

ArcGIS® GeoEvent Processor for Server

Powered by ArcGIS



Working with RSS Data Feeds

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Introduction

The ArcGIS GeoEvent Processor is an extension for ArcGIS for Server used for filtering and processing real-time event data received by ArcGIS. It is a new Esri product targeted at meeting a growing demand among a wide range of customers to incorporate real-time, streaming data as a normal part of everyday GIS applications, workflows, and analysis. RSS/ATOM data feeds are a potentially rich source of real-time data which GeoEvent Processor can filter and refine as part of its incorporation into an enterprise GIS.

The United States Geological Survey (USGS) publishes a popular set of real-time data feeds and notifications as part of their Earthquake Hazards Program¹. The USGS ShakeMap RSS Feed provides periodic update of earthquake events within the last 30 days and is used by federal, state, and local organizations, both public and private. Post-earthquake response and recovery, public and scientific information, as well as for preparedness exercises and disaster planning are all supported by the USGS.

Exercises in this tutorial will illustrate how GeoEvent Processor can be configured to poll an ATOM data feed from the USGS to retrieve data on earthquakes which have occurred in the last hour. This particular feed is updated by the USGS at least every five minutes. The exercises will walk through how to establish an input connector to poll the USGS feed for data, process the event data, and write the event data to a variety of outputs including: a basic TCP/Text socket output, an ArcGIS Online hosted feature service, and an event cache maintained by the GeoEvent Processor which can be queried using REST.

An Overview of Input/Output Components, Transports, and Adapters

Out-of-the-box, the GeoEvent Processor provides a number of component templates. You have used several of these templates to create input and output connectors as you completed the exercises in the 'Introduction to GeoEvent Processor' tutorial.

To help you understand what a "component template" is, you need to understand that connectors – both input and output – are supported by *transports* and *adapters*.

- A transport handles the dispatch and receipt of event data over a communication channel (such as HTTP, TCP, UDP, or Web Socket).
- An adapter interprets data received and translates data for transmission.

The introductory exercises did not introduce the concept of adapters and transports because they are generally "behind the scenes". Custom adapters and transports which target specific third-party devices and data feeds can be developed using the GeoEvent Processor SDK.

In this tutorial you will be using a 'Receive RSS' component template which relies on an adapter to understand RSS/ATOM content and a transport developed for the HTTP protocol. The 'Receive RSS' component template, RSS adapter, and HTTP transport are all included with GeoEvent Processor out-of-the-box.

¹ For more information on available data feeds, please visit the USGS pages below:

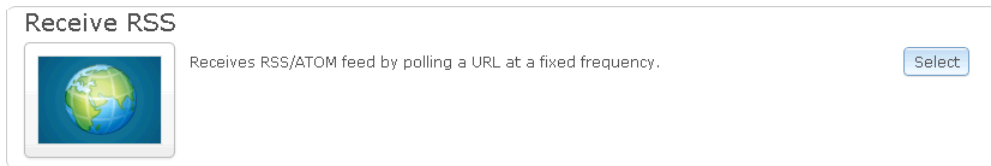
- <http://earthquake.usgs.gov/earthquakes/feed/v1.0>
- <http://earthquake.usgs.gov/earthquakes/shakemap>

Using, you configure a component template and save your configuration to create either an input or an output connector.

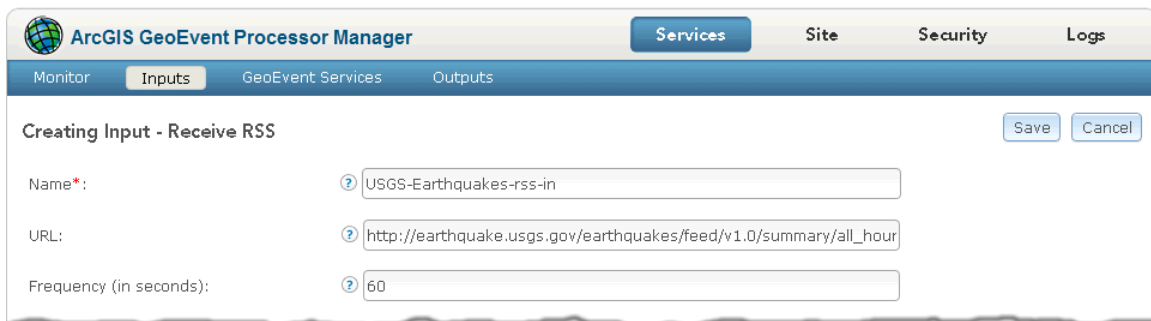
Poll an endpoint for RSS/ATOM data

In this exercise you will list component templates in the GeoEvent Processor Manager web application and use these templates to create an input connector to poll an RSS feed for data and an output connector to send the event data to a TCP port. You will use the Service Designer web application to connect your input and output components and publish a GeoEvent Service. You will monitor the output using the console application described in the 'Introduction to GeoEvent Processor' tutorial.

1. Launch the GeoEvent Processor Manager, navigate to the 'Services' > 'Inputs' page and click the 'Add Input' button. A list of available 'Input Connectors' is displayed.
2. In the 'Input Connectors' dialog, search for the keyword "RSS" and select the 'Receive RSS' template.



3. Enter a descriptive Name for your input connector: USGS-Earthquakes-rss-in
4. Enter the following endpoint for the connector's URL parameter:
http://earthquake.usgs.gov/earthquakes/feed/v1.0/summary/all_hour.atom
5. Change the 'Frequency (in seconds)' value to 60.



6. Expand the 'Advanced' properties and change the 'Receive New Data Only' parameter to 'No'.
 - Leave the other parameter values unchanged.
 - Your configuration should match the illustration on the next page.

Advanced

HTTP Method: GET

Parameters:

Acceptable MIME Types: text/xml,application/rss+xml,application/atom+xml,application/xml,text/plain

Receive New Data Only: Yes No

Mode*: CLIENT

Use URL Proxy: Yes No

Your “USGS-Earthquakes-rss-in” input connector will poll the specified USGS earthquake data feed every 60 seconds to retrieve event data. Setting the ‘Receive New Data Only’ parameter to ‘No’ means that every poll will retrieve all the feed’s events. We know that USGS is only updating the feed every five minutes, so we will frequently receive copies of event data already received. That’s OK – we’re doing that for two reasons. First, for the purposes of this exercise, we want to simulate a feed which is more active than the feed we’ve subscribed to. Second, we will be updating (not appending) event data to a feature service in a later exercise.

Taking a quick look at the advanced parameters illustrated above:

- The connector’s default mode ‘CLIENT’ means that the connector will act as a client, initiating an HTTP connection to a server assumed to be providing the data feed. GeoEvent Processor will be issuing an HTTP GET to retrieve the data from the provider.
- ‘Acceptable MIME types’ is a comma separated list which specifies the type of RSS data the connector will accept. The default is to accept only RSS data that matches the type “text/xml”, “application/rss+xml”, “application/atom+xml”, “application/xml”, or “text/plain”.
- The ‘Parameters’ field is left blank because, for this exercise, there are no additional query parameters to append to the URL when retrieving the RSS data. (You might use this parameter to specify a bounding box if the feed you were querying supported such a content filter.)
- The ‘Use URL Proxy’ parameter is set to ‘No’ with the assumption that your organization does not require the use of a proxy when making connections to the Internet. If this is not the case, you will need to edit the connector’s configuration, change this parameter to ‘Yes’ and provide a proxy URL.


