SABER
Single Automated Business Exchange for Reporting

GUIDE TO WORKING WITH SABER STATUS DATA

Guide to Providing and Consuming Business Disruption Information Through SABER

Abstract

This document contains all the instructions you need to (a) provide your business closure and disruption data to SABER and (b) consume data from SABER about business disruptions for display in a wide variety of incident management applications and geospatial visualizations to give your organization up-to-date situational awareness about the status of private sector organizations.

The SABER Team
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V4.3

Contents

Guide to Working with SABER Data

This guide describes how to provide, consume, and display business disruption status data from SABER, the Single Automated Business Exchange for Reporting.

In the illustration below, the private sector generally is the source of business disruption status using spreadsheets, automated feeds, web services, and mobile apps. The private sector is the consumer of business status using their own situational awareness and geospatial visualization software.

SABER uses the XchangeCore Web Services Data Orchestration as its technology for exchange. XchangeCore is capable of transforming a variety of different formats of disruption data into the National Information Exchange Model (NIEM) standard incident structure.

This guide provides details on all the different ways status is provided to SABER and consumed from SABER.

Three Ways Companies Provide Status to SABER

1. A Simple Spreadsheet

Spreadsheet is posted by company on SABERspace website, transformed to NIEM standard, consumed by existing applications of authorized organizations

2. Mobile App Available

Companies use in their facilities and governments give to local companies to assure automatic status reporting and shared situational awareness.

3. Fully Automated Connection

Walmart leads the way by providing a fully automated connection to SABER for continuous updates.

SABER — Single Automated Business Exchange for Reporting

Sears, Macy's, Target, Lowes, Costco, Walmart, Walgreens Invite You to Join SABER

Dear Colleagues,

Macy's, Target, Sears, Lowes, Walmart, Costco, Walgreens, and other corporations all make their business continuity status available to federal, state, and local governments through SABER, the Single Automated Business Exchange for Reporting. Together we invite your company or your agency to enroll in SABER to improve how the private sector provides business status information to governments.

The purpose of SABER is to provide a single location for private sector organizations to deposit operations status information for sharing with authorized government agencies and other approved organizations.

We believe that SABER saves us time, improves currency and accuracy of information that governments use, and reduces gaps, overlaps, and inconsistencies in the critical information that governments use for response decisions.

SABER is a non-profit organization created by the private sector that has been operational for nearly two years now. SABER has functioned during numerous exercises in Florida, California, and Illinois plus the national CAPSTONE exercises in 2014 and 2015. SABER also is experienced in real activations for the Northeast Snowmageddon, Hurricane Arthur, Typhoon Dolphin, the Napa Earthquake, and Hurricane Joaquin flooding.

To improve how you share business disruption status and reduce the burden of doing so, we invite you to enroll in SABER at www.SABERspace.org.

We hope to see your disruption status on SABER at the next exercise so we all are better prepared.

Jim Williams and James Waldrop, Sears Holdings
David Hosier, Macy's
Gabriel Marcus, Costco Wholesale
Rachael Tovey, Walgreens

John Mueller, Target
Rick Neudorff, Lowes
Brooke Brager, Walmart

Enroll at www.SABERspace.org

Governments Consume Disruption Status from SABER

Have a VBEOC, no problem to add SABER status

Google Earth is easy to use

Get the SABER board for WebEOC at no cost

Go mobile with SpotOn Response

ArcGIS Online gets SABER data easily

Simple lists available too

Add SABER Status Map to website or VBEOC

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Part 1: Providing Business Disruption Status Data to SABER

This section of the guide describes the use of the various types of data ingests to create the NIEM standard exchange format which XchangeCore then distributes to external applications that can visualize on a map or incorporate into their application.

The data exchange formats specifically used by SABER are:

- CSV files (spreadsheet-like documents)
- GeoRSS feeds (automated standardized formats)
- SOAP Web Services (customized connections made to external business disruption data sources or applications). The use of WebEOC to connect to the SOAP Web Services is described in a later section and a WebEOC Board and Connector to XchangeCore are available from SABER.
- SpotOnResponse mobile app

The process for providing each of the formats of business disruption data to SABER are described below. You will use only one of these formats, selected in consultation with SABER based on your existing capabilities.

CSV Files (Excel® Spreadsheets)

CSV files are created in spreadsheets that are then saved in the Comma Separated Valued (CSV) file format. When a private sector organization registers on the SABER website (www.SABERspace.com), it will provide SABER with the spreadsheet that the company currently uses to share its disruption information with internal management or others, if one exists. If a standard format is not already in use, SABER can provide one.
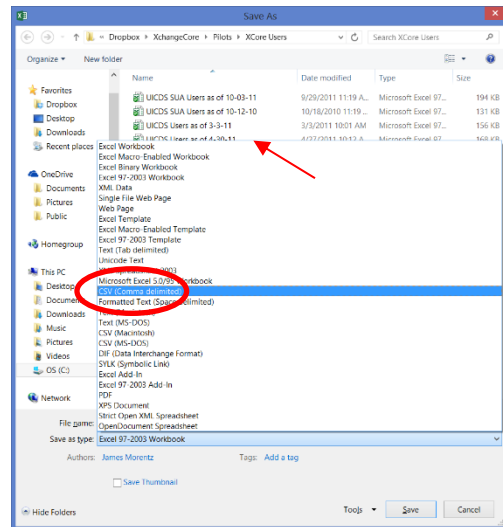
A. To prepare for submitting data to SABER:

SABER analyzes the company spreadsheet and configures a connector to translate and transmit automatically the spreadsheet data to the SABER XchangeCore. Spreadsheets have the following requirements:


- CSV format is used to save the document.
- A SINGLE first row contains column header names that will be used to provide labels for the data.
- All future documents must maintain the same exact format, including assuring that no blank rows or columns are introduced during editing.

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- A sample spreadsheet is available on the www.SABERspace.org website in the Members Login section for those who need a model CSV file or for those who can make use of the sample file.

