Boundless Exchange Documentation

Release 1.3.0

Boundless

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Boundless Exchange is a web-based platform for your content, built for your enterprise. It facilitates the creation, sharing, and collaborative use of geospatial data. For power users, advanced editing capabilities for versioned workflows via the web browser are included. Boundless Exchange is powered by GeoNode, GeoGig, OpenLayers, PostGIS, GeoServer and pycsw. Boundless Exchange is designed as a platform for collaboration. You can now focus on your community – getting stakeholders quickly involved and empowering them with information. Exchange supports communal editing – allowing you to crowd-source information in an online, powerful, distributed/versioned architecture with an intuitive user interface.

Contents 1

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User Guide

Accounts, Users and Groups

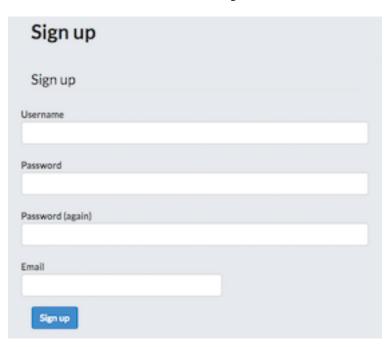
Exchange is a social platform, making the user account the primary component of any Exchange instance.

Creating a new account

Depending on how the Exchange instance was configured, you may have to register for an account. If the *Register* link is not displayed, then you will need to contact the Site Systems Administrator to have an account created.

If the Register link is displayed then register a new account by completing the following steps:

1. Select the *Register* link and fill out all fields in the following form.



2. Depending on how the Exchange site was configured you may have to confirm your email. If this is the case, follow the steps listed in the instructional email you will receive.

Managing your profile

Your profile in Exchange is where you can add your points of contact, interests, and other related content you may want to publish. This is how other users will find you, and view your work.

To adjust your profile settings complete the following steps:

1. Click on your user name in the top right of the screen. Select *Profile* from the drop-down menu to enter the Profile Settings page. This will display your current profile settings.

Test User (test)



- 2. To modify your profile, select the *Edit Profile* link.
- 3. On this page, you can update your information, including your avatar. It is important to include (at a minimum) your **First name**, **Last name** and **Email address**. This is required to properly display history of GeoGig versioned layers.
- 4. When finished, select the *Update Profile* button.

Viewing other user accounts

Once your account is created in Exchange, you will be able to view other user accounts on the system. This will let you see who else may be interested in the projects you are working on, or help you find additional data through collaboration.

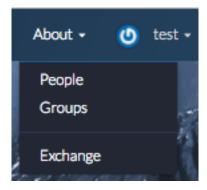
- 1. Select the *About* link on the Exchange toolbar, and click **People** in the drop-down menu. You will see a list of thumbnails for all users registered on this system. Avatar images will display if the user has provided one.
- 2. Click on an individual username to see their contact information, and any resources owned by the user. Any layers, maps or documents they have added to Exchange will be listed under Resources.
- 3. You can also click on the *User Activities* link to see the chronological list of that user's activities.

Managing groups

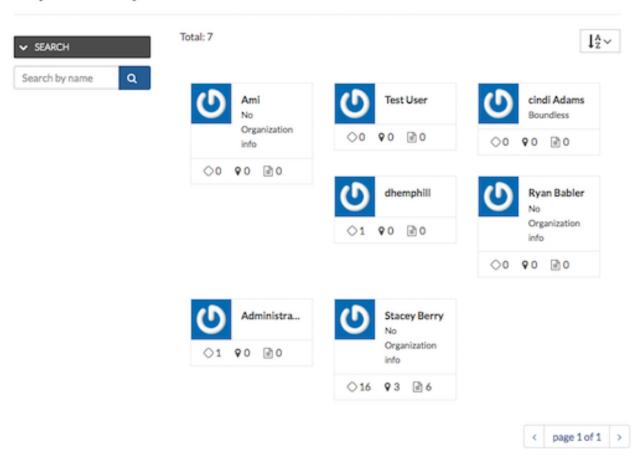
Registered Exchange users can create and be added to groups. Groups are a great way to organize and manage your team. You can see what action has been taken by the group and its members through the activity feed.

Edit Your Profile





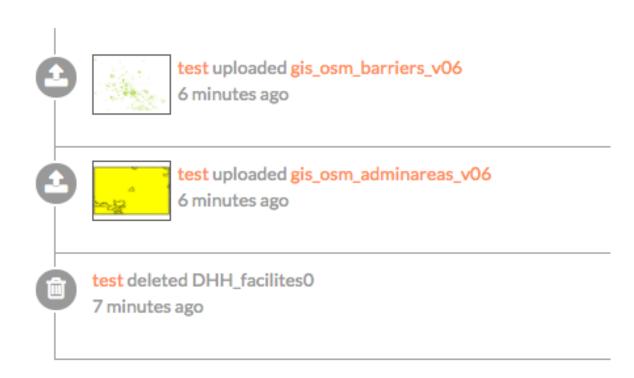
Explore People



Resources



Activity Feed for test

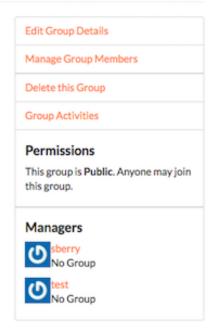


View an existing group

- 1. Select the *About* link on the Exchange toolbar, and click **Groups** in the drop-down menu. A list of all existing groups within Exchange will display.
- 2. Click on the name of a group to see the contact information, a list of members, and any additional details provided by the group managers.

Test organization





Members







Create a group

- 1. Select the *About* link on the Exchange toolbar, and click **Groups** in the drop-down menu. A list of all existing groups within Exchange will display.
- 2. Click the *Create a New Group* button, and fill out as much information about your group as possible. Once you have added the group name, contact information, and a brief description of the group, click the *Create* button at the bottom of the page.
- 3. You will be returned to your group's information page. To add other group members, select the *Manage Group Members* link. Type the name of a registered Exchange user in the **User identifiers** textbox, and select their role

Create a Group

Title

Test organizations

Logo

Choose File No file chosen

Description

This group is for anyone interested in test materials.

Email

test@boundlessgeo.com

Email used to contact one or all group members, such as a mailing list, shared email, or exchange group.

Access

10

Public

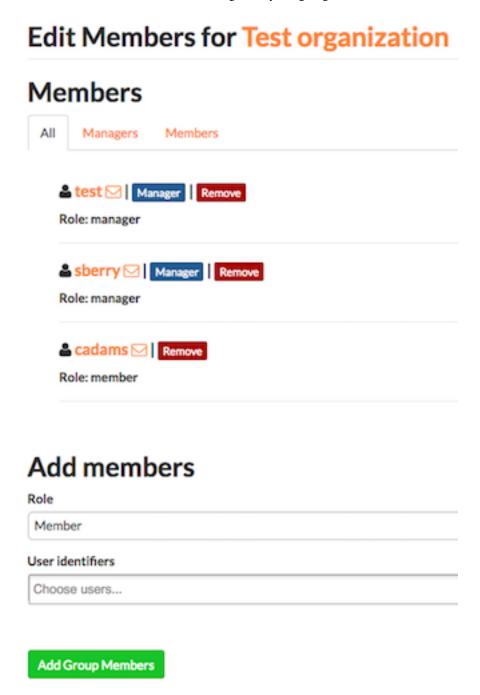
Public: Any registered user can view and join a public group.

Public (invite-only): Any registered user can view the group. Only invited users can join.

Private: Registered users cannot see any details about the group, including membership. Only invited users can join.

as either a Member or Manager.

You can add more than one new member at a time, as long as they are going to have the same role.



4. Click the *Add Group Members* button when you have finished.

You can view all of the managers or members of the group by clicking on their respective tabs.

Note: Groups can only be deleted from Exchange by an administrator. If you have a group you no longer need, please contact your Exchange administrator.

Discovering available content

There are many different ways to find, filter and display data throughout Exchange. Whether you know exactly what you're looking for, or have just a general idea, Exchange helps you find exactly what you need.

Exchange Search - Using just one search, you can find all of the maps, layers or documents that are available to Exchange, as well as services added by other users.

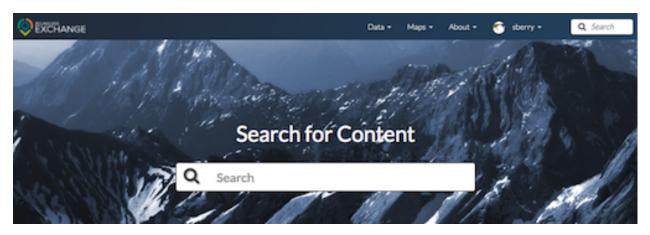
Exchange supports the registration of remote geospatial content using pycsw. This allows a user to organize spatial data in catalogs, but search on all of them at the same time. Once a remote layer is registered, you are able to retrieve metadata and a thumbnail by hitting different endpoints.

What does this mean for you? You can search for records which are stored outside of Exchange. This unified search makes finding data in Exchange faster and easier than ever.

From the Boundless Exchange homepage, simply enter your search term in the Search for Content field. When you type in the search field, Exchange will list the layers, maps, and documents matching the text you've entered. Select a resource in the list to open its information page, or press Enter to open the list of results that are relevant to your search terms.

For example, if you type "te" in the search box, and press Enter, you will get a list of all of the results that begin with the letter combination "te" in the title or abstract.

Note: You can use multiple search terms, separated by 'and' or 'or', but this is a simple search, and does not require wildcards or Boolean operators.

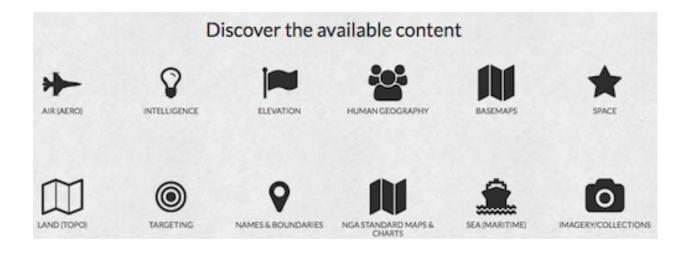


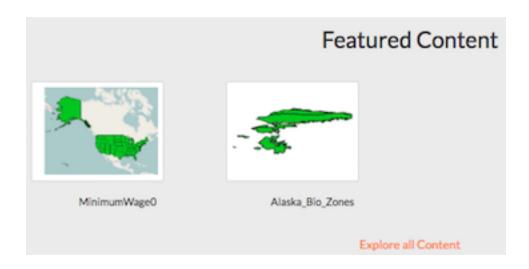
Discover the Available Content - In Exchange, your data is separated into multiple categories based on the content of the information. Your Exchange administrator can configure your datasets and metadata based on your settings and requirements. When searching for data, selecting on one of these available datasets will help you find information faster by returning only those results meeting the category criteria.

This is an example of what the content datasets could be for your Boundless Exchange instance. The specific datasets will depend on your settings and requirements. Hover over the individual categories to see what type of data is in each one.

Featured Content - Featured datasets are available on the Boundless Exchange homepage, and allow users to immediately see maps, layers or documents which have been highlighted as important. A dataset can be featured by editing its metadata, and ensuring the Featured checkbox is selected.

Browsing Layers - To open the Layers page, click on the Data link on the Boundless Exchange toolbar, and select Layers in the drop-down menu. Here you can browse data that has been uploaded into Exchange. From the layers



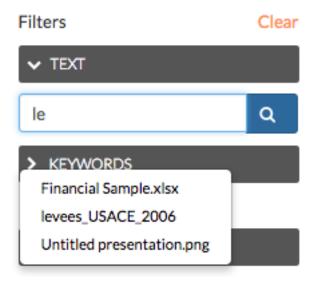


page, you can see how many times a layer has been viewed, and its average user rating. Selecting on the layer's title will take you to the information page where you can download the layer, edit metadata, or view additional information about the layer.

Browsing Maps - To open the Maps page, click on the Maps link on the Boundless Exchange toolbar, and select Explore Maps. Like the Layers page, the Maps page lets you browse the available maps that have been uploaded into Exchange. The map's rating and the number of times it has been viewed are available on this page. Similar to a layer, selecting on the title of a map will take you to its information page.

Filtering - Layers, maps and documents can be filtered to help you better manage the data available in Exchange. Listed below are several options to refine your search results.

• Filter by Text - Filters results using basic search terms. Type your search terms in the text box, and select your results from the displayed list. Multiple terms can be used, separated by 'and' or 'or'.

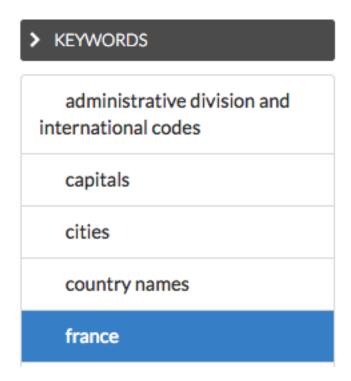


- Filter by Keywords If a user has associated keywords to the layer in the metadata, you can filter layers by those terms. Select on a keyword to limit results to those layers with associated keywords.
- Filter by Type (layers and documents) You can filter layers by raster, vector, remote and WMS. Documents can be sorted by text, image or presentation. The selected filter will display in blue.
- Filter by Category When the metadata for a layer or a map has been tagged with a specific category, it will be reflected in the Categories panel. Your layers can be added to the categories created in your settings:

This is an example of what the categories will look like. They will correspond with the available datasets from the homepage, but may differ among Exchange instances.

When filtering, click on a category to limit the results list to those layers tagged with that category title. Selecting another available category expands your results to include those layers in the results list. Click on the category a second time to remove it from the layer results list.

- Filter by Owners You can select data based on the owner of the product. This may be useful if you are trying to quickly find products created by individuals on a joint project.
- **Filter by Date** This will limit the list of products by a date range. In the Date panel, select the start date and the end date for the date range. The list will update to reflect those layers, documents or maps created within that timeframe.
- Filter by Regions Type a geographical region in the textbox to find data only associated to that region.







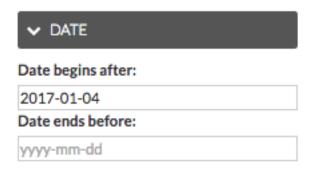
Category

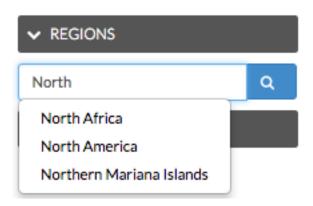
- Imagery Base Maps Earth Cover
- Economy
- Environment
- 🕖 Biota
- Elevation
- Planning Cadastre
- Boundaries
- Transportation
- □ (Location
- Farming

- Society
- Utilities Communication
- Oceans
- ା 😯 Health
- Geoscientific Information
- Inland Waters
- ■ Structure
- □ Intelligence Military
- Climatology Meteorology Atmosphere









• Filter by Extent - Zoom in and out to find products pertaining only to the extent displayed on the map.



Working with Documents

Uploading documents into Exchange allows you to share them with other users. Documents can be actual files, or they can be links to documents on other websites. You can also associate a document to a layer or a map, which will display in the information page.

Uploading documents

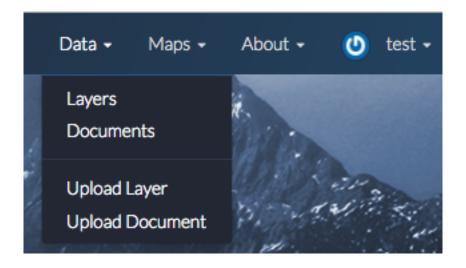
1. Select the *Data* link on the Exchange toolbar, and click **Upload Document** in the drop-down menu.

The following file types can be uploaded: .doc, .docx, .gif, .jpg, .jpeg, .ods, .odt, .pdf, .png, .ppt, .pptx, .rar, .sid, .tif, .tiff, .txt, .xls, .xlsx, .xml, .zip, .gz, .qml

Important: Your Site Administrators may limit specific file types.

- 2. Add a title to the document as you would like it to appear in Exchange. It could be the same as the file name, but it doesn't have to be.
- 3. Select the *Choose File* button, and browse to the file to be uploaded.

OR: Enter the URL for an existing document.



File:

Choose File No file chosen

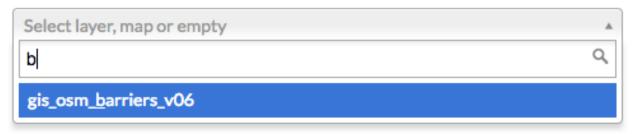
URL:

https://en.wikimaps.org/wiki/Map#/media/File:World_Map_1689.JPG

The URL of the document if it is external.

4. To link your document to an existing map or layer, type the name of the map or layer in the **Link to** section, and select it from the list.

Link to:



The social design of Exchange allows users to coordinate on projects by sharing access to the same data; however, there may be instances when you want to limit who has access to your documents. In Exchange, you can establish permissions for who can view, edit, and manage documents. Permissions can also be set for editing metadata.

5. On the right side of the page, under the **Who can view** and **Who can download** sections, add the name(s) of registered users or groups. This will ensure anonymous view access is disabled, and only those registered users specified are able to see your documents.

Select the checkbox next to **Anyone** to leave viewing or downloading available to all users.

- In the same area, under Who can download it?, add the users or groups who have permission to download the document.
- 7. Set permissions accordingly for who is able to change metadata and manage the document.
- 8. Click the *Upload* button.

Enter the document's metadata on the next page. It's recommended that you add an abstract at a minimum. Metadata helps other users know more about what you are uploading, and why.

- 9. Fill out as much of the metadata as you can, or as needed, to include selecting a category.
- 10. **Optional:** To create a custom thumbnail for a document, the image URL is needed. Copy and paste the link into the Thumbnail URL box. Custom thumbnails can also be created in this manner for maps and layers.
- 11. When you have finished entering metadata, click the *Update* button at the bottom of the page.

The document will now be listed as an available result under the Explore Documents page.

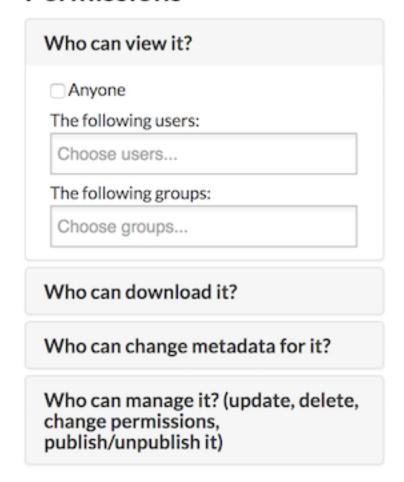
Browsing documents

Finding documents that other Exchange users have added is quick and easy. As long as you have the proper permissions, you are able to view, download and edit any document you see in Exchange.

1. Select the *Data* link on the Exchange toolbar, and click Documents in the drop-down menu.

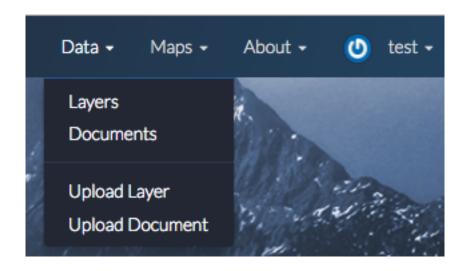
As you learned in the **Discovering Content** section, you can filter the document results to find the type of documents you need.

Permissions



Thumbnail url

https://en.wikipedia.org/wiki/Map#/media/File:World_Map_1689.JPG



2. Click on the title of the document you want to view. This will open the document's information page.



From here, you can view or download the metadata, edit, change permissions or download the document. You will also be able to view or add ratings and comments to the document.

- 3. Click the **Ratings** tab, and select a star rating for the document. The more stars, the better the rating.
- 4. Select the **Comments** tab to provide any feedback regarding the document. Click the *Add Comment* button, and type your comments in the text box. Click the *Submit Comment* button when you are finished.

Working with Layers

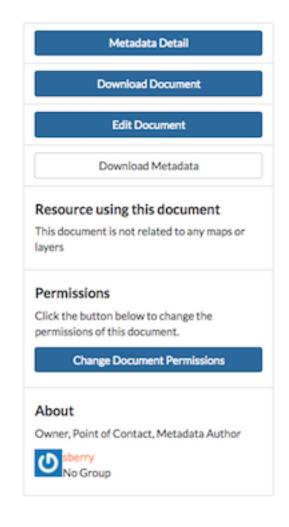
Exchange allows you to upload layers for better visualization of your data, and to create a more detailed map.

Exchange supports the following Vector formats:

- · ESRI Shapefile
- CSV (Comma Separated Value)
- Google Earth KML
- GeoJSON

The following are the supported Raster formats:

- GeoTIFF
- ERDAS Imagine
- JPEG2000





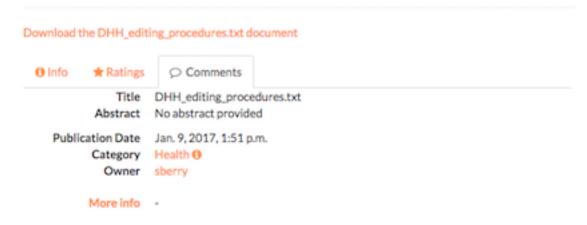
Rate this document

② ☆ ☆ ☆ ☆ ☆

Average Rating

会会会会会(0)

DHH_editing_procedures.txt



Comments (0 total)

Add Comment

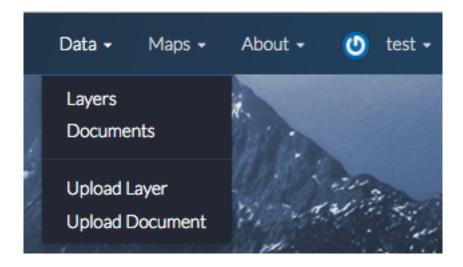
- NITF (National Imagery Transmission Format)
- CIB (Controlled Image Base)
 - 1 Meter
 - 5 Meter
 - 10 Meter
- CADRG (Compressed Arc Digitized Raster Graphic)
 - GNC (Global Navigation Chart)
 - JNC (Jet Navigation Chart)
 - ONC (Operational Navigation Chart)
 - TPC (Tactical Pilotage Chart)
 - JOG (Joint Operations Graphic)
 - TLM100 (Topographic Line Map 100K)
 - TLM50 (Topographic Line Map 50K)

All file types listed can be uploaded as a Zip Archive (.zip).

Once the layers are uploaded, they will be available to other users in Exchange.

Upload a layer

1. Click the *Data* link on the Exchange toolbar, and select **Upload Layers** in the drop-down menu to open the Upload Layers page.



2. Click the *Choose Files* button. This will open a local file dialog. Navigate to your data folder and select the file(s) for the geospatial layer.

Note: Some file types require multiple files to create a complete layer. If you are uploading an ESRI Shapefile, be sure to include the .dbf, .prj, .shp, and .shx files.

Add Data

choose file(s)

Valid file extensions: shp, shx, prj, dbf, kml, geojson, json, tif, tiff, gpkg, csv, zip, xml, sld, ntf, nitf

- 3. Click on your file under Manage Your Data. Verify the file information is correct, and select Create Layer.
- 4. Verify the name of your layer is correct, and click the *Continue* button. A unique identifier will be added to the end of your layer.

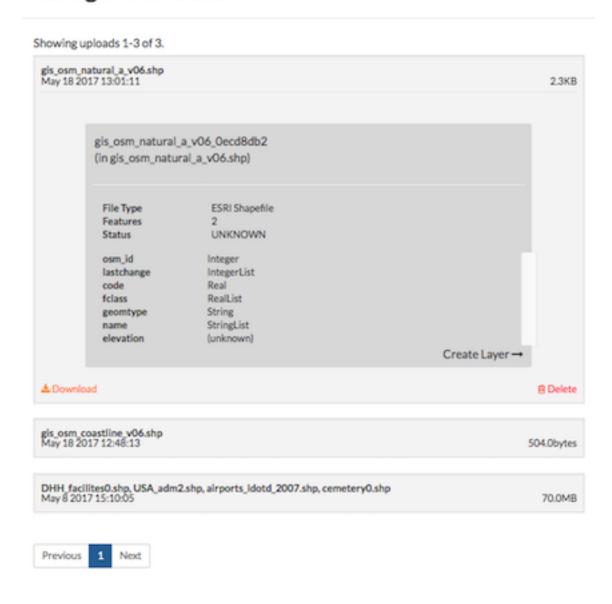
Configure time attributes

A feature can currently support one or two time attributes. If a single attribute is used, the feature is considered relevant at that single point in time (start date). If two attributes are used, the second attribute represents the end of a valid time period for the feature.

A time attribute can be:

• A date - 02/15/2016 11:23 AM

Manage Your Data



Name your layer.

gis_osm_natural_a_v06_0





- Text that can be converted to a timestamp Wednesday December 7, 2016 9:47 AM
- A number representing a year 2016, 1978

You will select the attribute you want to use from the drop down list. Exchange can handle the following formats:

The most common formatting flags are:

- y year
- M month
- d day of month
- h hour of the day (0 23)
- k hour of the day (1-24)
- m minute in an hour
- s seconds in a minute

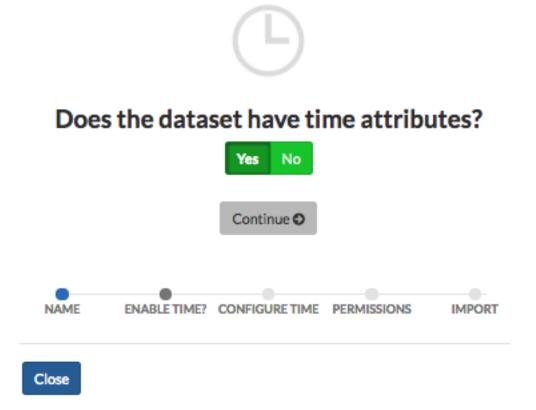
Exchange will also handle date and optional time variants of ISO-8601. In terms of the formatting flags noted above, these are:

```
yyyy-MM-dd'T'HH:mm:ss.SSS'Z'
yyyy-MM-dd'T'HH:mm:sss'Z'
yyyy-MM-dd'T'HH:mm'Z'
yyyy-MM-dd'T'HH:Z'
yyyy-MM-dd
yyyy-MM-dd
yyyy-MM
```

Note: Single quotes represent a literal character.

To remove ambiguity, repeat a code to represent the maximum number of digits. For example, yyyy or MM instead of yy or M.

5. Select a time attribute option for your layer.



Yes - If your layer has an attribute for time configuration, and you'd like to enable the playback feature, select Yes. Configure the time attribute by selecting which data field is the Start Date. Selecting an end date is optional.

No - Select No if your data does not include temporal information.

Click the Continue button.

Enable version history

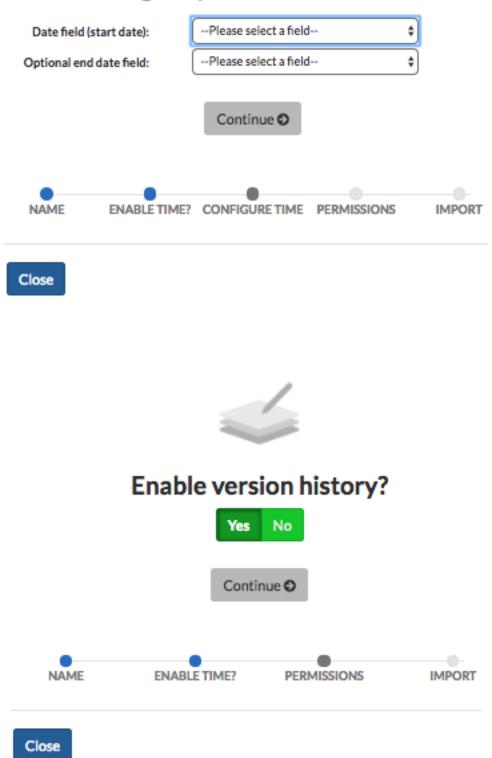
6. Select whether or not you'd like to enable version history.

Exchange uses GeoGig repositories to maintain version control of your vector data. By enabling version history, you can see the history of changes and who made them. Please reference the **Editing and Version Management** section for further information. Establishing permissions for your layers allows you to see edits made to the information through version history. Please see the below section on **Setting Permissions** for more information.

Note: Attempting to enable version history for a raster file will cause an error, notifying you to verify your configuration before you can proceed with the import.

Select Yes or No, followed by the Continue button.

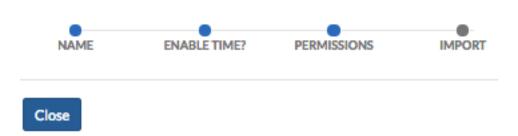
Configure your time attributes:



7. Click the *Create my layer* button to begin the import. You will be notified that the importer has successfully finished. Select the hyperlink to view your layer, or click the *Close* button to continue importing data.

Ok, we're ready to create the layer!

The import has finished successfully. View the layer.



Selecting **View the layer** will take you to the layer's information page, where you can create permissions for viewing and editing your data.

Layer information

Each layer has an information page associated to it, which has several options for managing the layer's data. Information is available for the following:

- Info Displays general information about the layer
- Attributes Lists the features in a layer, and the nonspatial information about the feature
- Ratings Based on the ratings of other users
- Comments Any comments on the layer from users
- Legend Maps using this layer What other maps within Exchange are using the layer
- Permissions How others can see or modify this layer
- Styles What styles are associated to the layer
- About Provides information on the owner, Point of Contact and Metadata Author
- 1. To access Layer Information, click the *Data* link on the Exchange toolbar, and select **Layers** from the drop-down menu. This will open the Explore Layers page. Here you will see a list of all of the available layers. Each layer has a thumbnail image, as well as the title, author, and any associated keywords.



- 2. Click the title of the layer you want to access.
- 3. The information page for the layer will open.

Using the map features

Within the Map Information page, there are some map features that will help you view the layer more in depth.

Zoom - Select the Zoom In or Zoom Out button to zoom to a specific location. Depending on the basemap, you may be able to zoom in as close as 1:10 meters.

Zoom to the Initial Extent - Return to the original extent of the map.

Switch to Globe (3D) - Select this button to view this map as 3D.

Print Map - Select Print Map to print a copy of the layer.

Layers - Select the Layers button to turn any of your layers off or on.

Click the *Basemap* button to select a different basemap style.

Layer detail tabs

There are five tabs with information pertaining to the particular layer: Info, Attributes, Ratings, Comments, and GeoGig.

The Info tab is the default display, and contains basic information about the layer, such as the title, who created it, and when it was published.

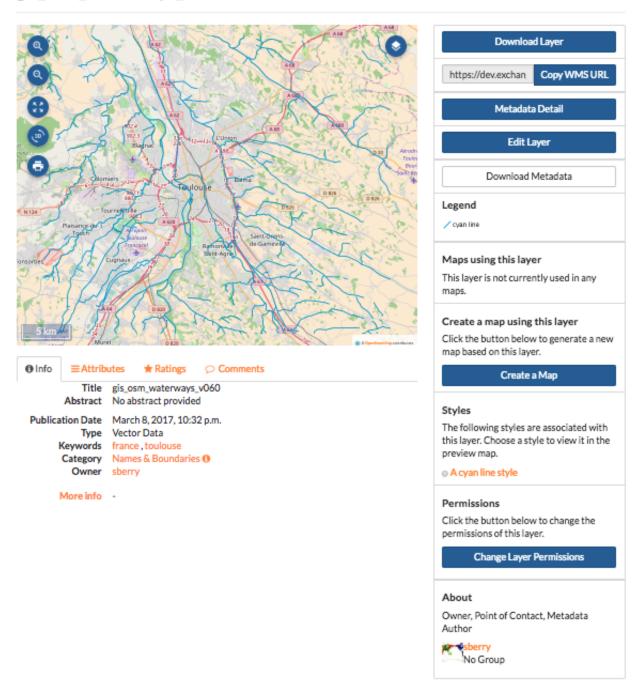
The Attributes tab displays the layer attribute table. Layer attribute statistics will only display if the value is a numeric attribute, otherwise, no statistics will be calculated.

The Ratings tab displays all ratings given to a layer by other users. Click on a star to rate the layer (one to five stars). Click the **Cancel this rating** icon to delete your rating.

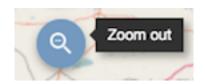
The Comments tab allows you to see what others are saying about this layer, as well as leave your own comment. Click the *Add Comment* button to leave a comment about the layer. When you've finished, click the *Submit Comment* button.

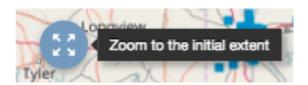
The GeoGig tab shows you the history of edits that have been made to the layer, when they were made, and by whom.

gis_osm_waterways_v060



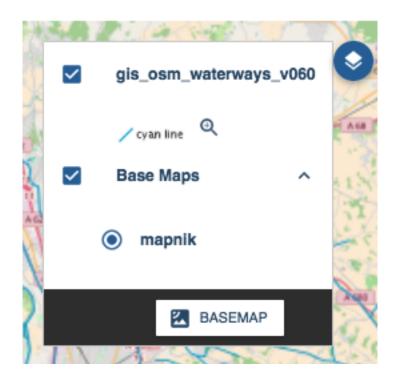


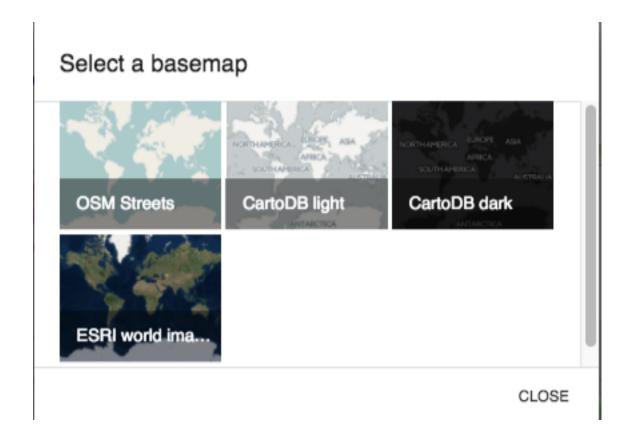




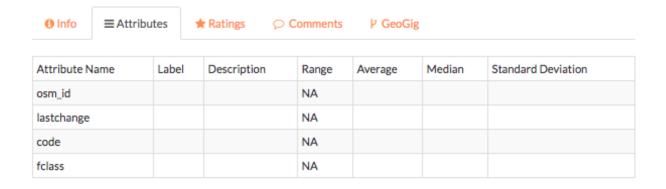


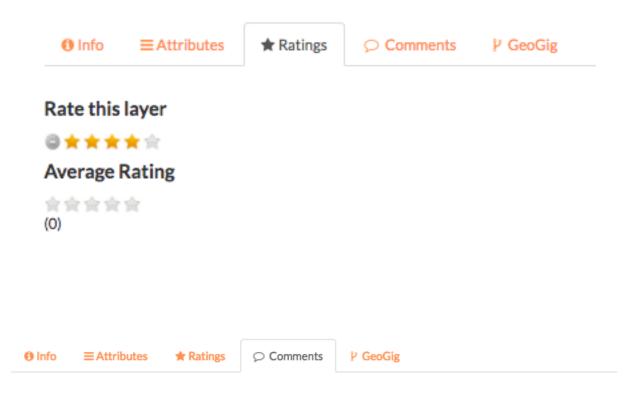








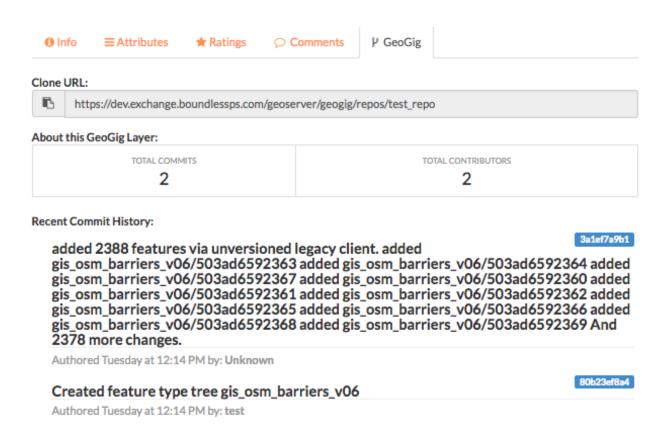




Comments (1 total)

Add Comment





Editing metadata and managing layers

Each layer's information page allows you to view the information that makes up the layer. Exchange allows you to edit metadata pertaining to a layer that you have uploaded, as well as any layers you are given permissions to access by other users.

Edit metadata

Metadata is information about the layer, such as the owner, title, purpose or restrictions on a layer. You can include as much information about the layer as you feel is important; the more you can tell other users about your layer, the better. If you have questions about what to put in a field, hover your mouse over the area. An information balloon will explain what is required.

1. Click the Edit Layer button, and select the Edit button under Metadata. The Edit Metadata page will display.



- 2. Edit the information fields to include anything pertinent to the layer. **Note:** Once you begin to edit the metadata, the Category field becomes mandatory, and you must select at least one.
- 3. Click the *Update* button at either the top or bottom of the page to save your changes.

Create a custom thumbnail

Custom images related to your map can be created, and will display next to the map on the Explore Maps page.

1. From the layer's info page, click the *Edit Layer* button.



2. Click the Set from file button to browse to the image.



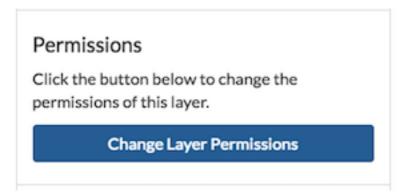
3. Browse to the image you'd like to use. Once added, the new image will display.

Set permissions

The social design of Exchange allows users to coordinate on projects by sharing access to the same layers and maps; however, there may be instances when you want to limit who has what access to your layers. In Exchange, you can establish permissions for who can view, edit, and manage layers. Permissions can also be set for editing styles and metadata.

By default, when a layer is uploaded, the permissions are set so that only the person who uploaded the layer has access to it. If you want other people to view, download, or edit the layer, you must change the permissions to allow it. Without changing permissions, other registered users will not see it listed as an available layer.

- 1. Click the *Change Layer Permissions* button.
- 2. Under the Who can view and Who can download sections, add the name(s) of registered users or groups. This will ensure anonymous view access is disabled, and only those users specified are able to see your layers. You can also leave the checkbox checked to allow all users access to the layer.
- 3. You can make the same changes for who can edit, change metadata, styles and who can manage the data. Add the names of users or groups who have permission to edit the layer. Click the *Apply Changes* button when you are finished.



Manage styles

Layers can have multiple associated styles. The Styles section tells you which style(s) is currently associated to the layer.

- 1. Click the Edit Layer button, and then Manage under Styles
- 2. Click the name of a style in the left-hand list to select it, and move it to the right-hand list.
- 3. Click a style in the right-hand list, and click the arrows between the lists to remove a style.
- 4. Click the *Update available Styles* button to save changes.

Replace a layer

Replacing a layer allows you to upload a new layer, taking the place of the current layer.

- 1. Click the *Edit Layer* button, and select the *Replace* button.
- 2. Follow the instructions to upload a new layer.

Remove a layer

Removing a layer will delete it completely from Boundless Exchange.

- 1. Click the *Edit Layer* button, and select Remove.
- 2. Verify your selection by clicking the Yes, I am sure button.

Downloading data from a layer

Within Exchange, there are two ways to extract data and metadata, download a layer or download a layer's metadata. This facilitates the flow of geospatial data in (import) and out (export) of Exchange.

Who can view it?	
Anyone	
The following users:	
x sberry	
The following groups:	
Who can download it?	
Anyone	
The following users:	
× sberry	
The following groups:	
The following users:	
The following groups:	
Who can edit data for this layer?	
The following users:	
ж sberry	
The following groups:	
Who can edit styles for this layer?	
Who can manage it? (update, delete, cloublish/unpublish it)	hange permissions,

Styles

The following styles are associated with this layer. Choose a style to view it in the preview map.

A dark yellow line style



Manage Styles

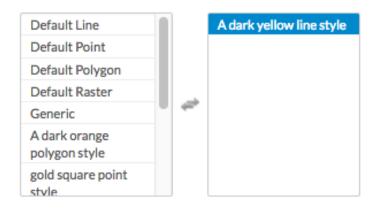
Manage Available Styles for geonode:gis_osm_barriers_v06

Layer Default Style

A dark yellow line style \$

Available styles

Click on an available style in the upper box to assign it to this layer. Selected styles appear in the lower box.



Update Available Styles



Download data

- 1. Click the *Download Layer* button.
- 2. Select the format in which you'd like the data to be downloaded. Exchange currently offers the following formats for use in multiple geospatial platforms:

View in Google Earth KML GeoJSON Excel CSV GML 3.1.1 GML 2.0 Zipped Shapefile PNG PDF JPEG

3. Save the file to your computer when the Save As dialog box opens.

Download metadata

- 1. Click the *Download Metadata* button.
- 2. Select the format in which you'd like to download the metadata.

Download Metadata

Full metadata

Text format HTML format

Standard Metadata - XML format

Atom

DIF

Dublin Core

ebRIM

FGDC

ISO

3. Save the file to your computer when prompted.

Working with Maps

Maps are comprised of various layers and their styles. Layers are available as local layers, or they can be remote layers, served from other web servers. Exchange maps can be manipulated via map zoom and extent, layer ordering, and style.

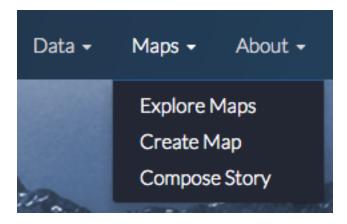
Create a map

Maps can be created in the Explore Maps section, or from one or more layers in Explore Maps.

Create a new map

1. Select the *Maps* link on the Boundless Exchange toolbar.

2. Click **Create Map** in the drop-down menu.

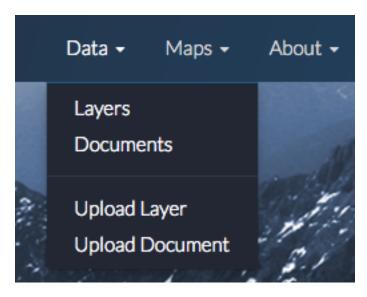


A new map environment will open, and you can begin working.

Create a new map from a single layer

Maps can be created in the Explore Layers section, or from one or more layers in Explore Maps.

1. Select the *Data* link on the Boundless Exchange toolbar, and click **Layers** in the drop-down menu.



2. Select the **Create a Map** link under the layer you'd like to add to the map. A new map will open with the layer as part of the map.

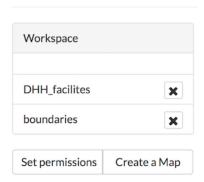
Create a new map from multiple layers

- 1. Click the *Shopping Cart* icon next to the layers you'd like to add to your map. They will display in your cart until you are ready to build your map.
- 2. Click the *Create a map* button to add all of the layers to a new map.

Remove a layer from the cart by clicking the X next to its name.

A new map will open with all of the layers displayed.

Explore Layers



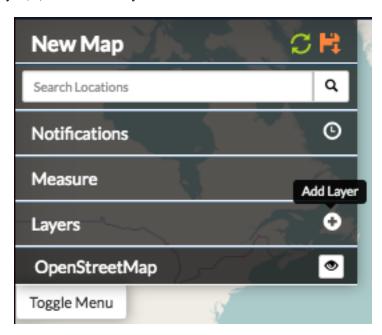
Add layers to a map

You can add layers to the map from within the map environment using the Add Layer feature. Layers can be added from either the local geoserver within Exchange, or from a registry.

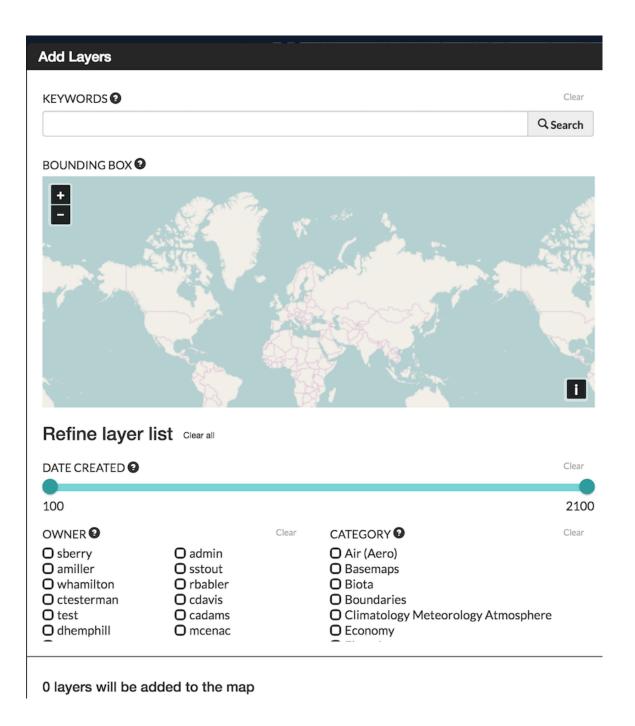
The local geoserver hosts layers that have been added to Exchange by other registered users. Local layers can be discovered through an advanced search from the Boundless Exchange homepage, from the Explore Layers page, and from within the map.

Registry is a system for building, maintaining, and deploying a public registry of web map services of various types, OGC and Esri services. From a user's perspective, registry integration is within the mapping client. Rather than having to add multiple services into Exchange, registry exposes external services and allows the user to add them to their map.

1. Click the Add Layer (+) button in the Layers field.

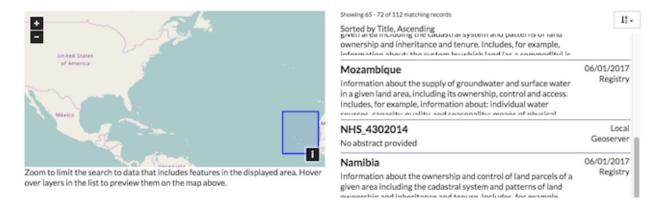


The Add Layers window will open. A list of available layers will display on the right, but you can refine your search to find specific information.

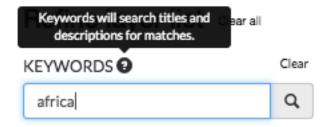


2. **Using the map -** Zoom in or out to your area of interest. The list of available layers will change to show you what is within the map extent (minus any layers currently on your map).

Hover your mouse over a layer in the results list. A bounding box will display over the layer's coverage area. Each layer will tell you whether it is from the local geoserver, or the registry.



3. **Keywords** - Add keywords to find specific layers. Words associated in the metadata, and the title are used for results. Select the Clear link to remove the filter.



4. **By owner -** Click the checkbox next to an individual's name to return layers added by that user. If you are collaborating on a project, this is a fast way to find layers from your team members.



5. **Date Created -** Click and drag the time bar to filter layers by their creation date.

- 6. Category Click the checkbox next to one or more categories to filter layers by their metadata category.
- 7. Once your results have been filtered, select the layers you'd like to add to your map from the results list, and click the *Add Layers* button. Your layer(s) will now display on your map, and in the layers list.

2 layers will be added to the map



Change layer order

Layers on a map are drawn from bottom to top. The top layer in your list will display on top of any layers below it. Each layer will appear in the order it is displayed in your list. Sometimes a layer may need to be reordered so it can be more clearly displayed.

- 1. Click on the name of the layer you want to reorder.
- 2. Drag the layer up or down to the desired position.

Toggle layer visibility

Toggle Visibility allows you to turn a layer's display off and on without having to remove the layer form the map completely.



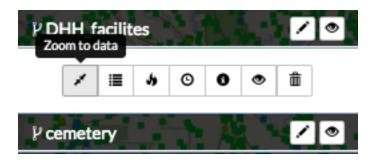
- 1. Click the Toggle Visibility button to turn a layer off.
- 2. Click the Toggle Visibility button again to turn a layer back on.

Zoom to data

The Zoom to data button allows you to center the map quickly on a particular layer. It is particularly convenient when you need to quickly return to the extent of the data for that layer.

- 1. Click a layer in the layer list.
- 2. Click the Zoom to data button. The map will zoom in and center on that particular layer's extent.

Important: If a layer's visibility is dependent on scale, and the data extent is at a lower scale, you will need to zoom in to view the data.



Show layer info

Information about a layer is available in the map by clicking the Show Layer Info button. Show Layer Info will include server information, basic metadata, and the projection (SRS).

- 1. Click on a layer name in the layer list to expand the layer options.
- 2. Click the Show Layer Info button.



The Layer Info window will display.

Remove a layer from the map

- 1. To remove a layer from the map, click the name of the layer you'd like to remove, and click the *Remove layer* button in the layer tools.
- 2. Click the Yes button to confirm.

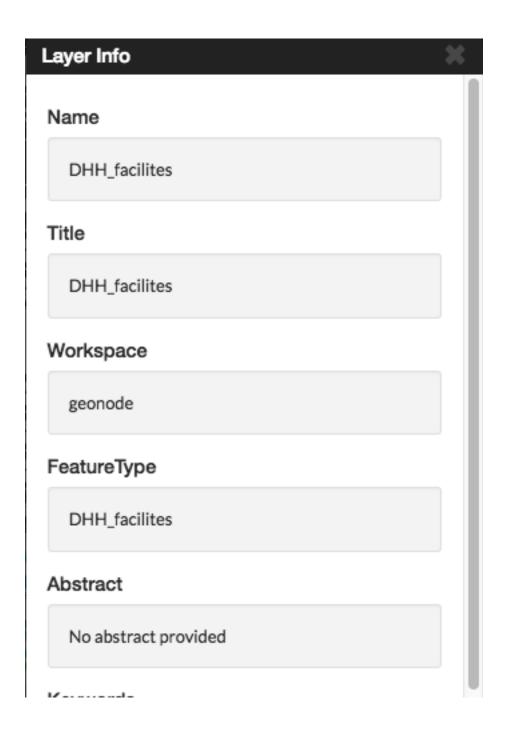
Get feature information

To get information in a vector layer, simply click a feature on the map. Once you click the feature, the information window will display. The point of the information window will touch the feature you clicked.

Change attribute visibility

Individual attribute visibility can be turned off and on in a feature window. This can make managing large numbers of attribute fields in a layer easier.

- 1. In the layers list on the map, select on the layer whose attribute visibility you'd like to change. The layer's additional options will display.
- 2. Click the *Show Attribute Visibility* button to open the list of attributes for the layer.

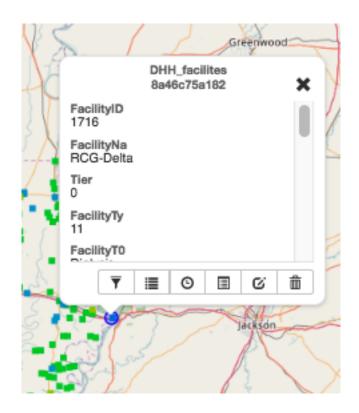




Remove Layer

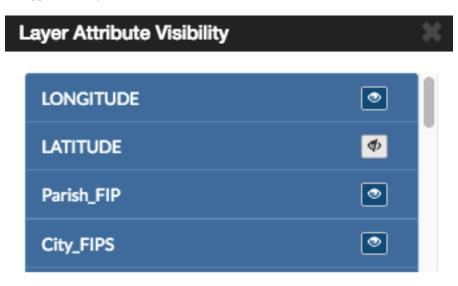
Are you sure that you want to remove this layer?

Yes No





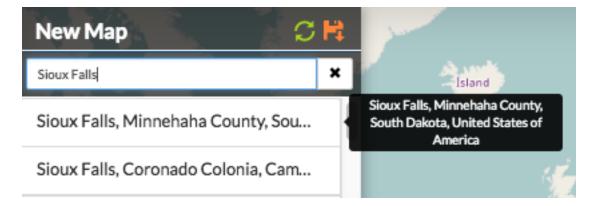
3. Click on the *Toggle Visibility* button for an attribute to turn it off and on.



4. Select a feature on the map from that layer. The attribute will no longer appear in the feature information window, as it has been toggled off. Repeat these steps to toggle it back on.

Search for locations

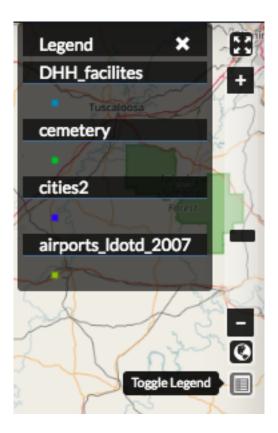
FFind a specific location on the map simply by typing the name of a place, zip code, address or lat/long (DMS or DD) in the Search Locations text box. Click the search button to return a list of possible matches. Scroll through the list, and select one of the matches. The map will recenter on that location. This is a simple search, and does not allow wildcards.



Using the legend

A legend displayed the symbols used for vector layers in a map. It can be toggled off and on to maximize screen space when necessary.

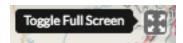
Click the Toggle Legend button to toggle the legend off and on.



Additional map features

There are additional features which allow you to change your coordinate display, your full screen extent, and your map scale.

1. Click the *Toggle Full Screen* button to maximize your map environment to the full screen.



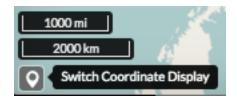
- 2. Click the *Zoom In* (+) / *Zoom Out* (-) buttons, or click and drag the scroll bar to zoom in and out on the map. Click the *Zoom to World* button to return to the world view.
- 3. Click the *Switch Coordinate Display* button, in the lower left corner of your map, to change the coordinate system. Your available options are DMS, DD (or XY) and MGRS. Click the button additional times to cycle through to your desired display. Your scale bar is located just above the coordinate display.

Measure distance or area

You can measure distance or areas on your map using the Measure tool.

1. To measure an area or distance on the map, select the Measure field. The measure tools will open, and you can select whether you want to measure a line distance, or an area.



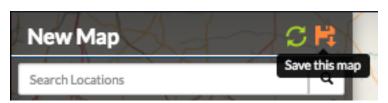


- 2. **Area** Click the *Area* button in the Measure tools. Begin drawing by clicking your mouse on your map at your starting point. Click subsequent points around the area you want to measure. To complete your measurement, you will need to ensure you close your polygon by clicking on your starting point.
 - **Line** Click the Length button in the Measure tools. Begin drawing by clicking your mouse at your starting point. Click subsequent points along the route or feature you want to measure.
- 3. To complete your measurement, click your mouse at the end distance. The line will turn from a bold blue to a thin blue line. The distance will display as meters/kilometers, miles or feet, depending which unit you have selected.
- 4. Click the Stop Measuring button to clear your map and measurements.

Save a map

Saving a map allows you to maintain your preferences for the next use, as well as makes it available for other Exchange users.

1. Click the Save this map button.



2. Add a title and an abstract for your map so it is searchable by others. Click the Save button to save your changes. The name will be reflected in the title, and replace "New Map."

The Map is now saved in the list of maps on the Maps page.

Create a copy of a map

You can use an existing map as a starting point for another map. This allows you to incorporate the work others have done without changing their maps.

- 1. Click Maps on the Boundless Exchange toolbar, and select Explore Maps in the drop-down menu.
- 2. Select on the map you would like to copy. This will open the map details page.

Click the Create a New Map button under the Copy this map section.

A new map will open, populated with all of the layers of the map you copied.

- 3. Click the Save this map button on the toolbar.
- 4. Add a new title and an abstract, possibly indicating this is a copy of another map.
- 5. Click the Save Copy button.

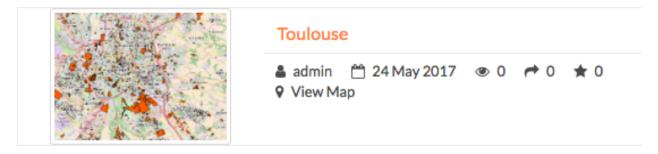
Save this map			×
Title			
Title			
Abstract			
0		≭ Close	I Save
	Copy this map		
	Duplicate this map and modify it for your own purposes		
	Create a New Map		

Your new map is now saved, and can be accessed from the maps page.

Important: You are only copying the map. Any changes you make to the layer (data set) will affect both maps. Copying the map would primarily be used to make visual changes.

Managing Maps

Every map has its own details page, which provides more information about the map, the metadata and who has what permissions for making edits. To get to the details page for a map, click on the map title.



The map details page provides a view of the map, along with information about the map. It also tells you which layers are used in the map.

Download data layers

Here you can download the contents of a map that is stored in Exchange. It does not download data from other servers, however.

- 1. Click the *Download Map* button.
- 2. Select Download Data Layers.

If multiple layers exist, you will be able to select one or more of the available layers.

3. Select the layer(s) you want to download individually, or the *Start downloading this map* button to begin downloading.

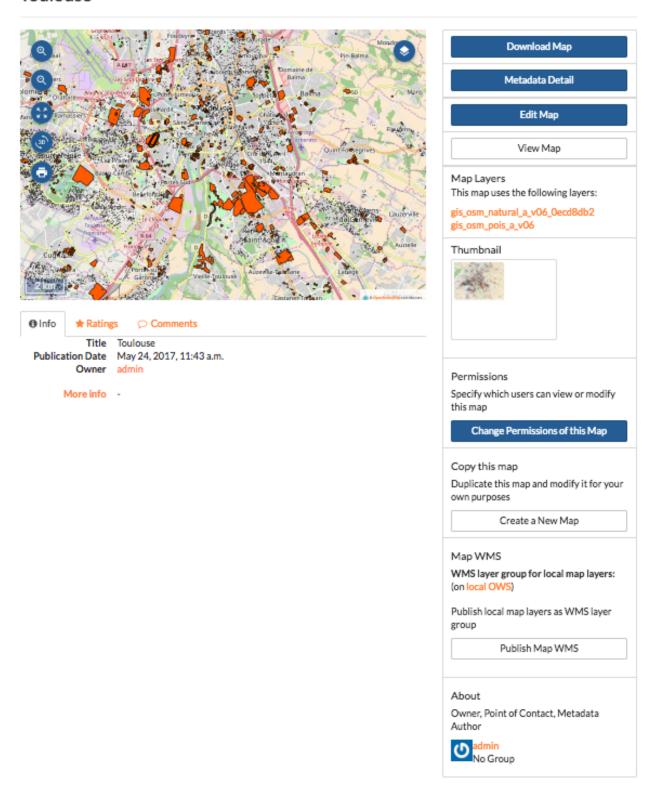
Download Web Map Context

The Web Map Context (WMC) is an open geospatial consortium (OGC) standard for metadata describing a map service.

- 1. Click the *Download Map* button.
- 2. Select **Download Web Map Context** from the menu.

A new tab will open with the XML for the web map context.

Toulouse



Download Map

Download Data Layers Download Web Map Context

Map Layers

This map uses the following layers:

levees_USACE_2006 cemetery DHH_facilites airports_ldotd_2007

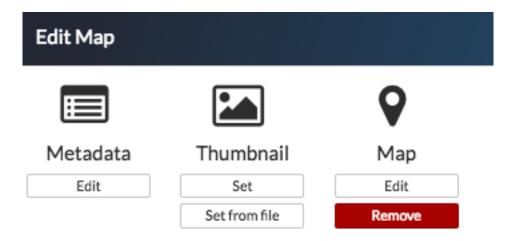
Download Map

Download Data Layers Download Web Map Context

Edit map metadata

Metadata plays an important role for maps. It describes the map in a way that the legend does not; why it was created, the date it was published, and who created it, for example. When a map is updated, it is important to update the metadata, as well. You can edit the information about the map if you have the proper permissions.

- 1. Click the *Edit Map* button
- 2. Click the Edit button under Metadata on the Edit Map menu.



- 3. In the metadata page, fill in the fields with information about the map. The more information you provide, the better others will understand your map.
- 4. Click the *Update* button at the top or bottom of the page to save your changes.

Set map thumbnail

By default the thumbnail images for maps will only have the vector layers. In order to include the background map you will need to use the Set Map Thumbnail button.

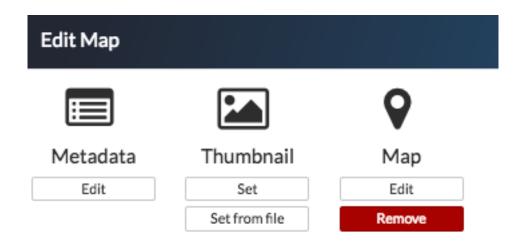
- 1. Pan and/or zoom the inset map on the **Map Details** page so that it's centered on the view you would like for the map thumbnail.
- 2. Click the *Edit Map* button.
- 3. Click the Set button under Thumbnail on the Edit Map menu.

This will set the map thumbnail with the base map and layers included.

Create a custom thumbnail

Custom images related to your map can be created, and will display next to the map on the Explore Maps page.

- 1. From the map's info page, click the *Edit Map* button.
- 2. Click the *Set from File* button to browse to the image. Select the image you want to use, and verify it displays in the thumbnail section.



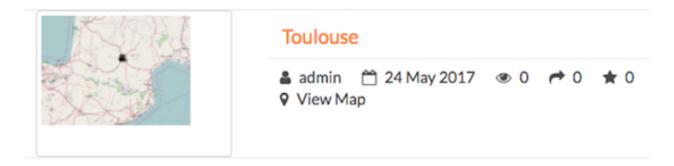


Fig. 1.1: Old Thumbnail

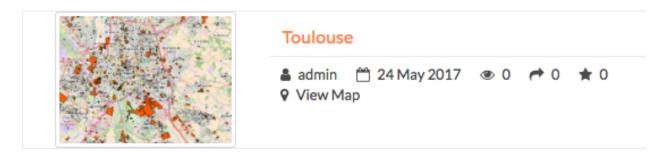


Fig. 1.2: New Thumbnail

Edit Map

Edit map permissions

The map permissions determine which users can view or edit a map. The permissions can be set to establish:

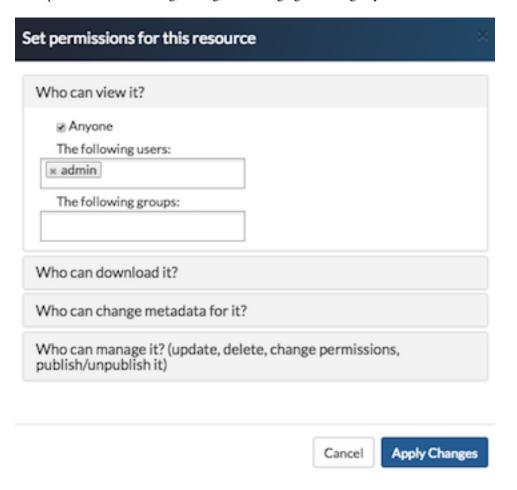
- Who can view it?
- Who can download it?
- Who can change metadata for it?
- Who can manage it (update, delete, change permissions, publish/edit)?
- 1. Click the *Change Permissions of this Map* button in the Permissions section.

Permissions

Specify which users can view or modify this map

Change Permissions of this Map

2. Establish the permissions for viewing, editing, and managing according to your needs.

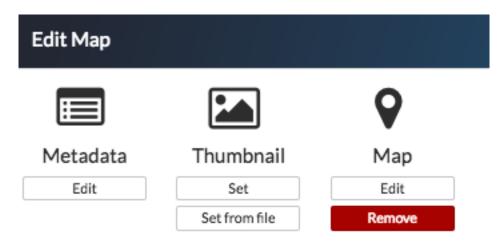


3. Click the **Apply Changes** button to save changes.

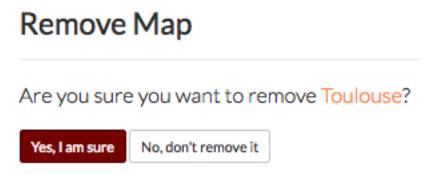
Remove a map

You are able to remove a map from Exchange. It is important to note that this will remove the map for all users.

1. Click the Edit Map button.



- 2. Click the red *Remove* button under Map in the Edit Map menu.
- 3. Click the *Yes* button to confirm.



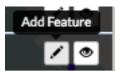
Editing and Version Management

Edit Features

Vector layer permissions can be set so the layer can be edited by other users. The editing tools will be available to you in the map, if you have permissions to edit a layer. If a layer was saved as a GeoGig layer, then you can work with the layer's edit history as well.

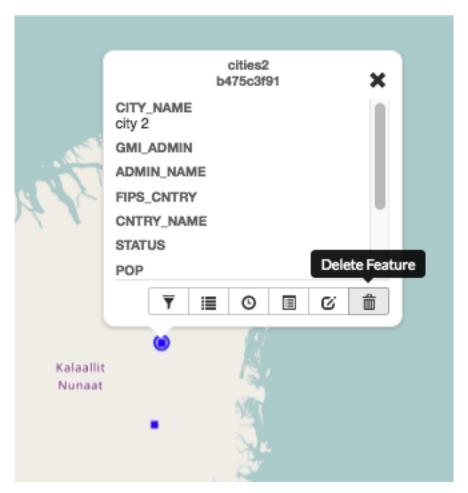
Add a point feature to a layer

A layer that is able to be edited will have the *Add Feature* button available.



- 1. Click the *Add Feature* button. The Drawing Geometry dialog will appear at the top of the map.
- 2. Click on the map to add your point feature.
- 3. Click the *Accept Feature* button to keep the geometry. Click the *Cancel Feature* button to remove the added feature.
- 4. After the feature is accepted, the Edit Attributes window will open. Fill out the fields, or select values from the dropdowns to add attribute values.
- 5. Click the *Save* button at the bottom of the form to save the feature to the layer.

Note: To delete a feature, click on the feature to be removed, and select the Delete Feature button. Select Yes to confirm.

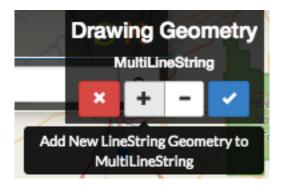


Add a line to a layer

A line layer consists of lines that represent features such as roads, powerlines, waterways, etc.

- 1. Click the Add Feature button. The Drawing Geometry dialog will appear at the top of the screen.
- 2. Click on the map to begin drawing the linear feature. Click additional points to add all of the vertices. Double-click the last vertex to finish drawing the line.
- 3. Click the *Accept Feature* button to add the geometries to the layer.
- 4. After accepting the feature, populate the attributes in the Edit Attributes window with any required information.
- 5. Click the *Save* button to save your changes.

Note: To add a multi-line feature, select the *Add Geometry* button.

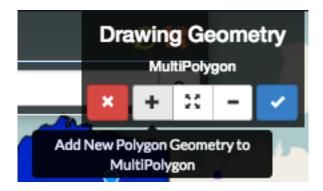


Add a polygon feature to a layer

Polygons can be used to represent many different features, including buildings, bodies of water, hazardous areas, *etc*. A simple polygon layer has a single polygon per feature.

- 1. Click the Add Feature button. The Drawing Geometry dialog will appear at the top of the screen.
- 2. Click on the map to begin adding the polygon. Continue to click to add all of the vertices. To finalize the polygon, close the geometry by clicking on the first vertex again.
- 3. Click the Right Angles button to create right angle corners on your polygon.
- 4. Click the *Accept Feature* button to add the geometries to the layer.
- 5. After accepting the feature, populate the attributes in the Edit Attributes window with any required information.
- 6. Click the *Save* button to save your changes.

Note: To add a multi-line feature, select the *Add Geometry* button.



Edit attributes

If a layer is able to be edited, Exchange allows you to make attribute changes directly from the map.

- 1. Select a feature on the map. The feature info box will appear.
- 2. Click the *Edit Attributes* button to open the Edit Attributes window.
- 3. Add attribute information as necessary.
- 4. Click the *Save* button to save your changes.

Edit point geometries on the map

Point layers can be either simple point or multi-points layers. For simple point layer, there is one point per feature. Multi-point layers will have more than one point per feature.

- 1. Select a point feature on the map to open the feature info box.
- 2. Click the *Edit Geometry* button. This will open the Drawing Geometry dialog at the top of the screen. Your selected feature will be highlighted in blue.
- 3. Click and drag the feature to a new location.
- 4. Click the Accept Feature button to save the new feature location. Click the Cancel button to cancel your edit.

Edit point geometry manually

Coordinates for point geometries can also be edited manually. This is useful when you have the coordinates from another source (such as a report or agency).

- 1. Select a point feature on the map to open the feature info box.
- 2. Click the Edit Attributes button. The Edit Attributes window will open.
- 3. Click the Location field to edit the point's coordinates. Add the new location.
- 4. Click the *Save* button to save your changes.

Edit line or polygon geometries

Any existing feature in a layer can be modified, if you have permission to edit the layer. A layer that has been saved to GeoGig will maintain a history of all of the edits to ensure the provenance of the data.

- 1. Select a feature on the map to be edited. This will open the feature info box.
- 2. Click the *Edit Geometry* button. The Editing Geometry dialog will open.
- 3. Mouse over the geometry to highlight the vertex to edit. Click and drag the vertex to a new location. Repeat to edit any additional vertices.

Version Management

GeoGig is a specialized database that was designed for distributed editing, and supports collaborative editing of geospatial data. It is designed for vector data (point, line, polygon, etc.), and is recommended as the best way to maintain a reliable history of changes to your data.

When a layer has been stored in GeoGig, it maintains the history of all of the edits made to the data, along with who made the changes and when. Within the web map, you can view the history for a layer and for the features.

GeoGig tab in Boundless Exchange

GeoGig layers in Boundless Exchange will have a GeoGig tab in addition to the other tabs on the Layer information page. The history is a list of commits that have been made to the layer.

In the layer information page, click on the GeoGig tab to see the chronological list of commits. The number of commits, and the total number of contributors will display.

Notifications

Because Exchange is a real time collaboration tool, it is important for users to be able to see what changes other team members are making to a project. When users upload layers, they are given the option to import the layer(s) into GeoGig, which will show who has made what changes (for more on GeoGig, please reference the Working with Layers Management section). If another user has made modifications to a layer currently on the map, a number will appear next to the Notifications indicating how many unread notifications you have. The more notifications, the more changes that have been made to your map layers.

- 1. Click on the number of unread notifications to open the Notifications list in the layers menu. This will show you all of the changes that have been made to your layer. If there have been multiple changes, they may be grouped into sections based on when the changes occurred. Click on the grouping you would like to view.
- 2. From here you can either select *View on Map* or *Show Changes* to see what has been modified. View on Map will show you where the changes have been made on the map.
- 3. Click the *Show Changes* button. Select *Yes* to acknowledge changes have been made to a feature, and compare the two versions.

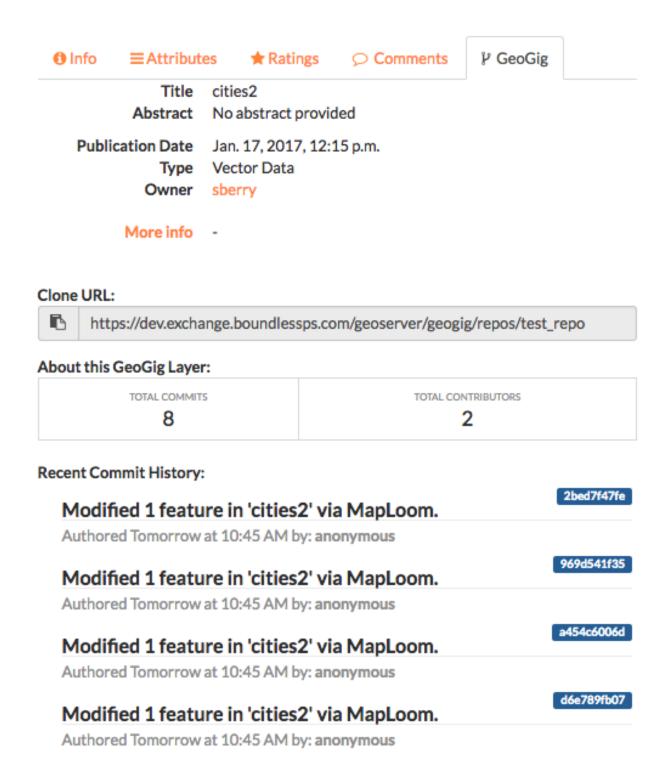


Fig. 1.3: Commit history within the GeoGig tab

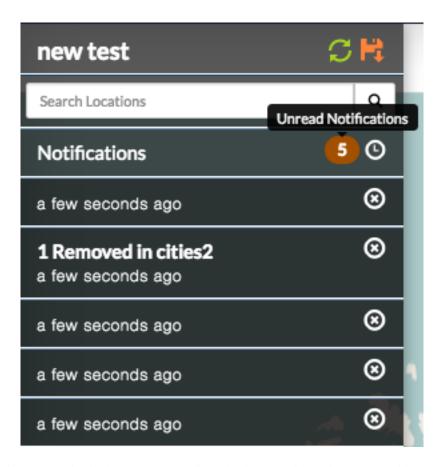


Fig. 1.4: Multiple changes were made to this layer, and have been grouped by time.



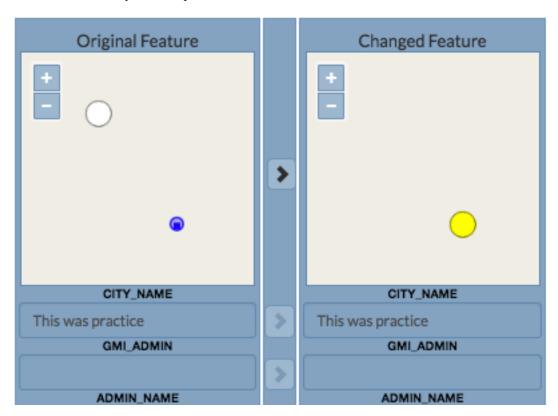


Warning

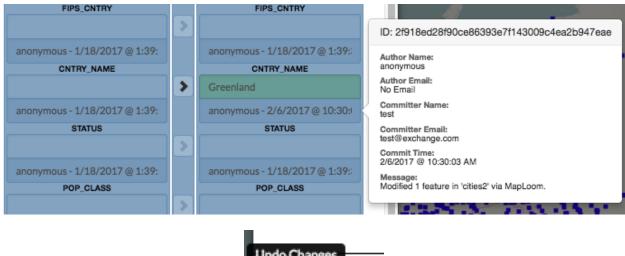
This feature has been modified since this notification was posted. Would you like to compare with the newest version?

Yes No

You will see a detailed side-by-side comparison of the features that have been edited.



- 4. Changes made to the feature attributes will be highlighted in red, green or yellow, depending on whether the change was a deletion, addition or edit. Click the *Show Authors* button and hover your mouse over the highlighted area to open a detailed description of the individual edit.
- 5. If you do not approve of the changes, or feel they were made in error, you are able to select the *Undo Changes* button at the bottom of the details window to revert to the original feature.

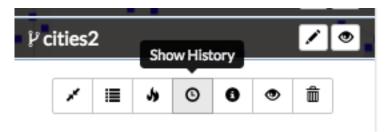




View layer history

You can view all of the changes made to an entire layer from the map.

- 1. Select the name of the layer you want to view. The menu will expand to show additional layer options.
- 2. Click on the *Show History* button. The history will expand.



- 3. Hover your mouse over a commit to view details about the changes. The color bar next to the commit indicates the type of edits that were made. Green indicates a new feature was added. Yellow indicates a feature was modified. Red indicates a feature was deleted. A commit can have multiple types of edits. In such cases, the bar will have colors representative of the types of edits that were made.
- 4. Click on a commit, and its history will update to show the individual edits within that commit. MapLoom will make one commit per edit.
- 5. Click the *Show Changes* button to bring up a new window, displaying the specific changes that were made. The changes will be highlighted with the same color coding as the commits. Green means something was added. Yellow means the feature was changed. Red means the feature was deleted. In the image below, the feature was added, and so the feature on the map is highlighted in green.

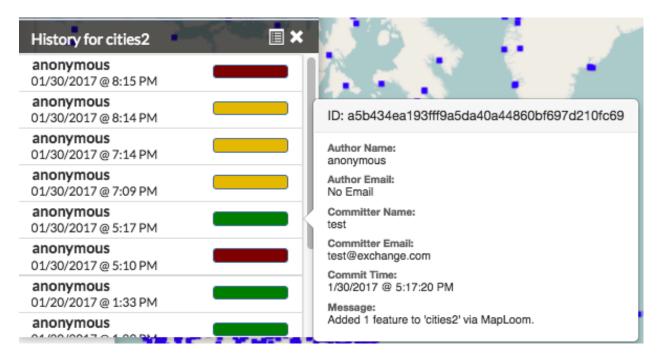
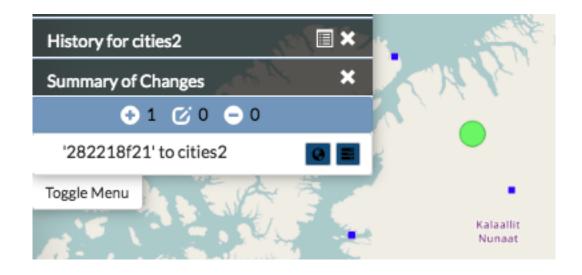
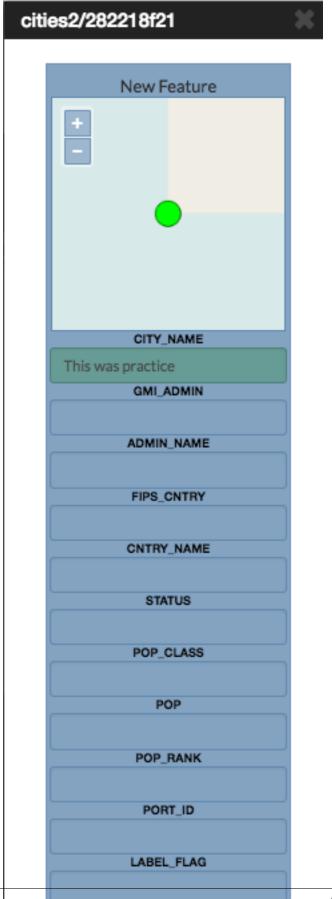


Fig. 1.5: History detail for a commit





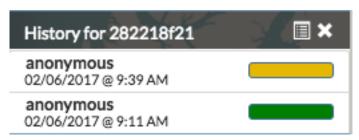
View feature history

In addition to viewing the history of edits on a GeoGig layer, you can also view the history of a feature.

- 1. Select a feature on the map. The feature details will appear.
- 2. Click the *Show History* button. The history list will expand with the commits that contain changes for that feature.



3. Click the specific commit whose history you'd like to view. The history will update to show the edits made to the feature for that commit. Information about the feature will display as you hover your mouse over the changes.



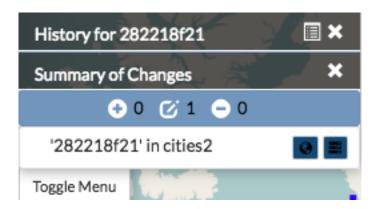
4. Click the Show Changes button to bring up a new window, displaying the specific changes that were made.

The changes will be highlighted with the same color coding as the commits. Green means something was added. Yellow means the feature was changed. Red means the feature was deleted. In the image below, the feature was added, and so the feature on the map and its attributes are highlighted in green.

1. Click the *Show Authors* button to see the names and dates for every attribute in the feature. Note that through the lifetime of a feature, there can be several authors. This is a good way to see who has contributed to a feature's current state.

Summarize history

You can visualize a summary of all of the edits within a date range for a layer.



- 1. Click the *Show History* button for layer you want to summarize.
- 2. Click the *History Summary* button.
- 3. Enter the date range for the history to summarize.
- 4. Click the *Summarize* button. The edited features will be highlighted, and will be listed under the Summary of Changes field.
- 5. Click the *Show Changes* button for one of the edits in the list to see a detailed view.

Export history

You can export a summary of all of the edits within a date range for a layer.

- 1. Click the *Show History* button for layer you want to summarize.
- 2. Click on the *History Summary* button
- 3. Enter the date range for the history to summarize.
- 4. Click the Export CSV button.
- 5. When prompted to save the file, browse to the location where you want to save it, and click Ok.

All of the feature change history will be added to the spreadsheet.

Analyzing data with Exchange

Working within the attribute table

In the **Editing and Version Management** section, you learned how to add data to the attribute table, and how to edit the attributes of a feature on the map. Here we will discuss how to manipulate the data from within the attribute table to find exactly what you need.

To open the **Table View**, click on a layer, and select the *Show Table* button.

All of the data provided for this layer will display in the Table View, though you may need to scroll up and down, or left and right to view all of the data on the page. Select the left or right arrow buttons to move to a different page.

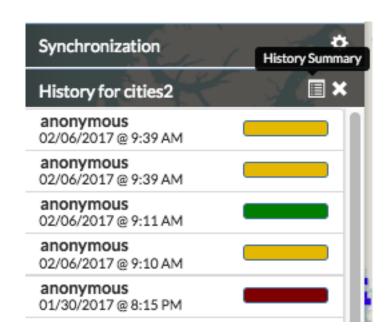
cities2/4dcb15e4289

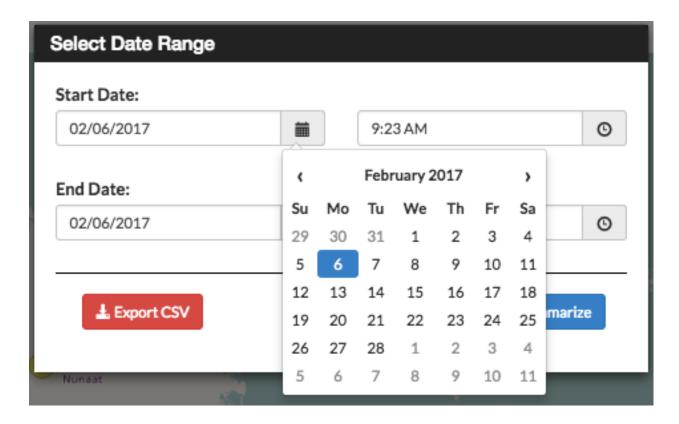


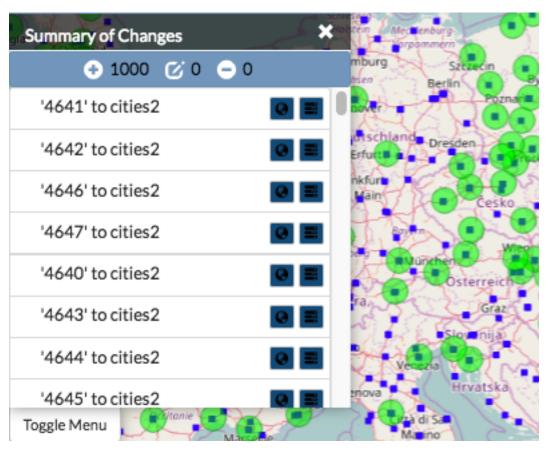
1.7. Analyzing data with Exchange

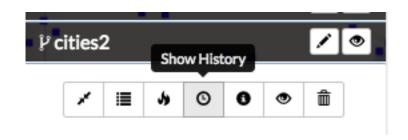


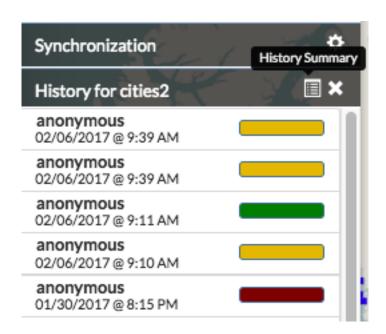


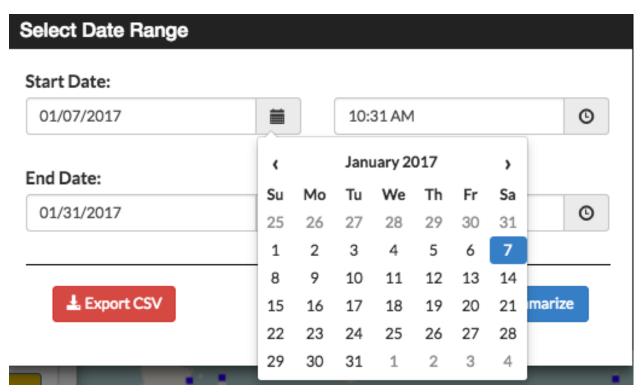






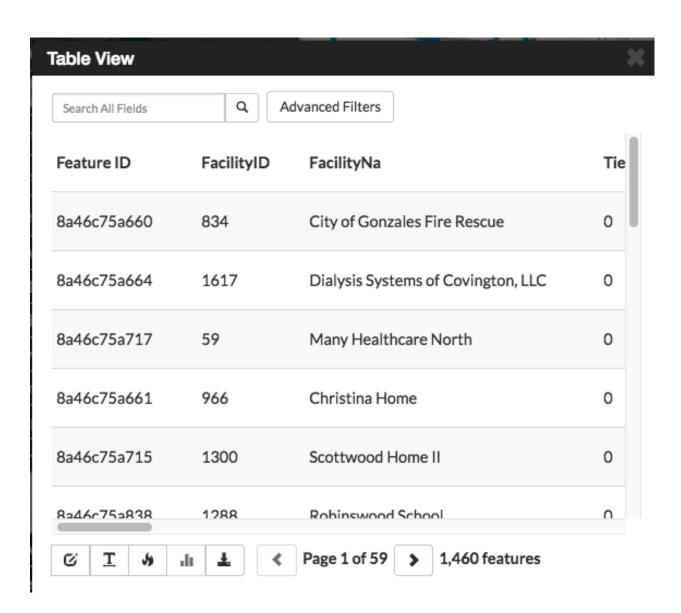






Α	В	С	D	E	F	G	Н
ChangeType	FeatureId	CommitId	Parent Comn	Author Name	Author Email	Author Comr	Committer N
MODIFIED	cities2/2822:	ae5a321e30	ecc40149848	anonymous		02/06/2017	test
MODIFIED	cities2/ac922	ecc40149848	3db5726005	anonymous		02/06/2017	test
ADDED	cities2/2822	3db5726005	ebb23c91a32	anonymous		02/06/2017	test
MODIFIED	cities2/ac922	ebb23c91a32	930fb1a2a5c	anonymous		02/06/2017	test
REMOVED	cities2/0a779	424d103cc13	4f610e7e7eε	anonymous		01/30/2017	test
MODIFIED	cities2/0a779	4f610e7e7e6	cbe0fb74784	anonymous		01/30/2017	test
MODIFIED	cities2/0a779	cbe0fb74784	ca50a88bd1l	anonymous		01/30/2017	test
MODIFIED	cities2/0a779	ca50a88bd1l	e16ded0348	anonymous		01/30/2017	test
ADDED	cities2/0a779	a5b434ea19	47807f07b8b	anonymous		01/30/2017	test
REMOVED	cities2/b475	47807f07b8b	7d89b1997e	anonymous		01/30/2017	test
ADDED	cities2/9ade	964b65981a	1685a0ec2ea	anonymous		01/20/2017	test
ADDED	cities2/52b7	1685a0ec2ea	2bed7f47fee	anonymous		01/20/2017	test
MODIFIED	cities2/4dcb1	2bed7f47fee	969d541f359	anonymous		01/19/2017	test
MODIFIED	cities2/4dcb1	969d541f359	a454c6006dd	anonymous		01/18/2017	test
MODIFIED	cities2/4dcb1	a454c6006dd	d6e789fb07f	anonymous		01/18/2017	test
MODIFIED	cities2/4dcb1	d6e789fb07f	6745e1ba9a	anonymous		01/18/2017	test
ADDED	cities2/b475	711b0ceaefa	f61db213bf2	anonymous		01/18/2017	test
ADDED	cities2/ac922	f61db213bf2	12f61b0712c	anonymous		01/18/2017	test

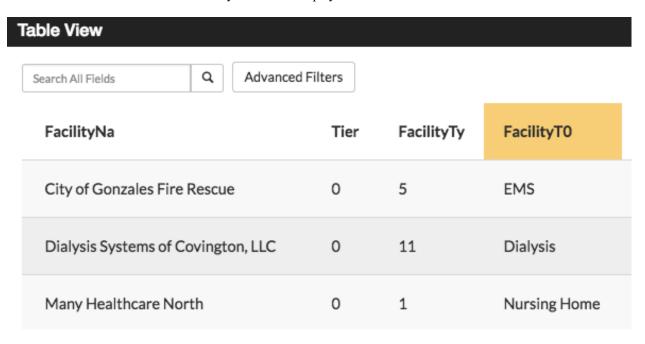




View attribute statistics

The View Statistics feature helps you visualize the data within an attribute by presenting it as either a bar graph or a pie chart. This information can be useful when you want to quickly see how data within a given attribute is distributed, or how many unique categories are represented within a single attribute.

1. Click the attribute title for the data you'd like to display.



2. Click the *View Statistics* button to open the summary statistics chart.

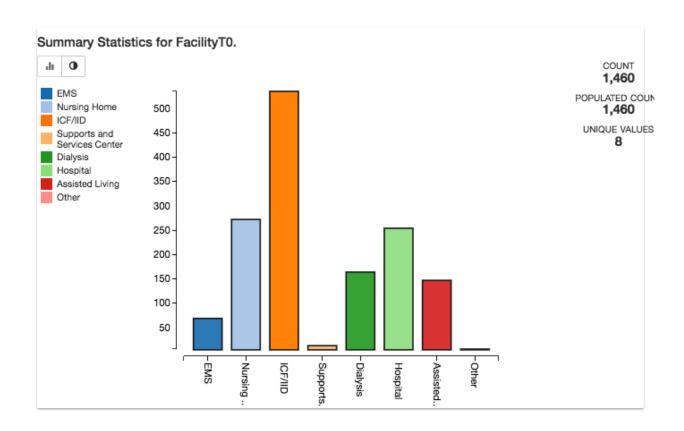


The attribute categories will be broken out into a bar graph, where each unique value in the field is represented by a single bar (or slice, if you are using a pie chart). The graph will show each of the unique values on the bottom axis, and the number of times that value is represented in the attribute table on the left side of the graph.

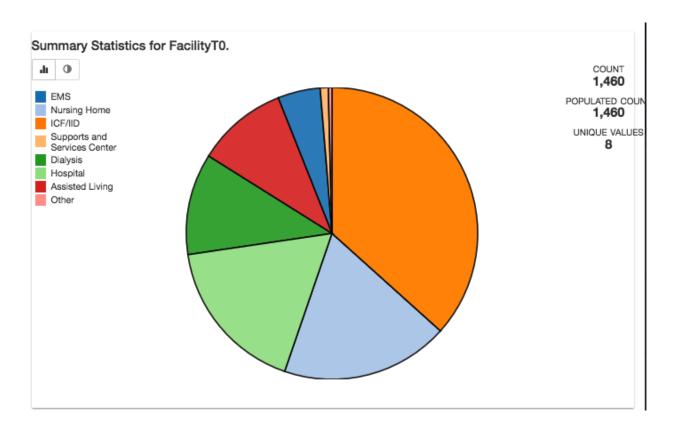
The View Statistics feature will give you a count of all of the features within the layer, the number of features with data populated in the attribute you are examining, and the number of unique values of the attribute itself.

Using the chart below as an example, you can see the layer has a total of 1,460 features. The FacilityTO attribute (used to create the graph) has data populating each of those features. There are eight unique values within the FacilityTO attribute field, and the bar represents the number of times that value was entered for the attribute.

3. Click the *Show Pie Chart* button to change the display to a pie chart.







Create a heat map

A heat map is a visual representation of your data, and allows you to see where your data is concentrated.

- 1. Select a point feature layer from your layers list.
- 2. Click the *Show heatmap* button to create a heat map layer.



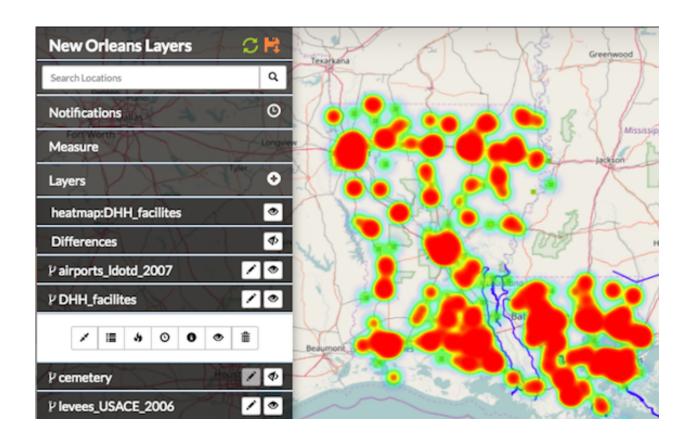
On the heat map, red indicates a high area of data concentration.

In this example, the heat map indicates the areas where the Department of Health facilities are concentrated in Louisiana. The red areas are areas of higher population.

Search all attributes

The Search All Fields search examines all of the attributes in a layer, and returns all features that have your search term in *any* of its attribute fields. It is a simple search that will find results from any location.

1. Type a search term in the Search All Fields text box.





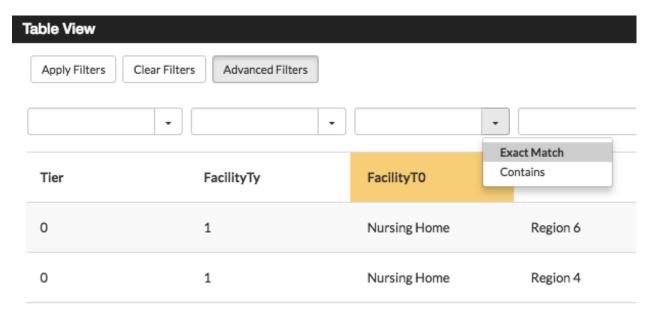
2. Click the magnifying glass button. Your results will display in the attribute table.

NOTE: You can use the * or the ? as wildcards if you aren't sure of the exact spelling of a search term. The * matches any number of characters. You can use the asterisk (*) anywhere in a character string. For example, **wh*** will find what, wheat, and whale, but not awhile or watch. The ? will match a single character in a specific position. A search for **r**?t will return rat or rot, but not rest or retract. A search of a partial word, or an open ended search, will return results containing those characters. Typing **abr** will return abrams and candelabra. You may also use a combination of the two. To clear the search, click the magnifying glass or the **X** button.

Advanced filters

Advanced filters can help with your analysis by returning only the features you want to see. Whether you are looking for data matching a specific attribute, or events occurring within a certain time period, using an advanced filter will help you find what you need.

- 1. Select the *Advanced Filters* button in the Table View to open the Filter by Attribute options.
- 2. Select an attribute type, and click the drop down menu to select whether you would like to filter for an exact match, or a term that would be contained within the results.
- 3. Add your search term to the text box, and click the *Apply Filters* button. Repeat these steps to add additional filters, and refine your search even more.



You are also able to filter attributes with dates or numbers by using either an exact match, or setting a range.

- 1. Click the drop down menu to select either **Exact Match** or **Range**. Type the date or number in the text box for an exact match, or select the dates/times using the calendar to establish a range.
- 2. Select the *Apply Filters* button.

Your results will display in the Table View. To clear your results, and return to the complete list of features, select the *Clear Filters* button. Click the *Advanced Filters* button again to return to **Search All Fields**.

Filter features using spatial filters

Spatial filters are used to select features from one layer based on their location in relation to features from another layer. The overlapping, or intersecting, data will be filtered in the attribute table, and can be used for additional analysis.

- 1. Click a feature on the map to select it. This will set the boundaries for the filter, and all of the returned data will be within this feature.
- 2. Click the filter button to **Use this feature in a spatial filter**. The selected feature will change colors.
- 3. Click a feature from the layer you want to filter, and click the *Show Table* button in the information window. This will open the attribute table for the entire layer. All of the features in this layer will display in the attribute table.
- 4. Click the *Spatial Filter* button in the Table View. This filters the data to display only the features intersecting the original feature.

Fig. 1.6: Filter intersecting feature attributes

You can expand your spatial filter by selecting additional features from your layer. The results will be displayed in your attributes table.

Fig. 1.7: In the first example, there were 15 results using the spatial filter. By selecting additional features, there are now 42 results that intersect the layer.

A spatial filter can also be created using an individual point with a given radius, allowing you to see how many features from a second layer fall within that radius.

- 1. Click a point on the map from the desired layer. This will be the base point. A blue circle will highlight the point.
- 2. Click the filter button to *Use this feature in a spatial filter*. The selected feature will change colors. Enter the desired radius in meters when prompted. Click the *Add Spatial Filter* button.
- 3. Click a feature from the layer you want to filter, and click the *Show Table* button in the information window. This will open the attribute table, which will include all layer features.
- 4. Click the *Spatial Filter* button in the Table View. This filters the data to display only the features within the radius on the original point.

This example shows how many Department of Health facilities are within a 4000 meter radius of central Lake Charles, LA. The spatial filter narrows the results down to 17 facilities out of 1458.

You can edit the geometry of an existing spatial filter to adjust the size of the filter area.

- 1. Select a spatial filter feature on the map, and click the *Edit Geometry* button. The selected feature will change colors and the Editing Geometry window will open.
- 2. A blue dot will appear over the point on the feature to be moved.
- 3. Click and drag the point to its new location. Repeat this process until all of the points have been moved to their new location.
- 4. Select the Accept Feature button to finish your edits, and apply the new shape to your spatial filter.

Delete a spatial filter

Once you are finished with your spatial filter, you may want to clear the results, and remove the filter from your map.

- 1. From the Table View of your filtered results, select the *Spatial Filter* button. This will clear the filter, and show all features within the layer. Close the Table View window.
- 2. Click on the feature you used in your spatial filter, and select the *Delete Feature* button. Confirm that you want to delete the feature.

Combine filters for deeper analysis

Combining a filter by attribute and a spatial filter allows you to dig even deeper into your data to provide better analysis. Once you have completed your spatial filter, you can use an **Advanced Filter** to drill down even further.

- 1. With an existing spatial filter on the map, open the table view of the layer you want to further filter. Your table will display all of the features in the layer.
- 2. Click the Advanced Filters button, and select the attribute you'd like to add to the spatial filter. Click the drop down menu to select the appropriate criteria.
- 3. Add your search term to the text box, and click the Apply Filters button. This will filter your layer to those features containing the attribute you want to apply to the spatial filter.
- 4. Click the Spatial Filter button to apply the spatial filter.

Not only will all of your results fall completely within the area you selected for your spatial filter, but they will also meet your advanced filter criteria.

Using the Department of Health layer from the previous example, we want to find out how many of the facilities within our 4000 meter radius are hospitals. We filtered all facility types (in the FacilityTO attribute) to those containing the word hospital. There were 254 results. Next, we applied the spatial filter. Our search helped us determine that out of 1458 features, four are hospitals within a 4000 meter radius of Lake Charles, LA.

Filter features by timeline

Features will often have a time attribute detailing the specific time an event has occurred, or when a feature has changed. This information can be displayed in two ways. Continuous time focuses on the changes of a singular feature, such as the path of a tornado, or the spread of disease. Temporal data also tracks multiple features in single locations over time, such as store openings, lightning strikes, or cell phones pinging cell towers. Temporal data can be displayed in Exchange either as a whole (the entire layer at once), or it can be played back, with the features populating the map as the time bar progresses.

Note: For this feature, the layer must have a date/time attribute. The time attribute is configured when the layer is uploaded. Please see the section on Configuring Time Attributes under Working with layers for more information.

- 1. Add a layer with the temporal data to the map. The playback options will display at the bottom of your map.
- 2. Click the *Play* button to begin the playback for the layer. The features will populate, and display the date/time along the timeline.
- 3. Select additional playback options. Playback options include:

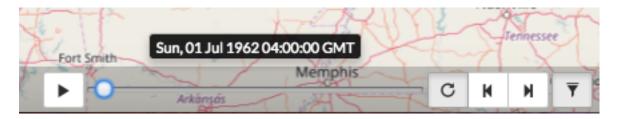


Fig. 1.8: A layer with temporal data will have a toolbar with playback options at the bottom of the map.

Play / Pause - Begins and stops the playback feature.

You can click and drag the time slider to display features at a specific time, or click on the red lines along the timeline. The spacing of the lines indicates the times on the layer.

Repeat - Loops the playback so it automatically begins once all of the temporal features have displayed.

Step Back / Step Forward - Displays the previous feature again or skips forward to the next feature.

4. Select the *Filter Features by Timeline* button to display all of the features at once, essentially turning off the playback.

Fig. 1.9: Filter features by timeline turns off the timeline feature for a layer.

Creating a story

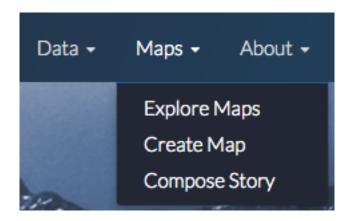
In the section Analyzing Data with Exchange, you learned how to display features with a temporal attribute, detailing the specific time an event occurred, or when a feature changed. Exchange now offers a feature that allows you to combine geographic data, text, pictures and multimedia to tell a story.

StoryScapes allows you to compile multiple temporal layers to create your own spatial narrative. Data is added to chapters, which can be separate, but related topics, or can they build off of each other, developing throughout the story. StoryScapes helps you visualize the changes in your data over time.

Compose a story

Before creating any story, you will need to ensure you have uploaded all of the layers you will use to create your chapters.

- 1. Select the **Maps** link on the Boundless Exchange toolbar.
- 2. Click **Compose Story** in the drop-down menu.
- 3. Click the *Compose Story* button in the Welcome to the Exchange Composer window.
- 4. Fill out the Story Properties form. Provide as much information as possible, so that others will know what the story is showing. Click the *Save* button when you are finished with your changes. The story saves as a Map in Exchange.



Create chapters

Like a book, map stories are comprised of chapters. You can have one chapter, or multiple chapters to tell your story.

- 1. Click the *1* button to begin working on your first chapter.
- 2. Click the *Chapter Info* button. Give your chapter a title, and provide a brief summary explaining what the data is showing. You can select a base map appropriate to your data, if you've got multiple maps available.

Note: Talk to your Exchange administrator for additional basemap services.

- 3. Click the Save Chapter Info button to create your chapter.
- 4. Click the *Back* button to return, and continue creating your chapter.

Add Story Layers

- 1. Click the StoryLayers button, and select Add a New StoryLayer.
- 2. Select layers from the Explore Layers window to add to your story. You can search for specific layers, browser through all of the layers, just yours, or those you've saved as favorites. Click the View button to preview the layer in the map viewer, or select Use to add this layer to your story.

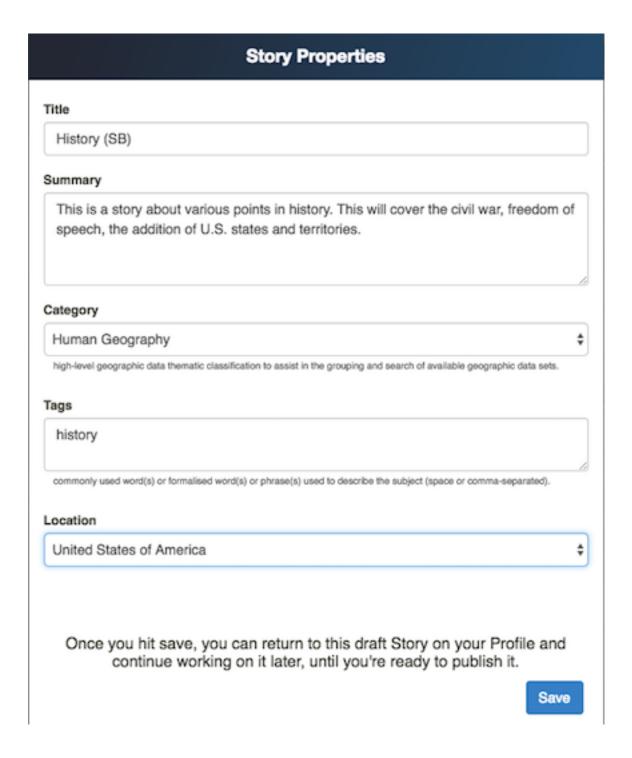
You can edit the settings of your individual layers by clicking on the title of the layer. This will open settings that allow you to edit the layer's style, view the attribute table, turn off/on individual attribute visibility, or remove the layer.

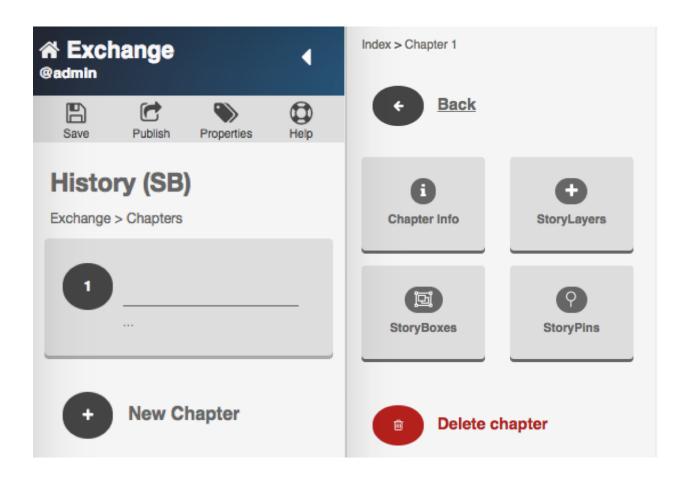
3. Once you have added all of the layers to your story, select the *Save* button to save your draft, and click the *Back to Selected Chapter* button.

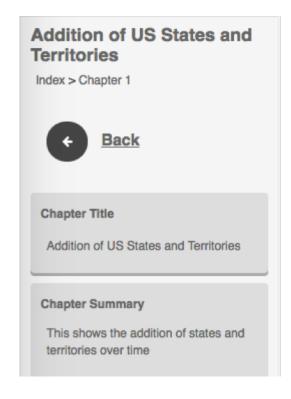
Create Story Boxes

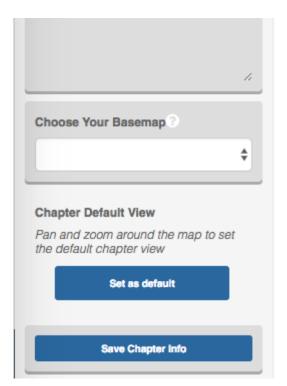
A StoryBox creates a sort of visual boundary for your story. This tells the viewer that all of the events in this chapter take place within this particular area.

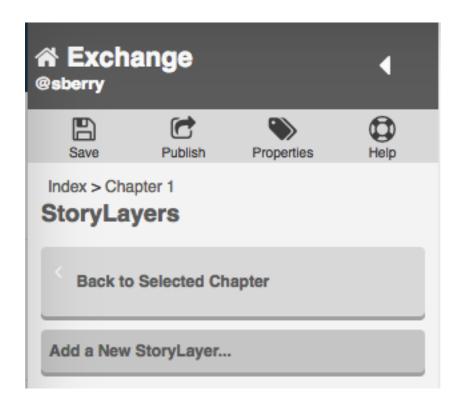
1. Click the StoryBoxes button, and select Add a New StoryBox.

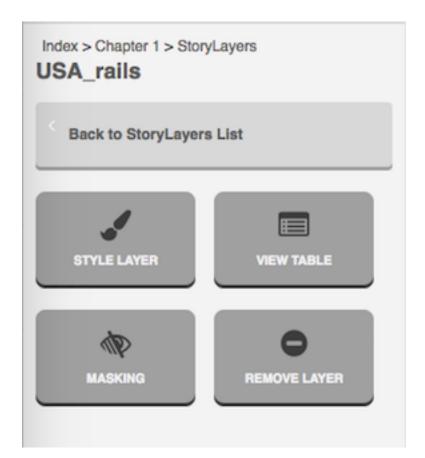


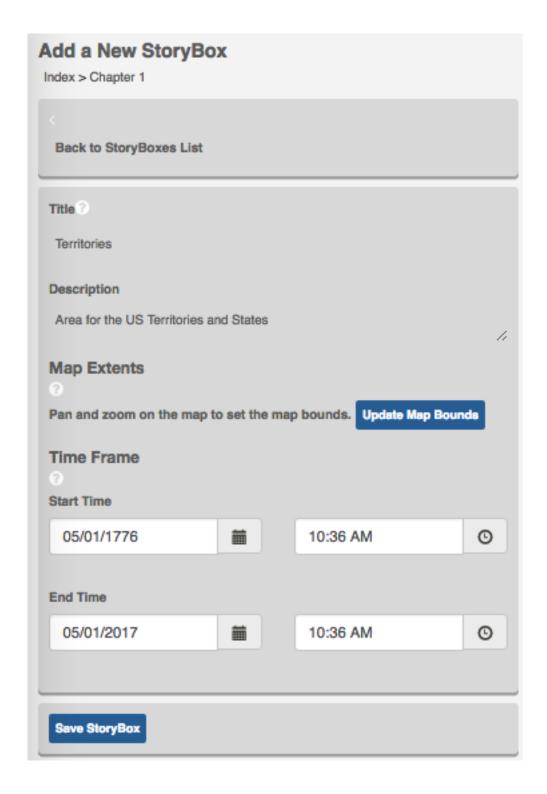












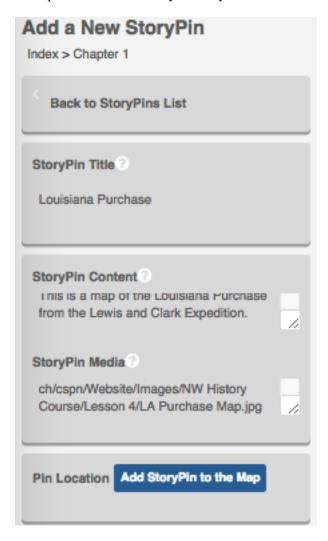
- 2. Give your StoryBox a title and brief description. Your StoryBox will appear in the timeline.
- 3. Pan and zoom on the map, and select **Update Map Bounds** to create a border area for your map.
- 4. Create a Time Frame for your story.

Every StoryBox needs a start and end time. Select start and end times that correspond to the times listed with your features.

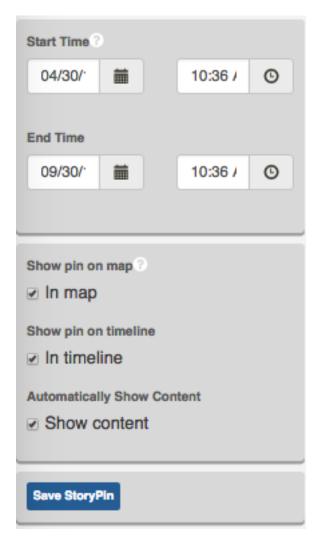
- 5. Click the Save StoryBox button to save your changes, and click the Back to StoryBoxes List to continue your story. Your StoryBox will display.
- 6. Click the Save button to save your draft, and select Back to Selected Chapter to return to your chapter and continue your story.

Add a StoryPin

- 1. Click the StoryPins button, and select Add a New StoryPin.
- 2. Fill in a title and a brief description of the content of your StoryPin.



- 3. Copy and paste the URL of your StoryPin in the StoryPin Media textbox. This can be from YouTube, Flickr, Vimeo, Vine, Twitter, Instagram, etc.
- 4. Click the Add Story Pin to the Map button to add a location where your media will display. You'll want to add a start and end time to ensure it displays at the proper point of your story. Leaving this blank will display your story point throughout the duration of the chapter.
- 5. Once you have selected the location for your pin, click the *Accept Feature* button. This will be where your pin displays.
- 6. Select the corresponding checkboxes to display your pin on the map, timeline, or both.



7. Once you have filled in all of the necessary information, select the Save button to save your draft, and the Save StoryPin button, followed by the Back to Selected Chapter to continue your Story.

Add additional chapters

Telling a complete story will likely involve adding more layers and chapters. To add the next chapter, click the Index link, and repeat the steps above. Once you have added everything to your story, select the Save button a final time to ensure your story has saved.

Publish your story

All that is left now is to share your story.

1. Click the *Publish* button to make your story available to others. Confirm that you are finished, and select the blue *Publish* button.



2. You will receive a congratulatory message once your story has saved. Click the **View your Story** hyperlink to open your completed project.

From here, you can press the play button to watch your story play out. Your chapters will be listed in the index on the left. You can also click on the title of the story, and open the viewer in full screen.

Administration

Django Administration

Exchange users with administrator privileges are able to maintain site setting through the Django Site Administration page. Here you can manage user accounts, content, and system settings.

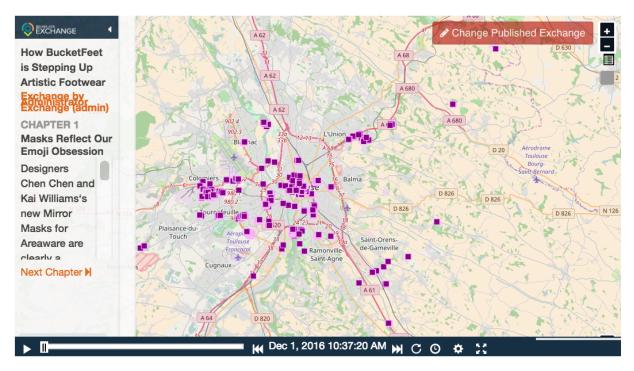
To access the Django administration site, log in to Exchange using your administrator credentials, and select Admin in the profile drop down menu. You will be directed to the Django administration site.

Accounts

This section covers how to add, modify and delete Exchange user accounts. All of the options in this section are available through the Account menu on the Django Site administration page.

Account creation

- 1. To create an Exchange user account, select the Add link next to Accounts.
- 2. Click the green plus (+) button next to the User list to add another user.
- 3. Create a username and password that will be remembered by the user. Confirm the password and select the Save button.
- 4. Select the timezone and primary language for the user from the drop down menus.
- 5. Click the Save button to save the account.



How BucketFeet is Stepping Up Artistic Footwear



Summary

Raaja Nemani & Aaron Firestein, the creators of BucketFeet, admit they're polar opposites. Aaron is an artist who met Raaja, an investment banker, by chance in Buenos Aires. Raaja bought a pair of Aaron's hand-painted shoes, and everywhere he went on his travels after, people asked him about their incredible look. This is how BucketFeet was born, and its founders gave us some insight into what their brand has become since that serendipitous moment.

Category: Elevation

Tags:

Chapters

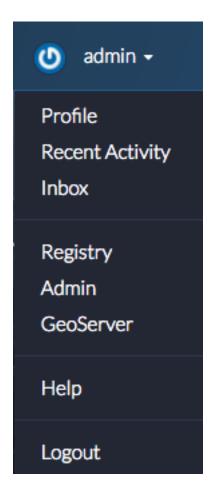
Masks Reflect Our Emoji Obsession

The High-Flying Philosophy of Flight 001

Chapter 1: Masks Reflect Our Emoji Obsession

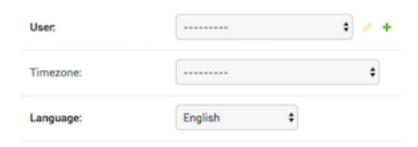
Designers Chen Chen and Kai Williams's new Mirror Masks for Areaware are clearly a reflection of our emoji obsession. Originally conceived as more elaborate, almost tribal designs, the designers ultimately opted to shift towards a concept that played with feelings through the use of an instantly recognizable face. To visualize this direction, Areaware's team collaborated with up-and-coming Brooklyn artist Carson Fisk-Vittori who took the mirrors to Mexico City and shot photographs in various settings.

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ACCOUNT		
Account deletions	+ Add	Change
Accounts	+ Add	
Email addresses	+ Add	
Signup code extendeds	+ Add	Change
Signup codes	+ Add	Change

Add account



Modify an existing account

Changing a user's password, setting permissions, and editing their email address can all be completed in the Account section.

Edit user information

- 1. Select Accounts in the Account menu, and click on the username whose information you'd like to modify.
- 2. Click the pencil icon next to the username, and make the changes to the account. When you are finished, click the *Save* button to save your changes.

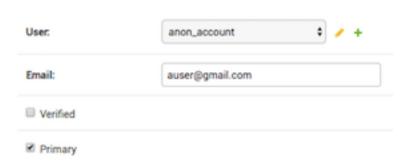
Within the Change User screen, you can update the following user information:

- Personal info The basics
- User permissions Designates what type of account the user has, groups the user belongs to
- · Important dates
- Extended profile information Organization, location, biography

Edit an email address

- 1. Select Email addresses in the Account menu, and click on the user name whose email you'd like to modify.
- 2. Update the email address, and check the box to display if the email has been verified, and if this is the user's primary email address.

Change email address



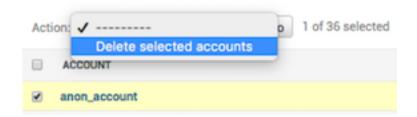
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3. Click the save button when you are finished, or continue modifying any additional accounts.

Delete a user account

- 1. Select Accounts in the Account menu, and check the box next to the user account(s) you want to delete.
- 2. Select Delete selected accounts in the Action menu, and click the Go button.

Select account to change



3. Click the Yes, I'm sure button to verify your selection. You will be notified that the account was successfully deleted.

Signup codes

As an administrator, you are able to invite individuals to try Exchange. When you do this, a signup code is generated. This signup code is used to track trial users in Exchange. From this site, you can modify when the signup code expires, the number of times it can be used, or delete the code itself.

Invite users

1. Select Profile in your profile drop down menu, and click Invite User in the lower right corner.

Note: While this is not done in Django, you must have the required privileges to invite users.



- 2. Type the email address of the person you'd like to invite, and provide an easy to remember username.
- 3. Click the *Invite User* button when you are finished.

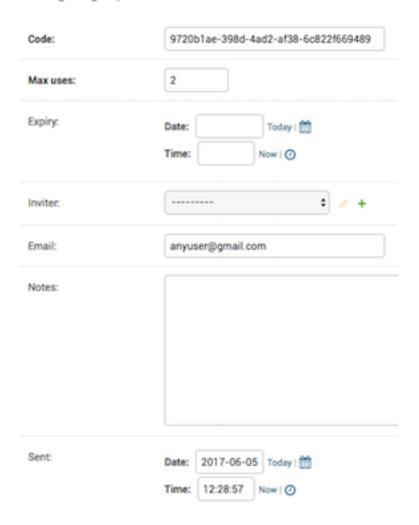
The guest will receive an email notifying them that they have been invited to sign up for an Exchange account.

Signup codes

You will need to return to the Django administration site to modify signup codes.

- 1. Select Signup Codes in the Account menu, and click on the code you'd like to view.
- 2. Make all necessary changes, and click the Save button. From this screen, you are able to:
 - Modify the number of times the code can be used
 - Set an expiration date for the invitation
 - Add the individual who sent the invitation
 - · Add any notes relevant to the invitation or its recipient

Change signup code



To delete the signup code, click the *Delete* button, and select **Yes, I'm sure** to verify your choice.

Actstream (Activity Stream)

Exchange uses Django Activity Stream, which creates a list of activities generated by the actions on your site, and allows you to quickly visualize who is performing what actions. An action is a description of an action that was performed (Verb) at some instance in time by some Actor on some optional Target that results in an Action Object getting created/updated/deleted.

Action events are categorized by four main components.

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- Actor The user who performed the activity.
- Verb The verb phrase that identifies the action of the activity, such as created or deleted.
- Action Object The object linked to the action itself, such as a layer or a map.
- Target The object to which the activity was performed. Currently, Exchange is not using this component.

For example: admin (actor) uploaded (verb) a layer (object) 12 hours ago.

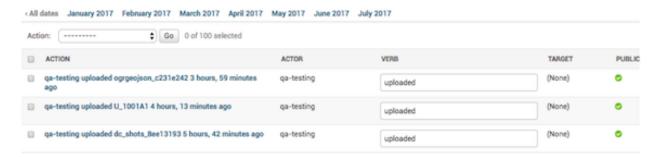
1. Click Actions in the Actstream menu on the Django site administration page.



All of the actions that have taken place within Exchange will be listed, along with who performed it (actor), and what they did (verb). The target and whether or not the action is public is also listed, but they are not used at this time.

2. Click on an action to view more details.

Select action to change



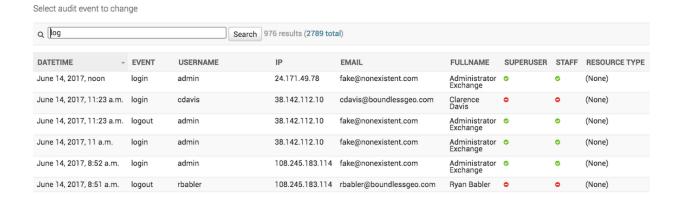
Audit trail

The audit trail is intended to display all of the activities that happen within Exchange. It tracks who performed what actions, and when. Included is detailed information about the user, such as their IP, email address, full name and their user status.

To view the audit trail, click Audit events in the Audit trail menu on the Django site administration page.



A list of all of the events that have occurred within Exchange will display. From here, administrators can filter everything for specific types of events, users, etc. using the search field. Simply type a term in the textbox, and click the Search button.



Audit trail is very similar to the Activity stream feature, but the primary difference is that with Audit trail, you are able to see when an event occurred, and from where. Activity stream tells you exactly what action has taken place.

Announcements

Administrators can create short messages for all Exchange users that will be placed at the top of their screen. Their importance level, determined by the originator, can range from general to critical, and can easily be scheduled for publication.

Create an announcement

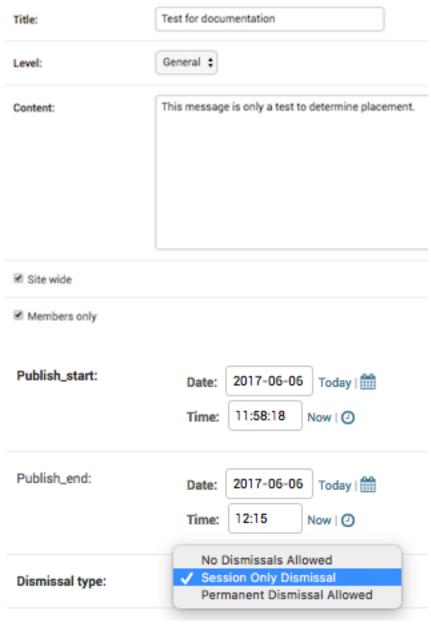
1. Click the green plus (+) Add button next to Announcements.



- 2. Provide a title for your message, and select the level of importance for your message from the Level list. Your options are General, Warning and Critical, and should be determined by the nature of the announcement.
- 3. Type your full message in the Content textbox.
- 4. Select the checkboxes to determine whether or not you'd like your announcement to be seen site-wide, and/or for Exchange members only.
- 5. Use the publish start and end options to create a display time limit for your message, and select a dismissal option from the menu.
- 6. Click the *Save* button to create your announcement. To verify your announcement is correct, click the View on site button in the upper right corner.

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Add announcement





Test for documentation

June 6, 2017, 12:10 p.m.

This message is only a test to determine placement.

Delete an announcement

- 1. When you are ready to delete your announcement, click Announcements under the Announcements menu on the Django Site administration page.
- 2. Check the box next to the announcement(s) you'd like to delete, and select **Delete Selected Announcements** in the Action menu, followed by the *Go* button.

Select announcement to change



3. Click the *Yes, I'm sure* button to verify your selection. You will be notified that your announcement was successfully deleted.

Avatars

Administrators can create, delete or manage avatars for users through the Django administration site. Valid image files are accepted (jpg, jpeg, png, tif, etc).

Add a new avatar

1. Click the green (+) Add button in the Avatar menu on the Django administration page.



- Select a user from the list, and determine if this will be the main image for the account by clicking the Primary checkbox.
- 3. Browse to the avatar image by selecting the *Choose File* button. Once the file name displays, click the Save button. You will be notified that the avatar was added successfully.

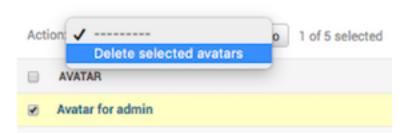
Change an existing avatar

- 1. Select Avatars from the Avatar menu on the Django administration page, and click the name of the account whose avatar will change.
- 2. Click the *Choose File* button to select a new avatar image, followed by the *Save* button. You will be notified that the avatar was successfully changed.

Delete an avatar

- 1. Select Avatars from the Avatar menu on the Django administration page, and click the checkbox next to the name of the avatar to be deleted.
- 2. Select Delete Selected Avatar from the Action menu, and click the Go button.

Select avatar to change



3. Verify your selection by clicking the Yes, I'm sure button.

You will be notified that the avatar was successfully deleted.

Documents

The Documents section is designed to help manage documents that have been added to Exchange. This section will explain how to add new documents through Django, and how to edit and delete existing documents. All of the options in this section are available through the Documents menu on the Django Site administration page.

Add a document

1. Click the **Add** link next to Documents on the Django Administration site Documents menu.



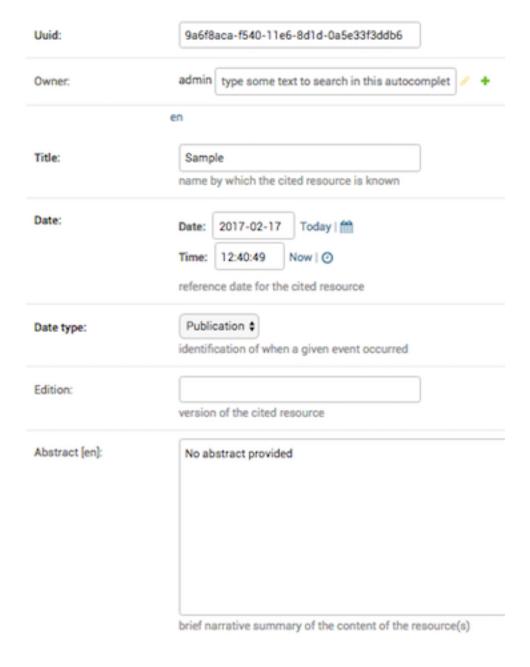
2. Complete as much of the Add document form as possible; all of the fields on the form in **bold** are required.

You will see this form throughout the Django admin site. Additional fields are used in the Maps, Layers, CSW Records and StoryScapes forms.

Uuid - This field is required, and is only auto-generated through the Exchange User Interface. You can find UUID generators online to help you create one for use here.

Owner - Type or select your user name from the list.

Title - Provide a title for your document.



Date/Time - The date and time will automatically populate with the document upload date. It is the reference date for the document, and does not need to correlate to the time period of the data (which will be configured later).

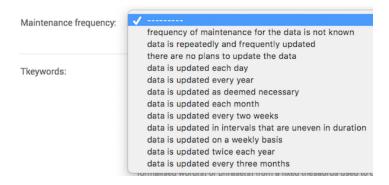
Date type - This will indicate whether the date/time from above is related to the document's creation, publication or revision.

Edition - If there have been revisions to your document, you can let users know by adding a version number here.

Abstract - Let others know what the document is about with a brief narrative summary.

Purpose - Provide a short description of why the document was created.

Maintenance frequency - From the pull down, select how often modifications and deletions are made to the data after it is first published.



Keywords region - Select a region/country from the list which best fits the data. Hold down Control, or Command on a Mac, to select more than one.

Restrictions - Select from a list of limitations which can be placed on the access or use of the data. Provide a description of "Other Restrictions" in the textbox.



License - Select data licensing requirements from the list. Not all data has licensing requirements.



Language - Select the language used within the dataset.

Category - Data is divided into categories, which assists in the grouping and search of available geographic datasets. These categories correspond to those on the Exchange homepage.

Spatial representation type - This explains the method used to represent geographic information in the dataset.

grid data is used to represent geographic data
three-dimensional view formed by the intersecting homologous rays of an overlapping pair of images
textual or tabular data is used to represent geographic data
triangulated irregular network
vector data is used to represent geographic data
scene from a video recording

Temporal extent start / end - Set the time period covered by the content of the dataset.

Supplemental information - Include any other descriptive information about the dataset.

Data quality statement - Provide a general description of the validity and legitimacy of the dataset. Explain any changes in the data over time.

Bounding boxes - There are four boxes to enter the coordinates for your bounding boxes. Enter the points for all of the X,Y coordinates.

Important: The following fields are automatically populated by Exchange, and should not be changed. Making edits to these fields could result in data loss.

- Srid
- · CSW typename
- · CSW schema
- · CSW source
- CSW type
- · CSW anytext
- · CSW WKT geometry
- · Metadata xml
- · Object ID

Metadata - Click the checkboxes to ensure the metadata is uploaded and preserved. The Metadata XML will automatically generate once the document is saved.

Counts - Popular count and Share count will update as the document is viewed and shared.

Featured - Click the checkbox to feature this document on the homepage under the Featured Content section.

Is Published - This allows others to find your document when it is completed. It will make it searchable through the Exchange search.

Thumbnail URL - Enter the URL for the thumbnail for your document. This will be what users see when searching for your document in Exchange.

Srid:	EPSG:4326
CSW typename:	gmd:MD_Metadata
CSW schema:	http://www.isotc211.org/2005/gmd
CSW source:	local
CSW type:	series ‡
CSW anytext:	Geographic information - Metadata ISO 19115:2003 4326 EPSG 6.11 Sample 2017-02-17T12:40:49Z publication mapDigital No abstract provided completed https://dev.exchange.boundlessps.com/media/thumbs/document-9a6f8aca-f540-11e6-8d1d-0a5e33f3ddb6-thumb.png Thumbnail for 'Sample' image/png ESRI Shapefile 1.0 None eng utf8 -180 180 -90 90 No information provided https://dev.exchange.boundlessps.co/documents/124 WWW:LINK-1.0-httplink Online link to the 'Sample' description on GeoNode https://dev.exchange.boundlessps.com/media/thumbs/document-9a6f8aca-f540-11e6-8d1d-0a5e33f3ddb6-thumb.png WWW:DOWNLOAD-1.0-httpdownload .png Sample (Thumbnail Format) dataset
CSW WKT geometry:	POLYGON((-180 -90,-180 90,180 90,180 -90,-180 -90))

Detail URL - This is the number assigned to your document, and is added to the end of the Exchange URL. This can make accessing your document easier in the future; just enter the Exchange URL, followed by /document/<document number>. The detail URL is created after saving your document.

Rating - Once your document is published, others can provide a rating to let you know what they think of it.

Content type - This does not necessarily correspond to the file's extension type, but rather the type of data in the file.

File - Click the Choose File button to browse to and change the file.

Extension - The following file types can be uploaded: .doc, .docx, .gif, .jpg, .jpeg, .ods, .odt, .pdf, .png, .ppt, .pptx, .rar, .sid, .tif, .tiff, .txt, .xls, .xlsx, .xml, .zip, .gz, .qml.

Doc type - Is the file an image, document, presentation, etc.?

URL - The URL of the document if it is external.

Keywords - Enter words or phrases, separated by commas, used to describe the subject, and can be search by other users.

3. Once you have completed the form, click the Save button to add your document to Exchange.

Edit existing documents

- 1. To edit an existing document, click the Change link in the Documents menu.
- 2. Find the document you'd like to edit. You can do this multiple ways:
- Type all or part of the document name in the search field at the top of the page.
- Select a filter term on the right side of the page to minimize document results
- Scroll through the list of results.

Q Search By date January 2017 February 2017 March 2017 April 2017 < All dates Any date Today 0 of 27 selected Action: Go Past 7 days This month ID TITLE DATE CATEGORY This year 433 Wild-pig.xlsx April 20, 2017, 2:45 p.m. By date type 316 Logo SVG March 27, 2017, 4:47 p.m. Imagery/Collections Cambridge, MA Basemap March 3, 2017, 12:38 p.m. Imagery/Collections 175 Creation 167 Cambridge, MA Aerial 1947 March 2, 2017, 10:30 a.m. Imagery/Collections Publication

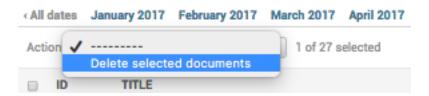
Select document to change

- 3. Click on the ID number of the document you'd like to edit. The Change document page will open, and you can begin editing the metadata.
- 4. Click the Save button once you have made all of your edits.

Delete a document

If you no longer need a document, and would like to remove it from Exchange, it can be quickly and easily deleted from the system.

- 1. Click **Change** in the Documents menu to open the list of all documents.
- 2. Click the checkbox next to the document you'd like to delete.
- 3. Select **Delete selected documents** from the Action menu, and click the *Go* button.



4. Click the *Yes, I'm sure* button to verify your selection. You will be notified that the document was successfully deleted.

Your document will no longer be available in Exchange.

Groups

The Groups section of the Django administration site allows users with admin credentials to manage groups within Exchange. This section will explain how to invite individuals to groups, create or delete groups, and modify group profiles.



Create a group

- 1. Click the **Add** link next to Group profiles on the Django Administration site Groups menu to open the Add group profile page.
- 2. Provide a unique title for your group. This will also be what is used for the Slug field. The Slug is a unique identifier for your group. If your group title is comprised of multiple words, you will need to use a hyphen or an underscore to replace the spaces.

http://www.exchange.com/groups/groups/We-Love-Maps.

- 3. Browse to an image you want to use as a logo for the group.
- 4. Provide a brief description of the group. Explain briefly why the group was created, who the members are, or what service the group provides.

Add group profile

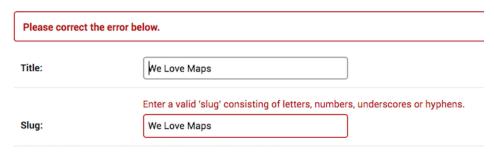
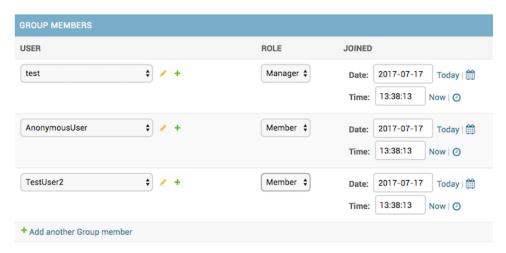


Fig. 1.10: A slug is the URL friendly version of the title. For example, with the group We Love Maps, the slug would be either We-Love-Maps or We_Love_Maps. When the URL for the group is created, it becomes something like this:

- 5. Add an email address. This can be an email used to contact one or all of the group members, such as a mailing list, shared email, or an exchange group.
- 6. Select the type of access you'd like users to have to the group from the Access menu. The group can be Public, Public (invite-only), or Private.



- 7. Add any keywords that may be helpful for users to find your group, or determine if the organization is relevant to their work.
- 8. Add members to the group by selecting Exchange users from the pull down list, and select either Manager or Member from the Role menu. If adding more than three members, to a group, select the **Add another Group member** link. This will add another row for an additional member.



9. Once all of the group members have been added, click the *Save* button to create the group. This will direct you to the list of existing groups. A notice will display, indicating the group profile was added successfully.

Manage groups

Update existing group profiles and modify group members through the Django site.

- 1. Click **Group profiles** in the Groups menu on the Django administration site Groups menu to open the list of existing groups.
- 2. Open the Change group profile page for a specific group by selecting on the name of the group you'd like to modify.

From here, you are able to to change the group information, add or remove group members, and change member roles. To delete a user from a group, click the checkbox under the delete column next to their name.

3. Click the *Save* button when you are finished to save your changes.

Delete a group

- 1. Click **Group profiles** in the Groups menu on the Django administration site Groups menu to open the list of existing groups.
- 2. Click the checkbox next to the name of the group to be deleted, and select **Delete selected group profiles** in the Action menu, followed by the *Go* button.

Action: Delete selected group profiles GROUP PROFILE We Love Maps Docu testing testgroup QA rbabler Group Test organization

Select group profile to change

6 group profiles

3. Click the *Yes, I'm sure* button to verify your selection. You will be notified that you have **Successfully deleted** 1 group profile.

Layers

The Layers section of the Django administration site is used to maintain features for a layer. The primary function used in this section is the ability to edit individual attributes for a layer. The other options in the Layers section are not covered in this documentation.

Edit attribute fields for a layer

1. Click the Layers link in the Layers menu on the Django administration page. This will open a list of all layers available on your site.



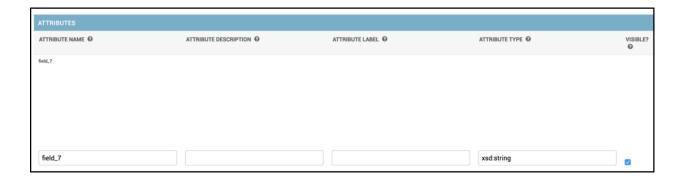
- 2. Find the layer whose attributes you'd like to edit. You can do this multiple ways:
 - Type all or part of the layer name in the search field at the top of the page.
 - Select a filter term on the right side of the page to minimize layer results.
 - Scroll through the list of results.



- 3. Once you have found the layer you'd like to edit, click on the ID number. This will open the Change Layer page. Scroll to the Attributes section at the bottom of the page.
- 4. Type the new attribute label and description in the text box. To turn visibility off/on for an attribute, click the visibility check box. Click the save button at the bottom of the page when you are finished.

Osgeo_Importer

The primary use of the Osgeo_Importer section is to help Exchange admin users manage data, files and layers imported through the web user interface. This section will cover how to view and delete existing uploaded files. All of the



options in this section are available through the Osgeo_Importer section on the Django Site administration page.

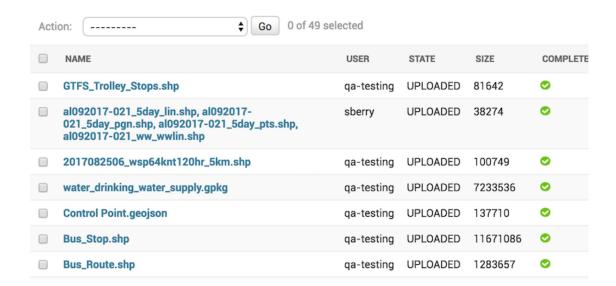
View Uploaded data

 Click the Upload data link under the Osgeo_Importer menu on the Django Administration site Osgeo-Importer menu.

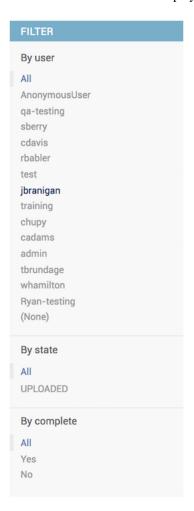


Data that has been uploaded into Exchange will be listed on the page. Information is listed for the name of the data file, the user who uploaded it, the state of the file (typically will display UPLOADED), and the size of the file. A green checkmark will display, indicating the data upload was completed successfully.

Select uploaded data to change



Uploaded data can be filtered by selecting one of the filter options. Available options allow you to filter by user, by state and by complete. Select on one of the links to narrow the results displayed to fit your filter criteria.



2. Click on a file name to view the individual file information.

Note: These fields were populated at the time the file was imported, and should not be changed. This section should be thought of as for informational purposes only to view the status, size or file type for a file.

3. Click the browser's back arrow to return to the previous page.

View Uploaded files and Uploaded layers

1. Click either the **Upload files** or **Upload layers** link under the Osgeo_Importer menu on the Django Administration site Osgeo-Importer menu.

The Upload files page will display the directory link for the file.

Clicking on the file link will open the Change file upload page, where you can change the uploaded file or view the file type. It is not recommended that this information is changed, as it could lead to loss of data. This is intended for reference only.

Select upload file to change

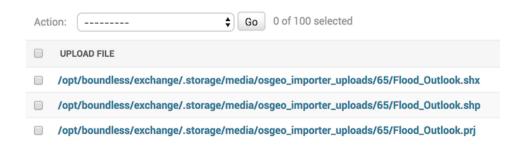


Fig. 1.11: List of uploaded files

Selecting **Upload layers** will display the list of layers by name and feature count. The task ID will be the unique ID assigned to the layer upon upload.



Fig. 1.12: List of uploaded layers

Delete uploaded data/files/layers

Users with administrator privileges are able to delete uploaded content from within the Django Administration site quickly, and easily.

- 1. From the list of uploaded content, click the checkbox next to the name of the data/files/layers you'd like to delete.
- 2. Select the delete option from the Action drop down menu, and click the **Go** button.



3. Verify your selection by clicking the *Yes, I'm sure* button.

Working with Registry

In Exchange, there are two primary types of data that can be added to Registry, a service or a single layer. A service is two or more layers being added to the map at the same time, whereas a single layer is just an individual layer. The form is the same for either one, but you will need to have a relatively good understanding of your data in order to successfully insert your new record.

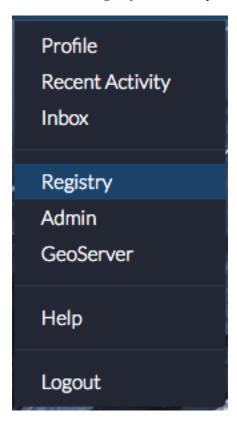
Currently, you can add the following services in Exchange:

- WMS Web Map Service
- MapServer ESRI Map Service
- ImageServer ESRI Image Service

Add an individual record to CSW

Exchange users with administrator privileges are able to add CSW records through their Exchange webpage.

1. Click on your user name in the toolbar. Select **Registry** from the drop-down menu to open the record form.



2. A list of all items registered in Exchange will open, displaying their status as Complete, Unknown, Pending, or Error. Click the *Register a new Record* button in the top right corner to add a new record.

Click the Register a new Record button in the top right corner to add a new record.

3. Complete the form with all of the necessary information.

Service URL - This is the URL address for the endpoint you are trying to add.

Registered Items

Register a new Record

Title	URL	STATUS	USER
Apple	https://mapstory.org/geoserver/geonode/wms	Complete	
Layers 1234	https://ingamaps.geointapps.org/arcg/s/rest/services/Hurricane_Matthew/Haiti_Latest_Assessments/MapServer	Complete	
Layers 8	http://maps.dggs.alaska.gov/arcgis/rest/services/pub_thumbs/mp141/MapServer	Complete	
Shipping and Hydrography	https://ngamaps.geointapps.org/arcgis/rest/services/Arctic_Summit/Shipping_and_Hydrography/MapServer	Complete	
Quaternary faults and folds in Alaska	http://maps.dggs.alaska.gov/arcgis/rest/services/pub_thumbs/mp141/MapServer	Error	admin
Layers	$https://ngamaps.geointapps.org/arcgis/rest/services/Arctic_Summit/Shipping_and_Hydrography/MapServerwittps://displayserverwittps:/$	Unknown	admin
Boundless CD	https://demo.mapstory.org/geoserver/geonode/wms	Complete	admin
DC Metro Bus Lines	$http://maps2.dcgis.dc.gov/dcgis/rest/services/DCGIS_DATA/Transportation_WebMercator/MapServer$	Complete	admin
Hurricane_Matthew CD	$https://ngamaps.geointapps.org/arcgis/rest/services/Hurricane_Matthew/Haiti_Latest_Assessments/MapServerwittense$	Complete	admin
Layers Noon	$https://ngamaps.geointapps.org/arcgis/rest/services/Hurricane_Matthew/Haiti_Latest_Assessments/MapServerwittense$	Complete	admin
Minneapolis_Contours	$https://services.arcgis.com/afSMGVsC7QIRK1kZ/ArcGIS/rest/services/Minneapolis_Contours/FeatureServerwith the contours of the$	Complete	admin
PWStreetPavementMgmt	https://services.arcgis.com/afSMGVsC7QlRK1kZ/ArcGlS/rest/services/PWStreetPavementMgmt/FeatureServerwind (and the control of	Complete	admin
VPM Web Service	http://maps2.dcgis.dc.gov/dcgis/rest/services/DCGIS_APPS/vpmwebservices/MapServer	Complete	admin
Layers	$https://ngamaps.geointapps.org/arcg/s/rest/services/Hurricane_Matthew/Haiti_Latest_Assessments/MapServer$	Error	admin
Layers	$https://ngamaps.geointapps.org/arcg/s/rest/serv/ces/Arctic_Summit/Shipping_and_Hydrography/MapServerwittps://dispress/server$	Error	admin
Layers - blah cbt	$https://ngamaps.geointapps.org/arcg/s/rest/serv/ces/Hurricane_Matthew/Haiti_Latest_Assessments/MapServerwittps://displayserverwitt$	Error	admin
Layers	$https://ngamaps.geointapps.org/arcg/s/rest/serv/ces/Hurricane_Matthew/Halti_Latest_Assessments/MapServerwittense$	Pending	admin
Test	https://mapstory.org/geoserver/geonode/wms	Pending	admin
Layers	$https://ngamaps.geointapps.org/arcg/s/rest/serv/ces/Hurricane_Matthew/Halti_Latest_Assessments/MapServerwittense$	Unknown	admin
Layers	http://maps2.dcgis.dc.gov/dcgis/rest/services/DCGIS_APPS/Cultural_Assets/MapServer	Unknown	admin

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Geoserver Example: https://mapstory.org/geoserver/geonode/wms

ESRI MapServer Example: https://ngamaps.geointapps.org/arcgis/rest/services/Hurricane_Matthew/Bahamas_Latest_Damage

Note: Entering a MapServer url will auto-populate the available services such as WMSServer, WFSServer, Feature-Server.

ESRI MapServer WMSserver Example: https://ngamaps.geointapps.org/arcgis/services/Hurricane_Matthew/Haiti_Latest_Asse ESRI ImageServer Example: https://gis.ngdc.noaa.gov/arcgis/rest/services/bag_hillshades/ImageServer

Title - This field should populate automatically. The title should be related to the data, but should also be unique enough to find when performing a search. You can change the title if you don't want what auto-filled.

Layer Identifier - For ESRI MapServer Services, this field will be populated automatically; however, for any other service type, the name of the layer is required for this field.

Category - Select a category from the list that best describes your data.

Abstract - The abstract should provide a brief description of the data being added.

Agency - Where did the information come from? This should also auto-populate. If Exchange is unable to detect who the data belongs to from the endpoint, add the creator/agency information.

Contact Email - Please add your email address here.

Contact Phone - Please add a contact phone number here.

Gold - Select this checkbox if the data is NGA-approved content.

Additional services types (also called references) can be added by selecting the type from the drop down menu, and adding the URL. Service types discovered from the service URL are also listed at the top of the form.

4. Click the Submit Record button to nominate record.

Note: Contact your Exchange administrator if the status does not display as Complete. They will need to take a look at your record via Django administration. Please see step 5 in the record administration section below.

For additional examples of records that have been successfully added in Exchange, please check out the Appendix.

Verify the record

Once you submit your record, you will be directed to the Registered Items page. To verify the record status in Registry, you can search for it using the Exchange search field at the top of the page, or use the Add Layer function from your map.

CSW Record Administration

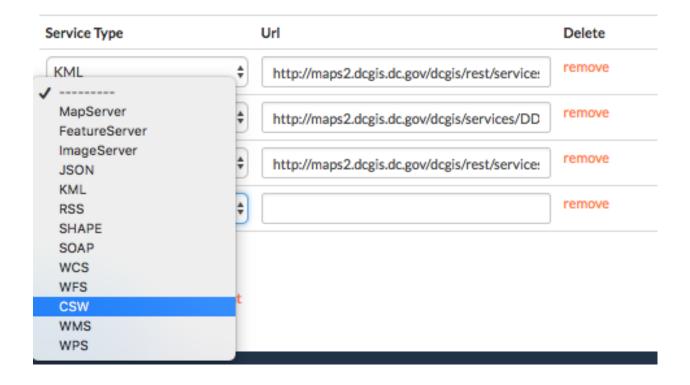
Add a CSW record

Records can also be added through the Django administration site. The form there requires you to add all data manually, and does not have an auto-populate function.

- 1. Click on your user name in the toolbar. Select **Admin** from the drop-down menu to open the record form.
- 2. Click Add next to CSW Records from the Core menu on the Django administration site.

Register New Record

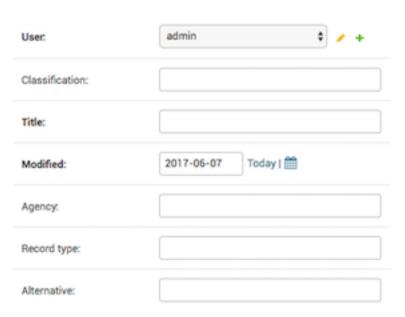
Below are the additional s	ervice typ	es disovered from service url.	
KmlServer WMSSer	ver M	apServer	
Service Url:			
http://maps2.dcgis.dc.go	v/dcgis/re	est/services/DDOT/WazeData/MapServer	
e.g. http://example.com/ArcGIS	/rest/servio	es/Specialty/ESRI_StateCityHighway_USA/MapServer	
Title:			
Waze Data			
Category:			
Names & Boundaries			‡
Abstract:			
WAZE Data for Papal vis	it.		
Agency:			
DDOT			
Contact Email:			
sberry@boundlessgeo.co	om		
Contact Phone:			
555-1212			
Gold:			
		114	Delete
Service Type		Url	Delete
KML	\$	http://maps2.dcgis.dc.gov/dcgis/rest/service:	remove
22WMS	\$	http://maps2.dcgis.dc.gov/dcgis/services/Deha	pter 1. User Guid
MapServer		http://maps2.dcgis.dc.gov/dcgis/rest/service	remove





3. Complete the form with all of the necessary information. All of the fields on the form in **bold** are mandatory.

Add CSW Record



User - Select a user from the list to be the owner of the record.

Classification (optional) - Unless the data resides on a classified system, this will remain blank/UNCLASSIFIED.

Title - The title should be related to the data, but should also be unique enough to find when performing a search for data.

Modified - This field is filled in by default, but can be edited to match what is true for the data.

Agency - Where did the information come from?

Record Type - The type field denotes what kind of data is being added.

For the services listed below, you would use the following information:

- ESRI map server ESRI:ArcGIS:MapServer
- ESRI image server ESRI:ArcGIS:ImageServer
- · WMS Services dataset

Alternative - An ESRI service will number each of the layers (starting with zero), and when adding data from a service, the alternative field points to the id individual layer to be pulled from that server. For GeoServer OGC services, the value for the Alternative field can be pulled from the layer name which is a string that does not contain spaces. If you leave the space blank, all of the associated layers will be added.

Abstract - The abstract should provide a brief description of the data being added.

Service Endpoint - This is the URL address for the endpoint you are trying to add.

Geoserver Example: https://mapstory.org/geoserver/geonode/wms

ESRI MapServer Example: https://ngamaps.geointapps.org/arcgis/rest/services/Hurricane_Matthew/Bahamas_Latest_Damage

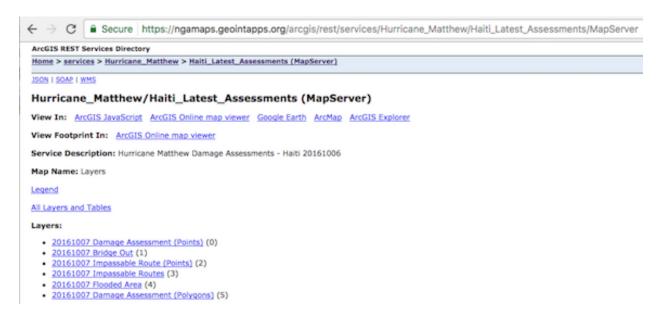


Fig. 1.14: List of layers with ID's for the MapServer. The layer ID for Bridge Out is '1' as indicated by the value in the parenthesis.

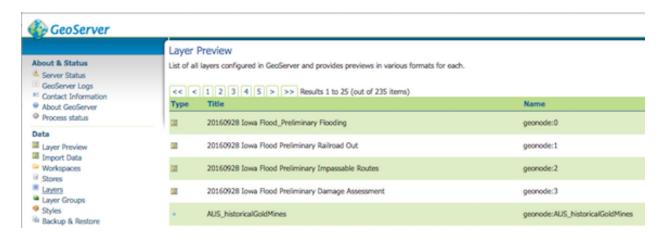


Fig. 1.15: Geoserver typically follows the format of <workspace>:<name>. The <name> portion is all that's needed for the Alternative field.

Service Endpoint:	
Relation:	
Record format:	

ESRI MapServer WMSserver Example: https://ngamaps.geointapps.org/arcgis/services/Hurricane_Matthew/Haiti_Latest_Asse ESRI ImageServer Example: https://gis.ngdc.noaa.gov/arcgis/rest/services/bag_hillshades/ImageServer

Relation - This field is not currently used. It is used to associate records to one another

Record Format - This can vary depending on the kind of data being added. When registering a WMS service, format must be set to OGC:WMS.

Bbox upper corner:	85.0 180
Bbox lower corner.	-85.0 -180
Contact email:	
Contact phone:	
□ Gold	
Category:	
Status message:	
Status:	Unknown

Bounding Box coordinates: Upper Corner - The bounding box defaults to an area that will cover what is being added. It is recommended to leave the default settings (85.0 180, -85.0 -180) unless you have specific requirements.

Bounding Box: Lower Corner - Same as above.

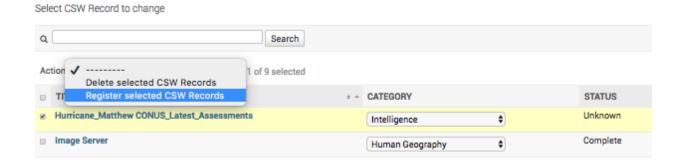
Contact Email - Please add your email address here.

Contact Phone - Please add a contact phone number here.

Gold - Select this checkbox if the data is NGA-approved content.

Category – Select a category from the drop-down menu.

- 4. Once you have completed the form, click the Save button. You will be returned to the CSW record page, and notified that your record was added successfully.
- 5. A record added through the Django administration site will display the status as **Unknown**. Click the checkbox next to your record, and select **Register Selected CSW Record** from the Action menu. Click the *Go* button.



Delete a record

- 1. Select **CSW Records** from the CORE menu on the Django administration site.
- 2. Click the checkbox next to the record(s) to be deleted.
- 3. Select Delete selected CSW Records from the Action menu, and click the :guilabel'Go' button.
- 4. Click the Yes, I'm sure button to verify your selection.

Managing Storyscapes

Through Django, administrators are able to create, delete and manage stories.



Create a story

Build the story index

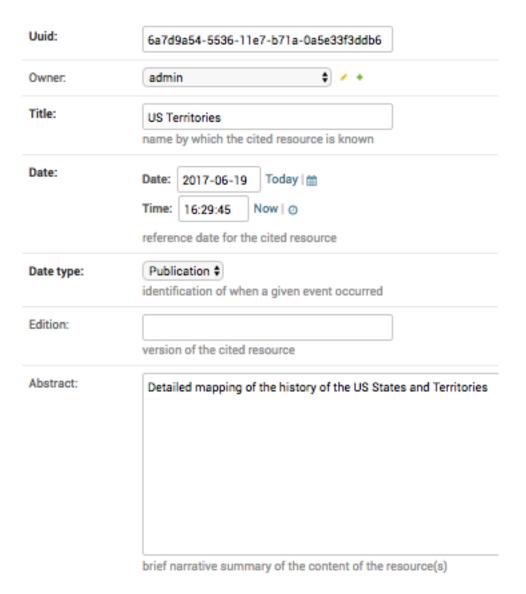
Users with administrator privileges are able to create stories through Django by clicking the Add link next to Stories in the Storyscapes menu.

- 1. Ensure the layers you want to use for your story have previously been uploaded, and are available in Exchange.
- 2. Fill in as much of the form as possible; all of the fields on the form in **bold** are required.

There are several options available through the Django administration site that are not available through the Exchange user interface. They provide a more detail for the story and its metadata, but typically require a little more knowledge of the datasets.

Uuid - This field is required, and is only auto-generated through the Exchange User Interface. You can find UUID generators online to help you create one for use here.

Owner - Select your user name from the list.



Title - Provide a title for your story. It should encompass all of the chapters that will make up your story.

Date/Time - The date and time will automatically populate with the story creation date. It is the reference date for the story, and does not need to correlate to the time period of the story data (which will be configured later).

Date type - This will indicate whether the date/time from above is related to the story's creation, publication or revision.

Edition - If there have been revisions to your story, you can let users know by adding a version number here.

Abstract - Let others know what the story is about with a brief narrative summary.

Purpose - Provide a short description of why the story was created.

Maintenance frequency - From the pull down, select how often modifications and deletions are made to the data after it is first published.

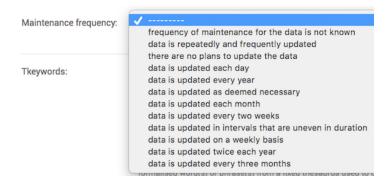


Fig. 1.16: Maintenance frequency options

Keywords region - Select a region/country from the list which best fits the data. Hold down *Control*, or *Command* on a Mac, to select more than one.

Restrictions - Select from a list of limitations which can be placed on the access or use of the data. Provide a description of "Other Restrictions" in the textbox.



License - Select data licensing requirements from the list. Not all data has licensing requirements.



Fig. 1.17: License requirement options

Language - Select the language used within the dataset.

Category - Data is divided into categories, which assists in the grouping and search of available geographic datasets. These categories correspond to those on the Exchange homepage.

Spatial representation type - This explains the method used to represent geographic information in the dataset.

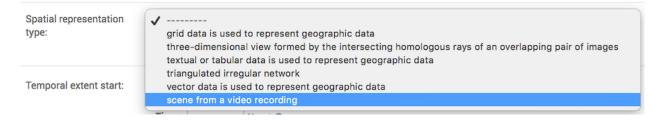


Fig. 1.18: Available spatial representation types

Temporal extent start / end - Set the time period covered by the content of the dataset.

Supplemental information - Include any other descriptive information about the dataset.

Data quality statement - Provide a general description of the validity and legitimacy of the dataset. Explain any changes in the data over time.

Bounding boxes - There are four boxes to enter the coordinates for your bounding boxes. Enter the points for all of the X,Y coordinates.

The following fields will populate automatically, and don't need to be changed. They are related to registry. Changing these fields without the proper information could cause problems with your story creation.

- Srid
- · CSW typename
- · CSW schema
- · CSW source
- CSW type
- CSW WKT geometry

Metadata - Click the checkboxes to ensure the metadata is uploaded and preserved. The Metadata XML will automatically generate.

Counts - Popular count and Share count will update as the story is viewed and shared.

Featured - Click the checkbox to feature this story on the homepage under the Featured Content section.

Is Published - This allows others to find your story when it is completed. It will make it searchable through the Exchange search.

Thumbnail url - Enter the URL for the thumbnail for your story. This will be what users see when searching for your story in Exchange.

Detail URL - This is the number assigned to your story, and is added to the end of the Exchange URL. This can make accessing your story easier in the future; just enter the Exchange URL, followed by /story/<story number>. The detail URL is created after saving your story.

Rating - Once your story is published, others can provide a rating to let you know what they think of it.

Srid:	EPSG:4326
CSW typename:	gmd:MD_Metadata
CSW schema:	http://www.isotc211.org/2005/gmd
CSW source:	local
CSW type:	dataset
CSW anytext:	
CSW WKT geometry:	POLYGON((-180 -90,-180 90,180 90,180 -90,-180 -90))
□ Metadata uploade	d
□ Metadata uploade	d preserve
Metadata xml:	<pre><gmd:md_metadata xmlns:gmd="http://www.isotc211.org/2005/gmd"></gmd:md_metadata></pre>

Distribution URL - This is for information about online sources from which the dataset, specification, or community profile name and extended metadata elements can be obtained.

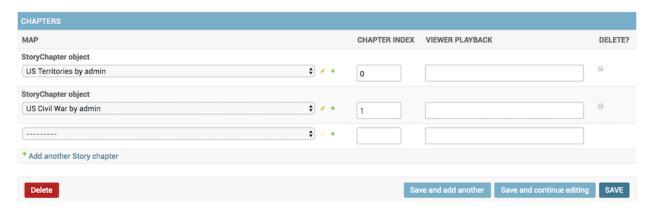
Distribution description - Provide a detailed description of what the online resource is or does.

Keywords - Enter words or phrases, separated by commas, used to describe the subject, and can be search by other users.

Add chapters

The content of the story will be chapters made from maps and layers previously uploaded into Exchange.

Note: It is recommended that you add layers via the Map Interface to ensure all of the required fields are properly completed.



This form is nearly identical to the one used for creating your story.

1. Select a map from the StoryChapter object list, and type a "0" in the Chapter Index box to indicate this will be part of the first chapter. The available maps will correspond to the maps in Exchange.

Note: The first chapter of the story must begin with 0.

You can add additional layers to a chapter by repeating this step, and ensuring the chapter index is the same for all layers in a chapter. Create new chapters by changing the chapter index number.

- 2. Click the Edit (pencil icon) next to the map name to make any necessary edits to the metadata. Save
- 3. When you've finished adding all of your chapters, and they are in the desired sequential order, click the *Save* button.

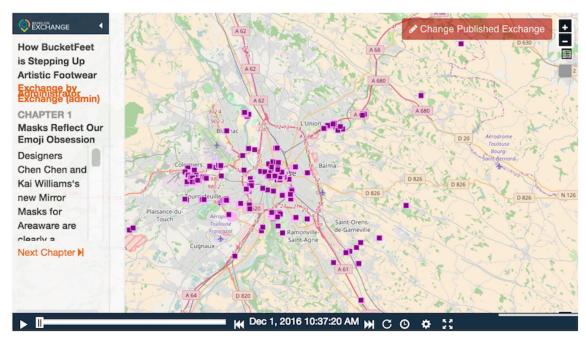
If you marked the "Is Published" checkbox, your story will now be available for other users to view in Exchange. Users can search for your story through the Exchange search on the homepage, or filter for it based on any of the keywords you selected.

Verify the story

To ensure your story was published, and plays properly, click the guilabel: *View on Site* button. The story will display, along with all of the chapter and layer details.

Select the *Play* button under the map to begin the story. The features will display according to the time attributes.

Click **Next Chapter** to skip ahead.



How BucketFeet is Stepping Up Artistic Footwear



Summary

Raaja Nemani & Aaron Firestein, the creators of BucketFeet, admit they're polar opposites. Aaron is an artist who met Raaja, an investment banker, by chance in Buenos Aires. Raaja bought a pair of Aaron's hand-painted shoes, and everywhere he went on his travels after, people asked him about their incredible look. This is how BucketFeet was born, and its founders gave us some insight into what their brand has become since that serendipitous moment.

Category: Elevation

Tags:

The story Summary will display all of the information provided when the story was created.



All of the chapters and layers used for the story will be listed in an index beneath the map viewer. You can toggle between the chapters to see information for the other chapters.



If you'd like to change anything about your story, click the *Change Publication Exchange* button. You will be returned to Exchange Composer site, and can make all edits from there.

If you checked the Featured checkbox when creating your story, you can go to the Exchange homepage, and view it by clicking on the thumbnail under the Featured Content section.

Delete a story

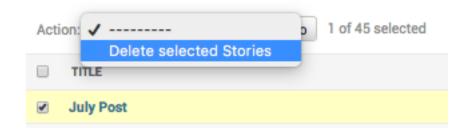
If a story is no longer needed, it can be quickly removed through the Django administration site.

- 1. Click the **Stories** link on the Storyscapes menu to open the list of stories within Exchange.
- 2. Click the checkbox next to the story you'd like to delete. Select Delete selected stories from the Action menu, and click the *Go* button.
- 3. Verify your selection by clicking the Yes, I'm sure button. The story will be removed from Exchange.

Appendix

The following is a CSW example that has been successfully added to Exchange in the past.

Select story to change



```
<csw:Transaction xmlns:csw="http://www.opengis.net/cat/csw/2.0.2" xmlns:ows=</pre>
→"http://www.opengis.net/ows" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
→instance" xsi:schemaLocation="http://www.opengis.net/cat/csw/2.0.2 http://
→schemas.opengis.net/csw/2.0.2/CSW-publication.xsd" service="CSW" version=
\rightarrow "2.0.2" xmlns:dc="http://purl.org/dc/elements/1.1/" xmlns:dct="http://purl.
→org/dc/terms/" xmlns:registry="http://gis.harvard.edu/HHypermap/registry/0.
→1" >
 <csw:Insert>
   <csw:Record xmlns:registry="http://gis.harvard.edu/HHypermap/registry/0.1</pre>
     <dc:identifier>78deee94-abb0-4d55-a589-022c9aa8f83c</dc:identifier>
     <dc:title>American Bullfrog</dc:title>
     <dc:type>dataset</dc:type>
     <dc:format>OGC:WMS</dc:format>
     <dct:modified>2017-05-17</dct:modified>
      <dct:abstract>Jeremiah was a bullfrog</dct:abstract>
     <dc:creator>Boundless</dc:creator>
     <dc:source>https://mapstory.org/geoserver/geonode/wms</dc:source>
     <ows:BoundingBox crs="http://www.opengis.net/def/crs/EPSG/0/4326"_</pre>
→dimensions="2">
     <ows:LowerCorner>-85.0 -180.0/ows20:LowerCorner>
     <ows:UpperCorner>85.0 180.0/ows20:UpperCorner>
     </ows:BoundingBox>
   </csw:Record>
   <csw:Record xmlns:registry="http://gis.harvard.edu/HHypermap/registry/0.1</pre>
     <dc:identifier>8db10886-327c-489c-ae6a-9f4aefaed96f</dc:identifier>
     <dc:title>District Public Schools</dc:title>
     <dc:creator>cdavis</dc:creator>
     <dc:type>dataset</dc:type>
     <dct:alternative>0</dct:alternative>
     <dct:modified>2017-05-16T01:00:03</dct:modified>
     <dc:format>OGC:WMS</dc:format>
     <registry:property name="category" value="Intelligence" />
     <dct:abstract>Provided by the Office of the Chief Technology Office </
     <dc:source>http://maps2.dcgis.dc.gov/dcgis/services/DCGIS_APPS/
→CrimeMap/MapServer/WMSServer</dc:source>
     <ows:BoundingBox crs="http://www.opengis.net/def/crs/EPSG/0/4326"_</pre>
→dimensions="2">
          <ows:UpperCorner>38.8269231595 -77.1006088171/ows:UpperCorner>
          <ows:LowerCorner>38.9845804134 -76.9198274506
      </ows:BoundingBox>
   </csw:Record>
```

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```
<csw:Record xmlns:registry="http://gis.harvard.edu/HHypermap/registry/0.1</pre>
" >
     <dc:identifier>71eb8337-7300-4527-a147-eb48e0c1a217</dc:identifier>
     <dc:title>Independent Schools</dc:title>
     <dc:creator>cdavis</dc:creator>
     <dc:type>dataset</dc:type>
     <dct:alternative>1</dct:alternative>
     <dct:modified>2017-05-16T01:00:03</dct:modified>
     <dc:format>OGC:WMS</dc:format>
     <registry:property name="category" value="Intelligence" />
     <dct:abstract>Provided by the Office of the Chief Technology Office </
→dct:abstract>
     <dc:source>http://maps2.dcgis.dc.gov/dcgis/services/DCGIS_APPS/
→CrimeMap/MapServer/WMSServer</dc:source>
     <ows:BoundingBox crs="http://www.opengis.net/def/crs/EPSG/0/4326"...</pre>
⇔dimensions="2">
         <ows:UpperCorner>38.8249954929 -77.0945924037
         <ows:LowerCorner>38.9847727049 -76.9288253097
     </ows:BoundingBox>
   </csw:Record>
   <csw:Record xmlns:registry="http://gis.harvard.edu/HHypermap/registry/0.1</pre>
     <dc:identifier>48e9fcb5-f334-4fc1-b740-a413fd359ffb</dc:identifier>
     <dc:title>Charter Schools</dc:title>
     <dc:creator>cdavis</dc:creator>
     <dc:type>dataset</dc:type>
     <dct:alternative>2</dct:alternative>
     <dct:modified>2017-05-16T01:00:03</dct:modified>
     <dc:format>OGC:WMS</dc:format>
     <registry:property name="category" value="Intelligence" />
     <dct:abstract>Provided by the Office of the Chief Technology Office </
\rightarrowdct:abstract>
     <dc:source>http://maps2.dcgis.dc.gov/dcgis/services/DCGIS_APPS/
→CrimeMap/MapServer/WMSServer</dc:source>
     <ows:BoundingBox crs="http://www.opengis.net/def/crs/EPSG/0/4326"_</pre>
→dimensions="2">
         <ows:UpperCorner>38.823876698 -77.0405716006</ows:UpperCorner>
         <ows:LowerCorner>38.9662259566 -76.920550725
     </ows:BoundingBox>
   </csw:Record>
   <csw:Record xmlns:registry="http://gis.harvard.edu/HHypermap/registry/0.1</pre>
     <dc:identifier>206a7b62-44fe-44cc-ac12-4a3981e0d4cb</dc:identifier>
     <dc:title>Colleges and Universities</dc:title>
     <dc:creator>cdavis</dc:creator>
     <dc:type>dataset</dc:type>
     <dct:alternative>3</dct:alternative>
     <dct:modified>2017-05-16T01:00:03</dct:modified>
     <dc:format>OGC:WMS</dc:format>
     <registry:property name="category" value="Intelligence" />
     <dct:abstract>Provided by the Office of the Chief Technology Office </
→dct:abstract>
     <dc:source>http://maps2.dcgis.dc.gov/dcgis/services/DCGIS_APPS/
→CrimeMap/MapServer/WMSServer</dc:source>
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→dimensions="2">
         <ows:UpperCorner>38.8664105135 -77.0949257657
         <ows:LowerCorner>38.9773671482 -76.9845781497/ows:LowerCorner>
```

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</ows:BoundingBox>
   </csw:Record>
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     <dc:title>Recreation Center</dc:title>
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     <dc:type>dataset</dc:type>
     <dct:alternative>4</dct:alternative>
     <dct:modified>2017-05-16T01:00:03</dct:modified>
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     <registry:property name="category" value="Intelligence" />
     <dct:abstract>Provided by the Office of the Chief Technology Office </
→dct:abstract>
     <dc:source>http://maps2.dcgis.dc.gov/dcgis/services/DCGIS_APPS/
→CrimeMap/MapServer/WMSServer</dc:source>
     <ows:BoundingBox crs="http://www.opengis.net/def/crs/EPSG/0/4326"_</pre>
→dimensions="2">
         <ows:UpperCorner>38.8188250508 -77.1046411529
         <ows:LowerCorner>38.9702403318 -76.9122142032
     </ows:BoundingBox>
   </csw:Record>
   <csw:Record xmlns:registry="http://gis.harvard.edu/HHypermap/registry/0.1</pre>
     <dc:identifier>6b287e6d-1df2-4441-bf30-74bfc883cf16</dc:identifier>
     <dc:title>Hospitals</dc:title>
     <dc:creator>cdavis</dc:creator>
     <dc:type>dataset</dc:type>
     <dct:alternative>5</dct:alternative>
     <dct:modified>2017-05-16T01:00:03</dct:modified>
     <dc:format>OGC:WMS</dc:format>
     <registry:property name="category" value="Intelligence" />
     <dct:abstract>Provided by the Office of the Chief Technology Office </
→dct:abstract>
     <dc:source>http://maps2.dcgis.dc.gov/dcgis/services/DCGIS_APPS/
→CrimeMap/MapServer/WMSServer</dc:source>
     <ows:BoundingBox crs="http://www.opengis.net/def/crs/EPSG/0/4326"...</pre>
→dimensions="2">
         <ows:UpperCorner>38.8248007187 -77.1092506249
         <ows:LowerCorner>38.9439270821 -76.9810381647/ows:LowerCorner>
     </ows:BoundingBox>
   </csw:Record>
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     <dc:identifier>53855400-5fb5-4bd3-80f7-1b1e82a17926</dc:identifier>
     <dc:title>Libraries</dc:title>
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     <dc:type>dataset</dc:type>
     <dct:alternative>6</dct:alternative>
     <dct:modified>2017-05-16T01:00:03</dct:modified>
     <dc:format>OGC:WMS</dc:format>
     <registry:property name="category" value="Intelligence" />
     <dct:abstract>Provided by the Office of the Chief Technology Office </
→dct:abstract>
     <dc:source>http://maps2.dcgis.dc.gov/dcgis/services/DCGIS_APPS/
→CrimeMap/MapServer/WMSServer</dc:source>
     <ows:BoundingBox crs="http://www.opengis.net/def/crs/EPSG/0/4326"_</pre>
→dimensions="2">
```

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<ows:UpperCorner>38.8312905811 -77.0972590041
         <ows:LowerCorner>38.9802624203 -76.9294869699
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   </csw:Record>
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     <dc:title>Places of Worship</dc:title>
     <dc:creator>cdavis</dc:creator>
     <dc:type>dataset</dc:type>
     <dct:alternative>7</dct:alternative>
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     <registry:property name="category" value="Intelligence" />
     <dct:abstract>Provided by the Office of the Chief Technology Office /
→dct:abstract>
     <dc:source>http://maps2.dcgis.dc.gov/dcgis/services/DCGIS_APPS/
→CrimeMap/MapServer/WMSServer</dc:source>
     <ows:BoundingBox crs="http://www.opengis.net/def/crs/EPSG/0/4326"__</pre>
⇔dimensions="2">
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         <ows:LowerCorner>38.9876984845 -76.9104702214
     </ows:BoundingBox>
   </csw:Record>
   <csw:Record xmlns:registry="http://gis.harvard.edu/HHypermap/registry/0.1</pre>
     <dc:identifier>6b678638-bc8d-4553-a4c8-f519aeb1e85b</dc:identifier>
     <dc:title>Points of Interest - MAR Aliases</dc:title>
     <dc:creator>cdavis</dc:creator>
     <dc:type>dataset</dc:type>
     <dct:alternative>8</dct:alternative>
     <dct:modified>2017-05-16T01:00:03</dct:modified>
     <dc:format>OGC:WMS</dc:format>
     <registry:property name="category" value="Intelligence" />
     <dct:abstract>Provided by the Office of the Chief Technology Office </
→dct:abstract>
     <dc:source>http://maps2.dcgis.dc.gov/dcgis/services/DCGIS_APPS/
→CrimeMap/MapServer/WMSServer</dc:source>
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→dimensions="2">
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     </ows:BoundingBox>
   </csw:Record>
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     <dc:title>District Boundary</dc:title>
     <dc:creator>cdavis</dc:creator>
     <dc:type>dataset</dc:type>
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     <dct:modified>2017-05-16T01:00:03</dct:modified>
     <dc:format>OGC:WMS</dc:format>
     <registry:property name="category" value="Intelligence" />
     <dct:abstract>Provided by the Office of the Chief Technology Office /
→dct:abstract>
     <dc:source>http://maps2.dcgis.dc.gov/dcgis/services/DCGIS_APPS/
→CrimeMap/MapServer/WMSServer</dc:source>
```

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```
<ows:BoundingBox crs="http://www.opengis.net/def/crs/EPSG/0/4326"...</pre>
→dimensions="2">
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         <ows:LowerCorner>38.9959320315 -76.9090163311
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   </csw:Record>
   <csw:Record xmlns:registry="http://gis.harvard.edu/HHypermap/registry/0.1</pre>
     <dc:identifier>f6884703-9216-45ce-bddc-4b8406a60fea</dc:identifier>
     <dc:title>2012 Wards</dc:title>
     <dc:creator>cdavis</dc:creator>
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     <dct:alternative>10</dct:alternative>
     <dct:modified>2017-05-16T01:00:03</dct:modified>
     <dc:format>OGC:WMS</dc:format>
     <registry:property name="category" value="Intelligence" />
     <dct:abstract>Provided by the Office of the Chief Technology Office </
→dct:abstract>
     <dc:source>http://maps2.dcgis.dc.gov/dcgis/services/DCGIS_APPS/
→CrimeMap/MapServer/WMSServer</dc:source>
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⇔dimensions="2">
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         <ows:LowerCorner>38.9959320315 -76.9090163311
     </ows:BoundingBox>
   </csw:Record>
   <csw:Record xmlns:registry="http://gis.harvard.edu/HHypermap/registry/0.1</pre>
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     <dc:title>2013 Advisory Neighborhood Commission</dc:title>
     <dc:creator>cdavis</dc:creator>
     <dc:type>dataset</dc:type>
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     <dct:modified>2017-05-16T01:00:03</dct:modified>
     <dc:format>OGC:WMS</dc:format>
     <registry:property name="category" value="Intelligence" />
     <dct:abstract>Provided by the Office of the Chief Technology Office </
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     <dc:source>http://maps2.dcgis.dc.gov/dcgis/services/DCGIS_APPS/
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→dimensions="2">
         <ows:UpperCorner>38.7915818645 -77.1198963847
         <ows:LowerCorner>38.9959320315 -76.9090163311
     </ows:BoundingBox>
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     <dc:identifier>4fd1ac4a-bdf2-4b0f-809b-ddbfbd76e8c5</dc:identifier>
     <dc:title>Police Service Areas</dc:title>
     <dc:creator>cdavis</dc:creator>
     <dc:type>dataset</dc:type>
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     <dc:format>OGC:WMS</dc:format>
     <registry:property name="category" value="Intelligence" />
     <dct:abstract>Provided by the Office of the Chief Technology Office /
-dct:abstract>
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```
<dc:source>http://maps2.dcgis.dc.gov/dcgis/services/DCGIS_APPS/
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     <ows:BoundingBox crs="http://www.opengis.net/def/crs/EPSG/0/4326"_</pre>
→dimensions="2">
         <ows:UpperCorner>38.7915100502 -77.1199125397/ows:UpperCorner>
         <ows:LowerCorner>38.9959283519 -76.9090341132
     </ows:BoundingBox>
   </csw:Record>
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     <dc:title>Police Stations</dc:title>
     <dc:creator>cdavis</dc:creator>
     <dc:type>dataset</dc:type>
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     <dc:format>OGC:WMS</dc:format>
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     <dct:abstract>Provided by the Office of the Chief Technology Office </
→dct:abstract>
     <dc:source>http://maps2.dcgis.dc.gov/dcgis/services/DCGIS_APPS/
→CrimeMap/MapServer/WMSServer</dc:source>
     <ows:BoundingBox crs="http://www.opengis.net/def/crs/EPSG/0/4326"_</pre>
→dimensions="2">
         <ows:UpperCorner>38.8533358106 -77.0748677251
         <ows:LowerCorner>38.9631146859 -76.9428287157
     </ows:BoundingBox>
   </csw:Record>
   <csw:Record xmlns:registry="http://gis.harvard.edu/HHypermap/registry/0.1</pre>
     <dc:identifier>b0aada68-0a60-4c8a-acb9-da8088f839bd</dc:identifier>
     <dc:title>Fire Stations</dc:title>
     <dc:creator>cdavis</dc:creator>
     <dc:type>dataset</dc:type>
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     <registry:property name="category" value="Intelligence" />
```

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→dct:abstract>
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         <ows:LowerCorner>38.9599655049 -76.9333316317
     </ows:BoundingBox>
   </csw:Record>
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→dct:abstract>
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→CrimeMap/MapServer/WMSServer</dc:source>
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→dimensions="2">
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         <ows:LowerCorner>38.9266760983 -76.9789379543
     </ows:BoundingBox>
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Exchange Support

There are two ways to get support in Boundless Exchange.

Reach out to the team via email at support@boundlessgeo.com to receive direct help from dedicated Boundless support staff. Be sure to include as much detail as possible about your issue, as well as all of your contact info.

Have a question you think someone else may have already asked? Check out the Community Questions and Answers page. Here you can find crowdsourced assistance, or share your knowledge with other users by answering their questions.

For version information, select the *About* link on the Exchange toolbar, and click **Exchange** in the drop-down menu.