7. Click the ‘Save’ button to create the new input component.
8. In the GeoEvent Processor Manager, navigate to the ‘Services’ > ‘Monitor’ page and note both the ‘Status’ and ‘Count’ for your newly created input.

The input connector should indicate a status ‘STARTED’ and every 60 seconds you should see its event count increase.

9. Navigate to 'Site' > 'GeoEvent Processor' > 'GeoEvent Definitions' in GeoEvent Processor Manager.
10. Notice that a GeoEvent Definition named 'USGS_All_Earthquakes__Past_Hour' has been created.

Recall from your introductory exercises that event data ingested into GeoEvent Processor must have an associated GeoEvent Definition which identifies an event's fields and data types. The 'Receive RSS' component template did not have a configurable field allowing you to specify a GeoEvent Definition. The connector's adapter creates one for you as it discovers the content and structure of the RSS data.

Note: You may see more than one event definition generated for RSS feeds. The connector should detect changes in a feed's content and update the GeoEvent Definition it is managing – but the adapter will sometimes create a second event definition when the cardinality of a previously observed field is the only change.















11. Click the edit icon  to the right of the 'USGS_All_Earthquakes__Past_Hour' event definition.

The 'Owner Name' of the event definition ('auto-generated/com.esri.ges.adapter.inbound/RSS/10.2.0') indicates that this is a managed GeoEvent Definition, created by the input adapter on-the-fly from the RSS feed's content. If you were to examine the feed in a browser you would discover the fields depicted below. (You will apply the TRACK_ID and GEOMETRY tags in the next exercise step.)


GeoEvent Definition Name: *

Owner Name: auto-generated/com.esri.ges.adapter.inbound.RSS/10.2.0

Fields for USGS_All_Earthquakes__Past_Hour

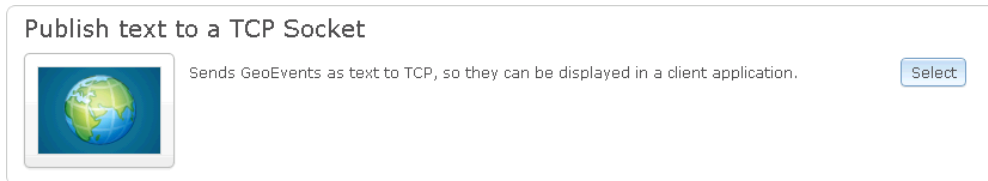
Name	Type	Cardinality	Tags	
title	String	1		 
link	String	1		 
description	String	1		 
guid	String	1	TRACK_ID	 
GEOMETRY	Geometry	1	GEOMETRY	 
geo_lat	Double	1		 
geo_long	Double	1		 

12. With the event definition open for editing, apply the GeoEvent TRACK_ID and GEOMETRY tags to the fields as illustrated, then click 'Save' to save the changes you made to tag these fields.

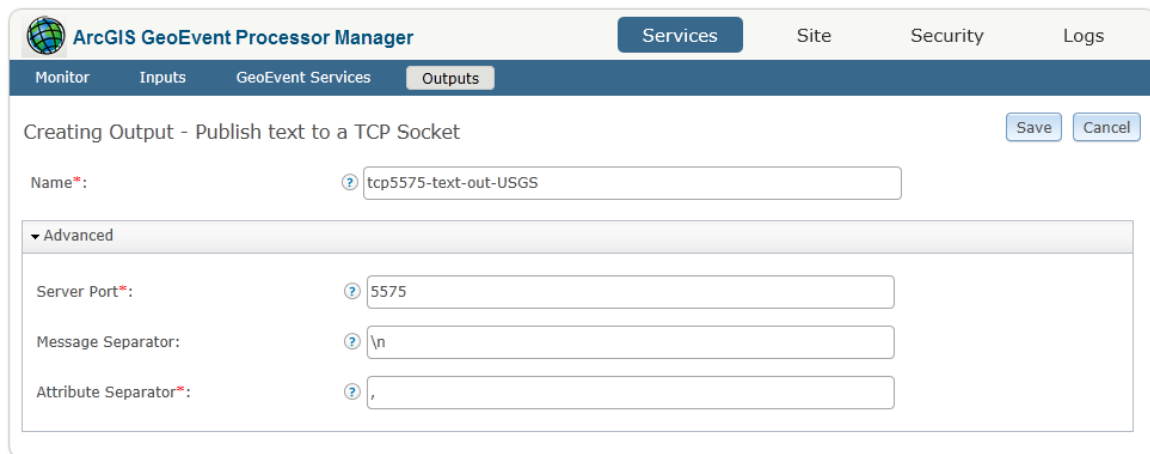
 You do not want to change the field names, field types, or field order of the event definition created and managed by the RSS inbound adapter. The schema was created based on the adaptor's discovery of the feed content and is managed by the adapter.

Before you will be able to observe any of the feed's attribute data, you will need to create an output connector and publish a GeoEvent Service.

13. In the GeoEvent Processor Manager, navigate to 'Services' > 'Outputs' and click the 'Add Output' button. Locate and select the 'Publish text to a TCP Socket' template.



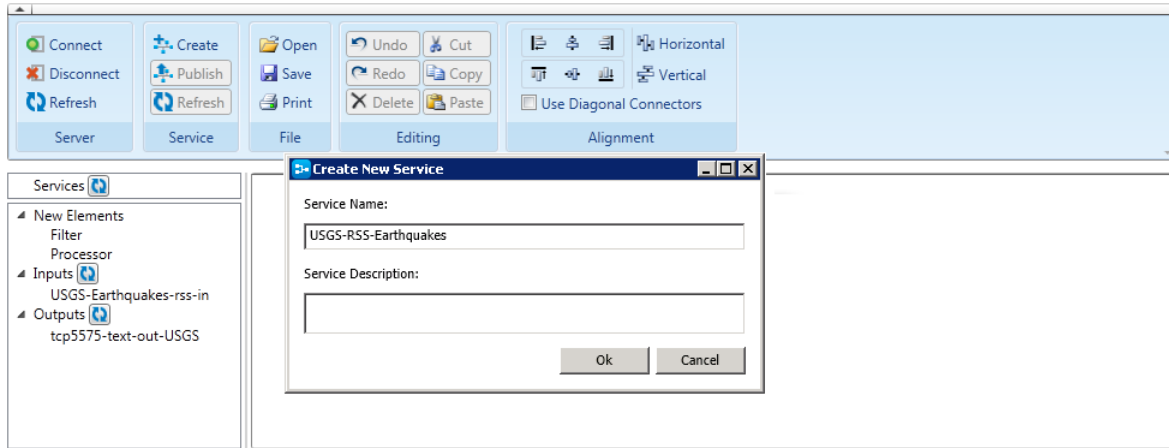
14. Configure a new TCP output connector specifying 'tcp5575-text-out-USGS' as the connector's name.
15. Expand the 'Advanced' properties and change the default 'Server Port' value to 5575.