B. To submit data to SABER:

1. Company puts business disruption data in a spreadsheet which is saved in the CSV format established in A, above.

2. On SABERspace.org, the CSV file is uploaded through the Members Login button (right).
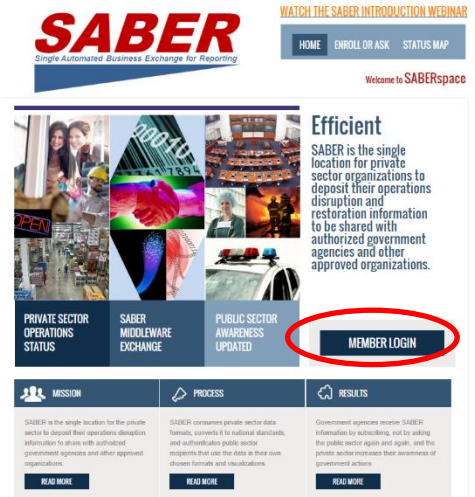
3. On the members upload page (left), click the proper Submit button for the company.
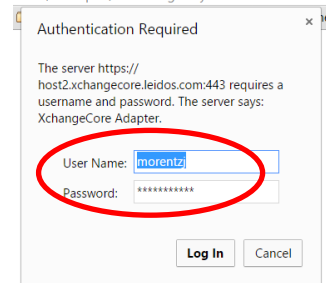
4. Enter the username and password (right) provided by SABER to authenticate the company to access and upload data securely. Click the Log In button.

5. The Upload Page (right) indicates that you are in the correct company configuration.
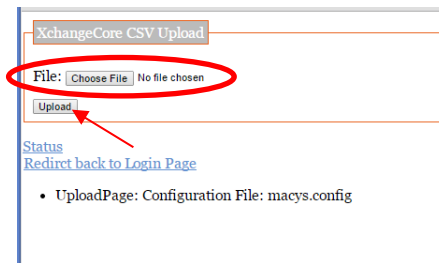
6. Click Choose File and browse to locate the CSV file.

7. Click Upload.

8. Your browser will indicate that the upload is processing. (Chrome, Internet Explorer, and Firefox have a spinner on the tab, for example.)

9. The Redirect back to Login Page link will take you back to SABERspace.org.

Following upload, the new/updated data will appear in any visualization application used by the company that is connected to the SABER XchangeCore using methods described in the CONSUMING DATA part of this guide below.

After uploading data, companies may use the SABERspace.org website Status Map tab to see data that has been designated for open distribution. Closed distribution data is available only on separately secured applications. The SABER Status Map is provided by SpotOnResponse LLC as a service to the private sector SABER membership.

GeoRSS Feeds

A GeoRSS feed is a Web document format that adds to RSS (Really Simple Syndication) feeds the location in a latitude and longitude format. These geographic locations can be represented by a point, line, box, and polygon.

A GeoRSS feed for SABER is provided by a company that publishes its disruption data through a Web URL containing the feed. The feed consists of from one to many individual facility disruption data records in the GeoRSS format.

For its data exchange, SABER uses XchangeCore Web Services Data Orchestration which includes a GeoRSS Injector that transforms GeoRSS data and transmits that data to XchangeCore where NIEM standard incident data formats are created.

To submit data to SABER through a GeoRSS feed:

    A. Company provides GeoRSS URL to SABER.
    B. SABER configures the GeoRSS Injector.
    C. Continuous operation results from the permanent linking of the GeoRSS feed to SABER.

GeoJSON Source

A GeoJSON is a Web service output format for encoding many geographic data structures. These geometry types include point, line, polygon, multipoint, multiline, and multipolygon. Additional descriptive information can be format into flexible structures describing the features of the geography.

A GeoJSON source for SABER is provided by a company that publishes its disruption data through a Web URL containing the GeoJSON file. The file consists of from one to many individual facility disruption data records in the GeoJSON format.

For its data exchange, SABER uses XchangeCore Web Services Data Orchestration which includes a GeoJSON Connectors Injector that transforms GeoJSON data and transmits that data to XchangeCore where NIEM standard incident data formats are created.

To submit data to SABER through a GeoJSON source:

    A. Company provides GeoJSON URL to SABER.
    B. SABER configures the GeoJSON Connector.
    C. Continuous operation results from the permanent linking of the GeoJSON feed to SABER.

SOAP Web Services

The SOAP Web Services used by SABER are provided by XchangeCore. XchangeCore offers extensive example source code (available on GitHub) to enable external applications to transform their data into NIEM standard formats and transfer that data to the SABER

XchangeCore. This requires programming effort on the part of the company providing disruption data (or their contractor) and those interested in this means of providing data to SABER should consult the XchangeCore Quick Start Guide to the Incident Management Service And Incident Work Product found at www.XchangeCore.org > Xchange Code Tab > Documents & Training.

In the section below titled WebEOC Board and Connector, an example of a SOAP Web Service connection to XchangeCore is provided. The WebEOC Board and Connector may be downloaded and used on your own network to connect SABER data into your WebEOC.

SpotOnResponse Mobile App and Web Application

SpotOnResponse is a partner with SABER and provides the SpotOnResponse Mobile App at a reduced cost to both private sector companies and to governments.

- Companies provide the app to their business locations for managers to report status information to the company and to SABER.
- Business Emergency Operations Centers (BEOC) subscribe to SpotOnResponse and give the mobile app to all their members to get fast, accurate, current business operating status.
- A BEOC member company can subscribe to SpotOnResponse as their contribution to the BEOC and SpotOnResponse allows all BEOC members to use that subscription.
- Governments subscribe to SpotOnResponse and provide it to the members of their private sector group or Business Emergency Operations Center.

When combine with the SpotOnResponse planning, situational awareness, and employee availability status reporting, this is an excellent management tool for small and medium size businesses. The result is that companies have the benefit of communicating directly with the government and at the same time report to SABER about business disruptions for sharing with other government and private sector SABER Members.

Using SpotOnResponse to Provide Operating Status of Business, Utilities, Critical Infrastructure

Touching MyStatus and the Site Status tab shows List of facilities, businesses, infrastructure that you manage …

Touch the Status and the site updates in every mobile SpotOnResponse and ArcGIS Online®, Google Earth®, WebEOC® …

See SpotOnResponse status changes in the EOC or the field in list, details of the facility, and changed color icons and XchangeCore-connected applications.

For more information about SpotOnResponse for business status reporting see www.SpotOnResponse.com.

Part 2: Consuming and Viewing Business Disruption Status Data from SABER

SABER data is available through XchangeCore Web Services Data Orchestration. XchangeCore data is exposed in KML feeds, GeoRSS feeds, GeoJSON feeds, XML feeds, and SOAP Web Services. This guide will focus on the use of the various types of feeds to create a quick, one-way visualization of the SABER data on a map.

