

BlackBerry AtHoc

Federal Signal Giant Voice 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. Federal Signal 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 Federal Signal Giant Voice System, operators can disseminate emergency alerts to the siren system from the BlackBerry AtHoc management console. Alert messages can be delivered using Key functions programmed in the Federal Signal hardware or software, text-to-speech or pre-recorded audio files to dynamically selected targets. Targeting choices are All Poles simultaneously, individual Zones of poles, and Poles.

Product requirements

The following sections describe the hardware and software requirements to install and configure the Federal Signal Giant Voice system.

Hardware requirements

- Federal Signal SS2000D with 7.1.5.8 firmware; OR,
- Federal Signal SS2000+ with 1.8.1.30 firmware; OR,
- Federal Signal Commander® Digital System Software with BlackBerry AtHoc plug-in

Software requirements

- BlackBerry AtHoc release 6.1.8.63 or newer
- IP Integration Module capnode_obf.jar 8/19/2009 or newer

You must also update the following files that are not specific to Federal Signal Giant Voice systems:

- IIM Management (Agent) Configuration
- C:\Program Files\capnode\AlertTemplate\SirenCentralStatusTemplate.xml
- C:\Program Files\capnode\myid.property
- C:\Program Files\capnode\title.property

Specific usage data collection

Configuration of a Federal Signal integration requires attention to detail as there are many components to be configured and data to be collected. Connection with the Federal Signal SS2000D, SS2000+ encoder, or the Commander® Digital System software is made through an RS-232 serial cable, analog audio connection, and relay switching logic.

In addition to the basic Public Address functions that allow the playing of pre-recorded audio or text-to-speech audio over the Federal Signal Giant Voice system, the BlackBerry AtHoc Federal Signal device allows mapping of pre-recorded audio messages and tones stored at the poles themselves. These Key functions allow for the highest audio clarity available through the system and should be configured as a priority.

Public Address activations allow dynamic targeting of poles, zones, or all poles simultaneously. In most cases, emergency broadcasts target all poles simultaneously. If more granular targeting is desired, a list of poles, location names, pole/zone grouping, and zone location names should be collected.

Key activations use the pole/zone/all targeting that is configured in the SS2000D, SS2000+ encoder, or the Commander® software Hot Keys.

When an alert is received by the IIM:

- The IIM sends an actuation serial command to the SS2000D, SS2000+, or Commander® PC and pauses.
- The Federal Signal encoder transmits the actuation data with the selected target to the poles.
- If the intended content was PA, the IIM plays the selected audio content.
- The IIM sends a cancel all serial command to the SS2000D, SS2000+, or Commander® PC and pauses.
- The Federal Signal encoder transmits the cancel all data to the poles.
- If additional targets are specified, the cycle repeats the sequence with the next specified target and content.

For detailed information about how to configure and program SS2000D, refer to the *SS2000D Controller/Encoder Installation and Operation Instructions*, (Federal Signal Corporation, [Document #255318G1](#)). The SS2000D should only be configured by a factory authorized service representative.

For detailed information about how to configure and program SS2000+, refer to the *Federal Signal Safety and Security Systems / Alert & Notification SS2000+ Manual*, (Federal Signal Corporation, [Document #255400C](#)). The SS2000+ should only be configured by a factory authorized service representative.

Federal Signal Commander® Digital System software should only be configured by a factory authorized service representative.

Federal Signal Giant Voice poles are programmed with Remote Terminal Unit (RTU) functions. A table of these functions needs to be collected to record which RTU function number contains the Public Address function. This information can be found by reading out the SS2000D, SS2000+, or observing the "Activation" table within the Commander® software.

The Federal Signal SS2000D or SS2000+ encoders are programmed with Hot Key functions. The SS2000D has 18 physical push buttons and 2 additional internal functions. The SS2000+ has 24 physical push buttons and 36 additional internal functions. The Commander® software has the ability to configure up to 60 activation functions.

In most cases when a site currently has an SS2000D encoder, the encoder needs to be replaced with an SS2000+ encoder to facilitate continuation of legacy functionality while adding the BlackBerry AtHoc integrated functionality. Primarily this is because an SS2000D encoder only has one serial port so any single SS2000D unit can only be connected to either the Federal Signal Commander® PC or to the BlackBerry AtHoc IIM.

Earlier installations used two SS2000D units, wired in parallel, such that one was connected to the Federal Signal Commander® PC and the other connected to the BlackBerry AtHoc IIM. The programming of both units was identical except that the SS2000D connected to the BlackBerry AtHoc IIM would have the 7.1.5.8 version firmware and all button programming would be configured to use the Auto Send mode. The legacy-use SS2000D typically has buttons programmed with the Auto Prompt Send mode requiring an operator to make the button selection

and then press the Send button. When an SS2000D is configured for manual operator use, the user needs to turn the key switch to unlock the unit, push an activation button, and then press the send button. On failing to follow the sequence, they can press the clear button to back out, press the intended button, and then press send.

The BlackBerry AtHoc functionality uses the Auto Send mode so that pressing the Send button is not required. On pressing the activation button, Auto Send mode sends the command instantly. While in Auto Prompt Send mode, the Send button is pressed after the activation button, before it sends the command. Integrated functions require Auto Send mode, but when the desktop encoder is to be used manually the buttons should be programmed as Auto Prompt Send, so accidents can be avoided.

Earlier the Federal Signal SSLoader software was used to:

- Read the configuration from the legacy SS2000D
- Flash the firmware in the BlackBerry AtHoc-integrated SS2000D
- Modify the button configuration section from the legacy SS2000D, converting from “Auto Prompt Send” to “Auto Send”
- Write the configuration file to the BlackBerry AtHoc-integrated SS2000D

Additionally, any unused buttons can be used to expand the functionality of the Legacy SS2000D and the BlackBerry AtHoc Key functions through the BlackBerry AtHoc-integrated SS2000D.

The newer SS2000+ encoder has two serial ports and both the Federal Signal Commander® PC and the BlackBerry AtHoc IIM can be connected concurrently. In these cases, the SS2000+ needs to be flashed using the SSLoader+ software with the 1.8.1.30 version firmware to allow connection to COM2.

The first 24 button Activation functions are programmed for Legacy operator use in Auto Prompt Send mode. Activation Functions 25 to 48 can be copied from the first 24 buttons but configured for Auto Send mode. Functions 49 to 60 can contain user desired functions that are available in the RTU function list but not programmed into the buttons. If there are unconfigured buttons, functions programmed into 25 to 60 can be condensed. Additionally, the Public Address Activation Function does not need to be copied into the higher range as the BlackBerry AtHoc integration targets the Public Address function directly through the RTU Function.

If an IP network is used to communicate directly between the Commander® software and RTUs instead of SS2000D or SS2000+ encoders, the IIM serial and audio functions are connected to the Federal Signal Commander® PC or server. The BlackBerry AtHoc alert Keys are mapped to the Commander® software Activation Hot Keys.

Irrespective of which integration method is used, the Key data that needs to be collected, is a list of the Activation Function or Hot Key numbers and functions.

