be displayed on the Zone View.
	Note: When you change this setting, the Zone Filter list does not immediately display the available Paging Zones; you must Save the settings, then go back into the Settings page to view and update the Paging Zones in the Zone Filter list.
Display Volume Cut Level (dB)	When enabled, the Zone View will display the numeric value for Cut Level to the right of each volume slider.
Display Zones Header	When enabled, a header will be displayed on the top of the page that labels Zone columns (e.g. Name, Description, Cut Level (dB)).
Display Audio Distributions Header	When enabled, a header will be displayed above each audio distribution list that labels the columns in the list (e.g. Line-Input/Playlist/Source, Zones, Description).
	Note: The Zones column label is not displayed on the All Speakers zone because the audio is played to All Speakers, not to zones.

Zone View

The Zone View can be used to control speaker volumes and audio distributions.

To display the Zone View:

1 Enter the following into a Chrome-based browser:

```
https://<Server-IP-Address>/zone-control
```

Tip: To create a shortcut to the Zone View, you can create a Map Object with an "Open URL" Action to open this link from the Dashboard.

2 If you are not already logged in, the Zone Control page will prompt you for a username and the Zone Control password.

3 After you have logged in, the Zone View is displayed (see *Figure 97, "Zone Control Zone View," on page 132*).
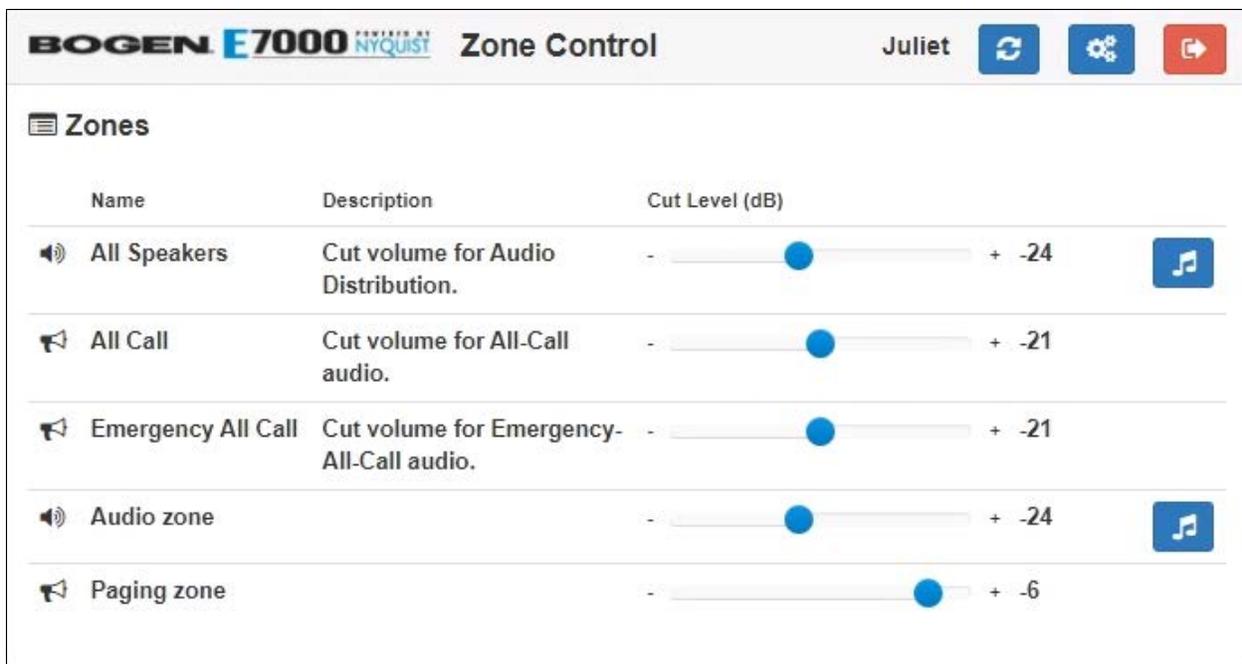
Figure 97. Zone Control Zone View

Table 30. Zone Control buttons

	Refresh: Press the Refresh button to have the Zone Controller refresh the volumes and autio distribution settings.
	Note: The status of zone volumes and audio distribution is *not* automatically updated. If a Nyquist web interface or scheduled event starts or stops an audio distribution, the state displayed on the Zone Controller may not be accurate. Whenever you wish to make a change to volume or audio distribution, you should press the refresh button first to ensure that you are starting with the correct state.

Table 30. Zone Control buttons

⚙	**Settings**: Press the Settings button to access the Settings page for the logged in user.
➡	**Logout:** Press the Logout button to log out of the Zone Controller.
♫	**Audio**: Press the Audio button to display the audio distributions that play to the selected Zone.

The Zone View displays the list of Zones that the user checked in the **Zone View Filter**.

Each listed Zone will include its name, a description, a volume slider, and an Audio icon (if **Display Audio Distributions** was disabled in the **Zone Control Settings**). The volume slider includes a cut-level value and a [-] on the left side and a [+] on the right side to decrease and increase the volume.

A zone's volume can be changed by simply sliding the volume control left or right for the desired zone. While using the slider, keep pressing the mouse or holding your finger down while sliding the volume left or right. When you lift up on the mouse or your finger, you will notice the volume change after a couple of seconds.

If you want to start or stop an Audio Distribution for a displayed zone, press the audio icon. After pressing the audio icon, a window will display a list of audio distributions that play to the selected Zone (see "*Audio Distribution Window" on page 134*). After the user presses start or stop for the desired audio distribution, the window closes and the Zone View is displayed.

If **Display Audio Distributions** is enabled under settings, you will see the available Audio Distributions displayed under each Zone, and can control (i.e., start and stop) the Audio Distribution from the Zone View.

Audio Distribution Window

The Audio Distribution window displays a list of Audio Distributions that play to the selected zone.

Each Audio Distribution in the list includes the start or stop button, a name, a zones list, and a description. The zones list works like the current Dashboard-based Audio Distribution zone list; it indicates when a distribution is being played to multiple zones.

Press the Start or Stop button for the desired Audio Distribution to start or stop.

After pressing Start or Stop for the desired audio distribution, the window closes and the Zone View is displayed.

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