This part of the guide includes sections on:

- Viewing SABER Status Data on the SABER Website
- Consuming SABER Status Data in Google Earth
- Consuming SABER Status Data in ArcGIS Online
- Consuming SABER Status Data in ArcGIS Geodatabase
- Consuming SABER Status with an ArcGIS GeoEvent Server
- Consuming SABER GeoJSON as an ArcGIS Feature Class with ArcGIS Toolbox Tool
- Creating an ArcGIS Feature Service from GeoJSON and Updating SABER Status for ArcGIS Online
- Viewing with the SpotOnResponse Mobile App and Web Application
- Embedding SABER Data into a Website
- Reading SABER Status in a Browser through a GeoRSS Feed
- Converting SABER Status into a Spreadsheet for Analysis with GeoJSON

At the conclusion are two appendices that provide additional technical details for status consumers:

- Appendix A: Easy Access with SABER Business Disruption Open URLs
- Appendix B: Password Protected Access to Query SABER Status Data
- Appendix C: WebEOC Board and Connector Installation

Viewing SABER Status Data on the SABERspace.com Website
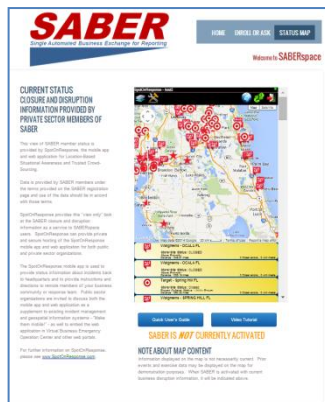
The SABER website is found at www.SABERspace.org and contains a Status Map. The Status Map provides publicly available SABER data in an easy-to-use format contributed by SpotOnResponse LLC to SABER. The map will center on the continental United States and show any business disruption information provided to SABER. In non-emergency periods, previous disruption information is provided on the site to illustrate the value of SABER and allow familiarization and practice.

No access credentials are necessary to view the data on the website that corporations have provided to SABER without distribution restrictions.

Consuming SABER Status Data in Google Earth
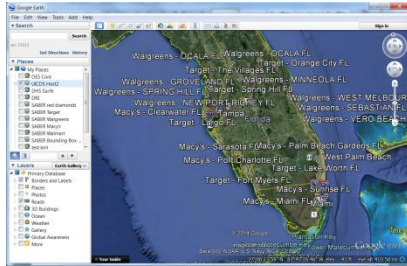
Using Google Earth™ to view SABER data provides an easy, effective, and inexpensive way to see business disruptions status information. Follow these simple steps to consume SABER data. If you do not already have Google Earth on your computer, you can download Google Earth from http://www.google.com/earth/download/ge/agree.html

A. Use the Add menu item (shown on the right) to add a Network Link in the New Network Link data entry form (shown below).

B. Enter a name that will appear in the Places section of Google Earth.

C. Enter the SABER link: https://app.spotonresponse.com/openfeeds/saberopen.kml (Note: this source is updated every 45 minutes. For an on-demand source that can be queried, see Appendix B.)

D. Click the Refresh tab and select Periodically in the dropdown box. Select a time (minutes rather than seconds makes sense.)

E. Click OK.

F. You may be prompted to enter your access credentials.

G. The network link name you entered will appear in the Places directory on the left.

H. Check the box next to the name to display SABER business disruption content.

I. The link will refresh at the period you set. To force refresh, right click on the name and select refresh.

J. Navigate the tree below the link name by clicking on the + sign.

K. You can force the map to the location of any item shown in Places by double clicking on it.
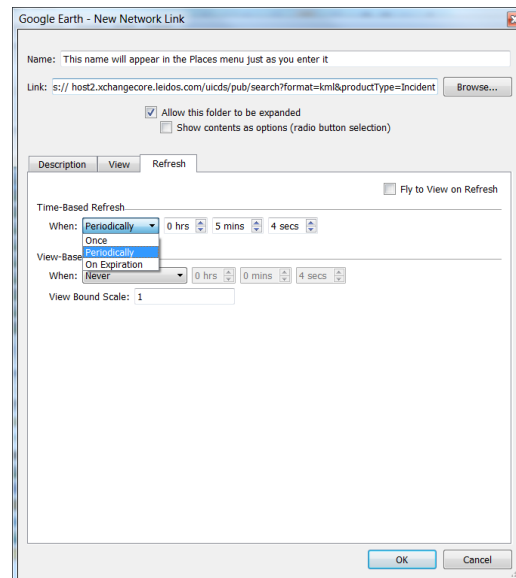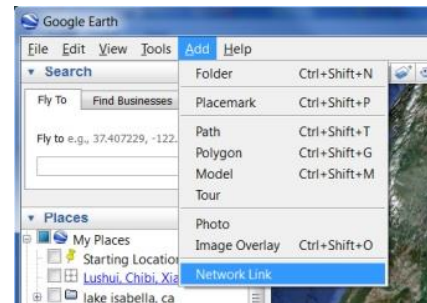
Consuming SABER Status Data in ArcGIS Online
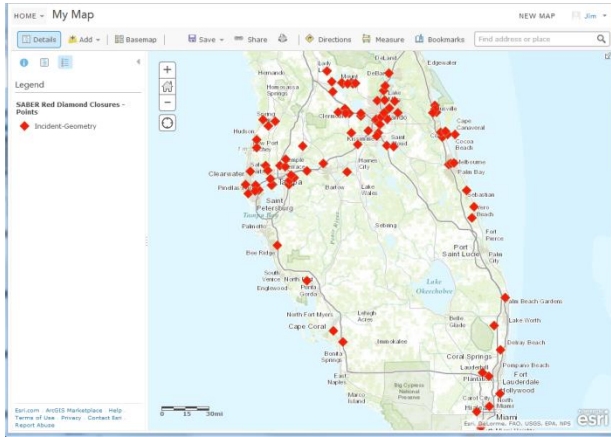
According to ArcGIS.com, with ArcGIS Online you can "Quickly create interactive maps and apps and share them with the rest of the organization. Each user gets an account so they can share and collaborate with each other. Every user also gets access to all of the ready-to-use apps, maps, templates, and other content so they can be productive right away."

This section will guide you to creating a My Content entry in your ArcGIS Online account for the SABER business disruption data. If you do not have an ArcGIS Online account you may obtain one free for 30 days at https://www.arcgis.com/home/signin.html

After logging in to your ArcGIS Online account, click on My Content.