Note: When creating and configuring a new TCP/Text output component you must specify a unique port which is not being used by another service or application. You can enter any port value accepted by your organization for your use. The port 5575 is specified here only to avoid conflicts with the default port 5570 used by exercises in the 'Introduction to GeoEvent Processor' tutorial.

16. Click the Save button to save your configured output connector.
17. Launch the GeoEvent Service Designer web application. If the web application was already running you will need to click the Server 'Refresh' button before the input and output connectors just created in Manager will be listed.
18. Click the 'Create' button in the 'Service' group to create a new GeoEvent service.
19. Name the service 'USGS-RSS-Earthquakes' as illustrated on the next page.





Connection Status: Connected to https://localhost:6143/

Note: If you have completed exercises in other tutorials or have Service, Input, or Output components you created independently as part of your study of GeoEvent Processor, your display may differ from the illustration above.

20. Drag the 'USGS-Earthquakes-rss-in' input and the 'tcp5575-text-out-USGS' output connector onto the main canvas and connect them as shown below.



21. Click 'Publish' to publish your new GeoEvent Service.
22. Back in the GeoEvent Processor Manager, navigate to the 'Services' > 'Monitor' page.
23. Verify that the 'USGS-RSS-Earthquakes' service just published is routing data from its input to its output by comparing the service's 'Out' event count with the event count for the output component.

Monitor Reset Statistics Last Reset:

GeoEvent Services							
Name	Status	In/Out	Count	Rate (over last 5 mins)		Max Rate	Time Since Last
USGS-RSS-Earthquakes	STARTED	In	210	0.40 /sec		0.41 /sec	00:00:04
		Out	210	0.40 /sec		0.41 /sec	00:00:04

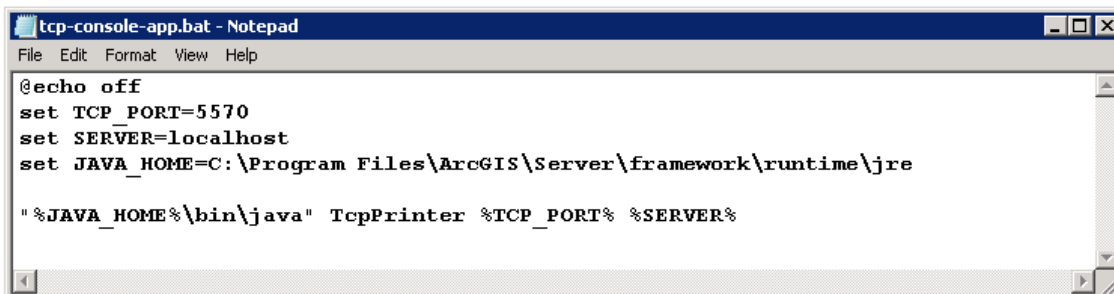
Inputs						
Name	Status	Count	Rate (over last 5 mins)		Max Rate	Time Since Last
USGS-Earthquakes-rss-in	STARTED	210	0.40 /sec		0.41 /sec	00:00:04

Outputs						
Name	Status	Count	Rate (over last 5 mins)		Max Rate	Time Since Last
USGS-Earthquakes-tcp-text-out	STARTED	210	0.40 /sec		0.41 /sec	00:00:04

Reviewing the RSS feed output

A simple console program, provided with the exercise materials, will enable you to observe the event data as it is processed by monitoring the output TCP socket. The program connects to the specified TCP socket as a listener and displays any data received on that port in a console window. Follow the steps below to configure the application to run on your system then launch the application and position its window where you can observe its display.

1. In a Windows File Explorer, locate the ...\\RSS\\utilities\\tcp-console-app folder.
2. Open the batch script in a text editor.
3. Notice that the script declares local variables for the TCP port on which it will be listening for events, the server it will be contacting, and the location of the JRE bundled with ArcGIS for Server.



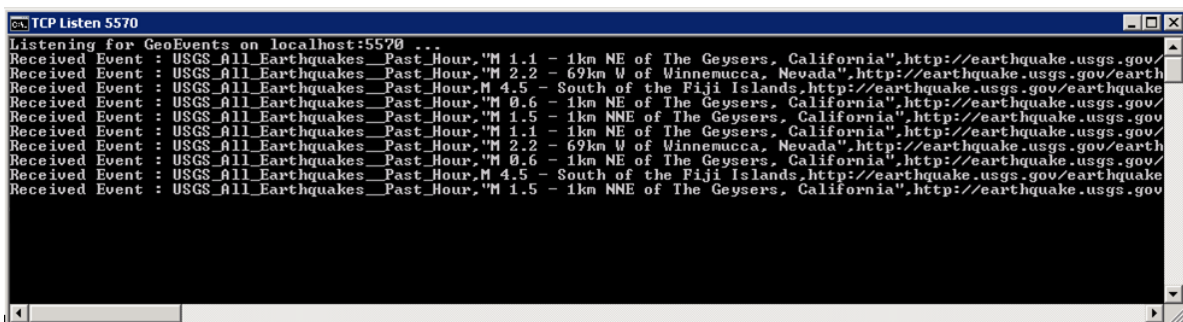
```
@echo off
set TCP_PORT=5570
set SERVER=localhost
set JAVA_HOME=C:\Program Files\ArcGIS\Server\framework\runtime\jre

"%JAVA_HOME%\bin\java" TcpPrinter %TCP_PORT% %SERVER%
```

4. Change the port number on the second line of the script to match the TCP port you configured your output connector to use. (This should be 5575 unless you elected to use a different port number.)
5. Verify that the java.exe executable can be found in the sub-folder 'bin' beneath the application folder ...\\ArcGIS\\Server\\framework\\runtime\\jre (as specified in the batch file illustrated above).

Note: Any recent Java Runtime can be used to run the TCP Console application. Change the JAVA_HOME defined within the script to conform to your ArcGIS for Server product's install.