If the site plays audio files not currently stored at the poles or in the BlackBerry AtHoc audio library, additional WAV files can be provided by the site to add them to the library. These WAV files should be converted to mono, compressed down to 8 or 16-bit sampling, and have all frequencies below 400 Hz removed before uploading, although 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 in the Studio tab may indicate an error. Please contact BlackBerry AtHoc 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 RTUs, 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 Federal Signal device

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

Configure the Federal Signal 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 Federal Signal 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.
3. On the **Configure Device Support** screen, select **Federal Signal Giant Voice** 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 **Federal Signal Giant Voice**.
4. On the **Federal Signal Giant Voice** page, click **Copy default settings**.

[Copy default settings](#)

General Settings

Convert Line Breaks: Yes No
Replace line break characters with spaces in content delivered to the IIM

Expected Polling Rate:

Output Format: Standard

CAP Parameter Defaults

Sender:
The identifier of the sender of the alert message

Event:
The text denoting the type of the subject event of the alert message

Contact:
The text describing the contact for follow-up and confirmation of the alert message

Area:

CAP URLs

Use following URLs within IIM configuration and for debugging purposes. Replace placeholders with appropriate values before using.

CAP Index URL:
IIMs poll this URL to retrieve all Live Alerts from system.

CAP Message URL:
IIMs poll this URL to retrieve details for a specific Alert.

CAP Event Logs Submission URL:
IIMs post event logs from Giant Voice systems to this system using this URL.

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5. Click **Save**.
6. In the navigation bar, click .
7. In the **Devices** section, click **Xml Feed**.
8. Click **Copy default settings**.
9. In the **Feed Source** section, select **Delivery Gateway ID**.



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

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Save Reset

10. Click **Save**.

Enable the Federal Signal Giant Voice 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 **Federal Signal Giant Voice**.
5. On the **Federal Signal Giant Voice** page, click **Edit**.
6. In the **Delivery Gateways** section, click **Add a Delivery Gateway > Federal Signal Giant Voice**.
7. In the **Federal Signal Giant Voice** row, click

▼ 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.

Delivery Gateway	
Federal Signal Giant Voice	

8. On 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>
<CapParams>
  <GVSystemType>FederalSignal</GVSystemType>
  <AllMode>0</AllMode>
  <ZoneMode>1</ZoneMode>
  <PoleMode>2</PoleMode>
  <KeyMode>4</KeyMode>
</CapParams>
</Configuration>
```

```

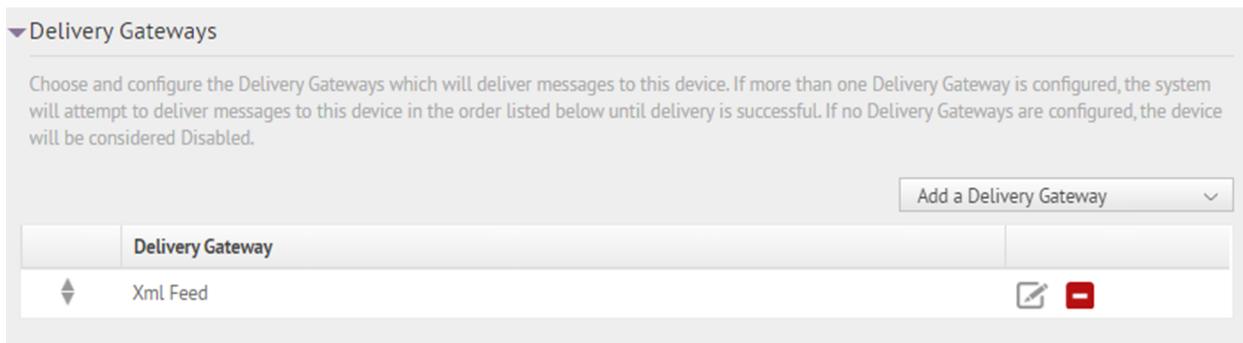
<UnusedMode>0</UnusedMode>
<DefaultAllCall>0</DefaultAllCall>
<DefaultKeyActivationCode>0</DefaultKeyActivationCode>
<NoPARequired>0</NoPARequired>
<PARequired>1</PARequired>
<IsCancelable>false</IsCancelable>
<ContentSource>GiantVoice</ContentSource>
</CapParams>
</Configuration>

```

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

Enable 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 **Xml Feed** row, click .



8. On the **Configure Gateways** window, check for XML code in the **Configuration XML** field. If the XML statements are not provided, copy and paste the following code into the field:

```

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

```

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

Set up mass device endpoints (targets)

To create a speaker pole, zone, or an all-poles user, an operator should perform the normal Mass Device Endpoint creation flow. You should give the endpoint a functionally descriptive name, so that it is recognizable in End User Manager and Report windows as a mass-communication device target entity.

Create mass device zone and pole endpoints

To create a new mass device endpoint for each zone and pole, complete the following steps:

1. Log in to BlackBerry AtHoc management system as an administrator.
2. In the navigation bar, click .
3. In the **Devices** section, click **Mass Devices Endpoints**.
4. Click **New**.
5. Select **Federal Signal Giant Voice** from the list.
6. To create a new endpoint for an All Poles zone, complete the following:
 - a. 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.
 - b. In the **Configuration** section, select the **Zone** option for **Giant Voice type**.
 - c. In **Address** field, enter "A,x" into the **Address** field, where "x" is the RTU Function number of the Public Address function (in this case RTU function 6).
7. To create a new endpoint for a preconfigured zone, complete the following steps:
 - a. 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.
 - b. In the **Configuration** section, select the **Zone** option for **Giant Voice type**.
 - c. In the **Address** field, enter "Z,x,y", where "x" is the zone number and "y" is the RTU Function number of the Public Address function (in this case, zone 1 and RTU Function 6).
8. To create a new endpoint for a pole, complete the following steps:
 - a. 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.
 - b. In the **Configuration** section, select the **Pole** option for **Giant Voice type**.
 - c. In the **Address** field, enter "P,x,y", where "x" is the zone number and "y" is the RTU Function number of the Public Address function (in this case, pole 1 and RTU Function 6).
9. Click **Save**.

Create a mass device key endpoint

To create the object that displays the list of keys associated with SS2000D Function Keys, SS2000+ Activation Functions, or Commander Activation Hot keys, complete the following tasks:

- Create the ATHOC-GV-KEYS attribute XML configuration.
- Perform the normal Mass Device Endpoint creation flow.

Create the Key XML configuration

For integrations with Federal Signal SS2000D encoders

This section describes how to program the SS2000D to integrate with the BlackBerry AtHoc IIM and create the Key User ATHOC-GV-KEYS attribute configuration.

1. Follow the instructions in the Federal Signal Corporation *SS2000D Controller/Encoder Installation and Operation Instructions*, [Document #255318G1](#) regarding the use of the Federal Signal SS2000 loader software and read the .DAT file from the SS2000D and then save it to a local drive.
2. Edit the **Mode** field of each Function Key to change from **Mode 3 = Auto Send** to **Mode 2 = Auto Prompt Send** and save the .DAT file with BlackBerry AtHoc in the name to differentiate it from the previously saved .DAT file.

Function Key					
	Button Name	Function	Mode	Site	Comment
1.	ATTACK WARN	01	2	300	
2.	PUBLIC ADDRESS	05	2	300	
3.	DISASTER WARN	02	2	300	
4.	TORNADO WARN	13	2	300	
5.	T-STORM WARN	12	2	300	
6.	FLSH FLOOD WAR	11	2	300	
7.	SHELTER IN PLAC	15	2	300	
8.	ALL CLEAR MSG	14	2	300	
9.	EXERCISE MSG	16	2	300	
10.	ALT STEADY	03	2	300	
11.	TEST MESSAGE	17	2	300	
12.	CHIMES	07	2	300	
13.	TO THE COLORS	22	2	300	
14.	CANCEL	19	2	300	
15.	ALT WAIL	06	2	300	
16.	CANCEL	97	2	300	
17.	CANCEL	27	2	300	
18.	RESET	99	2	300	
19.	BUTTON 19	97	1	001	
20.	BUTTON 20	97	1	001	

Mode:
 1 = Manual,
 2 = Auto Prompt Send,
 3 = Auto Send,
 4 = Auto Prompt Send / Auto Report,
 5 = Auto Send w/ Auto Report

Site #:
 1 - 299 = Individual Sites,
 300 = All-Call
 301 - 316 = Zones 1 - 16

3. Program the 7.1.5.8.BIN firmware version and the BlackBerry AtHoc.DAT file with SS2000D to integrate with the BlackBerry AtHoc IIM.
4. Copy the content below into a Notepad and modify it to match the Function Keys. The XML maps to the Function Key screen as shown in the following example:

Function Key					
	Button Name	Function	Mode	Site	Comment
1.	ATTACK WARN	01	3	300	
2.	PUBLIC ADDRESS	05	3	300	
3.	DISASTER WARN	02	3	300	
4.	TORNADO WARN	13	3	300	
5.	T-STORM WARN	12	3	300	
6.	FLSH FLOOD WAR	11	3	300	
7.	SHELTER IN PLAC	15	3	300	
8.	ALL CLEAR MSG	14	3	300	
9.	EXERCISE MSG	16	3	300	
10.	ALT STEADY	03	3	300	
11.	TEST MESSAGE	17	3	300	
12.	CHIMES	07	3	300	
13.	TO THE COLORS	22	3	300	
14.	CANCEL	19	3	300	
15.	ALT WAIL	06	3	300	
16.	CANCEL	97	3	300	
17.	QUIET TEST	98	3	300	
18.	RESET	99	3	300	
19.	BUTTON 19	97	1	001	
20.	BUTTON 20	97	1	001	

Mode:
 1 = Manual,
 2 = Auto Prompt Send,
 3 = Auto Send,
 4 = Auto Prompt Send / Auto Report,
 5 = Auto Send w/ Auto Report

Site #:
 1 - 299 = Individual Sites,
 300 = All-Call
 301 - 316 = Zones 1 - 16

The following table provides the definition for each attribute.

Attribute Name	Description
Id	Corresponds to the address of the key within the Giant Voice system. This addressing scheme varies by Giant Voice vendor.
messgaeldRef	References the <message> object to be displayed as a warning in the Targeting screen in the Management System during the publishing cycle.
targetingRule	Used to establish correct targeting behavior for the key. Possible values are: <ul style="list-style-type: none"> • TargetingNotAllowed • TargetingAllowed • TargetingRequired
name	The name of the Giant Voice key that is displayed in the publishing flow.
description	The description of the Giant Voice key that is displayed in the publishing flow. If there are more than 5 keys, this will not be displayed.

Note: Key number 2, Public Address, is skipped as Public Address functions are handled as an RTU Function through the All Poles, Pole, and Zone target user device address instead of a Function Key.

Note: For Federal Signal Giant Voice Keys, the `messageIdRef` parameter is always `MSG-TARGETING-NOT-ALLOWED` and the `targetingRule` parameter is always `TargetingNotAllowed`. This is because the targeting is set in the SS2000D Function Keys and cannot be overridden.

Note: The key name and description parameters cannot contain space or any of the following characters: ' ! \$ % ^ () = { } , ; : ? " < > |

```
<giantVoiceSetting>
<messages>
  <message id = "MSG-TARGETING-NOT-ALLOWED">The Giant Voice Key you have
  selected on the previous page does not allow
  additional selection of Giant Voice poles or zones. You may still target users
  for other devices, but Giant Voice targeting
  will be ignored.</message>
  <message id = "MSG-TARGETING-ALLOWED">The Giant Voice Key you have selected on
  the previous page already has Giant
  Voice poles and zones targeted, but you can override them by targeting different
  zones in the Targeting area just below.</message>
  <message id = "MSG-TARGETING-REQUIRED">The Giant Voice Key you have selected
  on the previous page does not have any
  targeting information built-in, and will require you to target at least one Giant
  Voice pole or zone below.</message>
</messages>
<keys>
  <key
    id = "1"
    messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
    targetingRule = "TargetingNotAllowed">
    <name>Attack Warn</name>
    <description>Attack Warn</description>
  </key>
  <key
    id = "3"
    messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
```

```

        targetingRule = "TargetingNotAllowed">
        <name>Disaster Warn</name>
        <description>Disaster Warn</description>
</key>
<key
    id = "4"
    messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
    targetingRule = "TargetingNotAllowed">
    <name>Tornado Warn</name>
    <description>Tornado Warn</description>
</key>
<key
    id = "5"
    messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
    targetingRule = "TargetingNotAllowed">
    <name>T-Storm Warn</name>
    <description>T-Storm Warn</description>
</key>
<key
    id = "6"
    messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
    targetingRule = "TargetingNotAllowed">
    <name>Flash Flood Warn</name>
    <description>Flash Flood Warn</description>
</key>
<key
    id = "7"
    messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
    targetingRule = "TargetingNotAllowed">
    <name>Shelter In Place</name>
    <description>Shelter In Place</description>
</key>
<key
    id = "8"
    messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
    targetingRule = "TargetingNotAllowed">
    <name>All Clear Msg</name>
    <description>All Clear Msg</description>
</key>
<key
    id = "9"
    messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
    targetingRule = "TargetingNotAllowed">
    <name>Exercise Msg</name>
    <description>Exercise Msg</description>
</key>
<key
    id = "10"
    messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
    targetingRule = "TargetingNotAllowed">
    <name>Alt Steady</name>
    <description>Alt Steady</description>
</key>
<key
    id = "11"
    messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
    targetingRule = "TargetingNotAllowed">
    <name>Test Message</name>
    <description>Test Message</description>
</key>
<key

```