A. Click the +Add Item menu option to expose a data entry form for you to complete.
B. In the The Data Is dropdown, select On the web.
C. Click on the KML radio button.
D. Enter the SABER business disruption data URL: https://app.spotonresponse.com/openfeeds/saberopen.kml
E. Enter a Title to identify your SABER data.
F. Enter a Tag.
G. Click Add Item button.
H. The SABER business disruption item will now appear in the My Content of your ArcGIS Online account and you many use it to make maps.

An alternative to using the KML data coming from the SABER XchangeCore is to use GeoRSS data. You may find that you prefer the GeoRSS capabilities in ArcGIS Online. To use GeoRSS as a data source, simply change the URL above to format=rss and follow the ArcGIS Online instructions to add GeoRSS to your map. Note: GeoRSS cannot be added through My Content and must be added directly to an ArcGIS Online map.

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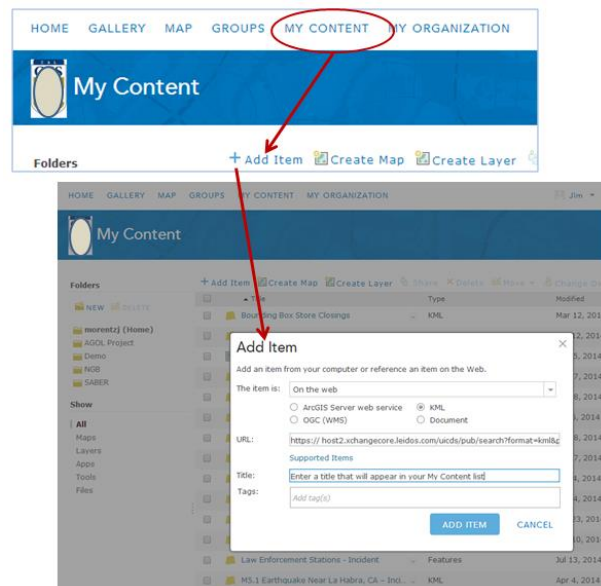
Consuming SABER Status with an ArcGIS GeoEvent Server

Thanks to Robbie Bagby of the Georgian Emergency Management Agency for these notes.

1. Brought in the SABER GeoRSS feed into ArcGIS GeoEvent Server. This software polls the GeoRSS url at a specified interval and maps the fields out to an ArcGIS Online REST feature service. This allows us to have a little more control over the data. We can export it out to multiple formats and run statistics on it. Kevin Armstrong and John Miller of ESRI helped me set this up.
2. The request we are making to the SABER API is just for the extent of Georgia. Here is how the url is formatted: https://xcore.spotonresponse.com/SorGeoJson/rest/rss?core=https://xcore.spotonresponse.com&username=YOURUSERNAME&password=YOURPASSWORD&coreversion=2&productType=incident&bbox=30.4770829,-85.3527832,35.0569804,-81.2768555
3. I created a web map in ArcGIS Online with the data and did some configurations as far as pop ups and symbology.
4. I created a dashboard application with the map in ArcGIS Web AppBuilder so we could summarize the data by count and types of closures.
5. Shared all the data, map, and app with the public and put it on our ArcGIS Online home page.

Consuming SABER Status Data in an ArcGIS Geodatabase

Richard Butgereit, GISP, of the Florida Division of Emergency Management has developed a Python script to automate downloading the SABER GeoRSS feed and parsing the data into an ArcGIS geodatabase.

The script is available from the XchangeCore code repository on GitHub at https://github.com/xchangecore/SABER-AGOL_Python. Our thanks to Richard for his contribution to the growth of SABER.

Consuming SABER GeoJSON as an ArcGIS Feature Class with ArcGIS Toolbox Tool

Cody Hughes, Program Analyst for FEMA's Enterprise Analytics Division, Office of Policy and Program Analysis developed a script and ArcGIS Toolbox Tool that converts the SABER GeoJSON into an ArcGIS Feature Class. The script and ArcGIS Toolbox Tool will pull down the GeoJSON data (really just 2 fields are pulled, Categories and Status) and create a feature class and then if you want, will update and print a map to pdf.

The script and tool are available in the XchangeCore code repository on GitHub at https://github.com/xchangecore/SABER-GeoJSON-ArcGIS_Script. Our thanks to Cody for his contribution to the growth of SABER, especially since this was completed at the height of Hurricane Harvey.

Creating an ArcGIS Feature Service from GeoJSON and Updating SABER Status for ArcGIS Online

Our thanks to Eric Shreve of the Arizona Department of Emergency and Military Affairs who worked with Robbie Bagby of the Georgia Emergency Management Agency during multiple hurricanes to make this capability available to the SABER and XchangeCore Communities.

SABER data for this dataset is outputted through GeoJSON and then converted into a Feature Service to be consumed through ArcGIS Online using the ArcGIS API for Python. You will need an ArcGIS Online or ArcGIS Enterprise account to process the code as a feature service.

The code is available on the XchangeCore Open Source Code Repository on GitHub at https://github.com/xchangecore/SABER-GeoJSON-Feature-Layers.

To automate the process through Windows Task Schduler you will need to format the action to real to "C:\Program Files\ArcGIS\Pro\bin\Python\envs\arcgispro-py3\python.exe" and the Add Argument option will direct to where you have your script running. For testing purposes, I added it to my local drive: "C:\Python Test\New Code\SABER\SABER GeoJSON Feature Layer.py" on an hour interval.

The script is dependent on ArcGIS Python Library but you can add the necessary libraries through the python console if you do not have access to Pro.

Any comments or questions can be directed to here: Eric Shreve, GIS Analyst Arizona Department of Emergency & Military Affairs (DEMA) 5636 East McDowell Road, Phoenix, AZ 85008 (w) (602) 464-6344| eric.shreve@azdema.gov | dema.az.gov

Viewing with the SpotOnResponse Mobile App and Web Application

On www.SpotOnResponse.com, the SpotOnResponse mobile app is described as Location-based Situational Awareness™ and Trusted Crowd-Sourcing™. SABER has benefitted from a relationship with SpotOnResponse which includes embedding the SpotOnResponse app into the SABER website and allowing selected, approved use of the mobile app by both governments and the private sector to expand the SABER efforts. As the SpotOnResponse website states: "Dozens or even hundreds of your emergency management team - public safety, health, public works, transportation, volunteers, even private security - are given access to SpotOnResponse to keep you informed of what is happening in an emergency. With messages, photos, videos, documents coming from the field you know what is really going on."

Embedding SABER Data into a Website

Websites generally use Google Earth, Google Maps, Bing Maps, or MapQuest to embed an active map. Below are links to instructions for developers for each of these popular maps.

- Google Earth can be embedded in your website following these instructions: http://www.google.com/earth/outreach/tutorials/kmlembed.html
- Many websites embed Google Maps using an API key with an iframe following instructions at this Google Maps developer website: https://developers.google.com/maps/documentation/embed/guide
- Bing maps are another popular choice to embed in a website. Developer credentials are required and more information can be found at http://www.bing.com/maps/embed/Customize.aspx
- Mapquest provides instructions to developers to embed a map on a website at http://developer.mapquest.com/web/tools/getting-started/add-a-map-to-your-website

Reading SABER Status in a Browser through a GeoRSS Feed

As described above, a GeoRSS feed is a Web document format that adds to RSS (Really Simple Syndication) feeds the location in a latitude and longitude format. These geographic locations can be represented by a point, line, box, and polygon. Additional descriptive information can also be provided in the GeoRSS feed.

The XchangeCore GeoRSS output can be viewed in any browser or an RSS reader. Some browsers or RSS readers format the output better than others, so experiment to find one that meets your needs.

The accompanying illustration shows the output in Internet Explorer which includes a simple counting component in addition to the text of the SABER Status.

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Converting SABER Status into a Spreadsheet for Analysis

The GeoJSON source from SABER may be converted into a Microsoft Excel spreadsheet (version 2016 and above) and can then be manipulated using any of the analytical capabilities of Excel.

1. Open Excel and click on the Data tab
2. Get Data > From Other Sources > From Web >
3. Enter a .json SABER URL from Appendix A (one is shown there for practice, another updated every 45 minutes).
4. Query Settings editor opens
5. Click on List (top row of spreadsheet)
6. Click To Table
7. Select or enter delimiter = None
8. How to handle extra columns = Accumulate into last column
9. Click OK (no alternatives)
10. First row, Click on Column 1 <> button to expand to see fields
11. If there is a warning saying List may be incomplete, click on Load More
12. Geometry Coordinates – select Extract Values to see lat/long
13. Select comma to concatenate
14. Highlight Geometry Coordinates column and click on Split Column
15. Select by Delimiter
16. Choose comma
17. Choose Split at Each occurrence of the delimiter
18. Result is Lat and Long are split into two columns as required by SABER
19. First row, Click on Column 1 <> button to expand to see fields
20. Select fields with checkbox
a. First row, Click on <> button
b. Click Expand to New Rows to expand to see additional fields
21. Select fields with checkbox
22. Recommended fields are ActivityCategoryText, ActivityName, ActivityStatus, and others as desired
23. ActivityStatus - if it is a numeric or other value you may change type to ABC
24. And use the Replace Value of null to change the value to "Closed" or another term
25. Your Query Settings may look something like the figure to the right:
26. Close & Load will extract data from SABER and present it in the Excel spreadsheet.
27. For the next update of SABER status, save the current spreadsheet with a different name.
28. To Refresh with updated SABER data: Data > Refresh All
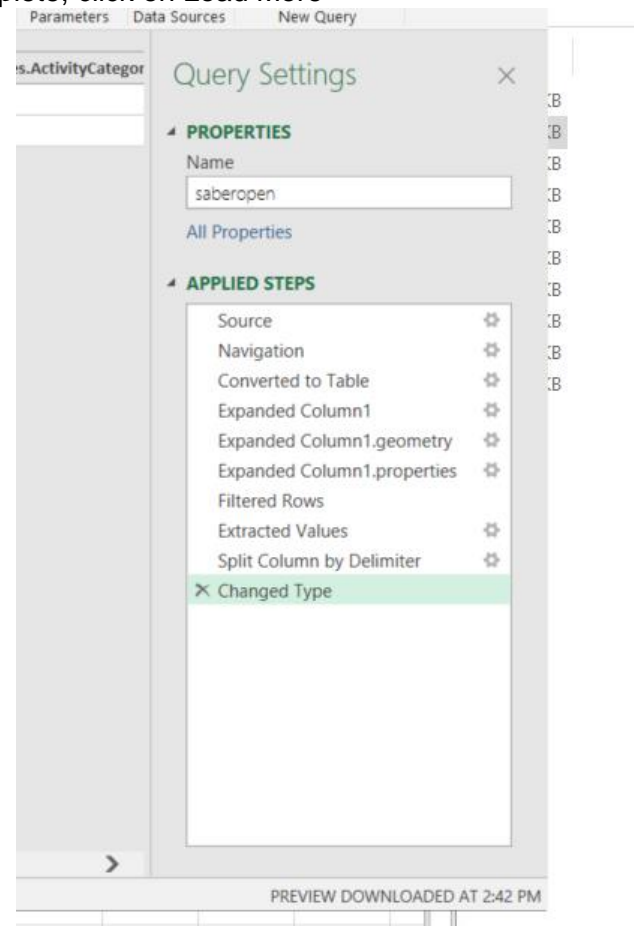
Appendix A: Easy Access with SABER Business Disruption Open URLs

SABER provides an open status feed that is updated every 45 minutes. No username or password credentials are required. For those who want a more sophisticated look into the SABER status data, credentials are required for access as described in Appendix B.

The open URL is available for:

GeoJSON

https://app.spotonresponse.com/openfeeds/saberopen.json

GeoRSS

https://app.spotonresponse.com/openfeeds/saberopen.rss

KML

https://app.spotonresponse.com/openfeeds/saberopen.kml

XML

https://app.spotonresponse.com/openfeeds/saberopen.xml

Want to Practice?

Because there is not always status data on SABER, you may find data sources empty. Therefore, we provide the following practice data sources which you may use to test consuming the SABER status

GeoJSON Practice

https://app.spotonresponse.com/openfeeds/practicesaberopen.json

GeoRSS Practice

https://app.spotonresponse.com/openfeeds/practicesaberopen.rss

KML Practice

https://app.spotonresponse.com/openfeeds/practicesaberopen.kml

XML Practice

https://app.spotonresponse.com/openfeeds/practicesaberopen.xml

Notes

Not all links have data at any given time. ArcGIS Online may prevent you from adding a link if there currently is no data.

When you copy the URLs above, make certain that there are no spaces added in the process of copy/paste.

Although the above links are currently open, SABER asks you please to enroll at http://www.saberspace.org/enroll-or-ask.html

To verify your content, you may view the Status Map at http://www.saberspace.org/status-map.html.

Appendix B: Password Protected Access to Query SABER Status Data

SABER status data can be queried to retrieve selected data with an account username and password which is available to organizations which allow their name to be announced as a SABER Member when enrolling at http://www.saberspace.org/enroll-or-ask-1.html. This section describes the query parameters available for analysis.