6. Save any changes you make to the script before continuing and close your text editor.
7. If you do not already have a Desktop Shortcut to the TCP Console batch script, right-click the batch script and select 'Send to' > 'Desktop (create shortcut)'.
8. Double-click your Desktop shortcut to the TCP Console to run the application and observe that a batch of data from the USGS data feed displayed in the console window every 60 seconds.



```
Listening for GeoEvents on localhost:5570 ...
Received Event : USGS_All_Earthquakes_Past_Hour,"M 1.1 - 1km NE of The Geysers, California",http://earthquake.usgs.gov/
Received Event : USGS_All_Earthquakes_Past_Hour,"M 2.2 - 69km W of Winnemucca, Nevada",http://earthquake.usgs.gov/earth
Received Event : USGS_All_Earthquakes_Past_Hour,"M 4.5 - South of the Fiji Islands,http://earthquake.usgs.gov/earthquake
Received Event : USGS_All_Earthquakes_Past_Hour,"M 0.6 - 1km NE of The Geysers, California",http://earthquake.usgs.gov/
Received Event : USGS_All_Earthquakes_Past_Hour,"M 1.5 - 1km NNE of The Geysers, California",http://earthquake.usgs.gov/
Received Event : USGS_All_Earthquakes_Past_Hour,"M 1.1 - 1km NE of The Geysers, California",http://earthquake.usgs.gov/
Received Event : USGS_All_Earthquakes_Past_Hour,"M 2.2 - 69km W of Winnemucca, Nevada",http://earthquake.usgs.gov/earth
Received Event : USGS_All_Earthquakes_Past_Hour,"M 0.6 - 1km NE of The Geysers, California",http://earthquake.usgs.gov/
Received Event : USGS_All_Earthquakes_Past_Hour,"M 4.5 - South of the Fiji Islands,http://earthquake.usgs.gov/earthquake
Received Event : USGS_All_Earthquakes_Past_Hour,"M 1.5 - 1km NNE of The Geysers, California",http://earthquake.usgs.gov
```



Did you notice that each record in the illustration on the previous page is prefixed with "USGS_All_Earthquakes__Past_Hour"? This is the event definition created by the RSS adapter which you inspected in the previous exercise.

Publishing an RSS feed's content to a hosted feature service

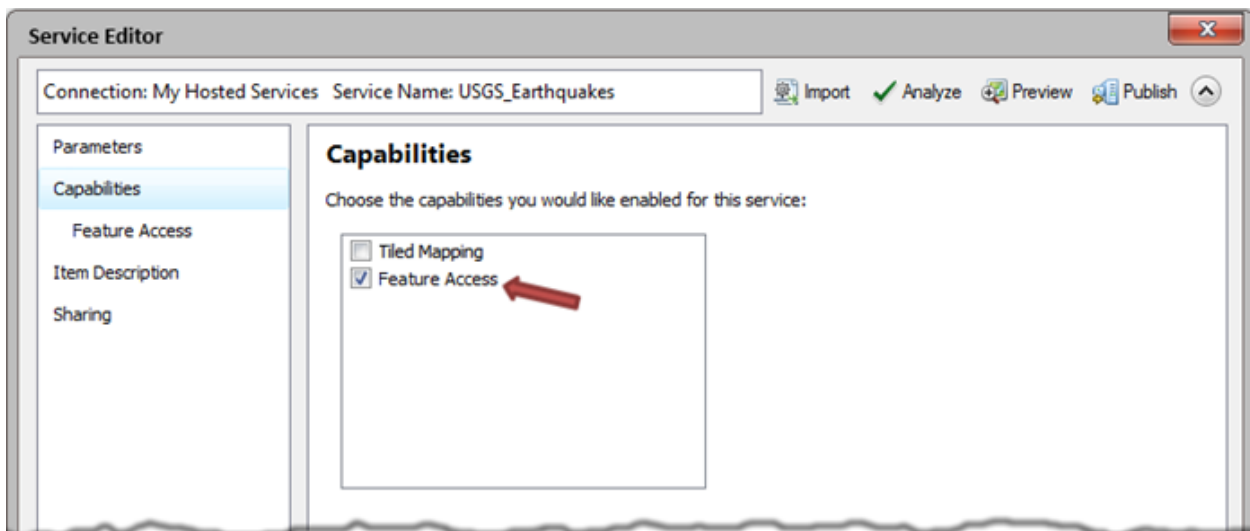
In this exercise you will publish a feature service hosted by ArcGIS Online for Organizations. If you do not have an AGOL for Organizations account, you can obtain a 30-day trial by navigating to the following page: <http://www.arcgis.com/features/free-trial.html>

- If you do not wish to use a hosted feature service, you can publish a feature service hosted by your local ArcGIS for Server site. Refer to the 'Introduction to GeoEvent Processor' tutorial for exercise steps and notes on using a local AGS site to publish feature services.

You must have an "Organizations" account in order to publish hosted feature services; public AGOL accounts do not provide this capability.

Publish a hosted feature service and create a new online web map

1. First, locate the map package ...\\RSS\data\Earthquakes.mpk unzipped with the materials for this tutorial. Open the map package in ArcMap.
2. Select 'File' > 'Sign In...' and log-in to your ArcGIS Online for Organizations account.
3. Select 'File' > 'Share As' > 'Service...' and publish the map document as a hosted feature service. (Select 'Publish a Service' and then select the connection for your organization's hosted services.)
 - The map document's only feature layer (USGS_Earthquakes_Last_Hour) is currently empty. You will be using GeoEvent Processor to add features to the feature service as you receive them from the USGS RSS feed.
4. Name the feature service: USGS_Earthquakes
5. Make sure that you check the service capability 'Feature Access' as illustrated below.



6. Click 'Analyze' to check for potential issues with publishing; click 'Publish' to publish the service.
7. In a web browser, browse to <http://arcgis.com> and log-in to your AGOL for Organizations account.
8. Click 'My Content' to list your published content. You should have two new items:
 - A USGS_Earthquakes "Features" feature service
 - A USGS_Earthquakes "Service Definition"
9. Click the first item, the "Features" feature service to open it item's page.
10. Click the 'Edit' button and edit the feature service's properties to enable 'Editing' and allow users to 'Add, update, and delete' features (see illustrations below).

HOME GALLERY MAP GROUPS MY CONTENT MY ORGANIZATION

USGS_Earthquakes

Earthquakes during the last hour worldwide published by the USGS

◆ Features (Hosted) by [rsunderman_GEP](#)
 Source: Feature Service
 Last Modified: August 24, 2013
 ☆☆☆☆☆ (0 ratings, 1 view)

Facebook Twitter

OPEN SHARE EDIT DELETE MOVE USAGE

Description

USGS All Earthquakes, Past Hour Updates: Every 5 minutes Author: U.S. Geological Survey
http://earthquake.usgs.gov/earthquakes/feed/v1.0/summary/all_hour.atom

Properties

Tags: [Add tag\(s\)](#)

Credits:

Extent: Left: -180 Right: 180 Top: 90 Bottom: -90

Editing: Enable editing and allow editors to:
 Add, update, and delete features
 Update feature attributes only
 Add features only

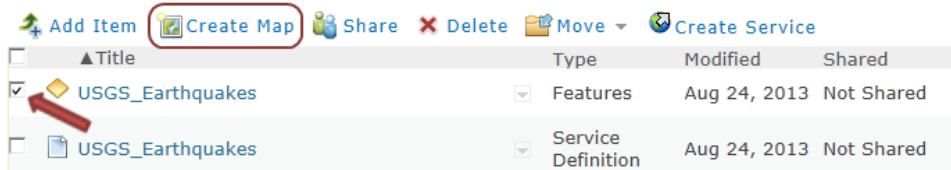
Export Data: Allow others to export to shapefile, CSV, geodatabase, or KML.

Sync: Enable Sync (disconnected editing with synchronization).

