BlackBerry AtHoc

CAP Publishing and Processing Guide

Last Published: July 2020

Contents

CAP at BlackBerry AtHoc overview

BlackBerry AtHoc supports Common Alerting Protocol (CAP) and is compliant with all industry accepted warning standards. CAP is a simple and general format for exchanging emergency alerts and public warnings over all types of networks. CAP allows a consistent warning message to be disseminated simultaneously over many different warning systems, thus increasing warning effectiveness while simplifying the warning task. CAP can gather information from state, local and national agencies. CAP also facilitates the detection of emerging patterns in local warnings of various kinds, hazard or hostile act.

This document describes how BlackBerry AtHoc publishes and processes CAP alerts and processes inbound CAP events.

For detailed information about CAP, see http://en.wikipedia.org/wiki/Common_Alerting_Protocol.

Publishing CAP alerts

BlackBerry AtHoc can communicate with Federal systems through Integrated Public Alert and Warning System (IPAWS). IPAWS is a two way communication system that includes inbound and outbound. In the inbound communication systems, alerts are sent from federal systems to BlackBerry AtHoc. The IPAWS server has an event, which is copied to the BlackBerry AtHoc database with Poller and Processing alert with BlackBerry AtHoc devices. In outbound communication systems alerts are sent from BlackBerry AtHoc to Federal systems.

IPAWS

In an emergency, emergency response officials need to provide the public with life–saving information quickly. IPAWS, a modern version of the national alert and warning infrastructure, helps organizations collaborate and alert the public in order to save lives and properties.

The Open Platform for Emergency Networks (OPEN) enables the sharing of emergency alerts and incident-related data between different standards-compliant incident management systems. IPAWS OPEN serves as the IPAWS Alerts Aggregator, collecting and routing IPAWS emergency alerts to and from emergency systems that serve the public. IPAWS OPEN integrates with the various alert dissemination methods of IPAWS.

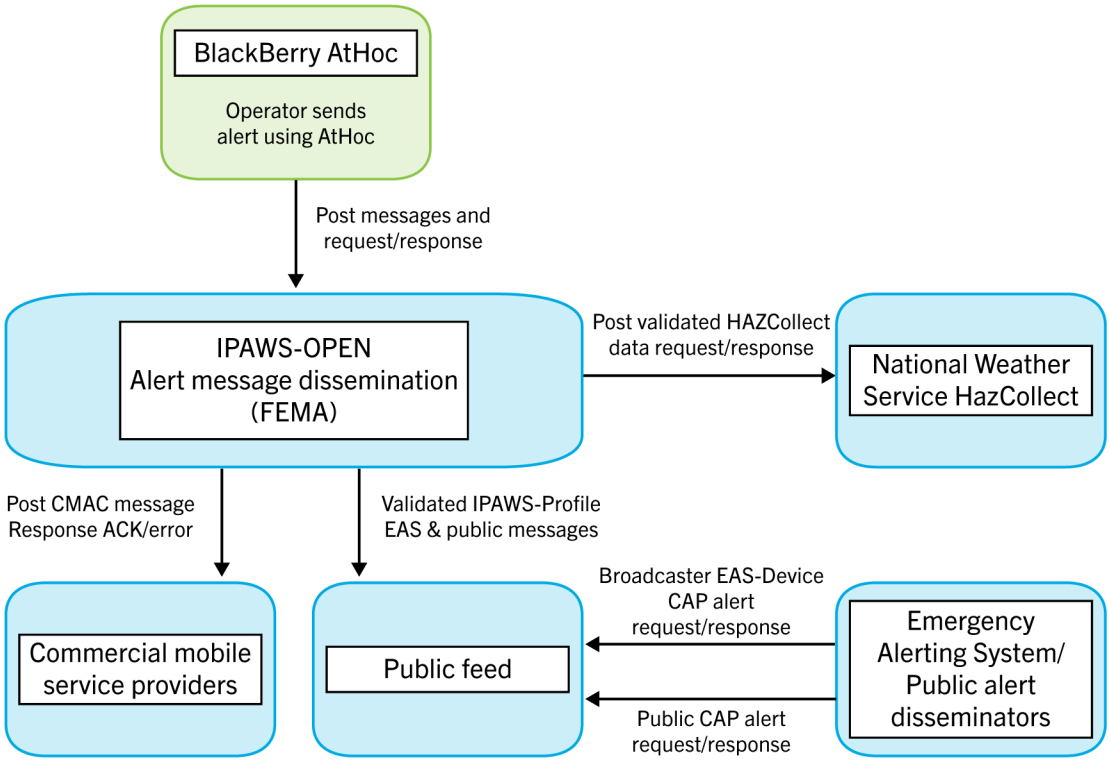


Figure 1: Alert dissemination through BlackBerry AtHoc and IPAWS

IPAWS provides a process for emergency communities at the federal, state, territorial, tribal, and local levels to communicate with each other through alerts. IPAWS helps integrate alerting systems that use Common Alerting Protocol (CAP) standards with the IPAWS infrastructure.

The BlackBerry AtHoc plug–in provides a support for sending alerts from one Collaborative Operating Group (COG) to other COGs and to public alerting systems, such as EAS, NWEM, and WEA.

Using the AtHoc Notification Delivery Server (NDS) console, users first configure the plug–in and set up accounts. They then use BlackBerry AtHoc to set up the IPAWS gateway and configure the BlackBerry AtHoc device. In BlackBerry AtHoc, they also create a mass device endpoint for each device as well as their own COG and other COGs with which they want to communicate. Operators can then send alerts through the BlackBerry AtHoc management console and can customize the content for the IPAWS devices. Additionally, users can use the out of the box IPAWS COG to COG Alert Template to notify operators that other COGS have sent alerts to their local system.

Configuring the Community Warning Feeds device

The Community Warning System (CWS) Feeds device is created to provide a generic and configurable CAP feed to other systems or devices.

Configure the CWS 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 **Community Warning System Feeds V2**.
4. On the **Community Warning System Feeds V2** page, click **Copy default settings**.
5. Click **Save**.