```

    id = "12"
    messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
    targetingRule = "TargetingNotAllowed">
    <name>Chimes</name>
    <description>Westminster Chimes</description>
</key>
<key
    id = "13"
    messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
    targetingRule = "TargetingNotAllowed">
    <name>To The Colors</name>
    <description>To The Colors</description>
</key>
<key
    id = "14"
    messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
    targetingRule = "TargetingNotAllowed">
    <name>CANCEL</name>
    <description>CANCEL</description>
</key>
<key
    id = "15"
    messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
    targetingRule = "TargetingNotAllowed">
    <name>Alt Wail</name>
    <description>Alt Wail</description>
</key>
<key
    id = "16"
    messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
    targetingRule = "TargetingNotAllowed">
    <name>CANCEL</name>
    <description>CANCEL</description>
</key>
<key
    id = "17"
    messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
    targetingRule = "TargetingNotAllowed">
    <name>Quiet Test</name>
    <description>Quiet Test</description>
</key>
<key
    id = "18"
    messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
    targetingRule = "TargetingNotAllowed">
    <name>Reset</name>
    <description>Reset</description>
</key>
</keys>
</giantVoiceSetting>

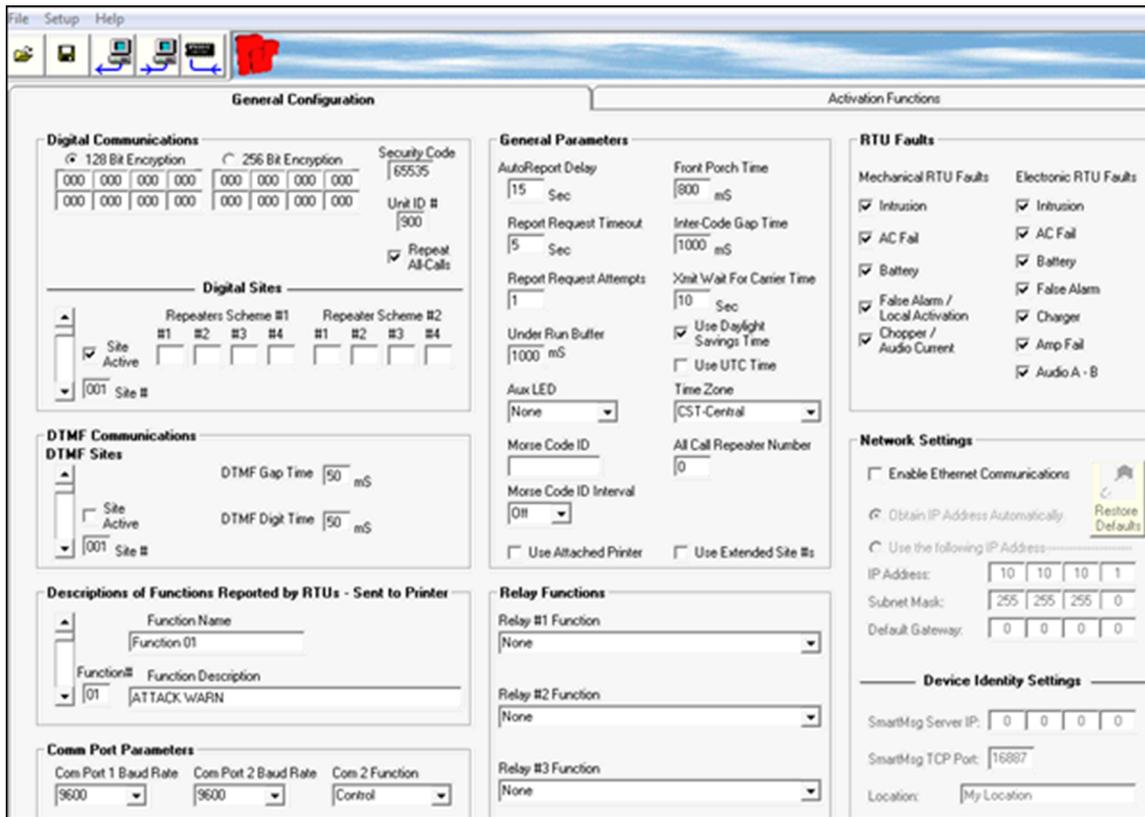
```

Note: In this example, keys number 2, number 19, and number 20 could be used to add functions that are available from the system but not programmed into the manual use SS2000D unit that the BlackBerry AtHoc-integrated SS2000D Function Key section was created from.

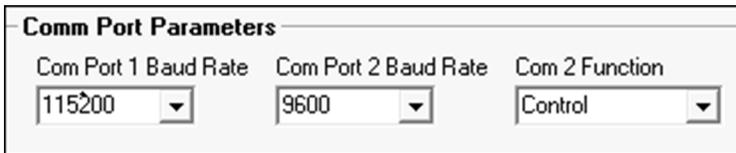
For Integrations with Federal Signal SS2000+ encoders

This section describes how to program the SS2000+, integrate with the BlackBerry AtHoc IIM, and create the Key User ATHOC-GV-KEYS attribute configuration.

1. Follow the instructions in the *Federal Signal Safety and Security Systems / Alert & Notification SS2000+ Manual, Document #255400C* regarding the use of the Federal Signal SSLoader+ software and read the .INI file from the SS2000+ and then save it to a local drive.



2. Flash the 1.8.1.30.HEX firmware version and the BlackBerry AtHoc.INI file with the SS2000+ to integrate with the AtHoc IIM.
3. In the **Comm Port Parameters** section, in the **General Configuration** section, verify the following items:
 - **Com Port 1 Baud Rate**—Set to either 9600 for communication with earlier versions of Federal Signal Commander® software or 115200 for communication with newer versions.
 - **The Com Port 2 Baud Rate**—Set for 9600.
 - **Com 2 Function**—Set to Control.



4. On the **Activation Functions** tab, copy each of the Activation Functions number 1 through number 24 into number 25 through number 48.
5. Add any RTU functions that are available in the system but not already programmed into buttons into Activation Functions number 49 through number 60.
6. The **Mode** field of each Activation number 1 through number 24 should be configured as **Auto Prompt Send**.
7. The **Mode** field of each Activation number 25 through number 60 should be configured as **Auto Send**. Additionally, the words **BlackBerry AtHoc** should be included in the **Comment Sent to Printer** field.
8. After the configuration is completed, save the .INI file with the name BlackBerry AtHoc to differentiate it from the previously saved .INI file and then open the new file in the Notepad.
9. Scroll down to the Function Key section, **Function Key 25**.

In the following example, Function Keys number 25 through number 46 are used.