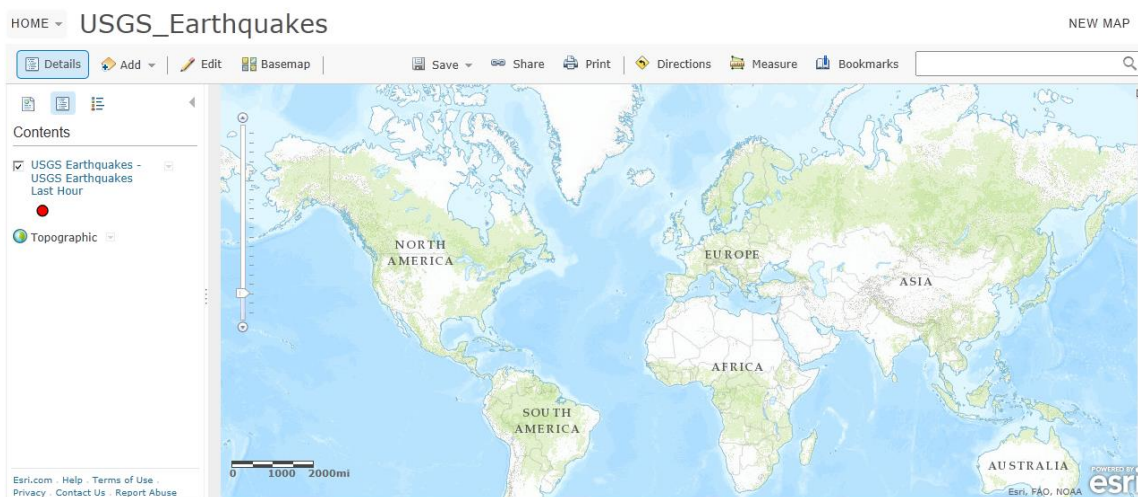
Track Edits: Keep track of who created and last updated features.
 Editors can only update and delete the features they add.

11. Click the 'Save' button to save your changes to the published service's editing capabilities.

- Back on the 'My Content' page, check the box next to the USGS_Earthquakes "Features" feature service and then click 'Create Map' in the content menu bar.



ArcGIS Online should create a web map for you with your hosted feature service as a map layer. If you click the middle button of the multi-purpose panel you can display the web map's table of contents as illustrated below.



- Select 'Save' > 'Save As' and enter a descriptive Title, Tags, and Summary for your web map, then click the 'Save' button to save your completed web map

Create an 'Update a Feature' output connector and update your GeoEvent Service

Now that you have a published feature service and web map for displaying the service's data, you will create and configure a Geo Event Processor output connector for updating features in the service. This portion of the exercise should be familiar to you if you completed the 'Introduction to GeoEvent Processor' tutorial exercises. There is, however, a slight twist – you will need to incorporate a Field Mapper processor element in order to transfer the feed's attribute data into a schema consistent with the feature service included in the web map.

- In GeoEvent Processor Manager, navigate to the 'Services' > 'Outputs' page.
- Click the 'Add Output' button, locate and select the 'Update a Feature' output component template.



3. Complete the configuration for the 'Update a Feature' connector:

- Provide a short but unique name: fs-out-USGS
- Select your ArcGIS Server / ArcGIS Online connection
- Identify the service's folder, service name, and feature layer
- Make sure that a unique field is specified which GeoEvent Processor can use to identify targeted features for update. (The USGS feed's *guid* field is sufficient for this purpose.)
- Set the 'Update Interval' to 20 seconds.

Creating Output - Update a Feature

Name*:	<input type="text" value="fs-out-USGS"/>
ArcGIS Server Connection*:	<input type="text" value="AGOL-Organization"/> Register ArcGIS Server
Folder:	<input type="text" value="Root"/>
Service Name*:	<input type="text" value="USGS_Earthquakes (FeatureServer)"/>
Layer:	<input type="text" value="USGS_Earthquakes_Last_Hour"/>
Unique Feature Identifier Field*:	<input type="text" value="guid"/>
Update Interval (seconds)*:	<input type="text" value="20"/>

▼ Advanced

Generate flat JSON*:	<input checked="" type="radio"/> Yes <input type="radio"/> No
Formatted JSON*:	<input type="radio"/> Yes <input checked="" type="radio"/> No
Delete Old Features:	<input type="radio"/> Yes <input checked="" type="radio"/> No

Let's pause a moment and consider our expected flow of data. Every 5 minutes or so, USGS will update their data feed. Every 60 seconds the USGS-Earthquakes-rss-in input connector configured earlier will poll the service to collect whatever data the feed has to report. Some of the data records may contain updates, some may be new, some may be duplicates of what the input connector already has.

Regardless of what the input connector harvests from the live data feed, every 20 seconds the output connector will send whatever data it has received to the target feature service using the specified 'guid' field to identify the features to update. If the output connector has not received any data, its buffer will be empty, and nothing will be sent to the feature service in the way of updates.

Before you can incorporate your newly created output connector into your USGS-RSS-Earthquakes GeoEvent Service you must create a GeoEvent Definition which is consistent with the published feature service's schema. Occasionally, when the data received by an input connector has the exact same schema as the feature service being updated by an output connector, you can reduce the complexity of your data flow and use a single GeoEvent Definition. **You will not be able to do that for this exercise.**

4. Save your configured fs-out-USGS output connector.
5. Navigate to the Manager's 'Site' > 'GeoEvent Processor' > 'GeoEvent Definitions' page.
6. Click the 'Import GeoEvent Definition' button and import an event definition from your published feature service.

A new GeoEvent Definition named for the target feature layer (“USGS_Earthquakes_Last_Hour”) should now be listed with your other event definitions.

7. Compare the schema (or field summary) of the imported event definition with the one created and maintained by the RSS adaptor.

GeoEvent Definitions

[New GeoEvent Definition](#)
[Import GeoEvent Definitions](#)













Name	Fields	
incident	id, name, type, status, alertType, openCondition, closeCondition, de...	
USGS_All_Earthquakes__Past_Hour	title, link, description, guid, GEOMETRY, geo_lat, geo_long	
USGS_Earthquakes_Last_Hour	title, link, guid, geo_lat, geo_long, shape	

Two main differences should stand out. First, the event definition you just imported does not have a 'description' field. Second, the feature service's field containing the geometry is named 'shape' and is listed as the last field in the field's list.

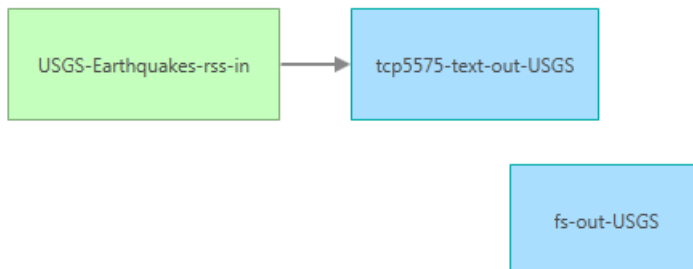
8. Click the edit icon () to the right of the new USGS_Earthquakes_Last_Hour event definition.
9. Tag the 'guid' field with the TRACK_ID tag and confirm that the 'shape' field has been tagged as the GEOMETRY field as illustrated on the next page.