Each of the query URLs below consists of a base URL and the query URL. The base URL points to the REST endpoint and the query URL includes the query parameters to retrieve the desired data. Here are examples of the four types of URL:

RSS:
https://xcore.spotonresponse.com/SorGeoJson/rest/rss?core=https://xcore.spotonresponse.com&username=YOURUSERNAME&password=YOURPASSWORD&coreversion=2&productType=incident

KML:
https://xcore.spotonresponse.com/SorGeoJson/rest/kml?core=https://xcore.spotonresponse.com&username=YOURUSERNAME&password=YOURPASSWORD&coreversion=2&productType=incident

XML:
https://xcore.spotonresponse.com/SorGeoJson/rest/xml?core=https://xcore.spotonresponse.com&username=YOURUSERNAME&password=YOURPASSWORD&coreversion=2&productType=incident

JSON:
https://xcore.spotonresponse.com/SorGeoJson/rest/data?core=https://xcore.spotonresponse.com&username=YOURUSERNAME&password=YOURPASSWORD&coreversion=2&productType=incident

The query URL begins with the ? and includes parameters for:

- Core= the URL of the XchangeCore to connect
- Username
- Password
- Coreversion is the current version of XchangeCore (currently = 2)

Plus numerous query parameters for limiting the data retrieved, as described below.

This section is adapted from "XchangeCore TechNote – Query Parameters for XchangeCore Feeds," TechNote XCORE-QRY-R02C01, July 1, 2014

A. XchangeCore Feed Queries

XchangeCore supports four types of one-directional data feeds that may be used to access SABER business disruption data: GeoRSS, KML, GeoJSON, and XML. All of these feeds are accessed with REST-like queries which are described below.

B. XchangeCore Product Types

The following XchangeCore productType parameters are relevant to SABER may be used to construct a query:
- Incident
- SOI

C. Query Parameters

This is a reference to the acceptable query parameters for the XchangeCore search interface.

Note the following:

- Groups with an asterisk (*) can exist multiple times. For example: productType=Alert&productType=Incident
- Parameters which occur multiple times are ORed together
- Parameters in general are ANDed together
- Most parameters are case-sensitive.
- Values must be url-encoded (e.g. spaces should be encoded as %20.)
- Specifying a productVersion REQUIRES a productID and all other parameters will be ignored. If the productVersion is specified, but not a productID then the productVersion will be ignored.

Workproducts*
```
productType    - e.g. productType=Incident        (Alert, SOI, etc)
interestGroup  - e.g. interestGroup=IG-f93ab935-3b94-4dd2-a0ea-e1033e206357
productID      - e.g. productID=Incident-1cae3bf3-f63e-4526-9501-149df83408ca
productVersion - e.g. productVersion=3            (requires a productID)
productState   - e.g. productState=Active         (Active | Closed)
```

search control
```
startIndex      - return results beginning with this index.  If no startIndex is specified, the
                  default is startIndex=1.  If an alternate start index is used, it begins with that
                  offset.  For example, startIndex=10 would return the results beginning with the
                  10th result.  This is useful for paging the results:
                      startIndex=1&count=10 will return the first 10 matches
                      startIndex=11&count=10 will return the next 10 matches
                      startIndex=21&count=10 will return the next 10 matches and so on…
count           - return this many results beginning with "startIndex"
format          - the return format (xml, kml, rss)
full            - default is no payload, to return the full work product use full=true
```

temporal (each parameter may occur only once)
createdBegin   - e.g. createdBegin=2013-08-01T00:01-4:00
updatedBegin   - e.g. updatedBegin=2013-08-01T00:01-4:00
createdEnd   - e.g. createdEnd=2013-08-31T00:01-4:00
updatedEnd   - e.g. updatedEnd=2013-08-31T00:01-4:00

users*
createdBy   - e.g. createdBy=admin@uicds-test2.saic.com
updatedBy   - e.g. updatedBy=uicds@uicds-test2.saic.com

digest*
what   - e.g., if the what data contained in the what field in the digest is "**ACCIDENT, Property Damage"** then the matching query needs to be
what=ACCIDENT,%20 Property%20Damage
Upper/lower case matters, so match exactly.
The %20 is http for a space, which must be included.
In the Incident Work Product, the what field (represented as <What ucore:code="Tornado Event") is digested from the payload's ActivityCategoryText (represented as <ns:ActivityCategoryText xmlns:ns="http://niem.gov/niem/niem-core/2.0">Tornado Event</ns:ActivityCategoryText>

geospatial (only one bbox per query)
bbox   - e.g. bbox=latitude_south,longitude_west, latitude_north longitude_east,
Latitude and longitude are expressed in decimal degrees, e.g., 38.904855,-84.495857, 40.494857,-82.947596

document format*
mimeType   - e.g. mimetype=application/pdf

icons
incidentIcon   - e.g.
incidentIcon=https://app.spotonresponse.com/UPLOADS/WalmartIcon.png
incidentIcon can be used ONLY WITH KML.
incidentIcon must be accessible from the Internet.

   D. Examples

SABER ALL BUSINESS DISRUPTIONS (GeoRSS)
https://xcore.spotonresponse.com/SorGeoJson/rest/rss?core=https://xcore.spotonresponse.com&username=YOURUSERNAME&password=YOURPASSWORD&coreversion=2&productType=incident

SABER ALL BUSINESS DISRUPTIONS (KML)

https://xcore.spotonresponse.com/SorGeoJson/rest/kml?core=https://xcore.spotonresponse.com&username=YOURUSERNAME&password=YOURPASSWORD&coreversion=2&productType=incident

SABER ALL BUSINESS DISRUPTIONS (GeoJSON)
https://xcore.spotonresponse.com/SorGeoJson/rest/data?core=https://xcore.spotonresponse.com&username=YOURUSERNAME&password=YOURPASSWORD&coreversion=2&productType=incident

SABER BUSINESS DISRUPTION AND SENSOR-FIELD OBSERVATIONS (for Google Earth)
https://xcore.spotonresponse.com/SorGeoJson/rest/kml?core=https://xcore.spotonresponse.com&username=YOURUSERNAME&password=YOURPASSWORD&coreversion=2&productType=incident&productType=SOI

SABER BUSINESS DISRUPTION AND SENSOR-FIELD OBSERVATIONS (GeoJSON for ArcGIS Online)
Note: ArcGIS Online requires that the GeoJSON file be saved to a local computer and then converted to a Feature Layer in the MyContent section of ArcGIS Online)
https://xcore.spotonresponse.com/SorGeoJson/rest/data?core=https://xcore.spotonresponse.com&username=YOURUSERNAME&password=YOURPASSWORD&coreversion=2&productType=incident

SABER BUSINESS DISRUPTION AND SENSOR-FIELD OBSERVATIONS (for ArcGIS Online)
Note: Queries for disruptions and observations in ArcGIS Online must be constructed separately.
Note: Substitute rss for kml in the links below to use GeoRSS source to which ArcGIS Online allows you to customize icons.

https://xcore.spotonresponse.com/SorGeoJson/rest/kml?core=https://xcore.spotonresponse.com&username=YOURUSERNAME&password=YOURPASSWORD&coreversion=2&productType=incident

https://xcore.spotonresponse.com/SorGeoJson/rest/kml?core=https://xcore.spotonresponse.com&username=YOURUSERNAME&password=YOURPASSWORD&coreversion=2&productType=SOI

WHAT CONTENT FILTER OF BUSINESS DISRUPTIONS (KML)
https://xcore.spotonresponse.com/SorGeoJson/rest/kml?core=https://xcore.spotonresponse.com&username=YOURUSERNAME&password=YOURPASSWORD&coreversion=2&productType=incident&what=Walmart

BOUNDING BOX GEOGRAPHIC FILTER OF BUSINESS DISRUPTIONS (KML)
Note: Lower left Lat/Long, Upper right Lat/Long illustrating Florida

https://xcore.spotonresponse.com/SorGeoJson/rest/kml?core=https://xcore.spotonresponse.com&username=YOURUSERNAME&password=YOURPASSWORD&coreversion=2&productType=incident&bbox=25.2665,-89.2761,31.2845,-79.2946

INCIDENT ICONS (KML ONLY)

Note: Icons must be located on Internet accessible servers without requirement for access credentials to be presented.

https://xcore.spotonresponse.com/SorGeoJson/rest/kml?core=https://xcore.spotonresponse.com&username=YOURUSERNAME&password=YOURPASSWORD&coreversion=2&productType=incident&incidentIcon=https://app.spotonresponse.com/UPLOADS/WalmartIcon.png

Notes

Not all links have data at any given time. ArcGIS Online may prevent you from adding a link if there currently is no data.

When you copy the URLs above, make certain that there are no spaces added in the process of copy/paste.

Appendix C: WebEOC Board and Connector Installation

The WebEOC SABER Board is installed on your own WebEOC. The Connector can be installed on the same network as your WebEOC or on a different network. The Connector is a Java application and requires a Java environment to operate.

Install SABER Board on WebEOC

1. This needs to be done by someone with Administrator right on WebEOC.
2. Import the SABER Incidents Board using the .web file, SaberIncidentBoard.web, included in the package.
3. The name of the board when created on WebEOC needs to be "SABER Incidents".
4. Create a WebEOC user for the connector. This user needs to have its own role/position, for example, SABERConnector, with the position having the proper privilege for the SABER Incidents board (see below).
5. Create a second WebEOC user for an operator to use the board in testing and operations. (Other users will be able to use the board when assigned to the incident, just like all WebEOC boards.)
6. Create an Incident. Assign users to the incident including the connector in step 1.
7. Create a group for SABER.
    a. Assign all the users including the connector user created in step 1 to this group.
    b. Assign the SABER Incidents Board to this group.
    c. Select "Other Events" as the Input
    d. Select "ListView" as the Display for the SABER Incidents board.

Enable "Incident Independence" for the SABER Board

WebEOC is built around the concept of "Incidents." Access to data is generally limited to a single incident. To allow the business status information available through SABER to be available to WebEOC users across all incidents, you must set the board to Incident Independent in your WebEOC set-up.

1. With WebEOC Administrator privileges, open WebEOC and go to Administration
2. Click on Process
3. Click on Boards
4. Select the Board to edit, in this case the SABER board
5. Click on Board Editor
6. Click on Tables
7. Check the box for "Incident Independent" to allow the Board to work with any Incident and not just a specific Incident. (See screen shot below)
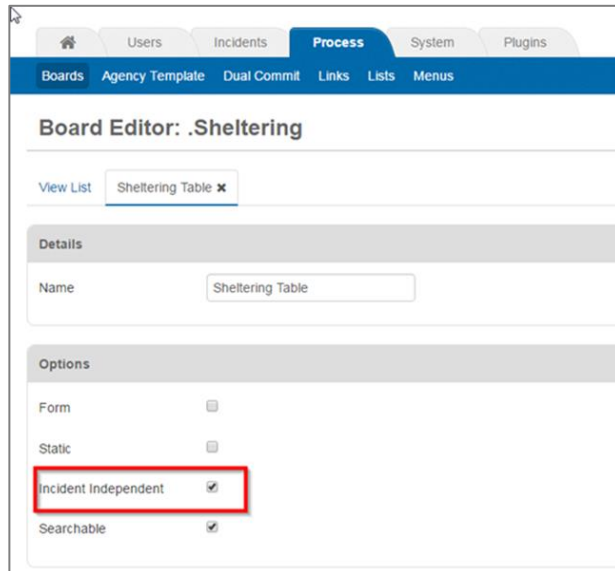
Special thanks to Dan Starr of Clark County, Nevada, for providing the Board Independence solution.

Test the WebEOC Board

1. Make certain you are using a "clean" (that is, no current entries) WebEOC Incident
   a. If there are entries, clean out WebEOC by deleting the incident and recreating it
   b. This should be done before you restart the adapter at any time in the future.
2. Test the board-to-WebEOC connectivity by creating one test entry in the WebEOC board using the login, name, position, incident, board name … then create an entry – this will make certain permissions, etc. are right.
3. If it creates, see below to start (or restart) the WebEOC adapter and it will synchronize all incidents on the XchangeCore to the WebEOC SABER Board.