Configure the device with a CWS gateway

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 **Community Warnings System Feeds V2**.
5. On the **Community Warnings System Feeds V2** page, click **Edit**.
6. In the **Details** section, verify the device details.
7. In the **Delivery Gateways** section, click **Add a Delivery Gateway** > **Community Warnings System Feeds V2**.
8. In the **Community Warnings System Feeds V2** row, click ✎.
9. In the **Configure Gateway** window, verify the XML with the following XML template. Make changes if required:

```
<Configuration>
<CapParams>
<GVSystemType>PUBLIC-FEED-V2</GVSystemType>
<UnusedMode>x</UnusedMode>
<PARequired>1</PARequired>
<ActivationCode>1</ActivationCode>
<IsInfoParameter>No</IsInfoParameter>
<!-- should be present if device is expected to be specified
as a parameter value in the CAP alert -->
<!-- this also indicates that the address field is unsupported -->
<IsTextOnlyDevice>Yes</IsTextOnlyDevice>
<ContentSource>PUBLIC-FEED-V2</ContentSource>
</CapParams>
</Configuration>
```

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

Create a mass device endpoint

1. In the navigation bar, click .
2. In the **Devices** section, click **Mass Device Endpoints**.
3. Click **New**, and then select **Community Warnings System Feeds V2**.
4. Enter the **Endpoint Name** and **Common Name**. By default, the Endpoint name is same as the Common Name.
5. In the **Configuration** section, enter the address for the mass device. The following special characters are not allowed: (`!^=<>)
6. Click **Save**.

Verify the mass device

1. After the new mass device is created, search for it in the **Devices** page.
2. Click the device you want to view. The details of the selected device are displayed.

Add a new map layer

The Shape Layers area of the Map Settings screen displays details about each of the shape-related layers that have been configured for maps.

1. Download the zip file to a common folder in your local drive.
2. In the navigation bar, click .
3. In the **Basic** section, click **Map Settings**. The Map Settings screen opens.
4. Optionally, click and drag to change the order of existing shape layers.
5. Optionally, to edit an existing shape layer, click . The Update Shape Layer dialog opens. You can update the shape layer name, display color, and selectable status. Click **Save** to save your changes and return to the Map Settings screen.
6. To add a new shape layer, click **Add Shape Layer**.
7. On the **Add Shape Layer** dialog, enter a name for the new shape layer.
8. Click **Select** to select a shape file.
9. Browse to select the shape file on your system.

   Note: Only shape files that contain polygons and multipolygons can be imported. If your shape file contains point shape files, the file cannot be imported.

   The imported shape file should not exceed 100 Mb and should be saved as a ZIP file containing one of each of the following file types: `.prj`, `.dbf`, and `.shp`. BlackBerry AtHoc supports the GCS_WGS_1984 Geographical Coordinate System, with well-known ID 4326 and the following data:

   ```
   GEOGCS[&quot;GCS_WGS_1984&quot;,DATUM[&quot;D_WGS_1984&quot;,SPHEROID
    [&quot;WGS_1984&quot;,6378137.0,298.257223563]],PRIMEM
    [&quot;Greenwich&quot;,0.0],UNIT[&quot;Degree&quot;,0.0174532925199433]]
   ```

   Note: If your shape file data uses any other geographic coordination system (GCS), open the file in a standard GIS tool. Convert the shape file using the specified GCS values in the table.
10. Optionally, select the check box to make the new shape selectable.

    When creating an alert or alert template, a shape layer that is marked as selectable appears in the Select Predefined Locations list and in the Show Layers pop-up (accessed by clicking .) If the layer is not selectable, it appears in the Show Layers pop-up, but does not appear in the Select Predefined Locations list.
11. Select a color from the list. The default is red.
12. Click **Add**.
13. On the **Map Settings** screen, click **Save**.

Publish CAP alerts

1. Log in to the BlackBerry AtHoc management system with an administrator account.
2. Click **Alerts**.
3. Click **New Alert**.
4. Click **Create a Blank Alert**.
5. On the **New Alert** page, enter the title and content of the alert.
6. Specify response options for the text message.
7. In the **Location** field, click **Add**.
8. Click **Select Predefined Locations** and from the drop–down list select the mass device you created.
9. Uncheck the **Target Users** and **Target Organizations** check boxes.
10. Click **Apply**.

    Note: A red text message is displayed if add location steps are not completed as described in steps above. Operator will be unable to Review and Publish alert if the red warning message is displayed.
11. In the **Mass Devices** section check the **Community Waring System Feeds V2** checkbox and select the **Mass device user** from the drop-down list.
12. Click **Review and Publish** to send the alert.

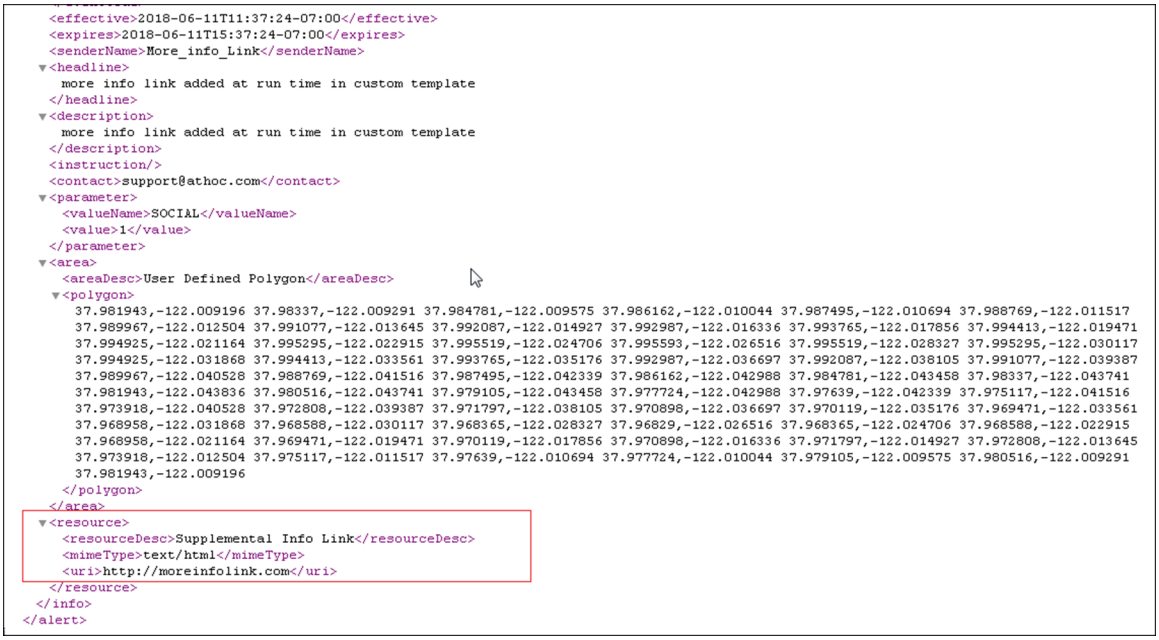
Obtain published CAP XML messages from AtHoc

To obtain published CAP XML messages from BlackBerry AtHoc, poll AtHoc as follows: `https://<iwsserverhostname>/Syndication/CAP_PUBLIC_FEED_V2/<vps>/capindex`.

The path provides an index file that contains links to alerts represented by <item> elements that are currently active. Only active alerts show up in the index file. You must continuously poll the file to get the active alerts and to discover which alerts are no longer active. To view an item in the index file, download the full CAP message from the <url> element in the item. The red arrow in the following example points to the URL from where you can download the CAP alert to process.

Note: Some URL specifics will be different.

The following image shows a generated payload of an alert from the syndication feed. The payload includes an entry for the "More Info Link".



Post acknowledgments to BlackBerry AtHoc

After downloading and processing the CAP message, you must send an acknowledgment message to the BlackBerry AtHoc server. This acknowledgment message is also a CAP message. The following is the acknowledgment message format:

```
<?xml version="1.0" encoding="UTF-8"?>
  <?xml-stylesheet href="capstateoes.xsl" type="text/xsl"?>
  <alert xmlns="urn:oasis:names:tc:emergency:cap:1.1">
    <identifier>ee2b8e8e7aa1dc903cc82ad4ab140fb1</identifier>
    <sender>BETA2</sender>
    <sent>2006-05-31T11:15:25-07:00</sent>
    <status>Actual</status>
    <msgType>Ack</msgType>
    <scope>Public</scope>
    <note>Message passed capnode filter</note>
    <references>SenderName,1410372042494,2014-09-10T11:00:42-07:00</references>
  </alert>
```

This is an example and your information might be different, such as the sender ID. This acknowledgment message is posted to the AtHoc server like any other CAP message.

Note: In the <references> field, fill in the following information: <node name>, <identifier of the alert you are acknowledging>,date and time

To Post, submit the CAP as an HTTPS POST as follows:

POST to: *https://<iwsserverhostname>/Syndication/PostCap* with the following parameter: `capXML=<ACK XML Content>`

Processing CAP events

The following sections describe the BlackBerry AtHoc agents.

AtHoc CAP agents

BlackBerry AtHoc deploys the following two agents:

- The CAP Feed Poller agent is a periodic job that polls an external source URL every x seconds. BlackBerry AtHoc supports polling two types of feeds:
  - ATOM (for example, Honeywell)
  - CAP XML format (for example, IPAWS)
- When a feed is polled, the poll contains entries about CAP-captured events. Each ATOM entry has a link to the full CAP payload that includes all of the details about the event.
- The CAP Event Processor identifies new entries, fetches CAP payloads, and applies business logic to publish the appropriate alert template (scenario.)

Business flow

The following steps describe the business flow for integrating the CAP Gateway for BlackBerry AtHoc:

1. The CAP Feed Poller job fetches the CAP feed and creates a queue entry in the AtHoc database (EVT_QUEUE_TAB).
2. For performance optimization, the polling agent maintains the “last-time-stamp” of the most recent feed entry within the payload.
   - Every new feed is first filtered against “last-time-stamp” and only new entries are picked up.
   - In the new entries, de-duplication is done based upon a unique identifier to avoid duplicate alerts. The unique identifier is also linked to published alert attribute <auid> within BlackBerry AtHoc for future reference.
3. The CAP Event Processor job running in the background picks up new entries and marks the picked–up entries as In Progress (IPC).
4. For all entries that are In Progress, the CAP Event Processor agent determines which alert template (scenario) needs to be published for the incoming event type and event name, based on the configuration of the agent.
5. The alert template (scenario) is published and the event queue entry is marked as Done. If there is an error, the entry is marked as Error.
6. Each agent maintains a debug log, known as the AtHoc Event Viewer, that is used during troubleshooting.

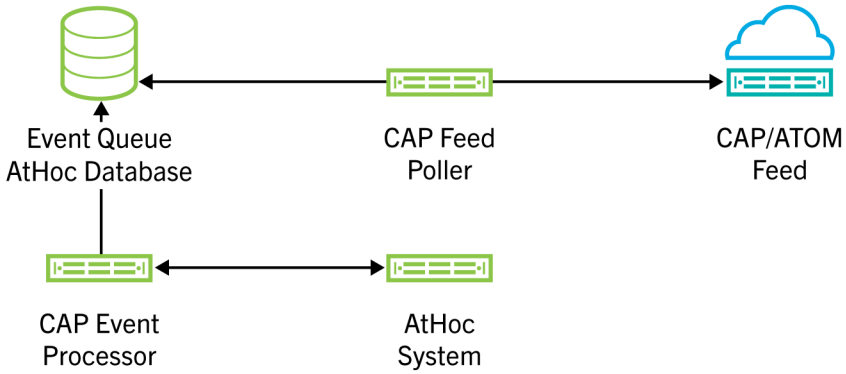


Figure 2: CAP gateway integration business flow

Configure the AtHoc CAP Event Processor and CAP Feed Poller Agents

Do one of the following:

- Set up the configuration using a stored procedure
- Set up the configuration using the BlackBerry AtHoc management system

Set up the configuration using a stored procedure

1. Log in to SQL Server Management Studio.
2. Navigate to **Database** > **ngaddata** > **Programmability** > **Stored Procedures**.
3. Run the stored procedure ENABLE_DISABLE_CAP_EVENT_PROCESSOR once for the system.
4. Run the stored procedure ENABLE_DISABLE_CAP_FEED_POLLER.

Set up the configuration using the BlackBerry AtHoc management system

1. Log in to the BlackBerry AtHoc management system as a system administrator and change to the **Unresolved Desktop Users (1)** organization.
2. In the navigation bar, click .
3. In the **System Setup** section, click **Integration Manager**.
4. On the **Integration Manager** screen, click **Cap Event Processor**.
5. On the **Cap Event Processor** page, copy the XML in the configuration and make any necessary changes.

```
<eventRules>
 <eventRule eventType="SG-ACTIVATION">
  <xpathQuery value="/alert/info/parameter[./valueName/text()='EventName']/
value" />
  <eventMappings>
   <eventMapping eventName="PUSH_TEST" scenarioCommonName="50343bf7-add1-4bf1-
b9b2-991b4e48c6d4" />
  </eventMappings>
 </eventRule>
</eventRules>
```

6. Click **Save**.
7. On the **Integration Manager** screen, click **Cap Feed Poller**.

8. On the **Cap Feed Poller** page, copy the XML in the configuration and make any necessary changes.

```
<CapFeedPoller maxDegreeOfParallelism="5">
 <CapFeeds>
   <CapFeed name="Feed1" type="HoneywellCAP" lastUpdatedLocalDateTime="2/6/2018
 2:02:25 PM" pollingInterval="20" lastPollingTime="7/9/2018 4:20:33 PM"
 url="http://10.123.246.21/CapAtomTestFeeds/atomtest.xml" />
  <CapFeed name="Feed2" type="IPAWS" lastUpdatedLocalDateTime="7/9/2018
 11:20:33 PM +00:00" pollingInterval="20" lastPollingTime="7/9/2018
 4:20:33 PM" url="https://apps.fema.gov/IPAWSOPEN_EAS_SERVICE/rest/public/
recent/2012-08-21T11:40:43Z?pin=MzJCYWYyZzIzQTc" />
 </CapFeeds>
</CapFeedPoller>
```

9. Click **Save**.

Set up the AtHoc CAP Feed Poller agent configuration

1. Log in to the BlackBerry AtHoc management system and change to the **System Setup (3)** organization.
2. In the navigation bar, click ⚙.
3. In the **System Setup** section, click **Integration Manager**.
4. On the **Integration Manager** screen, click **CAP Feed Poller agent**.
5. Update the agent's configuration with the external source URL.
6. Based on your needs, the XML might be for one feed type only or for multiple feed types. The following example is for multiple feed types, Honeywell and IPAWS:

```
<CapFeedPoller maxDegreeOfParallelism="5">
<CapFeeds>
<CapFeed name="Feed1" type="HoneywellCAP" lastUpdatedLocalDateTime="1/11/2017
 12:16:25 PM" pollingInterval="20" lastPollingTime="1/12/2017 5:55:23 PM"
 url="http://10.123.246.21/CapAtomTestFeeds/atomtest.xml"/>
<CapFeed name="Feed2" type="IPAWS" lastUpdatedLocalDateTime="1/13/2017
 1:55:23 AM +00:00" pollingInterval="20" lastPollingTime="1/12/2017 5:55:23
 PM" url="https://apps.fema.gov/IPAWSOPEN_EAS_SERVICE/rest/public/recent/20
 12-08-21T11:40:43Z?pin=MzJCYWYyZzIzQtc"/>
</CapFeeds>
<CapFeedPoller>
```

Set up the AtHoc CAP Event Processor agent configuration

1. Change to the **System Setup (3)** organization.
2. In the navigation bar, click ⚙.
3. In the **System Setup** section, click **Integration Manager**.
4. On the **Integration Manager** screen, click **Cap Event Processor**.
5. Edit the XML in the **Configuration** field.

   Note: Add the provider ID for the organization that needs the CAP Event Poller to be enabled. You can enable the agent for multiple organizations by adding their provider ID and event types.

```
<CapEventProcessor xmlns="" maxDegreeOfParallelism="10"
 ignoreDuplicateTimeInterval="30">
            <providers>
             <provider id="your-provider-id">
              <eventRules>
               <eventRule eventType="SG-ACTIVATION">
```

```
                <xpathQuery value="/alert/info/parameter[./valueName/
text()='EventName']/value" />
                <eventMappings>
                <eventMapping eventName="E06995893A7P615ON"
 scenarioCommonName="ABCD" />
                </eventMappings>
              </eventRule>
            </eventRules>
          </provider>
         </providers>
        </CapEventProcessor>
```

6. Switch to the organization where you enabled the agent.
7. In the navigation bar, click ⚙.
8. In the **System Setup** section, click **Integration Manager**.
9. On the **Integration Manager** screen, click **Cap Event Processor** .
10. Add event rules to enable the agent for multiple event types:

```
//For eventName “Tornado Warning”

     <eventRules>
       <eventRule eventType="SG-ACTIVATION">
         <xpathQuery value="/alert/info/parameter[./valueName/
text()='EventName']/value" />
         <eventMappings>
          <eventMapping eventName="E06995893A7P615ON"
 scenarioCommonName="11475b17-47fb-4cc2-8a11-e678dcad38cb" />
         </eventMappings>
        </eventRule>
        <eventRule eventType="IPAWS">
          <xpathQuery value="//geocode[concat(valueName/text(),value/text()) =
 'UGCANZ530']/../../event/text()" />
          <eventMappings>
            <eventMapping eventName="Tornado Warning"
 scenarioCommonName="ed41b1b7-acb4-443e-9f17-f67a93275b44" />
          </eventMappings>
         </eventRule>
        </eventRules>
```

```
//For eventName “HoneywellCAP”

      <eventRules>
        <eventRule eventType="HoneywellCAP">
          <xpathQuery value="/alert/code" />
          <eventMappings>
            <eventMapping eventName="Fire1"
 scenarioCommonName="95a15f05-1723-4657-a800-c5a523045329" />
          </eventMappings>
        </eventRule>
        <eventRule eventType="SG-ACTIVATION">
          <xpathQuery value="/alert/info/parameter[./valueName/
text()='EventName']/value" />
          <eventMappings>
            <eventMapping eventName="QUIET_TEST"
 scenarioCommonName="95a15f05-1723-4657-a800-c5a523045329" />
          </eventMappings>
        </eventRule>
```

```
      </eventRules>
```

```
//For eventName “Special Weather Statement”

      <eventRules>
        <eventRule eventType="IPAWS">
          <xpathQuery value="//geocode[concat(valueName/text(),value/text()) =
 'UGCTXZ138']/../../event/text()" />
          <eventMappings>
            <eventMapping eventName="Special Weather Statement"
 scenarioCommonName="WEATHER-ALERT" />
          </eventMappings>
        </eventRule>
        <eventRule eventType="SG-ACTIVATION">
          <xpathQuery value="/alert/info/parameter[./valueName/
text()='EventName']/value" />
          <eventMappings>
            <eventMapping eventName="PUSH_TEST" scenarioCommonName="f4746947-
f3be-42bb-a2d5-498e1a750ecd" />
          </eventMappings>
        </eventRule>
      </eventRules>
```

11. Create an alert template. Copy the common name of the alert template.
12. Configure the required placeholders in the alert template. For more information, see Configure placeholders on the BlackBerry AtHoc system.
13. Update the configuration with the correct event name, geocode, county (if applicable), and the common name of the new alert template created in Step 11.

    Note: The scenario common name and the alert template common name are the same.

    Note: For detailed information about how to locate the geocode of a county, see Geocodes and counties.

```
</eventRules>
       <eventRule eventType="IPAWS">
              <xpathQuery value="//geocode[concat(valueName/text(),value/
text()) =
'UGCANZ53O']/../../event/text()"/>
             <eventMappings>
                   <eventMapping eventName="Hurricane Warning"
scenarioCommonName="9a52be39-b2ef-4f6b-af72-6dfa53ab714b"/>
                   <eventMapping eventName="Tornado Warning"
scenarioCommonName="9a52be39-b2ef-4f6b-af72-6dfa53ab714b"/>
             </eventMappings>
</eventRule>
     <eventRule eventType="HoneywellCAP">
            <xpathQuery value="/alert/code"/>
            <eventMappings>
                  <eventMapping eventName="Fire1"
scenarioCommonName="b32O358c-bd11-4ddO-bO5b-7f71b5ee4f1b"/>
             </eventMappings>
</eventRule>
       </eventRule eventType="SG-ACTIVATION">
       <xpathQuery value-"alert/info/parameter[/valueName/text()='EventName']/
value"/>
             <eventMappings>
                   <eventMapping eventName="HE-1A-TEST"
scenarioCommonName="O3df8OO4-599O-4603-9fa6-5cO66d296fa"/>
                   <eventMapping eventName="PUSH-TEST"
scenarioCommonName="Od4O2e3f-2a5e-4509-a579-e6dda53OO73e"/>
```

```
            <eventMappings>
        </eventRule>
</eventRules>
              </provider>
      </providers>
</inboundEventsProcessor>
```

Configure placeholders on the BlackBerry AtHoc system

1. In the navigation bar, click **Alert**.
2. Click **Alert Placeholders**.
3. Click **New** and then select the **Text** type.
4. In the **Basic** section, type a name in the **Name** field.

   Note: Placeholder names are case-sensitive. See Special placeholders for alert content.
5. In the **Values** section, change the **Maximum Length** to 100.
6. In the **Default** value, enter the same name you entered in Step 4.
7. Click **Save**.

   Note: Create as many placeholders as you need. Ensure the name is exactly as listed in the list above.
8. Update alert templates with your new placeholders.

Special placeholders for alert content

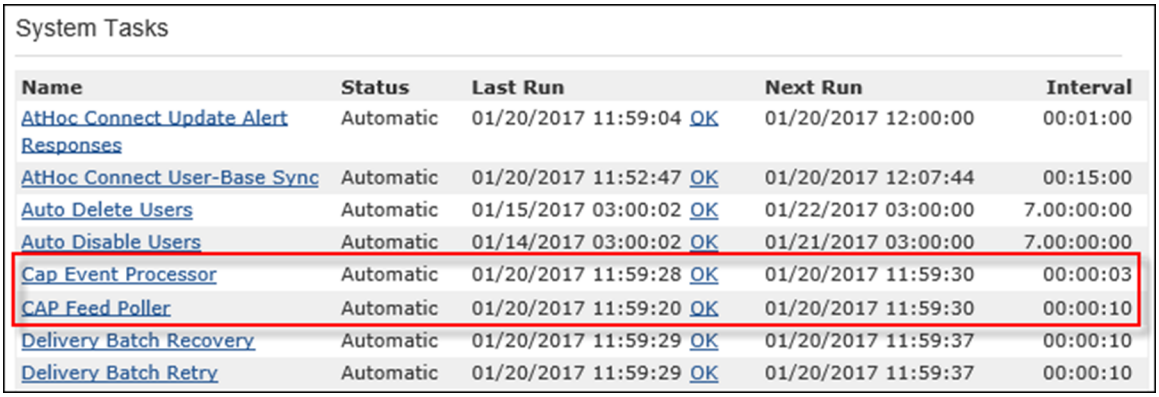
The IPAWS implementation supports the following placeholders in alert templates:

- NWSHeadline,
- NWSEvent,
- NWSDescription,
- NWSInstruction,
- NWSSenderName,
- NWSEffective,
- NWSExpires,
- NWSContact,
- NWSBody

Note: For information about how to create the required placeholders needed to support CAP feeds, see Configure placeholders on the BlackBerry AtHoc system.

View system tasks

The CAP Feed Poller and the CAP Event Processor jobs are displayed on the System Setup (3) organization at **Settings**> **System Setup**> **System Jobs** as shown in the following image:



Run Health Monitor

Verify on the system if Health Monitor is enabled.

1. Log in to the BlackBerry AtHoc management system.
2. Change to the **System Setup (3)** organization.
3. In the navigation bar, click .
4. In the **System Setup** section, click **Global System Health**.
5. On the **System Visibility Console**, scroll down to the **General** section.

If Health Monitor is not enabled, run the **MTR_EVT_QUEUE** stored procedure.

Ensure that the polling agent is running. If the polling agent is not running, Health Monitor displays an error.

Supported formats

Event Type	Index Type	Certified in BlackBerry AtHoc
Honeywell	ATOM	Yes
IPAWS	CAP	Yes
Alert Hub	ATOM	No
AirNow	ATOM	No

Additional supported capabilities

The following topics describe additional supported BlackBerry AtHoc capabilities.

Geo information

BlackBerry AtHoc can process geo information polled as part of the feed. For example, geocode is included in the IPAWS feed and configured in the CAP Event Processor agent configuration.

```
<eventRule eventType="IPAWS">
   <xpathQuery value="//geocode[concat(valueName/text(),value/text()) =
'UGCMTC067']
   /../../event/text()"/>
```

The following example shows multiple geocodes configured:

```
<eventRule eventType="IPAWS">
   <xpathQuery value="//geocode[concat(valueName/text(),value/text()) =
'UGCANZ530'
 or concat(valueName/text(),value/text()) = 'UGCCAC023']/../../event/text()"/>
   <eventMappings>
    <eventMapping eventName="Flood Warning"
scenarioCommonName="ca56a30c-864d-47ff-8c44-e4351a0b7807"/>
   </eventMappings>
  </eventRule>
```

Appendix A: Honeywell feed payload

The following is a sample ATOM Feed:

```
<feed xmlns="http://www.w3.org/2005/Atom">
  <title>Test</title>
  <subtitle>Test</subtitle>
  <id>urn:uuid:1d6ca29d-89f3-4b7d-989f-16bf6bd5fs53</id>
  <updated>2017-01-24T00:06:25Z</updated>
  <author>
    <name>test</name>
    <email>test@test.com</email>
  </author>
  <entry>
    <title>Fire in Main Lobby</title>
    <id>123577062</id>
    <updated>2017-01-24T00:06:25Z</updated>
    <summary>Actual</summary>
    <link href="http://10.123.246.21/CapAtomTestFeeds/alert.xml"/>
  </entry>
</feed>
```

The following is a sample of a full CAP payload that includes all event details (access URL found in ATOM feed):

```
<alert xmlns="urn:oasis:names:tc:emergency:cap:1.2">
  <identifier>9e68b7ea-40c8-44e7-b3ca-30f25bff3b7t8</identifier>
  <sender>NOTIFIERFireSystems</sender>
  <sent>2016-12-12T15:30:05-00:00</sent>
  <status>Actual</status>
  <msgType>Alert</msgType>
  <scope>Public</scope>
  <code>Fire1</code>
  <info>
    <language>en-US</language>
    <category>Geo</category>
    <event>Fire</event>
    <urgency>Immediate</urgency>
    <severity>Extreme</severity>
    <certainty>Observed</certainty>
    <eventCode>Fire1</eventCode>
  </info>
</alert>
```

Appendix B: Sample CAP messages

The CAP message retrieved from the index has information about which siren poles or group of sirens (any device or system) to activate. The CAP message also provides information about the resources that are used to compose the audio needed for the activation.

Example CAP message for all pole activation

The following is the Pole Activation formula:

`[[SystemURL]]/Syndication/[[GatewayId]]_[[VirtualSystemId]]/capiim/[[AlertId]]`

The **<addresses>** field specifies which polls or groups are active. The format is `PA,Mode,Address`. The mode is either all, pole, or zone, indicated by either 0, 2, or 1 respectively. For example, `PA,0,0` indicates to activate all polls. The `0` in the middle represents All.

Note: The Wave Audio, Wave PostTone, and WavePretone specify the resources used to compose the audio needed for the activation.

```
<?xml version="1.0"?>
<alert xmlns="urn:oasis:names:tc:emergency:cap:1.1">
    <identifier>CAP_PA|36719|2D8C5430-6095-42C6-A605-33412047DBD4|1014865|PUBLISH</identifier>
    <sender>IWSAlerts</sender>
    <sent>2016-01-25T15:07:43-08:00</sent>
    <status>Actual</status>
    <msgType>Alert</msgType>
    <source>System Default</source>
    <scope>Public</scope>
    <addresses>PA,0,0</addresses>
    <code>0,1</code>
  - <info>
        <category>Other</category>
        <event/>
        <urgency>Unknown</urgency>
        <severity>Unknown</severity>
        <certainty>Unknown</certainty>
      - <resource>
            <resourceDesc>Wave PreTone</resourceDesc>
            <mimeType>audio/wav</mimeType>
            <uri>https://INTEGRATION5.athoc.com/csi/getAudio.asp?id=5003</uri>
        </resource>
      - <resource>
            <resourceDesc>Wave Audio</resourceDesc>
            <mimeType>audio/wav</mimeType>
            <uri>https://INTEGRATION5.athoc.com/csi/getAudio.asp?id=5004</uri>
        </resource>
      - <resource>
            <resourceDesc>Wave PostTone</resourceDesc>
            <mimeType>audio/wav</mimeType>
            <uri>https://INTEGRATION5.athoc.com/csi/getAudio.asp?id=5003</uri>
        </resource>
      - <eventCode>
            <valueName>ATHOC</valueName>
            <value>IWSA</value>
        </eventCode>
        <effective>2016-01-25T15:07:43-08:00</effective>
        <expires>2016-02-24T15:07:43-08:00</expires>
        <senderName>Weather1</senderName>
        <headline>Test All LRAD Poles</headline>
        <description/>
        <instruction/>
        <contact>support@athoc.com</contact>
      - <parameter>
            <valueName>AUDIO-REPEAT-MODE</valueName>
            <value>2</value>
        </parameter>
      - <parameter>
            <valueName>AUDIO-REPEAT</valueName>
            <value>1</value>
        </parameter>
    </info>
</alert>
```

Example CAP message for activation of a single pole

PA, 2, 2 indicates that just one pole, number 2, needs to be activated. The 2 in the middle represents the single pole mode.

```
<?xml version="1.0"?>
- <alert xmlns="urn:oasis:names:tc:emergency:cap:1.1">
    <identifier>CAP_PA|36726|CEC23B2E-B8E6-48AF-9371-A7AB38E0206F|1014868|PUBLISH</identifier>
    <sender>IWSAlerts</sender>
    <sent>2016-01-25T15:23:17-08:00</sent>
    <status>Actual</status>
    <msgType>Alert</msgType>
    <source>System Default</source>
    <scope>Public</scope>
    <addresses>PA,2,2</addresses>
    <code>2,1</code>
  - <info>
      <category>Other</category>
      <event/>
      <urgency>Unknown</urgency>
      <severity>Unknown</severity>
      <certainty>Unknown</certainty>
    - <resource>
        <resourceDesc>Wave PreTone</resourceDesc>
        <mimeType>audio/wav</mimeType>
        <uri>https://INTEGRATION5.athoc.com/csi/getAudio.asp?id=5003</uri>
      </resource>
    - <resource>
        <resourceDesc>Wave Audio</resourceDesc>
        <mimeType>audio/wav</mimeType>
        <uri>https://INTEGRATION5.athoc.com/csi/getAudio.asp?id=5004</uri>
      </resource>
    - <resource>
        <resourceDesc>Wave PostTone</resourceDesc>
        <mimeType>audio/wav</mimeType>
        <uri>https://INTEGRATION5.athoc.com/csi/getAudio.asp?id=5003</uri>
      </resource>
    - <eventCode>
        <valueName>ATHOC</valueName>
        <value>IWSA</value>
      </eventCode>
      <effective>2016-01-25T15:23:17-08:00</effective>
      <expires>2016-02-24T15:23:17-08:00</expires>
      <senderName>Weather1</senderName>
      <headline>Test LRAD pole 2</headline>
      <description/>
      <instruction/>
      <contact>support@athoc.com</contact>
    - <parameter>
        <valueName>AUDIO-REPEAT-MODE</valueName>
        <value>2</value>
      </parameter>
    - <parameter>
        <valueName>AUDIO-REPEAT</valueName>
        <value>1</value>
      </parameter>
    </info>
</alert>
```

Example CAP message for a group of poles

`PA,1,3` indicates that Group 3 of the poles needs to be activated. The `1` in the middle represents the Zone.

```
<?xml version="1.0"?>
- <alert xmlns="urn:oasis:names:tc:emergency:cap:1.1">
    <identifier>CAP_PA|36727|98DB8362-3B13-422B-BF2E-DD189C450617|1014869|PUBLISH</identifier>
    <sender>IWSAlerts</sender>
    <sent>2016-01-25T15:27:08-08:00</sent>
    <status>Actual</status>
    <msgType>Alert</msgType>
    <source>System Default</source>
    <scope>Public</scope>
    <addresses>PA,1,3</addresses>
    <code>3,1</code>
  - <info>
      <category>Other</category>
      <event/>
      <urgency>Unknown</urgency>
      <severity>Unknown</severity>
      <certainty>Unknown</certainty>
    - <resource>
        <resourceDesc>Wave PreTone</resourceDesc>
        <mimeType>audio/wav</mimeType>
        <uri>https://INTEGRATION5.athoc.com/csi/getAudio.asp?id=5003</uri>
      </resource>
    - <resource>
        <resourceDesc>Wave Audio</resourceDesc>
        <mimeType>audio/wav</mimeType>
        <uri>https://INTEGRATION5.athoc.com/csi/getAudio.asp?id=5004</uri>
      </resource>
    - <resource>
        <resourceDesc>Wave PostTone</resourceDesc>
        <mimeType>audio/wav</mimeType>
        <uri>https://INTEGRATION5.athoc.com/csi/getAudio.asp?id=5003</uri>
      </resource>
    - <eventCode>
        <valueName>ATHOC</valueName>
        <value>IWSA</value>
      </eventCode>
      <effective>2016-01-25T15:27:08-08:00</effective>
      <expires>2016-02-24T15:27:08-08:00</expires>
      <senderName>Weather1</senderName>
      <headline>Test LRAD zone 3</headline>
      <description/>
      <instruction/>
      <contact>support@athoc.com</contact>
    - <parameter>
        <valueName>AUDIO-REPEAT-MODE</valueName>
        <value>2</value>
      </parameter>
    - <parameter>
        <valueName>AUDIO-REPEAT</valueName>
        <value>1</value>
      </parameter>
    </info>
</alert>
```

Appendix C: IPAWS feed payload

The following is a sample IPAWS feed payload:

<?xml version="1.0" encoding="UTF-8" standalone="true"?>
<alert xmlns="urn:oasis:names:tc:emergency:cap:1.2"><identifier>NWS-141029-932922-887343</identifier><sender>w-nws.webmaster@noaa.gov</sender><sent>2015-10-01T10:30:10-05:00</sent><status>Actual</status><msgType>Alert</msgType><scope>Public</scope><code>IPAWSv1.0</code><info><category>Met</category><event>Tornado Warning</event><responseType>Shelter</responseType><urgency>Immediate</urgency><severity>Extreme</severity><certainty>Observed</certainty><eventCode><valueName>SAME</valueName><value>TOR</value></eventCode><effective>2015-10-01T10:30:10-05:00</effective><onset>2015-10-01T10:30:10-05:00</onset><expires>2015-10-01T10:40:10-05:00</expires><senderName>NWS Green Bay WI</senderName><headline>THIS IS A TEST IPAWS NWS Tornado Warning issued July 13 at 4:19AM CDT expiring July 13 at 4:45AM CDT by NWS Green Bay WI</headline><description>THE NATIONAL WEATHER SERVICE IN GREEN BAY HAS ISSUED A * TORNADO WARNING FOR... SOUTHEASTERN OUTAGAMIE COUNTY IN NORTHEASTERN WISCONSIN... * UNTIL 445 AM CDT * AT 418 AM CDT...A SEVERE THUNDERSTORM CAPABLE OF PRODUCING A TORNADO WAS LOCATED NEAR BLACK CREEK...OR 8 MILES NORTH OF APPLETON...MOVING EAST AT 45 MPH. HAZARD...TORNADO. SOURCE...RADAR INDICATED ROTATION. IMPACT...FLYING DEBRIS WILL BE DANGEROUS TO THOSE CAUGHT WITHOUT SHELTER. MOBILE HOMES WILL BE DAMAGED OR DESTROYED. DAMAGE TO ROOFS...WINDOWS AND VEHICLES WILL OCCUR. TREE DAMAGE IS LIKELY. * LOCATIONS IMPACTED INCLUDE... APPLETON...KAUKAUNA...LITTLE CHUTE...BLACK CREEK...ONEIDA... WRIGHTSTOWN...FREEDOM...MACKVILLE...FIVE CORNERS...BINGHAMTON... CHICAGO CORNERS...TWELVE CORNERS AND MURPHY CORNER</description><instruction>TAKE COVER NOW! MOVE TO A BASEMENT OR AN INTERIOR ROOM ON THE LOWEST FLOOR OF A STURDY BUILDING. AVOID WINDOWS. IF YOU ARE OUTDOORS...IN A MOBILE HOME...OR IN A VEHICLE...MOVE TO THE CLOSEST SUBSTANTIAL SHELTER AND PROTECT YOURSELF FROM FLYING DEBRIS.
</instruction><web>http://www.weather.gov</web><parameter><valueName>VTEC</valueName><value>/O.NEW.KGRB.TO.W.0006.150713T0919Z-150713T0945Z/</value></parameter><parameter><valueName>EAS-ORG</valueName><value>WXR</value></parameter><parameter><valueName>PIL</valueName><value>GRBTORGRB</value></parameter><parameter><valueName>BLOCKCHANNEL</valueName><value>EAS</value></parameter><parameter><valueName>BLOCKCHANNEL</valueName><value>NWEM</value></parameter><parameter><valueName>eventEndingTime</valueName><value>2015-07-13T04:45:00-05:00</value></parameter><parameter><valueName>CMAMtext</valueName><value>Tornado Warning in this area til 4:45 AM CDT. Take shelter now. Check local media. - NWS</value></parameter><area><areaDesc>Outagamie</areaDesc><polygon>44.44,-88.61 44.54,-88.38 44.48,-88.29 44.40,-88.57</polygon><geocode><valueName>UGC</valueName><value>WIC025</value></geocode><geocode><valueName>SAME</valueName><value>055087</value></geocode></area></info></alert>

Appendix D: Geocodes and counties

The following are the two geocode formats:

- Universal Geographic Code (UGC)
- Federal Information Processing Standards (FIPS)

The UGC format is used in IPAWS feeds.

Locate the geocode of a county

The following sections describe how to locate the geocode of a county.

Locate the UGC county code

Codes map to the county of a state and must contain the following items:

- Two-letter state abbreviation
- The letter 'C' for county
- Three-digit county number

1. Open a browser and navigate to the National Weather Service website at the following URL: https://alerts.weather.gov.
2. Locate your state of residence and click **County List**.

3. Locate your county of residence and copy the **County Code**.

Locate the UGC zone code

Codes map to the county of a state and must contain the following items:

- Two-letter state abbreviation
- The letter 'Z' for county
- Three-digit zone number

1. Open a browser and navigate to the National Oceanic and Atmospheric Administration (NOAA) website at the following URL: https://alerts.weather.gov.
2. Locate your state of residence and click **Zone List**.

3. Locate your county of residence and copy the **Zone Code**.

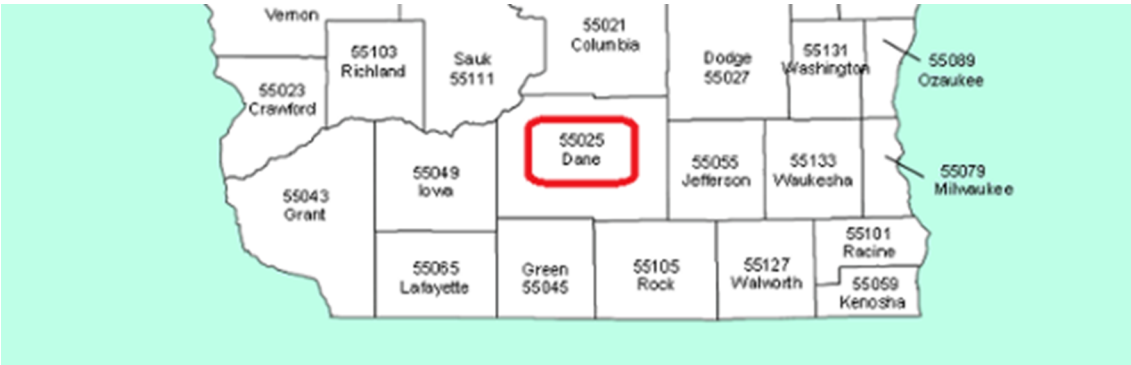
Locate the FIPS code

FIPS codes map to the county of a state and must contain the following items:

- Two-digit state number
- Three-digit county number

1. Open a browser and navigate to the National Weather Service Management Information Retrieval System (MIRS) website at the following URL: http://nws.noaa.gov/mirs/public/prods/maps/cnty_fips_list.htm.
2. Locate your state of residence and click **PDF** or **JPG** to view the FIPS Code. A Map of the selected state is displayed.

3. On the map, locate the county where your residence is located and copy the **FIPS Code**.



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https://support.athoc.com

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Published in Canada