GeoEvent Definition Name: *
Owner Name: arcgis

Fields for
USGS_Earthquakes_Last_Hour

Name	Type	Cardinality	Tags	
title	String	1		 
link	String	1		 
guid	String	1	TRACK_ID	 
geo_lat	Double	1		 
geo_long	Double	1		 
shape	Geometry	1	GEOMETRY	 

10. Save the changes to the event definition's tags (do not to change the field names, order, or data types).
11. Open the Service Designer web application and refresh the app by clicking the Server 'Refresh' button. (This will make the imported event definition and newly created output connector known to the application.)
12. Double-click the USGS-RSS-Earthquakes service to open it on the editing canvas.
13. Drag the fs-out-USGS output connector to the editing canvas and position it as illustrated below.



14. Double-click the 'New Elements' > 'Processor' item in the list to the left of the editing canvas to add a new processor element to the service.
15. Configure the processor element as a Field Mapper as illustrated on the next page.

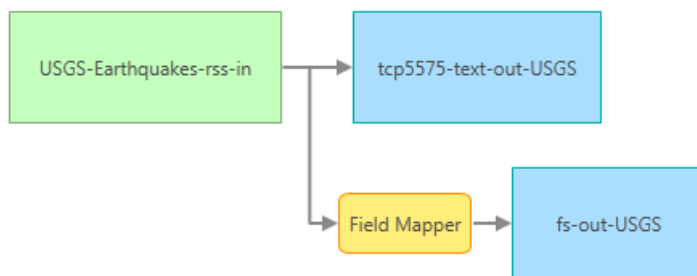
(!) It is important that you review the content of data feeds you ingest into GeoEvent Processor. The USGS RSS feed for worldwide earthquakes contains a description field which includes HTML tagged elements. ArcGIS for Server will not accept this content, which is why the description field was deliberately omitted from the schema of the published feature service.

Name:

Processor:

Source: <input type="text" value="USGS_All_Earthquakes_Past_Hour"/>	Target: <input type="text" value="USGS_Earthquakes_Last_Hour"/>
<input type="text" value="title"/>	<input type="text" value="title"/>
<input type="text" value="link"/>	<input type="text" value="link"/>
<input type="text" value="guid"/>	<input type="text" value="guid"/>
<input type="text" value="geo_lat"/>	<input type="text" value="geo_lat"/>
<input type="text" value="geo_long"/>	<input type="text" value="geo_long"/>
<input type="text" value="GEOMETRY"/>	<input type="text" value="shape"/>

16. Click OK to save the configuration of the Field Mapper and incorporate it into the GeoEvent Service as illustrated below.



17. Publish your re-configured service.

If you refresh the browser's display of your web map, you should see the most recent batch of earthquakes

Publishing an RSS feed's content to a GeoEvent Cache

In this exercise you will use the GeoEvent Processor Manager to create an output which publishes GeoEvents to a REST endpoint cache maintained by the GeoEvent Processor.

Note: The tutorial 'GeoEvent Caches' covers the GeoEvent Processor's caching functionality in greater detail. The caching mechanism is presented here only to illustrate an alternative output for event data.

1. In GeoEvent Processor Manager, navigate to 'Services' > 'Outputs' and click the 'Add Output' button.
2. In the 'Output Connectors' dialog, search for the keyword "Cache" to locate the 'Publish GeoEvents on a REST endpoint' output connector template. Click the connector template's select button.

Publish GeoEvents on a REST endpoint



Creates a REST end point that can be used to query GeoEvents. The URL of the REST endpoint will be `http://server:port/geoevent/rest/cache/{output name}?f={text|json|kml|rss}`. For example, if you want to retrieve GeoEvents from an output called rest-out in JSON format, the URL would be `http://server:port/geoevent/rest/cache/rest-out?f=json`. Please refer to the tutorial documentation for the parameters of each format.

Select

This output connector uses an out-of-the-box GeoEventCache adapter to write GeoEvents to a cache managed by the GeoEvent Processor. The cache is accessible through a REST endpoint described in the connector template illustrated above.

3. Configure the output connector as illustrated below, retaining all of the parameter default values except 'Name' which you will change to USGS-Earthquakes-cache.

ArcGIS GeoEvent Processor Manager

Services Site Security Logs

Monitor Inputs GeoEvent Services Outputs

Creating Output - Publish GeoEvents on a REST endpoint

Save Cancel

Name*: USGS-Earthquakes-cache

Rest Cache Limit Method*: Number of GeoEvents per Track

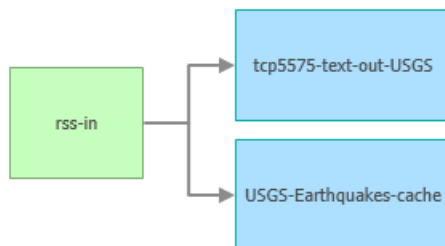
Rest Cache Limit Size*: 12

Advanced

Delete Old Events: Yes No

Maximum number of tracks allowed: 1000

4. Click 'Save' to create your new output connector.
5. In the Service Designer, double-click the USGS-RSS-Earthquakes service to open it for editing.
6. Refresh Service Designer's list of outputs (if necessary), then drag the newly created 'USGS-Earthquakes-cache' output onto the main canvas and connect integrate it into the service as illustrated on the next page.



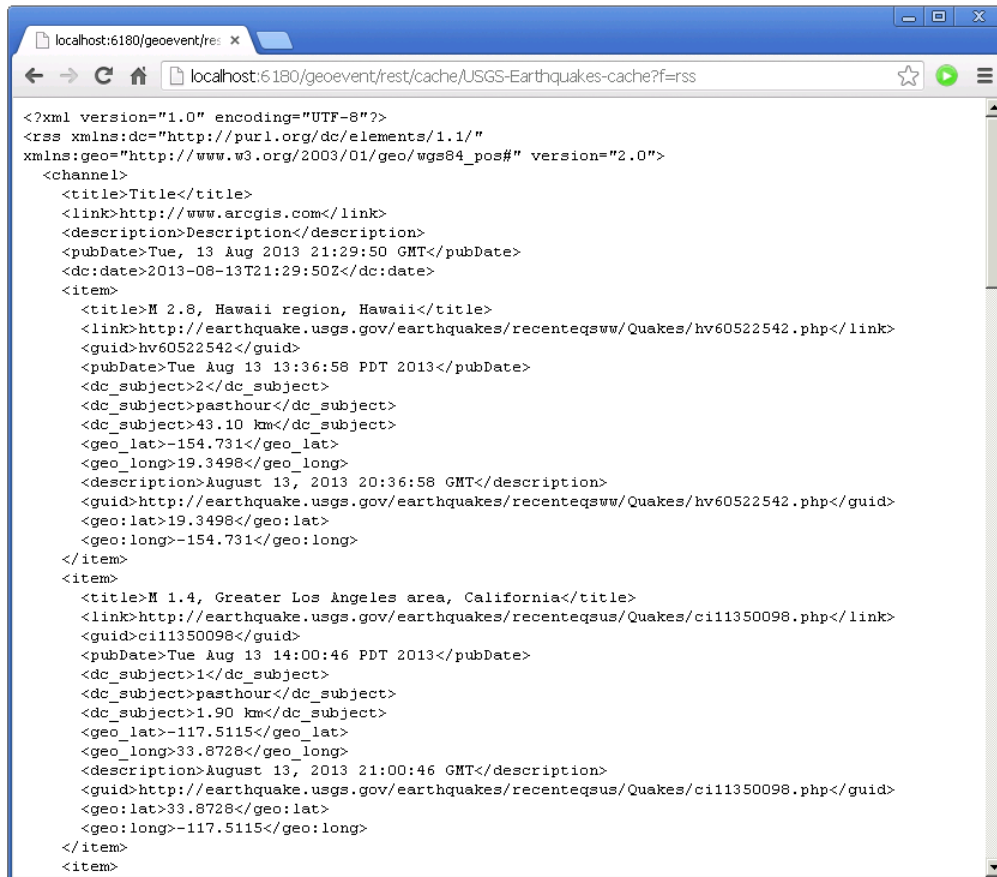
7. Publish your updates to the GeoEvent Service.