Configure WebEOC Adapter

1. Extract the WebEOCAdapter to a separate directory, e.g. c:\WebEOCAdapter
2. Navigate to the folder that contains WebEOCAdapter
3. Open the webeoc-context.xml file with an editor.
4. Edit the followings:
   a. "uicdsIncidentBoards" bean id –
      i. Change the value of the property "incidentName" to the exact name of the incident on WebEOC.
   b. "webEOCWebServiceClientConfig" bean id –
      i. Change the value of the property "hostURL" to your WebEOC's API url.
      ii. Change the value of the property "user" to the WebEOC login name for the adapter.
      iii. Change the value of the property "password" to the password of the user in (i).
      iv. Change the value of the property "position" to the position of the user in (i).

        v.   Change the value of the property "incident" to the exact name of the incident on WebEOC. This value should be the same as step a.

  c. "webServiceTemplate" bean id –

        i.   Change the value of the property "defaultUri" to the host of XchangeCore, if needed. Currently is pointing to host2.xchangecore.leidos.com, the SABER core.

        ii.   Change the value of the property "credentials" to a valid user of the XchangeCore in (i).

  d. webeoc-context.xml file

        i.   Locate the following in the webeoc-contextl.xml file.

        ii.   Bean id "uicdsCore". change the value of property "applicationID" from "webeoc" to their specific webeoc, e.g. "mdwebeoc".

  e. "webEOCWebServiceTemplate" bean id –

        i.   Change the value of the property "defaultUri" to your WebEOC's API uri.

Run the WebEOC Adapter

1. Open a Windows command prompt or Cygwin prompt, change the directory to where you extracted the WebEOCAdapter folder.
2. Execute the program by "java –jar WebEOCAdapter.jar"
   a. To turn the adapter off, navigate to this folder and use CTRL C.

Check the WebEOC Adapter Log

If you experience any operating anomalies, all interactions through the WebEOC Adapter are logged in webEOCAdapter.log which is found it is in the same directory of the WebEOCAdapter executable jar file.

Removing Old Events from the WebEOC SABER Board

The following is a SQL stored procedure written by Dan Starr, Senior Programmer/Analyst for Clark County, Nevada.

According to Dan, the SQL code below is for the DBA to create the Stored Procedure that resides in the database in one of the Stored Procedures folder in the database wedb_7. Below is a screen shot from MS SQL Server Management Studio showing the path. The DBA would copy the SQL code into the database and run the code, which creates the Stored Procedure. Then the DBA would setup a schedule to run the Stored Procedure on a regular schedule, I used every Sunday just to simplify it.
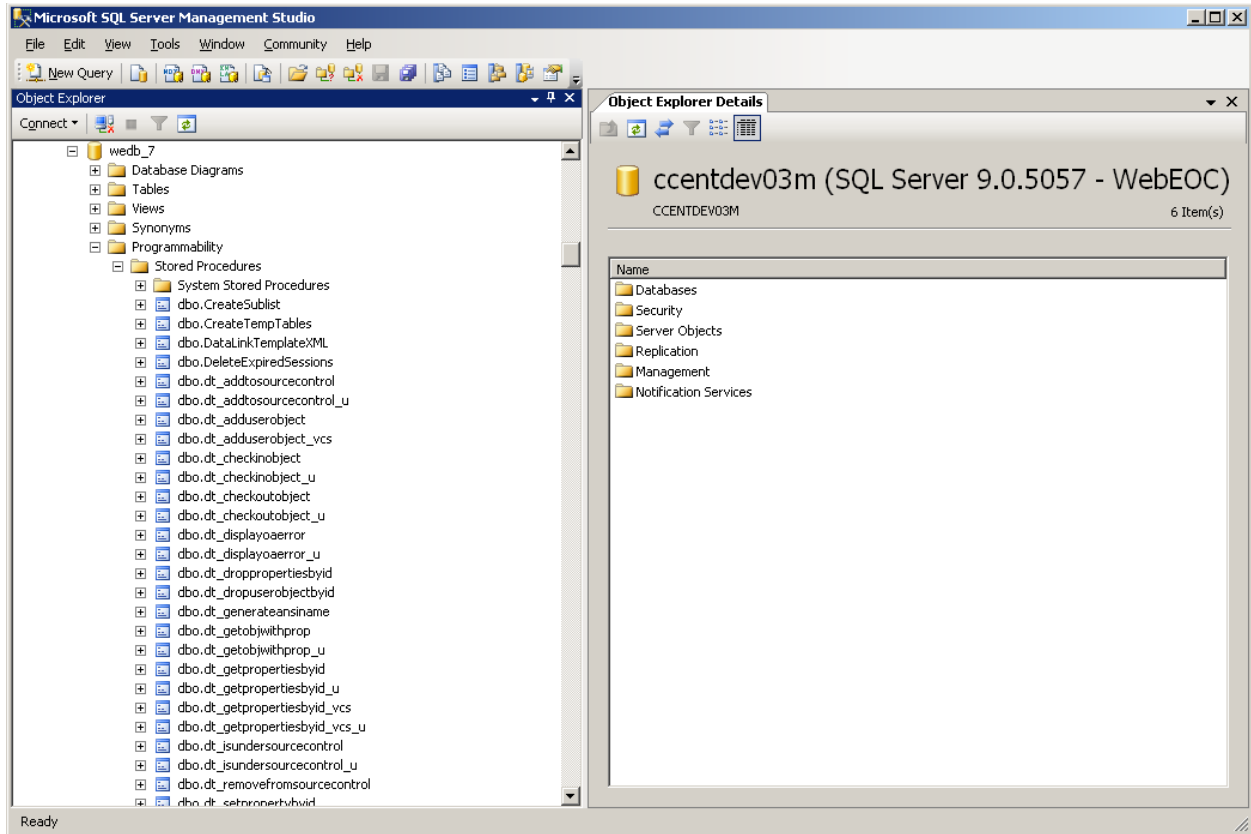
Details of the SQL Stored Procedure

Dan modified the SQL statement to use the event_datetime in the formula. The SQL commands below are used to create the Stored Procedure.

```
USE [wedb_7]
GO
/****** Object:  StoredProcedure [dbo].[usp_WebeocClearUICDS]    Script Date:
03/06/2012 11:53:30 ******/
SET ANSI_NULLS ON
GO
SET QUOTED_IDENTIFIER ON
GO
-- =============================================
-- Author:       <Author,,Name>
-- Create date: <Create Date,,>
-- Description:   <Description,,>
-- =============================================
CREATE PROCEDURE [dbo].[usp_WebeocClearUICDS]
AS
BEGIN
    -- SET NOCOUNT ON added to prevent extra result sets from
    -- interfering with SELECT statements.
    SET NOCOUNT ON;

  -- Insert statements for procedure here
    DELETE FROM dbo.table_309
```

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```
WHERE (DATEDIFF(day, event_datetime, GETDATE()) > 14) AND (status <> 'open')
END
```

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