```
FunctionKey25Name=Wail
FunctionKey25Encode1=FedDig.300.1.1.
FunctionKey25Encode2=
FunctionKey25Encode3=
FunctionKey25Mode=AutoSend
FunctionKey25PrinterComment=AtHoc Wail Tone

FunctionKey26Name=Steady
FunctionKey26Encode1=FedDig.300.2.1.
FunctionKey26Encode2=
FunctionKey26Encode3=
FunctionKey26Mode=AutoSend
FunctionKey26PrinterComment=AtHoc Steady Tone

FunctionKey27Name=Severe Weather
FunctionKey27Encode1=FedDig.300.20.1.
FunctionKey27Encode2=
FunctionKey27Encode3=

FunctionKey27Mode=AutoSend
FunctionKey27PrinterComment=AtHoc Severe Weather

FunctionKey28Name=AllClear
FunctionKey28Encode1=FedDig.300.21.1.
FunctionKey28Encode2=
FunctionKey28Encode3=
FunctionKey28Mode=AutoSend
FunctionKey28PrinterComment=AtHoc All Clear

FunctionKey29Name=ActiveShooter
FunctionKey29Encode1=FedDig.300.22.1.
FunctionKey29Encode2=
FunctionKey29Encode3=
FunctionKey29Mode=AutoSend
FunctionKey29PrinterComment=AtHoc Active Shooter

FunctionKey30Name=Shelter InPlace
FunctionKey30Encode1=FedDig.300.23.1.
FunctionKey30Encode2=
FunctionKey30Encode3=
FunctionKey30Mode=AutoSend
FunctionKey30PrinterComment=AtHoc Shelter In Place

FunctionKey31Name=Test Message
FunctionKey31Encode1=FedDig.300.27.1.
FunctionKey31Encode2=
FunctionKey31Encode3=
FunctionKey31Mode=AutoSend
FunctionKey31PrinterComment=AtHoc Test Message

FunctionKey32Name=Taps
FunctionKey32Encode1=FedDig.300.12.1.
FunctionKey32Encode2=
FunctionKey32Encode3=
FunctionKey32Mode=AutoSend
FunctionKey32PrinterComment=AtHoc Taps

FunctionKey33Name=Reveille
```

```

FunctionKey33Encode1=FedDig.300.13.1.
FunctionKey33Encode2=
FunctionKey33Encode3=
FunctionKey33Mode=AutoSend
FunctionKey33PrinterComment=AtHoc Reveille

FunctionKey34Name=Colors
FunctionKey34Encode1=FedDig.300.14.1.
FunctionKey34Encode2=
FunctionKey34Encode3=
FunctionKey34Mode=AutoSend
FunctionKey34PrinterComment=AtHoc Colors

FunctionKey35Name=Retreat
FunctionKey35Encode1=FedDig.300.15.1.
FunctionKey35Encode2=
FunctionKey35Encode3=
FunctionKey35Mode=AutoSend
FunctionKey35PrinterComment=AtHoc Retreat

FunctionKey36Name=NationalAnthem
FunctionKey36Encode1=FedDig.300.16.1.
FunctionKey36Encode2=
FunctionKey36Encode3=
FunctionKey36Mode=AutoSend
FunctionKey36PrinterComment=AtHoc National Anthem

FunctionKey37Name=Retreat & Nat.Anth.
FunctionKey37Encode1=FedDig.300.17.1.
FunctionKey37Encode2=
FunctionKey37Encode3=
FunctionKey37Mode=AutoSend
FunctionKey37PrinterComment=AtHoc Retreat & National Anthem

FunctionKey38Name=Revelille & Colors
FunctionKey38Encode1=FedDig.300.18.1.
FunctionKey38Encode2=
FunctionKey38Encode3=
FunctionKey38Mode=AutoSend
FunctionKey38PrinterComment=AtHoc Reveille & To The Colors

FunctionKey39Name=WestminsterChimes
FunctionKey39Encode1=FedDig.300.6.1.
FunctionKey39Encode2=
FunctionKey39Encode3=
FunctionKey39Mode=AutoSend
FunctionKey39PrinterComment=AtHoc Westminster

```

10. Copy the content into a Notepad and modify it to match the Function Keys. The XML maps to the Function Key as shown in the previous example.

Note: Key number 2, Public Address, is skipped as Public Address functions are handled as an RTU Function through the All Poles, Pole, and Zone target user device address instead of a Function Key.

Note: For Federal Signal Giant Voice Keys, the messageIdRef parameter is always MSG-TARGETING-NOT-ALLOWED and the targetingRule parameter is always TargetingNotAllowed. This is because the targeting is set in the SS2000+ Activation Functions and cannot be overridden.

Note: The key name and description parameters cannot contain spaces or any of the following characters: ' ! \$ % ^ () = { } , ; : ? " < > |

```
<giantVoiceSetting>
<messages>
  <message id = "MSG-TARGETING-NOT-ALLOWED">The Giant Voice Key you have
  selected on the previous page does not allow
  additional selection of Giant Voice poles or zones. You may still target users
  for other devices, but Giant Voice targeting
  will be ignored.</message>
  <message id = "MSG-TARGETING-ALLOWED">The Giant Voice Key you have selected on
  the previous page already has Giant
  Voice poles and zones targeted, but you can override them by targeting different
  zones in the Targeting area just below.</message>
  <message id = "MSG-TARGETING-REQUIRED">The Giant Voice Key you have selected
  on the previous page does not have
  any targeting information built-in, and will require you to target at least one
  Giant Voice pole or zone below.</message>
</messages>
<keys>
  <key
    id = "25"
    messageIdRef = "MSG-TARGETING-NOT- ALLOWED"
    targetingRule = "TargetingNotAllowed">
    <name>Attack Warning - Wail Tone</name>
    <description>Attack Warning - Wail Tone</description>
  </key>
  <key
    id = "26"
    messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
    targetingRule = "TargetingNotAllowed">
    <name>Disaster Warning - Steady Tone</name>
    <description>Disaster Warning - Steady Tone</description>
  </key>
  <key
    id = "27"
    messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
    targetingRule = "TargetingNotAllowed">
    <name>Severe Weather</name>
    <description>Severe Weather</description>
  </key>
  <key
    id = "28"
    messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
    targetingRule = "TargetingNotAllowed">
    <name>All Clear</name>
    <description>All Clear</description>
  </key>
  <key
    id = "29"
    messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
    targetingRule = "TargetingNotAllowed">
    <name>Active Shooter</name>
    <description>Active Shooter</description>
  </key>
  <key
    id = "30"
    messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
    targetingRule = "TargetingNotAllowed">
    <name>Shelter In Place</name>
```

```

        <description>Shelter In Place</description>
</key>
<key
  id = "31"
  messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
  targetingRule = "TargetingNotAllowed">
  <name>Test Msg</name>
  <description>Test Msg</description>
</key>
<key
  id = "32"
  messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
  targetingRule = "TargetingNotAllowed">
  <name>Taps</name>
  <description>Taps</description>
</key>
<key
  id = "33"
  messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
  targetingRule = "TargetingNotAllowed">
  <name>Reveille</name>
  <description>Reveille</description>
</key>
<key
  id = "34"
  messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
  targetingRule = "TargetingNotAllowed">
  <name>To The Colors</name>
  <description>To The Colors</description>
</key>
<key
  id = "35"
  messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
  targetingRule = "TargetingNotAllowed">
  <name>Retreat</name>
  <description>Retreat</description>
</key>
<key
  id = "36"
  messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
  targetingRule = "TargetingNotAllowed">
  <name>National Anthem</name>
  <description>National Anthem</description>
</key>
<key
  id = "37"
  messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
  targetingRule = "TargetingNotAllowed">
  <name>Retreat and National Anthem</name>
  <description>Retreat and National Anthem</description>
</key>
<key
  id = "38"
  messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
  targetingRule = "TargetingNotAllowed">
  <name>Reveille and To The Colors</name>
  <description>Reveille and To The Colors</description>
</key>
<key
  id = "39"
  messageIdRef = "MSG-TARGETING-NOT-ALLOWED"

```

```

        targetingRule = "TargetingNotAllowed">
        <name>Westminster Chimes</name>
        <description>Westminster Chimes</description>
</key>
<key
    id = "40"
    messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
    targetingRule = "TargetingNotAllowed">
    <name>Quiet Test</name>
    <description>Quiet Test</description>
</key>
<key
    id = "41"
    messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
    targetingRule = "TargetingNotAllowed">
    <name>Master Reset</name>
    <description>Master Reset</description>
</key>
<key
    id = "42"
    messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
    targetingRule = "TargetingNotAllowed">
    <name>Cancel</name>
    <description>Cancel</description>
</key>
<key
    id = "43"
    messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
    targetingRule = "TargetingNotAllowed">
    <name>Alternating Wail</name>
    <description>Alternating Wail</description>
</key>
<key
    id = "44"
    messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
    targetingRule = "TargetingNotAllowed">
    <name>Alternating Steady</name>
    <description>Alternating Steady</description>
</key>
<key
    id = "45"
    messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
    targetingRule = "TargetingNotAllowed">
    <name>Pulsed Wail</name>
    <description>Pulsed Wail</description>
</key>
<key
    id = "46"
    messageIdRef = "MSG-TARGETING-NOT-ALLOWED"
    targetingRule = "TargetingNotAllowed">
    <name>Pulsed Steady</name>
    <description>Pulsed Steady</description>
</key>
</keys>
</giantVoiceSetting>

```

Create a key mass device endpoint

1. Log in to BlackBerry AtHoc management system as an administrator.

2. In the navigation bar, click .
3. In the **Devices** section, click **Mass Device Endpoints**.
4. Click **New**.
5. Select **FedSig-Key-Menu** from the list.
6. In the **General** section, in 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.
7. In the **Configuration** section, select **Key** for Giant Voice Type
8. Copy the Key XML configuration into the Giant Voice Key field
9. In the **Address** field, enter **K**.
10. Click **Save**.

Create and publish a Federal Signal Giant Voice alert template

Prerequisites

- Before you start sending test alerts through Federal Signal Giant Voice, 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 Federal Signal Giant Voice 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. In the top navigation bar, click **Alerts > Alert Templates**.
3. Click **New**.
4. On the **New Template** page, 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 **Federal Signal Giant Voice**.
9. Select one or more mass alert endpoints from the pull-down list.
10. On the top right corner of the **Mass Devices** section, click **Options**.
11. On the **Mass Devices Options** page, select the **Text to Speech**.
12. Select **Alert Body** or **Custom Text**.
13. Click **Apply**.
14. In the **Schedule** section, change the **Alert Duration** to 15 minutes.
15. Click **Preview and Save**.
16. On the preview page, click **Save**.
17. Click  to go to the Home page.
18. In the **Quick Publish** section, find the alert template you created.
19. Click **Publish**.
20. On the **Review and Publish** screen, review the settings and selections.
21. 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_fedsig_<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 Org 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:

```
- <capIndex xmlns="http://www.incident.com/cap_index/1.0">
  <title>Current CAP Messages</title>
  <updated>2015-09-22T09:37:17.0783568-07:00</updated>
  - <item xmlns="http://www.incident.com/cap_index/1.0">
    <id>3685D691-B4F0-441F-A77E-DA7DFD2C18EA</id>
    <identifier>3685D691-B4F0-441F-A77E-DA7DFD2C18EA</identifier>
    <sender>AtHoc Admin</sender>
    <status>System</status>
    <msgType>Alert</msgType>
    <firstEffective>2015-09-22T09:36:41.797</firstEffective>
    <lastExpires>2015-09-22T09:51:41.797</lastExpires>
    <url>https://integration4.athoc.com/Syndication/CAP_FEDSIG_2050329/CapIim/1012599</url>
    <bounds />
    <format>http://www.incident.com/cap/1.1</format>
  </item>
</capIndex>
```

3. Verify the <addresses> and <code> to match with the following format. The “alert” XML format must be similar to the content in the following image:

```
<alert xmlns="urn:oasis:names:tc:emergency:cap:1.1">
  <identifier>CAP_FEDSIG|24690|3685D691-B4F0-441F-A77E-
    DA7DFD2C18EA|1012599|PUBLISH</identifier>
  <sender>IWSAlerts</sender>
  <sent>2015-09-22T09:36:41-07:00</sent>
  <status>Actual</status>
  <msgType>Alert</msgType>
  <source>Test Alert Channel</source>
  <scope>Public</scope>
  <addresses>FederalSignal,0,0</addresses>
  <code>1,1</code>
  - <info>
    <category>Other</category>
    <event />
    <urgency>Unknown</urgency>
    <severity>Unknown</severity>
    <certainty>Unknown</certainty>
    - <eventCode>
      <valueName>ATHOC</valueName>
      <value>IWSA</value>
    </eventCode>
    <effective>2015-09-22T09:36:41-07:00</effective>
    <expires>2015-09-22T09:51:41-07:00</expires>
    <senderName>Ft. Bliss SIM FedSig</senderName>
    <headline>Giant Voice System Test</headline>
    <description>This, is a test, of the Giant Voice, System....I say again....This, is a test, of the Giant
      Voice, System....Test complete....</description>
    <instruction />
    <contact>support@athoc.com</contact>
  </info>
</alert>
```

4. If any of the formatting does not match, review the Federal Signal Giant Voice Gateway XML content and Mass Communication Users’ Federal Signal Giant Voice device addressing. Errors in these sections are the most common reason for malformed Alert XML fields.

Test pre-installation legacy functionality

Before making any modifications to the Federal Signal 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 SS2000D, SS2000+ or the Commander® software, 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 SS2000D, SS2000+ or the Commander® software.

In addition, the site should initiate a Public Address function and make a manual microphone announcement. 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 of any broadcasts 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 Federal Signal device.

Prerequisite

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

- Latest Federal Signal BlackBerry AtHoc device package
- Latest Federal Signal IIM Capnode package
- Latest IIM Agent

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 console. 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`.

The organization ID is a 7 or 8-digit numerical identifier of the specific system of that customer. To obtain this Organization ID, log in to the BlackBerry AtHoc management system for the customer. Once logged in, you can find the system's organization ID at the top right of the Home Page of the system.

Navigate to the settings page of the browser and determine if you are using any type of Proxy server for routing 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 **Advanced**. 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.

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_FedSig` for an Federal Signal Giant Voice 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

#Site Specific
encoders=com.ha.capnode.drivers.sirencentral.SirenCentralEncoder
encoder.SirenCentralEncoder.SirenCentralDriver=com.ha.capnode.drivers.sirencentral.fs.SirenCentralDriverFS
indexURL=https://integration7.athoc.com/Syndication/CAP_FEDSIG/2086867/capindex
proxyServer=none
proxyPort=8080
delayBetweenRxPolls=7

#TTS
encoder.SirenCentralEncoder.TTS_SynthesizerIndex=0
encoder.SirenCentralEncoder.TTS_VoiceIndex=1
encoder.SirenCentralEncoder.TTS_Volume=30
encoder.SirenCentralEncoder.TTS_Speed=85
encoder.SirenCentralEncoder.TTS_Pitch=100
encoder.SirenCentralEncoder.TTS_Range=1

#Relay
encoder.SirenCentralEncoder.relay=1;3;4
encoder.SirenCentralEncoder.ptt_before=1000;1000;1000
encoder.SirenCentralEncoder.ptt_after=1000;0;16000

#PostCap
CapPostingTarget=True
CapPostingTarget.capUrl=https://integration7.athoc.com/syndication/postcap
CapPostingTarget.user=
CapPostingTarget.password=
  
```

9. If the integration uses a Federal Signal SS2000D encoder, the following `AckMode` variable should be set to false. Otherwise, it should be set to true. `encoder.SirenCentralDriverFS.SingleAckMode=false`
10. The Federal Signal COM Port settings displayed in the following images are default values and should not be changed.

```

system_private - Notepad
File Edit Format View Help
|
#FedSig COM Port specific
SirenCentralEncoder.RemoteComPort.Port=COM1
SirenCentralEncoder.RemoteComPort.BaudRate=9600
SirenCentralEncoder.RemoteComPort.DataBits=8
SirenCentralEncoder.RemoteComPort.Parity=n
SirenCentralEncoder.RemoteComPort.StopBits=1

#Single Ack Mode
encoder.SirenCentralDriverFS.SingleAckMode=true
  
```

11. Click **File > Save**.

12. Close the `system_private.config` file.
13. Restart the CapCon service.

Restart the CapCon service

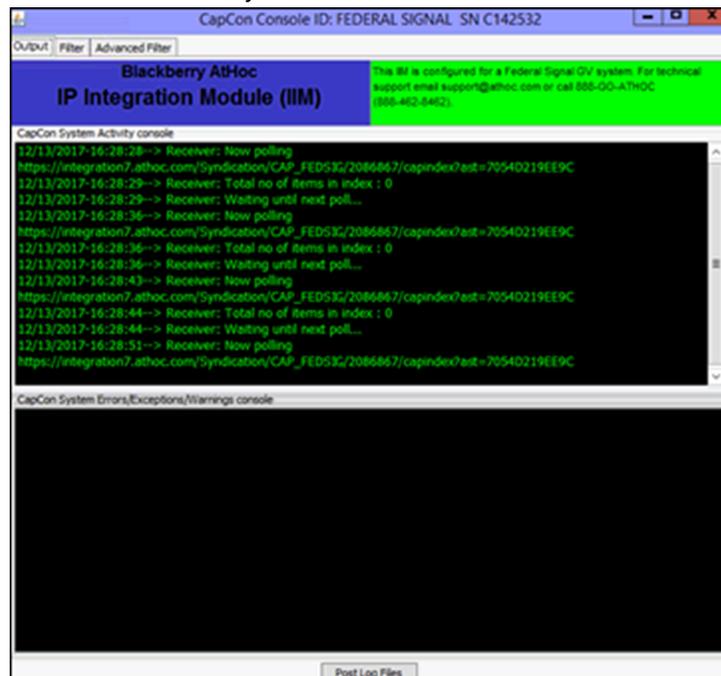
1. Navigate to your IIM system.
2. Go to **Start > Run > Services**.
3. Launch an instance of the Services Manager application. There should be a quick-launch icon in the taskbar of the desktop.
4. Scroll down to the IIM CapCon Service.
5. Right-click the **CapCon Services** row and select **restart** or **stop**.
6. Start the CapCon Service.

Verify the CapCon system activity console (GUI)

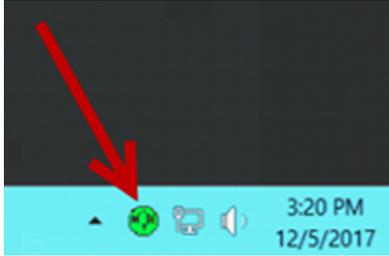
1. Log in to the IIM console as an administrator. The CapCon Console loads automatically.

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.



Troubleshooting

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.

To troubleshoot the configuration, complete the following steps:

1. If the BlackBerry AtHoc management system, for example, <https://integration4.athoc.com/client/default.asp>><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://integration4.athoc.com/syndication/cap_whelen_v2/2060520/capindex>https://integration7.athoc.com/syndication/cap_fedsig/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>2017-12-14T08:11:47.9988135-08:00</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>2017-12-14T08:19:26.4802357-08:00</updated>
  - <item xmlns="http://www.incident.com/cap_index/1.0">
    <id>7E0992B0-45A1-4A7F-BF2C-E82AEF334028</id>
    <identifier>7E0992B0-45A1-4A7F-BF2C-E82AEF334028</identifier>
    <sender>AtHoc Admin</sender>
    <status>System</status>
    <msgType>Alert</msgType>
    <firstEffective>2017-12-14T11:19:22.237</firstEffective>
    <lastExpires>2017-12-14T11:23:22.237</lastExpires>
    <url>https://integration7.athoc.com/Syndication/CAP_FEDSIG_2086867/CapIim/1140149</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 technical 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 SS2000D, SS2000+ or the Commander® software, 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 SS2000D or SS2000+ LCD or the Commander® software.

The site should initiate a Public Address function and make a manual microphone announcement. 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.

Test and verification

The following sections describe how to create and publish a pre-test alert template, verify the serial communication, and adjust audio settings.

Create and publish a pre-test alert template

Prerequisite

- Before you start sending test alerts through Federal Signal Giant Voice, 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 create a template that targets end users using desktop pop-up, email, and messages to other devices to inform them of a Giant Voice System test, complete the following steps:

1. Log in to the BlackBerry AtHoc management system as an administrator.
2. In the top navigation bar, click **Alerts > Alert Templates**.
3. On the **Alert Templates** page, click **New**.
4. On the **New Template** page, 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. Select **Informational** from the **Severity** list.
8. Select **Other** from the **Type** list.
9. In the **Content** section, enter an alert title. The alert title can be the same as the template name.
10. In the **Body** field, enter the text to be read by the text-to-speech. The body 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.
11. In the **Target Users** section, select the appropriate targeting group, individual users, or query to send the pre-test notification to.
12. Click **Select Personal Devices**.
13. Select **Desktop App** and **Email-Personal**.
14. In the top right corner of the **Personal Devices** section, click **Options**.
15. On the **Personal Devices Options** screen, click the **Desktop Popup** tab.
16. Select **App Template** and **App Audio** options.
17. Click **Apply**.
18. In the **Schedule** section, change the **Alert Duration** to the expected duration of the testing.
19. Click **Preview and Save**.
20. On the preview page, click **Save**.
21. Click  to go to the Home page.
22. In the **Quick Publish** section, find the template you created.
23. Click **Publish**.
24. On the **Review and Publish** page, review the settings and selections.
25. Click **Publish**.
26. To verify that the alert was published correctly, observe the receipt of desktop pop-up or email messages on the POC workstation.

Verify the serial communication

If the system has been configured with a Key User containing Cancel All or Quiet Test commands, these keys can be used to test the serial interconnection without generating any sound through the Giant Voice System.

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. In the **Mass Devices** section, select **Federal Signal Giant Voice**.
4. Select one or more mass alert endpoints from the pull-down list.
5. In the top right corner of the **Mass Devices** section, click **Options**.
6. On the **Mass Devices Options** screen, select **Giant Voice Key**.
7. From the list, select **CANCEL** or **Quiet Test**.

Note: Keys use implicit targeting. For example, the targeting is built into the SS2000+, SS200D Activation Function or the Federal Signal Commander® software Hot Keys, and targeting is not allowed when using Federal Signal Giant Voice Keys.

8. Click **Apply**.
9. In the **Schedule** section, change the **Alert Duration** to 15 minutes.
10. Click **Review and Publish**.
11. On the **Review and Publish** page, review the settings and selections.
12. Click **Publish**.
13. Observe the operations of the following:
 - In the IIM console window: the number of items in index increases and it starts processing the alert.
 - The SS2000+, SS2000D, or Commander® software transmits the Activation Function or Hot Key selected in the BlackBerry AtHoc management system.
 - Associated Giant Voice poles emits no sound because of the command sent.
14. If unexpected results are found, do the following:
 - a. Double-check the SS2000+ or SS2000D Activation Function programming or the Commander® software Hot Key configuration.
 - b. Verify that the Key User ATHOC-GV-KEYS attribute configuration file is constructed correctly.
15. If activation fails, double-check the serial cable connections, IIM Com Port settings, and `system_private.config` file serial configuration variables.

WAV file audio level adjustments

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 Federal Signal, 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.
4. Click **Edit**.
5. In the **Mass Devices** section, select **Federal Signal Giant Voice**.
6. In the top right corner of the **Mass Devices** section, click **Options**.
7. On the **Mass Devices Options** screen, select **Pre-recorded Audio**.
8. From the list, select **Test GVS**.
9. Click **Apply**.
10. Click **Review and Publish**.
11. On the **Review and Publish** page, review the settings and selections.
12. Click **Publish**.
13. 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 SS2000+, SS2000D, or Commander® software transmits the Public Address RTU Function.
 - The associated Giant Voice poles and the audio volume and clarity.
14. Adjust the IIM Windows Audio Tool Tray Slider to match the baseline audio level and clarity.
15. Repeat steps 2 to 13 until the pre-recorded audio sounds close in volume and clarity to manual microphone announcements.

Text-to-speech audio level and characteristic adjustments

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**.
3. Click **Edit**.
4. Click **Review and Publish**.
5. On the **Review and Publish** page, review the settings and selections.
6. Click **Publish**.
7. 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 SS2000+, SS2000D, or Federal Signal Commander® software transmits the Public Address RTU Function.
 - The associated Giant Voice poles and the audio volume and clarity.
8. Using Microsoft Notepad, open the `system_private.config` file located at `C:\Program Files\capnode\system_private.config`.
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. Using the Service Manager, restart the CapCon Services.
12. Run another test and observe the audio characteristics.

13.Repeat steps 2 to 12 until the prerecorded audio sounds close in volume and the clarity to the baseline.

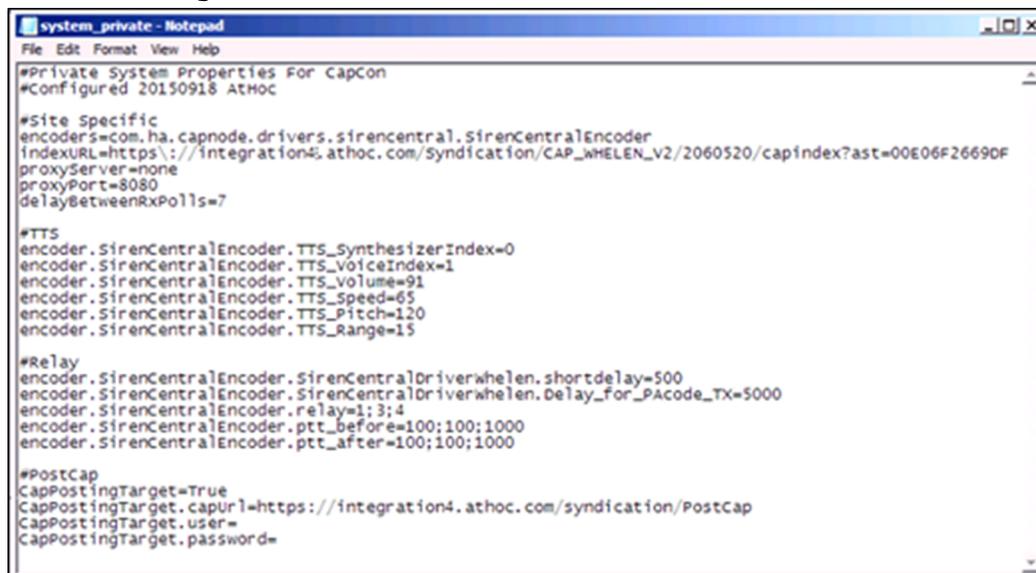
Function sequencing adjustments

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, SS2000D, SS2000+ encoder, or Federal Signal Commander® software. 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.

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**.
3. Click **Edit**.
4. Click **Review and Publish**.
5. On the **Review and Publish** page, review the settings and selections.
6. Click **Publish**.
7. Observe the operations of the following items:
 - In the IIM console window, the number of items in index increases and that it starts processing the alert.
 - The SS2000+, SS2000D, or Federal Signal Commander® software transmits the Public Address RTU Function.
 - The associated Giant Voice poles and the audio volume and clarity.

Note: The typical sequence of IIM operation when receiving alerts with text-to-speech content is for the poles to turn on the Public Address (PA) mode, transmit the TTS content and then turn off when a Cancel command is received. The siren poles also turn off after 7 to 10 seconds without receiving a command or audio content on air. In many cases, the Cancel command can be delayed after the audio by approximately 13 seconds and the sirens turn off before receiving the Cancel command, with the command reserved for canceling in poor conditions. However, in systems with noisy RF conditions, the Cancel command should be sent immediately after the audio content so that squelch noise and other on-air transmissions stop the broadcast.

8. Using the Microsoft Notepad, navigate to **C:\Program Files\capnode\system_private.config** and open the `system_private.config` file.



```
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. In the Notepad file, find the following items:

- `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.

10.Click **File > Save**.

11.Close the Notepad file.

12.Using the Service Manager, restart the CapCon services.

13.Run another test and observe the audio characteristics.

14.Repeat steps 2 to 13 until the prerecorded audio sounds close in volume and the clarity to the baseline.

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.

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