Assuming that your 'USGS-RSS-Earthquakes' service and 'rss-in' input connector are still running, you should be able to observe, from GeoEvent Processor Manager's 'Services' > 'Monitor' page, that events are being written to the output cache.

8. In a browser window, navigate to the following REST endpoint to view the contents of the cache.

- <http://localhost:6180/geoevent/rest/cache/USGS-Earthquakes-cache?f=rss>

An example of how a cache retrieved using Chrome is shown below.



```
<?xml version="1.0" encoding="UTF-8"?>
<rss xmlns:dc="http://purl.org/dc/elements/1.1/"
xmlns:geo="http://www.w3.org/2003/01/geo/wgs84_pos#" version="2.0">
  <channel>
    <title>Title</title>
    <link>http://www.arcgis.com</link>
    <description>Description</description>
    <pubDate>Tue, 13 Aug 2013 21:29:50 GMT</pubDate>
    <dc:date>2013-08-13T21:29:50Z</dc:date>
    <item>
      <title>M 2.8, Hawaii region, Hawaii</title>
      <link>http://earthquake.usgs.gov/earthquakes/recenteqsww/Quakes/hv60522542.php</link>
      <guid>hv60522542</guid>
      <pubDate>Tue Aug 13 13:36:58 PDT 2013</pubDate>
      <dc_subject>2</dc_subject>
      <dc_subject>pasthour</dc_subject>
      <dc_subject>43.10 km</dc_subject>
      <geo_lat>-154.731</geo_lat>
      <geo_long>19.3498</geo_long>
      <description>August 13, 2013 20:36:58 GMT</description>
      <guid>http://earthquake.usgs.gov/earthquakes/recenteqsww/Quakes/hv60522542.php</guid>
      <geo:lat>19.3498</geo:lat>
      <geo:long>-154.731</geo:long>
    </item>
    <item>
      <title>M 1.4, Greater Los Angeles area, California</title>
      <link>http://earthquake.usgs.gov/earthquakes/recenteqsus/Quakes/ci11350098.php</link>
      <guid>ci11350098</guid>
      <pubDate>Tue Aug 13 14:00:46 PDT 2013</pubDate>
      <dc_subject>1</dc_subject>
      <dc_subject>pasthour</dc_subject>
      <dc_subject>1.90 km</dc_subject>
      <geo_lat>-117.5115</geo_lat>
      <geo_long>33.8728</geo_long>
      <description>August 13, 2013 21:00:46 GMT</description>
      <guid>http://earthquake.usgs.gov/earthquakes/recenteqsus/Quakes/ci11350098.php</guid>
      <geo:lat>33.8728</geo:lat>
      <geo:long>-117.5115</geo:long>
    </item>
  </channel>
</rss>
```

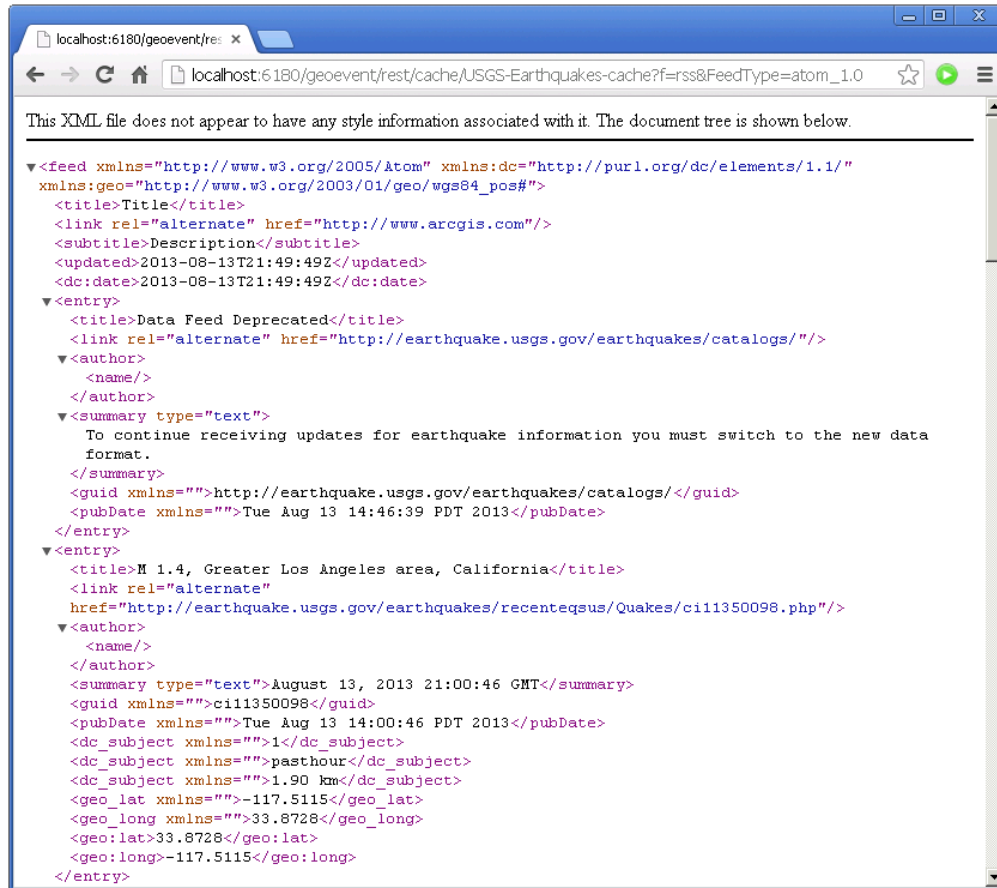
Notice that the cache content reflects the fields you saw previously in the GeoEvent Definition generated by the input component in your GeoEvent Service.

