



BlackBerry AtHoc

Whelen Giant Voice System Installation and Configuration Guide

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Getting started

The BlackBerry® AtHoc® management system uses the IIM add-on module interface with Giant Voice (GV) outdoor warning devices to enable wide-area Mass Notification System (MNS) broadcasts. Giant Voice features can broadcast critical information using voice messages, wave files, musical tones, or text-to-speech (TTS) conversion. Whelen GV supports outdoor Public Address (PA) systems that have large amplified speakers. Typically, speakers are set on poles in an array that covers a specified area with enough acoustic sound to override the ambient noise with emergency notification.

After the BlackBerry AtHoc management system is integrated with a Whelen Giant Voice System, operators can disseminate emergency alerts to the siren system from the BlackBerry AtHoc management system. Alert messages can be delivered using text-to-speech or pre-recorded audio files to up to three pre-defined target zones by using the external call key inputs. A fourth external call key input is reserved for sending a "Cancel" command to all poles.

Product requirements

The following section describes the hardware and software requirements to install and configure the Whelen V2 Giant Voice system.

Hardware requirements

- Whelen E-2010 Central Control Station or Whelen E969 Siren Activation Encoder

Software requirements

- BlackBerry AtHoc release 7.9 or later
- .NET framework 4.6.1 and 6.0.x

Specific usage data collection

Integration with a Whelen E-969 uses two Remote Inputs, while integration with an E-2010 uses four External Call Key inputs. One input, Remote Input 2 or External Call Key 58, is always reserved for the “Cancel All” function, leaving Remote Input 1 or External Call Keys 57, 59, and 60. The remaining functions are programmed as PA (Public Address) commands forwarding the submitted message to an associated Remote Terminal Unit (RTU) or target group.

These Remote Inputs and External Call Keys are programmed for Public Address use but unlike manual call keys, the IIM provides the audio content instead of an operator using the microphone.

When an alert is received by the IIM:

- The IIM sequences the actuation of the relevant Remote Input or External Call Key and pauses
- The Base Station transmits the contents of the Remote Input or External Call Key
- The IIM plays the selected audio content
- The IIM actuates Remote Input 2 or External Call Key 58
- The Base Station transmits the contents of the Remote Input or External Call Key
- If additional External Call Keys are specified, the cycle repeats the sequence with the next specified External Call Key

For detailed information about how to remote inputs for One Shot and Call Key activation, refer to the “Whelen E-969 Encoder Installation and Operating Manual” (Whelen Engineering Company, Inc. 1995; [Document # 04-0113056-01D](#)), pages 14 to 15. Remote Input 1 should be programmed as PUBLIC ADDRESS to ##### (all poles) and Remote Input 2 as CANCEL to #####.

For detailed information about how to Program, Modify, Delete, Finish Call Key and Remote Input Call Keys, refer to the “Whelen Operation & Installation Manual: Basic description and operation of the E-2010 Central Control Station (Whelen Engineering Company, Inc. 1998; [Document # 04-0113382-00C](#)), pages 7 to 10. External Call Key 58 should always be programmed as “1-00-#####-002” which cancels all poles and delays for 2 seconds.

There are several options when configuring External Call Keys 57, 59, and 60. In most cases, sites send all emergency content, bugle calls, and voice messages to all poles simultaneously. In this case, External Call Key 57 should be programmed as “1-04-#####-002” (PA all poles and delay for 2 seconds). If the site requires the ability to send some content to an individual pole or a subset of poles, the remaining 2 External Call Keys, 59 and 60 (and 57 if all poles is not desired), can be programmed to target an individual or a subset instead of the “#####” (all poles) selection.

Whelen Dual Tone Multi Frequency (DTMF) Station Addressing is detailed in the Whelen® Engineering Company Siren Configuration Software User’s Manual, Form No. 13595A (012304), pages 17 to 23. For the poles to be grouped, they must meet the Whelen addressing scheme such that “#” wildcard characters can be used in an address string. If they do not conform to grouping standards but the customer desires them to be grouped, the site’s GV System Maintenance POC needs to perform work to re-address individual poles.

Care should be taken in the configuration of multiple External Call Key configurations that all poles in the giant voice system are targetable by selecting one or more External Call Keys.

Also, consideration should be given to timely giant voice system activation. When multiple External Call Keys are configured, the IIM sends the audio content to the addresses contained in each External Call Key sequentially and not simultaneously. This can result in a significant delay to parts of the system during actual emergencies.

Because the Whelen v2 integration does not include “Key” functions, or the ability to specifically target recordings stored at the poles, any recordings stored at the poles need to be provided as WAV files to be stored in the BlackBerry AtHoc server. These WAV files should be converted to mono, compressed down to 8-bit or 16-bit sampling, and have all frequencies below 400 Hz removed before uploading. However, WAV Windows PCM, 8 KHz to 48 KHz, 8-bit or 16-bit, mono or stereo files will work.

Note: Audio files should be carefully edited to remove frequencies below 400 Hz. Sustained low frequencies can cause damage to certain vendors' electronic components.

For best results, any WAV file intended to be played by the IIM should be tested and verified prior to use in a live alerting situation.

If the WAV file is greater than 2 MB in size, the Audio File Uploader tool, found under the Settings section, may indicate an error. Contact BlackBerry AtHoc technical support for additional instructions on how to upload oversized files.

If the GV system uses radio frequency (RF) communications between the Central Control Unit (CCU) and Remote Terminal Units (RTU), you need to check the associated radio Push-To-Talk Time-Out-Timer setting. This setting should be set to 5 minutes or "infinite" to ensure that audio transmissions do not get cut off. Check with the site's GV System Maintenance or RF System Maintenance POC to ensure that this setting is correct.

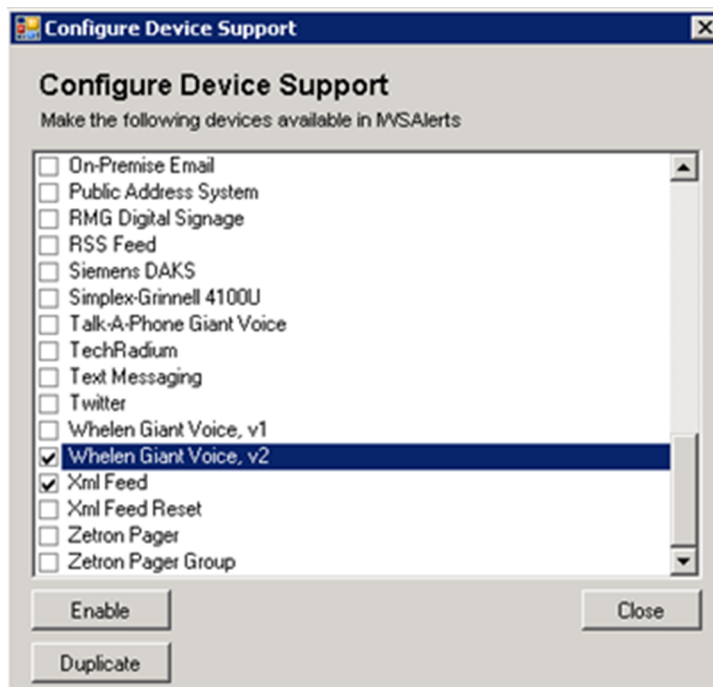
Configure the Whelen v2 device

Configure the Whelen v2 gateway in the Settings section of the BlackBerry AtHoc management system to enable the BlackBerry AtHoc alerts system to publish alerts through Whelen v2.

Configure the Whelen v2 device on the BlackBerry AtHoc application server


Log in to the BlackBerry AtHoc management system and check the Delivery Gateways section to verify that the Whelen v2 and XML Feed device gateways have been installed. If they are installed, skip this section.

1. Log in to the BlackBerry AtHoc application server as an administrator.
2. Navigate to the following folder <IWSAlerts Install Path>\ServerObjects\Tools and run the AtHoc.Applications.Tools.InstallPackage.exe file. The Configure Device Support screen opens.
3. Select **Whelen Giant Voice, v2** and **Xml Feed**.



4. Click **Enable**.
5. When the Installation Complete pop-up window is displayed, click **OK**.
6. Click **Close**.

Configure the delivery gateway

1. Log in to the BlackBerry AtHoc management system as an administrator.
2. In the navigation bar, click .
3. In the **Devices** section, click **Whelen Giant Voice, v2**.
4. On the **Whelen Giant Voice, v2** page, click **Copy default settings**.

5. In the **CAP Parameter Defaults** section, the **Sender** field displays "IWSAlerts". Remove "IWSAlerts" and manually enter "BlackBerry AtHoc Alerts" in the **Sender** field:


The screenshot shows the 'Whelen Giant Voice, v2' configuration page. The 'CAP Parameter Defaults' section is highlighted with a red box. It contains the following fields:

- Sender:** A text field containing 'BlackBerry AtHoc Alerts'. Below it is the description: 'The identifier of the sender of the alert message'.
- Event:** A text field with a blue border. Below it is the description: 'The text denoting the type of the subject event of the alert message'.
- Contact:** A text field. Below it is the description: 'The text describing the contact for follow-up and confirmation of the alert message'.
- Area:** A large text area.

Below the 'CAP Parameter Defaults' section is the 'CAP URLs' section, which contains three text fields with placeholder URLs and descriptions:

- CAP Index URL:** Placeholder: `[[SystemURL]]/syndication/[[GatewayId]]/[[VirtualSystemId]]/capindex`. Description: 'IIMs poll this URL to retrieve all Live Alerts from system.'
- CAP Message URL:** Placeholder: `[[SystemURL]]/syndication/[[GatewayId]]/[[VirtualSystemId]]/capim/[[AlertId]]`. Description: 'IIMs poll this URL to retrieve details for a specific Alert.'
- CAP Event Logs Submission URL:** Placeholder: `[[SystemURL]]/syndication/PostCap`. Description: 'IIMs post event logs from Giant Voice systems to this system using this URL.'

At the bottom of the page, there are navigation links: '<< Back', a 'Save' button with a red icon, and a 'Reset' link.

6. Click **Save**.
7. In the navigation bar, click .
8. In the **Devices** section, click **Xml Feed**.
9. On the **Xml Feed** page, click **Copy default settings**.
10. In the **Feed Source** section, select **End User**.



Xml Feed

Configure support for content feed publishing. Select Copy Default Settings to ensure that the feed format for CAP is compatible with the feed source.

[Copy default settings](#)

Feed Formats:

- ☐ Syndication: Atom
- ☒ Syndication: Caplim
- ☒ Syndication: CapIndex
- ☐ Syndication: RSS 2.0

Feed Source:

- ☒ End User
- ☐ Delivery Gateway ID
- ☐ Custom Identity

[<< Back](#)

Save

[Reset](#)

11. Click **Save**.

Enable the Whelen Giant Voice v2 device

1. In the navigation bar, click
2. In the **Devices** section, click **Devices**.
3. On the **Devices** page, click the **Mass Devices** tab.
4. Click **Whelen Giant Voice v2**.
5. On the **Whelen Giant Voice v2** page, click **Edit**.
6. In the **Delivery Gateways** section, click **Add a Delivery Gateway > Whelen Giant Voice,v2**.

▼ Delivery Gateways

Choose and configure the Delivery Gateways which will deliver messages to this device. If more than one Delivery Gateway is configured, the system will attempt to deliver messages to this device in the order listed below until delivery is successful. If no Delivery Gateways are configured, the device will be considered Disabled.

[Add a Delivery Gateway](#) ▼

| Delivery Gateway |
|--|
| <div> <div> <div></div> <div>Whelen Giant Voice, v2</div> </div> <div> </div> </div> |



7. In the **Whelen Giant Voice,v2** row, click .
8. In the **Configure Gateways** window, check for XML code in the **Configuration XML** field. If the field is empty, copy and paste the following code into the field:

```
<Configuration>
  <CapParams>
    <GVSystemType>Whelen2010v2</GVSystemType>
    <UnusedMode>0</UnusedMode>
    <KeyMode>4</KeyMode>
    <DefaultKeyCode>57</DefaultKeyCode>
    <DefaultKeyActivationCode>0</DefaultKeyActivationCode>
    <NoPARequired>0</NoPARequired>
    <PARequired>1</PARequired>
  </CapParams>
</Configuration>
```

```
<ContentSource>GiantVoice</ContentSource>
<PoleMode>0</PoleMode>
<DefaultAllCall>0</DefaultAllCall>
<AllMode>0</AllMode>
</CapParams>
</Configuration>
```

9. Click **Submit**.
10. Click **Save**.
11. Click **More Actions > Enable**.

Configure the Xml Feed device

1. In the navigation bar, click .
2. In the **Devices** section, click **Devices**.
3. On the **Devices** page, click the **Mass Devices** tab.
4. Click **Xml Feed**.
5. On the **Xml Feed** page, click **Edit**.
6. In the **Delivery Gateways** section, click **Add a Delivery Gateway > Xml Feed**.
7. In the **Whelen Giant Voice, v2** row, click .
8. In the **Configure Gateway** window, check for XML code in the **Configuration XML** field. If the field is empty, copy and paste the following code into the field:

```
<Configuration>
    <DeviceType>FEED</DeviceType>
</Configuration>
```

9. Click **Submit**.
10. Click **Save**.

Note: You must configure the Xml Feed but are not required to enable it to use the Whelen Giant Voice v2 device.


Set up mass device endpoints (targets)

The process of setting up Mass Alert devices or endpoints involves the use of external call keys, a Whelen term referring to E-969 or E-2010 encoder digital inputs. Each external call key is a set of instructions that is sent from the encoder to siren poles. On the E-2010 encoder there are three variable modes and one static mode for the call keys and each key is assigned a number. 57, 59, and 60 for variable mode inputs while 58 is a static mode input, which is reserved for sending "Cancel All" commands to all poles. Each variable call key can be assigned to one pole, a set of poles, or all poles.

Note: Creation of custom attributes ATHOC-GV-KEYS and ATHOC-GV-TYPE is not required for Whelen Giant Voice v2 Mass Communication users.

Create mass device external call key endpoints

Create a new Mass Device Endpoint for each static call key that is used (57, 59, and 60)

1. Log in to BlackBerry AtHoc management system as an administrator.
2. In the navigation bar, click the  (Settings) icon.
3. In the **Devices** section, click **Mass Devices Endpoints**.
4. Click **New**.
5. Select **Whelen Giant Voice v2** from the list.

6. In the General section, for the **Display Name** field, enter a name that describes the function of the associated call key, so that it is easy to identify which key is for which function. For example, in the following image, Call Key 57 is associated with Giant Voice All Poles.
7. In the Configuration section, select the **Other** option for **Giant Voice type**.
8. In Address field, enter one of the following call keys: "N,57", "N,59", or "N,60". Ensure that there are no spaces anywhere in the character string.
9. Click **Save**.

Settings > Mass Device Endpoints > CALL-KEY-57 Cancel Save

▼ General

| | | | |
|-----------------|--|----------------|--|
| Device Category | Giant Voice | Device | Whelen Giant Voice v2 |
| Endpoint Name * | <input type="text" value="CALL-KEY-57"/> | Display Name * | <input type="text" value="CALL-KEY-57"/> |

▼ Configuration

Giant Voice Type * ☐ Pole ☐ Zone ☐ Key ☒ Other

Address *

Settings > Mass Device Endpoints > CALL-KEY-59 Cancel Save

▼ General

| | | | |
|-----------------|--|----------------|--|
| Device Category | Giant Voice | Device | Whelen Giant Voice v2 |
| Endpoint Name * | <input type="text" value="CALL-KEY-59"/> | Display Name * | <input type="text" value="CALL-KEY-59"/> |

▼ Configuration

Giant Voice Type * ☐ Pole ☐ Zone ☐ Key ☒ Other

Address *

Settings > Mass Device Endpoints > CALL-KEY-60 Cancel Save

▼ General

| | | | |
|-----------------|--|----------------|--|
| Device Category | Giant Voice | Device | Whelen Giant Voice v2 |
| Endpoint Name * | <input type="text" value="CALL-KEY-60"/> | Display Name * | <input type="text" value="CALL-KEY-60"/> |

▼ Configuration

Giant Voice Type * ☐ Pole ☐ Zone ☐ Key ☒ Other


Address *

Create and publish a Whelen Giant Voice alert template

Prerequisites

- Before you start sending test alerts through Whelen Giant Voice v2, consider the impact it has on everyone within hearing distance of the poles you are using during the test.
- This process assumes that the IIM is not configured to download data from the BlackBerry AtHoc management server and is not connected to the Giant Voice equipment.
- Consult with your POC as to the acceptable content of the test alert. For example, the word "test" should appear at, or very near to, the start of the broadcast message.
- Although the initial use of this template is to test the data creation process, this template can be used during the audio tuning phase after the IIM and Giant Voice hardware are connected.

To confirm that the Whelen Giant Voice v2 device is installed correctly on the BlackBerry AtHoc management system, create a template.

1. Log in to the BlackBerry AtHoc management system as an administrator.
2. Click **Alerts > Alert Templates**.
3. On the **Alert Templates** page, click **New**.
4. On the **New Template** screen, in the **Alert Template** section, enter a template name and description.
5. Select a folder from the **Folder** list.
6. Select **Available for Quick Publish**.
7. In the **Content** section, enter the title and content of the alert.
8. In the **Mass Devices** section, select **Whelen Giant Voice v2** and select an option from the pull-down menu.
9. In the top right corner of the **Mass Devices** section, click **Options**.
10. On the **Mass Devices Options** screen, select the **Text to Speech** and **Alert Body** or **Custom Text** options.
11. Click **Apply**.
12. In the **Schedule** section, change the **Alert Duration** to 15 minutes.
13. Click **Preview and Save**.
14. On the preview screen, review the settings and selections.
15. Click **Save**.
16. Click  to go to the Home page.
17. In the **Quick Publish** section, find the alert template you created.
18. Click **Publish**.
19. On the **Review and Publish** screen, review the settings and selections.

20. Click **Publish**.

Verify the published alert

To verify that the alert was published successfully to the syndication feed, complete the following steps:

1. Open a browser and navigate to the following URL: `https://<url>/syndication/cap_whelen_v2/<vps-id>/capindex`.

Where <url> is the base URL of the BlackBerry AtHoc management system (for example, `https://integration7.athoc.com`) and <vps-id> is the 7 or 8-digit organization ID.

2. Copy the content in the <url> field into another browser. The “capIndex” XML format must be similar to the content in the following image:



Test pre-installation legacy functionality

Before making any modifications to the Whelen hardware programming or wiring, ensure that the legacy functions are operational. Any pre-existing problems that were not identified during testing before making changes to wiring or programming configuration could make troubleshooting more difficult after full system testing begins.

If the site has an E-2010 Central Control Station, have the customer or site operations POC initiate a Quiet Test and Health Feedback function of the poles and observe the health statuses of each pole on the E-2010 display. In addition, the site should initiate a Public Address function and make a manual microphone announcement.

If the site has an E-969 Encoder, health status feedback may not be observed. The site should initiate a Public Address function and make a manual microphone announcement. In either case, the microphone announcement should be observed as providing a loud and clear signal from an unobstructed listening position 100–200 yards from a Giant Voice pole, preferably in line-of-site with the pole and not near any buildings or large structures. Record any displayed faults or lack of clarity observed. It may only be possible to create audio with the new integration on par with the legacy audio functionality.

Configure IIM IP connectivity

This section describes the steps to configure the IP Integration Module (IIM) to communicate with the BlackBerry AtHoc Whelen v2 device.

Prerequisite

Ensure that the following packages are installed and configured before performing any tasks:

- Latest Whelen v2 BlackBerry AtHoc device package
- Latest Whelen v2 IIM capnode package

Uninstall the existing CapconService

1. Go to **Program Files** and open the **capnode** folder.
2. Right-click the `UninstallCapCon-NT.bat` file and select **Run as administrator**.
3. Go to **Start > Run > Services**.
4. Verify that the CapconService is uninstalled.

Uninstall the existing IIMAgent service

1. Go to **Program Files** and open the **capnode** folder.
2. Right-click the `Uninstall_IIMAgent.bat` file and select **Run as administrator**.
3. Go to **Start > Run > Services**.
4. Verify that the IIMAgent service is uninstalled.

Uninstall Java from IIM

Before you begin: Before uninstalling Java, make sure that the Java process is not running in the background.

1. Open the **control panel**.
2. Click **Program and Features**.
3. Right-click **Java 8 Update XXX (64-bit)** and click **Uninstall**.
4. Restart your system to ensure all background processes that use Java are stopped.
5. After the system restart, open a command prompt and type **java -version**. If Java is successfully uninstalled, the following message is displayed:

```
C:\Users\COMM_AtHoc>java -version
'java' is not recognized as an internal or external command,
operable program or batch file.
```

Configure IIM IP connectivity

This section describes the steps to configure the IP Integration Module (IIM) to communicate with the BlackBerry AtHoc Whelen v2 device.

Prerequisite

Ensure that the following packages are installed and configured before performing any tasks:

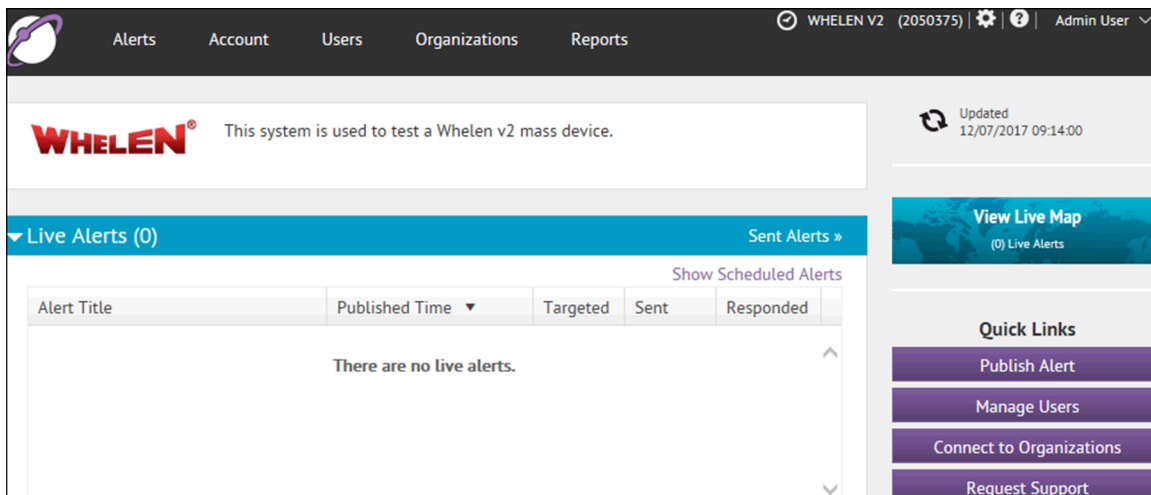
- Latest Whelen v2 BlackBerry AtHoc device package
- Latest Whelen v2 IIM Capnode package

To work as part of the BlackBerry AtHoc system, IIM must be able to communicate with the BlackBerry AtHoc server to download the CAP packets.

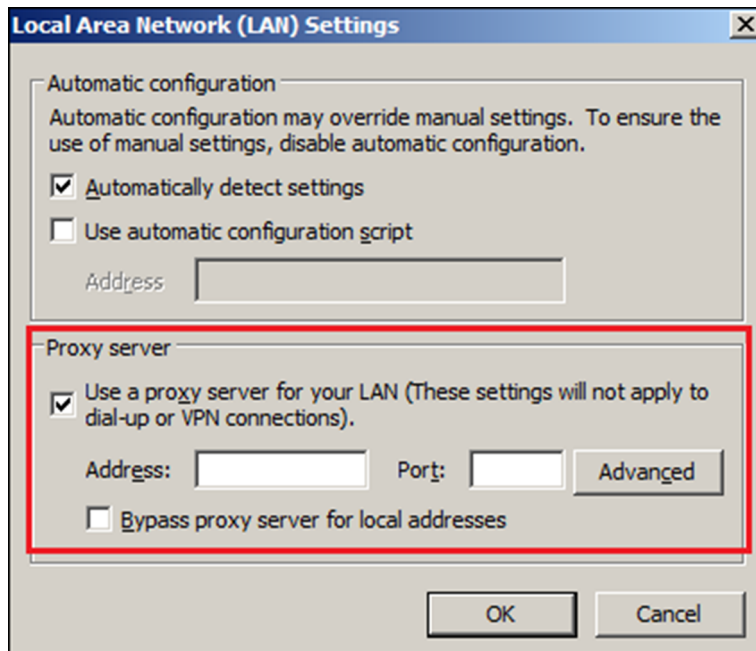
The initial configuration data you need to collect are:

- The BlackBerry AtHoc Alerts system base URL
- The BlackBerry AtHoc Alerts Organization ID
- Customer's proxy server and port information

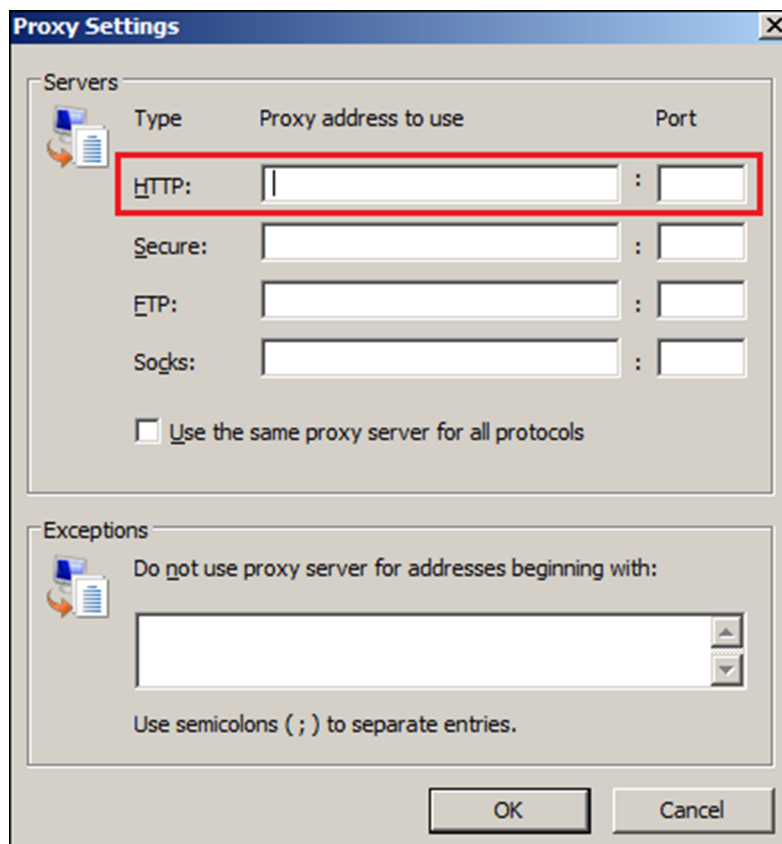
To find this information, use a local PC to log in to your local instance of the BlackBerry AtHoc management system. The URL can be a base "https" address used to access a specific system. You can obtain the URL of the system from the local system administrator or from the Blackberry Customer support team. Launch the management console. The URL from the "https" to the last character before the third forward slash (/) is the "base URL" of the system. For example, in the following URL address bar, the full URL for the sign-on page is: "https://integration7.athoc.com/client/auth/login?ReturnUrl=%2fclient%2fathoc-iws". The "base-URL" of the system is "https://integration7.athoc.com".



Navigate to the settings page of the browser and determine if you are using any type of Proxy server for routing of internet traffic. For example, if the browser you are using is Microsoft Internet Explorer (IE), go to the LAN settings, in IE, select **Tools > Internet Options**. On the Internet Options screen, click the **Connections** tab. At the bottom of the window, click **LAN settings**.

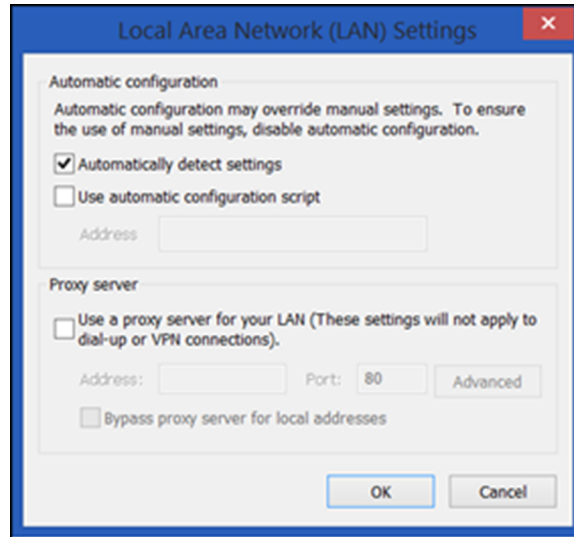


In the Proxy Server section, click the **Advanced** button. The **Proxy Settings** screen displays the Proxy Server Address.



Record the proxy server address and the port number. You can now close these settings windows and exit IE.

Note: It is also possible that your IE instance may not use proxy servers. If this is the case when you click the **LAN settings** button, no proxy server is used for internet traffic on this network.



Install the capnode in IIM

1. Download the capnode.zip file for Whelen.
2. Right-click the capnode.zip file and click **Properties**.
3. On the **Properties** dialog, in the **Security** section, select the **Unblock** option.
4. Click **OK**.
5. Right-click the **capnode.zip** file and select **Extract All...**
6. On the **Select a Destination and Extract Files** dialog, extract the files to C:\Program Files\capnode.

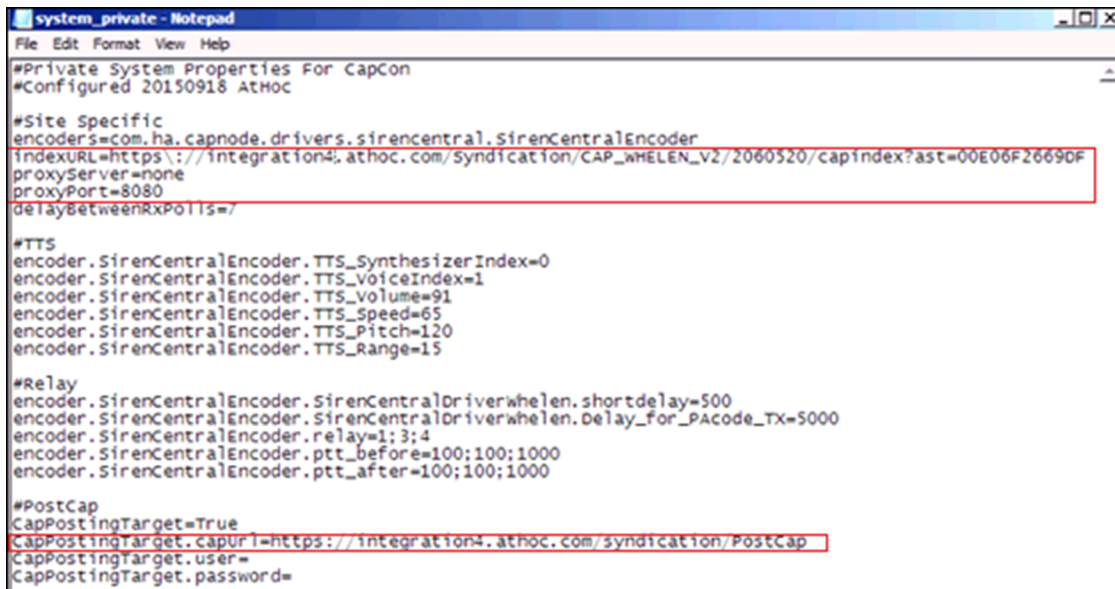
Install the CapconService

1. Go to **Program Files** and open the **capnode** folder.
2. Right-click the `InstallUtilCapconService.bat` file and select **Run as administrator**.
3. Go to **Start > Run > Services**.
4. Verify that the CapconService is installed.

Configure the system_private.config file

1. Open Microsoft Notepad as an administrator.
2. Click **File > Open**.
3. Navigate to C:\Program Files\capnode and change the file selection from "Text Documents (*.txt)" to "All Files (*.*)".
4. Select the **system_private** file.
5. Click **Open**.
6. Verify the following items in the `system_private.config` file:
 - a. The `indexURL` variable should be formatted similar to the following image. The base URL should be followed by "/syndication/", then the device gateway protocol ID (for example, CAP_Whelen_v2 for an Whelen Giant Voice, v2 system), the Organization ID number, followed by "/capindex".

- b. The “#” at the beginning of a line in the `system_private.config` file is used to comment out an unused line. The “#” should be removed from a line to use the variable.
7. Enter the proxy server and proxy port information you collected earlier in the `proxyServer` and `proxyPort` parameters. If the settings on the machine that you tested with is set for “Automatic” in the proxy settings, the settings for those two lines displays as follows:
- `proxyServer=none`
 - `proxyPort=8080`
8. Update the `CapPostingTarget` variables to reflect the correct URL using the same base URL as in the `indexURL` variable.



```
system_private - Notepad
File Edit Format View Help
#Private System Properties For CapCon
#Configured 20150918 AtHoc

#Site Specific
encoders=com.ha.capnode.drivers.sirencentral.SirenCentralEncoder
indexURL=https://integration4.athoc.com/Syndication/CAP_WHELEN_V2/2060520/capindex?ast=00E06F2669DF
proxyServer=none
proxyPort=8080
delayBetweenRXPolls=7

#TTS
encoder.SirenCentralEncoder.TTS_SynthesizerIndex=0
encoder.SirenCentralEncoder.TTS_VoiceIndex=1
encoder.SirenCentralEncoder.TTS_Volume=91
encoder.SirenCentralEncoder.TTS_Speed=65
encoder.SirenCentralEncoder.TTS_Pitch=120
encoder.SirenCentralEncoder.TTS_Range=15

#Relay
encoder.SirenCentralEncoder.SirenCentralDriverWhelen.shortdelay=500
encoder.SirenCentralEncoder.SirenCentralDriverWhelen.Delay_for_PACode_TX=5000
encoder.SirenCentralEncoder.relay=1;3;4
encoder.SirenCentralEncoder.ptt_before=100;100;1000
encoder.SirenCentralEncoder.ptt_after=100;100;1000

#PostCap
CapPostingTarget=True
CapPostingTarget.capurl=https://integration4.athoc.com/syndication/PostCap
CapPostingTarget.user=
CapPostingTarget.password=
```

9. Click **File > Save**.
10. Close the `system_private.config` file.
11. Restart the CapconService.

Launch the Capcon system activity console (GUI)

1. Go to **Program Files** and open the **capnode** folder.
2. Right-click the `runcapnode.bat` file and select **Run as administrator**.

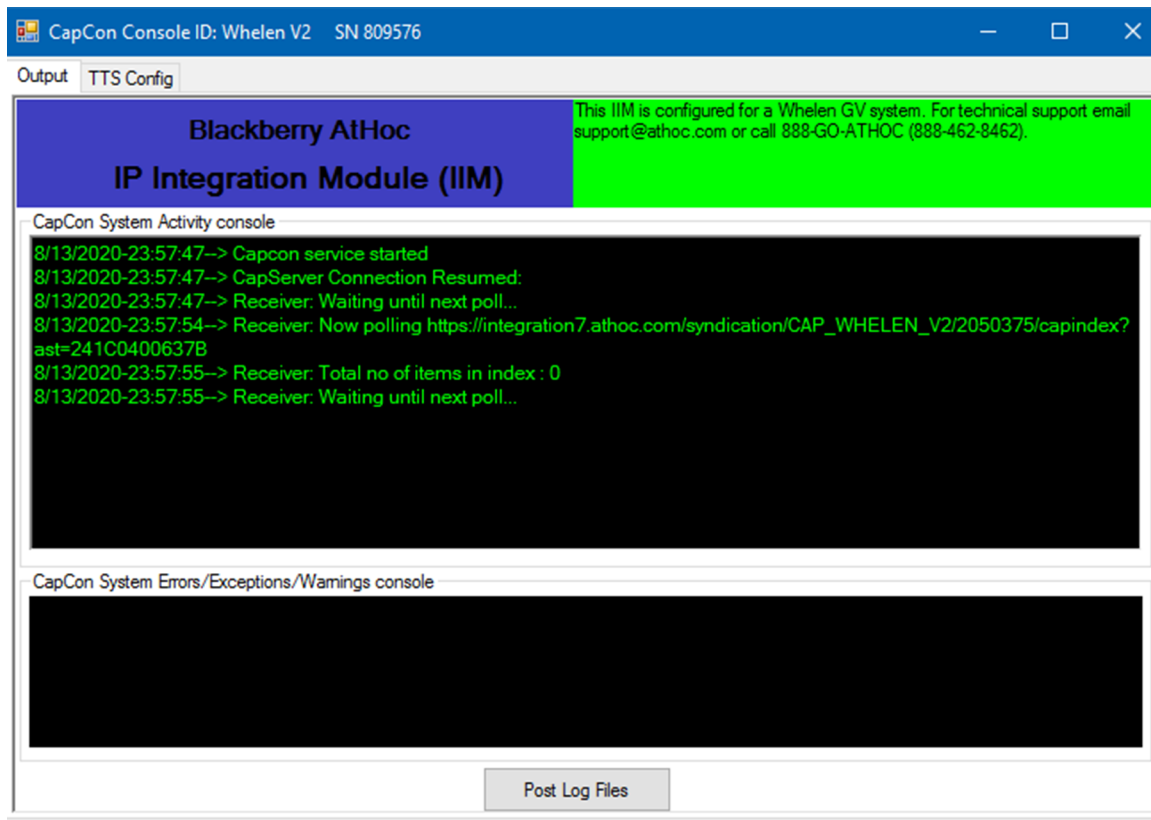
The Capcon system activity console opens.

Verify the Capcon system activity console (GUI)

1. Log in to the IIM console as an administrator. The Capcon console loads automatically.

The data in the Capcon System Activity console polls at the rate set by the `delayBetweenRXpolls` variable in the `system_private.config` file. The default is set to 7 seconds. A message indicates the total number of items in the index. The index number is the number of active alerts on the BlackBerry AtHoc system at that time.

2. Verify that the IIM console does not show any new errors.



3. Verify that the console icon in the task tray appears green (🟢), indicating that the connectivity between the IIM and the BlackBerry AtHoc alerts system is good. The console icon appears red (🔴) if the CapconService is stopped or not installed.

System tray icon menu

When the CapconService is running, the console icon in the task tray appears green (🟢). Rick-click the tray icon to perform any of the following tasks.

- **Hide Console:** Hide the Capcon console.
- **Show Console:** Display the Capcon console.
- **Restart Service:** Restart the CapconService.
- **Quit Console:** Close the Capcon console.
- **Stop All:** Close the Capcon console and stop the CapconService.
- **Restart GUI:** Restart the Capcon console and the system tray icon.
- **Restart All:** Restart the Capcon console, the system tray icon, and the CapconService.
- **Logs:** Open a list of log files in Capnode. Click to open a specific .log file.
- **Configs:** Open a list of configuration and property files. Click to open a specific .config or .prop file.

Troubleshoot Capcon console errors

If the Capcon system activity console indicates anything other than a total number of items in the index and a number, or if the Capcon System Errors/Exceptions/Warnings console has content in red, this indicates that the configuration has not been executed correctly.

1. If the BlackBerry AtHoc management system, for example, "https://integration7.athoc.com/athoc-iws" is available on IE on a local workstation, then the indexURL should also be available. Enter the indexURL in the browser. For example, "https://integration7.athoc.com/syndication/cap_whelen_v2/2086867/capindex".
If there are no items in the syndication feed, an XML similar to the following image should be displayed:

```
<?xml version="1.0"?>
- <capIndex xmlns="http://www.incident.com/cap_index/1.0">
  <title>Current CAP Messages</title>
  <updated>2017-12-14T08:11:25.2276647-08:00</updated>
</capIndex>
```

If there are items in the feed, an XML similar to the following image should be displayed:

```
<?xml version="1.0"?>
- <capIndex xmlns="http://www.incident.com/cap_index/1.0">
  <title>Current CAP Messages</title>
  <updated>2017-12-14T08:15:10.1492202-08:00</updated>
  - <item xmlns="http://www.incident.com/cap_index/1.0">
    <id>0A854D73-5310-4FC6-92B8-E4CBCEDC224C</id>
    <identifier>0A854D73-5310-4FC6-92B8-E4CBCEDC224C</identifier>
    <sender>AtHoc Admin</sender>
    <status>System</status>
    <msgType>Alert</msgType>
    <firstEffective>2017-12-14T11:15:05.713</firstEffective>
    <lastExpires>2017-12-14T11:19:05.713</lastExpires>
    <url>https://integration7.athoc.com/Syndication/CAP_WHELEN_V2_2086867/CapIim/1140148</url>
    <bounds/>
    <format>http://www.incident.com/cap/1.1</format>
  </item>
</capIndex>
```

2. If connectivity is still not good, try commenting out the `proxyServer` and `proxyPort` variables.
3. If an HTTP or HTTPS error is displayed instead of XML, this may indicate a firewall or certificate issue or a configuration problem with the BlackBerry AtHoc server syndication folder or subfolders.
4. Check the indexURL and proxy settings in the `system_private.config` file for any misspellings. If any line have been misspelled, repeat the configuration steps.
5. Check the `capnodelog` file for errors. Open Windows Explorer by right-clicking on the IIM Start button and navigate to `C:\Program Files\capnode\capnodelogs` and open the `capnode.log` file with Notepad. Browse the file to find the time that the indexURL was changed and the CapCon service restarted.
6. Contact BlackBerry AtHoc customer support. Be prepared to provide the `system_private.config` and `capnode.log` files and screen shots of the console screen and the BlackBerry AtHoc management console pages.

Test Post-installation final legacy functionality

Once the wiring modifications needed to complete the integration are complete, the integrator must ensure that the legacy functions of the original system are still operational.

Note: For instructions about the wiring modifications, contact the BlackBerry AtHoc Customer Support team and request a copy of the *BlackBerry AtHoc IIM Central Control Unit Interconnection Guide*.

This is essentially the same test that was performed before the modifications were made. This test must be performed again to ensure that any changes that were made have not created any problems with the legacy system's operation.

If the site has an E-2010 Central Control Station, have the customer or site operations POC initiate a Quiet Test and Health Feedback function of the poles and observe the health statuses of each pole on the E-2010 display. In addition, the site should initiate a Public Address broadcast, using the hand held microphone to make a test announcement.

If the site has an E-969 Encoder, health status feedback may not be observed. The site should initiate a Public Address broadcast, using the hand held microphone to make a test announcement. In either case, the microphone announcement should be observed as providing a loud and clear signal from an unobstructed listening position 100–200 yards from a Giant Voice pole, preferably in line-of-site with the pole, and not near any buildings or large structures.


Record any changes in operation since the pre-installation legacy functionality testing stage. If functionality does not work as expected, review the work that was performed and verify that all wiring has been terminated as shown in the wiring diagrams.

Create and publish a pre-test alert template

Prerequisites

- Before you start sending test alerts through Whelen Giant Voice v2, consider the impact on everyone within hearing distance of the poles you are using during the test.
- Consult with your POC as to the acceptable content, user targeting, and device selection of the pre-test notification.

To targets end users using the desktop app, email, and messages to other devices to inform them of a Giant Voice System test, create an alert template.

1. Log in to the BlackBerry AtHoc management system as an administrator.
2. Click **Alerts > Alert Templates**.
3. On the **Alert Templates** screen, click **New**.
4. On the **New Template** screen, in the **Alert Template** section, enter a template name and description.
5. Select a folder from the **Folder** list. Select **Test** if available.
6. Select **Available for Quick Publish**.
7. In the **Content** section, select **Informational** from the **Severity** list and **Other** from the **Type** list.
8. In the **Content** section, enter an alert title. The alert title can be the same as the template name. In the **Body** field enter the text to be read by the text-to-speech. The body text should contain the details of the testing with information such as the time testing will start and finish and any actions that should be taken as a result.
9. In the **Target Users** section, select the appropriate targeting group, individual users, or query to send the pre-test notification to.
10. Click **Select Personal Devices** and then select **Desktop App** and **Email - Personal**.
11. In the top right corner of the **Personal Devices** section, click **Options**.
12. On the **Personal Devices Options** screen, select **App Template** and **App Audio** options.
13. Click **Apply**.
14. In the **Schedule** section, change the **Alert Duration** to the expected duration of the testing.
15. Click **Preview and Save**.
16. On the preview screen, review the settings and selections.
17. Click **Save**.
18. Click  to go to the Home page.
19. In the **Quick Publish** section, find the Giant Voice System Test Notification template.
20. Click **Publish**.
21. On the **Review and Publish** screen, click **Publish**.
22. To verify that the alert was published correctly, observe the receipt of desktop pop-up or email messages on the POC workstation.

Adjust the WAV file audio level

IIM pre-recorded audio and text-to-speech audio tuning audio calibration must be performed in steps to calibrate the individual audio levels for pre-recorded audio (WAV file) play and text-to-speech. Some adjustments can be made by ear but can be more accurate if diagnostic tools are used. For radio-based systems, if a radio meter with an FM deviation scale can be used, the accuracy of the tuning can be more precise. For non-radio-based systems, a digital voltage meter can be used to read the levels of the transmitted audio.

Depending on the integration type, there can be different variables in the `system_private.config` file that need to be tuned. For Whelen v2, the variables that typically require tuning are related to time delays, variables with “before” or “after”, and text-to-speech attributes variables with “TTS”.

1. Adjust the IIM Windows Audio Tool Tray Slider to approximately 25% as a starting point.

The Giant Voice System Test template should be edited to use pre-recorded audio content; typically the “Test GVS” file. Observe the audio level and clarity in comparison with the manual activation baseline.

2. Log in to the BlackBerry AtHoc management system as an administrator.
3. In the **Quick Publish** section, search for the Giant Voice System Test template and click **Edit**.
4. In the **Mass Devices** section, select **Whelen Giant Voice, v2**.
5. In the top right corner of the **Mass Devices** section, click **Options**.
6. On the **Mass Devices Options** screen, select the **Pre-recorded Audio** option and select **Test GVS** from the list.
7. Click **Apply**.
8. Click **Review and Publish**.
9. On the **Review and Publish** screen, click **Publish**.
10. Observe the operations of the following:
 - In the IIM console window, the number of items in index increases and that it starts processing the alert.
 - The E-2010 or E-969 transmits the contents of External Call Key 57, 59, or 60 depending on selections made in the BlackBerry AtHoc management system.
 - The associated Giant Voice poles and the audio volume and clarity.
11. Adjust the IIM Windows Audio Tool Tray Slider to match the baseline audio level and clarity.
12. Repeat steps 2 to 11 until the pre-recorded audio sounds close in volume and clarity to manual microphone announcements.

Adjust the text-to-Speech audio level and characteristics

The previously configured Giant Voice System Test template should have been configured to use POC-approved verbiage and Text-to-Speech. Observe the audio level and clarity in comparison with the manual activation baseline and make adjustments as required.

1. Log in to the BlackBerry AtHoc management system as an administrator.
2. On the Home page, in the **Quick Publish** section, search for **Giant Voice System Test** and then click **Edit**.
3. Click **Review and Publish**.
4. On the **Review and Publish** screen, review the settings and selections.
5. Click **Publish**.
6. Observe the operations of the following:
 - In the IIM console window, the number of items in index increases and that it starts processing the alert.
 - The E-2010 or E-969 transmits the contents of External Call Key 57, 59, or 60 depending on selections made in the BlackBerry AtHoc management system.
 - The associated Giant Voice poles and the audio volume and clarity.
7. Click **Start > Run** and type **Notepad**. Right-click on the Notepad icon and select **Run as administrator** and then click **OK**.
8. Using Microsoft Notepad, open the `system_private.config` file located at `C:\Program Files\capnode\system_private.config`.

Tip: You can also use the TTS Config tab on the Capcon console to adjust the TTS audio characteristics and levels. For more information, see [Adjust TTS audio using the TTSTConfig tab](#).
9. In the Notepad, find the following:
 - `encoder.SirenCentralEncoder.TTS_Volume` variable and adjust up or down to match the baseline audio level.
 - `encoder.SirenCentralEncoder.TTS_Speed` variable and adjust up or down to adjust the rate of speech. The speed variable is in words per minute.

- `encoder.SirenCentralEncoder.TTS_Pitch` and `encoder.SirenCentralEncoder.TTS_Range` variables and adjust up or down to adjust the pitch and inflection of the speaking voice.

10. Click **File > Save**.

11. Run another test and observe the audio characteristics.

12. Repeat steps 1 to 11 until the prerecorded audio sounds close in volume and the clarity to the baseline.

Adjust TTS audio using the TTSTest tab

When you open the TTS Config tab on the Capcon console, the sliders have the values set in the `encoder.SirenCentralEncoder` attribute in the `system_private.config` file.

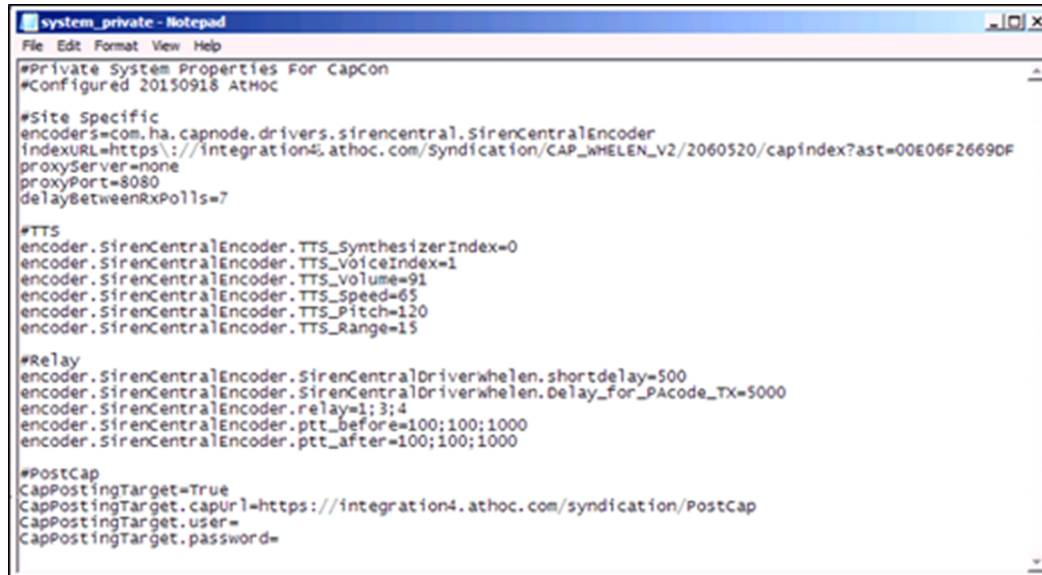
1. Log in to the Capcon console.
2. Click the **TTS Config** tab.
3. Adjust any of the following sliders:
 - **Volume:** Adjust up or down to match the baseline audio level.
 - **Words/Min:** Adjust up or down to change the rate of speech. The speed variable is in words per minute.
 - **Pitch/Hz:** Adjust the pitch of the speaking voice.
 - **Range:** Adjust the inflection of the speaking voice.
4. Optionally, click **Undo** to undo the last slider adjustment.
5. Optionally, select a **Synthesizer** and **Voice** option.
6. Optionally, enter text in the text field and click **Speak Text** or **Speak** to test the adjustments.
7. Click **Apply**. The adjustments are applied and saved to the `system_private.config` file.

Adjust function sequencing

The previously configured Giant Voice System Test template should have been configured to use POC-approved verbiage and Text-to-Speech. Observe the timing of the IIM, E-2010 or E-969 encoder. If the audio is being clipped at the beginning or end or if there is a long delay before or after the audio, make adjustments to variables in the `system_private.config` file to adjust the sequencing.

To adjust the function sequencing, complete the following steps:

1. Log in to the BlackBerry AtHoc management system as an administrator.
2. On the Home page, in the **Quick Publish** section, search for **Giant Voice System Test** and then click **Edit**.
3. Click **Review and Publish** to review the settings and selections.
4. On the **Review and Publish** screen, click **Publish**.
5. Observe the operations of the following:
 - In the IIM console window, the number of items in index increases and that it starts processing the alert.
 - The E-2010 or E-969 transmits the contents of External Call Key 57, 59, or 60 depending on selections made in the BlackBerry AtHoc management system.
 - The associated Giant Voice poles and the audio volume and clarity.
6. Using the Microsoft Notepad open the `system_private.config` file: `C:\Program Files\capnode\system_private.config`



```
#Private System Properties For CapCon
#Configured 20150918 Athoc

#Site Specific
encoder=com.ha.capnode.drivers.sirencentral.SirenCentralEncoder
indexURL=https://integration4.athoc.com/syndication/CAP_WHELEN_V2/2060520/capindex?ast=00E06F26690F
proxyServer=none
proxyPort=8080
delayBetweenRxPolls=7

#TTS
encoder.SirenCentralEncoder.TTS_SynthesizerIndex=0
encoder.SirenCentralEncoder.TTS_VoiceIndex=1
encoder.SirenCentralEncoder.TTS_Volume=91
encoder.SirenCentralEncoder.TTS_Speed=65
encoder.SirenCentralEncoder.TTS_Pitch=120
encoder.SirenCentralEncoder.TTS_Range=15

#Relay
encoder.SirenCentralEncoder.SirenCentralDriverWhelen.shortdelay=500
encoder.SirenCentralEncoder.SirenCentralDriverWhelen.Delay_for_PACode_TX=5000
encoder.SirenCentralEncoder.relay=1;3;4
encoder.SirenCentralEncoder.ptt_before=100;100;1000
encoder.SirenCentralEncoder.ptt_after=100;100;1000

#PostCap
CapPostingTarget=True
CapPostingTarget.capurl=https://integration4.athoc.com/syndication/Postcap
CapPostingTarget.user=
CapPostingTarget.password=
```

7. In the Notepad file, find the following:

- `encoder.SirenCentralEncoder.SirenCentralDriverWhelen.Delay_for_PACode_TX` variable and adjust up or down to increase or decrease the delay between sending the content of the external call key and beginning to turn on the relays. The default is 5000 ms.
- `encoder.SirenCentralEncoder.ptt_before` variable and adjust the delay between the relays turning on and the beginning of the audio content. The default is 100 ms between R1 turning on and R3 turning on; 100 ms between R3 turning on and R4 turning on; and 1000 ms between R4 turning on and the audio beginning to play.
- `encoder.SirenCentralEncoder.ptt_after` variable and adjust the delay between the audio content finishing and the relays turning off. The default is 100 ms between audio finish and R4 turning off; 100 ms between R4 turning off and R3 turning off; and 1000 ms between R3 turning off and R1 turning off.

8. Click **File > Save**. Close Notepad.

9. Using the Service Manager, restart CapCon services.

10. Run another test and observe the audio characteristics.

11. Repeat steps 1 to 10 until the prerecorded audio sounds close in volume and the clarity to the baseline.

Appendix: Differences between Java and .NET GUI

| | Panel | Java | .NET |
|----------------|---|--|--|
| Output tab | Title panel | No change | No change |
| | CapCon System Activity console | No change | No change |
| | CapconSystem Errors/Exceptions/Warnings console | No change | No change |
| | Post Log Files button | — | The PostLogFile has no function. |
| TTS Config tab | Slider panel/Top panel | <ol style="list-style-type: none"> 1. Includes sliders for voice, speed, pitch, and range. 2. There is no option to see the current pin value of sliders. 3. There is no option to set or change the slider value. 4. For Speak test from the GUI, you must click Apply every time you want to change a slider value. 5. The Undo button reloads the saved values from the system_private.config file and sets the those values to the sliders. 6. The Default button sets the sliders to their default values: 20,100,100, and 10. | <ol style="list-style-type: none"> 1. Includes sliders for voice, speed, pitch, and range. No change. 2. Includes a text box at the top of each slider that shows the current pin value. 3. The slider value can be adjusted from a text box at the top of each slider. Enter an integer value in the text box to set the slider pin to that value. 4. You do not need to click Apply to perform a Speak test from the GUI. The Apply button saves the current slider pin values to the system_private.config file. 5. The Undo button sets the last applied value of the sliders. 6. The Default button sets the sliders to their default values: 60,100,100, and 10. |
| | | Synthesizer drop-down menu | No change |

| | Panel | Java | .NET |
|-------------------------|----------------------|--|--|
| | Voice drop-down menu | The Voice drop-down menu has two names: Kate and Paul . | The Voice drop-down menu has one name: Paul . Kate has been removed. |
| | Text panel | No change | No change |
| System tray icon | — | <ol style="list-style-type: none"> 1. No pop-up notifications are displayed. 2. When IIM is offline (the CapconService is stopped), no notification is displayed. The system tray icon color does not change. 3. The Wrapper.log menu item appears in the system tray. 4. The system tray icon has a Restart GUI menu item. 5. There is no UI console log file. 6. The system tray icon does not have the BlackBerry logo. | <ol style="list-style-type: none"> 1. Pop-up notifications are displayed. 2. When IIM is offline, an IIM is offline pop-up notification is displayed. The system tray icon color changes to red (🔴). 3. The Wrapper.log menu item was removed from the system tray. 4. The Restart GUI menu item was renamed to Restart Console. 5. The console log file has entries for each action initiated from the system tray menu. 6. The system tray icon has the BlackBerry logo in the green, yellow, and red icons. |

| | Panel | Java | .NET |
|--|-------|---|--|
| CapCon Console main window (Form) | — | <ol style="list-style-type: none"> 1. There is no .exe file. 2. To run the Java GUI, you must have the runcapnode.bat file. 3. There is no AtHoc icon on the Java executable. 4. There is no option to pin the Capcon console to the taskbar. | <ol style="list-style-type: none"> 1. There is an .exe file. 2. To run the .NET GUI, double-click the CapConConsole.exe or the runcapnode.bat file. The .NET GUI can also be run by double-clicking the desktop shortcut which is created automatically after the first run of the Capcon console. 3. There is an AtHoc icon on the .NET executable Capcon Console.exe file. 4. The Capcon console can be pinned to the taskbar. |

BlackBerry AtHoc Customer Support Portal

BlackBerry AtHoc customers can obtain more information about BlackBerry AtHoc products or get answers to questions about their BlackBerry AtHoc systems through the Customer Support Portal:

<https://www.blackberry.com/us/en/support/enterpriseapps/athoc>

The BlackBerry AtHoc Customer Support Portal also provides support via computer-based training, operator checklists, best practice resources, reference manuals, and user guides.

Documentation feedback

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