The response from your REST query is customized by the parameters included at the end of the URL you entered into the browser. In the query depicted on the previous page the query requested an RSS format using the f=RSS option.

If you wanted a descriptive "Title" included in the response, or wanted the response formatted as an ATOM feed, you could specify that as part of the REST query:

- <http://localhost:6180/geoevent/rest/cache/USGS-Earthquakes-cache?f=rss&FeedTitle=Earthquakes>

- http://localhost:6180/geoevent/rest/cache/USGS-Earthquakes-cache?f=rss&FeedType=atom_1.0



Additional information on formatting REST queries can be found in the 'GeoEvent Caches' tutorial. A table containing some of the popular options for querying the cache is included on the next page.

Popular REST Cache Query Parameters

Parameter Name	Description	Possible Values (Bold is Default)
▪ FeedType	Instructs the RSS Adapter which type of feed to generate, RSS or ATOM, and which version to use.	atom_0.3 rss_0.92 atom_1.0 rss_0.93 rss_0.9 rss_0.94 rss_0.9N rss_1.0 rss_0.9U rss_2.0
▪ FeedTitle	Provides the RSS Adapter with a descriptive title to incorporate as the <title> element in the feed content.	<user-specified string>
▪ FeedDescription	Provides the RSS Adapter with a description to incorporate as the <description> element in the feed content.	<user-specified string>
▪ FeedAuthorName	Provides the RSS Adapter with a user name to incorporate as the <managingEditor> and/or the <dc:creator> element in the feed content.	<user-specified string>
▪ FeedLink	Provides the RSS Adapter with a URL to incorporate as the <link> element in the feed content.	<user-specified string>

Discuss “Unsupported attribution values” in an Appendix?

The screenshot shows the ArcGIS GeoEvent Processor Manager interface. The main window is titled "GeoEvent Processor" and has tabs for "Components", "Services", "Site", "Security", and "Logs". The "Site" tab is active. The "GeoEvent Definition Name" is "USGS_M_1__Earthquakes". The "Owner Name" is "auto-generated/com.esri.ges.adapter.inbound.RSS/10.2.0". The "Fields for USGS_M_1__Earthquakes" table is shown below.

Name	Type	Cardinality	Tags
title	String	1	/ x
link	String	1	/ x
description	String	1	/ x
guid	String	1	/ x
pubDate	Date	1	/ x
dc_subject	String	∞	/ x
GEOMETRY	Geometry	1	/ x
geo_lat	Double	1	/ x
geo_long	Double	1	/ x

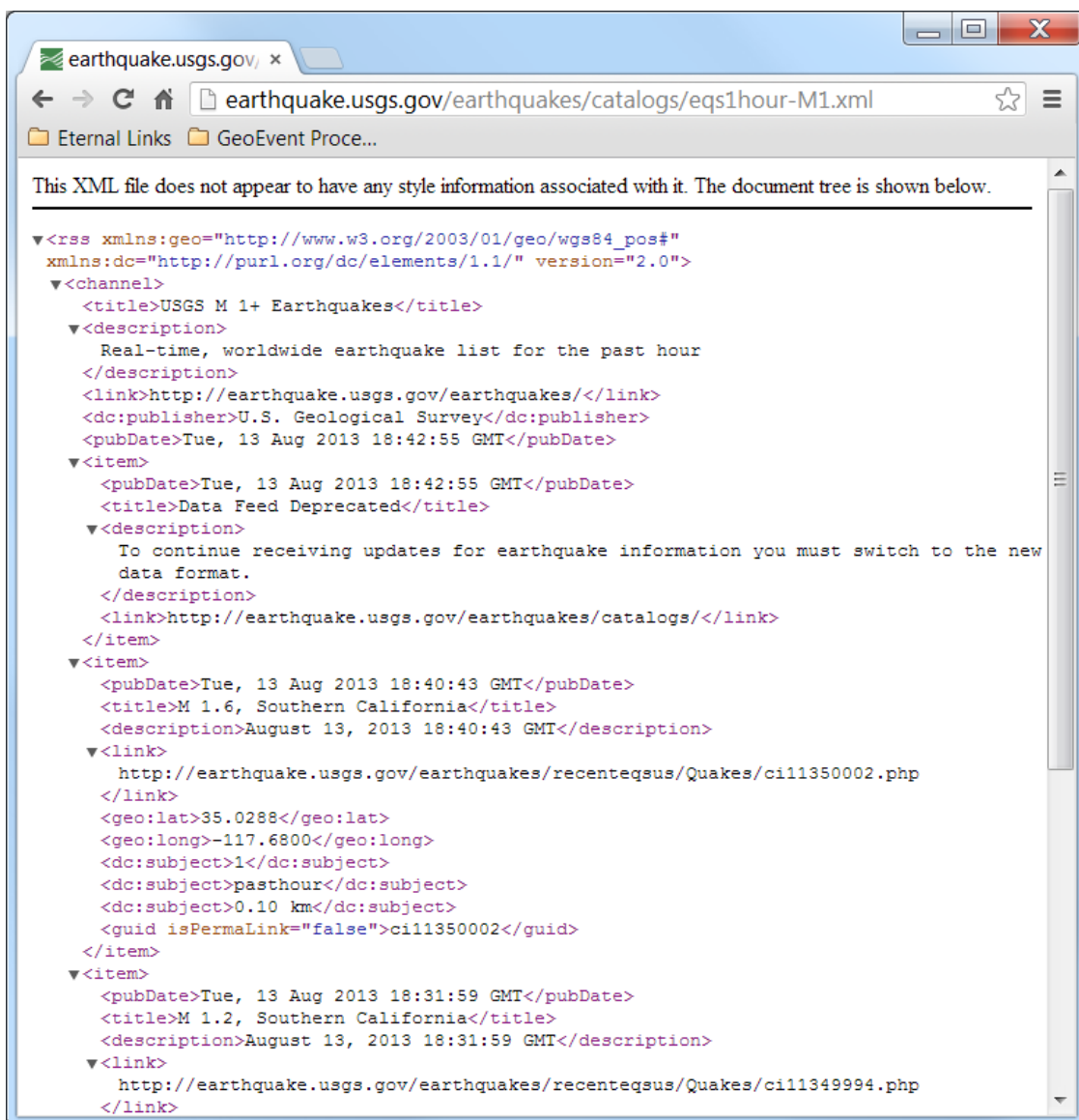
Appendix – Reviewing an RSS Feed’s structure in a web browser

In this tutorial’s exercises you used GeoEvent Processor to ingest event data from an RSS/ATOM feed by specifying the feed’s endpoint: <http://earthquake.usgs.gov/earthquakes/catalogs/eqs1hour-M1.xml>

You could enter this URL into a web browser to retrieve a single snapshot or batch of information from the feed. Refreshing the browser would update its display, similar to GeoEvent Processor polling the feed to retrieve a new batch of event data.

Reviewing the feed’s content in a browser can help you to understand the feed’s content and structure. This can be important, for example, when validating the GeoEvent Definition generated by the ‘Receive RSS’ input connector.

Google Chrome:



Internet Explorer:

