

a metadata editor

User's Guide

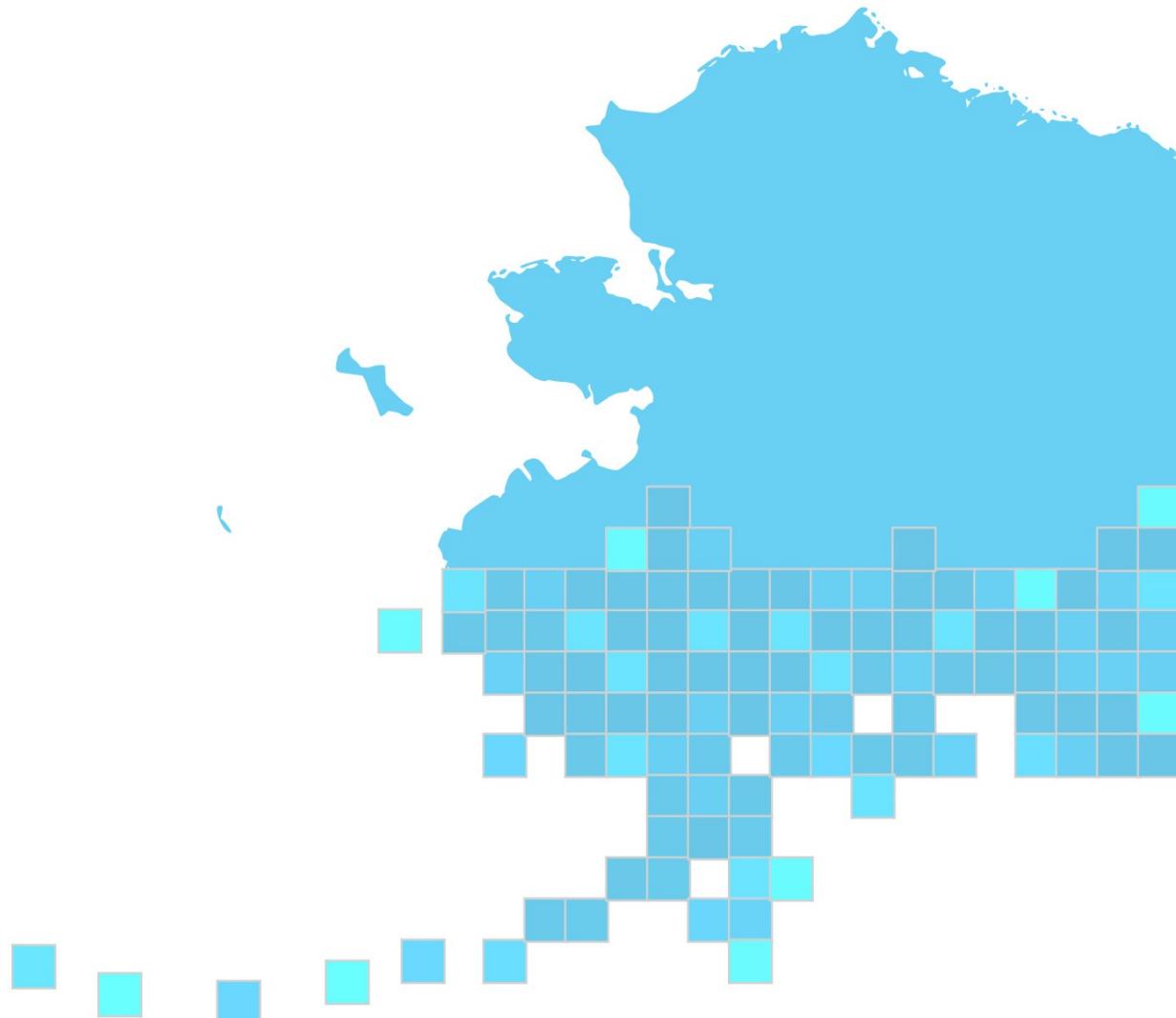


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mdEditor User Manual

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Metadata Editor (mdEditor)

mdEditor ([metadata](#) Editor) is an application that assists users in authoring and editing [metadata](#) for research projects, datasets, maps, images, and other documents. The main goal of mdEditor is to hide much of the technical complexity involved in creating archival quality [metadata](#) records that follow the standards published by ISO ([International Standards Organization](#)) and FGDC ([Federal Geographic Data Committee](#)).

With mdEditor you can publish [metadata](#) in any or all of the supported standards without specific knowledge of the standard. mdEditor edits and saves all your [metadata](#) on your personal computer so there are no user IDs, passwords, logins, or fees. And your information is always private and secure. All you need to begin authoring and publishing [metadata](#) is an internet connection to load the most current version of mdEditor into your favorite internet browser.

mdEditor works hard to conceal the complexity of computer software and [metadata](#) standards to allow [metadata](#) authors to focus on their [metadata](#) content. Even with the assistance of mdEditor, writing archival quality [metadata](#) is a challenging task that requires [metadata](#) authors to know their projects and datasets thoroughly and take the time necessary to describe them adequately. We hope you find that mdEditor eases that task considerably. And once your content is entered, mdEditor can generate [metadata](#) in the standard of your choice with a single button click. Have fun!

Who should read this manual

The "mdEditor User Manual" is intended to be a companion to scientists, researchers, and their assistants as they develop [metadata](#) with the assistance of mdEditor. This manual will discuss HOW to use mdEditor. Topics generally cover things such as workflow and how to perform certain tasks within mdEditor.

mdEditor is just one tool in the larger [ADIwg Metadata Toolkit](#). Information on local implementations, [customization](#), and extensions will not be covered in this manual. For information on other tools in the [ADIwg Metadata Toolkit](#) please refer to [mdBook](#).

Getting Started

Welcome to mdEditor!

It seems that each person faced with creating [metadata](#) records is burdened with a different set of requirements. This is partially why choosing the appropriate [metadata](#) authoring tool is so frustrating. Some tools are adapted to data or journal articles but few handle projects. Many require a user registration and cache records in their cloud storage -- until their service is no longer available. And most are tailored to support specific data types placing requirements on elements you don't have and lacking support for elements you need. Oh, and you would need a separate [metadata](#) editor for each [metadata](#) standard you have to support.

Welcome to [mdEditor](#)! We have tried to provide you with a [metadata](#) editor that solves ALL these dilemmas and more. After several years in development, [mdEditor](#) is now available to government and university researchers and to anyone world-wide, thanks to early support from the U.S. Geological Survey and U.S. Fish and Wildlife Service.

Because researchers' [metadata](#) requirements are so varied, a workflow for one situation may not be best suited to all. For that reason we advise reading through the 'Getting Started' section completely before beginning your first [metadata](#) project with [mdEditor](#). This will enhance your understanding of the organization and behavior of [mdEditor](#) as you sort through which [mdEditor](#) features you need and which steps can be bypassed. So, shall we begin?

New to mdEditor or metadata authoring?

If you are new to [mdEditor](#) and/or [metadata](#) authoring we strongly suggest you invest the time to take and complete the brief tutorial accompanying this documentation. The "[mdEditor](#) Tutorial" will lead you step-by-step through creating, editing, exporting, importing, and translating a simple [metadata record](#), all tasks you will need to master to successfully manage and publish your [metadata](#).

Once the tutorial is behind you, the "Reference" section of this documentation is available to provide detailed information about many of [mdEditor](#)'s features.

Information presented in the Tutorial is generally NOT repeated in the Reference section of this documentation. Please take the time pick up [mdEditor](#) basics from the Tutorial before referring to the Reference section for specifics.

Take the [mdEditor Tutorial](#) now!

Reference Manual

The Reference Manual provides specific information about the content, operation, and intention of each window in [mdEditor](#). The "Table of Contents" for the Reference Manual parallels the organization of [mdEditor](#) to allow for quickly accessing specific information in the manual.

It is assumed that the reader has worked through the [mdEditor Tutorial](#); if not, doing so would be time well spent. The Reference Manual will NOT cover general navigation and operation features covered in the Tutorial.

See specific edit window documentation for details about each [mdEditor](#) function:

- [EDIT METADATA](#) Create and edit [Metadata Records](#), [Contacts](#), and [Dictionary Records](#).
- [EXPORT RECORDS](#) Save, backup, organize, and share [Metadata Records](#), [Contacts](#), and [Dictionary Records](#).
- [IMPORT RECORDS](#) Load previously exported or shared [Metadata Records](#), [Contacts](#), and [Dictionary Records](#) into [mdEditor](#) for editing.
- [PUBLISH RECORDS](#) Publish [Metadata Records](#) with supported [metadata](#) repositories and clearing houses.
- [TRANSLATE RECORDS](#) Translate [mdEditor](#) mdJson formatted [Metadata Records](#) to established [metadata](#) formats such as ISO and [FGDC CSDGM](#).
- [SETTINGS](#) Set and alter [mdEditor](#) settings.

Reference -- Edit Window

In mdEditor, **Metadata Records**, **Contact Records**, **Dictionary Records** are created and maintained separately. This normalized format allows mdEditor to reference a contact multiple times within a single **metadata record** without restating the contact's information. The approach also allows individual contacts and dictionaries to be incorporated into many **metadata** records.

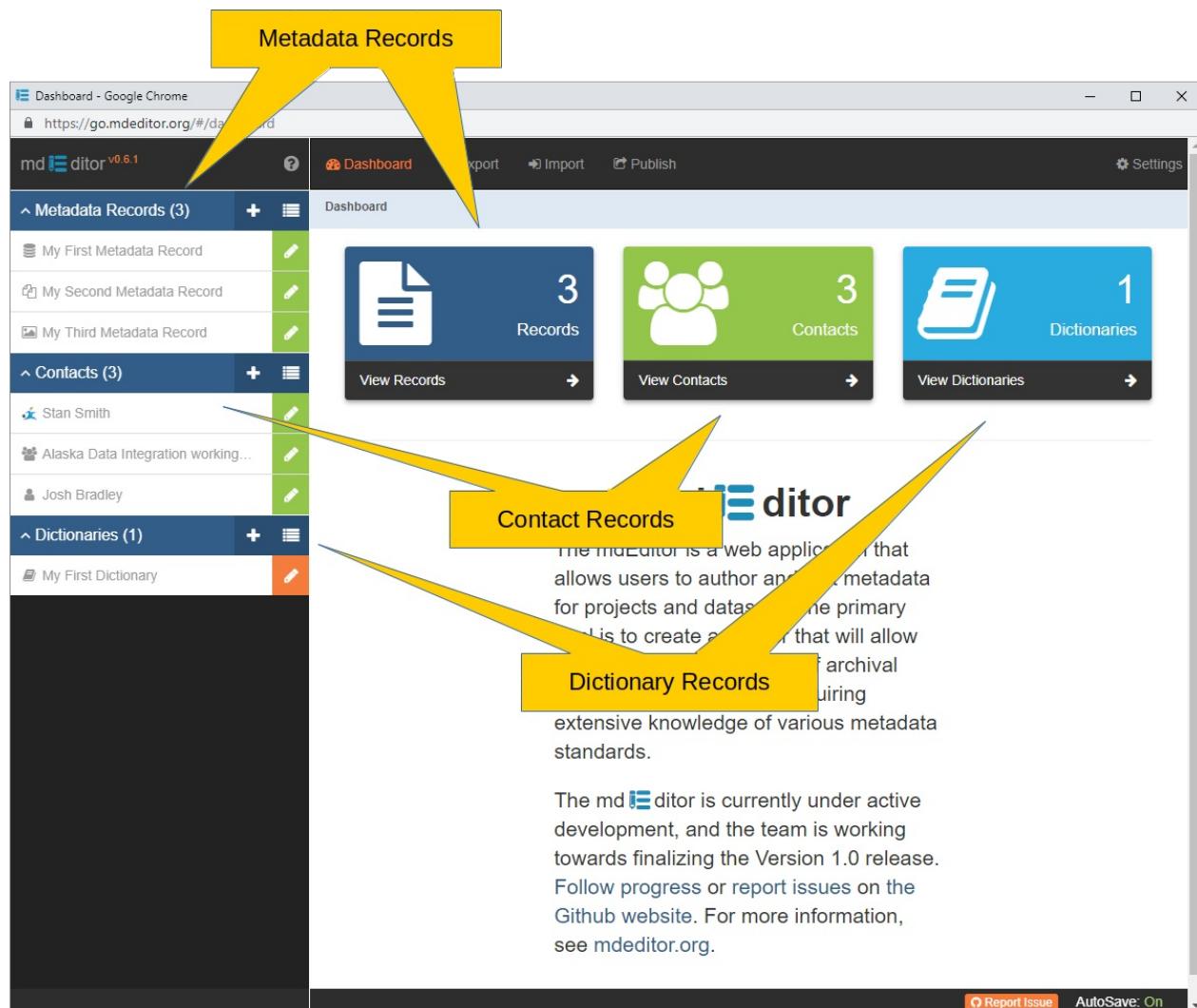


Image 1: Main mdEditor Dashboard

See specific edit window documentation for details about each **record** type:

- **METADATA RECORDS** Create, enter, and edit **Metadata Records**.
- **CONTACT RECORDS** Create, enter, and edit **Contact Records**.
- **DICTIONARY RECORDS** Create, enter, and edit **Dictionary Records**.

Reference -- Metadata Records

In mdEditor, **Metadata Records** are edited and saved separately from **Contacts** and **Dictionary Records**. This approach allows a **Metadata Record** to reuse **Contact** and **Dictionary Records** that were originally created for use with other **Metadata Records**, as well use the same **Contact** multiple times within the **Metadata Record** without reentering the **Contact**'s information.

There is a lot of information that may be entered for a single **Metadata Record**, far too much for a single data entry page. For that reason, the layout of the **Metadata Record** **EDITWINDOW** is divided into 13 sections. Each section is accessed by clicking its section buttons in the **SECONDARY NAVIGATION BAR**. The image below shows only the **Main** section of the **Metadata Record** **EDIT WINDOW**.

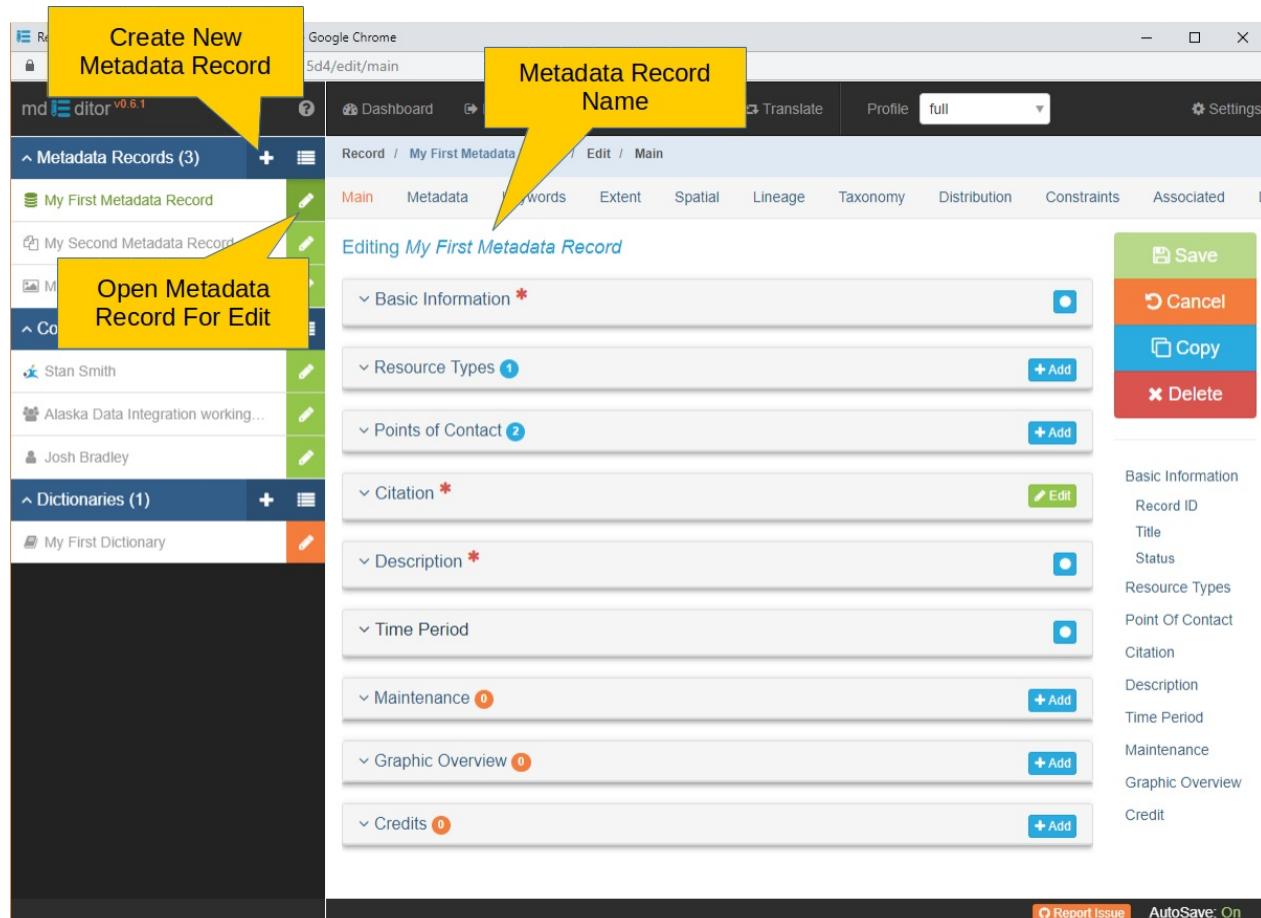


Image 1: **Metadata Record** Main Edit Window

See specific section documentation for details:

- **Main Section** Collects general information about the main resource.
- **Metadata Section** Collects general information about the metadata record itself.
- **Keywords Section** Provides for defining keyword sets for the main resource.
- **Extent Section** Allows definition of spatial, temporal, and vertical extents for the main resource.
- **Spatial Section** Defines the spatial parameters of the main resource such as spatial reference system and spatial resolution.

- **Lineage Section** Used to document the history of the main resource.
- **Taxonomy Section** Provides for describing the taxonomic systems and hierarchies for the main resource.
- **Distribution Section** Used to provide information about how to obtain a copy of the main resource
- **Constraint Section** Used to document constraints of any kind regarding the distribution and use of the main resource.
- **Associated Section** Allows for defining connections between the main resource and other related resources.
- **Documents Section** Supports adding references to documents that are relevant to the main resource.
- **Funding Section** Collects information about funding sources for development and/or maintenance of the main resource.
- **Dictionary Section** Allows associating **Dictionary Records** with the **Metadata Record** being edited.

Metadata Record -- Main Section

The **Main** section of the **Edit Window** collects general information about the main resource.

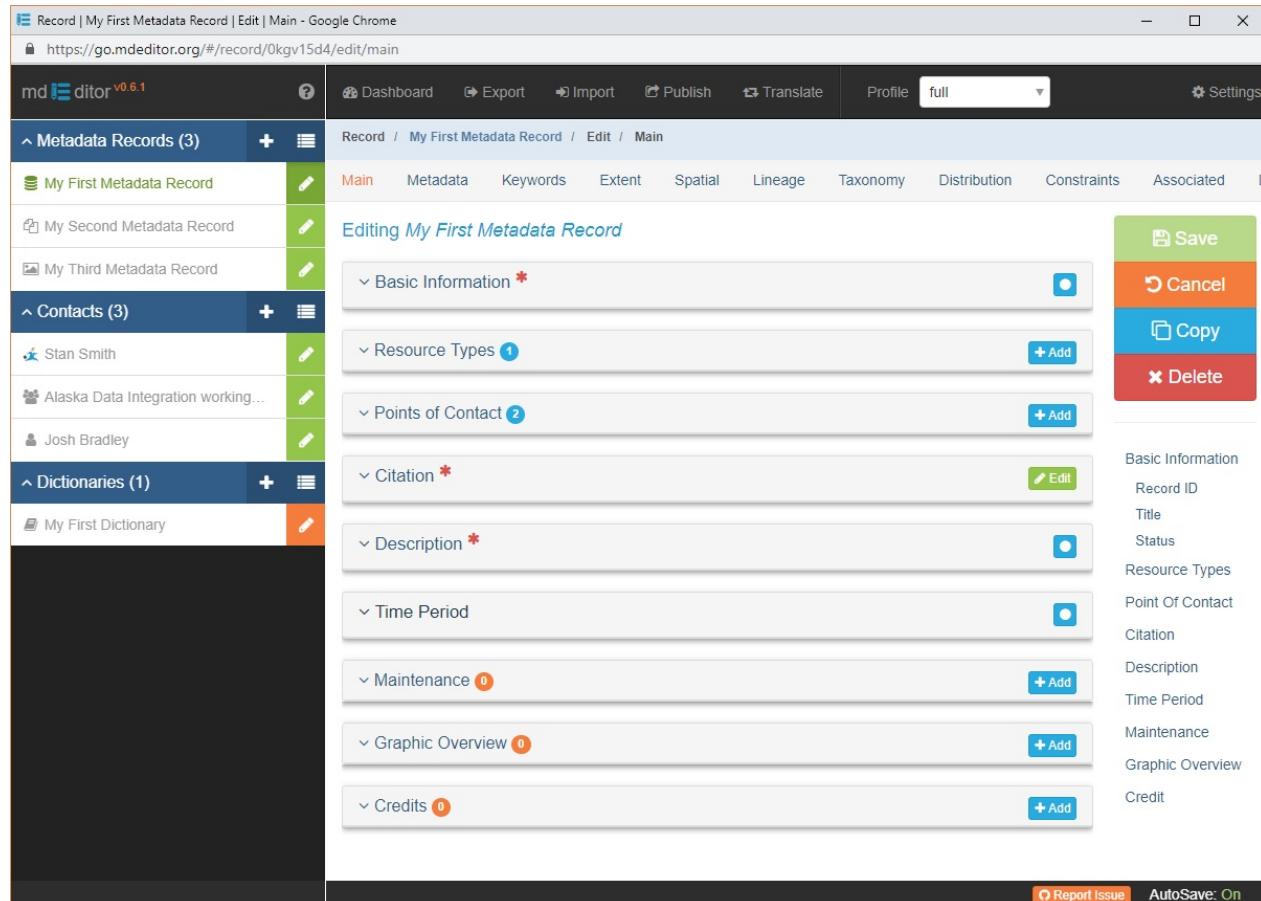


Image 1: Main Edit Window

- **Basic Information** {type: collection}

Usage: The **Basic Information** panel holds a collection of elements that identify and describe the main resource.

- **Resource Types** {type: array (obj: **Resource Type**)}

Usage: Identifies the general class or kind for the main resource of this **metadata record**.

- **Points of Contact** {type: array (obj: **Responsible Party**)}

Usage: The **Responsible Parties** identify persons and organizations to contact regarding the main resource.

- **Citation** {type: object (**Citation**); default empty}

Usage: The **Citation** for the main resource.

- **Description** {type: collection}

Usage: **Description** is a collection of independent elements that hold various text descriptions of the main resource.

- **Time Period** {type: object (**Time Period**)}

Usage: The **Time Period** describes a period of time over which the resource is relevant.

- **Maintenance** {type: array (obj: **Maintenance**)}

Usage: An array of **Maintenance** objects describing one or more maintenance schedules for the resource.

- **Graphic Overview** {*type: array (obj: Graphic)*}

Usage: An array of file descriptions for images, maps, flow charts, models, logos, etc. that help illustrate the resource.

- **Online Graphic Resource** {*type: array (obj: Online Graphic Resource); default: empty*}

Usage: An array of **Online Graphic Resource** objects that describe internet links to graphic files.

- **Credits** {*type: array (string)*}

Usage: An array of additional persons and organizations that contributed to the resource.

Metadata Record -- Main Section

Basic Information Panel

Basic Information {type: collection}

Usage: The Basic Information panel holds a collection of elements that identify and describe the main resource.

The screenshot shows the 'Basic Information' panel with the following fields:

- Record ID***: Input field containing 'd2a5297f-f966-46c9-b46a-45ef54616614' with an 'Edit' button.
- Title***: Input field with placeholder 'Enter the title for the resource.'
- Status***: Select dropdown menu with placeholder 'Select the current status'.
- Default Locale ***: A section with three dropdown menus:
 - Language**: Placeholder 'Select or enter a language code.'
 - Character Set**: Placeholder 'Select character set.'
 - Country**: Placeholder 'Select country code.'

Image 1: Basic Information Panel

- **Record ID** {type: string; max length: none; default: UUID}

Usage: A unique identifier (ID) for the metadata record.

Edit Click 'Edit' to change the **Record ID**.

Use caution when editing the **Record ID**. This ID must be unique among ALL your metadata records. If this ID was used to link with other metadata records, changing it may break the link.

- **Title** {type: string; max length: none; default: empty}

Usage: A user-provided title for the resource. This was required when the metadata record was created but may be edited at any time.

- **Status** {type: codelist (ISO MD_ProgressCode, ADIwg codes); multi-value: YES; extensible: YES; multi-value: YES; default: empty}

Usage: The current status of the main resource.

- **Default Locale** {type: object ([Locale](#)); default (eng, UTF-8, USA)}

Usage: The default or primary language and character encoding for the main resource.

[See object details](#)

Locale Object

- **Language** {*type: codelist (ISO 639 Part 2); extensible: YES; multi-value: NO; default: "eng"*}
- Usage:* Identifies the primary language of the main resource.
- **Character Set** {*type: codelist (IANA - Internet Assigned Numbers Authority); extensible: YES; multi-value: NO; default: "UTF-8"*}
- Usage:* Name of the character coding standard used in the main resource.
- **Country** {*type: codelist (ISO 3166-1 alpha-3); extensible: YES; multi-value: NO; default: "USA"*}
- Usage:* Three letter country code.

Metadata Record -- Main Section

Resource Type Array

Resource Types {*type: array (obj: Resource Type)*}

Usage: Identifies the general class or kind for the main resource of this [metadata record](#). An initial resource type was selected when the [metadata record](#) was created. The initial [Resource Type](#) may be changed here and other resource types added.

Resource Type Object

#	Type	Name	
0	report	My First Report	✖ Delete
1	Choose type of resource	Name of resource	✖ Delete

- **Type** {*type: codelist (ISO MD_ScopeCode, ADIwg codes); extensible: YES; multi-value: NO; default: empty*}

Usage: Identifies the type of resource(s), such as dataset, study, publication, project, etc.

- **Name** {*type: string; max length: none; default: empty*}

Usage: A user provided name for the resource. This may be helpful particularly when multiple resource types are identified.

Metadata Record -- Main Section

Points of Contact Array

Points of Contact {*type: array (obj: Responsible Party)*}

Usage: These **Responsible Parties** identify persons and organizations to contact regarding various responsibilities associated with the main resource.

Responsible Party Object (Points of Contact)

#	Role	Contacts
0	funder	x Alaska Data Integration working group ✖ Delete
1	Select or enter a role ⓘ	Select one or more contacts ✖ Delete

- **Role** {*type: codelist (ISO CI_RoleCode, ADIwg codes); extensible: YES; multi-value: NO; default: empty*}

Usage: Identifies the function or responsibility assigned to the person(s) or organization(s), etc.

- **Contacts** {*type: codelist (contact records in browser cache); multi-value: YES; default: empty*}

Usage: A list of contacts associated with this role.

Metadata Record -- Main Section

Citation View

Citation {type: view (**Citation**)}

Usage: **Citation** is a non-editable view of the main resource's citation information. Not all of the **Citation's** information is displayed in the view, only a few select fields that provide a reasonable overview of the citation.

~ Citation *

Edit

Title	My First Metadata Record
Alternate Titles	First Alternate Title Second Alternate Title
Dates	September 6th 2018 (creation)
Identifier	No identifiers assigned.
Responsible Party	No responsibility assigned.

Edit Citation

Edit and **Edit Citation**

Click either button to open the **Citation** object in the **Citation** EDIT WINDOW. See [Citation Section](#) for editing instructions.

Metadata Record -- Main Section

Description Panel

Description {type: collection}

Usage: Description is a collection of independent elements that hold various text descriptions for the main resource.

The screenshot shows a user interface for managing metadata. At the top, there's a header for 'Description *'. Below it, under the 'Abstract' section, there's a rich text editor toolbar with buttons for bold (B), italic (I), heading (H), and other text styles. A text input field below the toolbar contains the placeholder 'Enter an Abstract describing the resource.' To the right of the input field, status information is displayed: length: 0, lines: 1, words: 0, and 0:0. Under the 'Short Abstract' section, another rich text editor toolbar is shown with the same set of buttons. The text input field here contains the placeholder 'A short description of the resource. Max of 300 characters.' To its right, the status information is identical: length: 0, lines: 1, words: 0, and 0:0. Below these sections, there are three more fields: 'Purpose', 'Supplemental Information', and 'Environment Description', each with their own text input fields and toolbars.

- **Abstract** {type: markdown text; default: empty; max length: unlimited}

Usage: A brief narrative summary of the main resource contents. The **Abstract** is entered in plain text with the option to format the text using a [Markdown](#) syntax. See [Markdown Control](../../../../controls/markdown-control.md)

- **Short Abstract** {type: markdown text; default: empty; max length: 300 characters}

Usage: A short description of the main resource contents.

The **Short Abstract** is useful for summary pages, lists, and web pages built by repository and search software. The **Short Abstract** should be meaningful, not just the first 300 characters of the full **Abstract**.

- **Purpose** {type: string; max length: none; default: empty}

Usage: A summary of the intentions for which the resource was created.

- **Supplemental Information** {type: string; max length: none; default: empty}

Usage: Any other descriptive information about the resource.

- **Environment Description** {*type: string; max length: none; default: empty*}

Usage: Description of the resource in the producer's processing environment, including items such as the software, the computer, the computer operating system, file name, and the resource size.

Metadata Record -- Main Section

Time Period Object

`Time Period {type: object(Time Period)}`

Usage: The `Time Period` object describes a period of time over which the resource is relevant. For project resources, the time period might represent the start and end date of activity. For data resources, the time period may convey the date range of the resource data points.

The screenshot shows a detailed configuration interface for a `Time Period` object. At the top, there are fields for `Start Date*` and `End Date*`, both with date-time pickers. Below these are sections for `Dates*`, `Identifier` (a text input for a unique identifier), and `Description` (a text area for a brief description). A section for `Time Period Names` includes a button to add more names. The `Interval` section allows setting an `Interval Amount*` and choosing a `Time Unit*`. The `Duration` section provides granular controls for years, months, days, hours, minutes, and seconds.

- `Dates {type: collection}`

Usage: - A collection of elements to select and set the `Start Date` and `End Date` of a `Time Period`.

- `Start Date {type: date, datetime (ISO 8601); default: empty}`

Usage: Starting date and time of the `Time Period`. `Start Date` is not required if `End Date` is present.

- `End Date {type: date, datetime (ISO 8601); default: empty}`

Usage: Ending date and time of the `Time Period`. `End Date` is not required if `Start Date` is present.

- `Pick a Fiscal Year` Use this select control to set both the `Start Date` and `End Date` of a fiscal year. To set both dates for a fiscal year use the control to select the desired starting year. The `Start Date` will be set to the first day of the month for the fiscal year and the `End Date` will be the last day of the month twelve months later. The default starting month for the fiscal year is October. The starting month can be changed on the Settings page and will be used by `mdEditor` for all `Time Period` objects until changed. Previously defined fiscal years will not be effected.

See [Date-Time Control](#) for details on picking dates and times using the Date-Time control.

- **Identifier** {*type: string; max length: none; default: empty*}

Usage: - A unique identifier for this [Time Period](#).

The identifier must be alphanumeric and not include special characters. It need only be unique within the [metadata record](#).

ISO metadata records require time period IDs. If one is provided here it will be used by mdTranslator when writing ISO metadata. If the **Identifier** is left blank mdTranslator will generate a unique identifier for the [Time Period](#). Note that the generated time period ID may not be consistent across multiple translations by mdTranslator.

- **Description** {*type: string; max length: none; default: empty*}

Usage: A brief description of any relevant information for this [Time Period](#).

- **Time Period Names** {*type: array (string); max length: none; default: empty*}

Usage: - An array of user-assigned names for this time period. Each name is a character string.

- **Interval** {*type: object ([Time Interval](#)); default: empty*}

Usage: An object to specify a time interval for the resource.

See object details

- **Duration** {*type: object ([Time Duration](#)); default: empty*}

Usage: An object to specify a time duration for the resource.

See object details

Time Interval Object

- **Time Unit** {*type: codelist (ADIwg codes); multi-value: NO; extensible: YES; multi-value: NO; default: empty*}

Usage: A value for the units of time, e.g. year, month, day, hour, minute, second, jiffy.

- **Interval Amount** {*type: real; min: 0.0; max none; default: empty*}

Usage: A floating point or integer value representing the temporal length.

Time Duration Object

- **Year** {*type: integer; min: 0; max none; default: empty*}

Usage: A value for the number of years in the duration.

- **Month** {*type: integer; min: 0; max none; default: empty*}

Usage: A value for the number of months in the duration.

- **Day** {*type: integer; min: 0; max none; default: empty*}

Usage: A value for the number of days in the duration.

- **Hour** {*type: integer; min: 0; max none; default: empty*}

Usage: A value for the number of hours in the duration.

- **Minute** {*type: integer; min: 0; max none; default: empty*}

Usage: A value for the number of minutes in the duration.

- **Second** {*type: integer; min: 0; max none; default: empty*}

Usage: A value for the number of seconds in the duration.

At least one duration element is required. More than one may also be entered. e.g. 18 Months or 1 year, 6 months are equivalent durations.



Metadata Record -- Main Section

Maintenance Array

Maintenance {type: array (obj: *Maintenance*)}

Usage: An array of **Maintenance** objects describing one or more maintenance schedules for the resource.

#	Frequency	
0	monthly	Edit Delete
1	Not Defined	Edit Delete

Maintenance Object

Frequency*
Choose a value.

Dates 1

#	Date	Date Type	Description	
0	Enter date or datetime ! Add Date	Choose date type !	Describe the date.	Delete

Contacts 1

#	Role	Contacts	
0	Select or enter a role !	Select one or more contacts !	Delete

Notes 0

Enter notes regarding the maintenance of the resource. Delete

Scope
Select type of resource.

OK

- **Frequency** {*type*: codelist (ISO MD_MaintenanceFrequencyCode); *multi-value*: NO; *extensible*: YES; *multi-value*: NO; *default*: empty}

Usage: The frequency period for maintenance of this resource.
- **Dates** {*type*: array (*obj*: **Date**); *default*: empty}

Usage: - Dates and datetimes related to maintenance of this resource.

See object details
- **Contacts** {*type*: array (*obj*: **Responsible Party**); *default*: empty}

Usage: - Persons and organizations to contact for information regarding maintenance of this resource.

See object details
- **Notes** {*type*: array (string); *max length*: none; *default*: empty}

Usage: - An array of notes or comments to provide additional information about this maintenance cycle. Each note is a character string.
- **Scope** {*type*: codelist (ISO MD_ScopeCode, ADIwg codes); *extensible*: YES; *multi-value*: YES; *default*: empty}

Usage: - A code to describe the class or context for which the maintenance cycle applies.

Date Object

- **Date** {*type*: datetime (ISO 8601); *default*: empty}

Usage: Date or datetime.

See [Date-Time Control](#) for details on picking dates and times using the Date-Time control.
- **Date Type** {*type*: codelist (ISO CI_DateTypeCode, ADIwg codes); *extensible*: YES; *multi-value*: NO; *default*: empty}

Usage: A code describing the type of date or datetime.
- **Description** {*type*: string; *max length*: none; *default*: empty}

Usage: A short statement providing supplemental information about the date's context.

Responsible Party Object (Contacts)

- **Role** {*type*: codelist (ISO CI_RoleCode, ADIwg codes); *extensible*: YES; *multi-value*: NO; *default*: empty}

Usage: Identifies the function or responsibility assigned to the person(s) or organization(s), etc.
- **Contacts** {*type*: codelist ([contact records in browser cache](#)); *multi-value*: YES; *default*: empty}

Usage: A list of contacts associated with this role.

Metadata Record -- Main Section

Graphic Overview Array

Graphic Overview {*type: array (obj: Graphic)*}

Usage: An array of file descriptions for images, maps, flow charts, models, logos, etc., that help illustrate the resource.

The screenshot shows a list of graphic items. Item 0 is 'Expedition Logo' with a logo thumbnail and edit/delete buttons. Item 1 is 'Expedition Route Maps' with two map thumbnails and edit/delete buttons.

Graphic Object

The screenshot shows a form for creating a new graphic object. Fields include 'Name*' (mandatory), 'File Name', 'File Type' (with a note about MIME type), 'Description' (with a character limit of 500), and an 'Online Resource' section with a link to 'Graphic Overview'.

- **Name** {*type: string; max length: none; default: empty*}

Usage: Name of the file containing the graphic.

- **File Type** {*type: string; max length: none; default: empty*}

Usage: MIME type (Multipurpose Internet Mail Extension) of the graphic. e.g. jpeg, gif, pdf, png, bmp, etc.

- **Description** {*type: string; max length: none; default: empty; max length: 500 characters*}

Usage: A short description of the graphic.

- **Online Graphic Resource** {*type: array (obj: Online Graphic Resource); default: empty*}

Usage: **Online Graphic Resource** objects that define internet links to the **Graphic Overview** file.

See object details

Metadata Record -- Main Section

Online Graphic Resource Array

Online Graphic Resource {type: array (obj: **Online Graphic Resource**); default: empty}

Usage: An array of **Online Graphic Resource** objects that describe internet links to graphic files.

^ Online Resource 2 + Add

0	 Name Greater Anchorage Area URI https://www.google.com/maps/vt/data...	Edit Delete
1	Image Preview  Name Non-Graphic File URI http://adiwg.org/resources/899	Edit Delete

✓ OK

Along with the file **Name** and **URI**, mdEditor attempts to provide a thumbnail of each graphic file listed in the **Online Graphic Resource** array. If a thumbnail cannot be generated, a broken image link will be displayed like the one shown for the second array item above.

If for some reason mdEditor does not produce a thumbnail preview, check for the following:

- an invalid link
- the file's graphic format is not readable by mdEditor
- the file is not a graphic file

Online Graphic Resource Object

^ Online Resource 3

Editing:

Name

Online Resource Name

URI*

Online Resource URI

◎ Click to Select or Drop Image

Enter URI or select file to preview.

Protocol

Protocol for accessing the Online Resource

Description

Description of the Online Resource: Less than 500 characters

Function

Select function of the Online Resource

▼

✓ OK

- **Name** {*type: string; max length: none; default: empty*}

Usage: The name of the online graphic resource.

- **URI** {*type: URI; default: empty*}

Usage: - The internet location (address) for online access to the graphic resource, using the **URI** format - a.k.a URL.

Click to Select or Drop Image Use this drop target to drop local graphics and logos that are less than 50K Bytes in size. The graphic will be converted to a 'data:image/...' **URI** and placed into the **URI** element. These graphics will remain embedded in the **mdJson** file and do not need an additional internet accessible **URI** to access the graphic.

For graphics larger than 50K Bytes an internet accessible file is required. Place the **URI** to the graphic file in the **URI** element. **mdEditor** will then access the graphic file and build a thumbnail image for the **EDIT WINDOW** page.

The thumbnail image is not saved with the **mdJson** or **mdEditor** files. The thumbnail is rebuilt each time the **mdJson** file is edited.

- **Protocol** {*type: string; max length: none; default: empty*}

Usage: The online connection protocol used to access the graphic resource. e.g. ftp, http, https, etc.

- **Description** {*type: string; max length: 500 characters; default: empty*}

Usage: A text description with additional details of what the graphic resource is or describes.

- **Function** {*type: codelist (ISO CI_OnLineFunctionCode, ADIwg codes); extensible: YES; multi-value: NO; default: empty*}

Usage: A code declaring the intended function of the graphic resource.

Metadata Record -- Main Section

Credits Array

Credits {type: array (string)}

Usage: An array of additional persons and organizations that contributed to the resource. Each credit is a text string.

^ Credits 1 + Add

0	Josh Bradley	x Delete
1	Additional credits for the resource.	x Delete

Metadata Record -- Metadata Section

The **Metadata** section of the **EDIT WINDOW** collects general information about the **metadata record itself**. This is information about the **metadata**, not the resource described by the **metadata**. Yes, this is **metadata about metadata**!

The screenshot shows the mdEditor v0.6.1 application window. The left sidebar lists three 'Metadata Records' (My First Metadata Record, My Second Metadata Record, My Third Metadata Record), three 'Contacts' (Stan Smith, Alaska Data Integration working..., Josh Bradley), and one 'Dictionary' (My First Dictionary). The main content area is titled 'Editing Metadata Information' and contains a tree view of metadata fields. On the right, there is a vertical sidebar with buttons for Save, Cancel, Copy, and Delete, and a list of categories corresponding to the tree items. At the bottom right are 'Report Issue' and 'AutoSave: On' buttons.

Category	Description
Basic Information	Information about the metadata record itself.
Metadata Contacts	An array of persons or organizations to contact regarding the metadata record.
Metadata Identifier	A means to provide a unique identifier for this metadata record.
Parent Metadata	A citation for a parent resource or project.
Metadata Repositories	An array of metadata repositories or clearing houses where the metadata record has been cached.
Online Resource	An array of links to online locations where this metadata record can be retrieved.
Metadata Maintenance	A description of the maintenance schedule for this metadata record.
Dates	(Not explicitly listed in the screenshot)
Contacts	(Not explicitly listed in the screenshot)
Notes	(Not explicitly listed in the screenshot)
Default Locale	(Not explicitly listed in the screenshot)
Alternate Metadata	(Not explicitly listed in the screenshot)

- **Basic Information** {type: collection}

Usage: A collection of elements that describe the **metadata** for this **record**.

- **Metadata Contacts** {type: array (obj: **Responsible Party**)}

Usage: An array of persons or organizations to contact regarding the **metadata record**.

- **Metadata Identifier** {type: object (**Identifier**); default **UUID**}

Usage: A means to provide a unique identifier for this **metadata record**.

- **Parent Metadata** {type: object (**Citation**); default empty}

Usage: A citation for a parent resource or project.

- **Metadata Repositories** {type: array (obj: **Repository**)}

Usage: An array of **metadata** repositories or clearing houses where the **metadata record** has been cached.

- **Online Resource** {type: array (obj: **Online Resource**)}

Usage: An array of links to online locations where this **metadata record** can be retrieved.

- **Metadata Maintenance** {type: object (obj: **Maintenance**)}

Usage: A description of the maintenance schedule for this **metadata record**.

- **Default Metadata Locale** {*type: object(* `Locale` *)*}
- Usage:* The default or primary language and character encoding for the `metadata`.
- **Alternate Metadata Reference** {*type: array(obj:* `citation` *)*}
- Usage:* An array of `Citation` references to other editions of this `metadata record`.

Metadata Record -- Metadata Section

Basic Information

Basic Information {type: collection}

Usage: The **Basic Information** panel holds a collection of elements that describe the metadata for this [metadata record](#).

[Metadata about metadata!](#)

The screenshot shows a user interface for managing metadata. At the top, there's a header with a back arrow labeled '^ Basic Information' and a blue circular icon. Below the header, there are two main sections: 'Metadata Status' and 'Dates'.

Metadata Status: A dropdown menu with the placeholder 'Select the current status'. There is also a small red warning icon next to the placeholder.

Dates: A table with three columns: '#', 'Date', 'Date Type', and 'Description'. The table has one row, which is currently empty. To the right of the table is a red button labeled '+ Add Date'.

#	Date	Date Type	Description
0	Enter date or datetime ! Select Date	Choose date type ! Select Date Type	Describe the date. ! Enter Description

- **Metadata Status** {type: codelist (ISO MD_ProgressCode, ADIwg codes); multi-value: YES; extensible: YES; multi-value: NO; default: empty}

Usage: The current status of the [metadata record](#).

- **Dates** {type: array (obj: [Date](#)); default: empty}

Usage: Dates and datetimes related to creation and status of this [metadata record](#).

[See object details](#)

Date Object

- **Date** {type: datetime (ISO 8601); default: empty}

Usage: Date or datetime.

See [Date-Time Control](#) for details on picking dates and times using the Date-Time control.

- **Date Type** {type: codelist (ISO CI_DateTypeCode, ADIwg codes); extensible: YES; multi-value: NO; default: empty}

Usage: A code describing the type of date or datetime.

- **Description** {type: string; max length: none; default: empty}

Usage: A short statement providing supplemental information about the date's context.

Metadata Record -- Metadata Section

Metadata Contacts Array

Metadata Contacts {type: array (obj: **Responsible Party**)}

Usage: Each **Responsible Party** identifies a person or organization to contact regarding the [metadata record](#) for this resource.

Responsible Party Object (Metadata Contact)

#	Role	Contacts	Action
0	author	Stan Smith	Delete
1	Select or enter a role	Select one or more contacts	Delete

- **Role** {type: codelist (ISO CI_RoleCode, ADIwg codes); extensible: YES; multi-value: NO; default: empty}

Usage: Identifies the function or responsibility assigned to the person(s) or organization(s), etc.

- **Contacts** {type: codelist (contact records in browser cache); multi-value: YES; default: empty}

Usage: A list of contacts associated with this role.

Metadata Record -- Metadata Section

Metadata Identifier View

Metadata Identifier {type: view}

Usage: **Metadata Identifier** is a non-editable view of the **metadata**'s identifier information. Not all of the **Identifier**'s information is displayed in the view, only a few select fields that provide a reasonable overview of the identifier.

^ Metadata Identifier

Identifier	a80c25c6-a75e-4c15-a566-76e3eac74485
Namespace	urn:uuid

Edit Click the Edit button to open the **Identifier** object in the **Identifier** edit window.

Editing Metadata Identifier: d2a5297f-f966-46c9-b46a-45ef54616614 

Identifier

d2a5297f-f966-46c9-b46a-45ef54616614 **Edit**

Namespace

UUID

Version

Enter the version for the identifier.

Description

Enter a description of the identifier.

▼ Authority

- **Metadata Identifier** {type: object (**Identifier**); default empty}

Usage: Identifier for the **Metadata Record**.

[See object details](#)

Identifier Object

Identifier 1

Identifier*

Enter the identifier for the resource

Namespace

Select or type a namespace for the identifier.

Version

Enter the version for the identifier.

Description

Enter a description of the identifier.

Authority

✓ OK

- **Identifier** {type: string; max length: none; default: empty}

Usage: A cataloged and managed name or code for the resource.

- **Namespace** {type: string; max length: none; default: empty}

Usage: A string which unambiguously defines the namespace to which the identifier belongs.

- **Version** {type: string; max length: none; default: empty}

Usage: The version number of the identifier.

- **Description** {type: max length: none; string; default: empty}

Usage: A description of the meaning of the identifier.

- **Authority** {type: object ([Citation](#)); default empty}

Usage: A reference to information about the identifier. An [Authority](#) is an abbreviated version of the full [Citation](#) object.

[See object details](#)

As a safety precaution, the **Identifier** element has an 'Edit' button to prevent accidental changes. Click the [Edit](#) button to change the **Identifier**. Use caution when editing the **Metadata Identifier**. This ID must be unique among ALL your metadata records. If this ID was used to link with other metadata records, changing it may break the link.

Citation Object

See [Citation Section](#) for editing instructions.

Metadata Record -- Metadata Section

Parent Metadata Citation

[Parent Metadata](#) {type: view}

Usage: If the resource or project described by this metadata record has a parent resource or project from which it was derived, a citation to the parent may be defined using the [Parent Metadata](#) citation. The [Parent Metadata](#) panel is a non-editable view of the parent metadata's citation information. Not all of the [Parent Metadata](#)'s information can be displayed in the view, only a few select fields that provide a reasonable overview of the citation are included.

^ Parent Metadata [Edit](#)

Title	<i>Not Defined</i>
Alternate Titles	<i>No alternate titles assigned.</i>
Dates	<i>No dates assigned.</i>
Identifier	<i>No identifiers assigned.</i>
Responsible Party	<i>No responsibility assigned.</i>

[Edit Citation](#)

[Edit](#) and [Edit Citation](#) Click either button to open the [Parent Metadata](#) citation object in the [Citation](#) edit window. See [Citation Section](#) for editing instructions.

Metadata Record -- Metadata Section

Metadata Repository Array

Metadata Repositories {type: array (obj: *Repository*)}

Usage: An array of [metadata](#) repositories or clearing houses where the [metadata record](#) has been cached. The process of caching the [metadata record](#) in a repository happens outside of [mdEditor](#) and [mdTranslator](#) and is not covered in this document. Please consult with each individual repository to learn the details of their intake requirements and processes.

Metadata Record -- Metadata Section

Online Resource Array

Online Resource {*type: array (obj: Online Resource)*}

Usage: The **Online Resource** array contains links to online locations where this metadata record can be retrieved.

~ Online Resource 2		
#	Name	Uri
0	Example Resource 889	http://adiwg.org/resources/889
1	Not Defined	Not Defined

[+ Add](#)

[Edit](#) [Delete](#) [!](#)

Online Resource Object

~ Online Resource 2

Editing:

Name

URI*

Protocol

Description

Function

OK

- **Name** {*type: string; max length: none; default: empty*}

Usage: The name of the online resource.

- **URI** {*type: URI; default: empty*}

Usage: The internet location (address) for online access to the resource using the **URI** format - a.k.a URL.

- **Protocol** {*type: string; max length: none; default: empty*}

Usage: The online connection protocol used to access the resource. e.g. ftp, http, https, etc.

- **Description** {*type: string; max length: 500 characters; default: empty*}

Usage: A text description with additional details of what the resource is or describes.

- **Function** {*type: codelist (ISO CI_OnLineFunctionCode, ADIwg codes); extensible: YES; multi-value: NO; default: empty*}

Usage: - A code declaring the intended function of the resource.

Metadata Record -- Metadata Section

Metadata Maintenance Object

Metadata Maintenance {type: object (obj: **Maintenance**)}

Usage: A **Maintenance** object describing the maintenance schedule for this [metadata record](#).

The screenshot shows a configuration interface for a 'Maintenance' object. It includes sections for 'Frequency', 'Dates', 'Contacts', 'Notes', and 'Scope'. Each section has a summary table with columns for '#', 'Role' (or 'Date Type' or 'Description'), and controls for adding, deleting, and modifying entries.

#	Role	Contacts
0	Select or enter a role	Select one or more contacts

#	Date	Date Type	Description
0	Enter date or datetime	Choose date type	Describe the date.

#	Notes
0	Enter notes regarding the maintenance of the resource.

Scope
Select type of resource.

OK

- **Frequency** {type: codelist (ISO MD_MaintenanceFrequencyCode); multi-value: NO; extensible: YES; multi-value: NO; default: empty}

Usage: The frequency period for maintenance of this resource.

- **Dates** {type: array (obj: **Date**); default: empty}

Usage: - Dates and datetimes related to maintenance of this resource.

[See object details](#)

- **Contacts** {type: array (obj: **Responsible Party**); default: empty}

Usage: - Persons and organizations to contact for information regarding maintenance of this resource.

[See object details](#)

- **Notes** {type: array (string); max length: none; default: empty}

Usage: - An array of notes or comments to provide additional information about this maintenance cycle. Each note is a character string.

- **Scope** {*type*: codelist (ISO MD_ScopeCode, [ADIwg](#) codes); *extensible*: YES; *multi-value*: YES; *default*: empty}

Usage: - A code to describe the class or context for which the maintenance cycle applies.

Date Object

- **Date** {*type*: datetime (ISO 8601); *default*: empty}

Usage: Date or datetime.

See [Date-Time Control](#) for details on picking dates and times using the Date-Time control.

- **Date Type** {*type*: codelist (ISO CI_DateTypeCode, [ADIwg](#) codes); *extensible*: YES; *multi-value*: NO; *default*: empty}

Usage: A code describing the type of date or datetime.

- **Description** {*type*: string; *max length*: none; *default*: empty}

Usage: A short statement providing supplemental information about the date's context.

Responsible Party Object (Contacts)

- **Role** {*type*: codelist (ISO CI_RoleCode, [ADIwg](#) codes); *extensible*: YES; *multi-value*: NO; *default*: empty}

Usage: Identifies the function or responsibility assigned to the person(s) or organization(s), etc.

- **Contacts** {*type*: codelist (*contact records in browser cache*); *multi-value*: YES; *default*: empty}

Usage: A list of contacts associated with this role.

Metadata Record -- Metadata Section

Default Metadata Locale

Default Metadata Local {*type: object (Locale)*}

Usage: The default or primary language and character encoding for the [metadata](#).

The screenshot shows a user interface for setting a locale. At the top left is a back arrow labeled '^'. To its right is the title 'Default Metadata Locale' and a blue circular icon with a white dot. Below this are three input fields: 'Language*' with 'eng' selected, 'Character Set*' with 'UTF-8' selected, and 'Country' with 'USA' selected. Each field has a small 'x' and a downward arrow icon to its right.

Image 1: Locale Panel

Locale Object

- **Language** {*type: codelist (ISO 639 Part 2); extensible: YES; multi-value: NO; default: "eng"*}

Usage: Identifies the primary language of the main resource.

- **Character Set** {*type: codelist (IANA - Internet Assigned Numbers Authority); extensible: YES; multi-value: NO; default: "UTF-8"*}

Usage: Name of the character coding standard used in the main resource.

- **Country** {*type: codelist (ISO 3166-1 alpha-3); extensible: YES; multi-value: NO; default: "USA"*}

Usage: Three letter country code.

Metadata Record -- Metadata Section

Alternate Metadata Reference Array

Alternate Metadata Reference {*type: array (obj: citation)*}

Usage: The array holds **Citation** references to other editions of this **metadata record**. Other editions may include items such as older versions of the **metadata record** or the current **record** output in other **metadata** formats. s

^ Alternate Metadata Reference 2		+ Add
#	Title	
0	FGDC Version of My Metadata	 More...  Delete
1	Not Defined	 More...  Delete

Citation Object (Alternate Metadata Reference)

 Click 'More' to open the **Citation** object in the **Citation** edit window. See **Citation Section** for information on editing.

Metadata Record -- Keyword Section

The **Keywords** section of the **EDIT WINDOW** is used to define keyword sets for the main resource. Each **Keyword Set** is associated with a **Keyword Thesaurus** which references the master dictionary from which the individual **Keywords** were selected.

When no **Keyword** lists have been defined for the **Metadata Record** a large blue bar is displayed on the page declaring "No keywords found."

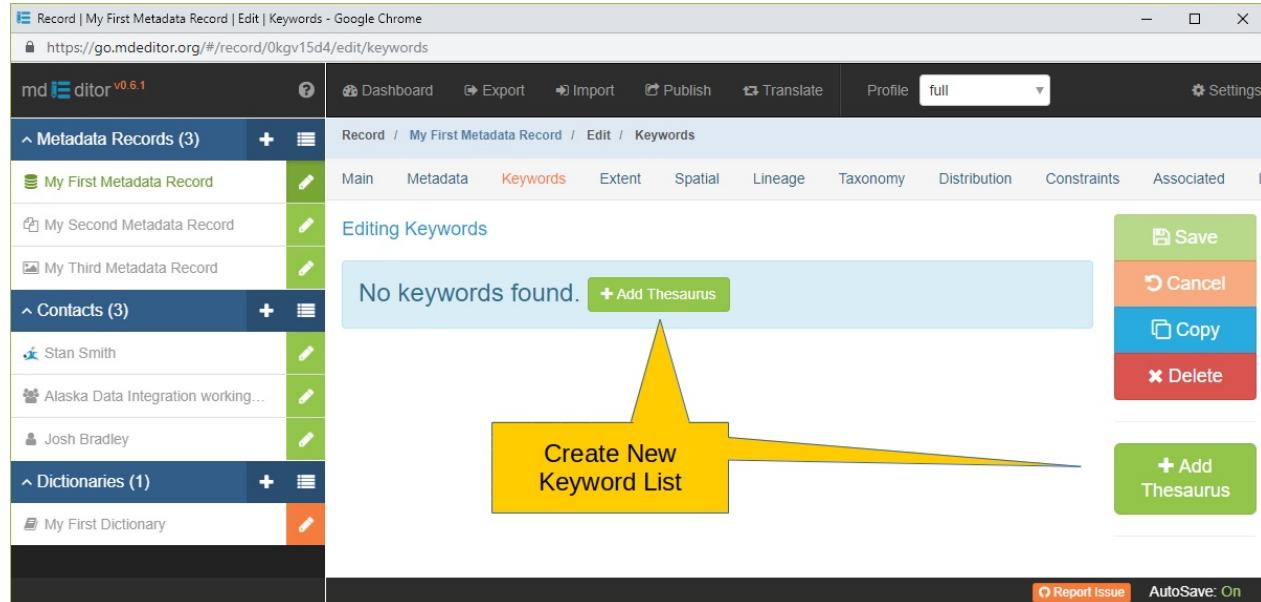


Image 1: Keyword Section window with no Keyword List Defined

Add Thesaurus To add the initial **Keyword** list click either 'Add Thesaurus' button.

When one or more **Keyword** lists have been defined the **Keyword** section window will look similar to the image below.

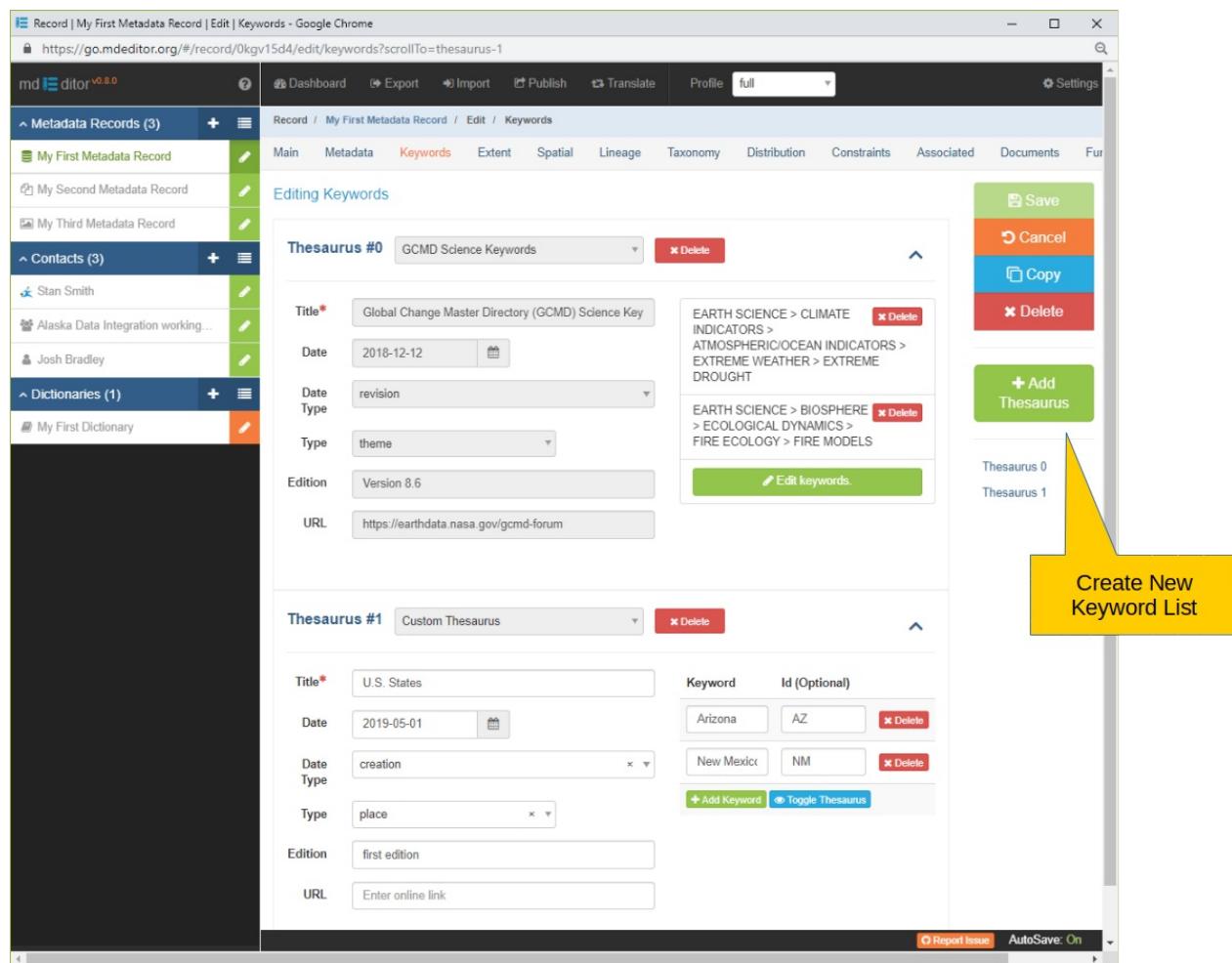


Image 2: Keyword Section window with multiple Keyword List Defined

Click the **Add Thesaurus** button in the **SECONDARY SIDEBAR** to add the next **Keyword** list.

Metadata Record -- Keyword Section

Choose a Thesaurus Type

Each **Keyword** list is assigned a "Thesaurus #" number starting with zero (0). The Thesauri numbers for a **Metadata Record** are always in sequence. When a **Keyword** list is deleted the numbering sequence will be reordered after the deleted list has been removed.

The Thesaurus IDs are for convenience only. A quick scroll link to the **Keyword** panel is placed in the **SECONDARY SIDEBAR** labeled with the thesaurus ID. Clicking this button will move the chosen **Keyword** list to the top of the window, space permitting.

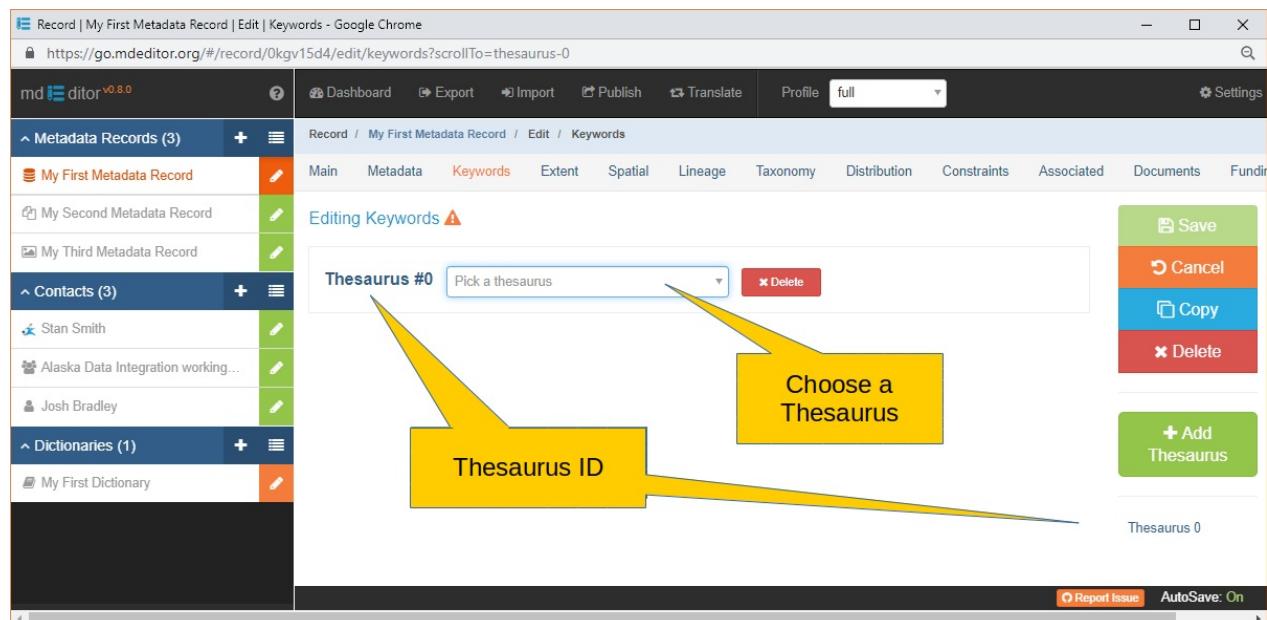


Image 1: Thesaurus Selection Window

A new **Keyword** list is initiated by choosing 'Custom Thesaurus' or one of the predefined keyword thesauri from the thesaurus selection list.

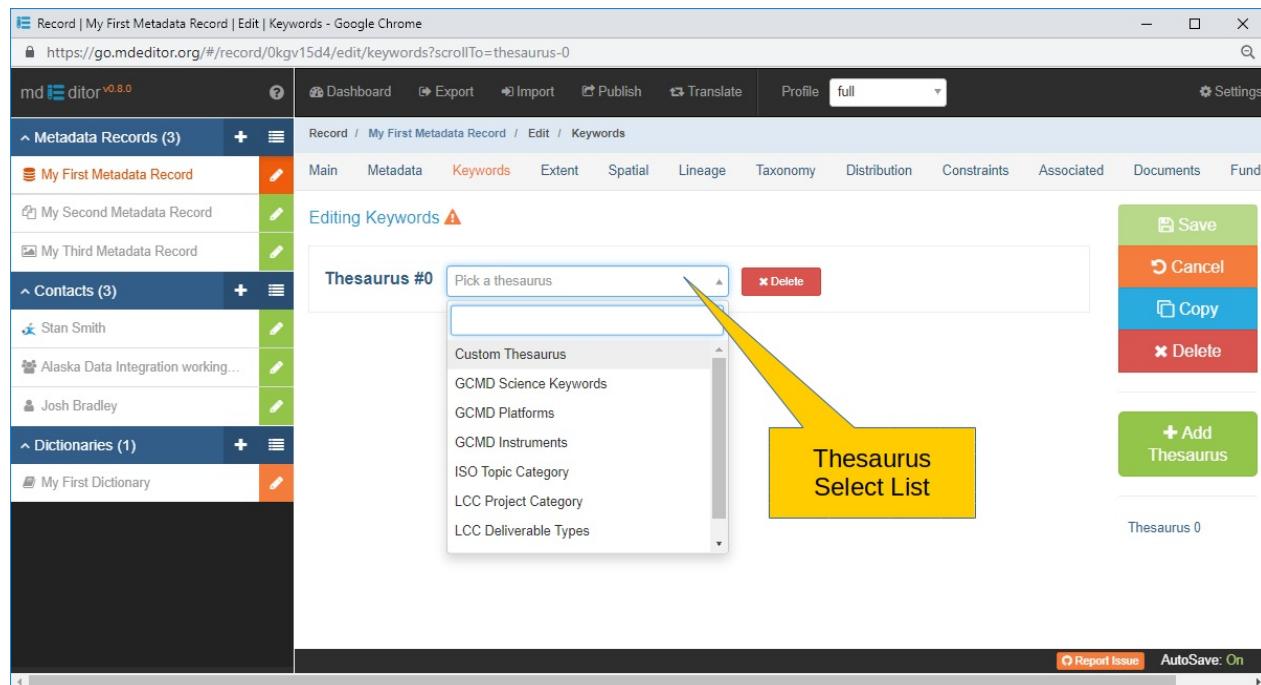


Image 2: Predefined Thesaurus Pick List

Once a thesaurus has been selected you can add [keywords](#) to the newly created [Keyword](#) list in accordance with procedures for predefined or custom keyword lists.

Metadata Record -- Keyword Section

Thesaurus Edit Window

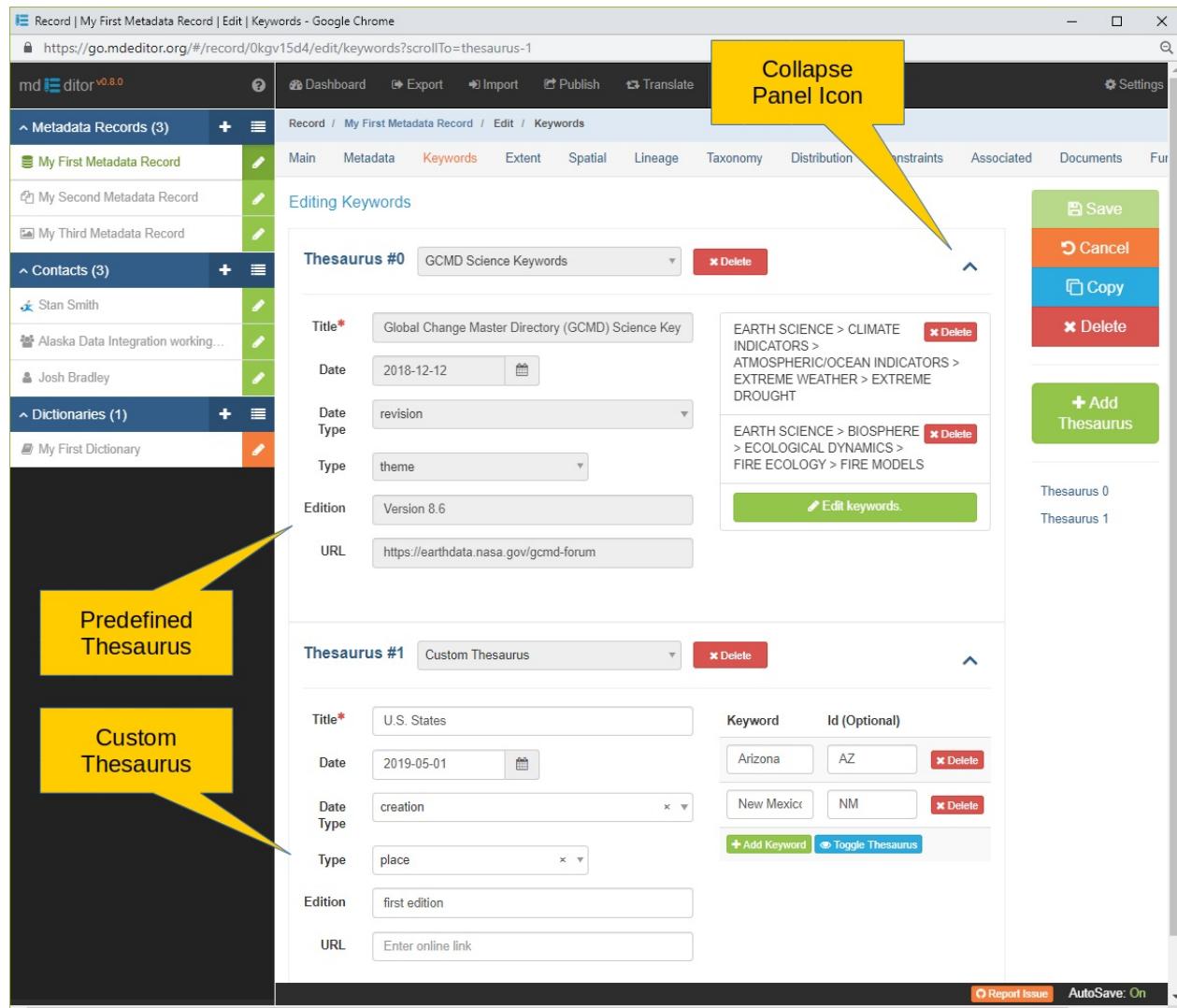


Image 1: Thesaurus Edit Window

Two types of **Keyword** lists may be specified: *predefined* and *custom*. When thesaurus information for predefined thesauri is inserted by **mdEditor** it cannot be edited by the user and the individual elements are disabled. Likewise, **keywords** from a predefined thesaurus must be selected from the list provided by **mdEditor** and cannot be extended.

Conversely, custom thesauri require the user to enter both the thesaurus information and **keywords**.

The **Keyword** panels may be collapsed to de-clutter the window by clicking the 'collapse panel icon' on the upper right corner of the panel. Once collapsed, they can be expanded again by reversing the process.

Metadata Record -- Keyword Section

Predefined Thesauri

When one of the predefined thesauri is selected all the thesaurus information elements are automatically filled in for your convenience and accuracy. The value of these elements cannot be changed, nor do they need to be.

mdEditor maintains the values of predefined thesauri information elements and keywords. However, once a **Keyword** list has been defined in a **Metadata Record** changes made to thesauri information elements or keywords in later releases of mdEditor will not be reflected in existing **Metadata Record**.

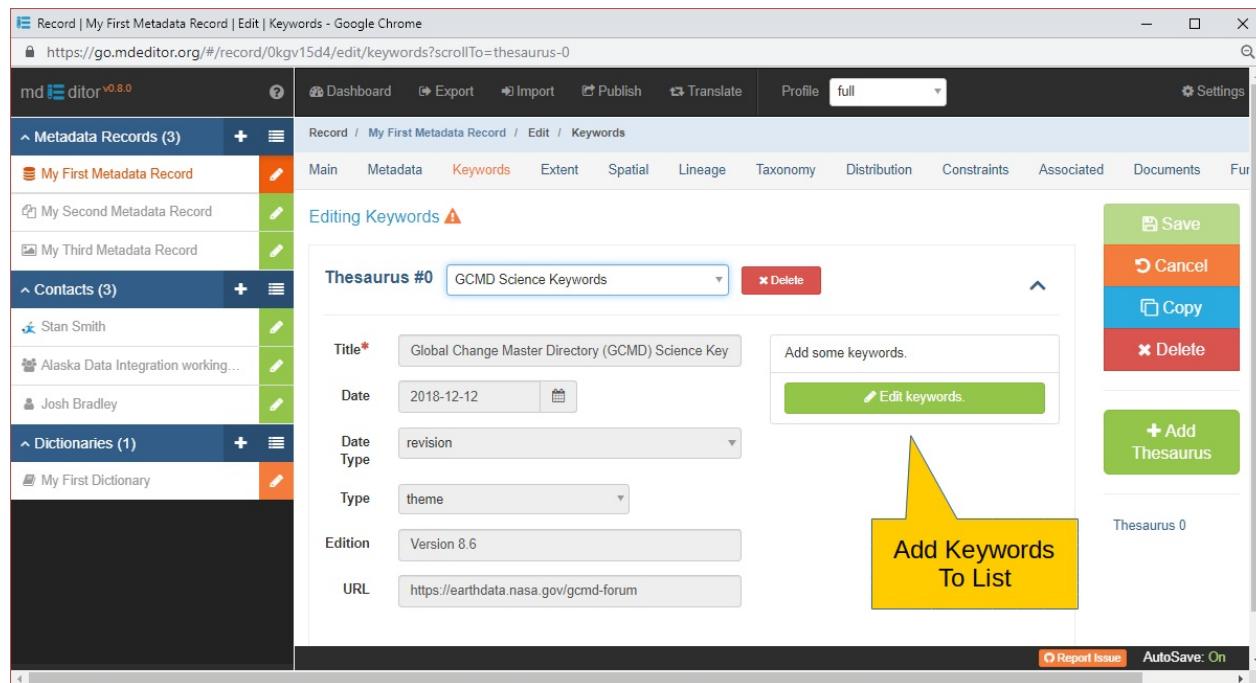


Image 1: Predefined Keyword Thesaurus Edit Window

With all thesaurus information elements pre-filled, all that remains is to choose which **keywords** to associate with the **Keyword** list.

Edit Keywords Click the 'Edit Keywords' button to show the list of available **keywords**. For predefined thesauri only **keywords** from the predefined list can be selected. User entries are not permitted. mdEditor maintains these keyword lists in accordance with the thesaurus source and strives to keep them current.

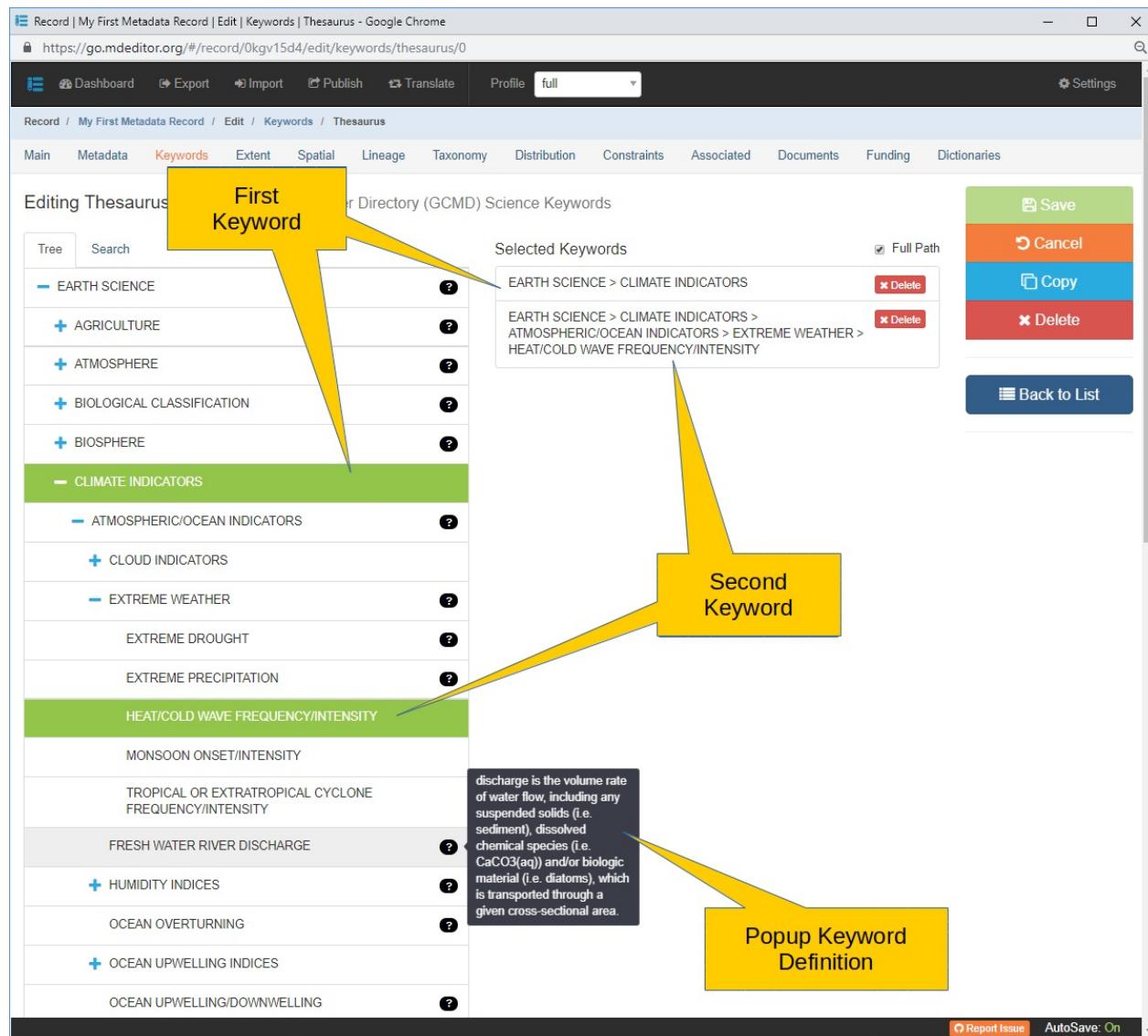


Image 2: Predefined Keyword Selection List

The list of available **keywords** is shown on the left side of the screen, **keywords** that have been selected appear in the "Selected **Keywords**" list on the right. In addition to appearing in the "Selected **Keywords**" list, selected **keywords** are highlighted in the available **keywords** list with a green background.

The available keyword list can be a simple list of **keywords** or a hierarchy of **keywords** as shown in the above image. When a keyword in a hierarchy is selected the full path is added to the "Selected Keyword" list.

- Click the '+' sign in a hierarchical keyword list to expand the next level of the hierarchy.
- Click the '-' sign in a hierarchical keyword list to collapse the current level of the hierarchy.
- **?** When available, hover over the question mark to pop up a definition of the keyword.
- **Delete** Click 'Delete' to remove a keyword from the "Selected **Keywords**" list. The keyword is not removed from the "Available **Keywords**" list. A keyword may also be removed from the "Selected **Keywords**" list by clicking on the keyword a second time in the "Available **Keywords**" list.
- **Back to List** Click the 'Back to List' button to close the **KEYWORDS SELECTION** window and return to the **Keywords** section.

Metadata Record -- Keyword Section

Custom Keyword Lists

When the [keywords](#) you need are not found in one of the predefined keyword thesauri you may build your own [Keyword](#) list using mdEditor's "Custom Thesaurus" page. With custom thesauri you can site established and standardized keyword lists not included in mdEditor's predefined list or create new lists with your own [keywords](#).

Since mdEditor allows more than one custom thesaurus, [keywords](#) can be organized into groups by common topic or theme. Each group can then be entered as a separate custom [Keyword](#) list. This will help make the lists more manageable.

A keyword may appear in more than one list without causing any complications.

The left side of the [CUSTOM THESAURUS EDIT WINDOW](#) contains element that define the keyword thesaurus. The right side provides for entry and maintenance of the [keywords](#).

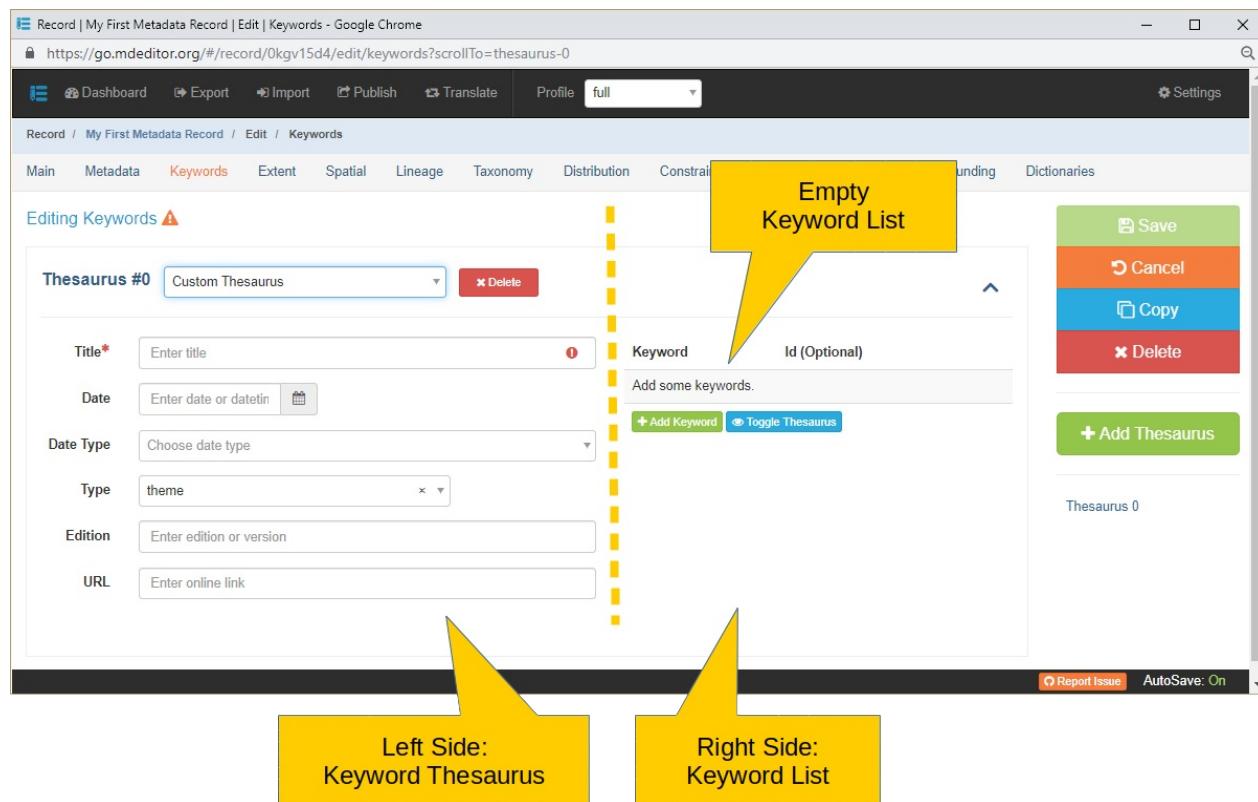


Image 1: Custom Keyword List Edit Window

Custom Keyword Thesaurus

The [Keyword](#) thesaurus is a [Citation](#) object. All [Keyword](#) thesaurus elements except [Type](#) belong to this [Citation](#).

All of the **Citation** object's elements are supported by mdJSON and mdTranslator for a thesaurus citation, however only the subset listed below are supported by mdEditor at this time.

A complete definition for the **Citation** object may be found at [Citation](#).

- **Title** {*type: string; max length: none; default: empty*}

Usage: A name for the custom **Keyword** list.

Custom **Keyword** lists may share the same **Title**, however this is not best practice. Try to give each custom list a unique **Title**.

- **Date** {*type: date, datetime (ISO 8601); default: empty*}

Usage: A date or datetime associated with the **Keyword** list.

- **Date Type** {*type: codelist (ISO CI_DateTypeCode, ADIwg codes); extensible: YES; multi-value: NO; default: empty*}

Usage: Type of date.

- **Type** {*type: codelist (ISO MD_KeywordTypeCode, ADIwg codes); extensible: YES; multi-value: NO; default: theme*}

Usage: A code or concept that defines the subject matter used to group similar **keywords**.

- **Edition** {*type: string; max length: none; default: empty*}

Usage: A version identifier for the **Keyword** list.

- **URL** {*type: string; max length: none; default: empty*}

Usage: This entry provides a link to any online information realted to the **Keyword** list. The value is placed in the **URI** element of the **Online Resource** object impledded in the thesaurus **Citation** object.

Custom Keyword List

When a custom **Keyword** list is first created or the list has no **keywords** assigned, the phrase "Add some **keywords**" will appear at the top of the list.

- **Add Keywords** Click to add a new **Keyword** object to the **Keyword** list.
- **Toggle Thesaurus** Click to hide or show the right side of the **CUSTOM THESAURUS EDIT WINDOW** window (thesaurus) to make more room for entering longer words or phrases as **keywords**.

Keyword Object

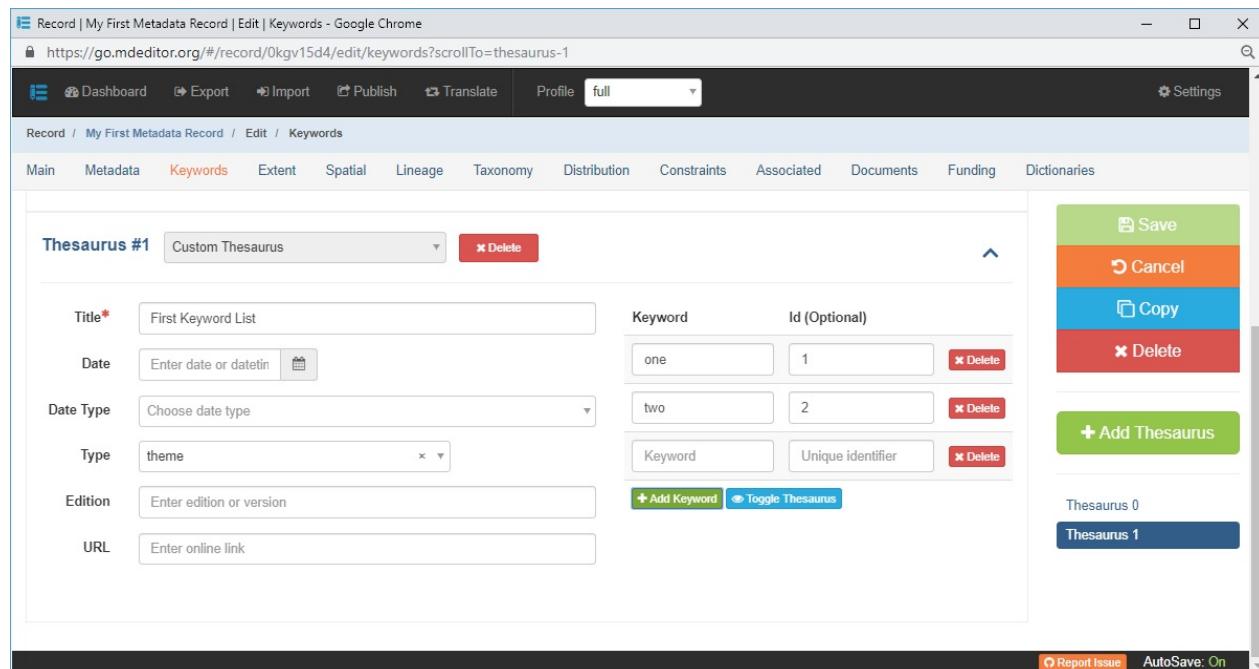


Image 2: Custom Keyword List Edit Window

- **Keyword** {*type: string; max length: none; default: empty*}

Usage: Commonly used word, formalized word, or phrase used to describe the subject.

- **ID** {*type: string; max length: none; default: empty*}

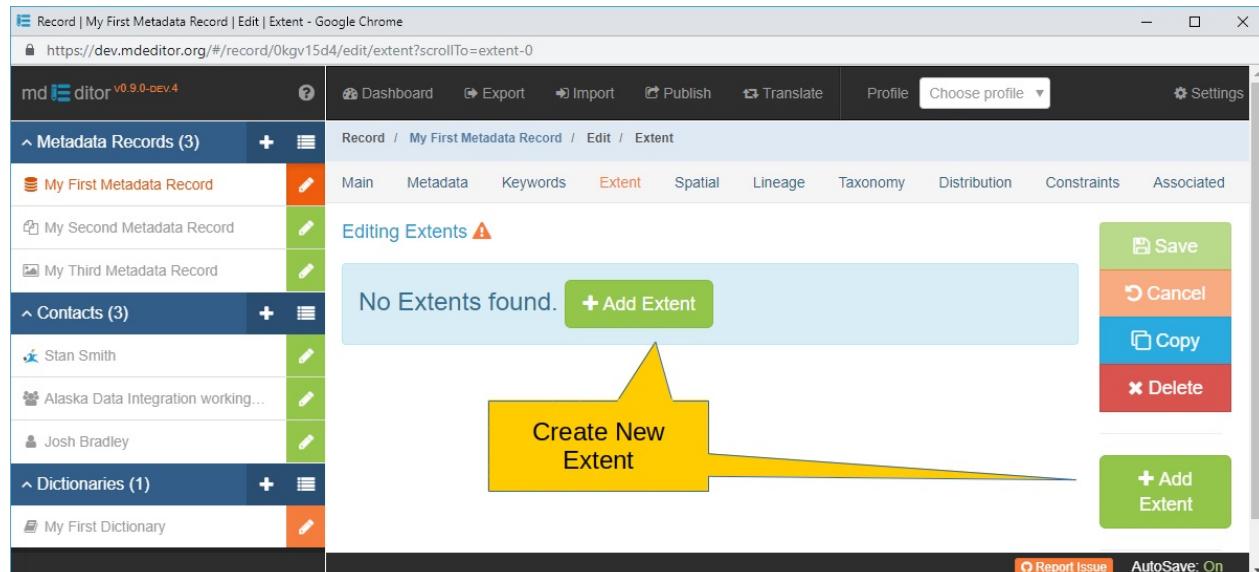
Usage: A number or code used to identify the keyword within the thesaurus domain.

Metadata Record -- Extent Section

The **Extent** section of the **EDIT WINDOW** is used to define geographic, temporal, and vertical extents for the main resource. The **Geographic Extent** sets spatial boundaries which encompass data collection and/or areas of interest for the main resource. The boundaries can be defined as a bounding box, points, lines, or complex polygons. **Temporal Extent** set time periods or specific instants for which the main resource is relevant. **Vertical Extents** define the vertical span of the main resource as altitude, elevation, or depth.

When no **Extents** have been defined for the **Metadata Record** a large blue bar is displayed on the page declaring "No Extents found."

Note only geographic extents are implemented in this release of mdEditor. Temporal and vertical extents are coming soon.



Click either **Add Extent** button to add the initial **Extent** to the **Metadata Record**. Afterwards you will be transferred to the **Extent** **EDIT WINDOW** where you can complete data entry for the extent.

When one or more **Extents** have been defined the **Extent** window will look similar to the image below.

The screenshot shows the mdEditor interface for editing metadata records. The left sidebar lists three metadata records: 'My First Metadata Record', 'My Second Metadata Record', and 'My Third Metadata Record'. Below them are sections for 'Contacts' (Stan Smith, Alaska Data Integration working group, Josh Bradley) and 'Dictionaries' (My First Dictionary). The main content area is titled 'Editing Extents' and shows the 'Extent #0' configuration. It includes fields for 'Extent Description' (Description of extent), 'Geographic Extent' (with 'Bounding Box' for North, South, East, West coordinates and 'Calculate' button), and 'Description' (Description of geographic extent). A right sidebar contains buttons for 'Save', 'Cancel', 'Copy', 'Delete', and '+ Add Extent'. At the bottom, there are 'Report Issue' and 'AutoSave: On' buttons.

The **Extent** **EDIT WINDOW** opens with one empty **Geographic Extent** initiated. Multiple **Geographic Extents** are permitted in mdJSON, however only one **Geographic Extents** is supported by mdEditor at this time. To include multiple **Geographic Extents** in the **Extent** you will need to generate the mdJSON manually.

Metadata Record -- Extent Section

Extent Edit Window

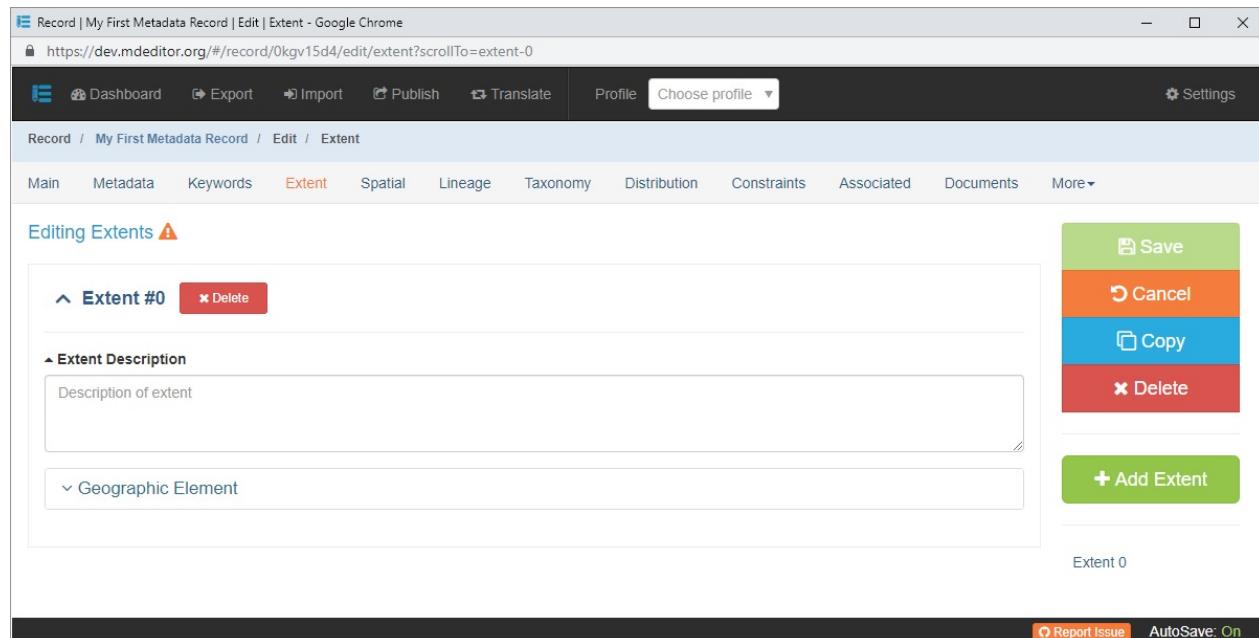


Image 1: Extent Edit Window

- **Description** {*type: string; max length: none; default: empty*}

Usage: A narrative description of the **Extent** including its geographic, temporal, and vertical extents.

- **Geographic Extent** {*type: object (Geographic Extent); default empty*}

Usage: A geographic boundary which encompasses the resource data collection area and/or areas of interest for the resource. The boundaries can be defined as a bounding box, points, lines, and/or complex polygons.

- **Temporal Extent** {*type: array (obj: Temporal Extent)*}

Usage: An array of **Temporal Extent** objects which define the time periods or specific time instants for which the main resource is relevant.

Not implemented in this release of mdEditor.

- **Vertical Extent** {*type: array (obj: Vertical Extent)*}

Usage: An array of **Vertical Extent** objects which define the vertical span of the main resource as altitude, elevation, or depth.

Not implemented in this release of mdEditor.

Although none of the elements are indicated required, one or more must be defined for the **Extent** to be valid.

Metadata Record -- Extent Section

Geographic Extent Edit Window

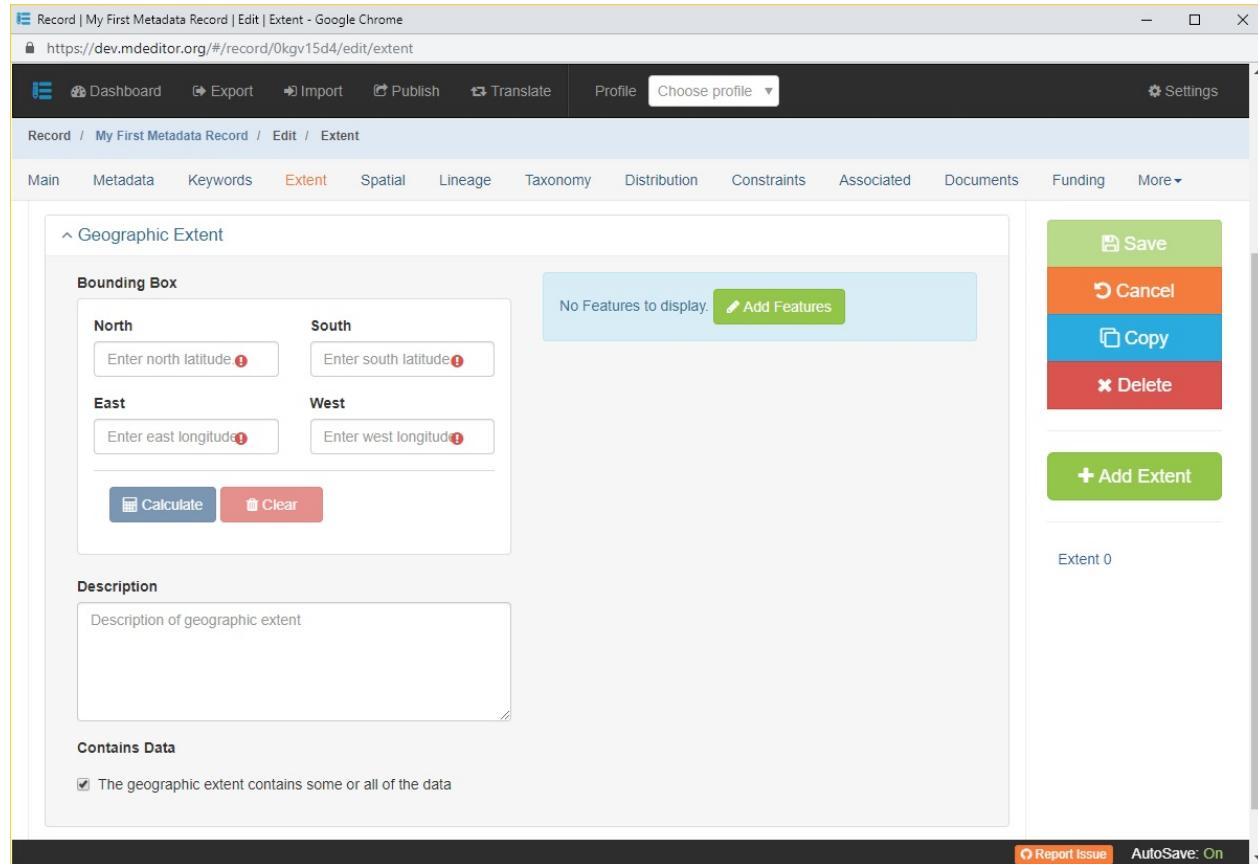


Image 1: Geographic Extent Edit Window

- **Bounding Box** {type: collection}

Usage: The general geographic position of the resource defined by bounding latitudes and longitudes.

- **North** {type: real; min: -90.0; max: +90.0; default: empty}

Usage: Northern-most coordinate of the limit of the dataset extent or area of interest expressed in latitude, in decimal degrees.

- **South** {type: real; min: -90.0; max: +90.0; default: empty}

Usage: Southern-most coordinate of the limit of the dataset extent or area of interest expressed in latitude, in decimal degrees.

- **East** {type: real; min: -180.0; max: +180.0; default: empty}

Usage: Eastern-most coordinate of the limit of the dataset extent or area of interest expressed in longitude, in decimal degrees.

- **West** {type: real; min: -180.0; max: +180.0; default: empty}

Usage: Western-most coordinate of the limit of the dataset extent or area of interest expressed in longitude, in decimal degrees.

- **Calculate** If **Features** have been added to the **Geographic Extent** the button may be clicked to compute **Bounding Box** values for the collection of **Features**.

Bounding box coordinates are not automatically recalculated when **Features** are added, edited, or deleted. Click the **Calculate** button again after making changes to the **Feature** collection.

- **Clear** Clear all **Bounding Box** elements.
- **Description** {*type: string; max length: none; default: empty*}

Usage: A short description of the geographic areal domain of the data set. Examples include, "Manistee River watershed", "extent of 7½ minute quads containing any property belonging to Yellowstone National Park", or "ponds and reservoirs larger than 2 acres in Jefferson County, Colorado".

- **Contains Data** {*type: Boolean; default: TRUE*}

Usage: Indicates the **Geographic Extent** encompasses some or all the data for this **Extent**.

- **Features** {*type: array (obj: Feature)*}

Usage: An array of objects each describing a geographic boundary or location comprising all or a portion of the resource.

When no **Features** have been defined for the **Geographic Extent** a large blue bar is displayed on the page declaring "No Features to display." Click the **Add Features** button to transfer to the **Feature EDIT WINDOW** where you can import or manually add and edit **Features**.

After one or more **Features** have been added to the **Geographic Extent** a map will be displayed showing the features. See the image below.

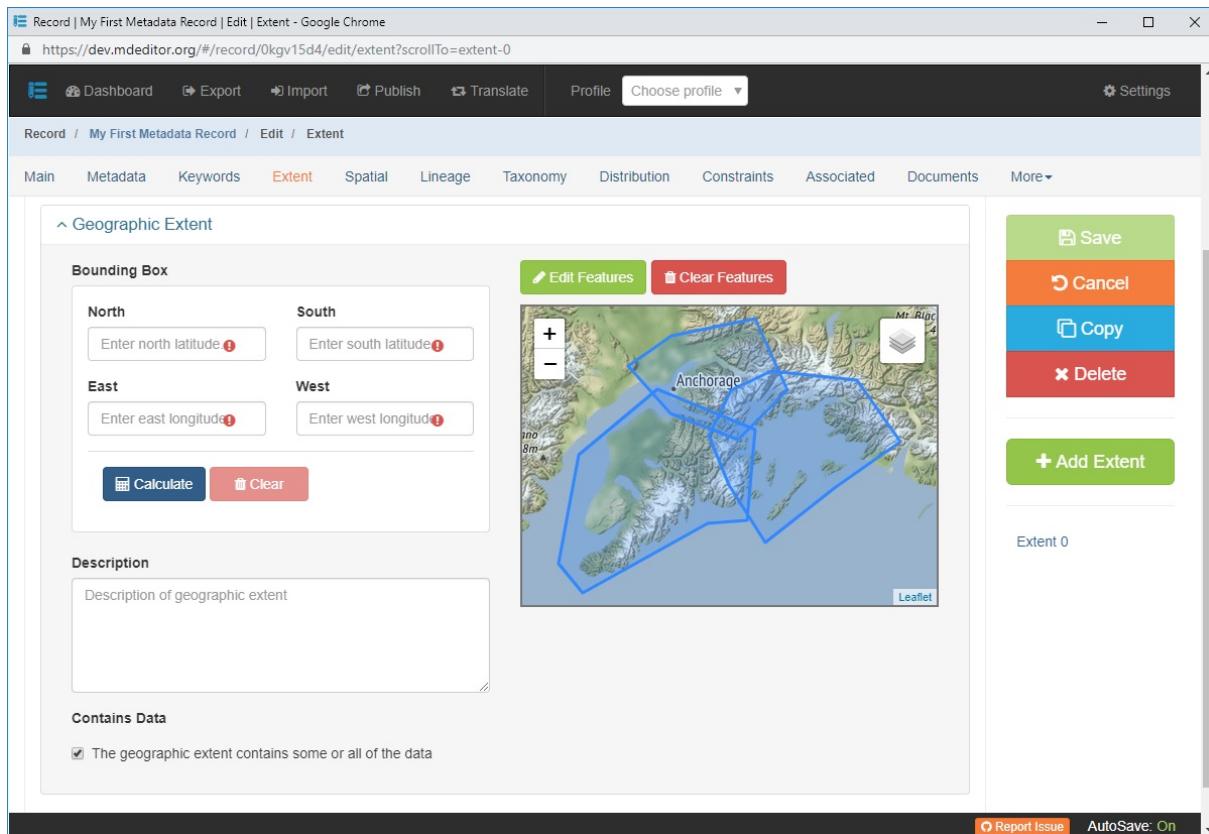


Image 2: Geographic Extent Edit Window with Features

- **Edit Features** Click to transfer to the **Feature EDIT WINDOW** where you can add new and edit existing **Features**.
- **Clear Features** Remove all **Features** from the **Geographic Extent**.

Metadata Record -- Extent Section

Geographic Features Edit Window

The **Features EDIT WINDOW** allows geographic features for the **Geographic Extent** to be added and edited. Features may be added manually or imported if the features have been saved in one of the graphic standards supported by mdEditor.

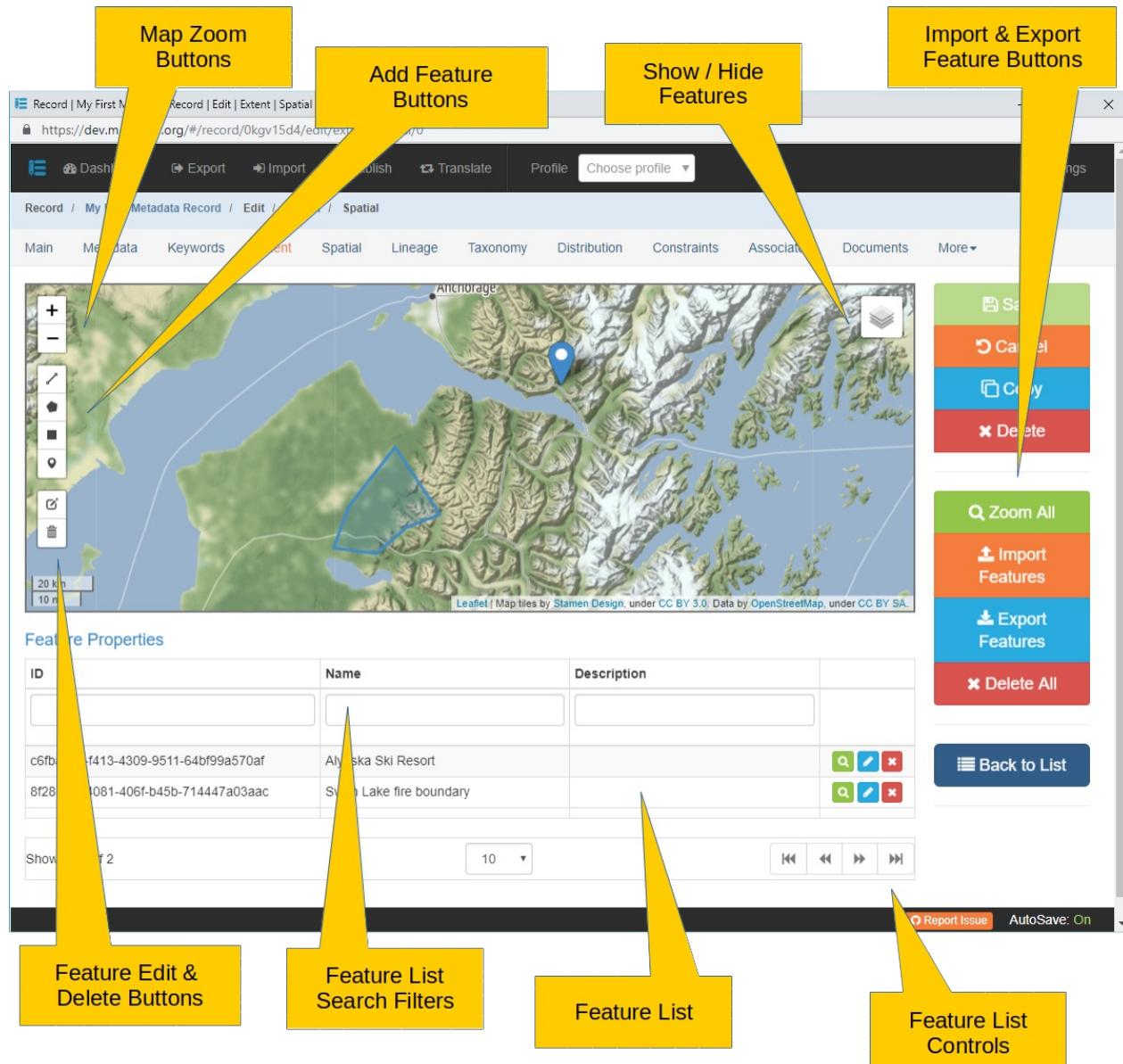


Image 1: Geographic Extent Features Edit Window

The map at the top of the page displays the **Features** that have been added to the **Geographic Extent**. On the left side of the map are button groups for modifying the map's display and adding and editing features. Mouse controls are also active over the map.

Map

Click to zoom map in to see more detail (smaller map scale).

Click to zoom map out to see greater area (larger map scale).

Map scale may also be zoomed in and out using the mouse scroll wheel while the cursor is hovering over the map.

The map may be panned by holding either the left or right mouse button down while moving the mouse over the map.

Zoom All Click to zoom the map scale in or out to display all **Features** in the **Geographic Extent**.

If the map tiles turn gray try zooming in and out to refresh. Also, the map will not display tiles at a resolution of less than 500 meters.

 Click to Show/Hide the **Features** layer over the map. Clicking the button will display a short menu with a "Extents" checkbox. If checked, features will be displayed. If unchecked, features will be hidden.

Add Features

[Import Features](#)

[Edit Features](#)

[Export Features](#)

Metadata Record -- Extent Section

Add Geographic Features

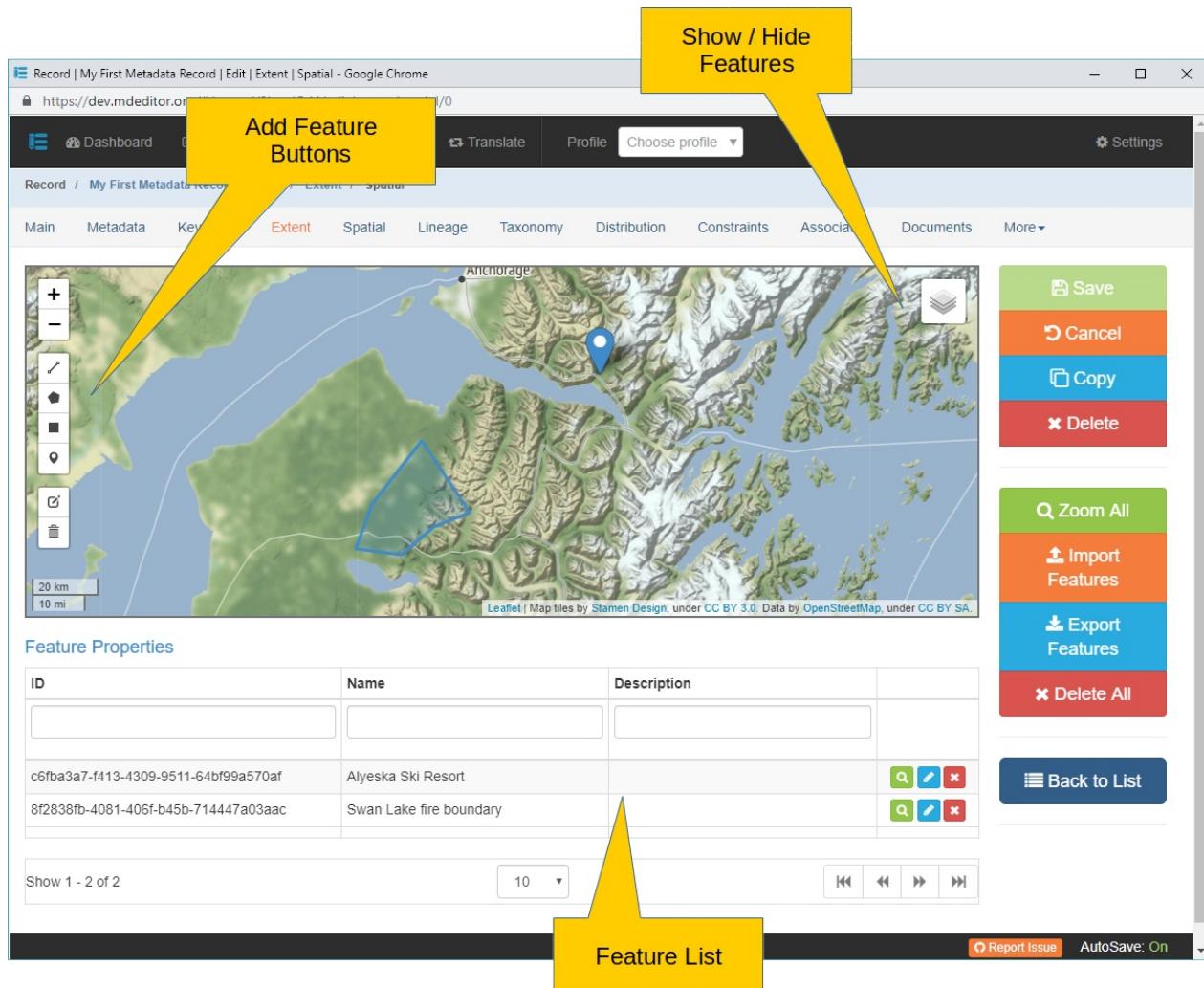


Image 1: Geographic Extent Features Edit Window

Geographic **Features** may be added directly to the map using the map's drawing controls. These controls are access via the button positioned along the left side of the map.

Click to add a line **Feature** to the map and **Geographic Extent**, the cursor tip will change to a crosshair. Place the crosshair at the line's starting point and click. Move to the cursor to the next point along the line and click to anchor the segment. You may move the cursor again to add another segment or click the last point entered to complete the line.

Click to add a polygon **Feature** to the map and **Geographic Extent**, the cursor tip will change to a crosshair. Place the crosshair at the polygon's starting point and click. Move to the cursor to the next vertex (polygon point), click to anchor the polygon segment. Continue until the polygon is fully outlined. To close the feature and complete the polygon click the originating point.

Click to add a rectangle **Feature** to the map and **Geographic Extent**, the cursor tip will change to a crosshair. Place the crosshair at one corner of the rectangle and click. Move to the cursor to a diagonal corner of the rectangle and click to anchor the rectangle and complete the feature.



Click to add a point **Feature** to the map and **Geographic Extent**, the cursor tip will change to a crosshair. Place the crosshair at the point's location on the map and click to anchor the point and complete the feature.

If a newly added **Feature** disappears from the map as soon as it has been added check that the 'Extents' layer is turned on by clicking on the button.

Metadata Record -- Extent Section

Import Geographic Features

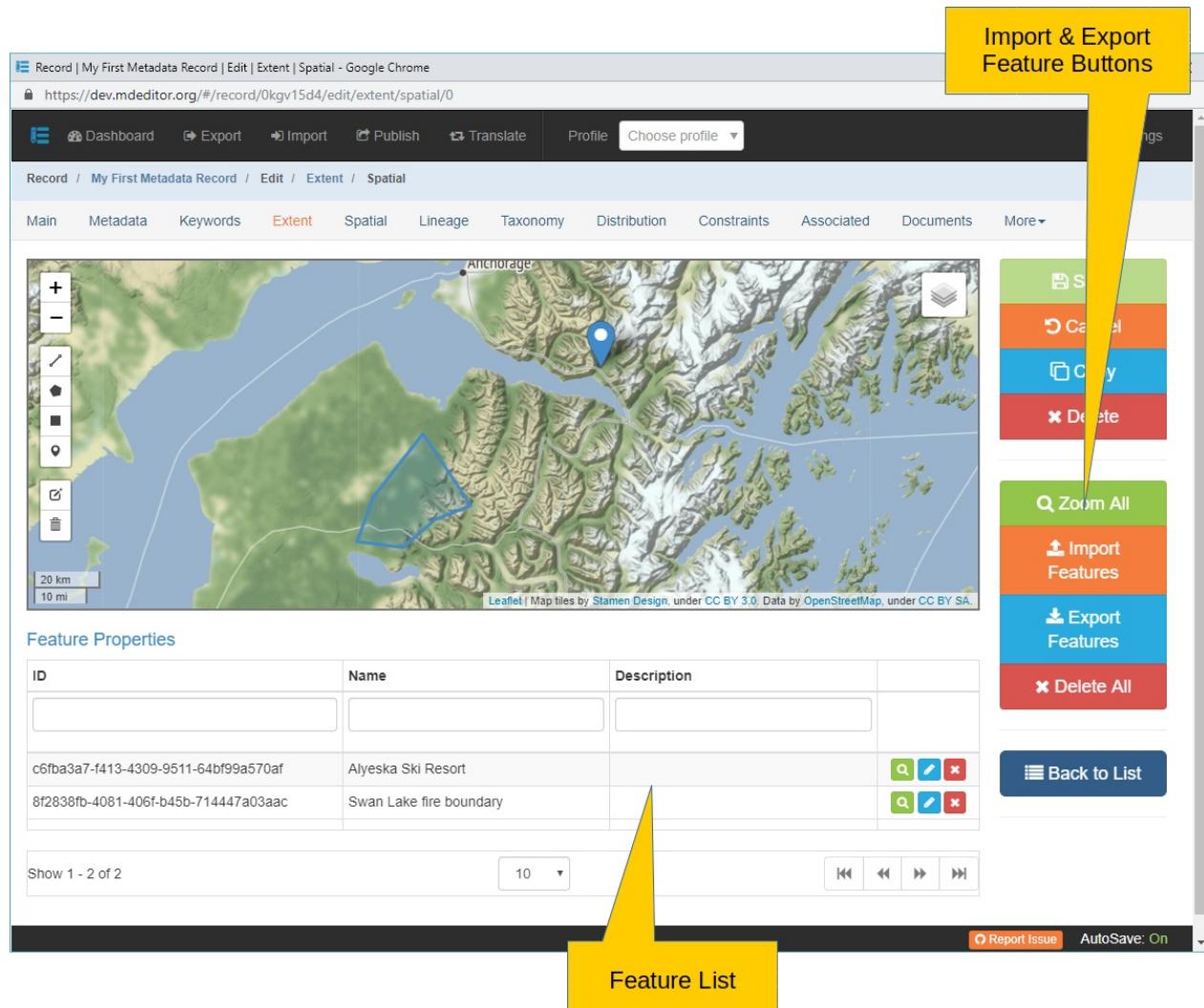


Image 1: Geographic Extent Features Edit Window

Some geographic features stored on your hard drive may be imported directly into mdEditor and saved as a geographic **Feature**. To be eligible for import the file must be saved in one of the supported formats listed below.

Import Features Click to import a feature file from your hard drive. Your operating system's file explorer will open to a default file location (such as the 'Downloads' folder). Select the file to import or navigate to the desired folder. Select the file to import and click "Open".

-or-

Drag & Drop The map supports dragging a file from your file explorer and dropping the feature file on the map. mdEditor will open the file and incorporate the feature(s).

- **CSV** (Comma or Tab delimited) text file

The import process searches column heading names for clues to locating geographic and other information.

- A column name of "lat", "latitude", or "lat" + any other characters is assumed to contain the geographic latitude in decimal

degrees.

- A column name of "lon", "longitude", or "lon" + any other characters is assumed to contain the geographic longitude in decimal degrees.
- A column name of "id" is assumed to contain the ID of the point and is saved in a editable field.
- A column name of "name" is assumed to contain the name of the point and is saved in a editable field.
- A column name of "description" is assumed to contain a description of the point and is saved in an editable field.
- All other column values are saved in read-only fields.

The CSV file can only import points.

- **KLM** (Keyhole Markup Language) - used by Google Earth and others applications.
 - A column name of "name" is assumed to contain the name of the feature and is saved in a editable field.
 - A column name of "description" is assumed to contain a description of the feature and is saved in an editable field.
 - All other column values are saved in read-only fields.
- **Shapefile** (ESRI ArcGIS format) - A non-topological file format for storing the geometric location and attribute information of geographic features in XML structure.
 - Vector shapefiles are not supported.
- **GeoJSON** (RFC 7946) - a geospatial data interchange format based in JavaScript Object Notation, [JSON](#).
 - A column name of "id" is assumed to contain the ID of the feature and is saved in a editable field.
 - A column name of "name" is assumed to contain the name of the feature and is saved in a editable field.
 - A column name of "description" is assumed to contain a description of the feature and is saved in an editable field.
 - All other column values are saved in read-only fields.
- **GPX** (the GPS eXchange Format) - a data format for exchanging GPS data between programs and users.

Metadata Record -- Extent Section

Edit Geographic Features

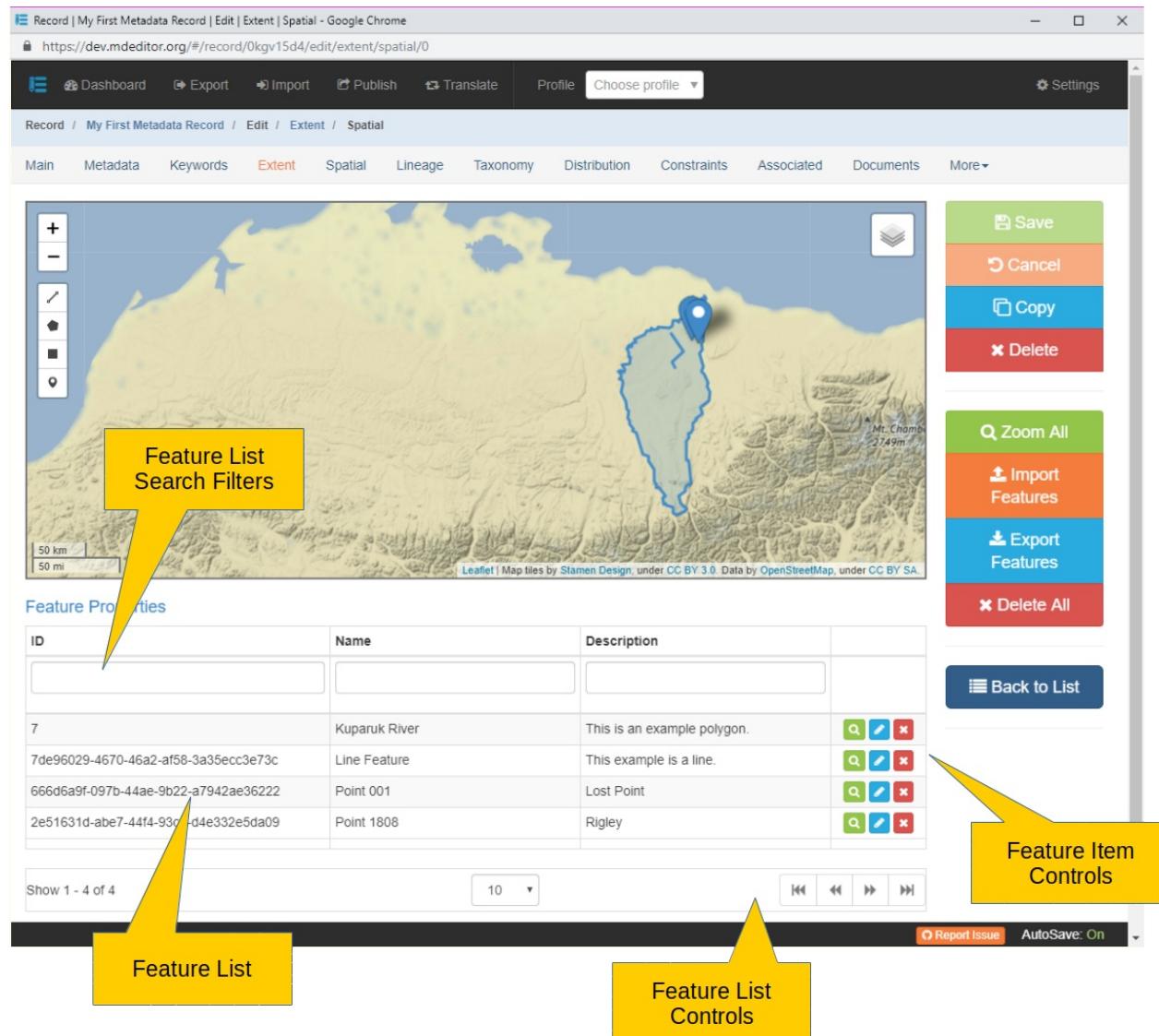


Image 1: Geographic Extent Features Edit Window

All geographic **Features** can be edited on the map whether they were initially drawn or imported, the editing process is the same.

[Locate a Features](#)

[Edit Shape](#)

[Edit Properties](#)

Locate a Feature

The first step in editing a **Feature** is to locate the feature. This can be done directly on the map or using the **FEATURE LIST** near the bottom of the window.

Select from Feature List

As the mouse rolls over lines on the **FEATURE LIST** the corresponding **Feature** is highlighted on the map.

- If the **Feature** isn't in the current map display area, click the  button to center the map on the feature. The map will also zoom to best show the feature.

When centering in on points, the map zooms to a scale of 300 meters. However, map tiles only display to a maximum resolution of 500 meters. Therefore the map detail is lost and a gray background replaces the map. To regain map detail simply zoom out a level to 500 meters or greater.

- Click to enter edit mode on the **Feature**.
- Click to delete the **Feature**.

There is no confirmation option before delete!

The default **FEATURE LIST** shows the first 10 **Features**. When more than 10 features have been added to the map use the 'Feature List' controls at the bottom of the window to page the list up or down to see all the features. You may also change the number of features shown in the list at one time.

To narrow the list of features displayed use the 'Search Filter' option at the top of the 'Feature List'. The list may be filtered by **ID**, **Name**, and **Description**. Type your search string into one or more of the filter boxes and the 'Feature List' will show only those **Features** that match. Clear the filters to see the full list again.

Select from Map

To select a **Feature** on the map for editing double click the feature. For polygons this can be anywhere inside the polygon.

Double clicking to select a line can be tricky, especially if the line falls within a polygon, the polygon always seems to get priority. When having trouble selecting any feature directly from the map try selecting from the **FEATURE LIST** instead.

Edit Shape

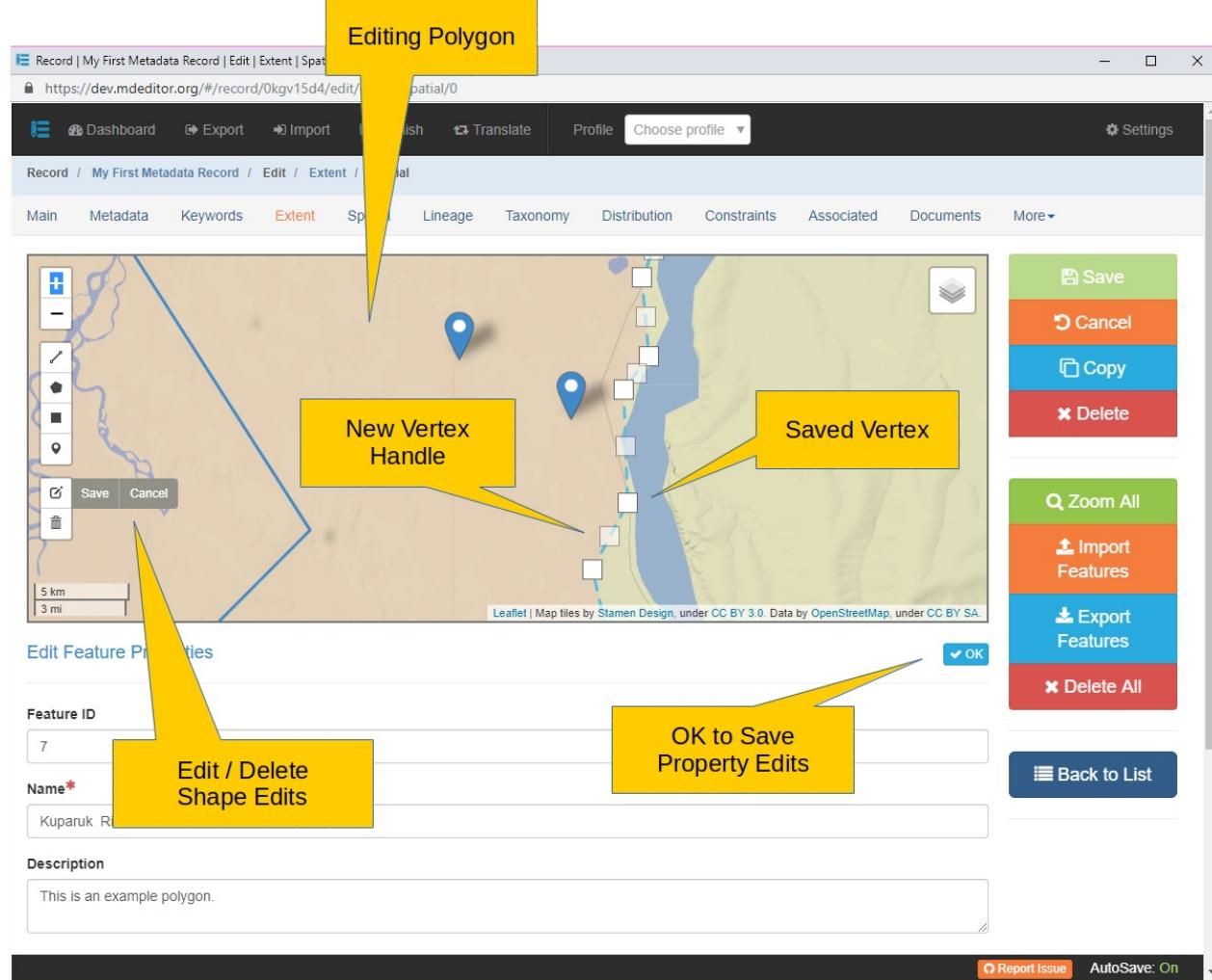


Image 2: Editing Features Shape

Points

Points can be moved or deleted. When a point is selected for edit its map symbol will change color and be surrounded by a dashed line. The 'Edit / Delete' buttons for shape edits will show on the left edge of the map if not already present.

Click and drag the point to its new location then click the 'Save' button on the pop-out menu of the edit button (☞), or click 'Cancel' to return the point to its initial location.

To delete the point **Feature**, select the point for edit then click the button. On the pop-out menu that appears click "Clear All" to delete the **Feature**. Both the "Save" and "Cancel" buttons will cancel the delete process.

The actual coordinate values for the point cannot be edited within mdEditor.

Lines and Polygons

Lines and polygons can be reshaped or deleted, but not moved as a complete map feature. When the line or polygon is selected for edit its line becomes dashed and each vertices is marked by an opaque white square (see above image). These mark the 'saved vertices' or vertices that represent an actual point in data. Mid way between saved vertices is transparent square providing a handle for adding a new vertex to the data file.

To move an existing point (vertex) click and drag any opaque square to its new location. To increase the detail of the line or polygon you can click and drag one of the transparent squares to a desired location. This will add a new vertex to the data. Notice that the new vertex turns opaque and transparent squares appear on either side of the new vertex.

To delete an existing point (vertex) click the vertex without moving the mouse.

Clicking on a transparent square will add a new vertex to the data file even if the square is not dragged to a new location. In this way a portion of line segment can be pinned before moving one it's original end point.

After reshaping a line or polygon click the 'Save' button on the pop-out menu of the edit button (), or click 'Cancel' to return the vertices to their original positions.

To delete the line or polygon **Feature**, select the feature for edit then click the  button. On the pop-out menu that appears click "Clear All" to delete the **Feature**. Both the "Save" and "Cancel" buttons will cancel the delete process.

Edit Properties

To edit the properties of a **Feature** click the  button on the corresponding line in the **FEATURE LIST** or double click the feature on the map. The **Feature**'s properties will be shown in a table below the map that temporarily replaces the **FEATURE LIST**.

Only the **ID**, **Name**, and **Description** elements may be edited. All other properties of the **Feature** are displayed as read-only.

Click the **OK** button to save your changes and show the **FEATURE LIST** once again.

Initiate property edits using the  button when possible. After clicking the **OK** button to end property edits the **Feature** will remain in active edit mode on the map. You will need to click 'Save' or 'Cancel' on the  button pop-out menu to close shape edit mode.

Metadata Record -- Extent Section

Export Geographic Features

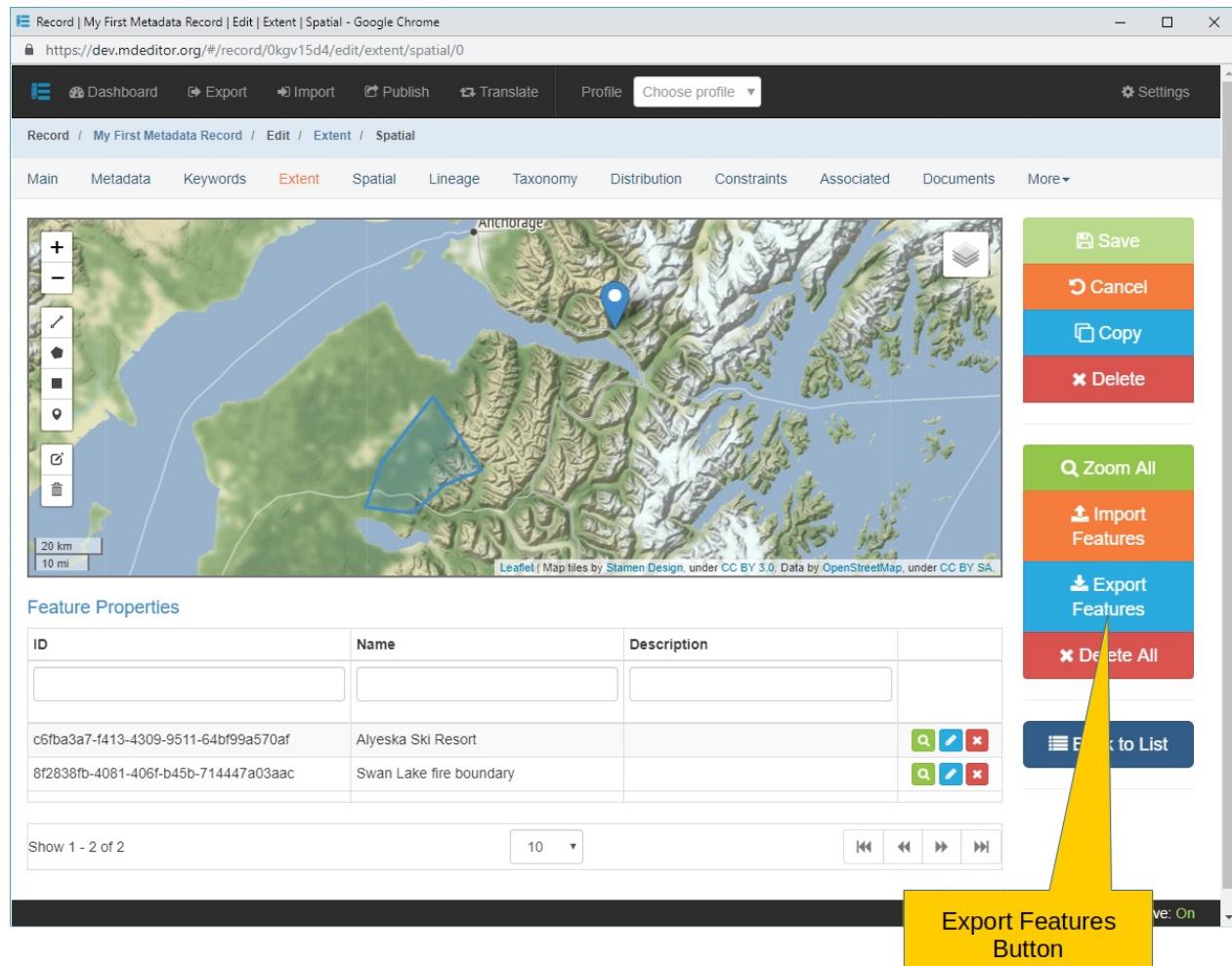
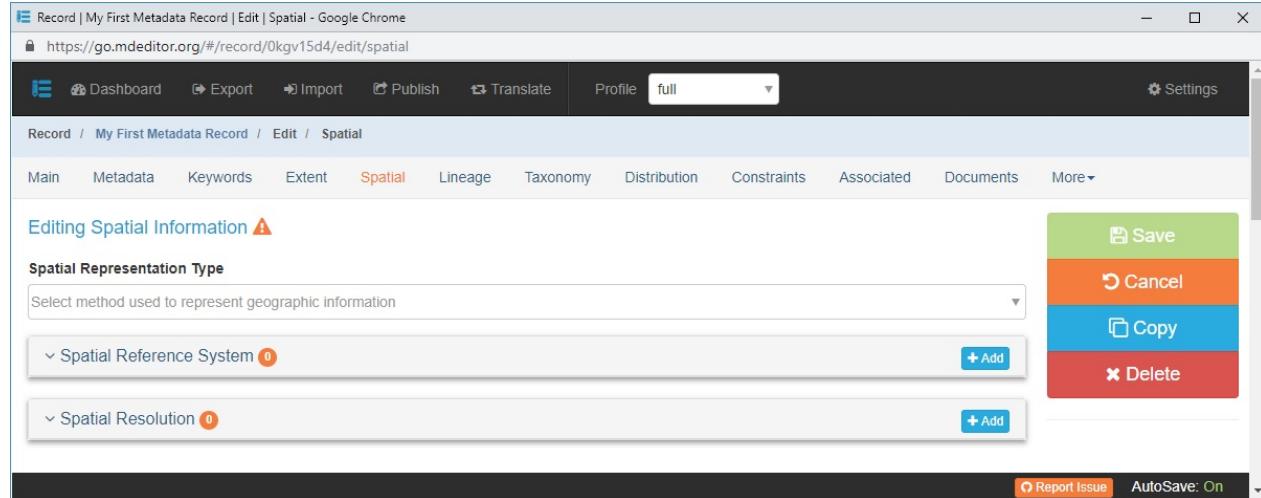


Image 1: Geographic Extent Features Export Window

Export Features Click to export ALL geographic **Features** for the **Geographic Extent** into a single GeoJSON "Feature Collection" object. The file will be placed in your default downloads folder with a name of "export_features.json".

Metadata Record -- Spatial Section

The **Spatial** section of the **EDIT WINDOW** is used to document the spatial parameters of the main resource.



- **Spatial Representation Type** {*type: codelist (ISO MD_SpatialRepresentationTypeCode, ADIwg codes); extensible: YES; multi-value: YES; default: empty*}
- Usage:* The geographic format of the main resource such as grid, vector, textTable, video, etc.
- **Spatial Reference System** {*type: object (Spatial Reference System); default empty*}
- Usage:* The spatial reference system of the main source.
- **Spatial Resolution** {*type: object (Spatial Resolution); default empty*}
- Usage:* Information about the scale of the geographic extent of the main resource.

Metadata Record -- Spatial

Spatial Reference System

Spatial Reference System {type: object (*Spatial Reference System*); default empty}

Usage: The spatial reference system used by the main resource.

The screenshot shows a user interface for defining a spatial reference system. At the top left is a back arrow labeled '^ Spatial Reference System'. On the right side of the header is a blue square icon with a white circle. The main area contains several input fields:

- Reference System Type***: A dropdown menu with the placeholder "Select type of reference system used." and a red error icon.
- Identifier***: An input field with the placeholder "Enter the identifier for the resource" and a red error icon.
- Namespace**: A dropdown menu with the placeholder "Select or type a namespace for the identifier."
- Version**: An input field with the placeholder "Enter the version for the identifier."
- Description**: An input field with the placeholder "Enter a description of the identifier."
- Authority**: A dropdown menu with a blue square icon and a white circle on the right.

- **Reference System Type** {type: codelist (ISO MD_ReferenceSystemTypeCode); extensible: YES; multi-value: NO; default: empty}

Usage: Type of reference system used.

- **Reference System Identifier** {type: object (*Identifier*); default empty}

Usage: The reference system identifier or definition.

See object details

Identifier Object

Identifier 1

Identifier*

Enter the identifier for the resource

Namespace

Select or type a namespace for the identifier.

Version

Enter the version for the identifier.

Description

Enter a description of the identifier.

Authority

✓ OK

- **Identifier** {type: string; max length: none; default: empty}

Usage: A cataloged and managed name or code for the resource.

- **Namespace** {type: string; max length: none; default: empty}

Usage: A string which unambiguously defines the namespace to which the identifier belongs.

- **Version** {type: string; max length: none; default: empty}

Usage: The version number of the identifier.

- **Description** {type: max length: none; string; default: empty}

Usage: A description of the meaning of the identifier.

- **Authority** {type: object ([Citation](#)); default empty}

Usage: A reference to information about the identifier. An [Authority](#) is an abbreviated version of the full [Citation](#) object.

[See object details](#)

Citation Object

See [Citation Section](#) for editing instructions.

Metadata Record -- Source

Spatial Resolution

Spatial Resolution {type: object ([Spatial Resolution](#)); default empty}

Usage: The geographic scale of the main resource.

^ Spatial Resolution ✖

Scale Factor*
 !

Level Of Detail*
 !

Measure
Measure Type*
 ! ▾

Value*
 !

Units*
 !

It is required to have at least one of the three **Spatial Resolution** elements, but multiple are permitted.

- **Scale Factor** {type: integer; min: 0; max none; default: empty}

Usage: The geographic scale for the resource expressed as map scale (e.g. 1:24000) or fraction (1/24000); enter the denominator (e.g. 24000).

- **Level of Detail** {type: string; max length: none; default: empty}

Usage: A brief textual description of the spatial resolution of the resource.

- **Measure** {type: object ([Measure](#)); default empty}

Usage: Scale of the geographic extent expressed in distance, length, or angle parameters.

[See object details](#)

Measure Object

Measure

Measure Type*

The type of measurement.

Value*

Enter the number of units in the measurement.

Units*

Type of units to associated with the value.

- **Measure Type** {*type: codelist (enumerated list); extensible: NO; multi-value: NO; default: empty*}

Usage: An enumerated selection list: distance, length, angle, measure, scale.

- **Value** {*type: real; min: 0; max none; default: empty*}

Usage: The number of units in the measure.

- **Units** {*type: string; max length: none; default: empty*}

Usage: The name of the units associated with the **Value**.

Metadata Record -- Lineage Section

The **Lineage** section of the **EDIT WINDOW** is used to document the history of the resource. In other words, the step-by-step actions taken from acquisition of source data through transformation and validation of intermediary data products to final assembly of the main resource.

When no **Lineage** has been defined for the **Metadata Record** a large blue bar is displayed on the page declaring "No Lineage found."

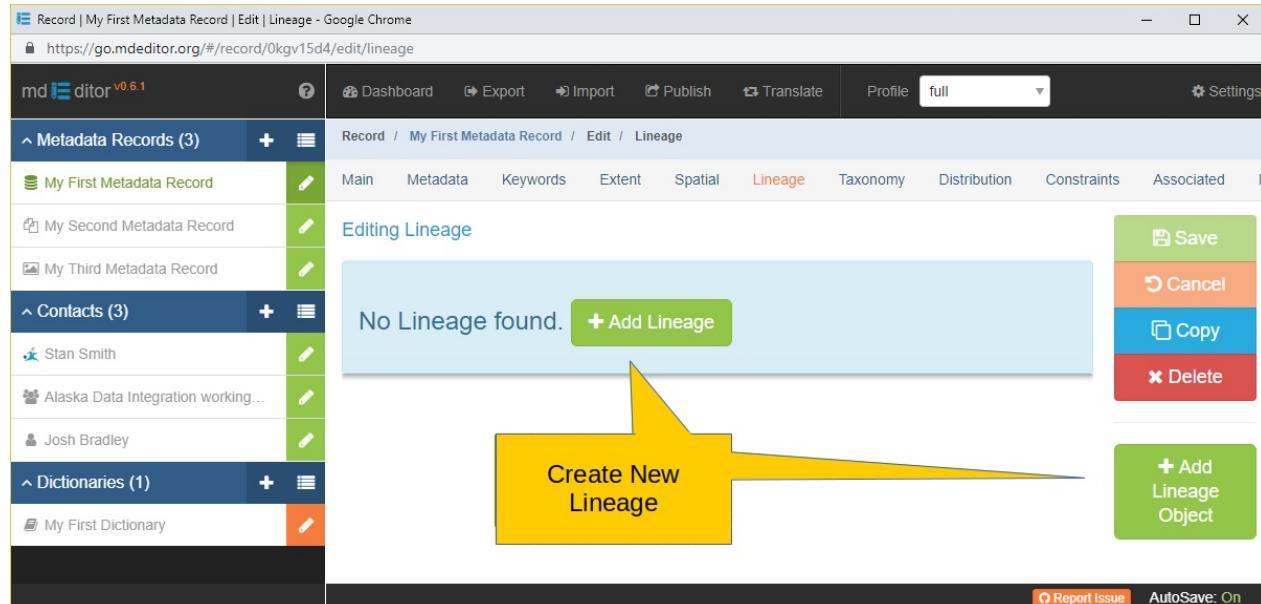


Image 1: Lineage Section with no Lineage Defined

Add Lineage and **Add Lineage Object** To add a resource **Lineage** object click either button, they serve the same function. After clicking one of the buttons you will be transferred to the **Lineage EDIT WINDOW** where you can complete data entry for the resource lineage.

When one or more **Lineage** have been defined the **Lineage** section window will look similar to the image below.

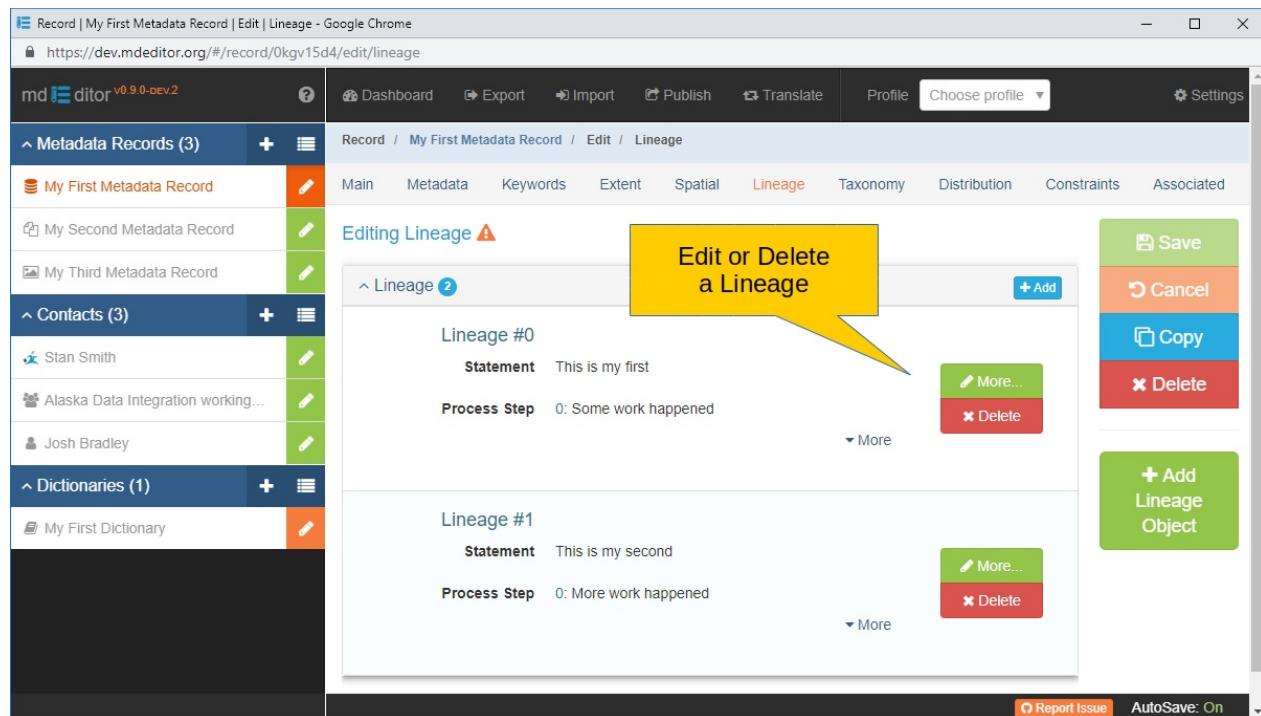


Image 2: Lineage Section with one or more Lineage Defined

Click the **Edit** button to transfer to the **Lineage EDIT WINDOW**.

Metadata Record -- Lineage Section

Edit Window

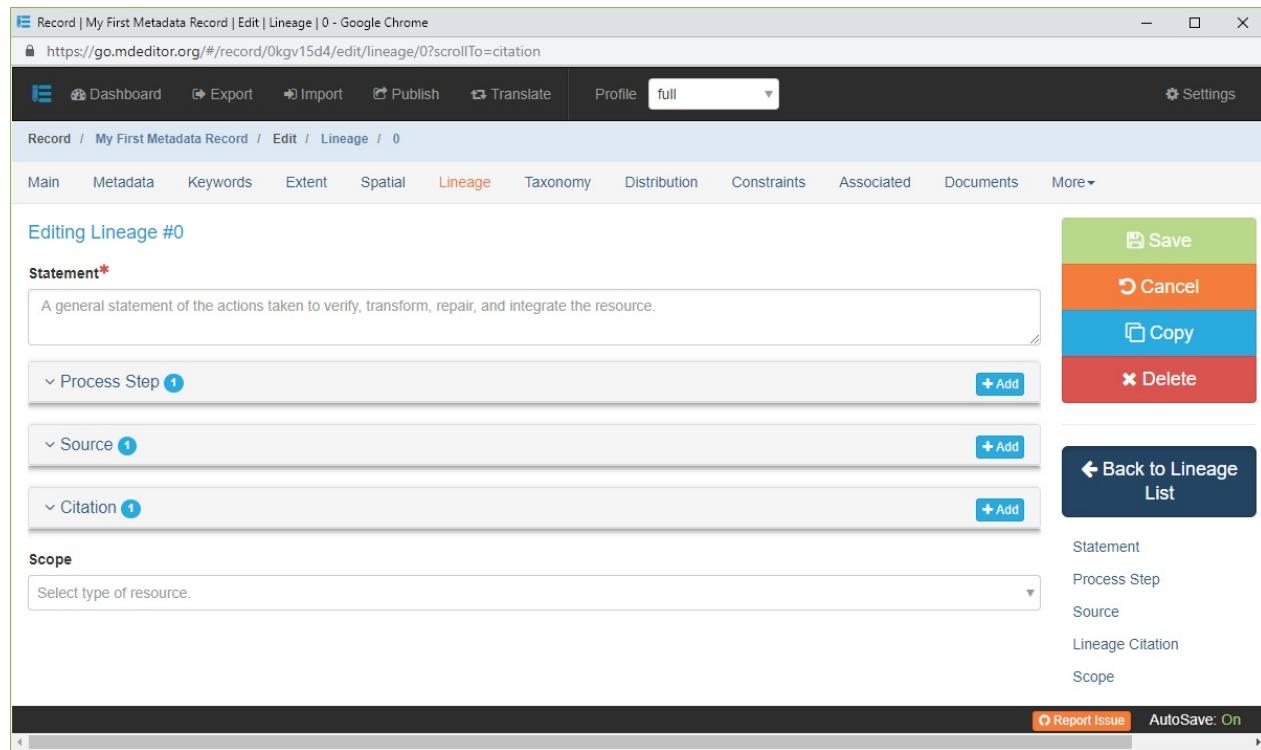


Image 1: Lineage Edit Window

[Back to Lineage List](#) Click to return to the list of defined [Lineages](#).

- **Statement** {*type: string; max length: none; default: empty*}

Usage: A description of the resource being described along with a general statement of the overall actions taken to verify, transform, filter, and integrate the resource.

- **Process Steps** {*type: array (obj: [Process Step](#))*}

Usage: An array of brief statements describing individual, non-trivial processes or methodologies taken in developing the resource.

- **Sources** {*type: array (obj: [Source](#))*}

Usage: An array of information about source datasets used in creating the resource.

- **Citations** {*type: array (obj: [Citation](#))*}

Usage: An array of citations that describe the lineage process.

- **Scope** {*type: codelist (ISO MD_ScopeCode, ADIwg codes); extensible: YES; multi-value: NO; default: empty*}

Usage: The type of resource this lineage describes.

Metadata Record -- Lineage Section

Process Step Array

A screenshot of a user interface for managing a process step array. At the top, there's a header 'Process Step 1' with a '+ Add' button. Below it is a table with two columns: '# Description'. A single row is shown with '# 0' and 'Process Step one' in the description column. To the right of this row are two buttons: a green 'More...' button and a red 'Delete' button.

- **Description** {type: string; max length: none; default: empty}

Usage: A brief description of the process step. After entering a **Description**, click **More...** to access the remaining **Process Step** elements.

Process Step Object

Process Step {type: object (**Process Step**); default empty}

Usage: The panel collects the elements of the **Process Step** object. Each **Process Step** object identifies and describes a single, non-trivial step in the evolution of developing the resource.

A screenshot of a web-based editor for a process step object. The top navigation bar includes 'Record | My First Metadata Record | Edit | Lineage | 0 | Step 0 - Google Chrome' and a URL 'https://go.mdeditor.org/#/record/0kgv15d4/edit/lineage/0/step/0?scrollTo=citation'. The main toolbar has icons for Dashboard, Export, Import, Publish, Translate, Profile (set to 'full'), and Settings. Below the toolbar is a breadcrumb trail: 'Record / My First Metadata Record / Edit / Lineage / 0 / Step 0'. A navigation bar below shows tabs for Main, Metadata, Keywords, Extent, Spatial, Lineage (highlighted in orange), Taxonomy, Distribution, Constraints, Associated, Documents, and More. The main content area is titled 'Editing Process Step #0'. It contains several input fields and lists:

- Step ID:** Input field containing '1'.
- Description***: Input field containing 'Process Step one'.
- Step Sources**: A list with a '+ Add' button.
- Step Products**: A list with a '+ Add' button.
- Processors**: A list with a '+ Add' button.
- Step Reference**: A list with a '+ Add' button.
- Time Period**: A list with a '+ Add' button.
- Scope**: A dropdown menu with the placeholder 'Select type of resource.'

 On the right side, there's a vertical stack of buttons: 'Save' (green), 'Cancel' (orange), 'Copy' (blue), and 'Delete' (red). Below these buttons is a 'Back to Lineage' link. A sidebar on the right lists the fields: Step ID, Step Description, Step Source, Step Product, Processors, Step Reference, Time Period, and Scope. At the bottom right are 'Report Issue' and 'AutoSave: On' buttons.

- **Step ID** {type: string; max length: none; default: empty}

Usage: A alphanumeric string uniquely identifying the **Process Step**.

It is recommended to use **Step IDs** that communicate the order in which the individual steps were applied.

- **Description** {*type: string; max length: none; default: empty*}

Usage: A brief description of the process step.

The **Description** element is the same "Description" element available on the *Lineage Edit Window* and likely was entered in a preceding step. The **Description** element may be edited from either **EDIT WINDOW**

- **Step Sources** {*type: array (obj: String)*}

Usage: An array listing **Source** data or other resources serving as input to the **Process Step**.

- **Step Products** {*type: array (obj: String)*}

Usage: An array listing **Source** data or other resources produced by the **Process Step**.

Source and product resources are both documented as **Source**. Simply, a product of one process step may be the source of the next process step.

- **Step Processor** {*type: array (obj: Responsible Party)*}

Usage: An array persons and/or organizations involved in executing the **Process Step**.

- **Step Reference** {*type: array (obj: Citation)*}

Usage: An array of citations for the resources used in the **Process Step**.

- **Time Period** {*type: object (Time Period); default empty*}

Usage: The time period over which the **Process Step** was performed.

- **Scope** {*type: codelist (ISO MD_ScopeCode, ADIwg codes); extensible: YES; multi-value: NO; default: empty*}

Usage: The type of resource this **Process Step** describes.

Metadata Record -- Process Step

Step Sources Array

Step Sources {type: array(string)}

Usage: An array of references to a data source or other resource used in this [Process Step](#). Each description is a text string.

^ Step Sources 2		+ Add
#	Description	
0	Process Step one, Source one	✖ Delete
1	Information about the source data used in the process step.	✖ Delete

- **Description** {type: string; max length: none; default: empty}

Usage: A text description of the data source or other starting point resource for this [Process Step](#).

It is a good practice to here to reference a defined lineage [Source](#).

Metadata Record -- Process Step

Step Products Array

Step Products {type: array (string)}

Usage: An array of references to datasets or other resources created as a product of this **Process Step**, or created in the process of performing this **Process Step**. Each description is a text string.

^ Step Products 2		+ Add
#	Description	
0	Process Step one, Product one	✖ Delete
1	Information about an intermediate data set that (1) is significant in the opinion of the data producer, (2) is generated in the processing step, and (3) is used in later processing steps.	✖ Delete

- **Description** {type: string; max length: none; default: empty}

Usage: A text description of the data product or other resource prepared during this **Process Step**.

It is a good practice to here to reference a defined lineage **Source**.

Metadata Record -- Process Step

Processors Array

Processors {type: array (obj: [Responsible Party](#))}

Usage: An array of [Responsible Parties](#) indicating persons and/or organizations responsible for this [Process Step](#).

#	Role	Contacts
0	contributor	x Stan Smith Delete
1	Select or enter a role	! Select one or more contacts Delete

Responsible Party Object

- **Role** {type: codelist (ISO CI_RoleCode, [ADIwg](#) codes); extensible: YES; multi-value: NO; default: empty}

Usage: Identifies the function or responsibility assigned to the person(s) or organization(s), etc.

- **Contacts** {type: codelist (contact records in [browser cache](#)); multi-value: YES; default: empty}

Usage: A list of contacts associated with this role.

Metadata Record -- Process Step

Step Reference Array

Step Reference {type: array (obj: *citation*)}

Usage: An array of **Citations** referencing the science and mechanics of this **Process Step**.

^ Step Reference (2)		+ Add
#	Title	
0	Process Step one, Reference one	More... Delete
1	Process Step one, Reference two	More... Delete

More... Click to access all **Citation** object elements in the Citation EDIT WINDOW. See [Citation Section](#) for editing instructions.

Metadata Record -- Process Step

Step Time Period

Time Period {type: object(`Time Period`)}

Usage: The `Time Period` object describes a period of time over which the processing of this step took place.

The screenshot shows a configuration interface for a 'Time Period'. At the top, there's a header 'Time Period' with a back arrow and a close button. Below it, there are two main sections: 'Dates*' and 'Identifier'. The 'Dates*' section contains fields for 'Start Date*' and 'End Date*', each with a date-time input field and a calendar icon. There's also a 'Pick a Fiscal Year' dropdown. The 'Identifier' section has a text input field for a unique identifier. Below these are 'Description' and 'Time Period Names' sections. The 'Time Period Names' section includes a '+ Add Time Period Name' button. The 'Interval' section allows setting an 'Interval Amount*' and choosing a 'Time Unit*'. Finally, the 'Duration' section provides fields for entering time amounts in years, months, days, hours, minutes, and seconds.

- **Dates** {type: collection}

Usage: - A collection of elements to select and set the `Start Date` and `End Date` of a `Time Period`.

- **Start Date** {type: date, datetime (ISO 8601); default: empty}

Usage: Starting date and time of the `Time Period`. `Start Date` is not required if `End Date` is present.

- **End Date** {type: date, datetime (ISO 8601); default: empty}

Usage: Ending date and time of the `Time Period`. `End Date` is not required if `Start Date` is present.

- **Pick a Fiscal Year** Use this select control to set both the `Start Date` and `End Date` of a fiscal year. To set both dates for a fiscal year use the control to select the desired starting year. The `Start Date` will be set to the first day of the month for the fiscal year and the `End Date` will be the last day of the month twelve months later. The default starting month for the fiscal year is October. The starting month can be changed on the Settings page and will be used by `mdEditor` for all `Time Period` objects until changed. Previously defined fiscal years will not be effected.

See [Date-Time Control](#) for details on picking dates and times using the Date-Time control.

- **Identifier** {*type: string; max length: none; default: empty*}

Usage: - A unique identifier for this [Time Period](#).

The identifier must be alphanumeric and not include special characters. It need only be unique within the [metadata record](#).

ISO metadata records require time period IDs. If one is provided here it will be used by mdTranslator when writing ISO metadata. If the **Identifier** is left blank mdTranslator will generate a unique identifier for the [Time Period](#). Note that the generated time period ID may not be consistent across multiple translations by mdTranslator.

- **Description** {*type: string; max length: none; default: empty*}

Usage: A brief description of any relevant information for this [Time Period](#).

- **Time Period Names** {*type: array (string); max length: none; default: empty*}

Usage: - An array of user-assigned names for this time period. Each name is a character string.

- **Interval** {*type: object ([Time Interval](#)); default: empty*}

Usage: An object to specify a time interval for the resource.

See object details

- **Duration** {*type: object ([Time Duration](#)); default: empty*}

Usage: An object to specify a time duration for the resource.

See object details

Time Interval Object

- **Time Unit** {*type: codelist (ADIwg codes); multi-value: NO; extensible: YES; multi-value: NO; default: empty*}

Usage: A value for the units of time, e.g. year, month, day, hour, minute, second, jiffy.

- **Interval Amount** {*type: real; min: 0.0; max none; default: empty*}

Usage: A floating point or integer value representing the temporal length.

Time Duration Object

- **Year** {*type: integer; min: 0; max none; default: empty*}

Usage: A value for the number of years in the duration.

- **Month** {*type: integer; min: 0; max none; default: empty*}

Usage: A value for the number of months in the duration.

- **Day** {*type: integer; min: 0; max none; default: empty*}

Usage: A value for the number of days in the duration.

- **Hour** {*type: integer; min: 0; max none; default: empty*}

Usage: A value for the number of hours in the duration.

- **Minute** {*type: integer; min: 0; max none; default: empty*}

Usage: A value for the number of minutes in the duration.

- **Second** {*type: integer; min: 0; max none; default: empty*}

Usage: A value for the number of seconds in the duration.

At least one duration element is required. More than one may also be entered. e.g. 18 Months or 1 year, 6 months are equivalent durations.



Metadata Record -- Lineage Section

Source Array

A screenshot of a web-based metadata editor showing a 'Source Array' section. The array contains a single item at index 0, labeled 'Source one'. To the right of the item are two buttons: a green 'More...' button and a red 'Delete' button.

- **Description** {type: string; max length: none; default: empty}

Usage: A brief description of the source data. After entering a **Description**, click **More...** to access the remaining **Source** elements.

Source Object

A screenshot of a web-based metadata editor showing the 'Source Object' editing interface. The page title is 'Record | My First Metadata Record | Edit | Lineage | 0 | Source - Google Chrome'. The main content area shows a form for editing a source object. The form includes fields for 'Source ID' (containing '6785043e-ae01-4dd6-8bb2-578ba671573d'), 'Description*' (containing 'Source one'), and 'Scope' (a dropdown menu). On the right side, there is a vertical sidebar with buttons for 'Save', 'Cancel', 'Copy', and 'Delete'. Below these buttons is a link 'Back to Lineage Object'. At the bottom of the sidebar, there is a list of associated entities: 'Source ID', 'Source Description', 'Scope', 'Source Citation', 'Metadata Citation', 'Spatial Reference System', and 'Spatial Resolution'. The bottom right corner of the interface shows 'Report Issue' and 'AutoSave: On'.

- **Source ID** {type: string; max length: none; default: UUID}

Usage: An alphanumeric string uniquely identifying the **Source**.

- **Description** {type: string; max length: none; default: empty}

Usage: A brief description of the **Source**.

The **Description** element is the same "Description" element available on the *Lineage Edit Window* and likely was entered in a preceding step. The **Description** element may be edited from either [EDIT WINDOW](#)

- **Scope** {*type: codelist (ISO MD_ScopeCode, ADIwg codes); extensible: YES; multi-value: NO; default: empty*}
- Usage:* The type of resource that most closely defines this **Source**.
- **Source Citation** {*type: object (Citation); default empty*}
- Usage:* A reference to information about the source data or resource.
- **Metadata Citation** {*type: array (obj: Citation)*}
- Usage:* An array of **Citations** providing references to the **Source**.
- **Spatial Reference System** {*type: object (Spatial Reference System); default empty*}
- Usage:* The spatial reference system used by the source.
- **Spatial Resolution** {*type: object (Spatial Resolution); default empty*}
- Usage:* Information about the geographic scale of the source.

Metadata Record -- Source

Source Citation

Source Citation {*type: object (Citation); default empty*}

Usage: A reference to information about the source data or resource.

Note that the **Source Citation** is only a partial citation. The object does not include all **Citation** elements.

The screenshot shows a user interface for configuring a 'Source Citation' object. It consists of a vertical list of expandable sections, each with a blue circular icon in the top right corner and a '+ Add' button in the bottom right corner. The sections are:

- Source Citation (parent section)
- Basic Information *
- Responsible Parties 0
- Online Resource 0
- Identifier 0

See [Citation Section](#) for editing instructions.

Metadata Record -- Source

Metadata Citation Array

`Metadata Citation {type: array (obj: Citation)}`

Usage: An array of `Citations` providing references to the `Source`.

^ Metadata Citation 2		+ Add
#	Title	
0	Citation one	Edit Delete
1	Citation two	Edit Delete

Citation Object

^ Metadata Citation 2 OK

▼ Basic Information *

▼ Responsible Parties 0 + Add

▼ Online Resource 0 + Add

▼ Identifier 0 + Add

OK

Note that the `Metadata Citation` is only a partial citation. The object does not include all `Citation` elements.

See [Citation Section](#) for editing instructions.

Metadata Record -- Source

Spatial Reference System

Spatial Reference System {type: object (*Spatial Reference System*); default empty}

Usage: The spatial reference system used by the source data.

The screenshot shows a user interface for defining a spatial reference system. At the top left is a back arrow labeled '^ Spatial Reference System'. On the right side of the header is a blue square icon with a white circle. The main area contains several input fields:

- Reference System Type***: A dropdown menu with the placeholder "Select type of reference system used." and a red error icon.
- Identifier***: An input field with the placeholder "Enter the identifier for the resource" and a red error icon.
- Namespace**: A dropdown menu with the placeholder "Select or type a namespace for the identifier."
- Version**: An input field with the placeholder "Enter the version for the identifier."
- Description**: An input field with the placeholder "Enter a description of the identifier." and a small text icon.
- Authority**: A dropdown menu with a blue square icon on its right.

- **Reference System Type** {type: codelist (ISO MD_ReferenceSystemTypeCode); extensible: YES; multi-value: NO; default: empty}

Usage: Type of reference system used.

- **Reference System Identifier** {type: object (*Identifier*); default empty}

Usage: The reference system identifier or definition.

[See object details](#)

Identifier Object

Identifier 1

Identifier*

Enter the identifier for the resource

Namespace

Select or type a namespace for the identifier.

Version

Enter the version for the identifier.

Description

Enter a description of the identifier.

Authority

✓ OK

- **Identifier** {type: string; max length: none; default: empty}

Usage: A cataloged and managed name or code for the resource.

- **Namespace** {type: string; max length: none; default: empty}

Usage: A string which unambiguously defines the namespace to which the identifier belongs.

- **Version** {type: string; max length: none; default: empty}

Usage: The version number of the identifier.

- **Description** {type: max length: none; string; default: empty}

Usage: A description of the meaning of the identifier.

- **Authority** {type: object ([Citation](#)); default empty}

Usage: A reference to information about the identifier. An [Authority](#) is an abbreviated version of the full [Citation](#) object.

[See object details](#)

Citation Object

See [Citation Section](#) for editing instructions.

Metadata Record -- Source

Spatial Resolution

Spatial Resolution {type: object ([Spatial Resolution](#)); default empty}

Usage: The geographic scale of the resource.

^ Spatial Resolution ✖

Scale Factor*
 !

Level Of Detail*
 !

Measure
Measure Type*
 ! ▾

Value*
 !

Units*
 !

It is required to have at least one of the three **Spatial Resolution** elements, but multiple are permitted.

- **Scale Factor** {type: integer; min: 0; max none; default: empty}

Usage: The geographic scale for the resource expressed as map scale (e.g. 1:24000) or fraction (1/24000); enter the denominator (e.g. 24000).

- **Level of Detail** {type: string; max length: none; default: empty}

Usage: A brief textual description of the spatial resolution of the resource.

- **Measure** {type: object ([Measure](#)); default empty}

Usage: Scale of the geographic extent expressed in distance, length, or angle parameters.

[See object details](#)

Measure Object

Measure

Measure Type*

The type of measurement.

Value*

Enter the number of units in the measurement.

Units*

Type of units to associated with the value.

- **Measure Type** {*type: codelist (enumerated list); extensible: NO; multi-value: NO; default: empty*}

Usage: An enumerated selection list: distance, length, angle, measure, scale.

- **Value** {*type: real; min: 0; max none; default: empty*}

Usage: The number of units in the measure.

- **Units** {*type: string; max length: none; default: empty*}

Usage: The name of the units associated with the **Value**.

Metadata Record -- Lineage Section

Citation Array

- **Citation** {type: array (obj: **Citation**)}

Usage: A reference to information about the source dataset, including an online resource or other instructions.

^ Citation 2		+ Add
#	Title	
0	Lineage Citation one	More... Delete
1	Lineage Citation two	More... Delete

More... Click to access all **Citation** object elements in the **Citation** **EDIT WINDOW**. See **Citation Section** for editing instructions.

Metadata Record -- Taxonomy Section

The **Taxonomy** section of the **EDIT WINDOW** defines the taxonomic information for the resource. A **Taxonomic Collection** in **mdEditor** is described using a hierarchy or 'Classification' consisting of a discretionary number of levels from Kingdom to Subspecies. The **mdEditor**'s implementation also allows multiple entities to be ascribed to each level of the hierarchy which effectively supports branching the hierarchy. The **Taxonomic Collection** further includes information about observers, specimens, and how the species identification was made.

Although the **Taxonomy** section was originally developed to define biological hierarchies, it may also be used to define hierarchies in other disciplines.

While not strictly a hierarchy, taxonomy could be used to document layered systems or stratigraphic resource.

When no **Taxonomic Collections** have been defined for the **Metadata Record** a large blue bar is displayed on the page declaring "No taxonomic collections found."

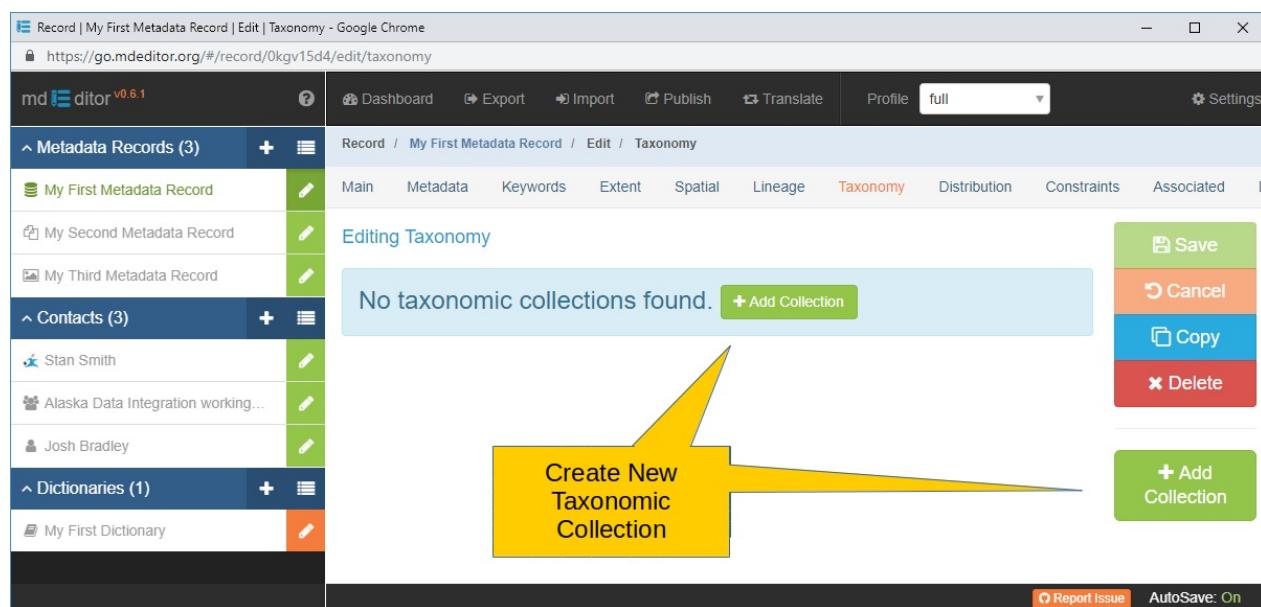


Image 1: Taxonomy Section with no Taxonomic Collections Defined

To add the first taxonomic description to the **Metadata Record** click either **Add Collection** button. **mdEditor** will navigate to the **Taxonomic Collection** **EDIT WINDOW**.

When one or more **Taxonomic Collections** have been defined the **Taxonomy** section window will look similar to the image below.

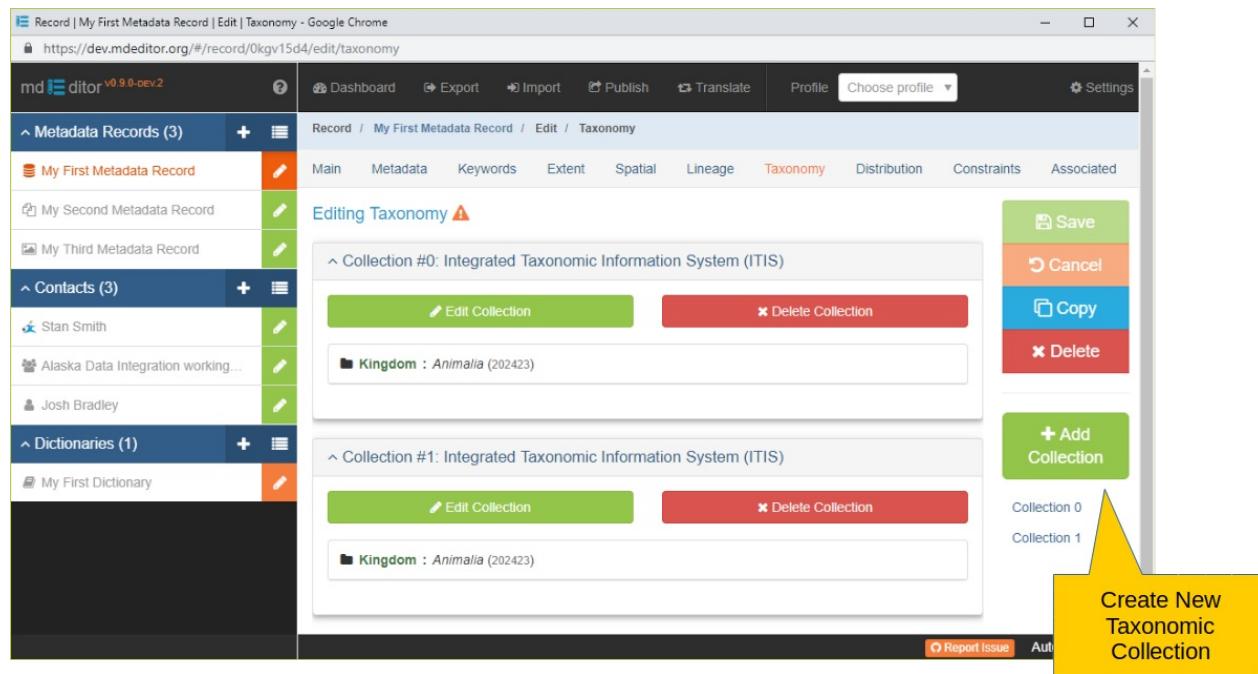


Image 2: Taxonomy Section with Multiple Taxonomic Collections Defined

Click the **Add Collection** button in the **SECONDARY SIDEBAR** to add the next **Taxonomic Collection**.

Metadata Record -- Taxonomy Section

Edit Window

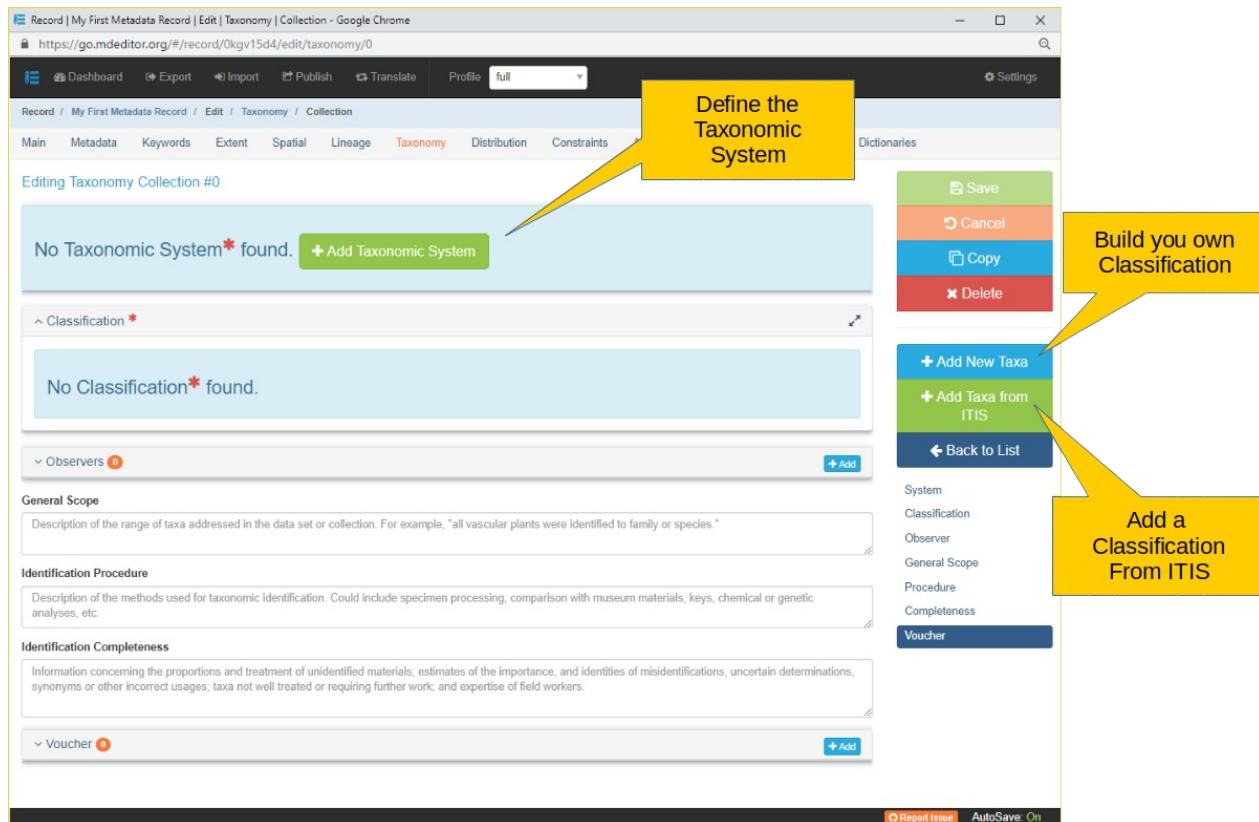


Image 1: Taxonomy Collection Edit Window

Add New Taxa Click to add a new custom **Classification** to the **Taxonomic Collection**.

Add Taxa from ITIS Click to find and import a **Classification** from the U.S. Geological Survey's Integrated Taxonomic Information System (USGS ITIS) to the **Taxonomic Collection**.

Back to Resource List Click to return to the list of defined **Taxonomic Classifications** for the current **Metadata Record**.

- Add Taxonomic System** Click this button to add a new **Taxonomic System** to the **Taxonomic Classification**. See "Taxonomic System" for details.

- Classification** {type: array (obj: **Classification**)}

Usage: An array of taxonomic hierarchies that describe the levels (taxon rank), scientific names (latin name), and common names for species referenced in the **metadata** resource.

- Observers** {type: array (obj: **Responsible Party**)}

Usage: Each **Observer** identifies a person or organization involved in making the determination of species.

See below for details

- General Scope** {type: string; max length: none; default: empty}

Usage: A description of the range of taxa addressed in dataset or collection. For example "All vascular plants were identifier to family or species."

- **Modification Procedure** {*type: string; max length: none; default: empty*}

Usage: Description of the methods used for taxonomic identification. Could include specimen processing, comparison with museum materials, keys, and key characters, chemical or genetic analyses, etc.

- **Identification Completeness** {*type: string; max length: none; default: empty*}

Usage: Information concerning the proportions and treatment of unidentified materials (i.e. materials sent to experts, and not yet determined); estimates of the importance, and identities of misidentifications, uncertain determinations, synonyms or other incorrect usages; taxa not well treated or requiring further work; and expertise of field workers.

- **Voucher** {*type: array (obj: Voucher)*}

Usage: An array of specimen vouchers identifying the specimens used in species determination and where they are being preserved.

Responsible Party Object (Observer)

#	Role	Contacts
0	observer	Josh Bradley, Stan Smith
1	Select or enter a role	Select one or more contacts

Image 2: Taxonomy Observer Array

- **Role** {*type: codelist (ISO CI_RoleCode, ADIwg codes); extensible: YES; multi-value: NO; default: empty*}

Usage: Identifies the function or responsibility assigned to the person(s) or organization(s), etc.

- **Contacts** {*type: codelist (contact records in browser cache); multi-value: YES; default: empty*}

Usage: A list of contacts associated with this role.

Metadata Record -- Taxonomy Section

Taxonomic System

The **Taxonomic System** is a reference to the system of taxa used by the **Classification** object(s).

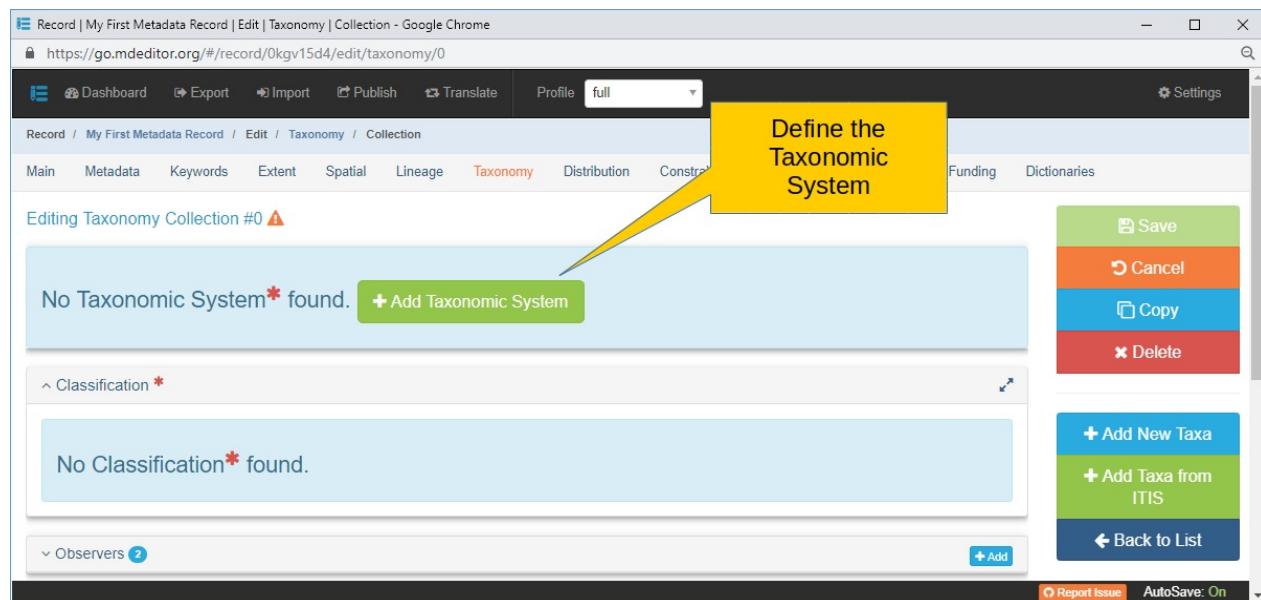


Image 1: Taxonomy System Panel with no Systems defined

Add Taxonomic System When no **Taxonomic Systems** have been defined for the **Collection** a large blue box displaying an **Add Taxonomic System** button will occupy the **Taxonomic Systems** object array. Click this button to add the initial **Taxonomic System** reference for the **Collection**.

When creating or using an unpublished taxonomic **Collection** you still need to define a **Taxonomic System** reference for your **Classification**. Technically, only the minimal element, **Title**, needs to be entered. However, additional detail is encouraged.

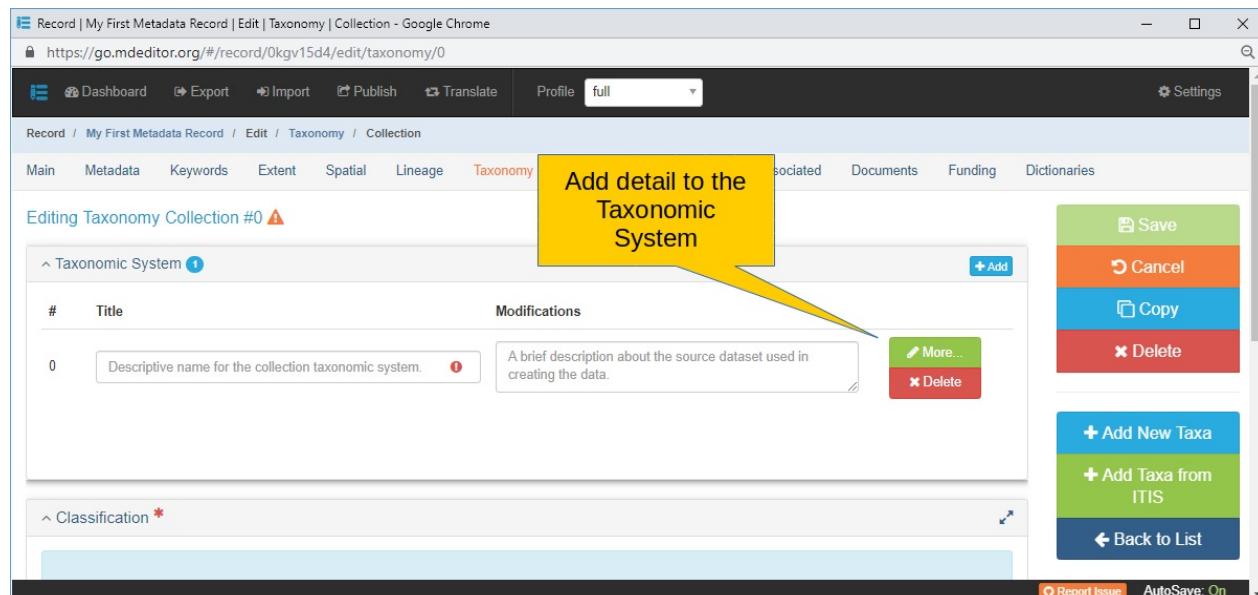


Image 2: Taxonomy System Array

- **Title** {*type: string; max length: none; default: empty*}

Usage: Title (or name) of the **Taxonomic System** being referenced.

The **Title** element is the **Taxonomic System**'s **Citation** element **Title**. It may also be edited within the **Citation** after clicking the **More** button.

- **Modifications** {*type: string; max length: none; default: empty*}

Usage: A description of any modifications or exceptions made to the classification system as described in the **Taxonomic System** reference.

The **Modifications** element may be edited both from the **Taxonomic Systems** panel array and **EDIT WINDOW**

Edit Click this button to expand the **Classification** object making all elements available for edit.

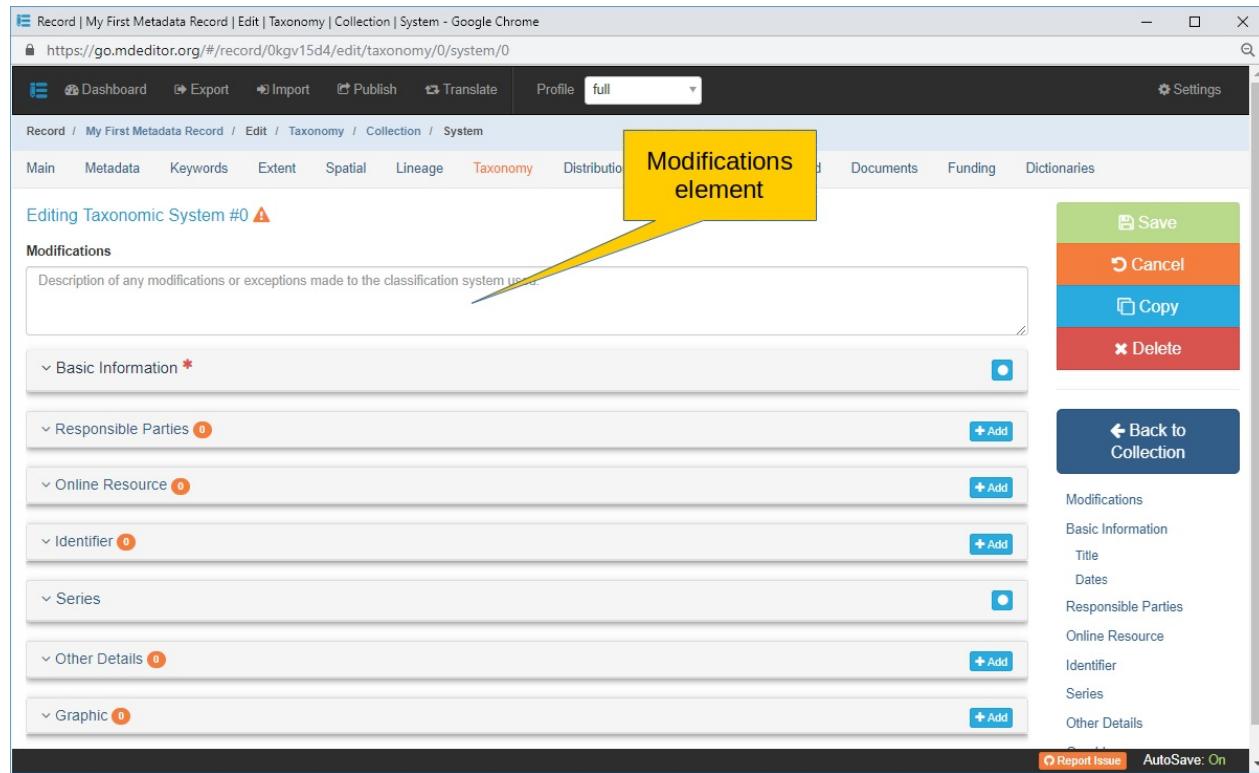


Image 3: Taxonomy System Edit Window

- **Modifications** {type: string; max length: none; default: empty}

Usage: A description of any modifications or exceptions made to the classification system as described in the [Taxonomic System](#) reference.
- The remaining elements are all **Citation** elements for the [Taxonomic System](#). See [Citation Section](#) for editing instructions.

Metadata Record -- Taxonomy Section

Taxonomic Classification

Classification {type: array (obj: **classification**)}

Usage: An array of taxonomic hierarchies that describe the levels (taxon rank), scientific names (latin name), and common names for species referenced in the [metadata](#) resource.

New **Classification** hierarchies are added by clicking on either the **Add New Taxa** or **Add Taxa from ITIS** buttons in the **SECONDARY SIDEBAR**.

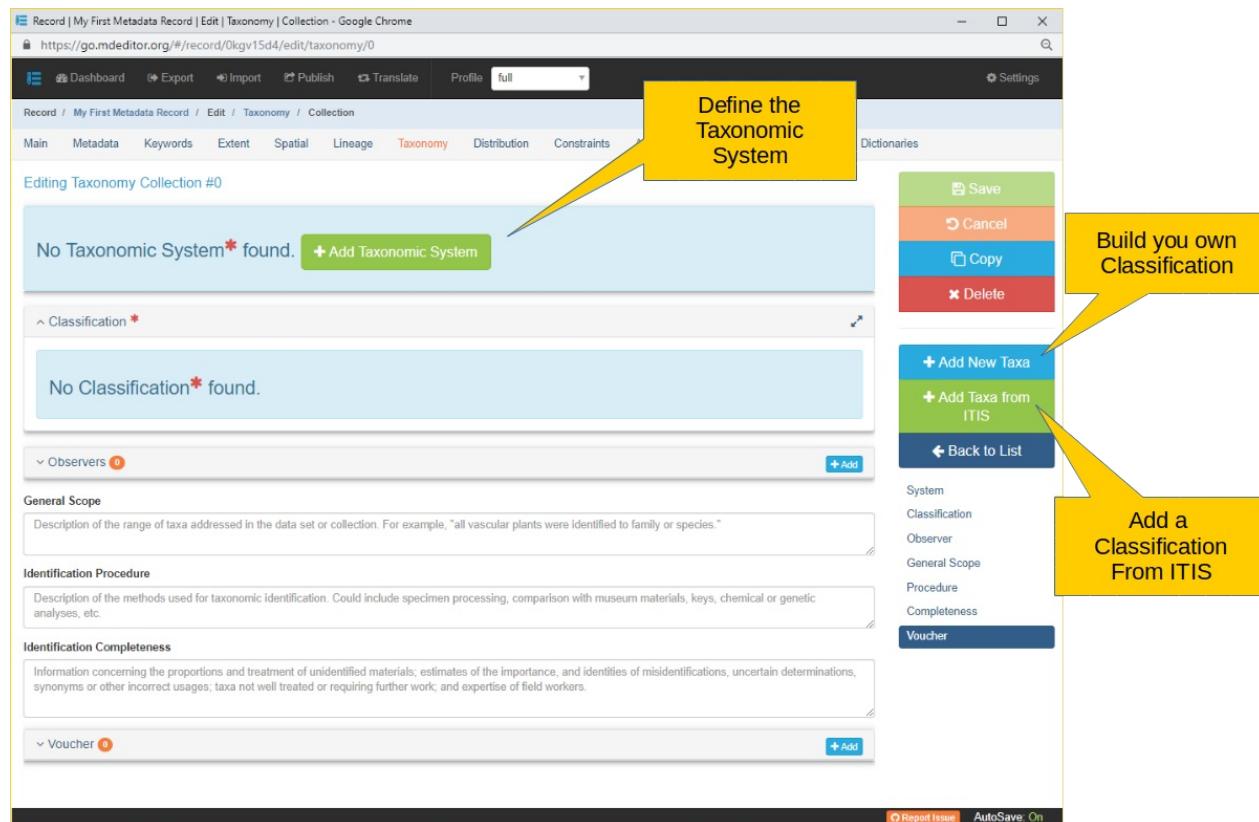


Image 1: Taxonomy Collection Edit Window

Add New Taxa Click this button to add a custom, top-level node for a new **Classification** array. Note that only the top-level (or entry point) of the hierarchy is entered with this function. The remainder of the hierarchy is added, and edited, using the buttons on the individual nodes of the hierarchy. See [Add Custom Classification](#) for details.

Add Taxa from ITIS Click this button to explore the USGS Integrated Taxonomic Information System (ITIS) and import complete taxonomic classification hierarchies with a single click. The ITIS database holds over 800,000 entries and adds about 2,000 new entries each month. See [Importing ITIS Classification](#) for details.

Metadata Record -- Taxonomy Section

Add Custom Classification Hierarchy

Clicking the **Add New Taxa** button will add a new, top-level node to the **Classification** array.

My Top Level : My Taxon Name : Common one

Taxonomic Level*	Taxonomic Name*	Taxonomic ID						
My Top Level	My Taxon Name							
Common Names 1 <table border="1"> <tr> <td>0</td> <td>Common one</td> <td>* Delete</td> </tr> <tr> <td>1</td> <td>Enter value</td> <td>* Delete</td> </tr> </table>			0	Common one	* Delete	1	Enter value	* Delete
0	Common one	* Delete						
1	Enter value	* Delete						
+ Add Common Name <input type="button" value="OK"/>								

Image 1: Custom Classification Edit Window

- **Taxonomic Level** {*type: string; max length: none; default: empty*}

Usage: Name of the taxonomic level (rank) for which the **Taxonomic Name** is provided. Example: "Kingdom", "Division", "Phylum", "Subphylum", "SuperClass", "Class", "SubClass", "InfraClass", "Superorder", "Order", "Suborder", "Infraorder", "Superfamily", "Family", "Subfamily", "Tribe", "Subtribe", "Genus", "Species".

- **Taxonomic Name** {*type: string; max length: none; default: empty*}

Usage: The agreed to scientific or other official name for the taxon being described.

- **Taxonomic ID** {*type: string; max length: none; default: empty*}

Usage: The ID assigned by the **Taxonomic System** to this taxon.

- **Common Name** {*type: array (string)*}

Usage: Specification of applicable common names. These common names may be general descriptions of a group of organisms if appropriate (e.g. insects, vertebrate, grasses, waterfowl, vascular plants, etc.).

OK Click 'OK' when the entry is complete to return to the **Taxonomic Collection** **EDIT WINDOW**. The first node of a new **Classification** hierarchy will be displayed in the **Classification** array panel.

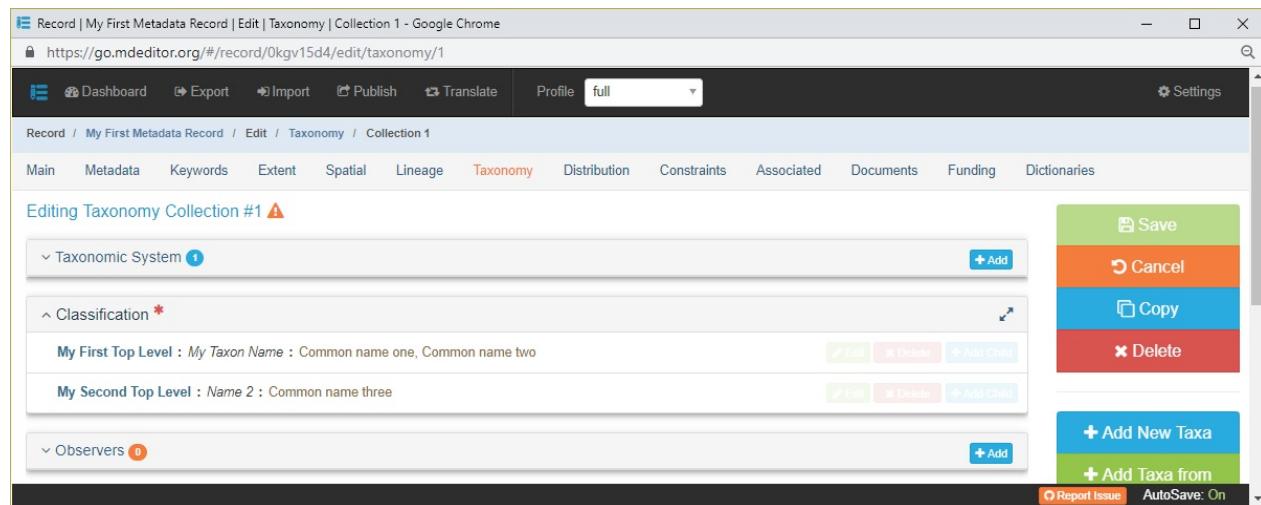


Image 2: New High-level node for Classification

Once the high-level node has been added, it may be edited and extended using the buttons on the individual nodes of the hierarchy. See [Editing the Hierarchy](#) for details.

Metadata Record -- Taxonomy Section

Import Classifications from ITIS

After clicking the **Add Taxa from ITIS** button the Integrated Taxonomic Information System (ITIS) search window will display.

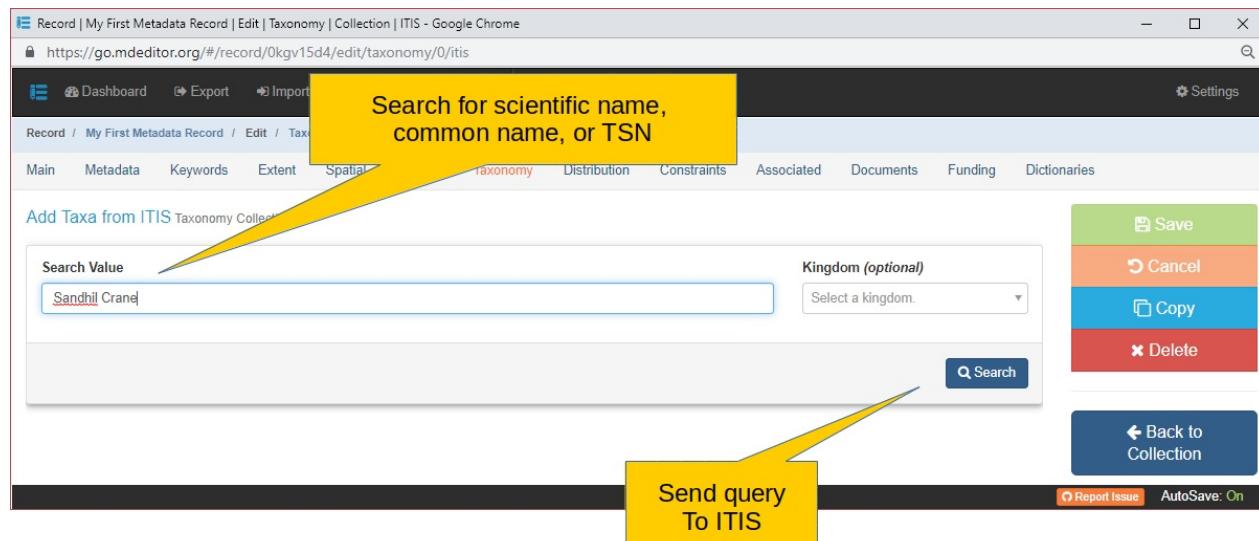


Image 1: Searching ITIS

- **Search Value** {*type: string; max length: none; default: empty*}

Usage: Word or phrase to search for in the ITIS database. Typical searches are for scientific names, common names, or an ITIS Taxonomic Serial Number (TSN).

- **Kingdom (optional)** {*type: codelist (ITIS Kingdom); extensible: NO; multi-value: NO; default: empty*}

Usage: A search may optionally be narrowed by selecting an ITIS Kingdom as a filter.

Enter a search value and click **Search**

The screenshot shows the mdeditor.org interface for managing metadata records. The top navigation bar includes links for Record, My First Metadata Record, Edit, Taxonomy, Collection, and ITIS. The main menu has options like Dashboard, Export, Import, Publish, Translate, Profile (set to full), Settings, and a search icon.

The current view is under the 'Taxonomy' tab of the 'Collection' section for 'ITIS'. The left sidebar lists categories: Main, Metadata, Keywords, Extent, Spatial, Lineage, Taxonomy (selected), Distribution, Constraints, Associated, Documents, Funding, and Dictionaries.

A search bar at the top says 'Search Value' with 'Sandhill Crane' typed in. To its right is a dropdown for 'Kingdom (optional)' with the placeholder 'Select a kingdom.' Below these are 'Save', 'Cancel', 'Copy', and 'Delete' buttons.

The main content area shows a search result titled 'Select Taxa Showing 4 found'. It lists four entries:

- Grus canadensis Species**
Kingdom: Animalia
TSN: 176177 (valid)
Common Name:
Grulla gris (Spanish)
Sandhill Crane (English)
grue du Canada (French)
- Grus canadensis canadensis Subspecies**
Kingdom: Animalia
TSN: 176178 (valid)
Common Name:
Lesser Sandhill Crane (English)
- Grus canadensis nesiotis Subspecies**
Kingdom: Animalia
TSN: 202246 (valid)
Common Name:
Cuba Sandhill Crane (English)
- Grus canadensis pulla Subspecies**
Kingdom: Animalia
TSN: 202247 (valid)
Common Name:
Mississippi Sandhill Crane (English)

Next to each entry is a green 'Add' button. To the right of the list is a 'Taxa Selected' panel with the instruction 'Select taxa from the list.' A large yellow callout box with a black border and white text 'Select ITIS Taxon(Taxa)' points to one of the 'Add' buttons. At the bottom right of the page are 'Report Issue' and 'AutoSave: On' buttons.

Image 2: Select ITIS Items

ITIS will return a list of all taxa that meet the search criteria. Generally there will be more items returned than desired. Select the taxon(taxa) to import by clicking the **Add** button next to the desired taxon which will move it to the "Taxa Selected" column.

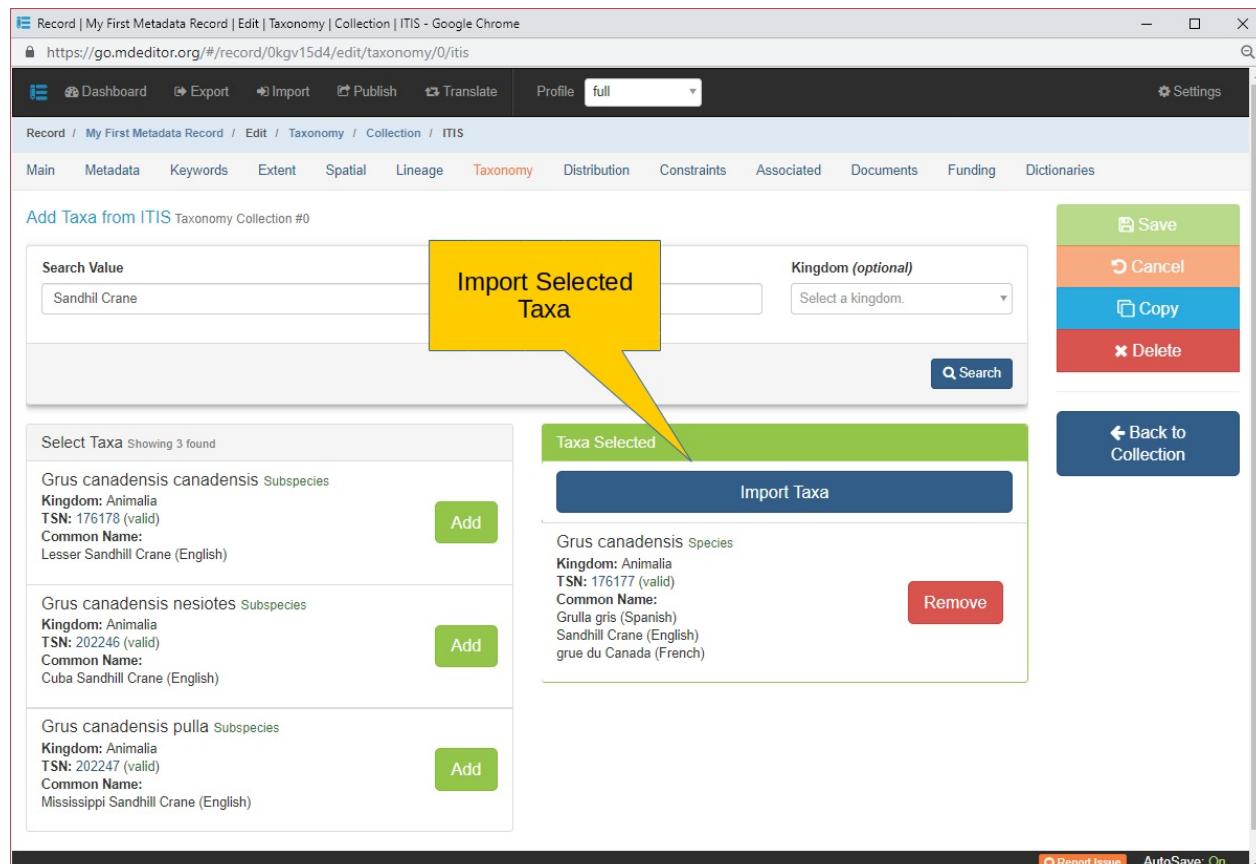


Image 3: Import ITIS Items

When ready to import the taxa moved to the "Taxa Selected" column, click the **Import Taxa** button and the taxonomic hierarchy(ies) will be imported directly into mdEditor.

Import Taxa The 'Import Taxa' button will import all the Taxon in the "Taxa Selected" list. If a particular taxon has been previously imported it will not be re-imported.

A **Taxonomic System** object for ITIS will also be created and inserted in the **Taxonomy Collection** if one does not already exist. Only one ITIS **Taxonomic System** will be added regardless of how many taxa are imported or how many times

Import Taxa is clicked.

Remove Click 'Remove' to remove a taxon from the "Taxa Selected" list and exclude it from import. Note that **Remove** will not remove a previously imported taxon. To removed an unwanted taxonomic hierarchy see [Editing the Classification Hierarchy](#).

Back to List To view the added ITIS taxa, return to the **Taxonomic Collection** **EDIT WINDOW** by clicking the 'Back to List' button.

The screenshot shows the mdEditor interface for managing metadata records. The top navigation bar includes links for Record, Dashboard, Export, Import, Publish, Translate, Profile (set to 'full'), Settings, and a search bar. The main menu has sections for Main, Metadata, Keywords, Extent, Spatial, Lineage, Taxonomy (selected), Distribution, Constraints, Associated, Documents, Funding, and Dictionaries.

The 'Taxonomy' section is currently active, showing the 'Editing Taxonomy Collection #0' screen. It contains two main sections:

- Taxonomic System:** A table with one row for 'My Example System' and one row for 'Integrated Taxonomic Information System (ITIS)'. The 'Integrated Taxonomic Information System (ITIS)' row includes a description: "A brief description about the source dataset used in creating the data." To the right of the table are buttons for Save, Cancel, Copy, and Delete.
- Classification:** A tree view of a taxonomic hierarchy for a Sanhill Crane. The root node is 'My First Top Level : My Taxon Name : Common name one, Common name two'. Below it are 'My Second Top Level : Name 2 : Common name three' and 'Kingdom : Animalia (202423)'. The 'Kingdom' node has children: 'Subkingdom : Bilateria (914154)', 'Infrakingdom : Deuterostomia (914156)', 'Phylum : Chordata (158852)', 'Subphylum : Vertebrata (331030)', 'Infraphylum : Gnathostomata (914179)', 'Superclass : Tetrapoda (914181)', 'Class : Aves (174371)', 'Order : Gruiformes (176147)', 'Family : Gruidae (176174)', 'Subfamily : Gruiinae (707773)', 'Genus : Grus (176175)', and 'Species : Grus canadensis (176177) : Grulla gris, Sandhill Crane, grue du Canada'. Each node has edit, delete, and add child buttons.

On the right side of the screen, there is a sidebar with buttons for adding new taxa or from ITIS, and a 'Back to List' button. A vertical list of system components is also present: System, Classification, Observer, General Scope, Procedure, Completeness, and Voucher.

Image 4: ITIS Hierarchy

After adding the ITIS taxon a `Taxonomic System` reference for ITIS was added to the `Taxonomic System` array.

And a new taxonomic hierarchy was added to the `Classifications` array for the imported taxon.

When a second or subsequent taxon from ITIS is imported, mdEditor will attempt to merge the hierarchies. In doing so the common taxa layers are not repeated. In the example below "Canada Goose", was merged with the "Sandhill Crane" `Classification` shown above.

Record | My First Metadata Record | Edit | Taxonomy | Collection - Google Chrome
<https://go.mdeitor.org/#/record/0kgv15d4/edit/taxonomy/>

Taxonomic System

#	Title	Modifications
0	My Example System	Not Applicable More... Delete
1	Integrated Taxonomic Information System (ITIS)	A brief description about the source dataset used in creating the data. More... Delete

Classification *

- My First Top Level : My Taxon Name : Common name one, Common name two
- My Second Top Level : Name 2 : Common name three
- Kingdom : Animalia (202423)
- Subkingdom : Bilateria (914154)
- Infrakingdom : Deuterostomia (914156)
- Phylum : Chordata (158852)
- Subphylum : Vertebrata (331030)
- Infraphylum : Gnathostomata (914179)
- Superclass : Tetrapoda (914181)
- Class : Aves (174371)
- Order : Gruiformes (176147)
- Family : Gruidae (176174)
- Subfamily : Gruiinae (707773)
- Genus : Grus (176175)
 - Species : Grus canadensis (176177) : Grulla gris, Sandhill Crane, grue du Canada
 - Order : Anseriformes (174982)
 - Family : Anatidae (174983)
 - Subfamily : Anserinae (714008)
 - Genus : Branta (174998)
 - Species : Branta canadensis (174999) : Ganso canadiense, Canada Goose, bernache du Canada

System
 Classification
 Observer
 General Scope
 Procedure
 Completeness
 Voucher

Image 5: ITIS Hierarchy

Metadata Record -- Taxonomy Section

Editing the Classification Hierarchy

Editing a **Classification** (taxonomic hierarchy) is the same whether it was created manually or imported from ITIS. Editing is permitted at each node (line) of the hierarchy. To enable the edit buttons for a particular node simply roll the cursor over that line and the buttons will illuminate.

The screenshot shows the 'Taxonomy' tab selected in the top navigation bar. The main content area displays a hierarchical list of taxonomic ranks from Kingdom down to Species. A yellow callout box highlights the 'Edit' button for the 'Species' node 'Grus canadensis'. The sidebar on the right contains buttons for Save, Cancel, Copy, Delete, Add New Taxa, Add Taxa from ITIS, and Back to List.

Image 1: Classification Hierarchy Edit Buttons

Edit Clicking the 'Edit' button will navigate to the same window used to **Add New Taxa** where you may change the **Taxonomic Level**, **Taxonomic Name**, **Taxonomic ID**, and **Common Name** for the node. After editing, click **OK** to save your changes or click anywhere off the edit window to return without saving any changes you may have made.

Delete Click 'Delete' to remove the node from the hierarchy.

When a level is deleted all lower nodes (child nodes) will also be deleted.

To delete an entire **Classification** hierarchy simply delete the highest node.

Add Child Clicking 'Add Child' will branch the current node. In this way many species can be represented in the same hierarchy without recreating the entire structure.

Metadata Record -- Taxonomy Section

Taxonomy Voucher

Voucher {type: array (obj: *Voucher*)}

Usage: An array of specimen vouchers identifying the specimens used in species determination and where they are being preserved.

^ Voucher 2		+ Add
#	Specimen	
0	Fish scales	Edit Delete
1	Not Defined	Edit Delete ⓘ

Image 1: Taxonomy Voucher Array

^ Voucher 2		✓ OK
Specimen*	<input type="text" value="Fish scales"/>	
Repository*	Role* <input type="text" value="principalInvestigator"/>	
Contacts	<input type="text" value="Josh Bradley"/>	
✓ OK		

Image 2: Taxonomy Voucher Edit Window

- **Specimen** {type: string; max length: none; default: empty}

Usage: Word or phrase describing the type of specimen collected (e.g. 'herbarium specimens', 'blood samples', 'photographs', 'individuals', or 'batches').

- **Repository** {type: object (*Responsible Party*); default empty}

Usage: Information about the curator or contact person and/or agency responsible for the specimens.

See below for details

Responsible Party Object (Repository)

- **Role** {type: codelist (ISO CI_RoleCode, ADIwg codes); extensible: YES; multi-value: NO; default: empty}

Usage: Identifies the function or responsibility assigned to the person(s) or organization(s), etc.

- **Contacts** {type: codelist (contact records in browser cache); multi-value: YES; default: empty}

Usage: A list of contacts associated with this role.

Metadata Record -- Distribution Section

The **Distribution** section of the **EDIT WINDOW** is used to provide information about how to obtain a copy of the main resource and/or other important resources described by the **Metadata Record**.

When no **Distributions** have been defined for the **Metadata Record** a large blue bar is displayed on the page declaring "No distribution sections found."

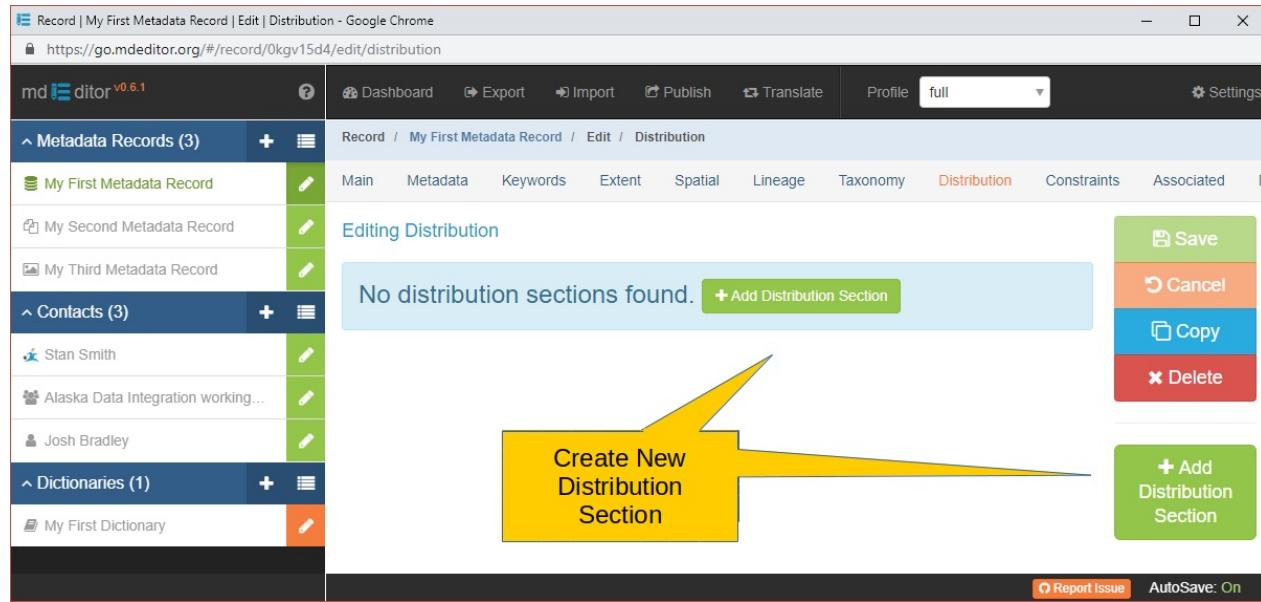


Image 1: Distribution Section with no Distributions Defined

Click either **Add Distribution Section** button to add the initial **Distribution**. Afterwards you will be transferred to the **Distribution EDIT WINDOW** where you can complete data entry for the distribution.

When one or more **Distributions** have been defined the **Distribution** window will look similar to the image below.

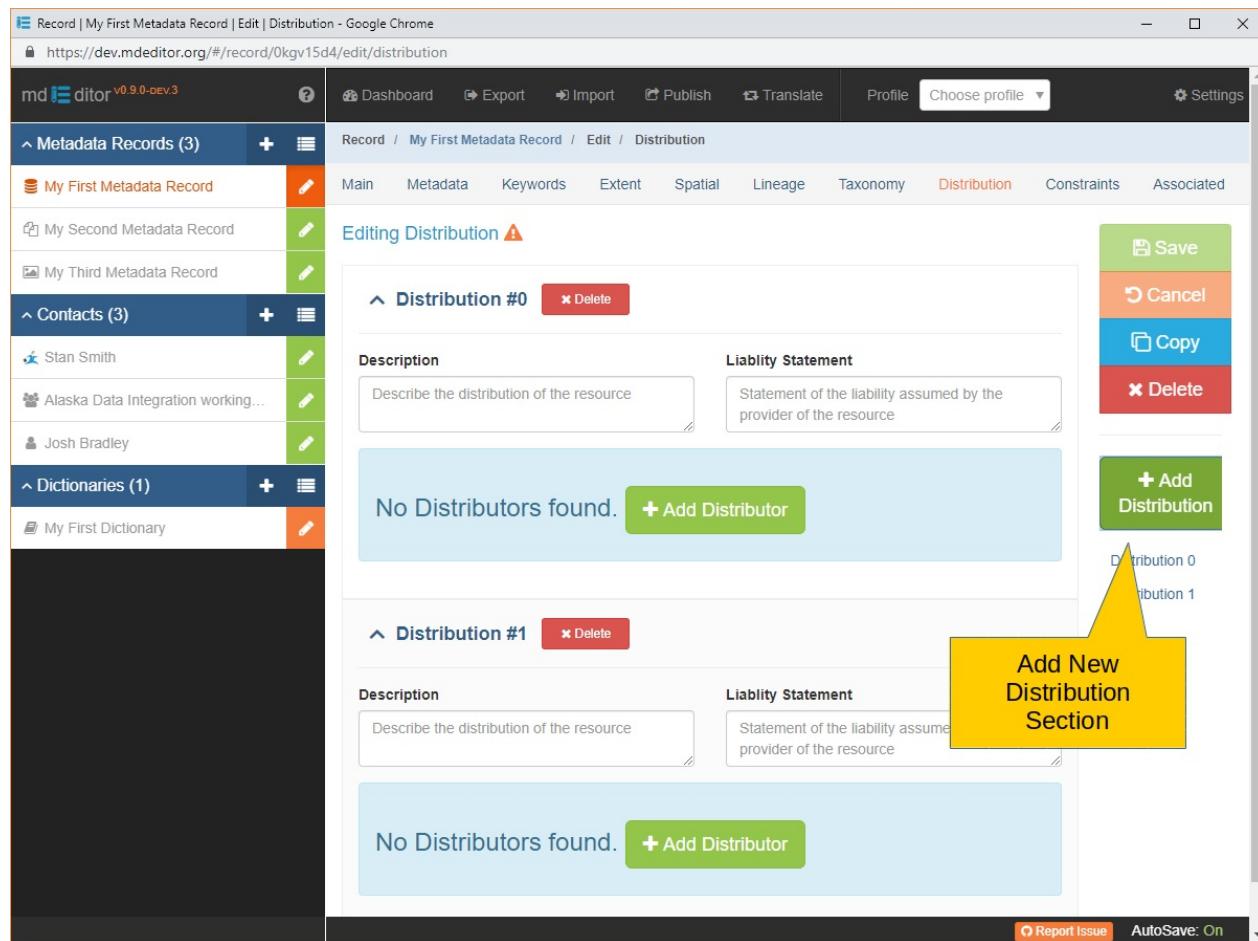


Image 2: Distribution Section with Multiple Distributions Defined

Click the **Add Distribution** button in the **SECONDARY SIDEBAR** to add the next **Distribution**.

Metadata Record -- Distribution Section

Distribution Edit Window

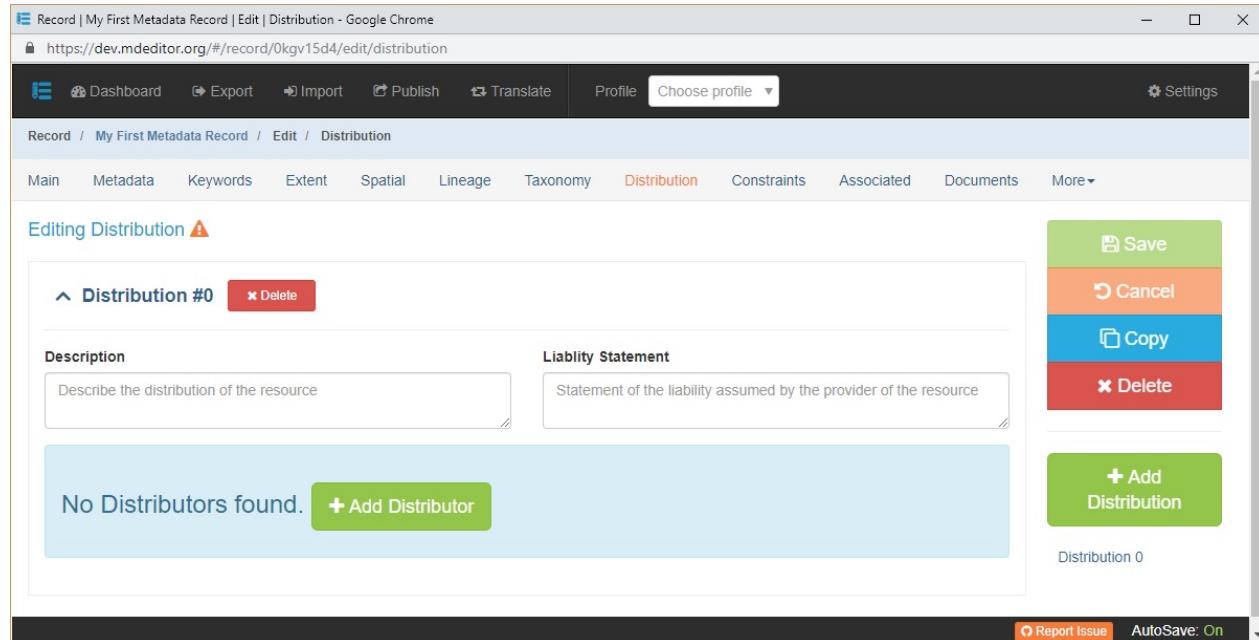


Image 1: Distribution Edit Window

- **Description** {*type: string; max length: none; default: empty*}

Usage: A description of the resource being distributed. This may be the main resource, a intermediate or derived product, raw data, a supporting document, or a zipped package of resources.

- **Liability Statement** {*type: string; max length: none; default: empty*}

Usage: A statement of the liability assumed or exempted by the resource owner.

- **Distributor** {*type: array (obj: Distributor)*}

Usage: An array of **Distributor** objects. Each distributor is person or organization authorized to distribute copies of the distribution package. Details of the distribution package and method(s) of delivery are maintained within the **Distributor** object.

When no **Distributors** have been defined for the **Distribution** a large blue bar is displayed on the page declaring "No Distributors found." Click the **Add Distributor** button to add the initial **Distributor**. Afterwards you will be transferred to the **Distributor EDIT WINDOW** where you can complete data entry for the distributor.

When one or more **Distributors** have been defined the **Distribution EDIT WINDOW** will look similar to the image below.

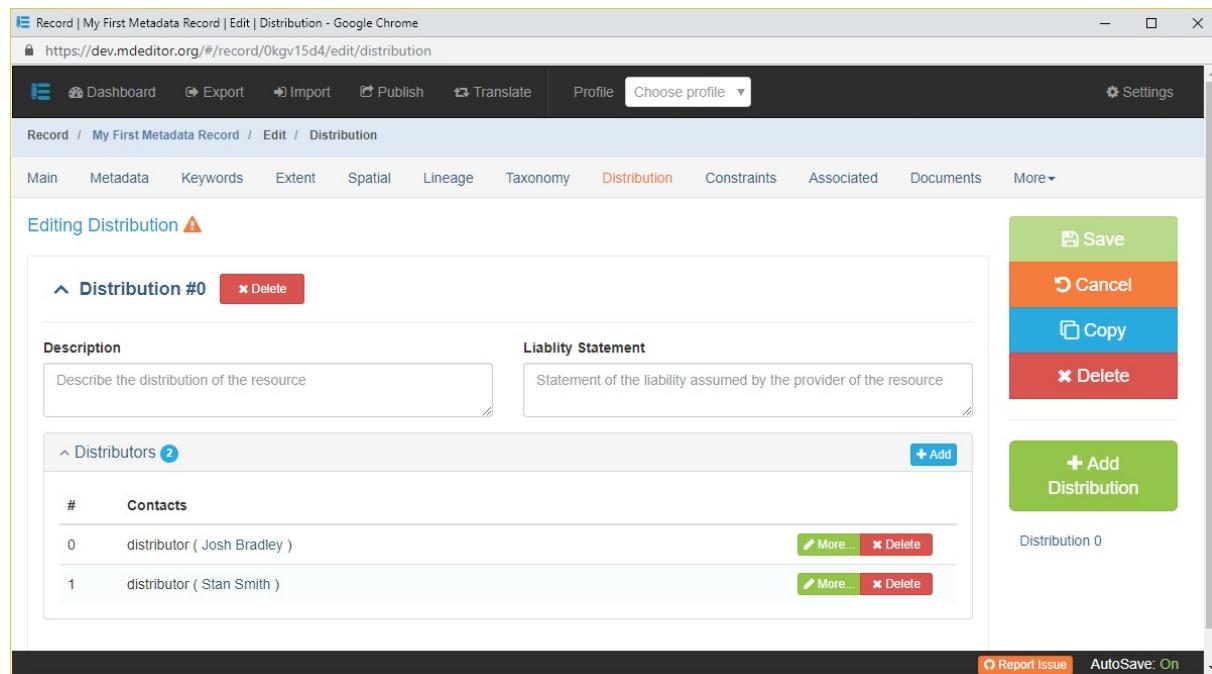


Image 2: Distribution Edit Window with Multiple Distributors Defined

Click the **Add** button in the **Distributor** panel title bar to add the next **Distributor** or click the **Edit** button to open an existing **Distributor**'s **EDIT WINDOW**.

Metadata Record -- Distribution Section

Distributor Edit Window

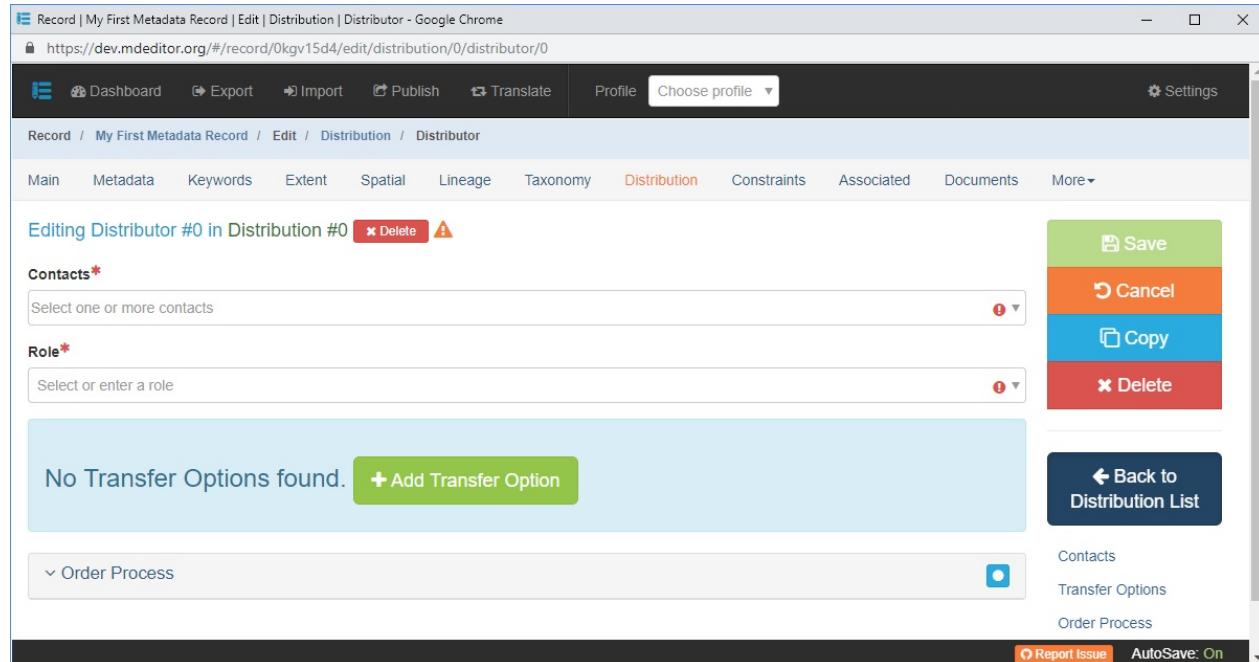


Image 1: Distributor Edit Window

- **Contacts** {*type: codelist (Contacts loaded in browser cache); extensible: NO; multi-value: YES; default: empty*}

Usage: The organization and/or person(s) to contact with questions about obtaining or using the distribution.

This is the contact information for a single distributor. You may include multiple contacts within a distributor's organization, or multiple means of contacting the distributor. However, if there are multiple distributors for the distribution it is best to identify each in separate **Distributor** objects.

- **Role** {*type: codelist (ISO CI_RoleCode, ADIwg codes); extensible: YES; multi-value: NO; default: empty*}

Usage: Identifies the function or responsibility assigned to the person(s) or organization(s).

The **Role** value is generally "distributor" although other values can be chosen. However, remember there is only one role allowed for the **Distributor** **Contact**.

- **Transfer Option** {*type: array (obj: Transfer Option)*}

Usage: A description of the method and media by which a resource is obtained from the distributor.

When no **Transfer Options** have been defined for the **Distributor** a large blue bar is displayed on the page declaring "No Transfer Options found."

Click the **Add Transfer Option** button to add the initial **Transfer Option**. Afterwards you will be transferred to the **Transfer Option** **EDIT WINDOW** where you can complete data entry.

When one or more **Transfer Options** have been defined the **Transfer Option** array will look similar to the image below.

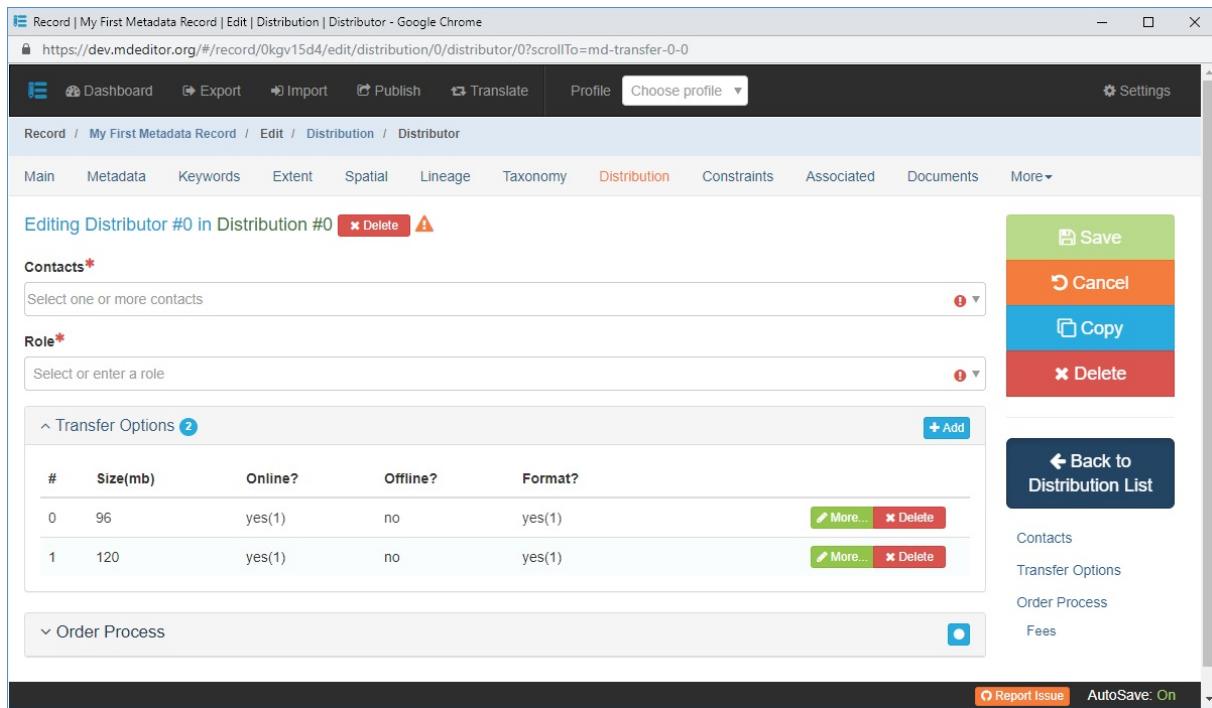


Image 2: Distributor Edit Window with Multiple Transfer Options

Click the **Add** button in the **Transfer Option** panel title bar to add the next **Transfer Option**.

Click the **More ...** button to open the **Transfer Option** **EDIT WINDOW**.

- **Order Process** {*type: object (Order Process)*}

Usage: Provides information about how the resource may be obtained and related instructions and fee information.

Metadata Record -- Distribution Section

Transfer Option

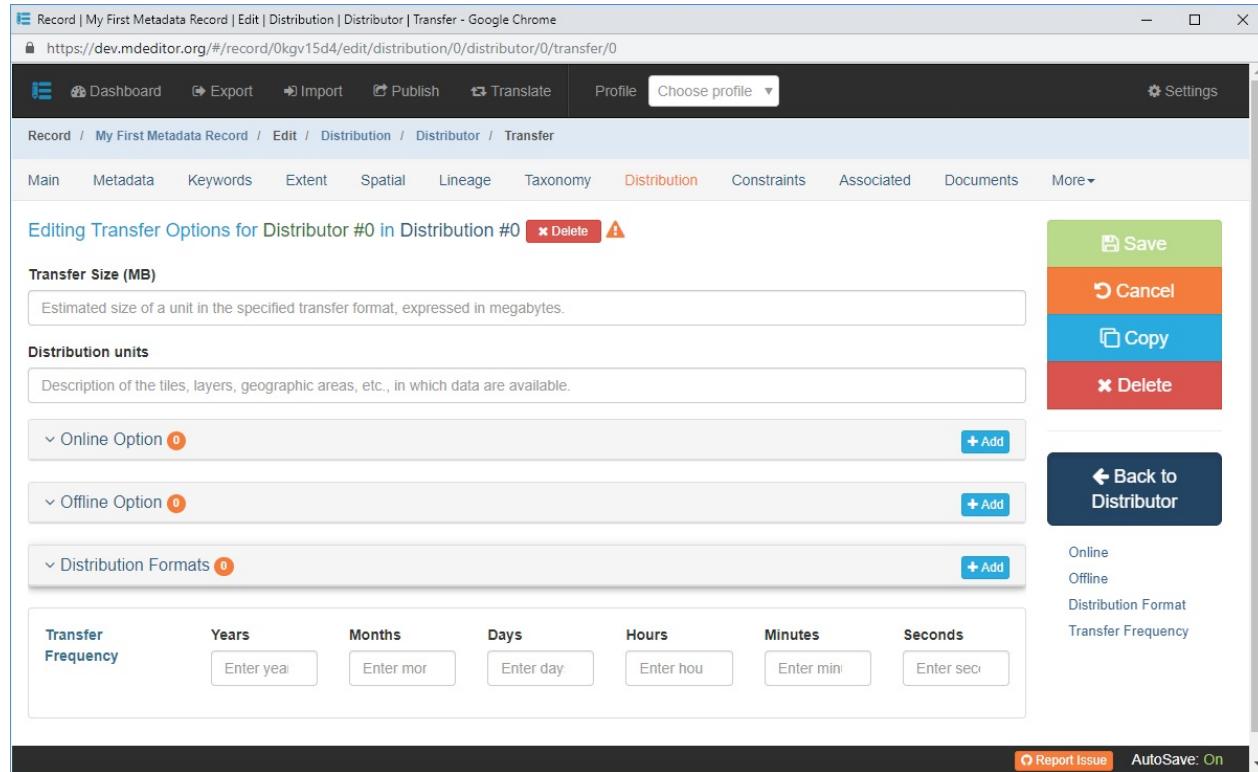


Image 1: Transfer Option Edit Window

- **Transfer Size** {*type: integer; min: 0; max none; default: empty*}
- Usage:* Estimated size of the distribution package, expressed in megabytes. If the distribution is made available in units, **Transfer Size** would be the average size of a unit. Specify the type of such units in **Distribution Units**.
- **Distribution Units** {*type: string; max length: none; default: empty*}
- Usage:* The tiles, layers, geographic areas, etc., in which data are available.
- **Online Option** {*type: array (obj: [Online Resource](#))*}
- Usage:* Each **Online Option** contains information about an online source for the distribution.
See object details
- **Offline Option** {*type: array (obj: [Offline Option](#))*}
- Usage:* Each **Offline Option** object contains information about an option for offline medium on which the distribution and be obtained.
- **Distribution Formats** {*type: array (obj: [Distribution Format](#))*}
- Usage:* Provides information about the format(s) used by the distributor.
- **Transfer Frequency** {*type: object ([Time Duration](#)); default empty*}
- Usage:* The rate of occurrence of distribution.
See object details

Online Resource

~ Online Resource 2

Editing:

Name

URI*

Protocol

Description

Function

OK

- **Name** {*type: string; max length: none; default: empty*}

Usage: The name of the online resource.

- **URI** {*type: URI; default: empty*}

Usage: The internet location (address) for online access to the resource using the [URI](#) format - a.k.a URL.

- **Protocol** {*type: string; max length: none; default: empty*}

Usage: The online connection protocol used to access the resource. e.g. ftp, http, https, etc.

- **Description** {*type: string; max length: 500 characters; default: empty*}

Usage: A text description with additional details of what the resource is or describes.

- **Function** {*type: codelist (ISO CI_OnLineFunctionCode, ADIwg codes); extensible: YES; multi-value: NO; default: empty*}

Usage: - A code declaring the intended function of the resource.

Time Duration Object

- **Year** {*type: integer; min: 0; max none; default: empty*}

Usage: A value for the number of years in the duration.

- **Month** {*type: integer; min: 0; max none; default: empty*}

Usage: A value for the number of months in the duration.

- **Day** {*type: integer; min: 0; max none; default: empty*}

Usage: A value for the number of days in the duration.

- **Hour** {*type: integer; min: 0; max none; default: empty*}

Usage: A value for the number of hours in the duration.

- **Minute** {*type: integer; min: 0; max none; default: empty*}

Usage: A value for the number of minutes in the duration.

- **Second** {*type: integer; min: 0; max none; default: empty*}

Usage: A value for the number of seconds in the duration.

At least one duration element is required. More than one may also be entered. e.g. 18 Months or 1 year, 6 months are equivalent durations.

Metadata Record -- Distribution Section

Offline Transfer Option

The screenshot shows a web-based metadata editing interface. At the top, there's a navigation bar with links for Dashboard, Export, Import, Publish, Translate, Profile, Choose profile, Settings, and a search icon. Below the navigation is a breadcrumb trail: Record / My First Metadata Record / Edit / Distribution / Distributor / Transfer. A horizontal menu bar follows with items: Main, Metadata, Keywords, Extent, Spatial, Lineage, Taxonomy, Distribution (which is highlighted in red), Constraints, Associated, Documents, Funding, and Dictionaries.

The main content area contains a form titled "Offline Option". It includes the following fields:

- Medium Title**: A text input field labeled "Name of the medium".
- Storage**: A collection of fields:
 - Density**: A dropdown menu with the placeholder "Density at which the data are recorded".
 - Density Units**: A dropdown menu with the placeholder "Units of measure for the recording".
 - Number Of Volumes**: A dropdown menu with the placeholder "The number of volumes in the".
- Storage Format**: A dropdown menu with the placeholder "Method used to write to the medium".
- Identifier***: A text input field labeled "Enter the identifier for the resource".
- Namespace**: A dropdown menu labeled "Select or type a namespace for the identifier".
- Version**: A text input field labeled "Enter the version for the identifier".
- Description**: A text input field labeled "Enter a description of the identifier".
- Note**: A text input field labeled "Describe other limitations or requirements for using the medium".

On the right side of the form is a vertical toolbar with four buttons: "Save" (green), "Cancel" (orange), "Copy" (blue), and "Delete" (red). Below the toolbar is a "Back to Distributor" button. To the right of the form is a sidebar with links: "Online", "Offline", "Distribution Format", and "Transfer Frequency". At the bottom right of the form are "Report Issue" and "AutoSave: On" buttons.

Image 1: Offline Transfer Option Edit Window

- **Medium Title** {*type*: string; *max length*: none; *default*: empty}

Usage: Name of the offline medium on which the distribution can be obtained.

- **Storage** {*type*: collection}

Usage: A collection of elements that describe the physical characteristics of how the information was written to the medium.

- **Density** {*type*: number; *min*: 1; *max none*; *default*: empty}

Usage: Density at which the data are recorded.

- **Density Units** {*type*: string; *max length*: none; *default*: empty}

Usage: Units of measure for the recording density.

- **Number of Volumes** {*type*: integer; *min*: 1; *max none*; *default*: empty}

Usage: The number of items identified in the media resource.

- **Storage Format** {*type*: codelist (ISO MD_MediumFormatCode); *extensible*: YES; *multi-value*: NO; *default*: empty}

Usage: Method used by the resource provider to write to the medium, such as: tar, iso9660, etc.

- **Identifier** {*type*: collection}

Usage: A unique identifier for an instance of the medium.

- **Identifier** {*type*: string; *max length*: ooo; *default*: empty}

Usage: A unique identifier for an instance of the medium.

- **Namespace** {*type*: string; *max length*: ooo; *default*: empty}

Usage: A string which unambiguously defines the namespace for the identifier.

- **Version** {*type*: string; *max length*: ooo; *default*: empty}

Usage: The version of the identifier

- **Description** {*type*: string; *max length*: ooo; *default*: empty}

Usage: A natural language description of the meaning of the identifier value.

- **Note** {*type*: string; *max length*: ooo; *default*: empty}

Usage: Description of other limitations or requirements for using the medium.

Metadata Record -- Distribution Section

Distribution Format

The screenshot shows the 'Distribution' tab selected in the top navigation bar. Below it, the 'Distribution Formats' section is displayed. A single row is present in the table:

#	Format Name	Version	Compression Method	URL
0	Name of the format	Format version	Compression Method	On-line information about

On the right side of the table, there are three buttons: 'Copy' (blue), 'Delete' (red), and 'Back to Distributor' (dark blue). At the bottom right of the page, there are 'Report Issue' and 'AutoSave: On' buttons.

Image 1: Distribution Format Panel

To add the first **Distribution Format** click either the **Add** or the **Add Distribution Format** button. **mdEditor** will then add a **Distribution Format** object to the array.

The screenshot shows the 'Distribution' tab selected. In the 'Distribution Formats' section, a new row is being edited. The fields are:

#	Format Name	Version	Compression Method	URL
0	Name of the format	Format version	Compression Method	On-line information about

On the right side of the table, there are three buttons: 'Copy' (blue), 'Delete' (red), and 'Back to Distributor' (dark blue). At the bottom right of the page, there are 'Report Issue' and 'AutoSave: On' buttons.

Image 2: Distribution Format Edit Window

- **Format Name** {*type: string; max length: none; default: empty*}

Usage: Name of the format used by the Distributor to distribute the **Distribution**.

- **Version** {*type: string; max length: none; default: empty*}

Usage: Amendment number of the format version.

- **Compression Method** {*type: string; max length: none; default: empty*}

Usage: Recommendations of algorithms or processes that can be applied to read or expand resources to which compression techniques have been applied.

- **URL** {*type: URI; default: empty*}

Usage: An online source for detail information about the format.

Metadata Record -- Distribution Section

Order Process

The screenshot shows the 'Order Process' section of a metadata record. The main content area contains four input fields:

- Fees**: A text area for describing fees and terms for retrieving the resource.
- Planned Availability**: A date input field with a calendar icon.
- Ordering Instructions**: A text area for general instructions for obtaining the resource.
- Turnaround**: A text area for describing typical turnaround time for filling an order.

To the right is a sidebar with the following options:

- Buttons: Save (green), Cancel (orange), Copy (blue), Delete (red).
- Links: Back to Distribution List, Contacts, Transfer Options, Order Process, Fees.
- Status: Report Issue, AutoSave: On.

Image 1: Order Process Edit Window

- **Fees** {*type: string; max length: none; default: empty*}
- Usage:* Fees and terms for retrieving the resource, including monetary units.
- **Planned Availability** {*type: date, datetime (ISO 8601); default: empty*}
- Usage:* Date and time when the resource will be available.
- **Ordering Instructions** {*type: string; max length: none; default: empty*}
- Usage:* General instructions, terms and services provided by the distributor.
- **Turnaround** {*type: string; max length: none; default: empty*}
- Usage:* Typical turnaround time for the filling of an order.

Metadata Record -- Constraints Section

The **Constraints** section of the **EDIT WINDOW** is used to document constraints of any kind regarding the distribution and use of the main resource. Constraints can describe copyright requirements, intellectual property, limitation of data use, security concerns, and more.

When no **Constraints** have been defined for the **Metadata Record** the **Constraint** array will be empty.

The screenshot shows the mdEditor interface with the following details:

- Header:** Record | My First Metadata Record | Edit | Constraint - Google Chrome
https://go.mdeditor.org/#/record/0kgv15d4/edit/constraint
- Toolbar:** Dashboard, Export, Import, Publish, Translate, Profile (full), Settings
- Sidebar:** Metadata Records (3) expanded, showing My First Metadata Record, My Second Metadata Record, and My Third Metadata Record.
- Main Content:** Record / My First Metadata Record / Edit / Constraint. Sub-sections include Main, Metadata, Keywords, Extent, Spatial, Lineage, Taxonomy, Distribution, Constraints (highlighted in orange), Associated, and Details.
- Editing Constraints:** A panel titled "Editing Constraints" contains a "Constraints" section with a count of 0. It includes a "+ Add" button and a "Create New Constraint" button.
- Right Panel:** A vertical stack of buttons: Save (green), Cancel (orange), Copy (blue), Delete (red), and another "+ Add Constraint" button.
- Bottom:** Report Issue, AutoSave: On

Add and **Add Constraint** To add a new **Constraint** click either button, they serve the same function. After clicking one of these buttons the **Constraint** object panel will open in isolation mode.

OK Complete data entry for the **Constraint** then click "OK" to save your constraint.

The screenshot shows the "Constraints" dialog box with the following fields:

- Header:** Constraints (1) with an OK button.
- Section:** Constraint Type*
The type of constraint. (A dropdown menu is shown with an error icon.)
- Items:**
 - Use Limitations (0) with a + Add button.
 - Legal (checkbox checked)
 - Security (checkbox checked)
 - Responsible Parties (0) with a + Add button.
 - Graphic or Logo (0) with a + Add button.
- Footer:** OK button.

- **Constraint Type** {*type: codelist (ADIwg enumerated list); extensible: NO; multi-value: NO; default: empty*}

Usage: The type of constraint: use, legal, security.

- **Use limitations** caution on the limitations of the fitness of data, findings, or [metadata](#) in various use cases. i.e. What the data should NOT be used for. Limitations are not legally binding and do not deal with security concerns.
- **Legal constraints** enumerate any legally binding restrictions and prerequisites for accessing and using the resource or [metadata](#) including copyrights and intellectual property rights.
- **Security constraints** define any handling restrictions imposed on the resource or [metadata](#) for national security or similar security concerns.

A [Constraint](#) can have only one **Constraint Type**. When the type is "use" complete [Use Limitations](#), when "legal" complete [Legal](#), and when "security" complete [Security](#).

- **Use Limitations** {*type: array (obj: Use Limitation)*}

Usage: An array of limitations or cautions regarding the fitness of this data or findings for various uses. e.g. "Not to be used for ..." Each limitation is a text string.

- **Legal** {*type: object (Legal); default empty*}

Usage: Describes legally binding constraints on the use and distribution of the main resource and its [metadata](#).

- **Security** {*type: object (Security); default empty*}

Usage: Handling instructions imposed on the resource or [metadata](#) for national security or similar security concerns.

- **Responsible Parties** {*type: array (obj: Responsible Party)*}

Usage: An array of persons and/or organizations responsible for assigning and/or defining the [Constraint](#).

- **Graphic or Logo** {*type: array (obj: Graphic)*}

Usage: An array of file descriptions for images and logos associated with the constraint.

Metadata Record -- Constraint Section

Use Limitation Array

Use Limitation {type: array (string)}

Usage: An array of limitations or cautions regarding the fitness of this data or findings for various uses. e.g. "Not to be used for ..." Each limitation is a text string.

While **Use Limitation** is not required, at least one must be filled in when the **Constraint Type** is "use".

The screenshot shows a user interface for managing 'Use Limitations'. At the top left is a back arrow labeled '^' and the text 'Use Limitations'. To the right is a blue button with a '+' icon and the word 'Add'. Below this is a table-like structure with two rows. Row 0 contains a column index '0' and a text input field containing 'Limitation one.'. To the right of the input field is a red 'Delete' button with a white 'X'. Row 1 contains a column index '1' and a text input field containing 'Describe Limitation affecting the fitness for use of the resource or metadata. For example, "not to be used for navigation".' To the right of this input field is a red 'Delete' button with a white 'X'.

	Use Limitations	+ Add
0	Limitation one.	X Delete
1	Describe Limitation affecting the fitness for use of the resource or metadata. For example, "not to be used for navigation".	X Delete

Metadata Record -- Constraint Section

Legal Constraint

Legal Constraint {type: collection}

Usage: A collection of elements describing legally binding constraints on the use and distribution of the main resource and its [metadata](#).

While none of the elements on this panel are required, at least one must be filled in when the **Constraint Type** is "legal".

^ Legal

Access Constraints

Access constraints applied to assure the protection of privacy or intellectual property, and any special restrictions or limitations on obtaining 1 ▾

Use Constraints

Constraints applied to assure the protection of privacy or intellectual property, and any special restrictions or limitations or warnings on using ▾

Other Constraints 1

+ Add Other Constraint

0	Other one	✖ Delete
1	Other restrictions and legal prerequisites for accessing and using the resource.	✖ Delete

- **Access Constraint** {type: codelist (ISO MD_RestrictionCode, [ADIwg](#) codes); extensible: NO; multi-value: YES; default: empty}

Usage: These are access constraints applied to assure the protection of privacy of individuals or intellectual property as well as any restrictions or limitations on obtaining the resource or [metadata](#).

- **Use Constraint** {type: codelist (ISO MD_RestrictionCode, [ADIwg](#) codes); extensible: NO; multi-value: YES; default: empty}

Usage: These are use constraints applied to assure the protection or privacy of individuals or intellectual property as well as any restrictions or limitations on using the resource or [metadata](#).

- **Other Constraints** {type: array (string)}

Usage: Any other restrictions and legal prerequisites for accessing and using the resource or [metadata](#). Each limitation is a text string.

Metadata Record -- Constraint Section

Security Constraint

Security Constraint {type: collection}

Usage: A collection of elements describing handling instructions imposed on the resource or [metadata](#) for national security or similar security concerns.

^ Security

Classification*

Name of the handling restrictions on the resource or metadata.

Classification System Name

Enter name of the classification system.

Note

Explanation of the application of the legal constraints or other restrictions and legal prerequisites for obtaining and using the resource.

Handling Description

Enter additional information about the restrictions on handling the resource.

- **Classification** {type: codelist (ISO MD_ClassificationCode); extensible: NO; multi-value: NO; default: empty}

Usage: Level of the security restrictions assigned to this resource or [metadata](#).

- **Classification System Name** {type: string; max length: none; default: empty}

Usage: Name of the Classification System.

- **Note** {type: string; max length: none; default: empty}

Usage: Explanation for why this level of security classification was assigned to the resource or [metadata](#).

- **Handling Description** {type: string; max length: none; default: empty}

Usage: Any additional instructions for handling the resource or [metadata](#).

Metadata Record -- Constraint Section

Responsible Party Array

[^ Responsible Parties 2](#) [+ Add](#)

#	Role	Contacts
0	author	x Josh Bradley Delete
1	Select or enter a role !	Select one or more contacts ! Delete

- Responsible Party {*type: object (responsibleParty); default empty*}

Usage: The persons and/or organizations responsible for assigning and/or defining the **Constraint**.

See object details

Responsible Party Object

- **Role** {*type: codelist (ISO CI_RoleCode, ADIwg codes); extensible: YES; multi-value: NO; default: empty*}

Usage: Identifies the function or responsibility assigned to the person(s) or organization(s), etc.

- **Contacts** {*type: codelist (contact records in browser cache); multi-value: YES; default: empty*}

Usage: A list of contacts associated with this role.

Metadata Record -- Constraint Section

Graphic or Logo Array

Graphic {type: array (obj: **Graphic**)}

Usage: An array of file descriptions for images and logos associated with the constraint.

	Graphic or Logo	Actions
0	Graphic One:	Edit Delete
1	Graphic Two:	Edit Delete

Graphic Object

Graphic		Actions
Editing:		OK
Name*		
File Name		
File Type		
Enter the file format(s) of the logo.		
Description		
Description of the file: Less than 500 characters		
Online Resource 0		Add
		OK

- **Name** {type: string; max length: none; default: empty}

Usage: Name of the file containing the graphic.

- **File Type** {type: string; max length: none; default: empty}

Usage: MIME type (Multipurpose Internet Mail Extension) of the graphic. e.g. jpeg, gif, pdf, png, bmp, etc.

- **Description** {type: string; max length: none; default: empty; max length: 500 characters}

Usage: A short description of the graphic.

- **Online Graphic Resource** {type: array (obj: **Online Graphic Resource**); default: empty}

Usage: **Online Graphic Resource** objects that define internet links to the **Graphic Overview** file.

See object details

Metadata Record -- Constraint Section

Online Graphic Resource Array

Online Graphic Resource {type: array (obj: **Online Graphic Resource**); default: empty}

Usage: An array of **Online Graphic Resource** objects that describe internet links to graphic files.

^ Online Resource 2 + Add

0	 Name Greater Anchorage Area URI https://www.google.com/maps/vt/data... Edit Delete
1	Image Preview  Name Non-Graphic File URI http://adiwg.org/resources/899 Edit Delete

✓ OK

Along with the file **Name** and **URI**, mdEditor attempts to provide a thumbnail of each graphic file listed in the **Online Graphic Resource** array. If a thumbnail can not be generated a broken image link will be displayed like the one shown for the second array item above.

If for some reason mdEditor does not produce a thumbnail preview, check for the following:

- an invalid link
- the file's graphic format is not readable by mdEditor
- the file is not a graphic file

Online Graphic Resource Object

^ Online Resource 3 ✓ OK

Editing:

Name

Online Resource Name

URI*

Online Resource URI

◎ Click to Select or Drop Image

Enter URI or select file to preview.

Protocol

Protocol for accessing the Online Resource

Description

Description of the Online Resource: Less than 500 characters

Function

Select function of the Online Resource

✓ OK

- **Name** {*type: string; max length: none; default: empty*}

Usage: The name of the online graphic resource.

- **URI** {*type: URI; default: empty*}

Usage: - The internet location (address) for online access to the graphic resource, using the **URI** format - a.k.a URL.

Click to Select or Drop Image Use this drop target to drop local graphics and logos that are less than 50K Bytes in size. The graphic will be converted to a 'data:image/...' **URI** and placed into the **URI** element. These graphics will remain embedded in the **mdJson** file and do not need an additional internet accessible **URI** to access the graphic.

For graphics larger than 50K Bytes an internet accessible file is required. Place the **URI** to the graphic file in the **URI** element. **mdEditor** will then access the graphic file and build a thumbnail image for the **EDIT WINDOW** page.

The thumbnail image is not saved with the **mdJson** or **mdEditor** files. The thumbnail is rebuilt each time the **mdJson** file is edited.

- **Protocol** {*type: string; max length: none; default: empty*}

Usage: The online connection protocol used to access the graphic resource. e.g. ftp, http, https, etc.

- **Description** {*type: string; max length: 500 characters; default: empty*}

Usage: A text description with additional details of what the graphic resource is or describes.

- **Function** {*type: codelist (ISO CI_OnLineFunctionCode, ADIwg codes); extensible: YES; multi-value: NO; default: empty*}

Usage: A code declaring the intended function of the graphic resource.

Metadata Record -- Associated Resource Section

The **Associated Resource** section of the **EDIT WINDOW** is used to connect related resources. For instance, multiple resources may be related through inheritance where the main resource is a product of some larger program, or was a project that yielded sub-projects the **metadata** author wishes to note. These, as well as other association types, can all be linked by means of the **Associated Resource**.

When no **Associated Resources** have been defined for the **Metadata Record** a large blue bar is displayed on the page declaring "No Associated Resource found."

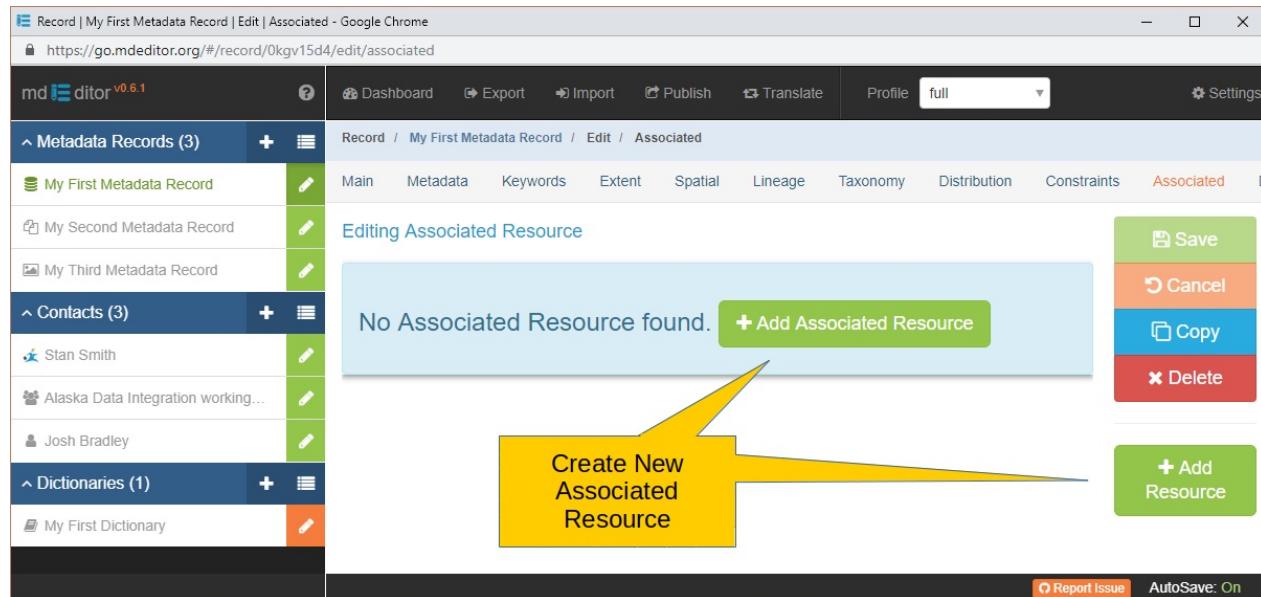


Image 1: Associated Section with no Associated Resources Defined

Add Associated Resource and **Add Resource** To add an **Associated Resource** click either button, they serve the same function. After clicking one of the buttons you will be transferred to the **Associated Resource** **EDIT WINDOW** where you can complete data entry for the resource.

When one or more **Associated Resources** have been defined the **Associated Resource** section window will look similar to the image below.

The screenshot shows the mdEditor application interface. The left sidebar lists three metadata records: 'My First Metadata Record', 'My Second Metadata Record', and 'My Third Metadata Record'. Below that, 'Contacts' and 'Dictionaries' sections are shown. The main content area is titled 'Editing Associated Resource' and contains two resource entries: 'Resource #0' and 'Resource #1'. Each resource entry includes fields for Association Type, Initiative Type, Title, Alternate Titles, Dates, Identifier, Responsible Party, and Metadata Identifier. On the right side, there is a vertical toolbar with buttons for Save, Cancel, Copy, Delete, and a large green '+ Add Resource' button. A yellow callout box with the text 'Create New Associated Resource' points to the '+ Add Resource' button.

Image 2: Associated Section with Multiple Associated Resources Defined

Click the **Add Resource** button in the **SECONDARY SIDEBAR** to add the next **Associated Resource**.

Metadata Record -- Associated Resource Section

Edit Window

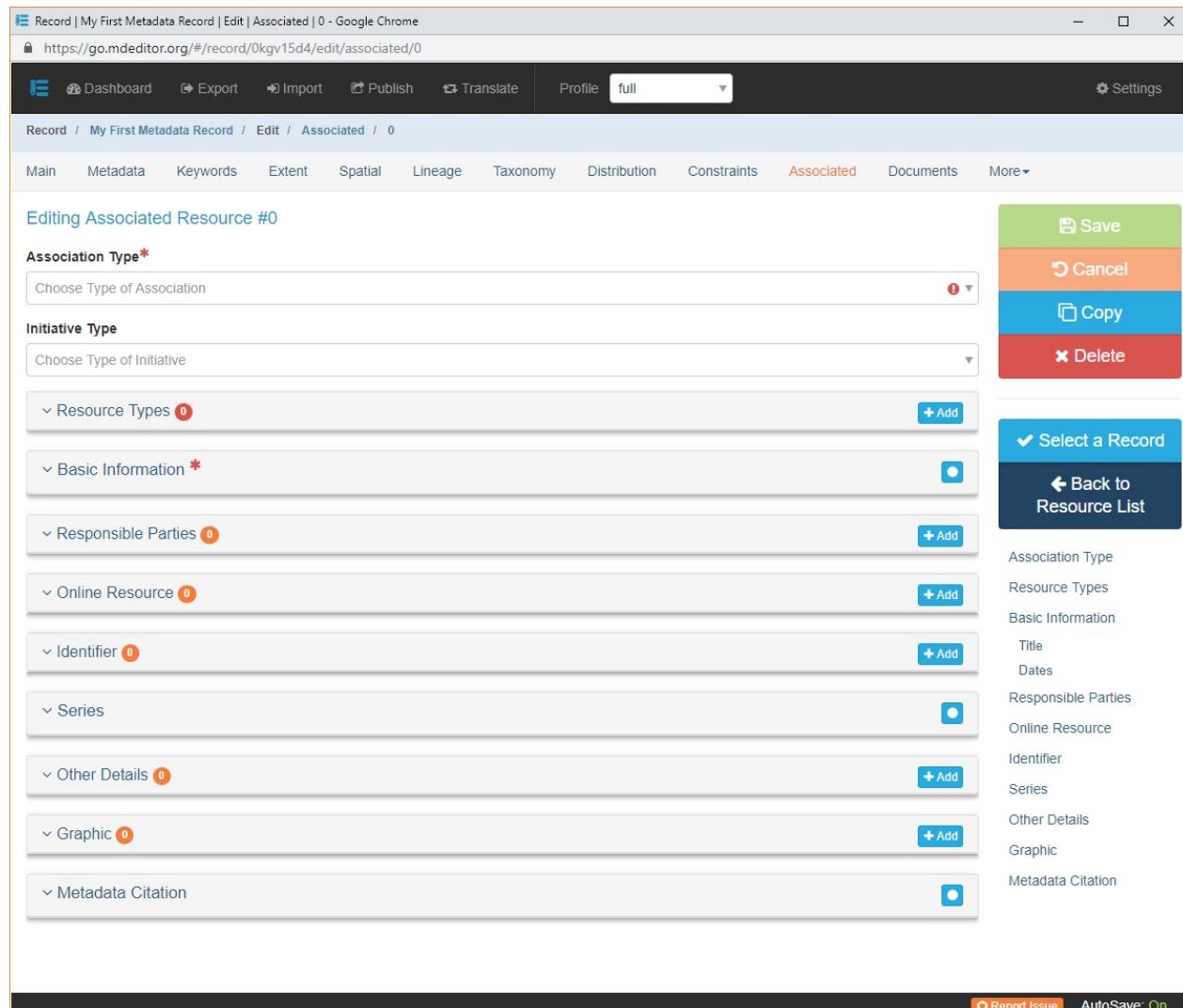


Image 1: Associated Resource Edit Window

Select a Record Click this button to see a list of **Metadata Records** available to import as an **Associated Resource**. See "Select a Resource" for details.

Back to Resource List Click to return to the list of defined **Associated Resources**.

- **Association Type** {*type: codelist (ISO DS_AssociationTypeCode, ADIwg codes); extensible: YES; multi-value: NO; default: empty*}

Usage: Justification for the correlation of two resources.

- **Initiative Type** {*type: codelist (ISO DS_InitiativeTypeCode); extensible: YES; multi-value: NO; default: empty*}

Usage: The type of initiative under which the resource was produced - the activity that resulted in the resource.

- **Resource Types** {*type: array (obj: **Resource Type**)*}

Usage: Identifies the general class or kind of **Additional Document** being documented.

See object details

- **Remaining Panel Elements** {type: object (`citation`); default empty}

Usage: The remaining panel elements comprise the `Associated Resource` citation. This `Citation` object refers to the resource being associated with the main resource.

See the [Citation Reference](#) for documentation on specific `Associated Resource Citation` panels.

Resource Type Object

#	Type	Name
0	report	My First Report ✖ Delete
1	Choose type of resource	Name of resource ✖ Delete

- **Type** {type: codelist (ISO MD_ScopeCode, ADIwg codes); extensible: YES; multi-value: NO; default: empty}

Usage: Identifies the type of resource(s), such as dataset, study, publication, project, etc.

- **Name** {type: string; max length: none; default: empty}

Usage: A user provided name for the resource. This may be helpful particularly when multiple resource types are identified.

Metadata Record -- Associated Resource Section

Select a Resource

Metadata Records which were previously defined and are currently loaded into **browser cache** may be imported as **Associated Resources**. The import process copies the imported **Metadata Record**'s main **Citation** to the **Associated Resource Citation**. You will still need to manually select the **Association Type** and **Initiative Type** as discussed [previously](#) to complete the **Associated Resource** object.

When the **Select a Record** is clicked a selection list is displayed showing all **Metadata Records** currently loaded in **browser cache**.

ID	Title	Type
d2a5297f-19c4-46c9-b46a-45ef54616614	My First Metadata Record	repository
a80c25c0-075e-4c15-a566-76e3eac74485	My Second Metadata Record	collection
b79a26-72bc-48ec-b6b6-f9095d11a9aa	My Third Metadata Record	drawing

Clicking on any row in the selection list will immediately load that **Metadata Record**'s **Citation** object, no confirmation is requested.

If you inadvertently select the wrong **Metadata Record** you will need to remove it from the **Associated Resource** array at the top level of **Associated Resource**. Do not be tempted to click **Delete** button in the **SECONDARY SIDEBAR** as this will delete the entire **Metadata Record** with no ability to recover.

- [Search](#)
- [View](#)

Search

When there are many **metadata records**, contacts, or dictionaries loaded into the **browser cache**, the search capabilities of the page can help quickly narrow the number of items being considered.

• Search ALL Columns

Text entered into "Search All Columns" control will be matched against the contents of each column. If the column value matches the search text, the item remains visible, otherwise the item is hidden. All items in the **browser cache** will be searched, not just those currently visible in the panel.

• Search Column

Immediately under each column header is the "Search A Column" control. Text entered into this control is matched against the contents of that column only. If the column value matches the search text, the item remains visible, otherwise the item is hidden. All items in the [browser cache](#) will be searched, not just those currently visible in the panel.

View

Each export panel has built in support for navigating long lists of [Metadata Records](#), [Contacts](#), and [Dictionaries](#). The following functions are available for each panel.

• Number of Items to Display

This selection list allows you to set the maximum number of items to display in the panel. The default is 10 items with options for 25, 50, and 500. You cannot set your own number of items.

• Record Controls

The "Record Controls" manage which set of items is visible in the panel. The controls become active when there are more items in [browser cache](#) than are displayed in the panel, given the limit set using the "Number of Items to Display" control (above).

- [Next Page](#)
- [Previous Page](#)
- [Last Page](#)
- [First Page](#)

• Select Columns to Display

Clicking this control presents a list of columns that can be displayed in the panel. By default all available columns are displayed. You can hide a column - or return it to visible again - by checking or un-checking the column name in the control's list. The list of columns is naturally different between the [Metadata Records](#), [Contacts](#), and [Dictionaries](#) panels.

Metadata Record -- Additional Documents Section

The **Documents** section of the **EDIT WINDOW** supports references to documents relevant to the main resource. These might include documents such as fact-sheets, data catalog pages, award documents, proposals, informational websites, or referenced research.

When no **Additional Documents** have been defined for the **Metadata Record** a large blue bar is displayed on the page declaring "No Additional Documents found."

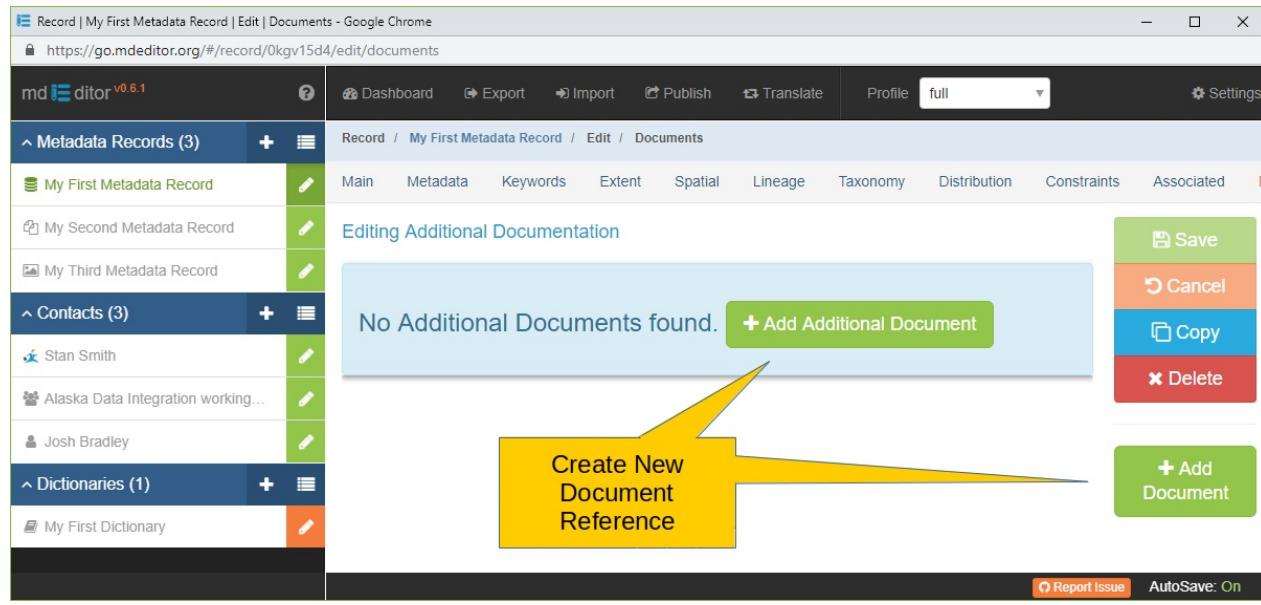


Image 1: Documents Section with no Additional Documents Defined

Add Additional Document and **Add Document** To add an **Additional Document** click either button, they serve the same function.

After clicking one of the buttons you will be transferred to the **Additional Document** **EDIT WINDOW** where you can complete data entry for the reference.

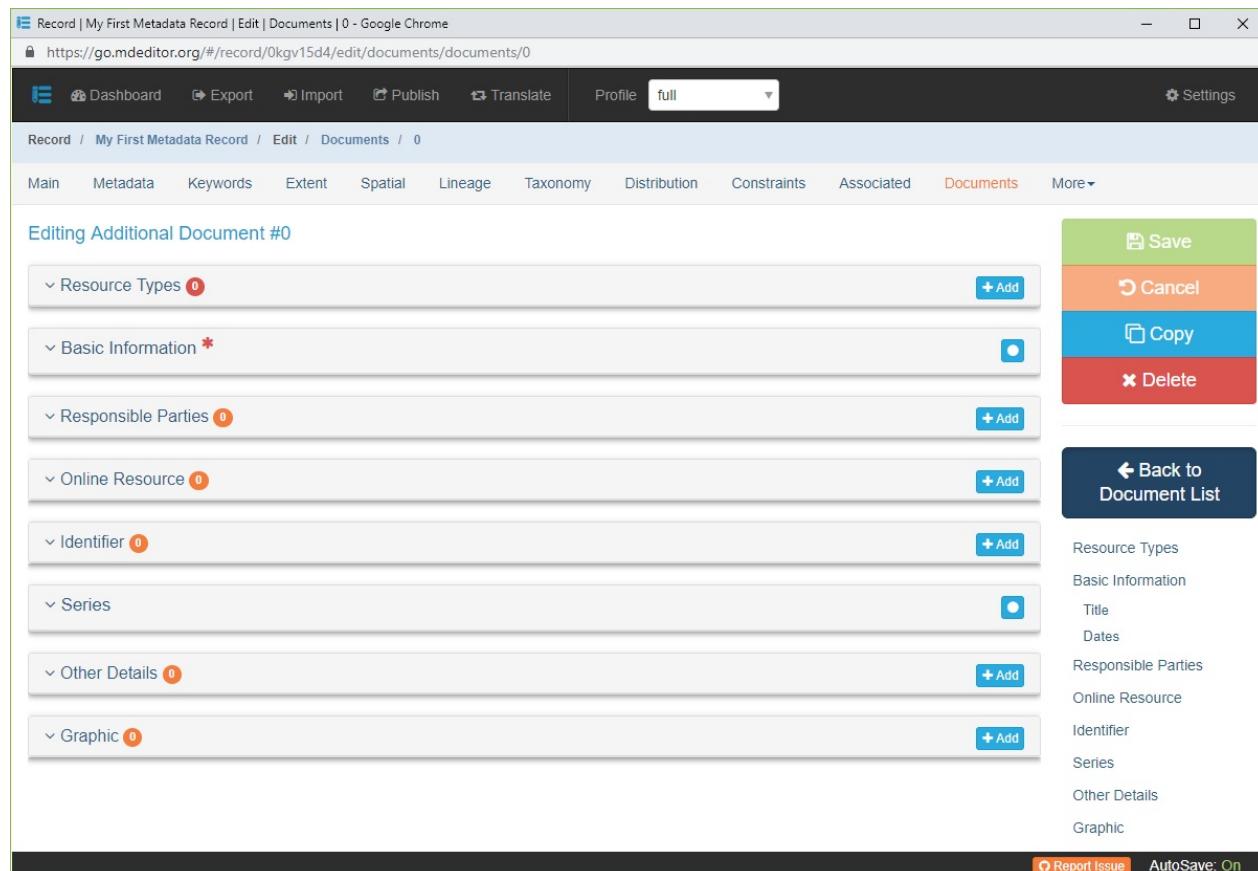


Image 2: Additional Documents Edit Window

The `Additional Document` object is basically a `Resource Type` array concatenated to a full `Citation` object. In other words, the `Additional Document` is a citation to some external document that is qualified by one or more `Resource Types`.

[Back to Document List](#) Click to return to the list of defined `Additional Documents`.

- **Resource Types** `{type: array(obj: Resource Type)}`

Usage: Identifies the general class or kind of `Additional Document` being described.

See object details

- **Remaining Panel Elements** `{type: object(Citation); default empty}`

Usage: The remaining panel elements comprise the `Additional Document` citation. This `Citation` object references the external document being linked with the main resource.

See the [Citation Reference](#) for documentation on specific `Additional Document Citation` panels.

Resource Type Object

Resource Types <small>(2)</small>		
#	Type	Name
0	report	<input type="text" value="My First Report"/> <small>x</small> <small>▼</small>
1	Choose type of resource	<small>b</small> <small>▼</small> <input type="text" value="Name of resource"/> <small>x Delete</small>

- **Type** {*type: codelist (ISO MD_ScopeCode, ADIwg codes); extensible: YES; multi-value: NO; default: empty*}

Usage: Identifies the type of resource(s), such as dataset, study, publication, project, etc.

- **Name** {*type: string; max length: none; default: empty*}

Usage: A user provided name for the resource. This may be helpful particularly when multiple resource types are identified.

Metadata Record -- Funding Section

The **Funding** section collects information about financing the development and/or maintenance of the main resource.

In mdEditor individual funding allocations for a resource are grouped into **Funding Periods**. After defining the fiscal boundaries of a **Funding Periods**, individual **Allocations** may be added to the period.

When no **Funding Periods** have been defined for the resource a large blue bar is displayed on the page declaring "No Funding Periods found."

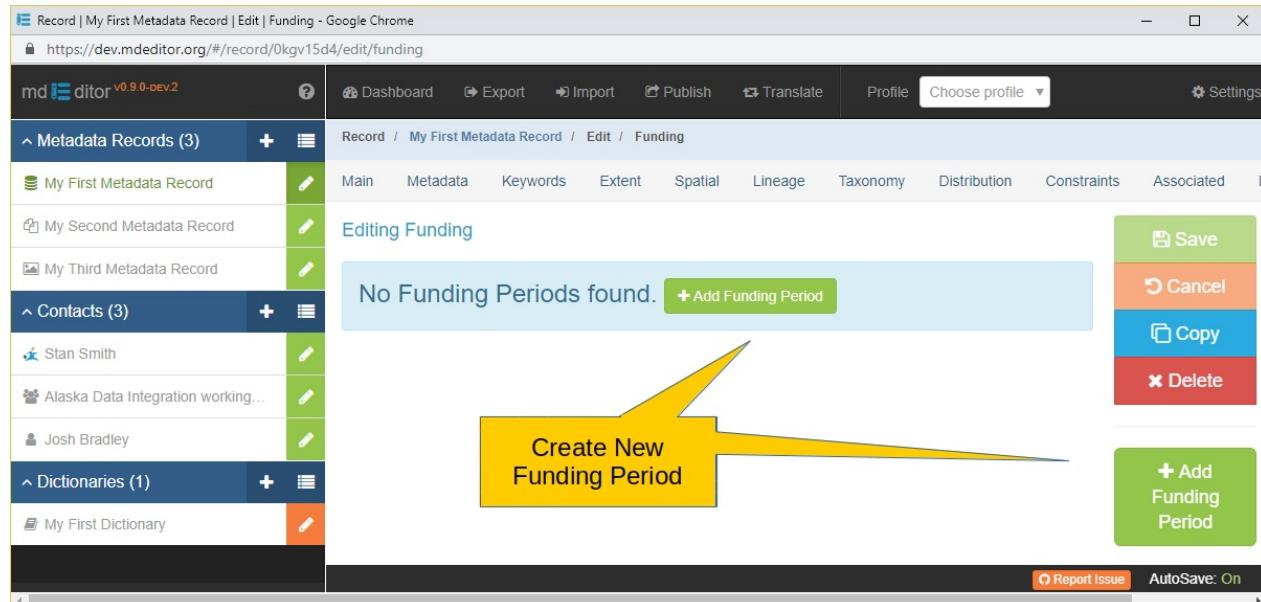


Image 1: Funding Section with no Funding Periods Defined

To add the first **Funding Period** to the **Metadata Record** click either **Add Funding Period** button. mdEditor will then navigate to the **Funding Period** **EDIT WINDOW**.

When one or more **Funding Periods** have been defined the **Funding** section window will look similar to the image below.

The screenshot shows the mdEditor application interface for editing a metadata record. The left sidebar lists various record types: Metadata Records (3), Contacts (3), and Dictionaries (1). The main content area is titled "Editing Funding" and shows two funding periods:

- Funding Period #0** (green button):

Amount	Currency	Source	Recipient	Match?
10000	USD	--	--	--
30000	USD	--	--	--
- Funding Period #1** (green button):

Amount	Currency	Source	Recipient	Match?
20000	USD	--	--	--

On the right side, there is a vertical toolbar with buttons for Save, Cancel, Copy, Delete, Add Funding Period, Report Issue, and AutoSave: On. The "Add Funding Period" button is highlighted.

Image 2: Funding Section with Multiple Funding Periods Defined

Click the **Add Funding Period** button in the **SECONDARY SIDEBAR** to add the next **Funding Period**.

Metadata Record -- Funding Section

Edit Window

The screenshot shows the 'Edit Window' for a 'Funding Period' in the Metadata Editor. The main area displays a table of allocations:

#	Amount	Currency	Matching
0	30000	USD	true

On the right, there is a vertical sidebar with buttons for Save, Cancel, Copy, and Delete. Below the table is a section for 'Time Period' with a blue button. At the bottom, there are tabs for Allocation, Time Period, and Description, along with 'Report Issue' and 'AutoSave: On' buttons.

Image 1: Funding Period Edit Window

- **Allocation** {type: array (obj: Allocation)}

Usage: An array of Allocation objects documenting individual financial contributions made available for development and/or maintenance of the resource during the period.

- **Time Period** {type: object (Time Period); default empty}

Usage: The beginning and ending dates for the funding period.

See object details

- **Description** {type: string; max length: none; default: empty}

Usage: A description of the funding period and significant goals and accomplishments for the period.

Time Period

^ Time Period

Dates*

Start Date* Enter start dateTime ⓘ

End Date* Enter end dateTime ⓘ

Identifier
Enter a unique identifier for the time period.

Description
A brief description providing relevant information about the time period.

Time Period Names 0

Interval

Interval Amount* Enter amount of time ⓘ

Duration **Years** Enter year **Months** Enter mo **Days** Enter day **Hours** Enter hrt **Minutes** Enter min **Seconds** Enter sec

- **Dates** {type: collection}

Usage: - A collection of elements to select and set the **Start Date** and **End Date** of a **Time Period**.

- **Start Date** {type: date, datetime (ISO 8601); default: empty}

Usage: Starting date and time of the **Time Period**. **Start Date** is not required if **End Date** is present.

- **End Date** {type: date, datetime (ISO 8601); default: empty}

Usage: Ending date and time of the **Time Period**. **End Date** is not required if **Start Date** is present.

- **Pick a Fiscal Year** Use this select control to set both the **Start Date** and **End Date** of a fiscal year. To set both dates for a fiscal year use the control to select the desired starting year. The **Start Date** will be set to the first day of the month for the fiscal year and the **End Date** will be the last day of the month twelve months later. The default starting month for the fiscal year is October. The starting month can be changed on the Settings page and will be used by `mdEditor` for all **Time Period** objects until changed. Previously defined fiscal years will not be effected.

See [Date-Time Control](#) for details on picking dates and times using the Date-Time control.

- **Identifier** {type: string; max length: none; default: empty}

Usage: - A unique identifier for this **Time Period**.

The identifier must be alphanumeric and not include special characters. It need only be unique within the [metadata record](#).

ISO metadata records require time period IDs. If one is provided here it will be used by `mdTranslator` when writing ISO metadata. If the **Identifier** is left blank `mdTranslator` will generate a unique identifier for the **Time Period**. Note that the generated time period ID may not be consistent across multiple translations by `mdTranslator`.

- **Description** {*type: string; max length: none; default: empty*}
- Usage:* A brief description of any relevant information for this **Time Period**.
- **Time Period Names** {*type: array (string); max length: none; default: empty*}
- Usage:* - An array of user-assigned names for this time period. Each name is a character string.
- **Interval** {*type: object ([Time Interval](#)); default: empty*}
- Usage:* An object to specify a time interval for the resource.
[See object details](#)
- **Duration** {*type: object ([Time Duration](#)); default: empty*}
- Usage:* An object to specify a time duration for the resource.
[See object details](#)

Time Interval Object

- **Time Unit** {*type: codelist (ADIwg codes); multi-value: NO; extensible: YES; multi-value: NO; default: empty*}
- Usage:* A value for the units of time, e.g. year, month, day, hour, minute, second, jiffy.
- **Interval Amount** {*type: real; min: 0.0; max none; default: empty*}
- Usage:* A floating point or integer value representing the temporal length.

Time Duration Object

- **Year** {*type: integer; min: 0; max none; default: empty*}
- Usage:* A value for the number of years in the duration.
- **Month** {*type: integer; min: 0; max none; default: empty*}
- Usage:* A value for the number of months in the duration.
- **Day** {*type: integer; min: 0; max none; default: empty*}
- Usage:* A value for the number of days in the duration.
- **Hour** {*type: integer; min: 0; max none; default: empty*}
- Usage:* A value for the number of hours in the duration.
- **Minute** {*type: integer; min: 0; max none; default: empty*}
- Usage:* A value for the number of minutes in the duration.
- **Second** {*type: integer; min: 0; max none; default: empty*}
- Usage:* A value for the number of seconds in the duration.

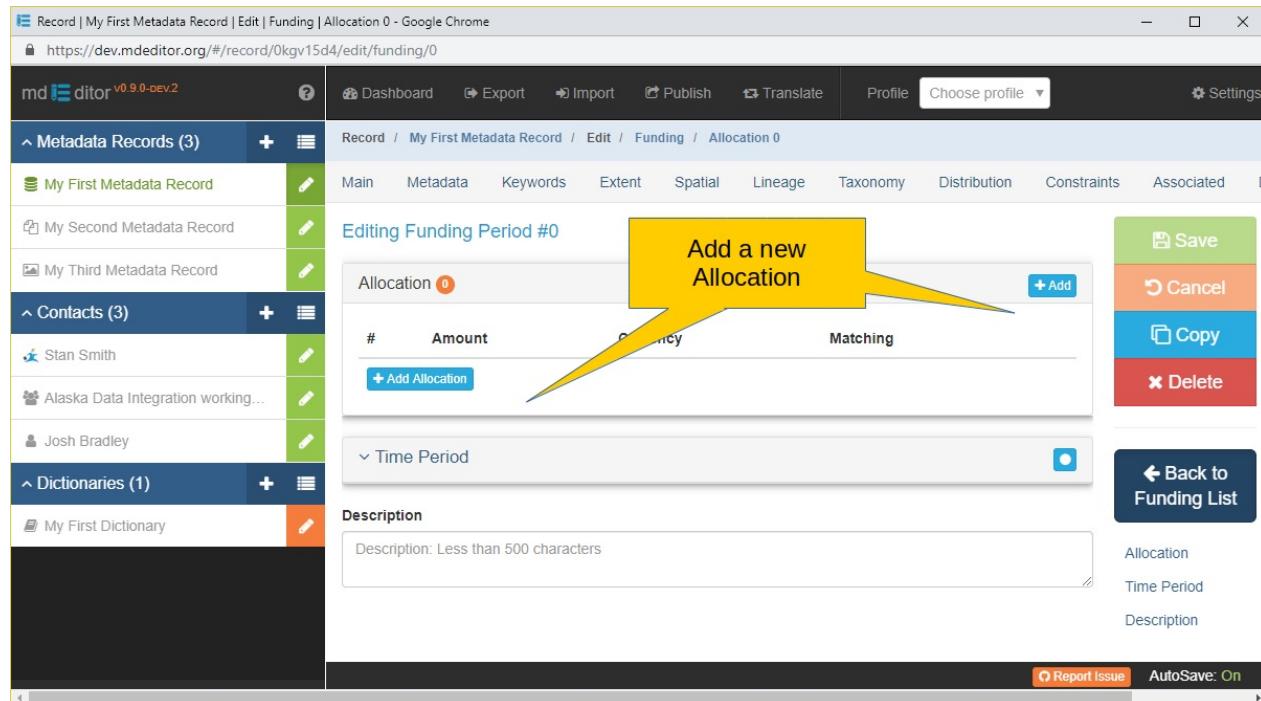
At least one duration element is required. More than one may also be entered. e.g. 18 Months or 1 year, 6 months are equivalent durations.

Metadata Record -- Funding Section

Allocations

The **Allocation** object documents an individual financial allocation made for the development and/or maintenance of the main resource during the **Funding Period**.

When no **Allocations** have been defined for the **Funding Period** the allocation array will be empty.



To add the first **Allocation** object to the **Funding Period** click either the **Add** button or the **Add Allocation** button on the **Allocation** panel. **mdEditor** will then navigate to the **Allocation EDIT WINDOW**.

When one or more **Allocations** have been defined the allocation array will look similar to the image below.

Record | My First Metadata Record | Edit | Funding | Allocation 0 - Google Chrome
https://dev.mdeditor.org/#/record/0kgv15d4/edit/funding/0

md Editor v0.9.0-dev.2

Metadata Records (3) + Main My First Metadata Record

My Second Metadata Record

My Third Metadata Record

Contacts (3) + Stan Smith

Alaska Data Integration working...

Josh Bradley

Dictionaries (1) + My First Dictionary

Editing Funding Period #0 !

Allocation 2 + Add

#	Amount	Currency	Matching	
0	10000	USD	Not Defined	Edit Delete
1	30000	USD	Not Defined	Edit Delete

Time Period

Description

Description: Less than 500 characters

Save Cancel Copy Delete

Back to Funding List

Allocation Time Period Description

Report Issue AutoSave: On

Metadata Record -- Funding Section

Allocations Edit Window

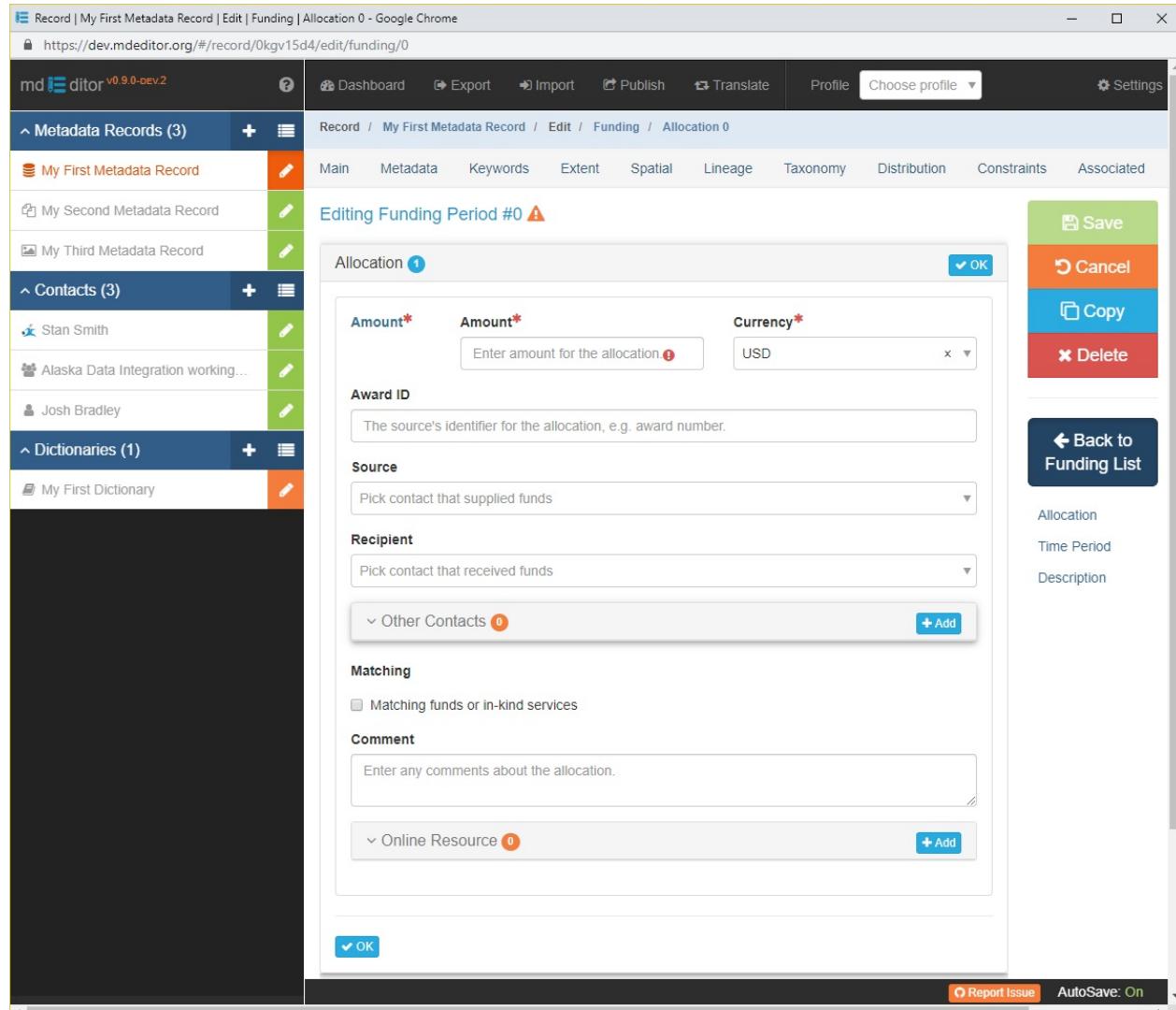


Image 1: Allocation Edit Window

- **Amount** {*type: real; min: 0.00; max none; default: 0.00*}

Usage: Amount of the allocation in the indicated currency.

- **Currency** {*type: codelist (Swiss Association for Standards); extensible: NO; multi-value: NO; default: "USD"*}

Usage: Type of currency in which the allocation was made.

- **Award ID** {*type: string; max length: none; default: empty*}

Usage: The identifier used by the source contact to reference this allocation.

- **Source** {*type: codelist (Contacts loaded in browser cache); extensible: NO; multi-value: NO; default: empty*}

Usage: The **Contact** providing the allocation.

- **Recipient** {*type: codelist (Contacts loaded in browser cache); extensible: NO; multi-value: NO; default: empty*}

Usage: The **Contact** receiving the allocation.

- **Other Contacts** {type: array (obj: [Responsible Party](#))}

Usage: An array of individuals and/or organizations other than source and recipient that serve as contact points or other roles related to the allocation.

[See object details](#)

- **Matching** {type: Boolean; default: FALSE}

Usage: Indicates whether the funds are to be considered matching funds.

- **Comment** {type: string; max length: none; default: empty}

Usage: Additional information relevant to the allocation.

- **Online Resource** {type: array (obj: [Online Resource](#))}

Usage: An array of online resources related to the allocation.

[See object details](#)

Responsible Party

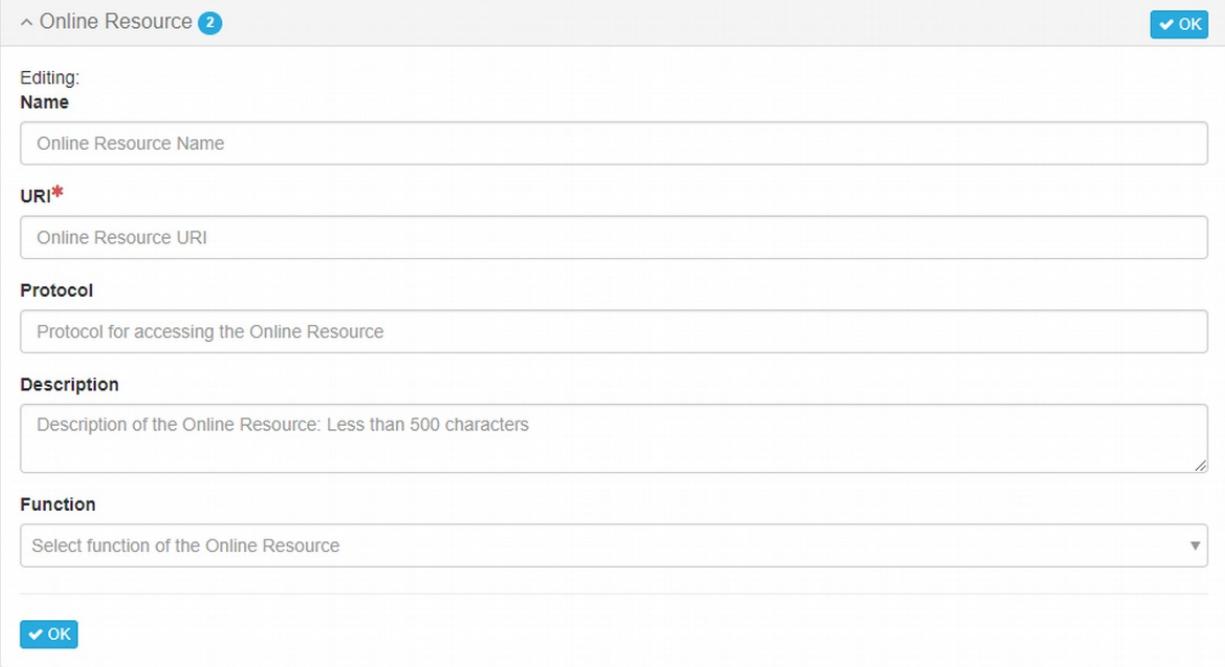
- **Role** {type: codelist (ISO CI_RoleCode, ADIwg codes); extensible: YES; multi-value: NO; default: empty}

Usage: Identifies the function or responsibility assigned to the person(s) or organization(s), etc.

- **Contacts** {type: codelist (contact records in [browser cache](#)); multi-value: YES; default: empty}

Usage: A list of contacts associated with this role.

Online Resource



The screenshot shows a configuration dialog for an 'Online Resource'. At the top left is a back arrow and the text 'Online Resource 2'. At the top right is a blue 'OK' button with a checkmark. The dialog contains several sections with input fields:

- Name**: A text input field containing 'Online Resource Name'.
- URI***: A text input field containing 'Online Resource URI'.
- Protocol**: A text input field containing 'Protocol for accessing the Online Resource'.
- Description**: A text input field containing 'Description of the Online Resource: Less than 500 characters'.
- Function**: A dropdown menu with the placeholder 'Select function of the Online Resource'.

- **Name** {type: string; max length: none; default: empty}

Usage: The name of the online resource.

- **URI** {type: [URI](#); default: empty}

Usage: The internet location (address) for online access to the resource using the [URI](#) format - a.k.a URL.

- **Protocol** {type: string; max length: none; default: empty}

Usage: The online connection protocol used to access the resource. e.g. ftp, http, https, etc.

- **Description** {*type: string; max length: 500 characters; default: empty*}
- Usage:* A text description with additional details of what the resource is or describes.
- **Function** {*type: codelist (ISO CI_OnLineFunctionCode, ADIwg codes); extensible: YES; multi-value: NO; default: empty*}
- Usage:* - A code declaring the intended function of the resource.

Metadata Record -- Dictionaries Section

The **Dictionary** section of the **Edit Window** is used to associate **Dictionary Records** with the **Metadata Record** currently being edited.

The screenshot shows the 'Dictionaries' section of the 'Edit Window' for a 'My First Metadata Record'. The interface includes a top navigation bar with 'Record', 'Edit', and 'Dictionaries' selected. Below this is a breadcrumb trail: 'Record / My First Metadata Record / Edit / Dictionaries'. The main content area has tabs for 'Main', 'Metadata', 'Keywords', 'Extent', 'Spatial', and 'Lineage'. On the right, there's a vertical toolbar with 'Save', 'Cancel', 'Copy', and 'Delete' buttons. The central area is divided into two panels:

- Select Dictionaries to Attach:** This panel contains a search bar and a table with one row: 'My First Dictionary' (Title) under 'tabularDataset' (Subject). A yellow callout points to this panel.
- Selected Dictionaries:** This panel lists the attached dictionary: 'My First Dictionary' (tabularDataset, Not Defined). It includes a 'Remove' button. A yellow callout points to this panel.

The **Dictionaries** **Edit Window** has two panels.

- **Select Dictionaries** This panel displays all **Dictionary Records** available to attach to the current **Metadata Record**. The available **Dictionary Records** are all those currently loaded into **browser cache**.
- **Selected Dictionaries** This panel lists any **Dictionary Records** already associated with the current **Metadata Record**.

- Search
- Select
- View

Search

When there are many **metadata** records, contacts, or dictionaries loaded into the **browser cache**, the search capabilities of the page can help quickly narrow the number of items being considered.

- **Search ALL Columns**

Text entered into "Search All Columns" control will be matched against the contents of each column. If the column value matches the search text, the item remains visible, otherwise the item is hidden. All items in the [browser cache](#) will be searched, not just those currently visible in the panel.

• Search Column

Immediately under each column header is the "Search A Column" control. Text entered into this control is matched against the contents of that column only. If the column value matches the search text, the item remains visible, otherwise the item is hidden. All items in the [browser cache](#) will be searched, not just those currently visible in the panel.

Select

To select a [Dictionary Record](#) simply the checkbox at the head of the row, or anywhere on the row, of the [Dictionary](#) you wish to associate with the current [Metadata Record](#). The association will immediately be confirmed in the [Selected Dictionaries](#) panel below.

Remove To remove an associated [Dictionary Record](#) simply click the 'Remove' button.

View

Each export panel has built in support for navigating long lists of [Metadata Records](#), [Contacts](#), and [Dictionaries](#). The following functions are available for each panel.

• Number of Items to Display

This selection list allows you to set the maximum number of items to display in the panel. The default is 10 items with options for 25, 50, and 500. You cannot set your own number of items.

• Record Controls

The "Record Controls" manage which set of items is visible in the panel. The controls become active when there are more items in [browser cache](#) than are displayed in the panel, given the limit set using the "Number of Items to Display" control (above).

- [Next Page](#)
- [Previous Page](#)
- [Last Page](#)
- [First Page](#)

• Select Columns to Display

Clicking this control presents a list of columns that can be displayed in the panel. By default all available columns are displayed. You can hide a column - or return it to visible again - by checking or un-checking the column name in the control's list. The list of columns is naturally different between the [Metadata Records](#), [Contacts](#), and [Dictionaries](#) panels.

Reference -- Contact Records

In mdEditor, **Contacts** are edited and saved separately from **Metadata Records** and **Dictionaries**. This normalized approach allows a **Contact** object's information to be used many time across a single **Metadata Record** or even by multiple **Metadata Records** without the necessity to reenter the contact's information. Rather than entering a contact's information in a **Metadata Record**, mdEditor places a reference to the **Contact** object, most often as a **Responsible Party**. Later, when the **Metadata Records** are translated into their final output format, mdTranslator will format the **Contact** object's information according to the selected standard's rule set.

With a little planning you can build a reusable library of **Contact** objects to use across many of your **Metadata Records**.

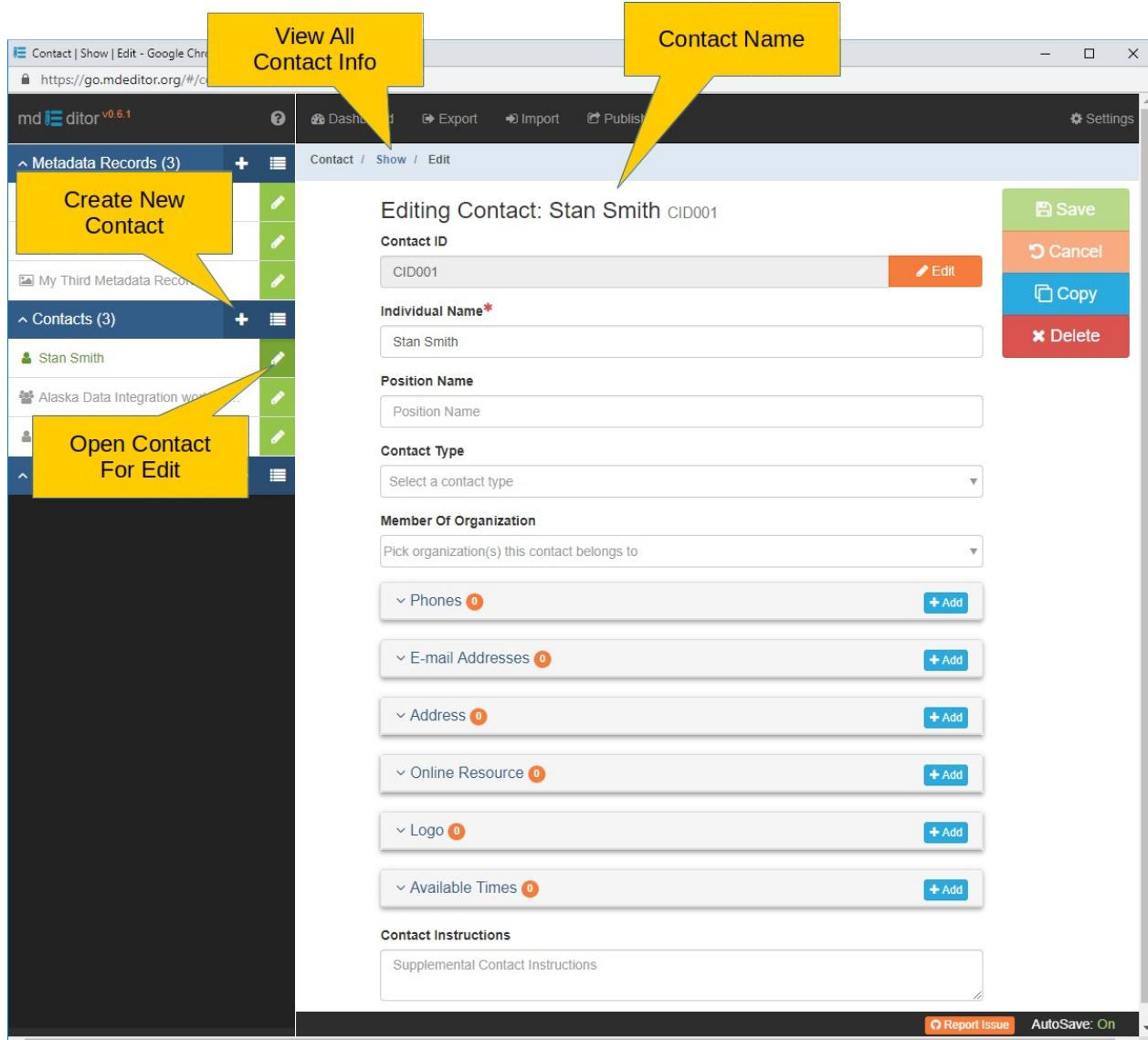


Image 1: Contact Edit Window

- To open a **Contact** object for editing, either create a new **Contact** by clicking the **+** button or open an existing **Contact** by clicking its **green** button in the **PRIMARY SIDEBAR**.

The **Contact**'s  button does not need to be green to edit the record. A **Contact** object can be edited in any state of completeness.

- The **Contact**'s name is displayed at the top of the **EDIT WINDOW**.
- There is a small **Show** button in the **BREADCRUMB BAR** that will open a view with all of the **Contact**'s information displayed. This may be helpful when determining if you have selected the intended contact for editing or when you just want to see what information was entered for a contact.

- Contact ID** {*type: string; max length: none; default: UUID*}

Usage: A unique identifier for the contact **record**.

Edit Click 'Edit' to change the **Contact ID**.

Use caution when editing the **Contact ID**. This ID must be unique among ALL your contact records. If this ID was used to link with other **metadata** records, changing it may break the link.

- Individual Name** or **Organization Name** {*type: string; max length: none; default: empty*}

Usage: Name of the individual or organization.

If the **Contact** is designated as "Individual" the element **Individual Name** will appear here. If the **Contact** is designated as "Organization", this element will be replaced by **Organization Name**.

When the **Contact** object was first defined it was designated as either an "Individual" or "Organization" contact record. This designation cannot be changed.

- Position Name** {*type: string; max length: none; default: empty*}

Usage: The position name or title of the individual.

For "Individual" contact records **Position Name** is required when **Individual Name** is empty. For "Organization" contact records **Position Name** is hidden on the **EDIT WINDOW**.

- Contact Type** {*type: codelist (ADIwg codes); extensible: YES; multi-value: NO; default: empty*}

Usage: A user-assigned type for the contact.

- Member of Organization** {*type: codelist (Organization **Contact**); extensible: NO; multi-value: YES; default: empty*}

Usage: A list of "Organization" **Contacts** the "Individual" or "Organization" **Contact** record being edited is affiliated with.

The parent **Contact** of the affiliation must be predefined in mdEditor in order to be selected.

- Phone Numbers** {*type: array (obj: **phone**)*}

Usage: An array of **Phone** numbers associated with the individual or organization contact.

- E-Mail Addresses** {*type: array (string: email address)*}

Usage: An array of e-mail addresses associated with the individual or organization contact.

- **Addresses** {*type: array (obj: Address)*}

Usage: An array of addresses associated with the individual or organization contact.

- **Online Resources** {*type: array (obj: Online Resource)*}

Usage: An array of online resources associated with the individual or organization contact.

- **Logos** {*type: array (obj: Graphic)*}

Usage: An array of file descriptions for images and graphic files used as logos for the individual or organization contact.

- **Online Graphic Resource** {*type: array (obj: Online Graphic Resource); default: empty*}

Usage: An array of online graphic files that describe internet links to graphic files.

- **Available Times** {*type: array (string)*}

Usage: An array of text strings that describe the best times to connect with the individual or organization contact.

- **Contact Instructions** {*type: string; max length: none; default: empty*}

Usage: Any supplemental instructions regarding contacting this "Individual" or "Organization" may be provided here.

Contact Record -- Phone Number

Phone Number Array

Phones {*type: array (obj: phone)*}

Usage: An array of **Phone** objects each describing a phone associated with the individual or organization contact.

#	Name	Number	Services
0	Front Desk	(206) 555-1212	x message x voice
1	Name or location or phone	Phone number	Choose phone type

Image 1: Contact Phone Number Panel

Phone Number Object

- **Name** {*type: string; max length: none; default: empty*}

Usage: User-assigned name for the phone or phone's location.

- **Number** {*type: NANP phone number; max length: none; default: empty*}

Usage: Phone number.

Currently the phone number control only supports the format for USA, Canada, and other NANP (North American Numbering Plan) countries. This **Number** must be 10 numeric characters and include an area code. Spaces and hyphens ("") are allowed as separators. The area code may optionally be enclosed in parentheses. Other country formats are accepted but marked as invalid.

- **Services** {*type: codelist (ISO MD_TelephoneTypeCode, ADIwg codes); extensible: YES; multi-value: YES; default: empty*}

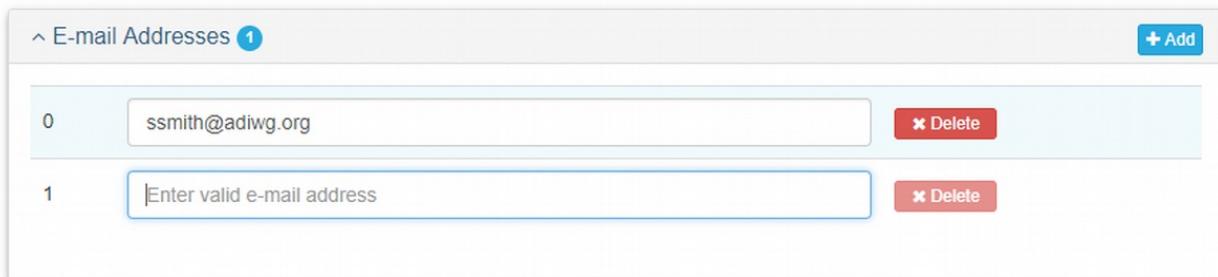
Usage: A list of services available at this number.

Contact Record -- Email Address

Email Address Array

E-mail Address {*type: array (string: email address)*}

Usage: An array of e-mail addresses associated with the individual or organization contact.



The screenshot shows a user interface for managing email addresses. At the top, there's a header with a back arrow and the text "E-mail Addresses 1". On the right side of the header is a blue button labeled "+ Add". Below the header, there are two rows of input fields. The first row, indexed at 0, contains the email address "ssmith@adiwg.org" in a white input field with a red "Delete" button to its right. The second row, indexed at 1, contains a placeholder text "Enter valid e-mail address" in a white input field with a red "Delete" button to its right. The entire panel has a light gray background.

Image 1: Contact E-mail Address Panel

Contact Record -- Address

Address Array

Address {type: array (obj: **Address**)}

Usage: An array of **Address** objects associated with the individual or organization contact.

The screenshot shows a panel titled '^ Address 1'. At the top right is a blue '+ Add' button. Below it is a list item with index '0' containing the address '4120 University Drive Anchorage, Alaska 99508 USA mailing'. To the right of this list item are two buttons: a green 'Edit' button and a red 'Delete' button.

Image 1: Contact Address Array Panel

Click **Add** or **Edit** to open the **Address** object for edit.

Address Object

The screenshot shows a panel titled '^ Address 2'. At the top right is a blue '✓ OK' button. The form contains the following fields:
Address Type*: A dropdown menu labeled 'Select or enter one or more types'.
Street Lines 0: A section with a blue '+ Add Street Line' button.
City: A text input field labeled 'City Name'.
State/Province: A text input field labeled 'State or Province'.
Postal Code: A text input field labeled 'Zip or Postal Code'.
Country: A dropdown menu labeled 'Enter a country code'.
Description: A text area labeled 'Address description'.
At the bottom left is a blue '✓ OK' button.

Image 2: Contact Address Panel

- **Address Type** {type: codelist (ADIwg codes); extensible: YES; multi-value: YES; default: empty}

Usage: The type of address, generally mailing and/or physical.

- **Street Lines** {type: array (string)}

Usage: An array of address lines. Add a new **Street Line** for each line of the address.

- **City** {type: string; max length: none; default: empty}

Usage: City Name.

- **State/Province** {*type: string; max length: none; default: empty*}

Usage: State or Province Name.

- **Postal Code** {*type: string; max length: none; default: empty*}

Usage: Postal or Zip code.

- **Country** {*type: codelist (ISO 3166-1 alpha-3); extensible: NO; multi-value: NO; default: empty*}

Usage: Country Name.

The country is selected from the list by "country name" not "code". However, mdTranslator may convert the country name to code during writing of metadata output.

- **Description** {*type: string; max length: none; default: empty*}

Usage: Any additional detail regarding the address may be placed in the **Description** element.

Contact Record -- Online Resource

Online Resource Array

Online Resource {*type: array (obj: Online Resource)*}

Usage: The **Online Resource** array contains links to online locations where additional information about this contact can be retrieved.

The screenshot shows a table titled "Online Resource" with two rows. The first row has an index "# 0", name "Example Resource 889", and URI "http://adiwg.org/resources/889". It includes "Edit" and "Delete" buttons. The second row has an index "# 1", name "Not Defined", and URI "Not Defined". It includes "Edit" and "Delete" buttons and a warning icon.

#	Name	Uri	
0	Example Resource 889	http://adiwg.org/resources/889	Edit Delete
1	Not Defined	Not Defined	Edit Delete

Image 1: [Metadata Online Resource Panel](#)

Online Resource Object

The screenshot shows an "Editing" dialog for an "Online Resource". It includes fields for "Name" (with placeholder "Online Resource Name"), "URI*" (with placeholder "Online Resource URI"), "Protocol" (with placeholder "Protocol for accessing the Online Resource"), "Description" (with placeholder "Description of the Online Resource: Less than 500 characters"), "Function" (with placeholder "Select function of the Online Resource" and a dropdown arrow), and a "OK" button.

- **Name** {*type: string; max length: none; default: empty*}

Usage: The name of the online resource.

- **URI** {*type: URI; default: empty*}

Usage: The internet location (address) for online access to the resource using the **URI** format - a.k.a URL.

- **Protocol** {*type: string; max length: none; default: empty*}

Usage: The online connection protocol used to access the resource. e.g. ftp, http, https, etc.

- **Description** {*type: string; max length: 500 characters; default: empty*}

Usage: A text description with additional details of what the resource is or describes.

- **Function** {*type*: codelist (ISO CI_OnLineFunctionCode, [ADIwg](#) codes); *extensible*: YES; *multi-value*: NO; *default*: empty}
Usage: - A code declaring the intended function of the resource.

Contact Record -- Logo

Logo Array

Logo {type: array (obj: *Graphic*)}

Usage: An array of file descriptions for images and graphic files used as logos for the individual or organization contact.

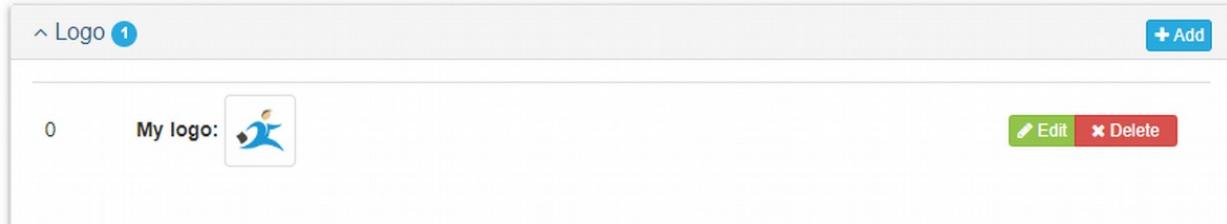


Image 1: Logo Array

The first logo placed will be used as the icon for this contact in the **PRIMARY SIDEBAR**. See image below.

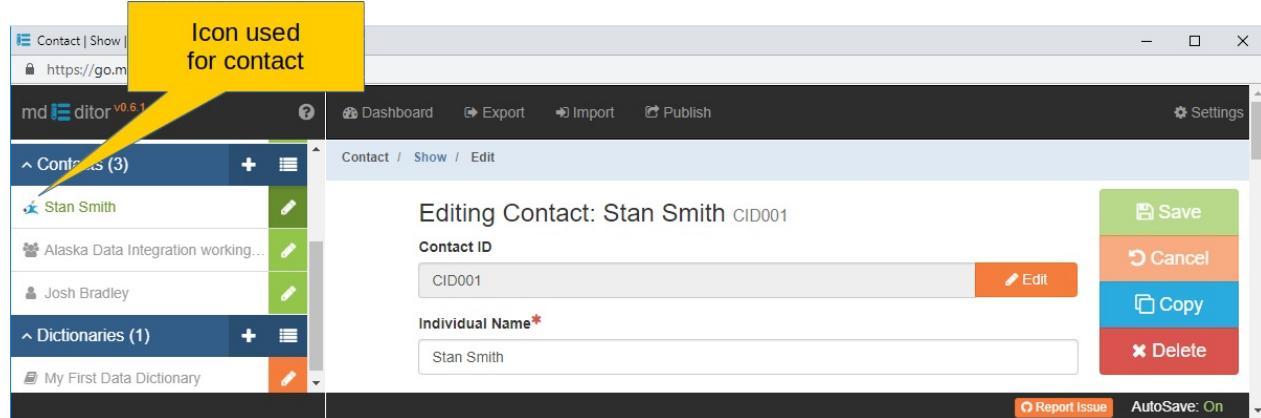


Image 2: Logo Icon Used for Contact

Graphic Object

~ Graphic 3

Editing:
Name*

File Name

File Type

Enter the file format(s) of the logo.

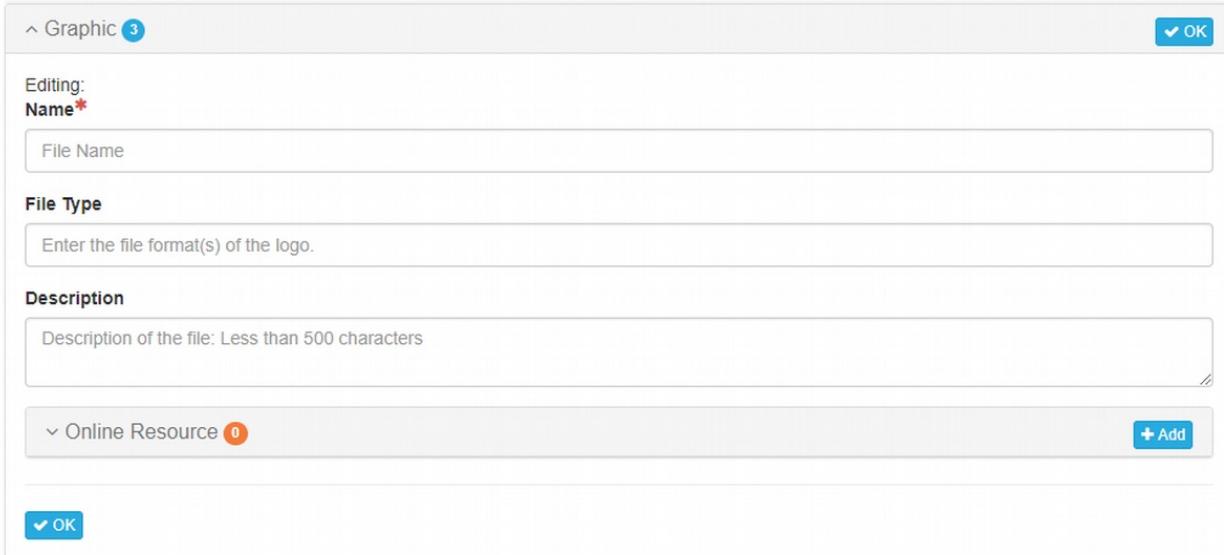
Description

Description of the file: Less than 500 characters

✓ Online Resource 0

+ Add

✓ OK



- **Name** {*type: string; max length: none; default: empty*}

Usage: Name of the file containing the graphic.

- **File Type** {*type: string; max length: none; default: empty*}

Usage: MIME type (Multipurpose Internet Mail Extension) of the graphic. e.g. jpeg, gif, pdf, png, bmp, etc.

- **Description** {*type: string; max length: none; default: empty; max length: 500 characters*}

Usage: A short description of the graphic.

- **Online Graphic Resource** {*type: array (obj: Online Graphic Resource); default: empty*}

Usage: **Online Graphic Resource** objects that define internet links to the **Graphic Overview** file.

[See object details](#)

Contact Record -- Online Graphic Resource

Online Graphic Resource Array

Online Graphic Resource {type: array (obj: **Online Graphic Resource**); default: empty}

Usage: An array of **Online Graphic Resource** objects that describe internet links to graphic files.

Online Resource 2

	Name	URI	
0	Greater Anchorage Area	https://www.google.com/maps/vt/data...	Edit Delete
1	Non-Graphic File	http://adiwg.org/resources/899	Edit Delete

▼ OK

Image 1: Online Graphic Resource Array

Along with the file **Name** and **URI**, mdEditor attempts to provide a thumbnail of each graphic file listed in the **Online Graphic Resource** array. If a thumbnail can not be generated a broken image link will be displayed like the one shown for the second array item above.

If for some reason mdEditor does not produce a thumbnail preview, check for the following:

- an invalid link
- the file's graphic format is not readable by mdEditor
- the file is not a graphic file

Online Graphic Resource Object

^ Online Resource 3

Editing:

Name

Online Resource Name

URI*

Online Resource URI

◎ Click to Select or Drop Image

Enter URI or select file to preview.

Protocol

Protocol for accessing the Online Resource

Description

Description of the Online Resource: Less than 500 characters

Function

Select function of the Online Resource

▼

✓ OK

- **Name** {*type: string; max length: none; default: empty*}

Usage: The name of the online graphic resource.

- **URI** {*type: URI; default: empty*}

Usage: - The internet location (address) for online access to the graphic resource, using the **URI** format - a.k.a URL.

Click to Select or Drop Image Use this drop target to drop local graphics and logos that are less than 50K Bytes in size. The graphic will be converted to a 'data:image/...' **URI** and placed into the **URI** element. These graphics will remain embedded in the **mdJson** file and do not need an additional internet accessible **URI** to access the graphic.

For graphics larger than 50K Bytes an internet accessible file is required. Place the **URI** to the graphic file in the **URI** element. **mdEditor** will then access the graphic file and build a thumbnail image for the **EDIT WINDOW** page.

The thumbnail image is not saved with the **mdJson** or **mdEditor** files. The thumbnail is rebuilt each time the **mdJson** file is edited.

- **Protocol** {*type: string; max length: none; default: empty*}

Usage: The online connection protocol used to access the graphic resource. e.g. ftp, http, https, etc.

- **Description** {*type: string; max length: 500 characters; default: empty*}

Usage: A text description with additional details of what the graphic resource is or describes.

- **Function** {*type: codelist (ISO CI_OnLineFunctionCode, ADIwg codes); extensible: YES; multi-value: NO; default: empty*}

Usage: A code declaring the intended function of the graphic resource.

Contact Record -- Available Times

Available Times Array

Available Times {*type: array (string)*}

Usage: An array of text strings that describe the best times to connect with the individual or organization contact.

The screenshot shows a user interface for managing available times. At the top, there's a header with a back arrow and the text 'Available Times' followed by a blue circular badge with the number '2'. To the right is a blue button with a '+' icon and the word 'Add'. Below the header, there are two rows of time entries. Each row consists of a small index number (0 or 1), a text input field containing the availability range, and a red 'Delete' button with a white cross icon. Row 0 contains 'Weekdays 9 a.m. to 5 p.m.' and Row 1 contains 'Saturday 10 a.m. to 2 p.m.'.

	Available Times	Action
0	Weekdays 9 a.m. to 5 p.m.	✖ Delete
1	Saturday 10 a.m. to 2 p.m.	✖ Delete

Image 1: Available Times Panel

Reference -- Dictionary Records

In mdEditor, **Dictionaries** are edited and saved separately from **Metadata Records** and **Contacts**. This normalized approach allows a **Dictionary** object's information to be used across multiple **Metadata Records** without the necessity to reenter the dictionary's information.

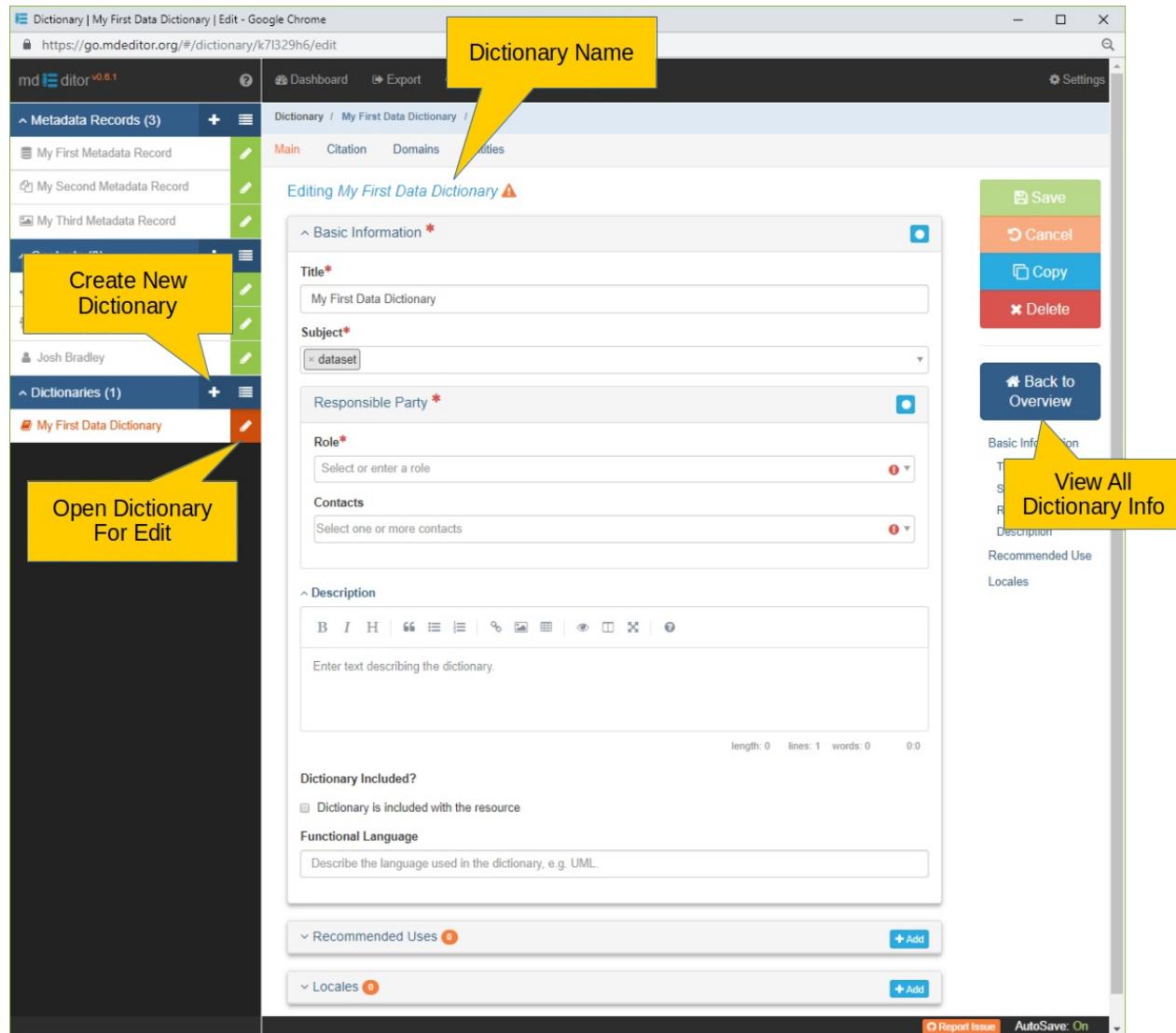


Image 1: Dictionary Main Edit Window

- To open a **Dictionary** object for editing, either create a new **Dictionary** by clicking the **+** button or open an existing **Dictionary** by clicking its **green** button in the **PRIMARY SIDEBAR**.

The **Dictionary**'s **green** button does not need to be green to edit the record. A **Dictionary** object can be edited in any state of completeness.

- The **Dictionary**'s name is displayed at the top of the **EDIT WINDOW**.

- There is a [Back to Overview](#) button in the [SECONDARY SIDEBAR](#) that will open a view with all of the [Dictionary](#)'s information displayed. This may be helpful in determining if you have selected the intended dictionary for editing, or if you just wish to review the information entered.
-

See specific sections for details:

- [Main Section](#) Describes general information about the [Dictionary Record](#).
- [Citation Section](#) The [Citation](#) for the [Dictionary Record](#).
- [Domain Section](#) Describes [Domains](#) which define all the values an [Attribute](#) may contain.
- [Entity Section](#) Defines objects for the data model described by this [Dictionary Record](#).
- [Attribute Section](#) Defines properties of [Entities](#) (objects).

Dictionary Record -- Main Section

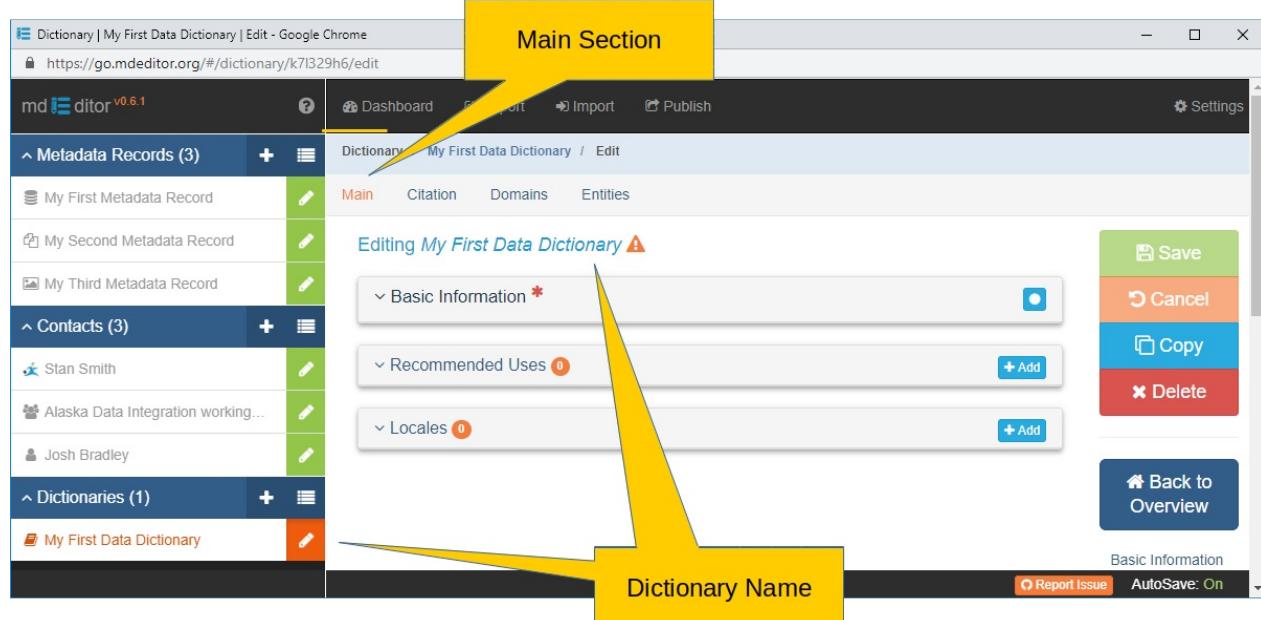


Image 1: Dictionary Main Edit Window

- **Basic Information** {type: collection}

Usage: A collection of elements that identify and describe the dictionary.

- **Recommended Uses** {type: array (string)}

Usage: An array of descriptions for the kind of uses to which this dictionary is best suited.

- **Locales** {type: array (obj: [Locale](#))}

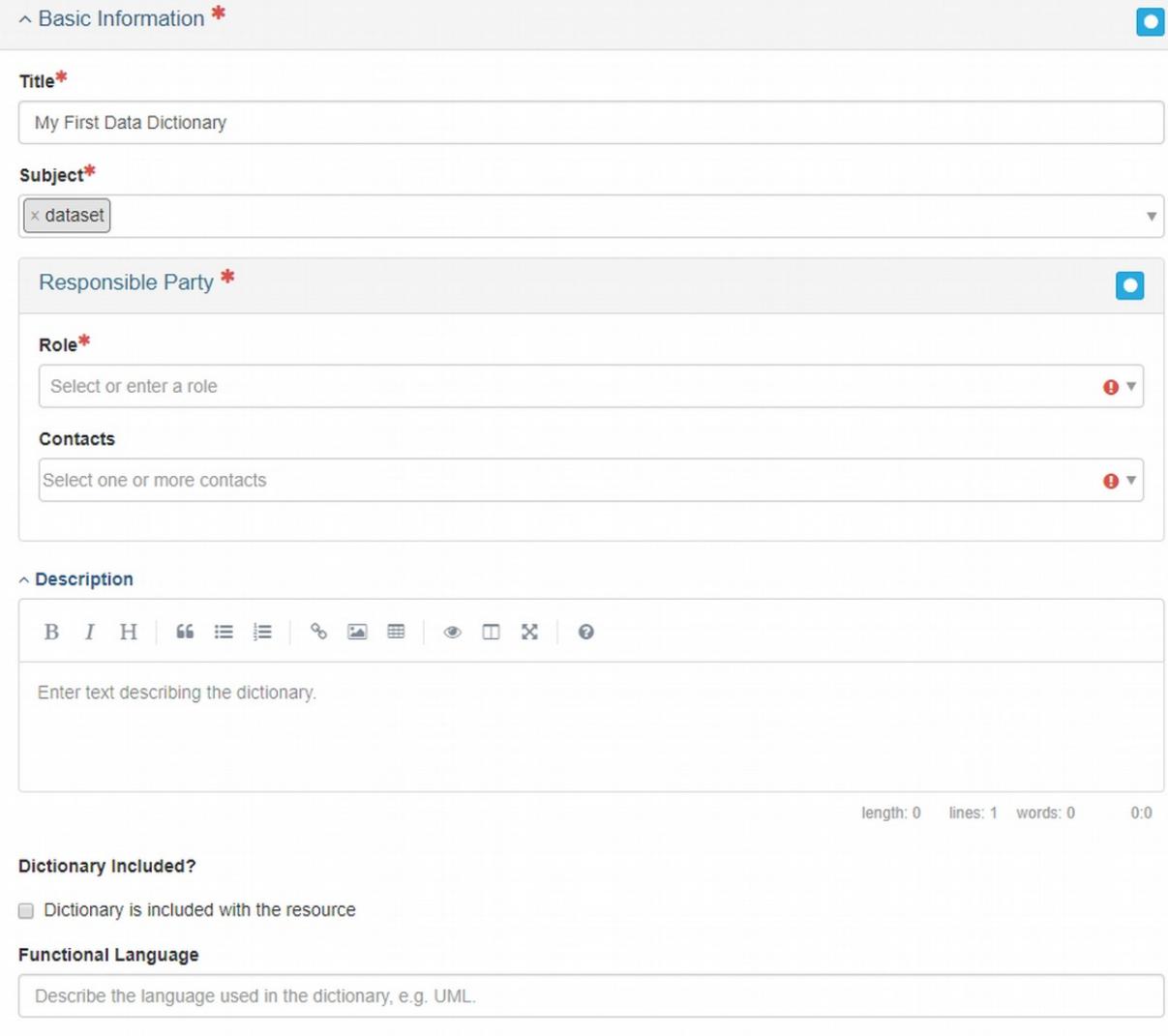
Usage: An array of [Locale](#) objects defining the language and country of origin in which the data dictionary is written.

Dictionary Record -- Main Section

Basic Information Panel

Basic Information {type: collection}

Usage: The Basic Information panel holds a collection of elements that identify and describe the dictionary.



The screenshot shows the 'Basic Information' panel with the following fields:

- Title***: My First Data Dictionary
- Subject***: x dataset
- Responsible Party***:
 - Role***: Select or enter a role
 - Contacts**: Select one or more contacts
- Description**:
 - Text area: Enter text describing the dictionary.
 - Length metrics: length: 0, lines: 1, words: 0, 0:0
- Dictionary Included?**:
 - Dictionary is included with the resource
- Functional Language**:
 - Text area: Describe the language used in the dictionary, e.g. UML.

Image 1: Dictionary Basic Information Panel

- **Title** {type: string; max length: none; default: empty}

Usage: A user-provided title for the resource. This was required when the dictionary record was created but may be edited at any time.

- **Subject** {type: codelist (ISO MD_ScopeCode, ADIwg codes); extensible: YES; multi-value: YES; default: empty}

Usage: One or more codes that describe the scope or content of the information in the dictionary.

- **Responsible Party** {type: object ([responsibleParty](#)); default empty}

Usage: The person or organization having primary responsibility for the intellectual content and structure of this dictionary.

See object details

- **Description** {*type: markdown* text; *default: empty*; *max length: unlimited*}
Usage: A free text description of the contents of the data dictionary. See [Markdown Control](#).
 - **Dictionary Included?** {*type: Boolean*; *default: FALSE*}
Usage: TRUE is the dictionary included with the resource materials. FALSE if the dictionary is unavailable or available via another link or resource.
 - **Functional Language** {*type: string*; *max length: none*; *default: empty*}
Usage: Formal functional language used in writing the dictionary schema.
-

Responsible Party Object

- **Role** {*type: codelist* (*ISO CI_RoleCode*, [ADIwg codes](#)); *extensible: YES*; *multi-value: NO*; *default: empty*}
Usage: Identifies the function or responsibility assigned to the person(s) or organization(s), etc.
- **Contacts** {*type: codelist* (*contact records in browser cache*); *multi-value: YES*; *default: empty*}
Usage: A list of contacts associated with this role.

Dictionary Record -- Main Section

Recommended Uses Array

Recommended Uses {*type: array (string)*}

Usage: An array of descriptions for the kind of uses to which this dictionary is suited. Each description is a text string.



Image 1: Dictionary Recommended Use Panel

Dictionary Record -- Main Section

Locale Array

Locales {*type*: array (*obj*: **Locale**)}

Usage: An array of **Locale** objects defining the language and country of origin in which the data dictionary is written.

^ Locales 0				+ Add
#	Language	Character Set	Country	

Image 1: Dictionary Locale Panel

Locale Object

- **Language** {*type*: codelist (ISO 639 Part 2); *extensible*: YES; *multi-value*: NO; *default*: "eng"}

Usage: Identifies the primary language of the main resource.

- **Character Set** {*type*: codelist (IANA - Internet Assigned Numbers Authority); *extensible*: YES; *multi-value*: NO; *default*: "UTF-8"}

Usage: Name of the character coding standard used in the main resource.

- **Country** {*type*: codelist (ISO 3166-1 alpha-3); *extensible*: YES; *multi-value*: NO; *default*: "USA"}

Usage: Three letter country code.

Dictionary Record -- Citation Section

Citation {*type: object (Citation); default empty*}

Usage: The citation for the **Dictionary**.

See [Citation Section](#) for editing instructions.

Dictionary Record -- Domain Section

In data management and database design the term "domain" refers to a list of all the permissible values for a data element. For example, if you have a table that collects information about people you may have a column for **gender**. The domain for **gender** would likely be "M", "F". In mdEditor **Domain** objects are described for a **Dictionary** in the **Domains** section of the **Dictionary** **EDIT WINDOW** and later attached to **Attributes** while defining or editing **Entities**.

When no **Domains** have yet been defined for a **Dictionary** the **Domains** section will display a large blue box stating "No Domain Found".

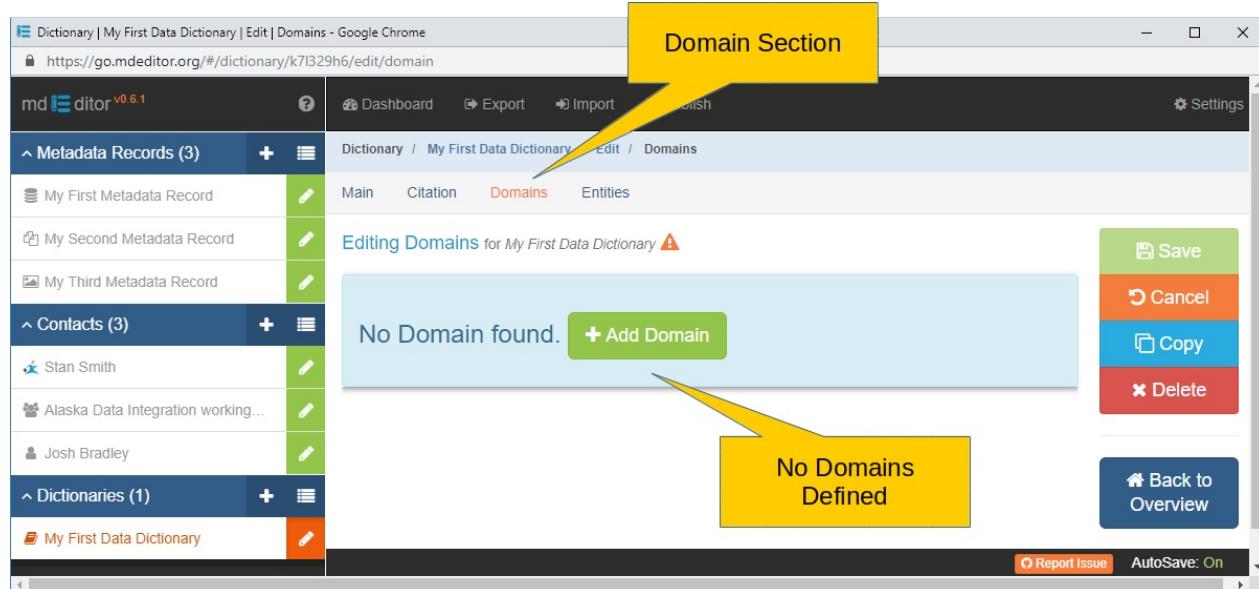


Image 1: Domain Edit Window with no Domains Defined

Add Domain To add the initial **Domain** click the 'Add Domain' button.

After one or more **Domains** are defined for the **Dictionary**, navigating to the **Domains** section will display an array panel of the previously entered **Domains**.

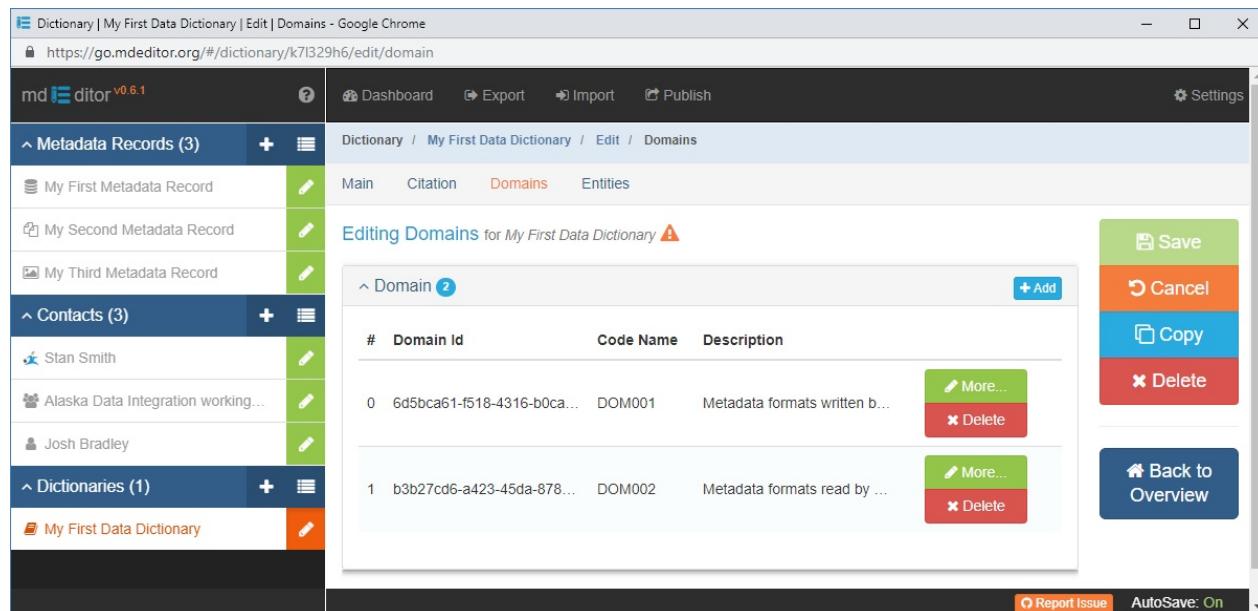


Image 2: Domain Array Panel

From this array panel new `Domains` can be defined and existing `Domains` can be edited or deleted. After entering a `Domain`, click `More...` to access the remaining elements.

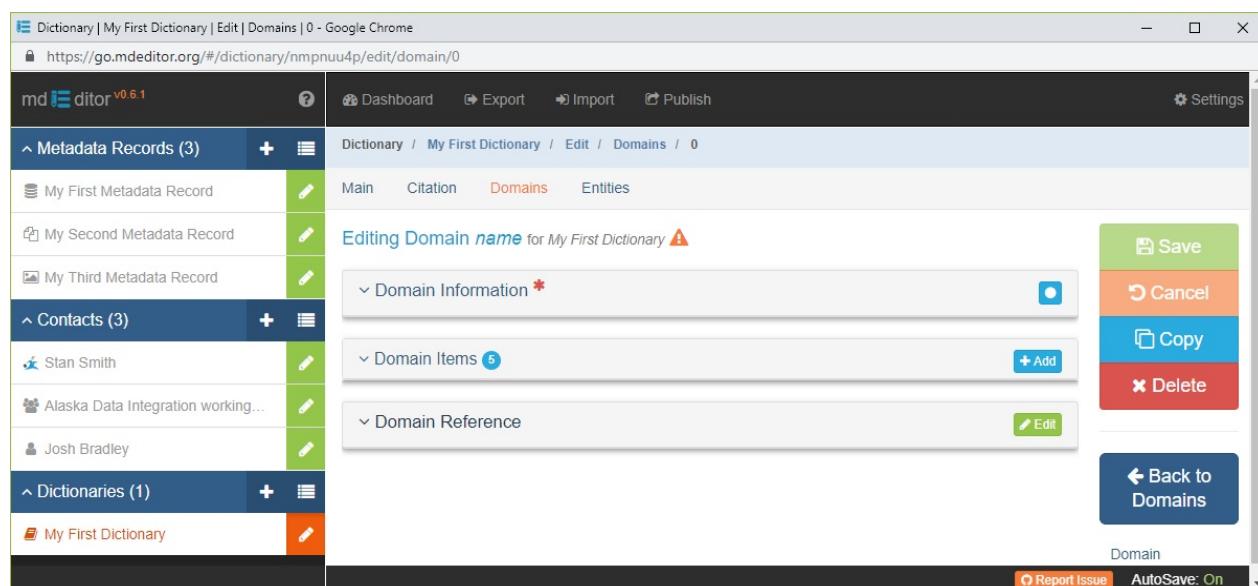


Image 3: Domain Array Panel

- **Domain Information** {`type: collection`}
Usage: A collection of elements that identify and describe the domain.
- **Domain Items** {`type: array (obj: Domain Item)`}
Usage: An array of defined `Domain Item` objects.
- **Domain Reference** {`type: object (Citation); default empty`}
Usage: The domains's citation information.

Dictionary Section -- Domain Section

Domain Information Panel

Domain Information {type: collection}

Usage: The **Domain Information** panel holds a collection of elements that identify and describe the domain.

^ Domain Information *

Domain Identifier*

6d5bca61-f518-4316-b0ca-1b264ab0a868

Code Name*

Enter the name used to refer to the domain in schema definitions.

Common Name

Enter a short common name for the domain.

Description*

A brief description of the domain.

Image 1: Domain Information Panel

- **Domain Identifier** {type: string; max length: none; default: *UUID*}

Usage: A unique identifier for the domain [record](#).

Use caution when editing the **Domain Identifier**. This identifier must be unique among your [Dictionary](#) domains. If this identifier was used to link with [Dictionary Attributes](#), changing it may break the link(s).

- **Code Name** {type: string; max length: none; default: empty}

Usage: The code name for the [Domain](#) used in the dictionary schema.

- **Common Name** {type: string; max length: none; default: empty}

Usage: A common or conversational name for the [Domain](#).

- **Description** {type: string; max length: none; default: empty}

Usage: A brief description of the [Domain](#) including identification of any established sources used in creating the list of domain items.

Dictionary Record -- Domain Section

Domain Item Array & Short Form

Domain Item {type: array (obj: **Domain Item**)}

Usage: An array of defined **Domain Item** objects.

^ Domain Items 2				+ Add
#	Name	Value	Definition	
0	male	M	male gender	More... x Delete
1	Descriptive name for the domain item.	Value of the domain item.	A brief definition for the domain item.	More... x Delete

Image 1: Domain Item Array

The array allows editing of the three required **Domain Item** elements. Click the **More ...** button to access all the **Domain Item** object elements.

- **Name**

See object details .

- **Value**

See object details .

- **Definition**

See object details .

Domain Item Object

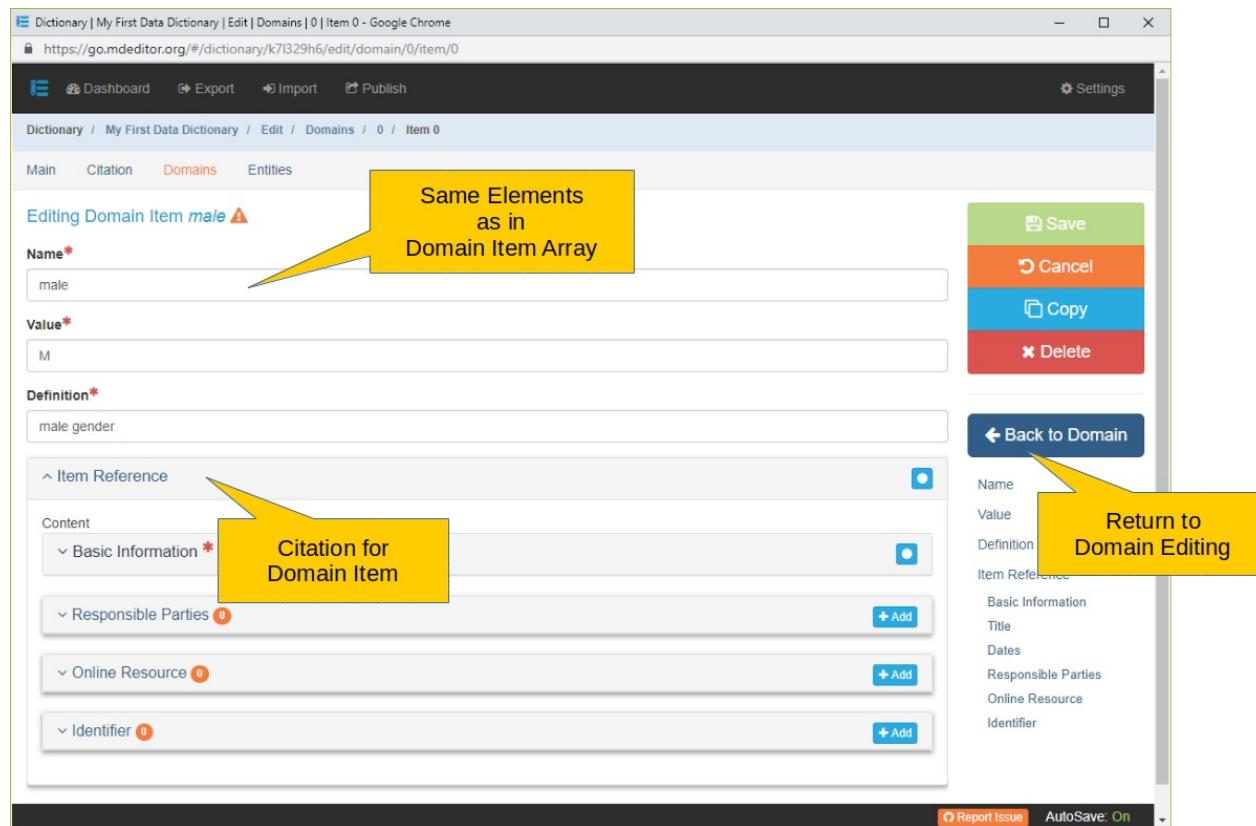


Image 2: Domain Item Edit Window

- **Name** {*type: string; max length: none; default: empty*}

Usage: A descriptive name associated with the **Domain Item** value.

- **Value** {*type: string; max length: none; default: empty*}

Usage: The **Domain Item** value.

For the metadata, all domain values are entered as strings. The intent of the metadata is strictly to inform. This value in a database 'look-up' table will likely be strongly typed as required (e.g. character, integer, real, Boolean, etc.)

- **Definition** {*type: string; max length: none; default: empty*}

Usage: A brief definition of the **Domain Item**.

- **Item Reference** {*type: object (Citation); default empty*}

Usage: Reference to a definition for this **Domain Item** or to a standard which contains the definition for this domain **Domain Item**.

- **Back to Domain** Click to return to the **Domain EDIT WINDOW**.

Dictionary Reference -- Domain Section

Domain Reference

Domain Reference {type: view([Citation](#))}

Usage: **Domain Reference** is a non-editable view of the domains's citation information. Not all of the [Citation's](#) information is displayed in the view, only a few select fields that provide a reasonable overview of the citation.

The screenshot shows a web-based application interface for viewing citation information. At the top left is a back arrow labeled '^ Domain Reference'. At the top right is a green 'Edit' button with a pencil icon. Below this is a table-like structure with several rows:

Title	<i>Not Defined</i>
Alternate Titles	<i>No alternate titles assigned.</i>
Dates	<i>No dates assigned.</i>
Identifier	<i>No identifiers assigned.</i>
Responsible Party	<i>No responsibility assigned.</i>

At the bottom right of this table area is another green 'Edit Citation' button with a pencil icon. The entire interface has a light gray background.

Image 1: Domain Reference Citation View

Edit and **Edit Citation** Click either button to open the [Citation](#) object in the [Citation](#) EDIT WINDOW. See [Citation Section](#) for editing instructions.

Dictionary Record -- Entities Section

In data management and database design the term "entity" refers to a person, place, thing, or concept about which information is collected and organized. Entities are most often implemented as tables in a database where the tables consist of numerous rows and columns. Each row represents an instance of the entity and each column stores a single fact about the instance such as "name" or "ID".

When no **Entities** have yet been defined for a **Dictionary** the **Entities** section will display a large blue box stating "No Entity Found".

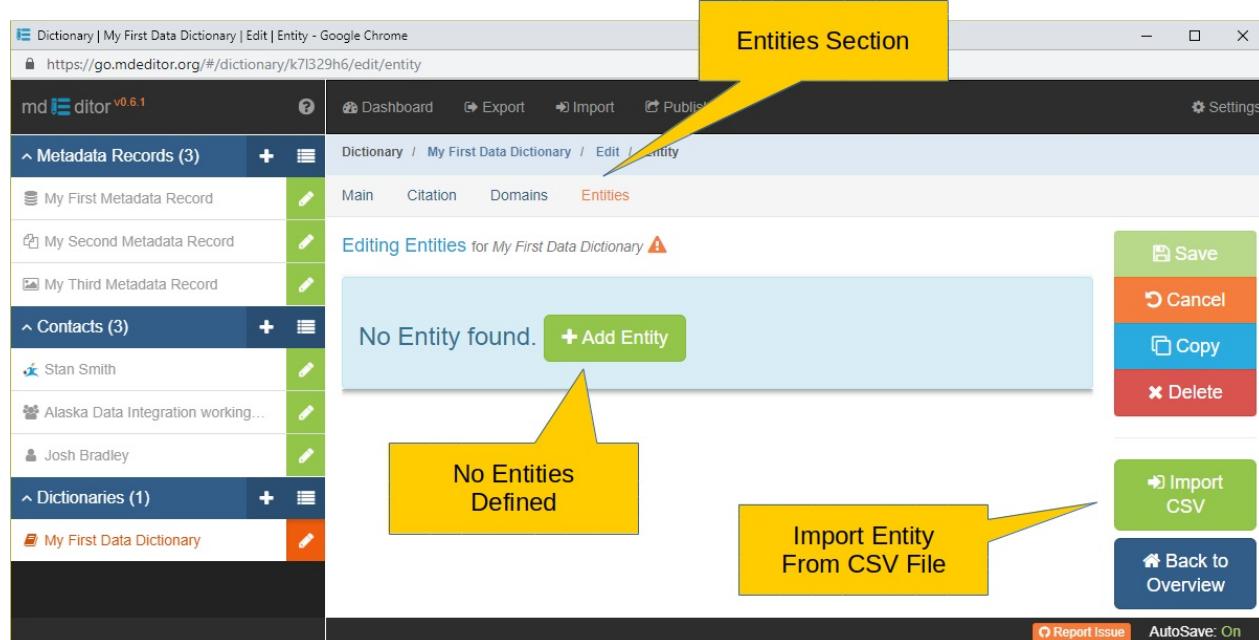


Image 1: Entity Edit Window with no Entities Defined

Add Entity To add the initial **Entity** click the 'Add Entity' button.

After one or more **Entities** have been defined for the **Dictionary**, navigating to the **Entities** section will display an array panel of the previously entered **Entities**.

Image 2: Entity Array Panel

Click **More...** to continue editing the **Entity**, and gain access to all its elements.

Image 3: Entity Edit Panel

Entities can also be entered via **CSV** (Comma Separated Value) files. See the **Import CSV** section for details.

- **Entity Information** {*type: collection*}

Usage: A collection of elements that identify and describe the entity.

- **Attributes** {*type: array (obj: Attribute)*}

Usage: The array panel displays a list of the defined **Entity** **Attributes**.

- **Entity Structure** {*type: collection*}

Usage: The **File Structure** elements provide file descriptions for **Entities** which are represented as spreadsheets or text files.

- **Entity Keys** {type: collection}

Usage: The Entity Keys panel contains elements that specify keys (primary and foreign keys) used to enforce integrity of the entity's data.

- **Entity Indices** {type: array (obj: Entity Index)}

Usage: An array of Entity Index objects used to define alternate keys (keys in addition to the Primary Key) for the Entity.

- **Entity Reference** {type: array (obj: Citation)}

Usage: The Entity Reference array lists Citations which reference additional information about the Entity.

Dictionary Section -- Entity Section

Entity Information Panel

Entity Information {type: collection}

Usage: The Entity Information panel holds a collection of elements that identify and describe the entity.

Entity Information *

Entity Identifier

a453ed0a-1876-421e-bd78-f050bb2c84bc

Code Name*

Enter the name used to refer to the entity in schema definitions or application software.

Definition*

A brief description of the entity.

Common Name

Enter a short common name for the entity.

Aliases 0

+ Add Alias

Image 1: Entity Information Panel

- **Entity Identifier** {type: string; max length: none; default: UUID}

Usage: A unique identifier for the entity.

Use caution when editing the Entity Identifier. This identifier must be unique among your Dictionary entities. If this identifier was used to link with Dictionary Attributes, changing it may break the link(s).

- **Code Name** {type: string; max length: none; default: empty}

Usage: The code name for the Entity used in the dictionary schema.

- **Definition** {type: string; max length: none; default: empty}

Usage: A brief definition for the Entity .

- **Common Name** {type: string; max length: none; default: empty}

Usage: A common or conversational name for the Entity .

- **Aliases** {type: array (string)}

Usage: An array of additional names that are used to refer to this Entity . Each alias is a text string.

Dictionary Section -- Entity Section

Attribute Array

Attributes {type: array (obj: **Attribute**)}

Usage: The array panel displays a list of the defined **Entity** **Attribute** objects and provides an **Add** button for creating additional **Attributes**. The array allows editing of the four required **Attribute** object elements. Click the **More ...** button to access the full set of **Attribute** elements.

#	Name	Data Type	Definition	Allow Null?	
0	person_id	character	x ▾ Unique identifier for per	<input checked="" type="checkbox"/>	More... Delete
1	Descriptive name for the	The datatype for the attribute(column! ▾	A brief definition of t! ▾	<input checked="" type="checkbox"/>	More... Delete !

Image 1: Attributes Array

Attribute Object (partial)

- **Code Name** {type: string; max length: none; default: empty}

Usage: The code name of the **Attribute** used in the dictionary schema.

- **Data Type** {type: codelist (ADIwg codes); extensible: YES; multi-value: NO; default: empty}

Usage: The data type for this attribute (e.g. character, integer, real).

- **Definition** {type: string; max length: none; default: empty}

Usage: A short narrative definition of the attribute.

- **Allow Null?** {type: Boolean; default: TRUE}

Usage: TRUE if this attribute can be left empty. FALSE if a value for the attribute is required.

See the **Attributes** EDIT WINDOW for full documentation of the **Attribute** object.

Dictionary -- Entity Section

File Structure

File Structure {type: collection}

Usage: The **File Structure** elements primarily support **Entities** which are represented as spreadsheets or text files.



Image 1: File Structure Panel

- **File Separator Character** {type: string; max length: none; default: empty}

Usage: Enter the character used to indicate the end of one attribute's content and the beginning of the next. This is generally a comma or tab character.

When a separator character would not be visible in the edit control you can enter a name for the character (e.g. "tab" or "space").

- **# Header Lines** {type: integer; min: 0; max none; default: empty}

Usage: Enter the number of lines at the top of the entity file that do not contain data.

- **Quote Character** {type: string; max length: none; default: empty}

Usage: Enter the character used to enclose an attribute's value in quotes: either a single quote or double quote.

You can also enter the word "single" or "double".

Dictionary Reference -- Entity Section

Entity Keys Panel

Entity Keys {type: collection}

Usage: The Entity Keys panel contains elements that specify keys (a.k.a. constraints) used to enforce integrity of the entity's data.

The Entity Keys panel interface includes a header with a back arrow and a blue square icon. Below it, the 'Primary Key Attributes' section lists 'city_id'. The 'Foreign Key Attributes' section has a header with a plus icon for adding more. It contains two rows. Row 0 shows 'state_id' as the local attribute, 'STATE' as the referenced entity, and 'code' as the referenced attribute. Row 1 shows an unselected local attribute and an unselected referenced entity.

Image 1: Entity Keys Panel

- **Primary Key** {type: codelist (**Attributes** defined in the current **Entity**); extensible: YES; multi-value: YES; default: empty}

Usage: The primary key is a field (or collection of fields), that allows each instance of the Entity to be uniquely identified.

Although the Primary Key element is not required, it is highly recommended and is required for all SQL table definitions.

- **Foreign Key** {type: array (obj: **Foreign Key**)}

Usage: In data management a foreign key is a field (or collection of fields) in one Entity that refers to the primary key in another Entity.

See object details

The foreign key constraint is used to prevent invalid data from being inserted into the foreign key column. This is enforced by requiring the foreign key column(s) to use one of the values contained in the referenced table column(s). In the above image foreign key column "state_id" for entity "CITY" must match a "state code" in the "STATE" entity.

Foreign Key Object

- **Local Attributes** {type: codelist (**Attributes** defined in the current **Entity**); extensible: YES; multi-value: YES; default: empty}

Usage: Choose the attribute (or collection of attributes) from the current entity that will be matched to the primary key of the referenced entity.

- **Referenced Entity** {*type: codelist (Entities defined in the current Dictionary); extensible: YES; multi-value: NO; default: empty*}

Usage: Choose the **Entity** which will act as the reference table for permissible values for the local attribute (or collection of attributes).

- **Referenced Attributes** {*type: codelist (Attributes defined in the referenced Entity); extensible: YES; multi-value: YES; default: empty*}

Usage: Choose the attribute (or collection of attributes) from the reference entity that represent its primary key.

When a foreign key is defined with multiple attributes be sure to select **Referenced Attributes** in the same order as **Local Attributes** so there is a one-to-one correspondence based on entry order.

Dictionary Record -- Entity Section

Indices Array

Entity Indices {*type: array (obj: Entity Index)*}

Usage: The panel contains a list of **Entity Index** objects used to define alternate keys (keys in addition to the **Primary Key**) for the **Entity**. Alternate keys are generally used to speed data retrievals and provide alternate retrieval paths in large datasets.

Alternate key constraints work entirely within an **Entity** whereas foreign key constraints rely on a reference to another (foreign) **Entity**.

#	Name	Attributes	Duplicates?
0	state_name	x name	<input type="checkbox"/> ✖ Delete
1	Name of the index.	Select or enter the attributes that compo... !	<input type="checkbox"/> ✖ Delete

Image 1: Entity Indices Panel

Entity Index Object

- **Name** {*type: string; max length: none; default: empty*}

Usage: The code name of the **Index** used in the dictionary schema.

- **Attributes** {*type: codelist (Attributes defined in the current Entity); extensible: YES; multi-value: YES; default: empty*}

Usage: Choose the attribute (or collection of attributes) from the current entity that will act as the alternate key.

- **Duplicates** {*type: Boolean; default: FALSE*}

Usage: TRUE if duplicates are permitted in the index. FALSE if duplicates are not permitted.

Dictionary Reference -- Entity Section

Entity Reference Array

`Entity Reference {type: array (obj: citation)}`

Usage: The `Entity Reference` array lists `Citation` objects which reference additional information about the `Entity`.

New `Citation` references can be added and existing `Citations` edited from the panel.

Entity Reference 1		+ Add
#	Title	
0	My Entity Citation	More... Delete

Image 1: Entity Reference Citation Array

More... Click to access all `Citation` object elements in the `Citation` EDIT WINDOW. See [Citation Section](#) for editing instructions.

Dictionary Record -- Entity Section

CSV Import Process

New [Entities](#) can be created using the [mdEditor CSV](#) Import process. The process is able to create an entity, along with its associated attributes and domains, in a single step. However, not all entity, attribute, and domain elements are supported by the [CSV](#) import process. Even some required elements cannot be captured from the [CSV](#) file, so additional editing is always required.

Only one entity can be imported per [CSV](#) file.

The [CSV](#) import process will save you time and typos if your entities are already in a tabular file such as a spreadsheet which can be quickly converted to [CSV](#). Otherwise building a preliminary [CSV](#) file may be more work than just entering the entity's information using the standard [mdEditor](#) entry panels.

Steps for importing an [Entity](#) from a [CSV](#) file:

- 1. Prepare the CSV file**
- 2. Read the CSV file**
- 3. Prepare Entity for Import**
- 4. Import Entity**

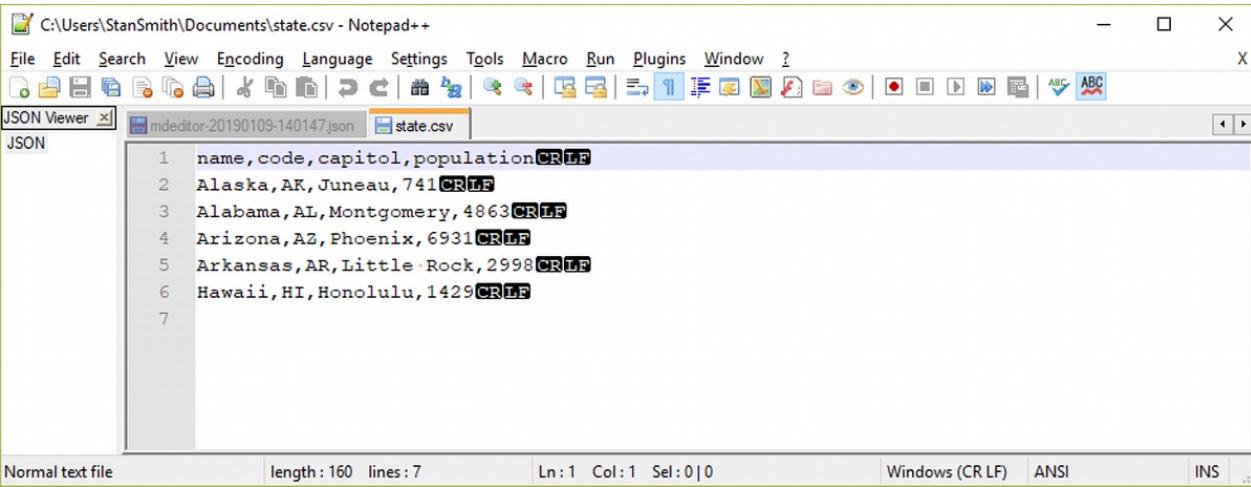
Dictionary Record -- CSV Import Process

Create or Prepare the CSV File

Start by creating a [CSV](#) file for your entity. This is easily done by building the entity in spreadsheet software such as Microsoft Excel or LibreOffice Calc then exporting it as a Comma Separated Value ([CSV](#)) file. Use the following rules for building your [CSV](#) file:

- Rows represent data records
- Each column is an attribute
- [mdEditor](#) expects the first row to be a header row (contains the **Attribute** **Code Names**)

Below is an example of a [CSV](#) file showing a table with a few U.S. State statistics (name, state abbreviation, capital city, and population). For expediency, only four attributes and five entity instances (data rows) were added to the table, but the maximum number is not limited by [mdEditor](#).



```
C:\Users\StanSmith\Documents\state.csv - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
JSON Viewer x mdeditor-20190109-140147.json state.csv
JSON
1 name,code,capitol,population
2 Alaska,AK,Juneau,741
3 Alabama,AL,Montgomery,4863
4 Arizona,AZ,Phoenix,6931
5 Arkansas,AR,Little Rock,2998
6 Hawaii,HI,Honolulu,1429
7
```

Normal text file length : 160 lines : 7 Ln : 1 Col : 1 Sel : 0 | 0 Windows (CR LF) ANSI INS ..

Image 1: Example [CSV](#) File

Dictionary Record -- CSV Import Process

Read the CSV file into mdEditor

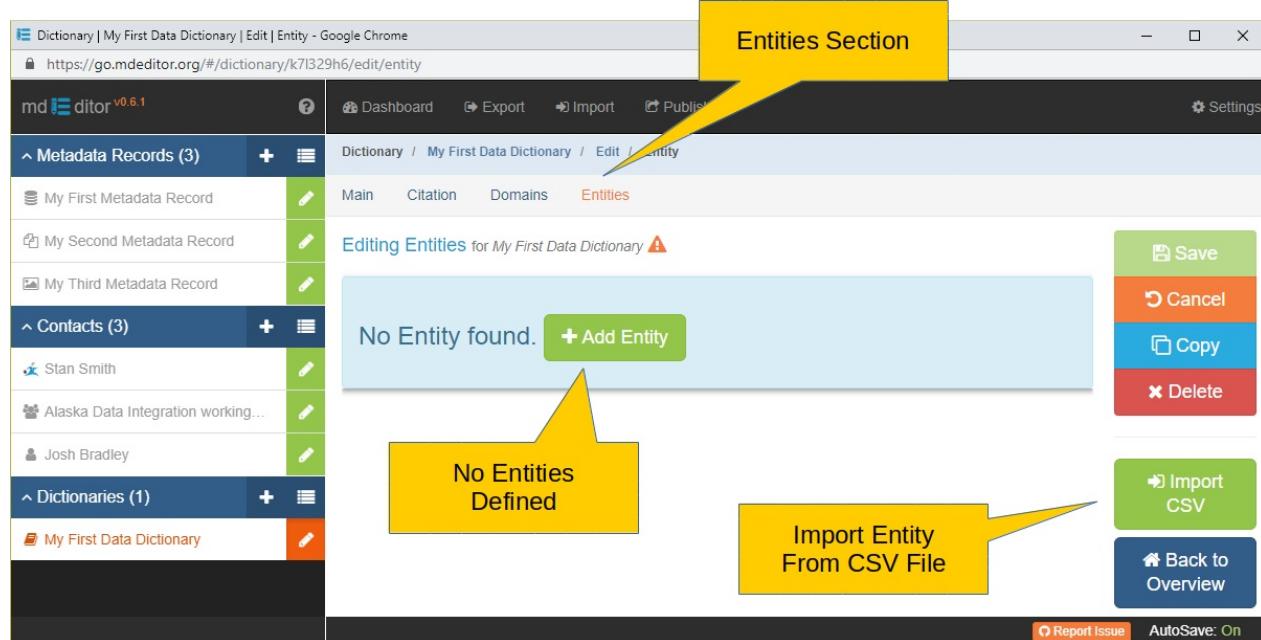


Image 1: Entity Edit Window with no Entities Defined

Instead of clicking the **Add Entity** button to create a new **Entity**, click the **Import CSV** button in the **SECONDARY SIDEBAR**.

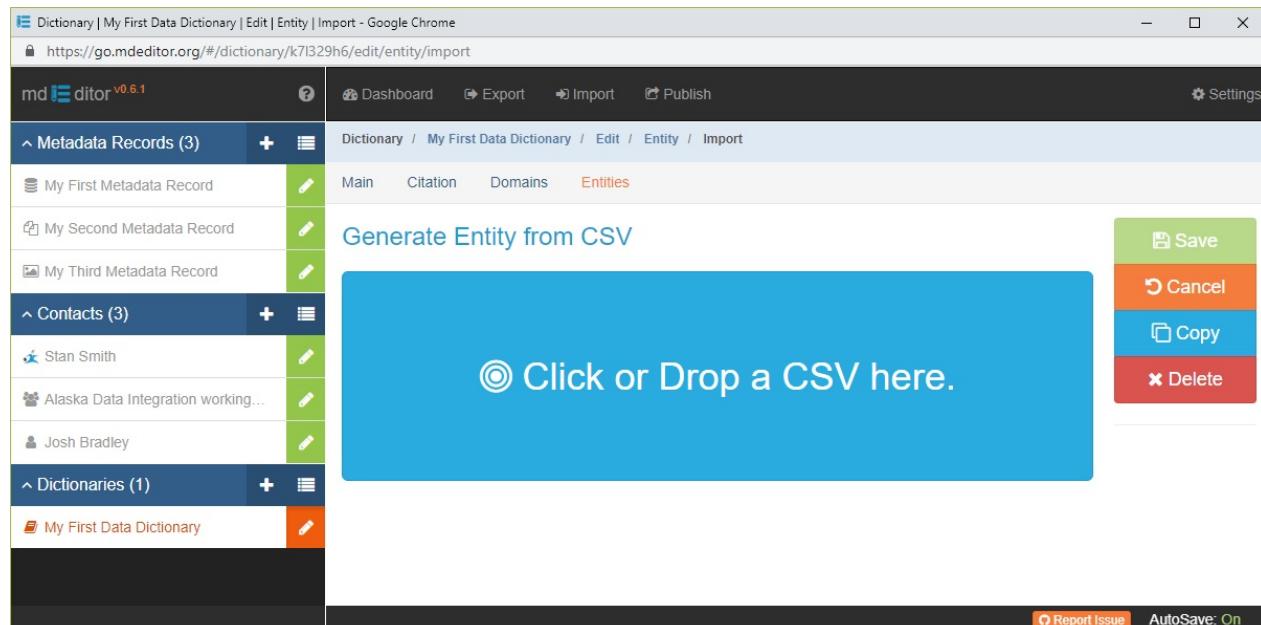


Image 2: **CSV** Entity Import Target

You are presented with a large blue target to drag and drop a **CSV** entity file onto or to click then navigate to a **CSV** entity file.

When using drag and drop method the target will turn green when mdEditor is ready to receive the CSV file.

When the sample [CSV](#) entity file illustrated above ("STATE") is dropped onto the target or selected for import the following entity will be STAGED FOR IMPORT in [mdEditor](#).

Generate Entity from CSV

Entity Identifier

44b8a0a6-2d5e-46ad-afa5-d94bd480f4bd

Entity Code Name*

Enter the name used to refer to the entity in schema definitions or application software.

Entity Definition*

A brief description of the entity.

Setup (1)

Select options for Attributes

Import	Name	Data Type	Domain	Allow Null	Max/Min		
<input checked="" type="checkbox"/>	name	(name)	character varying	<input type="checkbox"/> (5)	<input type="checkbox"/>	<input type="checkbox"/>	Example
<input checked="" type="checkbox"/>	code	(code)	character varying	<input type="checkbox"/> (5)	<input type="checkbox"/>	<input type="checkbox"/>	Example
<input checked="" type="checkbox"/>	capitol	(capitol)	character varying	<input type="checkbox"/> (5)	<input type="checkbox"/>	<input type="checkbox"/>	Example
<input checked="" type="checkbox"/>	population	(population)	integer	<input type="checkbox"/> x	<input type="checkbox"/> (5)	<input type="checkbox"/>	<input type="checkbox"/> (741/6931) Example

Image 3: Entity Staged for Import

It is important to note that the entity including its domains and attributes are not yet created at this juncture. They are only STAGED for import. Additional information must be added and existing information reviewed prior to actual import.

Dictionary Record -- CSV Import Process

Prepare the Entity for Import

Generate Entity from CSV

Entity Identifier

Entity Code Name*

Entity Definition*

Setup

Import		Name	Data Type	Domain	Allow Null	Max/Min	
<input checked="" type="checkbox"/>		name (name)	character varying	<input type="checkbox"/> (5)	<input type="checkbox"/>	<input type="checkbox"/>	Example
<input checked="" type="checkbox"/>		code (code)	character varying	<input type="checkbox"/> (5)	<input type="checkbox"/>	<input type="checkbox"/>	Example
<input checked="" type="checkbox"/>		capitol (capitol)	character varying	<input type="checkbox"/> (5)	<input type="checkbox"/>	<input type="checkbox"/>	Example
<input checked="" type="checkbox"/>		population (population)	integer	<input type="checkbox"/> (5)	<input type="checkbox"/>	<input type="checkbox"/> (741/6931)	Example

Image 1: Entity Staged for Import

On the above import window several items need to be completed and/or considered before clicking the **Do Import** button in the **SECONDARY SIDEBAR**.

Any items not completed here may be edited later using the mdEditor **Entity**, **Attribute**, and **Domain** edit windows.

1. **Entity Identifier** A default **Entity Identifier** was assigned. *See the Entity Information Panel for more detail*
2. **Entity Code Name** **Entity Code Name** is empty and must be filled in. *See the Entity Information Panel for more detail*
3. **Entity Definition** **Entity Definition** is empty and must be filled in. *See the Entity Information Panel for more detail*
4. The **Entity Setup** panel lists all the attributes derived from reading the **CSV** file. From this panel you can change attribute names and some of the basic attribute properties and even declare a domain be created from an attribute's values.
 - o To include the **Attribute** in the **Entity** be sure the **Import** checkbox is checked. Likewise, uncheck the **Import** checkbox to exclude the **Attribute** from the **Entity**.
 - o In the **Name** column you can change the **Attribute** name. The original **CSV** header column name is shown in the next column wrapped in parenthesis.

- While reading the CSV file, mdEditor attempted to identify the datatype of **Attributes** and placed its best guess in the **Data Type** column of the **Setup** panel. Review mdEditor's decision and change it if necessary. It was just a guess!
- If the values associated with an **Attribute** constitute a domain, place a check in the **Domain** element checkbox and a new **Domain** will be generated using the attribute's values. A list of the unique domain values detected by mdEditor can be previewed by rolling the mouse over the **Example** button.
- Place a check in the **Allow Nulls** checkbox if the **Attribute** is permitted to have null (empty) values.
- Place a check in the **Min/Max** checkbox if the **Attribute**'s value is to be restricted by these bounds. The minimum and maximum values shown will be transferred to **Minimum Value** and **Maximum Value** elements of the **Attribute**. See the *Attribute Information Panel* for more detail.

Generate Entity from CSV

Entity Identifier

Entity Code Name*

Entity Definition*

Setup

Import	Name	Data Type	Domain	Allow Null	Max/Min			
<input checked="" type="checkbox"/>	state_name	(name)	character varying	<input checked="" type="checkbox"/> (5)	<input type="checkbox"/>	<input type="checkbox"/>	AK	Example
<input checked="" type="checkbox"/>	state_code	(code)	character	<input checked="" type="checkbox"/> (5)	<input type="checkbox"/>	<input type="checkbox"/>	AL	Example
<input checked="" type="checkbox"/>	capitol	(capitol)	character varying	<input type="checkbox"/> (5)	<input type="checkbox"/>	<input type="checkbox"/>	AZ	Example
<input checked="" type="checkbox"/>	capitol_pop	(population)	integer	<input type="checkbox"/> (5)	<input type="checkbox"/>	<input type="checkbox"/> (741/6931)	AR	Example
							HI	Example

Image 2: Entity Ready for Import

Dictionary Record -- CSV Import Process

Import Entity

After completing the import preparation tasks, click the **Do Import** button to commit the new **Entity**, **Attributes**, and any **Domains** requested to your metadata **Dictionary Record**.

Not all required elements for **Attributes** and **Domains** were collected in the CSV import process, namely definitions. You will need to visit the **Attributes** and **Domains** **EDIT WINDOWS** to enter these remaining required and optional elements. But the CSV import was a quick start!

Dictionary Record -- Entity Section

Attribute Detail

All **Attributes** are properties of an **Entity**. Thus **Attributes** in **mdEditor** are defined from the **Attribute** array panel on the **Entities** **EDIT WINDOW** for **Dictionary Records** (see the **Attribute Array section** for initial **Attribute** definition).

As discussed in the **Attribute Array section**, only the few *required* **Attribute** elements may be defined from the **Entity**'s **Attribute** array panel. However, there are many additional **Attribute** elements that may be optionally defined from the **Attribute** **EDIT WINDOW**. These are discussed next.

In the example below, an **Entity** has been defined for vehicle registration records within a fictitious Department of Motor Vehicles database. Several of the VEHICLE_REGISTRATION **Entity**'s **Attributes** are shown in the **Attribute** array panel along with their required elements.

The screenshot shows the **mdEditor v0.6.1** interface for editing dictionary records. The left sidebar lists **Metadata Records**, **Contacts**, and **Dictionaries**. The main area is titled "Editing Entity VEHICLE_REGISTRATION for My First Dictionary". The "Entities" tab is selected. The "Entity Information" section contains fields for **Entity Identifier** (612d8423-046c-4a49-ae6f-98335db2e546), **Code Name** (VEHICLE_REGISTRATION), and **Definition** (Vehicles registered with the Department of Motor Vehicles). The "Common Name" field is set to "registration". The "Aliases" section has a "+ Add Alias" button. The "Attributes" section is expanded, showing a table with four rows of attribute definitions:

#	Name	Data Type	Definition	Allow Null?
0	registration_id	character	DMV registrati	<input checked="" type="checkbox"/> More... <input type="button" value="Delete"/>
1	vin	character varyingx	vehicle identifi	<input checked="" type="checkbox"/> More... <input type="button" value="Delete"/>
2	license	character	vehicle license	<input checked="" type="checkbox"/> More... <input type="button" value="Delete"/>
3	make	character varyingx	vehicle manuf.	<input checked="" type="checkbox"/> More... <input type="button" value="Delete"/>

On the right, a sidebar lists Entity Information, Entity Structure, Entity Keys, and Entity Reference. Buttons for **Save**, **Cancel**, **Copy**, and **Delete** are available. A "Back to Entity List" link is also present. A "Report Issue" and "AutoSave: On" button are at the bottom.

Image 1: Entity Attribute Array

Each **Attribute** has a **More...** button that when clicked navigates to the **Attribute**'s **EDIT WINDOW** providing access to *all* the **Attribute**'s elements, optional and required. This **Attribute** **EDIT WINDOW** is shown in the illustration below. Each of the **EDIT WINDOW**'s panels are discussed separately on the following pages.

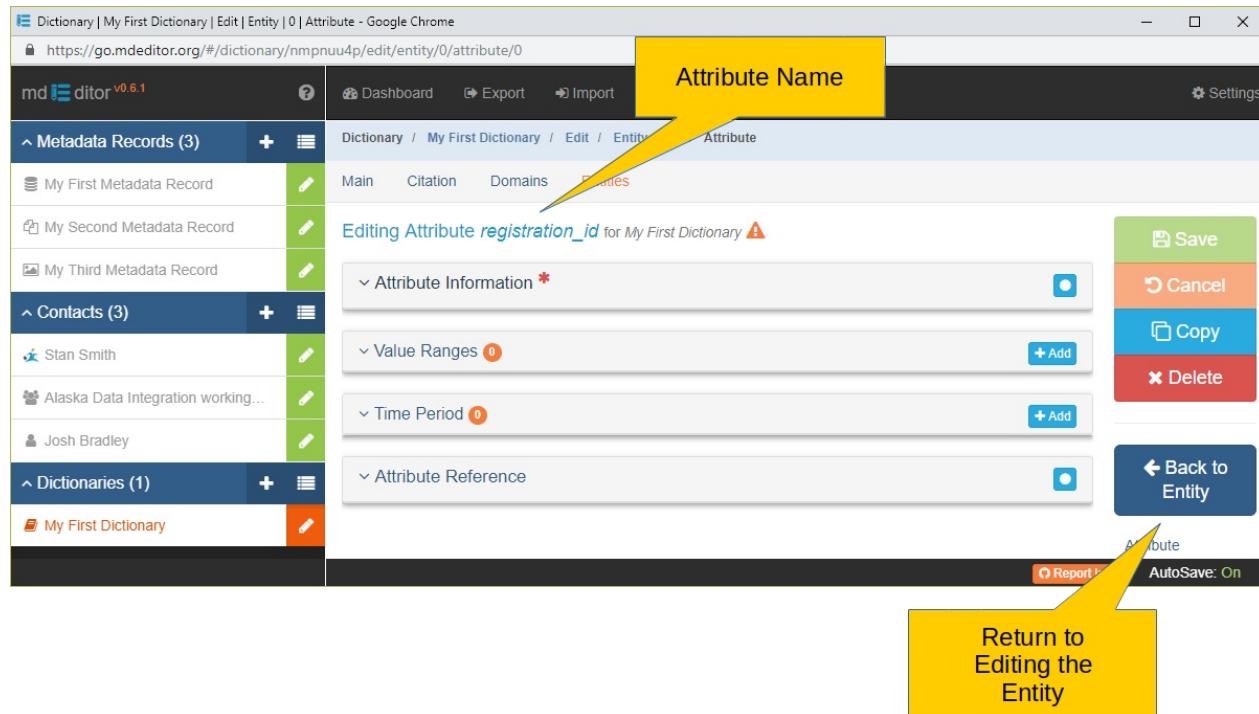


Image 2: Attribute Edit Window

- **Attribute Information**
- **Attribute Value Range**
- **Attribute Time Period**
- **Attribute Reference**

Dictionary Section -- Entity Section

Attribute Information Panel

Attribute Information {type: collection}

Usage: The Attribute Information panel holds a collection of elements that identify and describe the entity attribute.

The screenshot shows the Attribute Information panel with the following fields:

- Code Name***: registration_id
- Definition***: DMV registration ID
- Data Type***: character
- Allow Null?**: Allow null values
- Common Name**: Enter a short common(alternate) name for the attribute.
- Domain**: Select or enter the domain for this attribute.
- Aliases 0**: [+ Add Alias](#)
- Units**: A unit-of-measure for the attribute, e.g. 'meter', 'atmosphere', 'liter'
- Units Resolution**: The smallest unit increment for the attribute value.
- Case Sensitive?**: Is the attribute content case sensitive?
- Field Width**: The number of characters allowed in the attribute value.
- Missing Value**: The code which represents missing data.
- Minimum Value**: The minimum value permissible for this attribute.
- Maximum Value**: The maximum value permissible for this attribute.

Image 1: Attribute Information Panel

- **Code Name** {type: string; max length: none; default: empty}

Usage: The code used to identify this attribute. Most often this will be the table or spreadsheet column name.

Note, this element is the same as the **Name** element on the **Attribute** array panel on the **Entity** [\[EDIT WINDOW\]](#).

- **Definition** {*type: string; max length: none; default: empty*}
- Usage:* A succinct but comprehensive definition for the attribute.
- **Data Type** {*type: codelist (ADIwg codes); extensible: YES; multi-value: NO; default: empty*}
- Usage:* The datatype for the attribute.

Names for datatypes vary widely by database management system. The names included are the more common names employed by SQL database systems. Use the datatype name associated with the database system that implemented the entity. If this name is not included in the select list, you may type it in.

- **Allow Null?** {*type: Boolean; default: FALSE*}
- Usage:* Indicates whether null values are permitted as the attribute value.
- **Common Name** {*type: string; max length: none; default: empty*}
- Usage:* The name by which the **Attribute** is commonly referred as opposed to its code.
- **Domain** {*type: codelist (domains defined for this Dictionary Record); extensible: NO; multi-value: NO; default: empty*}
- Usage:* The **Domain** **Code Name** for the dictionary domain containing the list of permissible values for this **Attribute**.
- **Aliases** {*type: array (string)*}
- Usage:* An array of strings providing alternate names by which the attribute is known.
- **Units** {*type: string; max length:none; default: empty*}
- Usage:* A unit-of-measure for the attribute. E.g. 'meters', 'atmospheres', 'liters'.
- **Units Resolution** {*type: real; min: 0.0; max none; default: empty*}
- Usage:* The smallest unit increment to which an attribute value is measured.
- **Case Sensitive?** {*type: Boolean; default: FALSE*}
- Usage:* Indicates if the content of the data set is encoded in case-sensitive ASCII.
- **Field Width** {*type: integer; min: 0; max none; default: empty*}
- Usage:* The number of characters in the data field.
- **Missing Value** {*type: string; max length:none; default: empty*}
- Usage:* The code which represents missing data.
- **Minimum Value** {*type: string; max length:none; default: empty*}
- Usage:* The minimum range value permissible for this attribute. The minimum value may be either numeric or character.
- **Maximum Value** {*type: string; max length:none; default: empty*}
- Usage:* The maximum range value permissible for this attribute. The maximum value may be either numeric or character.

Dictionary Section -- Entity Section

Attribute Value Ranges Panel

Value Ranges {type: array (obj: **ValueRange**)}

Usage: Values of an attribute may be restricted to one or more ranges of values. These ranges may be declared using the **ValueRange** object.

Use the **Attribute's Minimum Value** and **Maximum Value** elements to define the overall range for the **Attribute**. Use the **ValueRange** object to define sub-ranges within the overall range.

#	Min Value	Max Value	
0	201800000000	201899999999	X Delete
1	The least value that the attribute can be assigned	The greatest value that the attribute can be assigned	X Delete

Image 1: Attribute Value Range Panel

- **Min Value** {type: string; max length: none; default: empty}

Usage: The least value that the attribute can be assigned within this range of values.

- **Max Value** {type: string; max length: none; default: empty}

Usage: The greatest value that the attribute can be assigned within this range of values.

Dictionary Section -- Entity Section

Attribute Time Period Array

Time Period {type: array (obj: *TimePeriod*)}

Usage: Values of an attribute may be restricted to one or more time periods. These **TimePeriods** may be declared using the **Time Period** object.

~ Time Period ②		+ Add
#	Start Date Time	End Date Time
0	2017-04-01T08:00:00.000Z	2017-05-25T08:00:00.000Z
1	2018-04-01T08:00:00.000Z	2018-05-25T08:00:00.000Z

Image 1: Attribute Time Period Array

Time Period Object

~ Time Period

Dates* Start Date* End Date*

Enter start dateTime !

Enter end dateTime !

Pick a Fiscal Year▼

Identifier

Enter a unique identifier for the time period.

Description

A brief description providing relevant information about the time period.

Time Period Names 0

+ Add Time Period Name

Interval Interval Amount* Time Unit*

Enter amount of time for

Choose unit of time ▼

Duration Years Months Days Hours Minutes Seconds

Enter year

Enter mo

Enter day

Enter hour

Enter min

Enter sec

- **Dates** {type: collection}

Usage: - A collection of elements to select and set the **Start Date** and **End Date** of a **Time Period**.

- **Start Date** {type: date, datetime (ISO 8601); default: empty}

Usage: Starting date and time of the **Time Period**. **Start Date** is not required if **End Date** is present.

- **End Date** {type: date, datetime (ISO 8601); default: empty}

Usage: Ending date and time of the **Time Period**. **End Date** is not required if **Start Date** is present.

- **Pick a Fiscal Year** Use this select control to set both the **Start Date** and **End Date** of a fiscal year. To set both dates for a fiscal year use the control to select the desired starting year. The **Start Date** will be set to the first day of the month for the fiscal year and the **End Date** will be the last day of the month twelve months later. The default starting month for the fiscal year is October. The starting month can be changed on the Settings page and will be used by `mdEditor` for all **Time Period** objects until changed. Previously defined fiscal years will not be effected.

See [Date-Time Control](#) for details on picking dates and times using the Date-Time control.

- **Identifier** {type: string; max length: none; default: empty}

Usage: - A unique identifier for this **Time Period**.

The identifier must be alphanumeric and not include special characters. It need only be unique within the [metadata record](#).

ISO metadata records require time period IDs. If one is provided here it will be used by `mdTranslator` when writing ISO metadata. If the **Identifier** is left blank `mdTranslator` will generate a unique identifier for the **Time Period**. Note that the generated time period ID may not be consistent across multiple translations by `mdTranslator`.

- **Description** {type: string; max length: none; default: empty}

Usage: A brief description of any relevant information for this **Time Period**.

- **Time Period Names** {type: array (string); max length: none; default: empty}

Usage: - An array of user-assigned names for this time period. Each name is a character string.

- **Interval** {type: object ([Time Interval](#)); default: empty}

Usage: An object to specify a time interval for the resource.

[See object details](#)

- **Duration** {type: object ([Time Duration](#)); default: empty}

Usage: An object to specify a time duration for the resource.

[See object details](#)

Time Interval Object

- **Time Unit** {type: codelist ([ADIwg](#) codes); multi-value: NO; extensible: YES; multi-value: NO; default: empty}

Usage: A value for the units of time, e.g. year, month, day, hour, minute, second, jiffy.

- **Interval Amount** {type: real; min: 0.0; max none; default: empty}

Usage: A floating point or integer value representing the temporal length.

Time Duration Object

- **Year** {type: integer; min: 0; max none; default: empty}

Usage: A value for the number of years in the duration.

- **Month** {type: integer; min: 0; max none; default: empty}

Usage: A value for the number of months in the duration.

- **Day** {*type: integer; min: 0; max none; default: empty*}

Usage: A value for the number of days in the duration.

- **Hour** {*type: integer; min: 0; max none; default: empty*}

Usage: A value for the number of hours in the duration.

- **Minute** {*type: integer; min: 0; max none; default: empty*}

Usage: A value for the number of minutes in the duration.

- **Second** {*type: integer; min: 0; max none; default: empty*}

Usage: A value for the number of seconds in the duration.

At least one duration element is required. More than one may also be entered. e.g. 18 Months or 1 year, 6 months are equivalent durations.

Dictionary Section -- Entity Section

Attribute Reference

Attribute Reference {*type: object([citation](#)); default empty*}

Usage: The **Attribute Reference** object is a [Citation](#) which references a standard or external description of the entity attribute.



Image 1: Attribute Reference Panel

See the [Citation Reference](#) for documentation on specific **Attribute Reference** panels.

Reference -- Citation Section

The **Citation** **EDIT WINDOW** is accessed from many locations throughout mdEditor. This is because a typical **metadata record** will reference many different resources. For example, these resources might be of earlier or referenced works, data domains, or taxonomic systems in addition to a required main resource for the **metadata record**. Each of these resources is represented by a separate **Citation** object each having identical structure and complement of elements.

How you actually arrive at the **Citation** **EDIT WINDOW** will vary, but the mdEditor elements and rules outlined in this reference section will apply in all situations.

If you clicked **Edit** to gain access to the **Citation** object there will be a **Back to ...** button in the **SECONDARY SIDEBAR**. Click this button to end editing of the **Citation** and return to the mdEditor section you were on before entering the **Citation** **EDIT WINDOW**.

- **Basic Information** {type: collection}

Usage: A collection of elements that describe the citation.

- **Responsible Party** {type: array (obj: **Responsible Party**)}

Usage: Identification of, and means of communication with, person(s) and organization(s) associated with the cited resource.

- **Online Resource** {type: array (obj: **Online Resource**)}

Usage: An array of links to online information about the cited reference.

- **Identifier** {*type*: array (*obj*: **Identifier**)}

Usage: An array of identifiers for the cited resource.

- **Series** {*type*: object (**Series**); *default*: empty}

Usage: Information about the series, publication, or aggregate resource to which a resource belongs.

- **Other Details** {*type*: array (string); *max length*: none; *default*: empty}

Usage: An array of additional details required to complete the citation that are not recorded elsewhere.

- **Graphic** {*type*: array (*obj*: **Graphic**)}

Usage: An array of file descriptions for images, maps, flow charts, models, logos, etc. associated with the citation.

- **Online Graphic Resource** {*type*: array (*obj*: **Online Graphic Resource**); *default*: empty}

Usage: An array of **Online Graphic Resource** objects that describe internet links to graphic files.

Citation Section -- Basic Information

Basic Information Panel

Basic Information {type: collection}

Usage: The **Basic Information** panel holds a collection of elements that describe the citation.

The screenshot displays the 'Basic Information' panel interface. It includes sections for 'Title', 'Alternate Titles', 'Dates', 'Edition', and 'Presentation Form'. Each section has an 'Add' button. The 'Title' section has a text input field. The 'Alternate Titles' section has a list area with an 'Add Alternate Title' button. The 'Dates' section has a table with columns for '#', 'Date', 'Date Type', and 'Description'. The 'Edition' section has a text input field. The 'Presentation Form' section has a dropdown menu.

- **Title** {type: string; max length: none; default: empty}

Usage: A user-provided title for the resource.

- **Alternate Titles** {type: array (string); default: empty}

Usage: Other titles, or aliases, by which the resource may be known.

- **Dates** {type: array (obj: **Date**); default: empty}

Usage: Dates and datetimes related to the creation and status of the resource referenced by this **Citation**.

See object details

- **Edition** {type: string; max length: none; default: empty}

Usage: Version identifier for the resource.

- **Presentation Form** {type: codelist (ISO CI_PresentationFormCode, ADIwg codes); multi-value: YES; extensible: YES;

multi-value: YES; default: empty}

Usage: The form that the resource is presented in, such as: digital map, digital document, etc.

Date Object

- **Date** {type: datetime (ISO 8601); default: empty}

Usage: Date or datetime.

See [Date-Time Control](#) for details on picking dates and times using the Date-Time control.

- **Date Type** {*type*: codelist (ISO CI_DateTypeCode, [ADIwg](#) codes); *extensible*: YES; *multi-value*: NO; *default*: empty}
Usage: A code describing the type of date or datetime.
- **Description** {*type*: string; *max length*: none; *default*: empty}
Usage: A short statement providing supplemental information about the date's context.

Citation Section -- Responsible Party

Responsible Party Array

Responsible Party {*type: array (obj: Responsible Party)*}

Usage: Identification of, and means of communication with, person(s) and organization(s) associated with the cited resource.

Responsible Party Object

#	Role	Contacts
0	principalInvestigator	x Stan Smith ⚙ ! Delete
1	Select or enter a role	Select one or more contacts ⚙ ! Delete

- **Role** {*type: codelist (ISO CI_RoleCode, ADIwg codes); extensible: YES; multi-value: NO; default: empty*}

Usage: Identifies the function or responsibility assigned to the person(s) or organization(s), etc.

- **Contacts** {*type: codelist (contact records in browser cache); multi-value: YES; default: empty*}

Usage: A list of contacts associated with this role.

Citation Section - Online Resource

Online Resource Array

Online Resource {*type: array (obj: Online Resource)*}

Usage: The **Online Resource** array contains links to online information about the cited reference.

~ Online Resource 2		
#	Name	Uri
0	Example Resource 889	http://adiwg.org/resources/889
1	Not Defined	Not Defined

[+ Add](#)

[Edit](#) [Delete](#) [!](#)

Online Resource Object

~ Online Resource 2

Editing:

Name

URI*

Protocol

Description

Function

[✓ OK](#)

- **Name** {*type: string; max length: none; default: empty*}

Usage: The name of the online resource.

- **URI** {*type: URI; default: empty*}

Usage: The internet location (address) for online access to the resource using the **URI** format - a.k.a URL.

- **Protocol** {*type: string; max length: none; default: empty*}

Usage: The online connection protocol used to access the resource. e.g. ftp, http, https, etc.

- **Description** {*type: string; max length: 500 characters; default: empty*}

Usage: A text description with additional details of what the resource is or describes.

- **Function** {*type: codelist (ISO CI_OnLineFunctionCode, ADIwg codes); extensible: YES; multi-value: NO; default: empty*}

Usage: - A code declaring the intended function of the resource.

Citation Section -- Identifier

Identifier Array

Metadata Identifier {*type: array (obj: Identifier)*}

Usage: An array of identifiers for the cited resource. Not all of the **Identifier's** information is displayed in the array view, only a few select fields that provide a reasonable overview of the identifier.

^ Identifier 2				+ Add
#	Identifier	Namespace	Description	
0	ID123	Not Defined	Not Defined	More... Delete
1	ID456	Not Defined	Not Defined	More... Delete

Edit Click the Edit button to open the **Identifier** object in the **Identifier** edit window.

Editing Identifier: ID123 ⚠

Identifier

ID123

Namespace

Select or type a namespace for the identifier.

Version

Enter the version for the identifier.

Description

Enter a description of the identifier.

Authority



- **Metadata Identifier** {*type: object (Identifier); default empty*}

Usage: Identifier for the **Metadata Record**.

[See object details](#)

Identifier Object

Identifier 1

Identifier*

Enter the identifier for the resource

Namespace

Select or type a namespace for the identifier.

Version

Enter the version for the identifier.

Description

Enter a description of the identifier.

Authority

✓ OK

- **Identifier** {*type: string; max length: none; default: empty*}

Usage: A cataloged and managed name or code for the resource.

- **Namespace** {*type: string; max length: none; default: empty*}

Usage: A string which unambiguously defines the namespace to which the identifier belongs.

- **Version** {*type: string; max length: none; default: empty*}

Usage: The version number of the identifier.

- **Description** {*type: max length: none; string; default: empty*}

Usage: A description of the meaning of the identifier.

- **Authority** {*type: object ([Citation](#)); default empty*}

Usage: A reference to information about the identifier. An **Authority** is an abbreviated version of the full [Citation](#) object.

[See object details](#)

As a safety precaution, this **Identifier** element has an 'Edit' button to prevent accidental changes. Click the **Edit** button to change the **Identifier**. Use caution when editing the **Metadata Identifier**. This ID must be unique among ALL your [metadata](#) records. If this ID was used to link with other [metadata](#) records, changing it may break the link.

Citation Object

See [Citation Section](#) for editing instructions.

Citation Section -- Series

Series Object

Series {*type: object (***Series***); default: empty*}

Usage: For resources which are included in a publication, details on the page(s) where the article or other resource was published.

^ Series

Name
Enter the name for the series.

Issue
Enter the issue for the series.

Page
Enter the page(s) for the issue.

- **Name** {*type: string; max length: none default: empty*}

Usage: Name of the series, publication, or aggregate resource of which the resource is a part.

- **Issue** {*type: string; max length: none default: empty*}

Usage: Information identifying the issue of the series, publication, or aggregate resource of which the resource is a part.

- **Page** {*type: string; max length: none default: empty*}

Usage: Details on which page(s) of the publication the article was published.

Citation Section -- Other Details

Other Details Array

Other Details {*type: array (string); max length: none; default: empty*}

Usage: An array of additional details required to complete the citation that are not recorded elsewhere. Each detail is a text string.

The screenshot shows a user interface for managing an array of 'Other Details'. At the top left is a back arrow labeled '^ Other Details 1'. At the top right is a blue 'Add' button with a plus sign. Below this is a table-like structure with two rows. Row 0 contains the text 'My first detail in short narrative format ...' and a red 'Delete' button. Row 1 contains the text 'Enter additional detail about the citation.' and another red 'Delete' button. The entire interface is set against a light gray background.

0	My first detail in short narrative format ...	✖ Delete
1	Enter additional detail about the citation.	✖ Delete

Citation Section -- Graphic

Graphic Array

Graphic {type: array (obj: [Graphic](#))}

Usage: An array of file descriptions for images, maps, flow charts, models, logos, etc. associated with the citation.

A screenshot of a web-based application interface for managing graphics. At the top, there's a header with a back arrow labeled '^ Graphic' and a blue button with '+ Add'. Below this, a table lists two items:

- Item 0: Expedition Logo - Shows a thumbnail image of a logo and has 'Edit' and 'Delete' buttons.
- Item 1: Expedition Route Map - Shows a thumbnail image of a map and has 'Edit' and 'Delete' buttons.

Graphic Object

A screenshot of a form for creating a new graphic object. The form includes the following fields:

- Name***: A required field with a placeholder "File Name".
- File Type**: A field with a placeholder "Enter the file format(s) of the logo."
- Description**: A text area with a placeholder "Description of the file: Less than 500 characters".
- Online Resource**: A section with a '+ Add' button and a count of 0.

At the bottom right is a blue 'OK' button with a checkmark icon.

- **Name** {type: string; max length: none; default: empty}

Usage: Name of the file containing the graphic.

- **File Type** {type: string; max length: none; default: empty}

Usage: MIME type (Multipurpose Internet Mail Extension) of the graphic. e.g. jpeg, gif, pdf, png, bmp, etc.

- **Description** {type: string; max length: none; default: empty; max length: 500 characters}

Usage: A short description of the graphic.

- **Online Graphic Resource** {type: array (obj: [Online Graphic Resource](#)); default: empty}

Usage: [Online Graphic Resource](#) objects that define internet links to the [Graphic Overview](#) file.

[See object details](#)

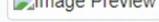
Citation Section -- Online Graphic Resource

Online Graphic Resource Array

Online Graphic Resource {*type: array (obj: Online Graphic Resource); default: empty*}

Usage: An array of **Online Graphic Resource** objects that describe internet links to graphic files.

^ Online Resource 2 + Add

0	 Name Greater Anchorage Area URI https://www.google.com/maps/vt/data...	Edit Delete
1	Image Preview  Name Non-Graphic File URI http://adiwg.org/resources/899	Edit Delete

✓ OK

Along with the file **Name** and **URI**, mdEditor attempts to provide a thumbnail of each graphic file listed in the **Online Graphic Resource** array. If a thumbnail can not be generated a broken image link will be displayed like the one shown for the second array item above.

If for some reason mdEditor does not produce a thumbnail preview, check for the following:

- an invalid link
- the file's graphic format is not readable by mdEditor
- the file is not a graphic file

Online Graphic Resource Object

^ Online Resource 3

Editing:

Name

Online Resource Name

URI*

Online Resource URI

◎ Click to Select or Drop Image

Enter URI or select file to preview.

Protocol

Protocol for accessing the Online Resource

Description

Description of the Online Resource: Less than 500 characters

Function

Select function of the Online Resource

▼

✓ OK

- **Name** {*type: string; max length: none; default: empty*}

Usage: The name of the online graphic resource.

- **URI** {*type: URI; default: empty*}

Usage: - The internet location (address) for online access to the graphic resource, using the **URI** format - a.k.a URL.

Click to Select or Drop Image Use this drop target to drop local graphics and logos that are less than 50K Bytes in size. The graphic will be converted to a 'data:image/...' **URI** and placed into the **URI** element. These graphics will remain embedded in the **mdJson** file and do not need an additional internet accessible **URI** to access the graphic.

For graphics larger than 50K Bytes an internet accessible file is required. Place the **URI** to the graphic file in the **URI** element. **mdEditor** will then access the graphic file and build a thumbnail image for the **EDIT WINDOW** page.

The thumbnail image is not saved with the **mdJson** or **mdEditor** files. The thumbnail is rebuilt each time the **mdJson** file is edited.

- **Protocol** {*type: string; max length: none; default: empty*}

Usage: The online connection protocol used to access the graphic resource. e.g. ftp, http, https, etc.

- **Description** {*type: string; max length: 500 characters; default: empty*}

Usage: A text description with additional details of what the graphic resource is or describes.

- **Function** {*type: codelist (ISO CI_OnLineFunctionCode, ADIwg codes); extensible: YES; multi-value: NO; default: empty*}

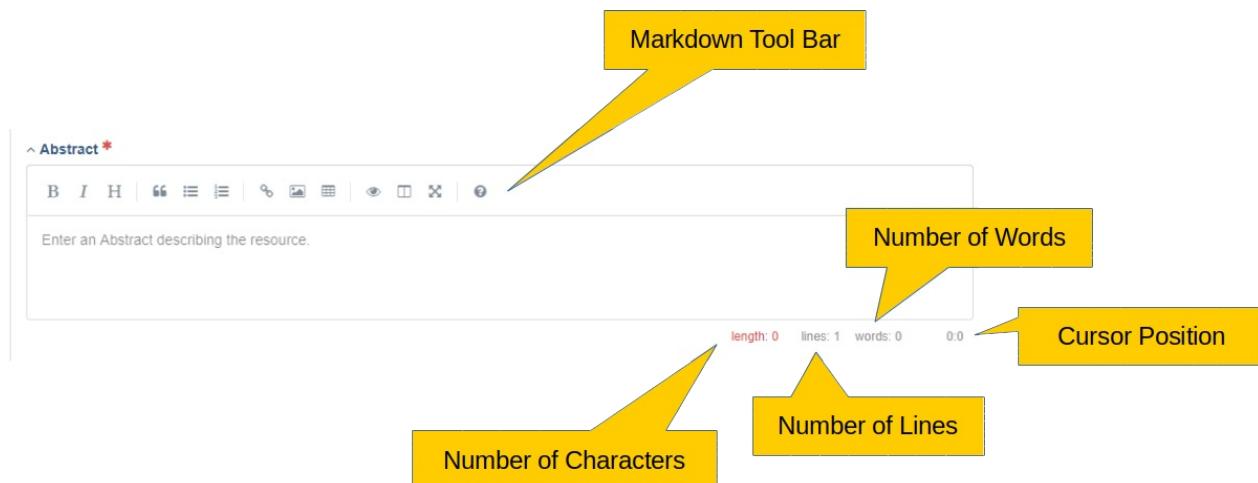
Usage: A code declaring the intended function of the graphic resource.

Reference -- Edit Window Controls

UNDER CONSTRUCTION

Controls

Markdown



Controls

Date Time

Dates*

Start Date* Enter start date/dateTime ! Select

End Date* Enter end date/dateTime ! Select

Pick a Fiscal Year ▾

Open Date-Time Control

Previous Month

Select Month

Next Month

Start Date* 2019-07-02 00:00:00 Select

Identifier Enter a unique identifier.

Description A brief description of the time period.

Time Periods + Add Time Period

Su	Mo	Tu	We	Th	Fr	Sa
30	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1	2	3
4	5	6	7	8	9	10

+ Add Time Period Name

Paste Current Date Time Select

Clear Control Select

Reference -- Export Record

The export function allows the contents of the currently loaded [metadata](#) records, contacts, and dictionaries to be saved either as an [mdEditor file](#) or [mdJSON file](#). These files can then be shared with collaborators or saved to a local workstation for backup and/or archiving.

By default, exported files will be saved in your computer's "downloads" folder. This default location can be changed in your browser's settings, generally under the "Downloads" topic.

Because mdEditor is a web application (runs in an internet browser) exports from mdEditor are treated as downloads even though the metadata records are already on your computer. The download process is actually copying the metadata records from browser cache to the computer's file system

The file name assigned to an exported file follows the form "mdEditor-" (for an [mdEditor file](#) export) or "mdJson-" (for an [mdJson file](#) export) followed by a timestamp and type of ".json". For example an [mdEditor file](#) exported at 2:14 p.m. on November 21, 2018 would have the name "[mdEditor-20181121-141126.json](#)". Note the timestamp is written in two sections using the format YYYYMMDD-hhmmss. The files can be freely moved and renamed to fit your requirements. Just make sure to keep the MIME type suffix of ".json". It is not necessary to keep the default file name in order to re-import the file to [mdEditor](#) at a later time.

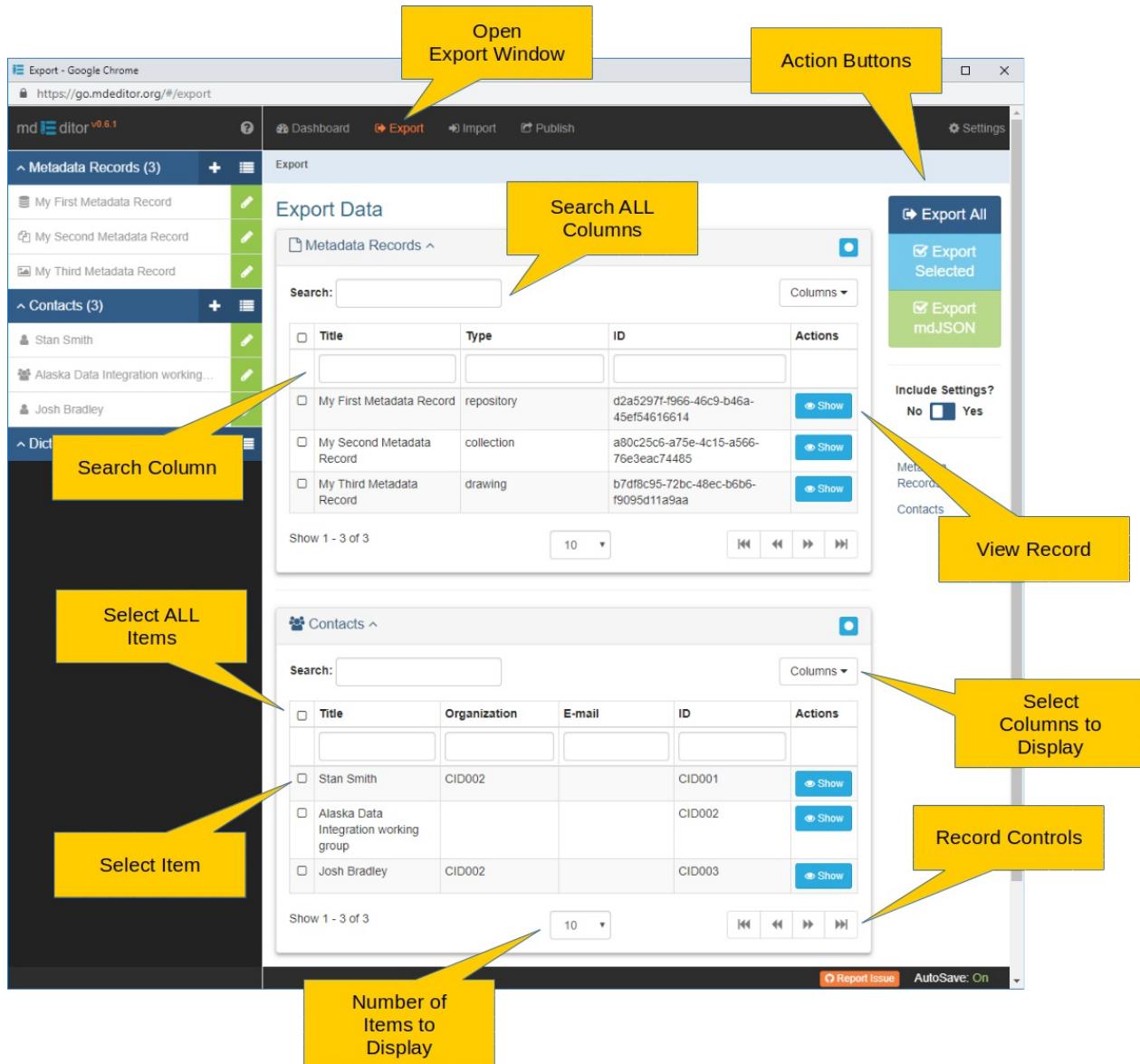


Image 1: Export Window

The **EXPORT** window is divided into three panels: **Metadata Records**, **Contacts**, and **Dictionaries**. Each of these panels has identical controls and behavior. So, what is discussed for one applies to all. In the image above the **Dictionaries** panel is not shown; there is no difference in behavior from the two which are shown.

- [Search](#)
- [Select](#)
- [Export](#)
- [View](#)

Search

When there are many [metadata](#) records, contacts, or dictionaries loaded into the [browser cache](#), the search capabilities of the page can help quickly narrow the number of items being considered.

• **Search ALL Columns**

Text entered into "Search All Columns" control will be matched against the contents of each column. If the column value matches the search text, the item remains visible, otherwise the item is hidden. All items in the [browser cache](#) will be searched, not just those currently visible in the panel.

• Search Column

Immediately under each column header is the "Search A Column" control. Text entered into this control is matched against the contents of that column only. If the column value matches the search text, the item remains visible, otherwise the item is hidden. All items in the [browser cache](#) will be searched, not just those currently visible in the panel.

Select

For an item to be considered for export, it must have a checkmark in the checkbox at the head of its row.

• Select ALL Items

To select all items in the panel, click the "Select All Items" checkbox in the table headings row. All items in the [browser cache](#) will be selected, not just those currently visible in the panel. Click it again to un-select all items.

• Select Item

To select an item, click the "Select Item" checkbox in the item's row. Click it again to un-select the item.

Export

There are four Export action buttons in the [SECONDARY SIDEBAR](#) to tailor your export. They control both the items set to be exported and the export file format.

• **Export All** Export All Items

Click this button to export all items in the [Metadata Records](#), [Contacts](#), and [Dictionaries](#) panels regardless of whether they are checked or not. All items will be exported into a single file in the [mdEditor file](#) format.

• **Export Selected** Export Selected Items

Use this export button to export only the [Metadata Records](#), [Contacts](#), and [Dictionaries](#) that have been individually checked. If no items are checked, the button will be disabled. All selected items will be exported into a single file in the [mdEditor file](#) format.

• **Export mdJson** Export Items in mdJson Format

Use this export button to export [Metadata Records](#) in [mdJSON file](#) format. If no [Metadata Records](#) are checked, the button will be disabled. All checked [Metadata Records](#) will be exported into a single, composite [mdJSON file](#).

Only [Metadata Records](#) can be exported in [mdJSON file](#) format. During the export operation [mdEditor](#) will automatically collect and bundle all referenced [Contacts](#) and [Dictionaries](#).

It is not recommended that you export more than one [Metadata Record](#) into an [mdJSON file](#). [mdTranslator](#) can only process one [mdJSON file](#) at a time, so individual [mdJSON files](#) will need to be extracted from the composite [mdJSON file](#) prior to translation. Although not complicated, this will require specialized editing software.

Further, while mdEditor can import composite mdJSON files, Contacts and Dictionaries will be duplicated once for each record in which they are used. Records will remain invalid until the duplicate Contacts and Dictionaries are manually deleted.

• Include Settings

Setting the 'Include Settings' switch to "Yes" will embed a copy of your mdEditor settings into an mdEditor file output. The option can be useful when you need to switch browsers or send your metadata to another person for review or edit. This option is not available for mdJSON file exports.

View

Each export panel has built in support for navigating long lists of [Metadata Records](#), [Contacts](#), and [Dictionaries](#). The following functions are available for each panel.

• Number of Items to Display

This selection list allows you to set the maximum number of items to display in the panel. The default is 10 items with options for 25, 50, and 500. You cannot set your own number of items.

• Record Controls

The "Record Controls" manage which set of items is visible in the panel. The controls become active when there are more items in browser cache than are displayed in the panel, given the limit set using the "Number of Items to Display" control (above).

- [Next Page](#)
- [Previous Page](#)
- [Last Page](#)
- [First Page](#)

• Select Columns to Display

Clicking this control presents a list of columns that can be displayed in the panel. By default all available columns are displayed. You can hide a column - or return it to visible again - by checking or un-checking the column name in the control's list. The list of columns is naturally different between the [Metadata Records](#), [Contacts](#), and [Dictionaries](#) panels.

• Show Record View

The 'Show' button exits the [EXPORT](#) window and displays a view of the record with more detail than shown in the [Metadata Records](#), [Contacts](#), and [Dictionaries](#) panels. Since the view does exit the [EXPORT](#) window, you will need to return by using the browser's "back" button or by clicking [Export](#) in the [PRIMARY NAVIGATION BAR](#).

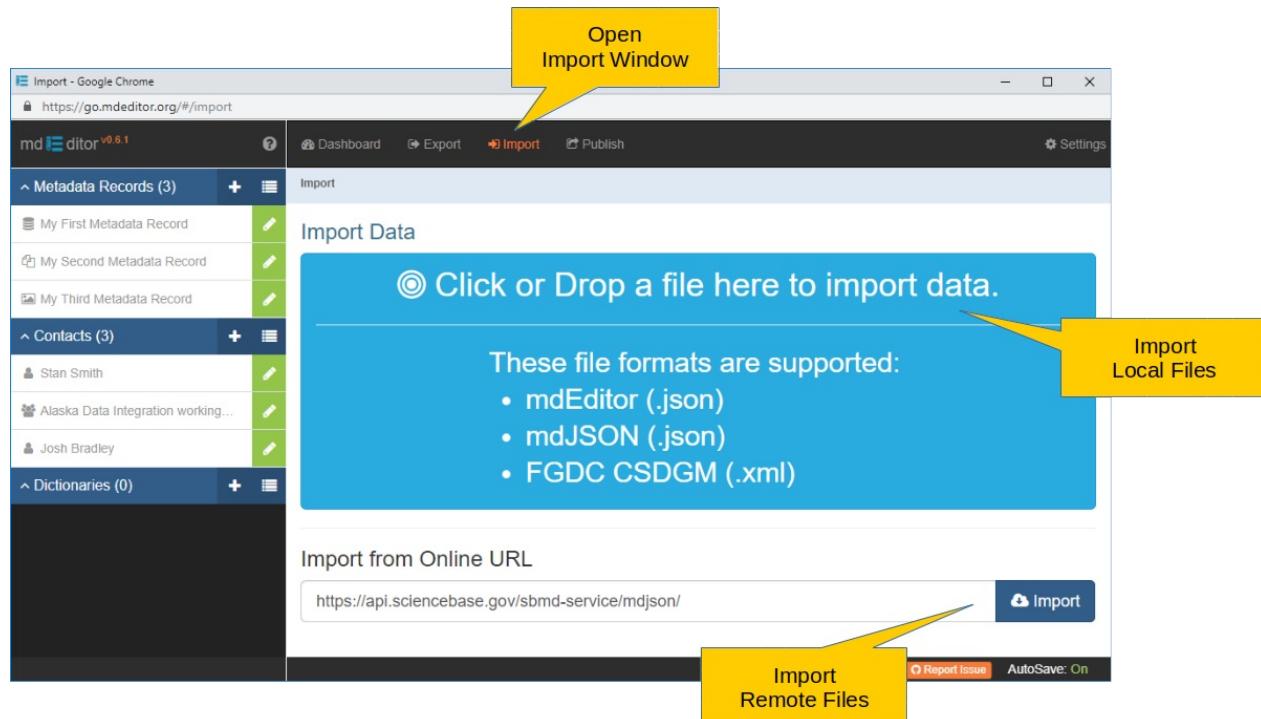
Reference -- Import Records

The import function allows [mdEditor](#) to load compatible [metadata](#) records saved in [local storage](#) into [browser cache](#). The function can also import cloud-based [metadata](#) files via the internet.

Imported records can be edited and exported again, translated into other [metadata](#) formats, used as starting points for other [metadata](#) records, or all the above.

The imported [metadata](#) must be formatted as either an [mdEditor file](#), [mdJSON file](#), or [FGDC CSDGM file](#). [mdEditor](#) and [mdJSON](#) formats have the capacity to contain multiple [metadata](#) records per file, [FGDC CSDGM](#) can support only a single [metadata record](#) per file.

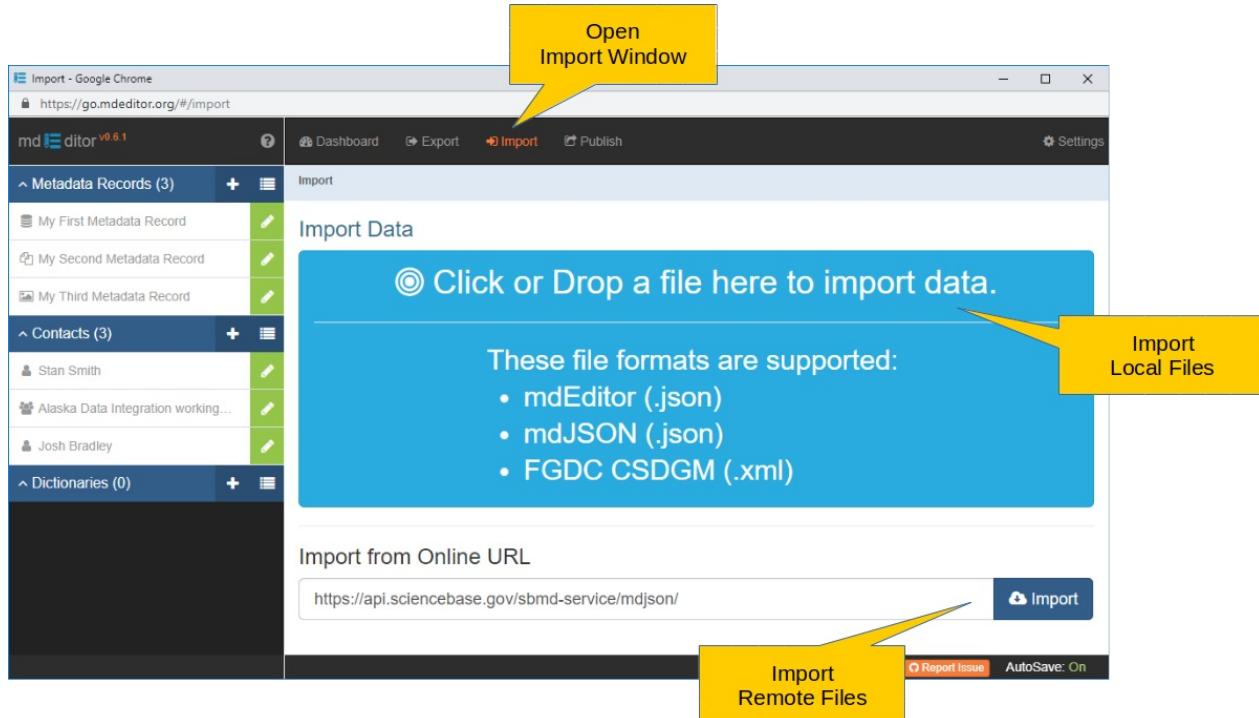
During the import process you can choose which [metadata](#) records, contacts, and/or dictionaries within the import file you wish to load into [browser cache](#). You also have the option to merge imported records with the currently loaded records or replace them.



Reference -- Import Records

Select Import File

The first step in the import process is to identify the [metadata](#) file to import. [mdEditor](#) can import [mdEditor](#), [mdJSON](#), and [FGDC CSDGM](#) metadata records from [local storage](#) or from remote locations via the internet.



Import Local File

- Click or Drop a file here to import data To import a local file, drag the file from your computer's desktop or file explorer over the large blue drop zone. When [mdEditor](#) becomes ready to receive the file, the target zone will turn green. Note that [mdEditor](#) has not read the file at this point and does not yet know if the file is valid. [mdEditor](#) is only ready to read the file if it is dropped.

Once the file is dropped [mdEditor](#) will immediately proceed to read it. If the file is not in [mdEditor](#) format, [mdJSON](#) format, or [FGDC CSDGM](#) format it will be rejected. It will also be rejected if there is a structural error within the file that prevents it from being interpreted. If the file is rejected a note will pop up on the window informing you of the rejection. If the file can be read, [mdEditor](#) will read it and transfer you to the [IMPORT](#) window.

The import file can have any name. The name does not need to be in the same pattern as assigned to exported files. Also, the file extension is ignored by [mdEditor](#). However, it is best practice to keep [mdEditor](#) and [mdJSON](#) file extensions as .json and [FGDC CSDGM](#) file extensions as .xml.

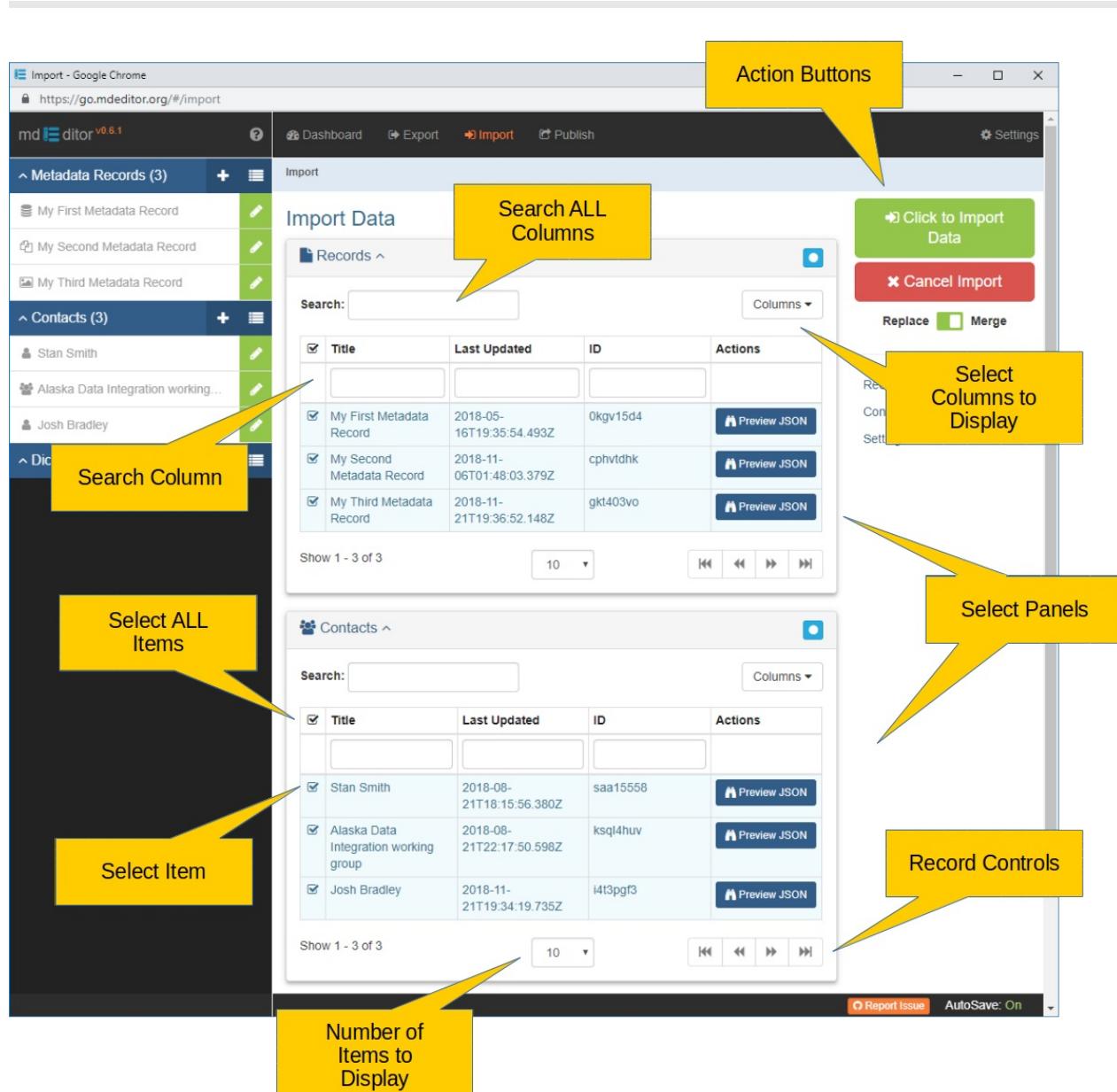
- Click or Drop a file here to import data The file drop zone is also a button. Click the button to launch your computer's file explorer and search for an import file. Once found, select the file and click "Open". [mdEditor](#) will proceed to process the file as outlined above.

Import Online File

- **Import from Online URL** To load a [metadata](#) file from an online source, type the complete URL into the control and click **Import**. `mdEditor` will proceed to process the file as outlined above.

Reference -- Import Records

Import Window



Search

When there are many [metadata](#) records, contacts, or dictionaries loaded into the [browser cache](#), the search capabilities of the page can help quickly narrow the number of items being considered.

- **Search ALL Columns**

Text entered into "Search All Columns" control will be matched against the contents of each column. If the column value matches the search text, the item remains visible, otherwise the item is hidden. All items in the [browser cache](#) will be searched, not just those currently visible in the panel.

- **Search Column**

Immediately under each column header is the "Search A Column" control. Text entered into this control is matched against the contents of that column only. If the column value matches the search text, the item remains visible, otherwise the item is hidden. All items in the [browser cache](#) will be searched, not just those currently visible in the panel.

Select

For an item to be considered for export, it must have a checkmark in the checkbox at the head of its row.

- **Select ALL Items**

To select all items in the panel, click the "Select All Items" checkbox in the table headings row. All items in the [browser cache](#) will be selected, not just those currently visible in the panel. Click it again to un-select all items.

- **Select Item**

To select an item, click the "Select Item" checkbox in the item's row. Click it again to un-select the item.

Import

There are three Import action buttons in the [SECONDARY SIDEBAR](#) to tailor your import. They control both the items set to be imported and the import file format.

- **Click to Import Data Import All Items**

The action will import all items than have been selected for import. The import process will either replace or merge the imported records according to the state of the 'Replace/Merge Records' switch described below.

- **Cancel Import Cancel Import**

The action will cancel the current import and return the user to the [IMPORT](#) file selection window.

- **Replace/Merge Records**

- **Replace**

The replace action will remove all items of a type currently loaded in [browser cache](#) and replace them with the items selected for import. For example, if even a single [Contact](#) is selected for import, ALL currently loaded contacts will be removed before the import [Contact](#) is loaded. Import items of other types ([Metadata Records](#) and [Dictionaries](#)) are

not effected. This same process is applied when replacing **Metadata Records** and **Data Dictionaries**. Dictionaries remove only dictionaries; Metadata records remove only metadata records. **Settings** are always replaced in full.

Remember to backup, **EXPORT**, currently loaded records before using the 'Replace' action.

Use caution when replacing items. Dependency links between **Metadata Records**, **Contacts** and **Data Dictionaries** can be broken in scenarios where **mdEditor** files are only partially loaded.

For example, if the replace action selects a **Contact** and no **Metadata Records** or **Dictionaries**, **mdEditor** will delete only the loaded **Contacts** before the import contact is added. If there are any **Metadata Records** or **Dictionaries** that depended on one of the removed **Contacts** those links will be broken until the missing **Contacts** are re-imported.

- **Merge (default)**

Unlike the replace action, merge will not remove items from **browser cache** prior to importing selected items. The merge action will instead use the item's internal ID which was assigned by **mdEditor** as the **record** was created. This ID is displayed in the **ID** column of the three selection panels.

Import items that cannot be matched with an item currently loaded in **browser cache** are simply added to **browser cache**.

The ID shown is for the item to be imported. Unfortunately, at this time there is no way to display the internal ID of items already loaded into **browser cache**. Therefore there is no positive way to determine which loaded items will be matched and replaced by imported items. The best that can be done at this point is to visually match **Metadata Record**, **Contact**, and **Dictionary** records by names or titles to understand what will happen on import.

View

Each export panel has built in support for navigating long lists of **Metadata Records**, **Contacts**, and **Dictionaries**. The following functions are available for each panel.

- **Number of Items to Display**

This selection list allows you to set the maximum number of items to display in the panel. The default is 10 items with options for 25, 50, and 500. You cannot set your own number of items.

- **Record Controls**

The "Record Controls" manage which set of items is visible in the panel. The controls become active when there are more items in **browser cache** than are displayed in the panel, given the limit set using the "Number of Items to Display" control (above).

- **Next Page**
- **Previous Page**
- **Last Page**

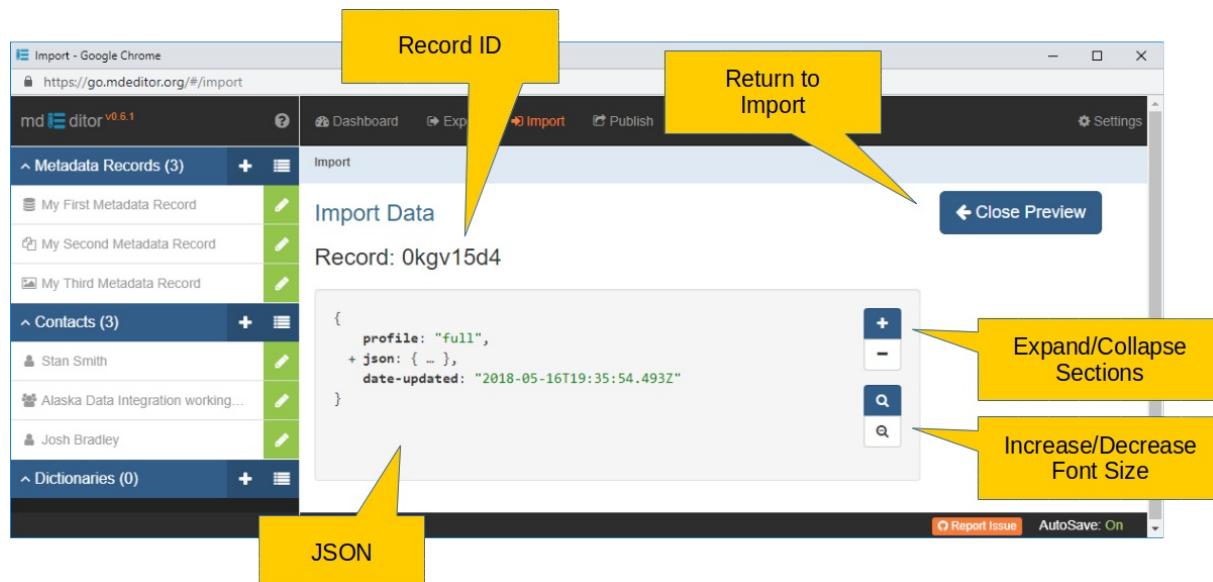
- First Page

• Select Columns to Display

Clicking this control presents a list of columns that can be displayed in the panel. By default all available columns are displayed. You can hide a column - or return it to visible again - by checking or un-checking the column name in the control's list. The list of columns is naturally different between the **Metadata Records**, **Contacts**, and **Dictionaries** panels.

• Preview JSON Show mdEditor JSON

The 'Preview JSON' button opens a new window and displays the selected item's **JSON**. The preview is neither in strict **mdEditor JSON** or **mdJSON** format, but somewhere in between. You can use this preview to examine details of **Metadata Records**, **Contacts**, **Data Dictionaries**, and **Settings** prior to import.



• Record ID

The "Record ID" is the **mdEditor record** id of the item selected for **JSON** preview. This will match the ID shown in the **IMPORT** window's selection panels.

• JSON Window

In the above image the hierarchical **JSON** sections are shown collapsed (or folded). To view the full **record** detail click the '+' (plus sign) on the "Expand/Collapse Sections" button.

• Expand/Collapse Sections

• Increase/Decrease Font/Size

• Close Preview Return to Import Window

Import Records -- Import File Formats

mdEditor can import metadata records in mdEditor, mdJSON, and FGDC CSDGM file formats. Although the import process is the same for each format there are differences that can influence your workflow.

- [mdEditor File Format](#)
 - [mdJSON File Format](#)
 - [FGDC CSDGM File Format](#)
-

mdEditor File Format

The mdEditor file format is organized to optimize editing in mdEditor. And similar to mdEditor's screen organization, the file format stores [Metadata Records](#), [Contacts](#), and [Dictionaries](#) separately. These items are then linked to each other via the mdEditor's internal 'IDs'. This organization allows users to define a [Contact](#) or [Dictionary](#) once and use it across many [Metadata Records](#).

The mdEditor file format keeps these internal 'IDs' when a file is exported. Then when importing an [mdEditor file](#) it can do positive item matching with items already loaded in [browser cache](#) regardless of whether titles or names have changed. This provides for a safe merge.

When importing you are allowed to choose which [Metadata Records](#), [Contacts](#), and [Dictionaries](#) to import. mdEditor will not automatically gather all [Contacts](#) and [Dictionaries](#) referenced by an imported [Metadata Record](#). It is up to you to know which of your [Contacts](#) and [Dictionaries](#) to include to fully support the [Metadata Records](#) you retain after import.

mdJSON File Format

The mdJSON file format stores a [metadata record](#) in a standard independent format developed by ADIwg. Each [metadata record](#) is complete and can stand alone in that all contacts and dictionaries needed by the [metadata record](#) are bundled with the [record](#). This is the format used by mdTranslator to prepare [metadata](#) in one of the supported standard [metadata](#) formats such as CSDGM or ISO.

The mdJSON file format is a great archive format for [metadata records](#) once editing has been concluded. It will not only save all contacts and dictionaries for the complete [metadata record](#), the [metadata record](#) and parts will maintain their state at the time the [record](#) was saved. For example, later changes to a reused [Contact](#) will not alter the contents of the archived mdJSON file.

Internal item 'IDs' are NOT saved with the mdJSON format. Thus when importing mdJSON files, item matching cannot be done. So when an import is requested to be MERGED, all items will be ADDED. Further, because the imported items do not have internal 'IDs', new 'IDs' are assigned as the items are added to [browser cache](#). This can create duplicates of items already in [browser cache](#) that will need to be manually removed.

An mdJSON file format is capable of storing multiple [metadata](#) records. Each of these [metadata](#) records is a complete [metadata record](#) with all its contacts and dictionaries. Thus when importing multiple mdJSON [metadata](#) records any contact or dictionary that was used by more than one of the [metadata](#) records will create a duplicate that will need to be manually removed.

The mdJSON file format performs best when working with a single [metadata record](#) at a time.

FGDC CSDGM File Format

The [FGDC CSDGM](#) (Federal Geographic Data Committee Content Standard for Digital Geospatial [Metadata](#)) file format stores a complete, standalone [metadata record](#) with all contacts and dictionaries. The [FGDC CSDGM](#) format cannot accommodate multiple [metadata](#) records in a single file.

Internal item 'IDs' are NOT saved with the [FGDC CSDGM](#) format. Thus when importing [FGDC CSDGM](#) files item matching cannot be done. So when an import is requested to be MERGED, all items will be ADDED. Further, because the imported items do not have internal 'IDs', new 'IDs' are assigned as the items are added to [browser cache](#). This can create duplicates of items already in [browser cache](#) that will need to be manually removed.

In [FGDC CSDGM](#), each time a contact is referenced in the [metadata](#) the author must restate all the contact's information. Since not all contact elements are required by the standard, or often completed, each reference to a contact which was used multiple times within the [metadata record](#) may contain different or even conflicting information.

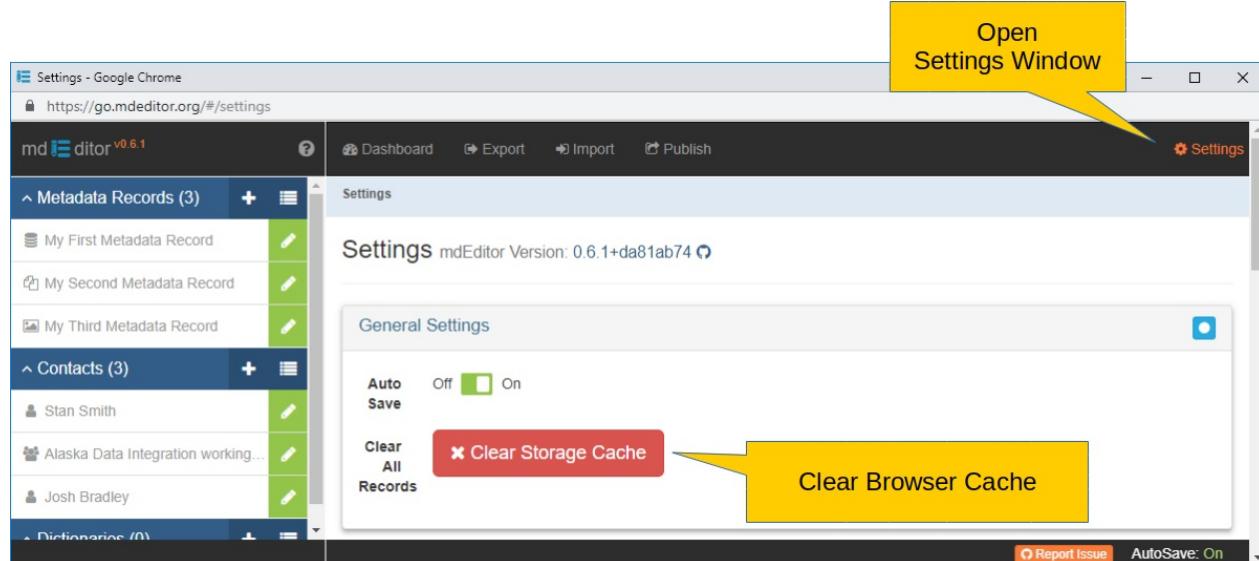
Use caution when deleting duplicate contacts or dictionaries to be sure all pertinent information is saved in the retained contact or dictionary.

Reference -- Import Records

Clearing Browser Cache

When importing [metadata](#) records to [mdEditor](#) there are times when completely clearing the [browser cache](#) can be helpful. If your import is replacing items of each type ([Metadata Record](#), [Contact](#), and [Dictionary](#)) [mdEditor](#) will effectively be clearing [browser cache](#) for you. In other instances you may need to do this yourself.

Warning: Clearing all records will delete all of the records currently loaded in [mdEditor](#). Before doing so, use the Export function to make a backup of your records. Otherwise, the records will be permanently lost (unless you previously made a backup copy).

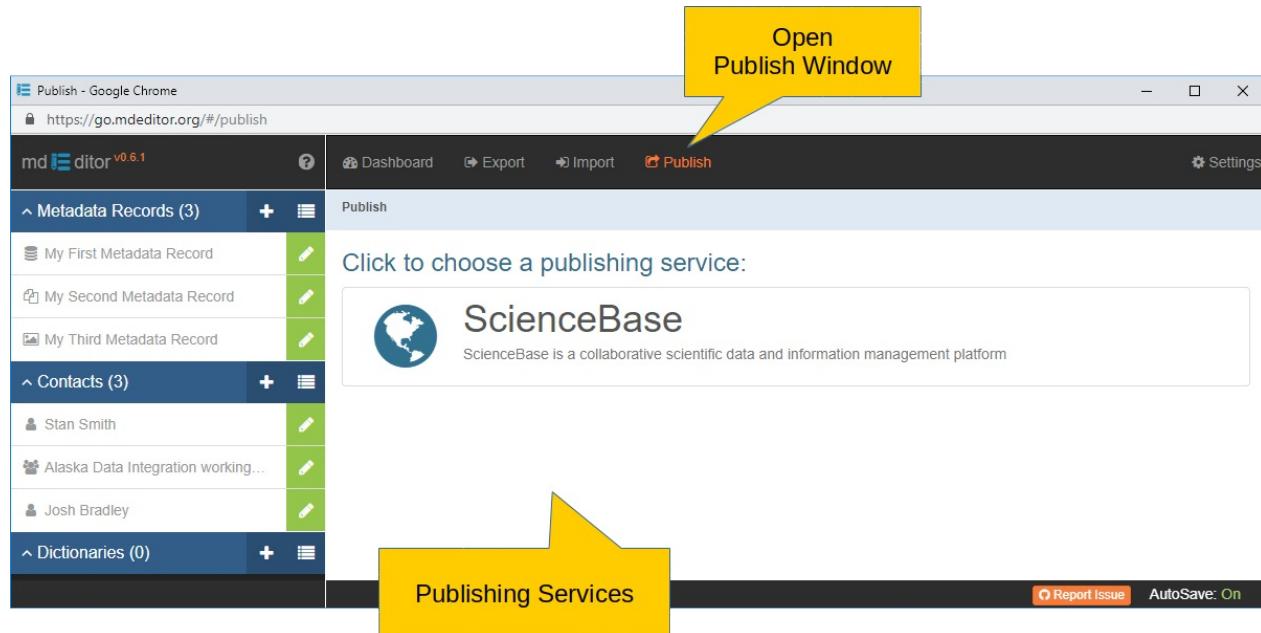


- [Clear Storage Cache](#) [Clear Browser Cache](#)

To clear [browser cache](#) open the [SETTINGS](#) window and in the [General Settings](#) panel click the [Clear Storage Cache](#) button, then confirm.

Publish

Incorporated into mdEditor's design is the ability to export metadata records directly to metadata repositories and clearing houses that support an "Application Program Interface" (API). These APIs are designed, written, and maintained by the repository owners, not by ADIwg and mdEditor support. To establish the interface, mdEditor must implement the repository's API.

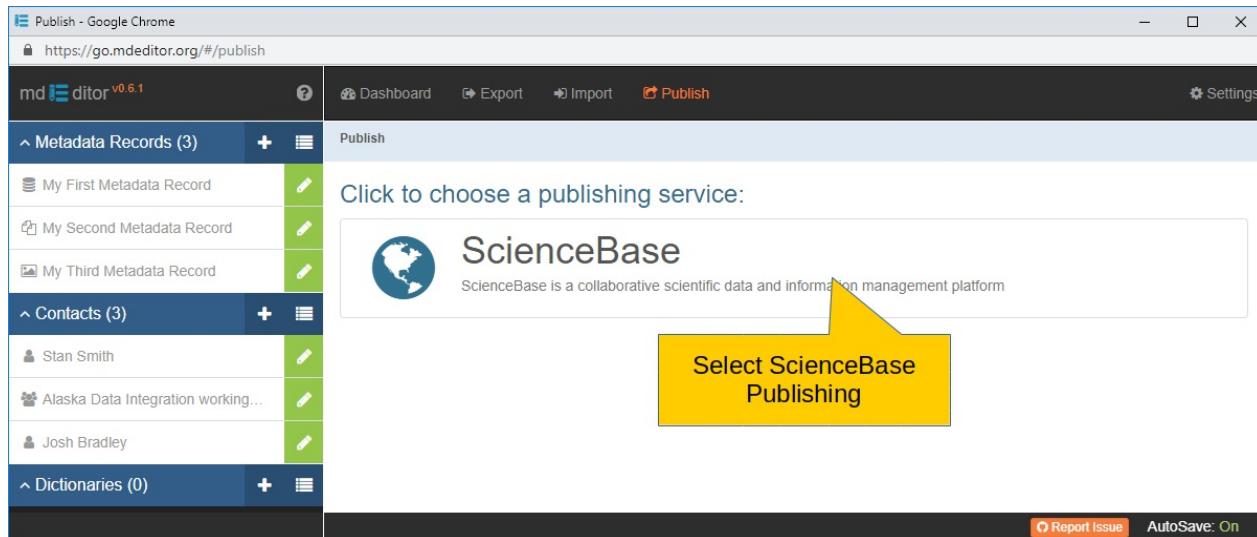


At this time the only supported repository is [ScienceBase](#), the United States Geological Survey's data repository. Because interface rules for each repository are different they are discussed individually.

Publish -- USGS ScienceBase

ScienceBase has its own [metadata schema](#) called **sbJSON**. If you publish from [mdEditor](#) to [ScienceBase](#), the [mdJSON](#) created in [mdEditor](#) will update the [sbJSON](#) for the [ScienceBase](#) item and [mdJSON](#) and XML [metadata](#) files will be attached to the [ScienceBase](#) item. [mdJSON](#) contains more [metadata](#) fields than [sbJSON](#) so what will display on the [ScienceBase](#) item will not include everything in the [mdJSON](#).

[Metadata](#) is published to [ScienceBase](#) in your community's project folder. You must have a [ScienceBase](#) user account with write access to this folder. Once you have successfully published from [mdEditor](#) to [ScienceBase](#), the corresponding [ScienceBase](#) Item(s) will be immediately updated.



Click the large "ScienceBase" button to begin the process.

Please read through sections [Requirements for Publishing](#) and [Testing Publishing](#) before trying to publish any real records.

Overview of Publishing to ScienceBase

The following describes what happens when you publish from [mdEditor](#) to [ScienceBase](#):

1. [mdEditor](#) outputs an [mdJSON](#) file.
2. The [mdJSON](#) file is transmitted via a web service to [mdTranslator](#).
3. [mdTranslator](#) translates the [mdJSON](#) file into [sbJSON](#) and XML.
4. [ScienceBase](#) imports the [sbJSON](#) and attaches the XML and [mdJSON](#) files to the [ScienceBase](#) item.
5. The XML [metadata record](#) is sent to data.doi.gov if the requisite [metadata repository](#) is specified. Note: [metadata](#) repositories are called Harvest Sets in [ScienceBase](#).

Publish -- USGS ScienceBase

Requirements

Publishing requires the [record](#) to be a valid [record](#), meaning that [mdEditor](#) checks that all required fields for a [mdJSON file](#) are present before allowing a [record](#) to be published.

Publishing requires every [record](#) to have a parent Identifier that identifies the [ScienceBase](#) folder where your [record](#) will be sent upon publishing. If you set up your Default Parent Identifier in [SETTINGS](#), then you do not need to add a parent ID to your individual [record](#). However, if you need to publish your [record](#) to a location different than your default folder, then you need to add a Parent ID to your [metadata record](#) (see [Metadata/Parent Metadata](#).)

Please use a testing folder before you update your real records. (Consult the Testing Publishing section of this manual for more information.)

Publish -- USGS ScienceBase

Testing

Please use a testing folder before you update your real records.

1. Determine your workflow for testing:

If you DO NOT already have items on [ScienceBase](#), choose a project and its products to test.

BEST MANAGEMENT PRACTICE: It's recommended that you export a project and its products into its own [mdEditor file](#). Set the default parent identifier as a [ScienceBase](#) folder.

If you DO already have items on [ScienceBase](#), choose one of the following approaches. Note that it will be harder to test without it affecting your real records.

Approach 1 - Take a simple project and product set, and make a copy of the [mdEditor](#) records. In the test version, delete all [ScienceBase](#) IDs (SBIDs) and parent IDs. The SBID will either be located in the citation, or if you imported the [record](#) from SB, the SBID will be the [record](#) identifier. Set the default parent identifier as a folder.

Approach 2- Publish directly to a real [record](#) if you are okay with the risk it presents.

2. Set your Default Parent Identifier in Settings.

3. Select one project with its associated products to test.

4. Follow the publishing instructions above for the scenario that applies to you.

5. Look for any errors in the third column. If you see an error that is 400 and red, it's a problem that you can address. However, if it's a 500 level error in red, that is a [ScienceBase](#) error that is outside the scope of the [mdEditor](#).

6. Verify that your test records have published as expected in your folder on [ScienceBase](#) (or to the real [record](#) if that's how you are testing).

7. After you are satisfied with how your test records published to [ScienceBase](#), you can proceed with publishing your real [record](#).

8. Update your [mdEditor](#) settings to your real Default Parent Identifier.

9. Using the [record](#) you just tested, proceed with publishing to the real location on [ScienceBase](#).

10. Make sure any test SBIDs are removed entirely from the [record](#) you want to actually publish.

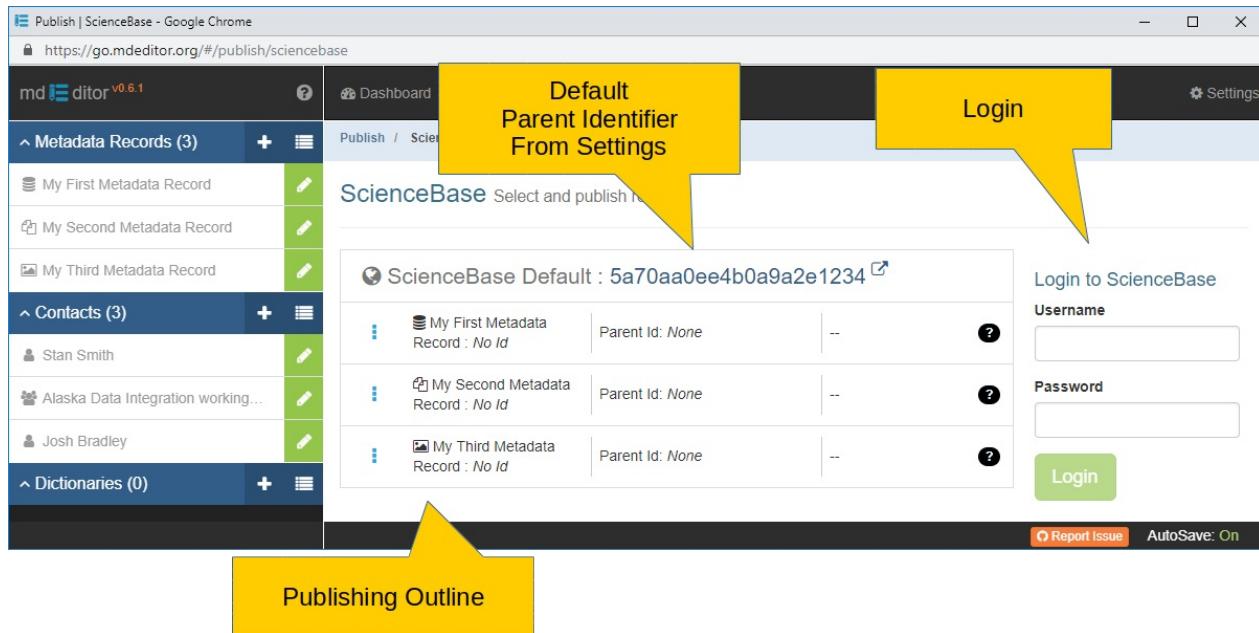
11. Verify that the real records have updated as expected.

12. Proceed with publishing your other records to their real locations.

Publish -- USGS ScienceBase

Publishing

The mdEditor Publishing Outline



The Publishing Outline displays a list of every valid record in mdEditor with its ScienceBase Identifier (if the record already exists on ScienceBase) and its parent ScienceBase Identifier (if present in the metadata). This publishing outline shows records in a parent-child relationship and reflects what you would see when you publish to ScienceBase.

Parent-Child relationships refer to how the records are organized and displayed on ScienceBase. This is different than the Project and Product associations identified within the metadata records.

- **Records without parent IDs** already in their metadata will appear directly under the ScienceBase header in the publishing outline. These records will be published under the default parent identifier you established in the settings. The Default parent identifier is listed in the ScienceBase header, which is hyperlinked to the record on ScienceBase.
- **Records with parent IDs** identified in their metadata will appear below a thick blue line and will be published under the parent ID listed in their metadata.
- Items directly below the ScienceBase header will be published under the ScienceBase item identified in your settings as “Default Parent Identifier.” Items below the blue line will be published under the parent ID specified in the metadata.

For example, if the Default Parent Identifier is your *community*, then projects at the root level in the publishing outline will be added directly under your *community*, but products nested under a project in the outline will be added as a direct child item to the project item on ScienceBase. Items listed at the root level in the publishing outline don't have a parentID that corresponds to a record loaded in mdEditor (Note: you could have other parent IDs identified in those records, but those records are not loaded in mdEditor)

Notes on Moving Records ...

- You can drag and drop records to establish the parent-child relationship, eliminating the need to establish the relationship in ScienceBase. This will also allow you to move items around (e.g., move a product from one project to another) and have that change be reflected on ScienceBase. Remember, this is only about parent-child relationships on ScienceBase, not about project-

product associations.

If you do not want these parent IDs to change, do not drag and drop these records in the publishing outline.

Notes on Parent IDs ...

- If you move a product under a different project, it will update that product's parent ID.
- Parent IDs established through the relationships in the publishing outline will overwrite existing parent IDs in the [metadata](#).
- Dragging and dropping a [record](#) onto the [ScienceBase](#) header at the top will set that [record](#)'s parent ID to the default parent ID you identified in Settings.
- If you have existing parent IDs in your [metadata](#) (and want to keep them as is), do not drag and drop those records onto the [ScienceBase](#) header-- this will erase the existing parent ID and insert what you have set as the default parent identifier.

Publishing Overview

Step 1: Login to [ScienceBase](#)

Step 2: Move Records in the Publishing Outline

Step 3: Submit for Publishing

Step 4: Review Records on [ScienceBase](#)

Step 1: Login to ScienceBase

A login window appears on the right side of the screen - enter your [ScienceBase](#) ID and password, and click Login. When you are logged in, the login window will display who you are logged in as. The current user must have read/write permissions on [ScienceBase](#) for any items to be published (including parent items). You cannot publish until you are logged in.

Step 2: Move Records in the Publishing Outline

Before you move records in the publishing outline please select your scenario below and follow the corresponding guidance.

- **Scenario A - DO NOT have items on ScienceBase**

If you do not have items on [ScienceBase](#) yet, and your desired parent-child relationship is to have each product as a direct child of a project item on [ScienceBase](#):

- Your records will all display under the [ScienceBase](#) header in the publishing outline. These items will be published as a direct child item under the SB item identified in your settings under "Default Parent Identifier."
- You can drag and drop records in the publishing outline to establish parent-child relationships for [ScienceBase](#).
- You can nest items in as many levels as you desire (the most common is a product nested under a project).
- To move a [record](#) back to the root level, drag and drop it on the top line that says "[ScienceBase](#) Default".

- **Scenario B - HAVE existing items on ScienceBase**

You have existing parent-child relationships on [ScienceBase](#) and/or you have intermediate folder(s) between project items and products (i.e., products are not direct child items of Project Items - this is not recommended).

- If you have parent-child relationships already established on [ScienceBase](#) (and those IDs are reflected in the [mdEditor](#) records), you likely do not want to move the records around in the publishing outline.
- If your products are housed in a “Products” folder on [ScienceBase](#) (or other intermediate folders between the project item and the products), then your products will not be nested under projects in the publishing outline. The parent ID for those products is the “Products” folder (which would not have a [record](#) in [mdEditor](#)). If this is your situation, do not change the structure in the publishing outline and publish as is (i.e., with every item organized at the root level in the outline).

Step 3: Submit for Publishing

1. To select a [record](#) to publish, click on it and it will turn green (click again to un-select it).

You cannot publish a record without a parent ID. Sending a non-existent parent ID to [ScienceBase](#) will return an error. If your records contain parent IDs in the [metadata](#), you can choose to publish products without publishing their associated projects at the same time.

2. [mdEditor](#) will publish your records sequentially, starting with the top [record](#) (it will publish the project first, then the products nested below it).
 - If you are publishing to your default parent identifier or if you have changed any project-product relationships in the publishing outline, you will see the updated parent IDs appear in the outline as publishing occurs. If you’re publishing to the existing locations on [ScienceBase](#), the IDs won’t change.
 - These new/updated IDs will be injected directly into the [mdJSON file](#) in [mdEditor](#). However, these updated IDs will not be included in the [mdJSON file](#) that is attached to [ScienceBase](#) as part of the publishing process. You would have to publish the [record](#) a second time to update the [mdJSON file](#) attached on [ScienceBase](#).
3. Upon successfully publishing to [ScienceBase](#), the third column will display a date and time. The [record](#)’s [ScienceBase](#) ID will be displayed in the first column, and the Parent ID will be displayed in the second column. If there are any errors during publishing, they will be noted in the third column.

Step 4: Review Records on ScienceBase

1. Once publishing is done, refresh [ScienceBase](#) to ensure everything is showing up the way you expected it would show up.
 - SB items should be updated with the new [metadata](#) information.
 - SB items should have an [mdJSON](#) and XML file attached.
 - SB items should be in the location reflected in the [mdEditor](#) publishing outline.
2. You can re-publish records as needed (e.g., after updating or correcting [metadata](#)).

Publish -- USGS ScienceBase

Re-Publishing

Once you have published your records for the first time, updating and re-publishing them is straightforward.

How to Re-Publish

1. Load the desired [mdEditor](#) files into [mdEditor](#).
2. Make necessary updates and changes to the [metadata](#).
3. Go to the Publish tab and login to [ScienceBase](#).
4. Select the records you want to re-publish and hit Publish.
5. Verify that the [mdJSON file](#) published to the [ScienceBase](#) page.

The [mdJSON](#) published to [ScienceBase](#) will always contain all of the updated information you published. [sbJSON](#) (and thus what is displayed on the [ScienceBase](#) page) will not always do so. Specifically, keywords that you delete in [mdEditor](#) will not be deleted from [sbJSON](#). [ScienceBase](#) only adds to its "tags" and does not remove tags.

If you delete or change the metadata repository information in [mdJSON](#), you must delete any obsolete or erroneous metadata repository tags directly on [ScienceBase](#). These are called "Harvest Sets" on [ScienceBase](#).

Translate Records

The **TRANSLATE WINDOW** service sends the currently active **Metadata Record** to ADIwg's **mdTranslator** for translation into the **metadata** standard of your choosing. The **TRANSLATE WINDOW** will then capture **mdTranslator**'s output and provide options for viewing and saving the resultant **metadata record**.

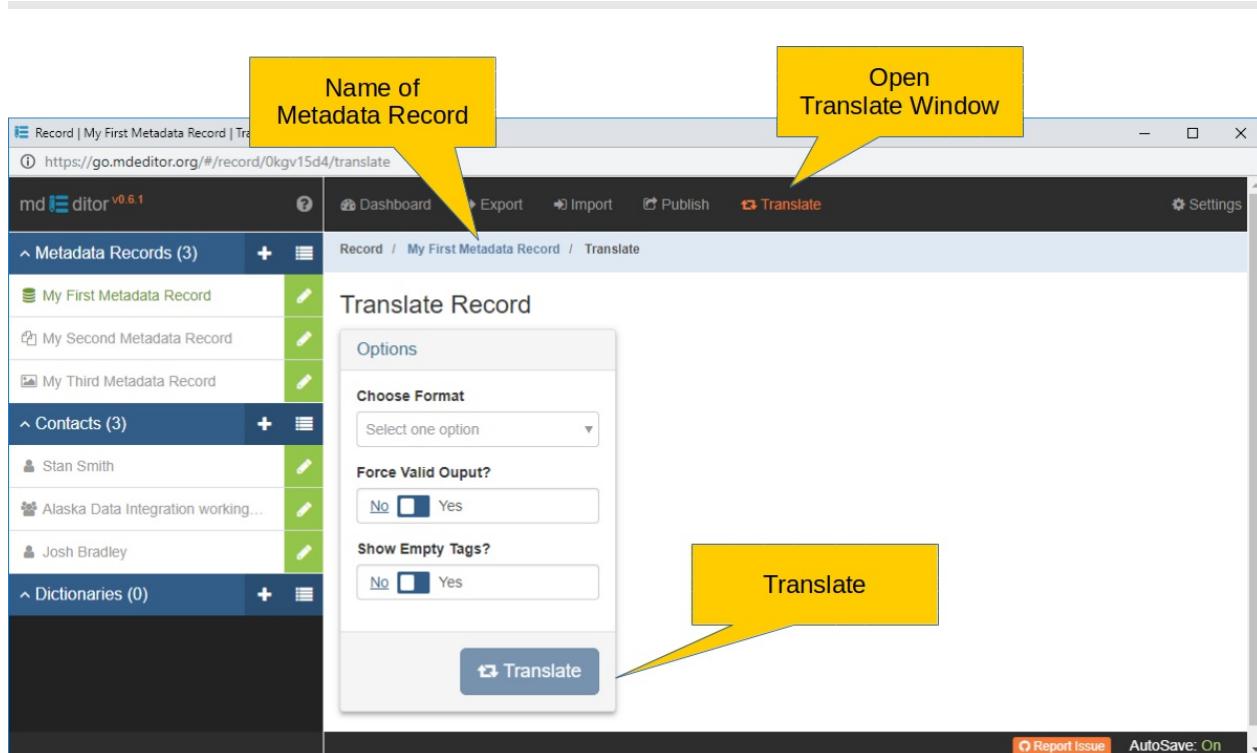
The **Translate** button is only visible on the **PRIMARY NAVIGATION BAR** when a **Metadata Record** is selected for edit. Selecting a **Contact** or **Dictionary** will not cause the **Translate** button to be visible.

It does not matter which section of the **Metadata Record** **EDIT WINDOW** is active for the **Translate** button to become active (e.g. **Main**, **Keywords**, etc.).

The screenshot shows the mdEditor application interface. At the top, there is a navigation bar with links for Dashboard, Export, Import, Publish, Translate, Profile (set to full), Settings, and a search bar. Below the navigation bar, there is a sidebar with sections for Metadata Records (3), Contacts (3), and Dictionaries (0). The main content area shows the 'My First Metadata Record' being edited. The 'Main' tab is selected. On the right side of the edit form, there is a vertical toolbar with buttons for Save (green), Cancel (orange), Copy (blue), and Delete (red). A yellow speech bubble points to the 'Translate' button in the toolbar, which is highlighted in blue. A yellow arrow also points to the 'Open Translate Window' button in the top right corner of the edit form. The bottom right corner of the screen shows 'Report Issue' and 'AutoSave: On'.

Translate Records

Choose Metadata Standard



- **Choose Format** {type: codelist (metadata standards supported by ADIwg's mdTranslator)extensible: NO; multi-value: NO; default: empty}

Usage: Translate the **Metadata Record** using the selected metadata standard.

- **Force Valid Output** {type: Boolean; default: No}

Usage: Applies to required elements of ISO and FGDC standards only. If 'Yes', mdTranslator will attempt to force the output to conform with the selected standard by writing tags for missing required elements in accordance with the output standard's rules. If 'No', mdTranslator will ignore missing required elements which may cause the output to fail validation.

For ISO standards, tags of missing required elements will be written with a 'nilReason="missing"' attributes. For the FGDC CSDGM standard, tags of missing required elements will be written with a value of "missing". No action is taken for HTML and sbJSON outputs.

Not all missing requirements can be patched by mdTranslator. In general, most missing elements can be replaced with some form of a 'missing tag'. Missing sections in FGDC CSDGM outputs cannot be patched, such as a missing contact section. Missing sections in ISO can be patched.

- **Show Empty Tags** {type: Boolean; default: No}

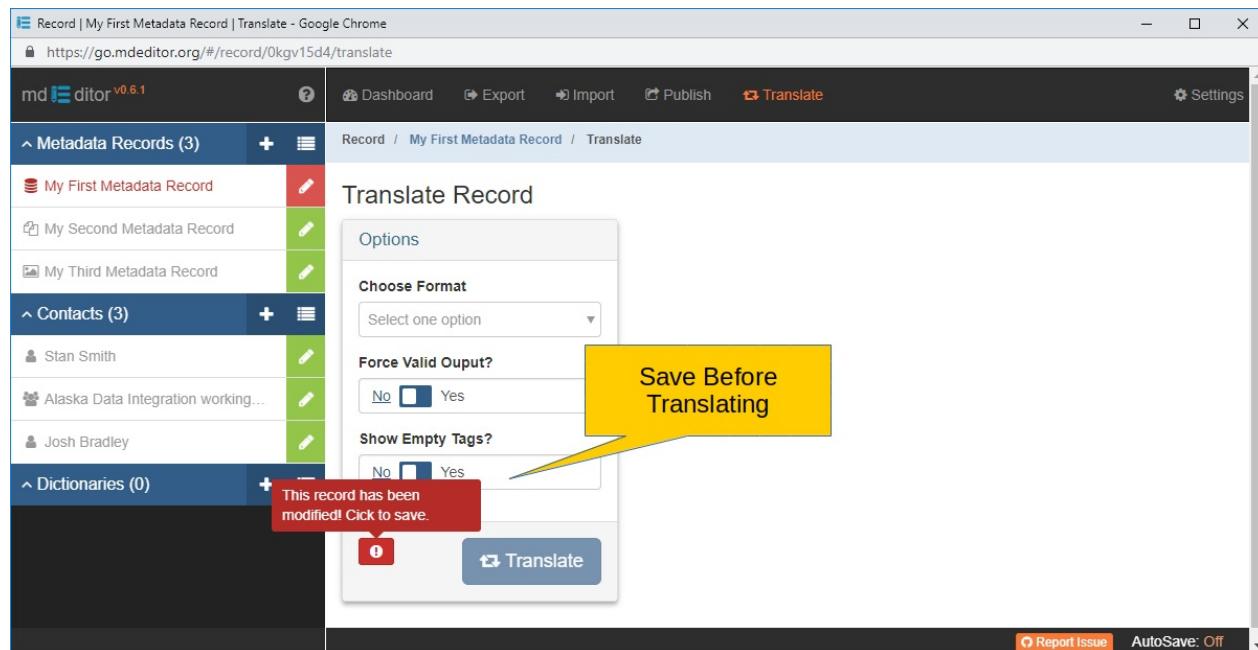
Usage: Applies to non-required elements of ISO and FGDC standards only. If 'Yes', mdTranslator will place an empty tag when values are missing. If 'No', mdTranslator will take no action.

Having an empty place holder tag rather than a missing tag may help some validators and repositories to validate the [metadata record](#). It can also be helpful when visually scanning [metadata](#) records to see what information could be supplied that was not. Adding empty tags is also helpful in understand the structure of the standard. But all this comes with the downside of creating a larger [record](#).

- **Translate** Initiate the translation process. The active [Metadata Record](#) will be sent to a publicly hosted [mdTranslator](#) server, translated, and the result retuned to your [mdEditor](#) where it will be displayed in a [RESULT](#) window.

You must be connected to the internet to translate a [Metadata Record](#).

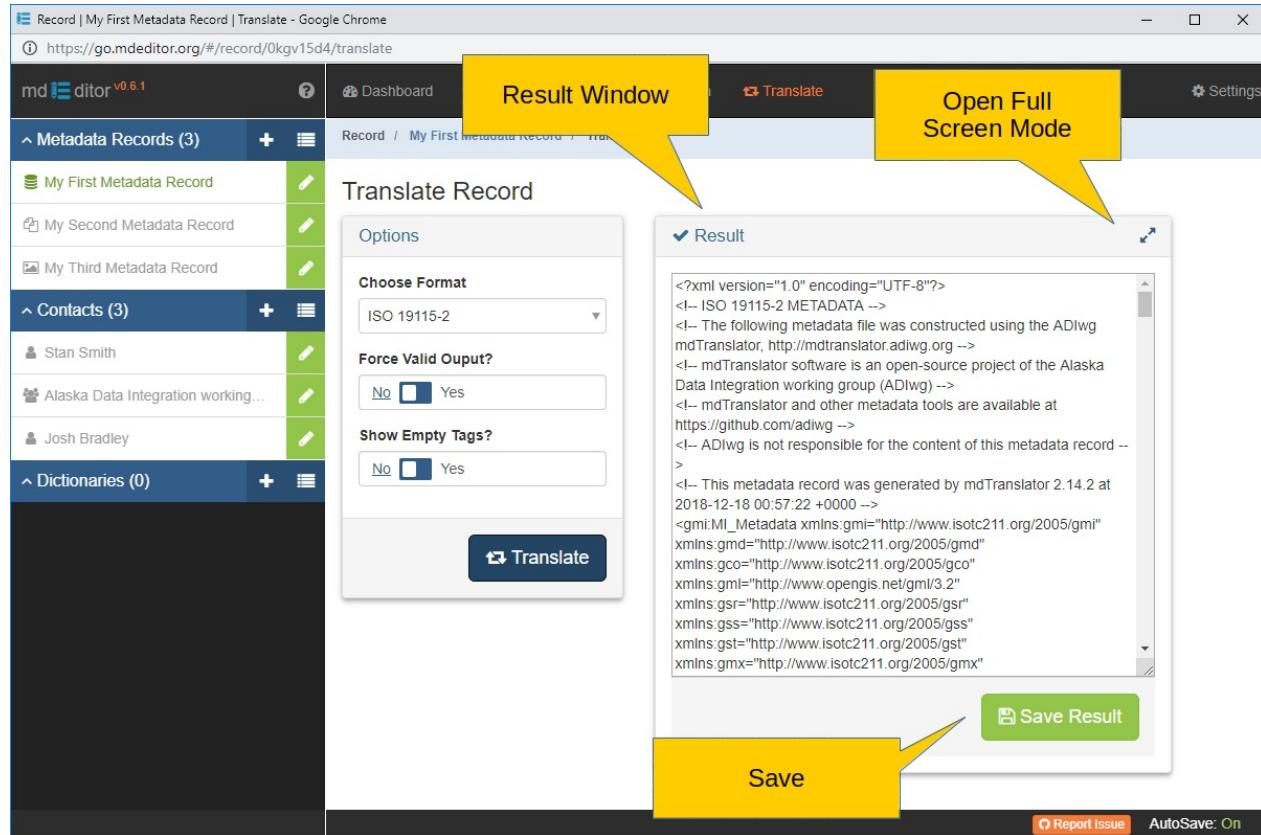
The [Metadata Record](#) to be translated must be saved prior to translation. In cases where "AutoSave" has been turned "OFF" the [Metadata Record](#) may not have been saved when you access the [TRANSLATE](#) window. In this case the [TRANSLATE](#) window will display a button to allow you to perform a 'Save' without returning to the [EDIT WINDOW](#)



Translate Records

Result Window

Output from the translation process of `mdTranslator` is captured by `mdEditor` and displayed in the `Result` panel. Here it can be reviewed and/or saved to your computer's local file system.



- **Full Screen Mode**

Expand the `Result` panel to full-screen mode.

- **Leave Full Screen Mode**

Compress the full-screen `Result` panel back to its original panel view.

- **Save Result** `Save Result`

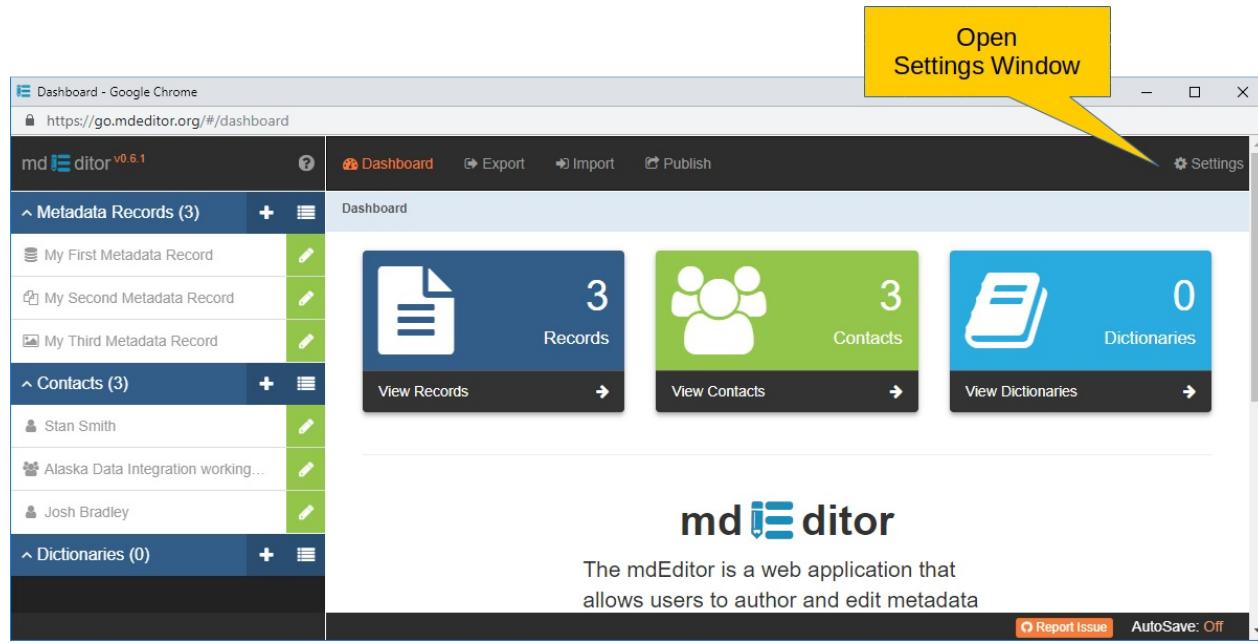
Download the contents of the `Result` panel to the downloads folder on your computer.

The file name assigned to the download file follows the form "`metadata record name_`" followed by a timestamp and a MIME type. The MIME type will be either ".json", ".xml", or ".html" depending on the chosen `metadata` standard. For example, translating "My First Metadata Record" into "ISO 19115-2" will create a file in your downloads similar to "My First Metadata Record_20181214.xml". Note the timestamp is written using the format YYYYMMDD. After download the files may be freely moved and renamed to fit your requirements. Just make sure to keep the MIME type suffix assigned to the download file.

Settings

The **SETTINGS** window provides access for viewing and modifying all **mdEditor** settings and default values. **mdEditor** settings are universal in that they apply to all **Metadata Records**, **Contacts**, and **Dictionaries** loaded in **browser cache**. However, a change made to a default value will not effect any values already written in your **metadata**.

The **Settings** button is available on the **PRIMARY NAVIGATION BAR** from any window in **mdEditor**.



Settings can be exported from the **EXPORT** window. In this way you can maintain one or more sets of settings and defaults to accommodate various **metadata** editing projects.

Settings

General Settings

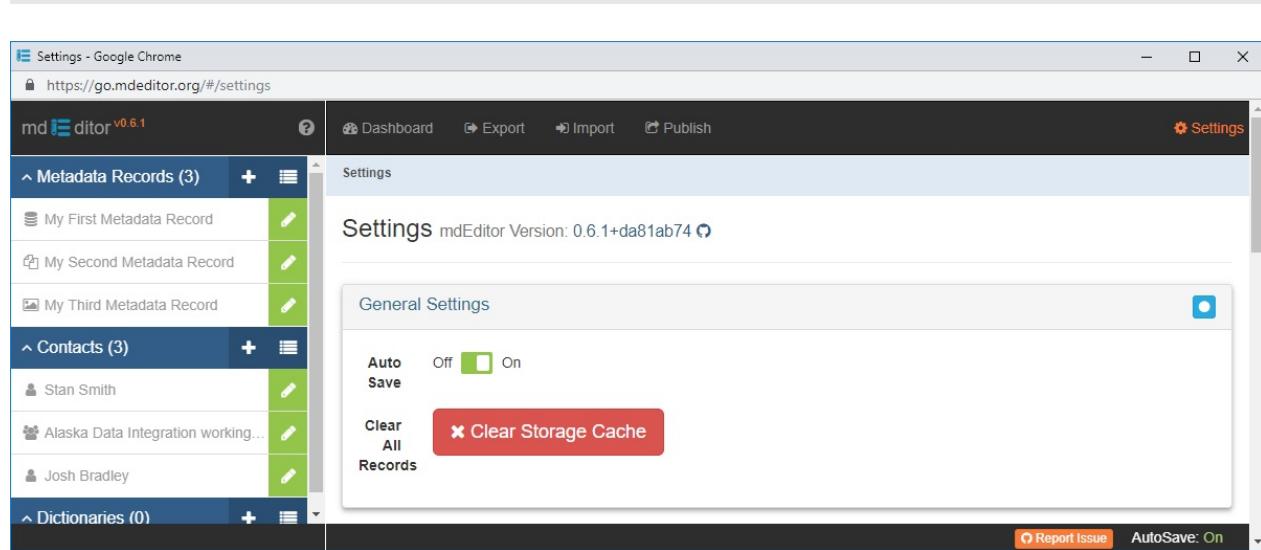


Image 1: General Settings Panel

- **Auto Save**

With Auto Save: ON, all edits in mdEditor are automatically saved. With Auto Save: OFF you will need to do manual saves of your [Metadata Records](#), [Contacts](#), and [Dictionaries](#).

- [Clear Storage Cache](#) [Clear Browser Cache](#)

Clearing [browser cache](#) (aka "Storage Cache") will delete all [Metadata Records](#), [Contacts](#), and [Dictionaries](#) from mdEditor's [browser cache](#). These are the records you can see in mdEditor's [PRIMARY SIDEBAR](#). The action will not remove any items from your computer's [local storage](#).

To clear [browser cache](#) click the [Clear Storage Cache](#) button, then confirm.

Be sure loaded [Metadata Records](#), [Contacts](#), and [Dictionaries](#) have been exported to local storage before clearing cache if you wish to have access to them later.

Settings

Defaults

Default values will pre-fill elements in `mdEditor` as new records and objects are created. The default values can be overridden during normal editing as necessary.

If a default value is cleared (no default value provided) no default value will be set for new elements and objects.

The screenshot shows the mdEditor interface with the 'Settings' tab selected. On the left, there's a sidebar with sections for 'Metadata Records (3)', 'Contacts (3)', and 'Dictionaries (0)'. The 'Defaults' section on the right contains fields for 'Language' (set to 'eng'), 'Character Set' (set to 'UTF-8'), and 'Country' (set to 'USA'). Below these are sections for 'Import URL' (a text input field), 'mdTranslator API URL' (a text input field containing 'https://mdtranslator.herokuapp.com/api/v3/translator' with a 'Default' button), and 'Metadata Repositories' (a table with a 'Add Metadata Repository' button). At the bottom right are 'Report Issue' and 'AutoSave: On' buttons.

- **Language** {*type: codelist (ISO 639 Part 2); extensible: YES multi-value: NO; default: "eng"*}

Usage: Identifies the primary language of the main resource.

- **Character Set** {*type: codelist (IANA - Internet Assigned Numbers Authority); extensible: YES multi-value: NO;; default: "UTF-8"*}

Usage: Name of the character coding standard used in the main resource.

- **Country** {*type: codelist (ISO 3166-1 alpha-3); extensible: YES multi-value: NO;; default: "USA"*}

Usage: Three letter country code.

- **Import URL** {*type: URL*}

Usage: This value will pre-fill the **Import from Online URL** element on the **IMPORT** window. This can be useful if many of your imports come from the same remote location.

- **mdTranslator API URL** {*type: URL*}

Usage: This provides the URL of the `mdTranslator` for the **TRANSLATE** function. If you have hosted a local version of `mdTranslator` that you wish to use, provide its location here. Otherwise, leave this value as the publicly hosted [ADIwg mdTranslator](#).

If you have deleted the [ADIwg](#) translator location and wish to restore it, click **Default**.

- **Metadata Repositories** {*type: array (obj: Metadata Repository)}*

Usage: Add a **Metadata Repository** object to set a default **Collection Title** for a **Repository**. When the **Repository** is selected on an **EDIT WINDOW** the **Collection Title** will auto fill.

See object details

Metadata Repository Object

- **Repository** {*type: codelist (ADIwg MetadataRepository); extensible: YES; multi-value: NO; default: empty}*}

Usage: Repository Name

- **Collection Title** {*type: string; max length: none; default: empty}*}

Usage: A text string to identify a set of resources in the repository.

The mdJSON **Metadata Repository** object has a full **Citation** to describe the repository. Currently this is not fully implemented in mdEditor. The **Collection Title** is inserted into the **Title** element of that citation.

Settings

Date Settings

The screenshot shows the mdEditor application window with the title "Settings - Google Chrome" and the URL "https://go.mdeditor.org/#/settings". The top navigation bar includes "mdEditor v0.6.1", "Dashboard", "Export", "Import", "Publish", and a "Settings" icon. On the left, there are three expandable sections: "Metadata Records (3)" containing "My First Metadata Record", "My Second Metadata Record", and "My Third Metadata Record"; "Contacts (3)" containing "Stan Smith", "Alaska Data Integration working...", and "Josh Bradley"; and "Dictionaries (0)". The main content area is titled "Date Settings" and contains a "Start Month of Fiscal Year" field set to "July" with a calendar icon. Below it is a "Publishing Settings" section with a "ScienceBase" dropdown menu. At the bottom right are "Report Issue" and "AutoSave: On" buttons.

- **Start Month of Fiscal Year** Set the starting month for a fiscal year when defining **Time Period** objects throughout mdEditor [EDIT WINDOWS].

Settings

Publish Settings

Incorporated into [mdEditor](#)'s design is the ability to export [metadata](#) records directly to [metadata](#) repositories and clearing houses that support an "Application Program Interface" (API). These APIs are designed, written, and maintained by the repository owners, not by [ADIwg](#) and [mdEditor](#) support. To establish the interface, [mdEditor](#) must implement the repository's API.

The screenshot shows the mdEditor application window. On the left, there is a sidebar with three sections: 'Metadata Records (3)' containing 'My First Metadata Record', 'My Second Metadata Record', and 'My Third Metadata Record'; 'Contacts (3)' containing 'Stan Smith', 'Alaska Data Integration working...', and 'Josh Bradley'; and 'Dictionaries (0)'. The main area is titled 'Settings' and contains two sections: 'Date Settings' with a dropdown for 'Start Month of Fiscal Year' set to 'July', and 'Publishing Settings' which is expanded to show 'ScienceBase' with a checked checkbox. At the bottom right of the main area, there are buttons for 'Report Issue' and 'AutoSave: On'.

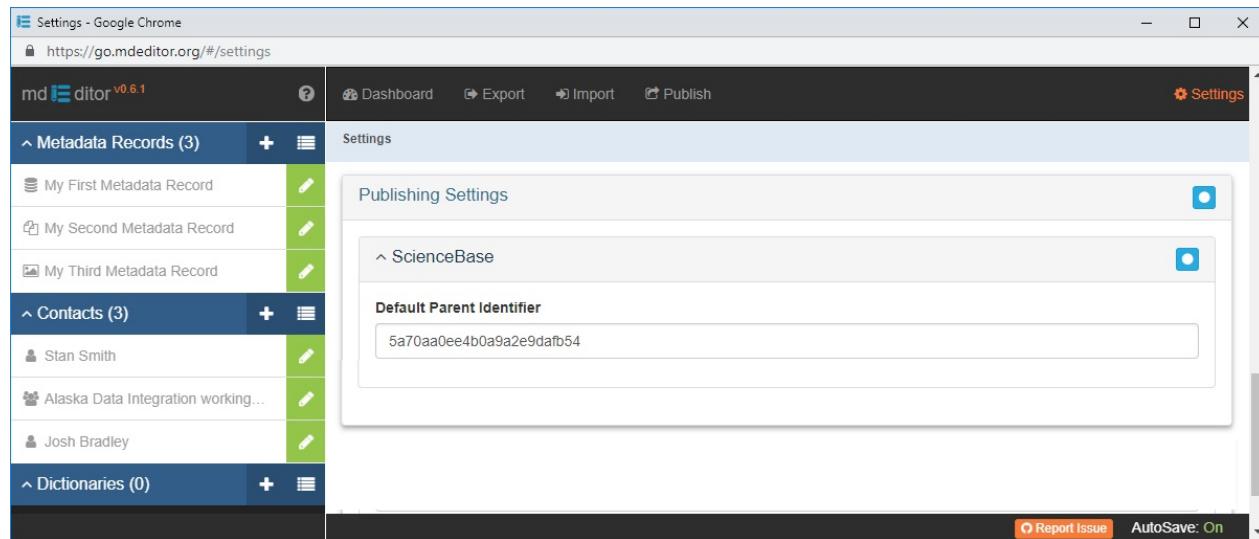
At this time the only supported repository is "[ScienceBase](#)", the United States Geological Survey's data repository. Because setup and interface rules for each repository are different they are discussed individually.

Settings -- Publish

USGS ScienceBase

The United States Geological Survey (USGS) [ScienceBase](#) data repository has one setting.

You must have a [ScienceBase](#) user account with write access to publish records into [ScienceBase](#). See [How do I get a ScienceBase account and become a member of a community?](#) for more information. See also [ScienceBase](#) for information on the collaborative scientific database repository.



- **Default Parent Identifier** In the Default Parent Identifier, enter your [ScienceBase](#) project folder's [ScienceBase](#) ID (SBID).

Workflow

UNDER DEVELOPMENT

Tutorial -- Welcome to the mdEditor Tutorial

This short "mdEditor Tutorial" is designed to provide you with an overview of the mdEditor layout, features, and workflow. It will not get into great detail about any single feature, that can be found in the [Reference](#) section when you are ready. In this tutorial we will work step-by-step through creating, editing, exporting, importing, and translating a simple [metadata record](#).

All that is required to take this tutorial is a current internet browser - the same one you are viewing this document in will work just fine - a color monitor, and about an hour of your time.

Many pages of mdEditor are capable of displaying quite a lot of information. We recommend a screen size of 1200x1080 or better. mdEditor will work with smaller screen sizes but the layout may be altered from screenshots in this document.

Tutorial -- Before We Begin

Before we actually begin entering and editing [metadata](#) in [mdEditor](#), let's spend a few moments discussing the architecture of [mdEditor](#) so you have an understanding of how and where your [metadata](#) is being managed.

Where is my metadata?

Because [mdEditor](#) runs in your internet browser you may quite naturally assume your data is being processed and saved in some far away cloud. It is not. All your data is being processed and stored on *your computer*. [mdEditor](#) is deployed as a web application primarily to avoid deployment and installation issues. Each time you open your browser to [mdEditor](#) you are guaranteed to load the most recent version of the software -- you are always up-to-date.

[mdEditor](#) exploits a feature in modern internet browsers called [browser cache](#). Think of the [browser cache](#) as a temporary workspace for your [metadata](#) that is accessible to browser applications like [mdEditor](#). Although we call [browser cache](#) *temporary* it is not cleared unless it is specifically requested to be cleared. The process used to clear the [browser cache](#) is very similar to the process you use to clear your browser history and the two are generally co-located.

For more permanent storage of your [metadata](#) records after they have been polished to your satisfaction, [mdEditor](#) provides two facilities appropriately named 'Export' and 'Import'. Export moves [metadata](#) from [browser cache](#) to a [local storage](#) folder/file of your specification on your hard-drive or SSD. Import does the opposite and moves [metadata](#) records from your hard-drive or SSD back into the [browser cache](#) for [mdEditor](#) to access. Of course these [local storage](#) locations may be a network server or another networked storage device if you desire.

Because [browser cache](#) is a property of the *browser*, if you change browsers (e.g., from Chrome to Microsoft Edge) you will likely not have access to your [metadata record](#) since each browser manages its cache separately. Don't worry. Records can be exported to [local storage](#) and then imported to the new browser.

What format is my metadata?

[mdEditor](#) saves [metadata](#) in a format we call '[mdJSON](#)'. This is a [metadata](#) format we designed specifically for the Alaska Data Integration Working Group [Metadata Toolkit](#) ([ADIwg Metadata Toolkit](#)) although its features make it attractive to other uses as well. First, [mdJSON](#) is written in JavaScript Object Notation ([JSON](#)) format. [JSON](#) is the native data structure for JavaScript, and thus of internet browsers, and is how all browsers move data across the internet and process it internally. It also has broad support among programming languages, and can be read by humans with little difficulty, all making it a natural choice.

It was necessary for us to create the new [mdJSON metadata](#) standard because we needed to support translation to multiple national and international adopted standards. To do this successfully we need a base standard that possesses a breadth of elements that encompasses all the other standards. We also need the freedom to extend the base standard to support new versions of adopted standards as they are issued. [mdJSON](#) also uses the extensible [JSON](#) format that can generally be modified without breaking your older [mdJSON](#) records.

How does my metadata get translated?

We call the process of converting [mdJSON](#) into another [metadata](#) standard 'translation'. To assist you in translating [mdJSON](#) into ISO or other [metadata](#) standards, [mdEditor](#) provides a translate feature, '[mdTranslator](#)'. [mdTranslator](#) is another tool in the [ADIwg Metadata Toolkit](#) that resides as a publicly hosted web service seamlessly integrated with [mdEditor](#). Ask [mdEditor](#) to translate your [metadata record](#) into [ISO 19115-2](#) format, for instance, and it will connect with [mdTranslator](#), forward your [mdJSON metadata record](#), wait for, and catch the returned ISO [metadata record](#). And all in one step for you!

Tutorial -- Starting Up mdEditor

Now that you have learned about the [mdJSON](#) format used by [mdEditor](#) and how [mdEditor](#) manages its files on your computer, let's start up [mdEditor](#). Oh, and if you skipped that section and don't know about those things it might be best to back up and read [Before We Begin before we begin](#).

As we step through this tutorial you are encouraged to follow along by running [mdEditor](#) in a separate browser window. You won't hurt anything, and the example file we build can be discarded at the end of the lesson. Instructional steps will be highlighted in tan call-out boxes with a wrench thrown in for effect. Like the one below:

Some work for you!

Ready to get started?

Open a new page or tab in your internet browser.

You may use the recent version of any internet browser that supports [HTML5](#) such as [Chrome](#), [Firefox](#), [Safari](#), [Opera](#), or [Edge](#). Although we have only thoroughly tested [mdEditor](#) with Chrome at this time we don't think you should have a problem with any of the others.

Point your browser to [mdEditor](#)

- <https://www.mdEditor.org>

This will bring you to the [mdEditor](#) home page shown below. The home page offers a brief orientation to [mdEditor](#) as well as links to important supporting resources and other propaganda (scroll below the image to view) and most importantly, a link to load [mdEditor](#).

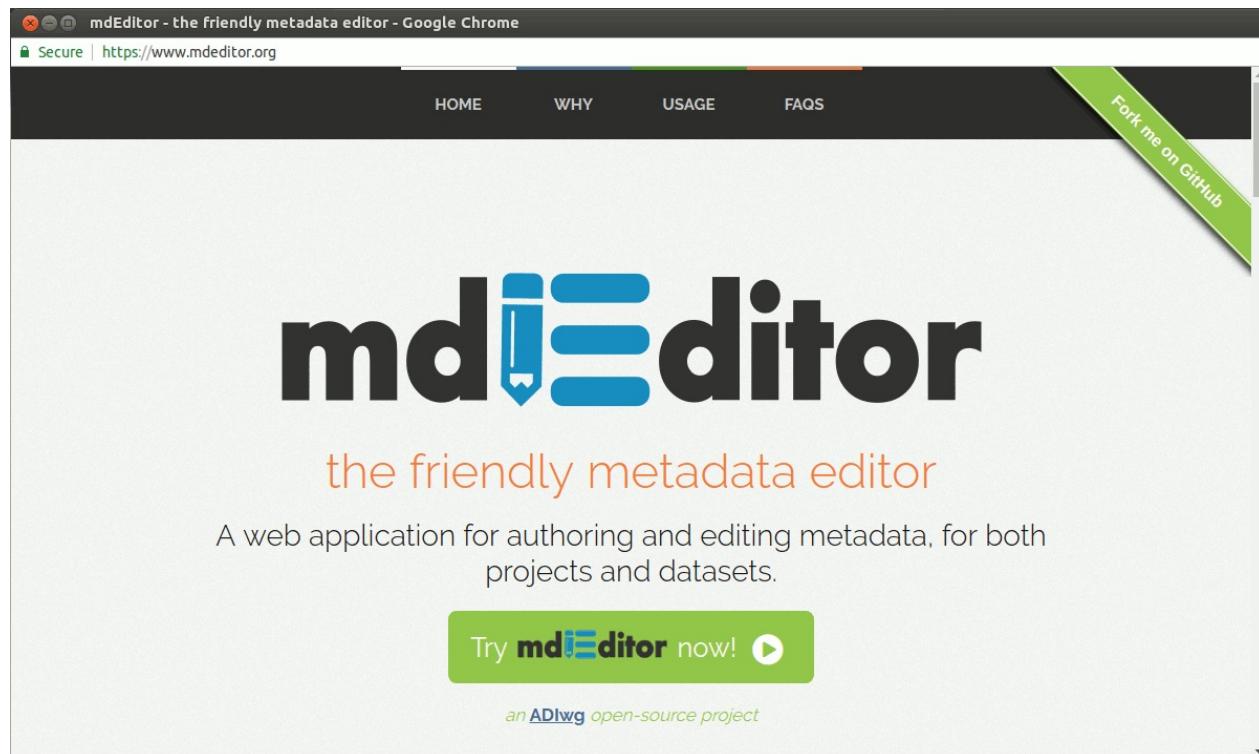


Image 1: The [mdEditor](#) homepage.

Open [mdEditor](#).

- Click the big green button labeled [Try mdEditor now!](#)

You should now see the Dashboard of [mdEditor](#), the starting point for accessing all tasks, and where you will begin each time you launch [mdEditor](#). What you actually see could vary depending on your choice of browser and device. Since [mdEditor](#) is smart enough to reconfigure the display based on available visual space, it will look quite different on your mobile device from the way it appears on your large work-place monitor. However, don't take this as a recommendation to attempt editing [metadata](#) from your iPhone!

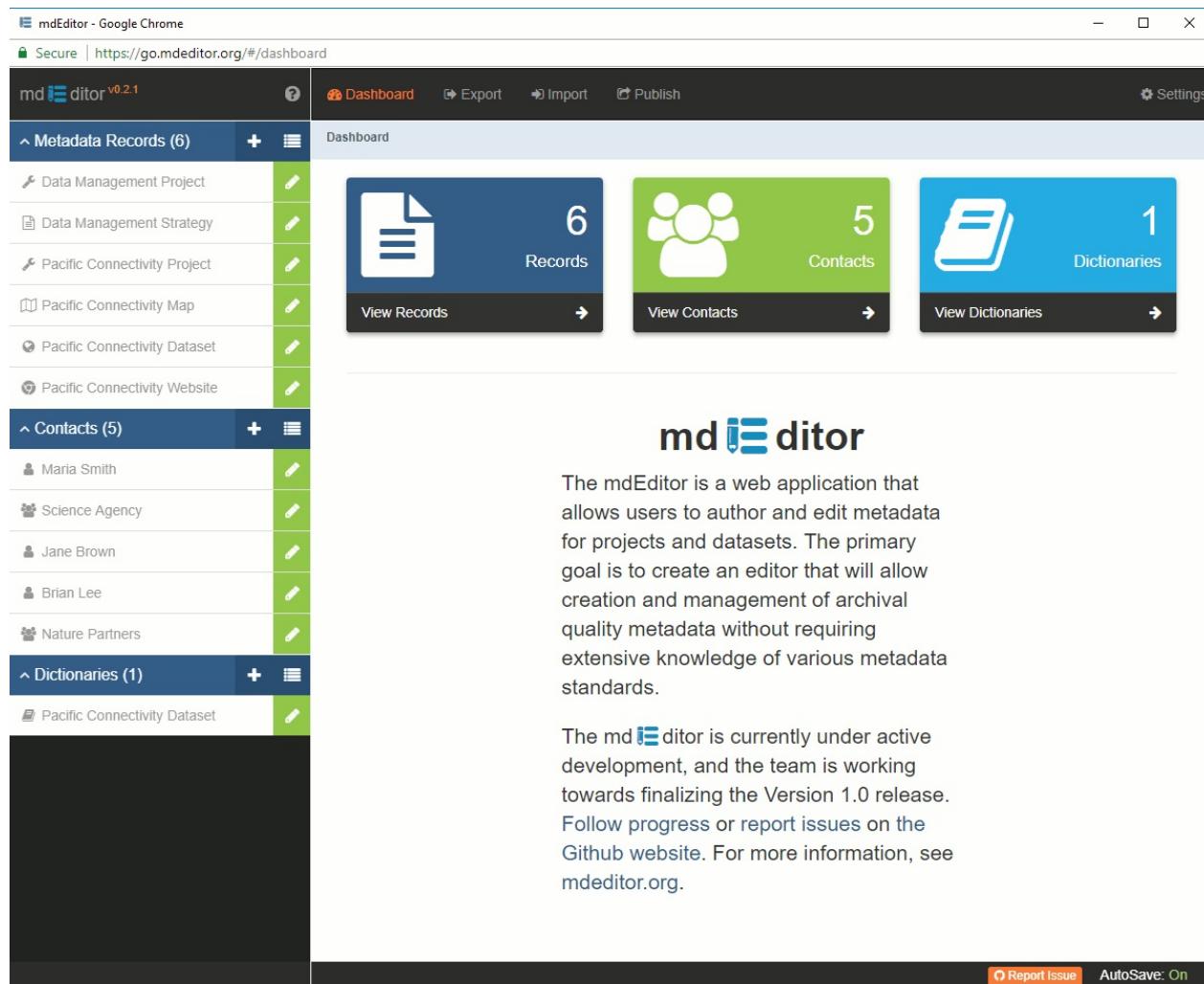


Image 2: The dashboard view.

When you opened mdEditor you may have seen an alert message telling you the software has changed since your last visit and outline new features that have become available. The message will not interfere with your editing. Just read the message, close it, and continue.

Notice that the left sidebar lists the [metadata](#) records, contacts, and data dictionaries currently loaded into your [browser cache](#). This is a list of *your* records and so will be different from those pictured in the screen shot. If this is your first time using [mdEditor](#) the lists will be empty.

As a shortcut, the next time you connect to [mdEditor](#) you can save a step and bypass the [mdEditor](#) home page by going directly to the [mdEditor Dashboard](#) at <https://go.mdeditor.org>.

Now, for our tutorial let's create a first [metadata record](#) together! This will be a practice [metadata record](#) so feel free to enter any values you like and even play around a bit as we go. But stay close enough to the script so you can follow along from step to step.

Tutorial -- Creating a Simple Metadata Record

In this section we will step through creating a simple [metadata record](#). Admittedly our [record](#) will be far too simple to serve as a meaningful [metadata record](#) in the real world, but it will contain enough to give you an idea of how [mdEditor](#) works. The [Reference](#) section of this documentation will examine the features of [mdEditor](#) in more detail. For now, open your browser and load [mdEditor](#) so you can see the Dashboard. See [Starting up mdEditor](#) if you missed out on how to do this.

You should see something like this ...

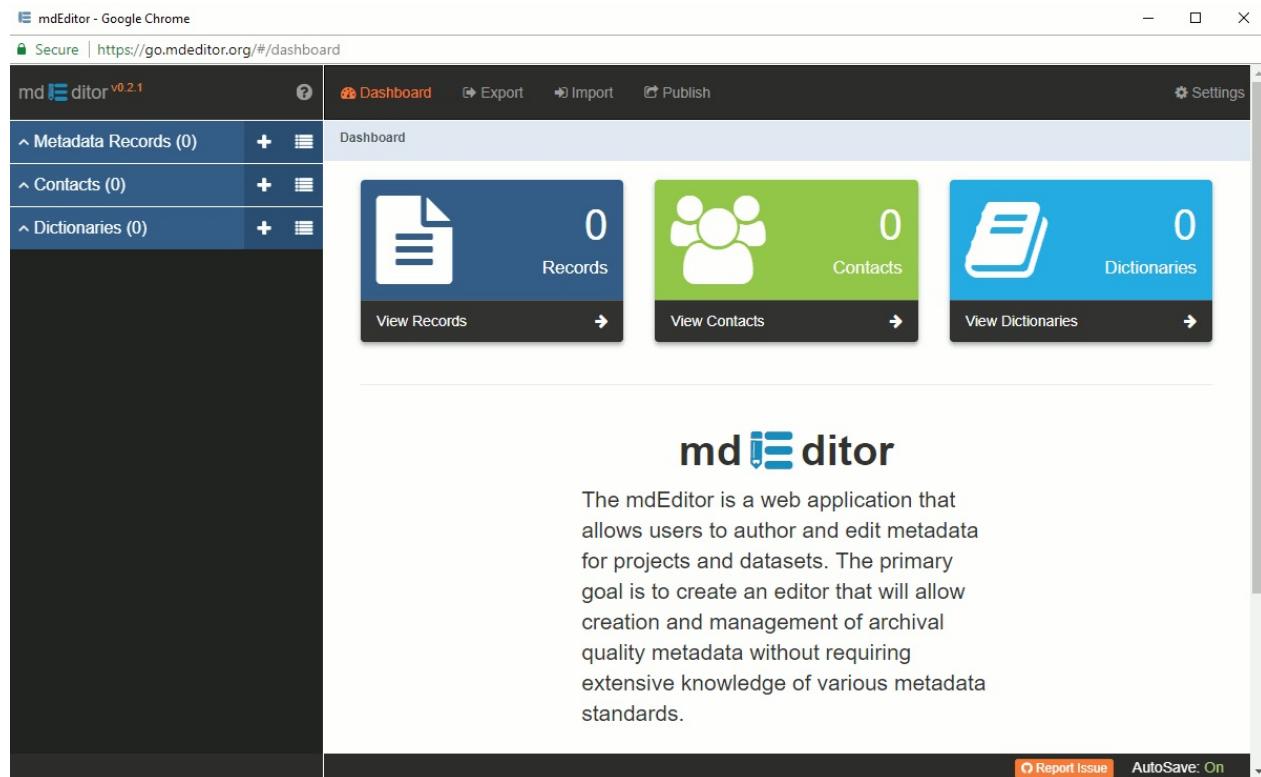


Image 1: Dashboard view with no records.

Notice that there are three blocks at the top of the Dashboard labeled "Records", "Contacts", and "Dictionaries". These are the different object types we can create and link together using [mdEditor](#). The blocks tell us that we have exactly zero (0) objects of these types created and loaded into [browser cache](#) at the moment.

The left menu-bar provides the same information but persists throughout our editing and provides us with a means to add new objects and reopen existing ones for editing.

Ready to start?

Tutorial -- Add a New Metadata Record

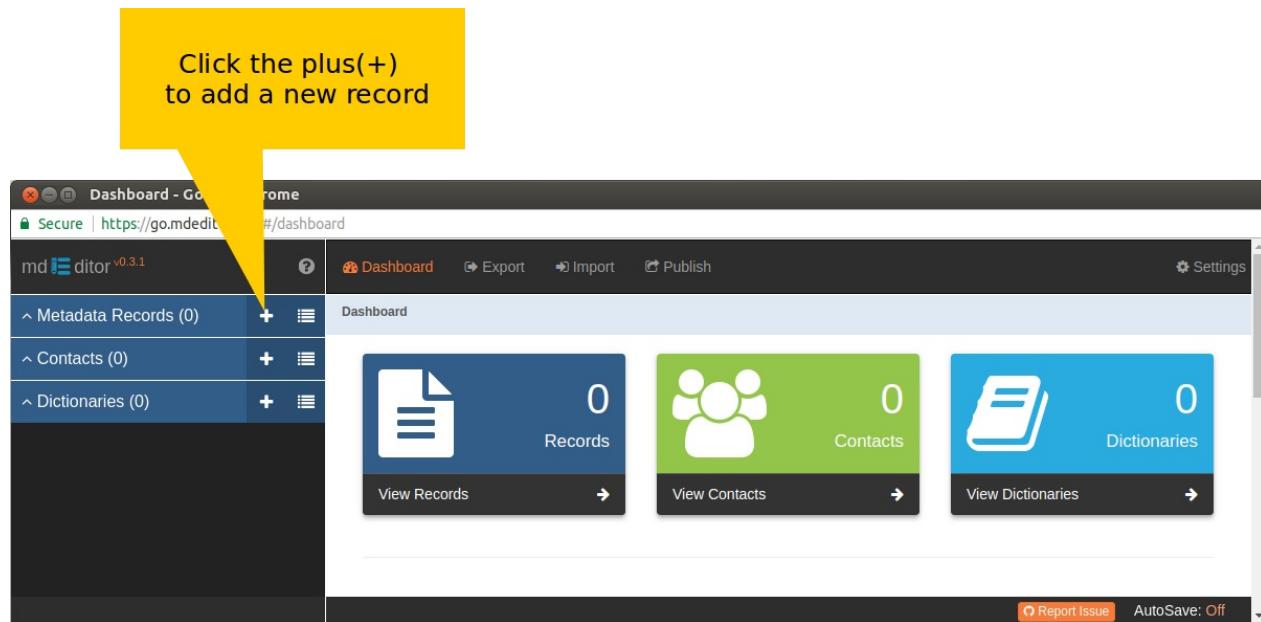


Image 1: Adding a new record

Create a New Record.

- Click the plus — button on the left menu-bar next to "Metadata Records"

You should see something like this ...

A screenshot of the 'Create New Record' form. The left sidebar shows 'Metadata Records (1)'. The main form has a title 'Create New Record'. It includes fields for 'Record ID' (auto-generated), 'Record Title*' (with a red asterisk), and 'Resource Types'. The 'Resource Types' section has a table with one row: 'Choose type of resource' and 'Name of resource'. At the bottom are 'Save' and 'Cancel' buttons.

Image 2: The newly created, unsaved record

The "Create New Record" form collects the minimal information [mdEditor](#) requires to save a new [metadata record](#). This minimal information is, of course, not sufficient to meet the minimum of any [metadata](#) standard, but just enough that you and [mdEditor](#) can find the [record](#) for editing.

"Contacts" and "Dictionaries" are added in a similar manner. We'll discuss these items later. For now, just add a new metadata record.

Record ID

Notice that [mdEditor](#) has filled in a [Record ID](#) for you. By default [mdEditor](#) assigns a [UUID](#) (Universally Unique Identifier) as the [Record ID](#).

You may change the Record ID later if you like, but it must be unique among all your metadata records otherwise there may be some confusion later on when using more advanced [mdEditor](#) features or publishing the [metadata](#). If you have a reliable record identification system, use it, otherwise best to keep the [UUID](#).

Record Title

Here is where you will assign a title that will describe the main resource of this [metadata record](#). In addition to becoming part of your [metadata record](#), this title will also be used in the left side-bar to identify and access your [record](#).

Enter your [Record Title](#).

Notice the record title appears in the left side-bar as you type the title in the edit panel. When you want to access the record in the future, you'll do that from the left side-bar.

Resource Types

Choose a resource type for the main resource described by this [metadata record](#). Resource type describes the broad category of the main resource, e.g. "dataset", "project", "software", or "sciencePaper". The select control will provide these and other resource types for you to choose from. You may optionally provide a name for the resource.

Enter a Resource Type and Resource Name.

Notice the Resource Type block has a [Add Resource Type](#) button. Click this button to enter another resource type in cases where the resource is in multiple formats such as "tabularDataset" and "map".

We are ready to save the [metadata record](#). The [Save](#) button at the bottom of the panel should have become active and turned a darker shade of green.

Click the **Save** button.

Wow! Now there's a lot more stuff on the screen. Let's spend a few minutes getting oriented before we enter more content into our new [metadata record](#).

Tutorial -- Navigating the Edit View

Your newly created [metadata record](#) should appear very similar to the following screen image, without all the text balloons of course...

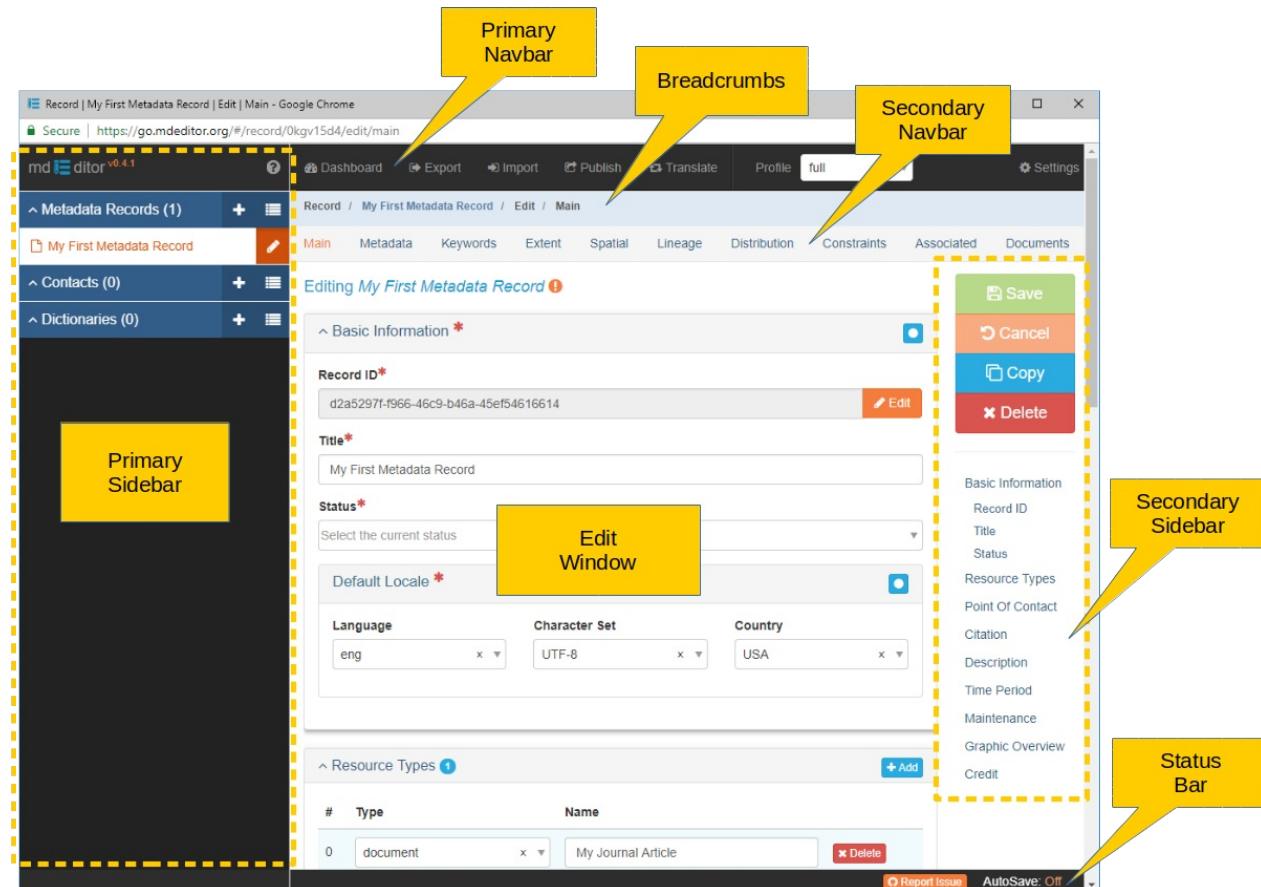


Image 1: The Edit View of a [metadata record](#)

Since there are quite a few buttons and icons in [mdEditor](#) to help make the [metadata](#) editing process as quick and clean as possible, let's divide the window up into parts and take a look at each of these separately.

Throughout the remainder of this documentation the following notations will be used ...

- Window parts (identified in the above image) will be formatted as **WINDOW PART**
- Within the **EDIT WINDOW** ...
 - sections (found in the **SECONDARY NAVIGATION BAR**) will be formatted as **Section Name**
 - **EDIT WINDOW** panels will be formatted as **Panel Name**
 - **EDIT WINDOW** panel elements will be formatted as **Element Name**

All these will be discussed in more detail over the next few pages.

Tutorial -- Primary Navigation Bar

The **PRIMARY NAVIGATION BAR** is the top-most navigation bar, which has been outlined with a yellow rectangle in the image below. This bar contains buttons that navigate you away from the Edit View (or whichever view you happen to be on at the time) to other facilities within **mdEditor**.

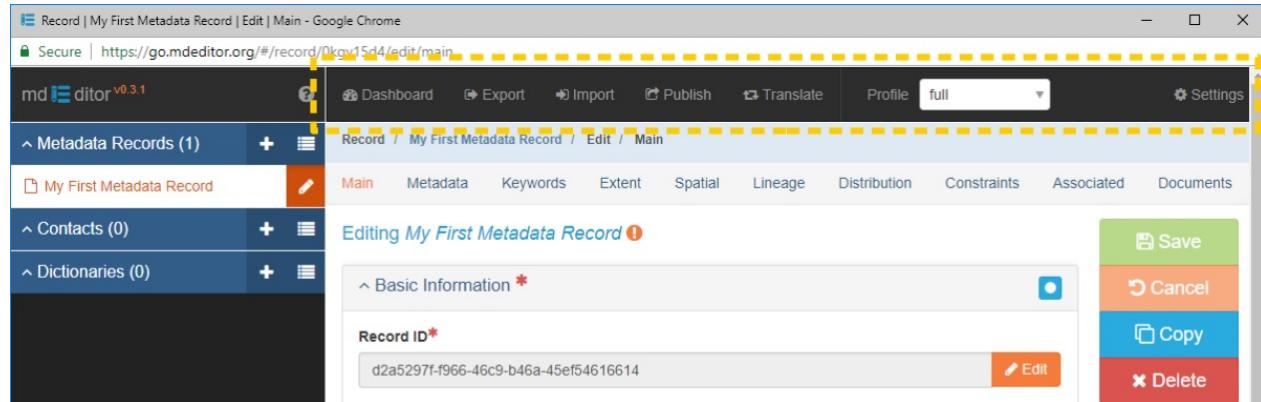


Image 1: The Primary Navigation Bar

Not all **PRIMARY NAVIGATION BAR** buttons are available from every window. For instance, "Translate" is not available from the "Dashboard". If a button seems missing, don't panic. Look around - you're likely just in the wrong place!

Dashboard

The Dashboard View is the initial view when starting **mdEditor**. It displays relevant notes about **mdEditor**'s status and a few statistics for the **metadata** records you currently have loaded in **browser cache**.

Export

The Export facility helps you move the **metadata** records you have been editing from **browser cache** to your local and networked storage devices for long-term backup and storage.

Import

The Import facility helps you load **metadata** records from your local and networked storage into **browser cache** for editing with **mdEditor**.

Publish

The Publish facility can transmit your **metadata record** directly to a supported **metadata repository**, handling most or all interface actions for you.

Translate

The Translate facility interfaces with the publicly hosted **mdTranslator**. It will send the selected **metadata record** to the translator, request translation into the **metadata** format of your choice, and capture the output to be viewed and saved to your **local storage**.

Profile

Profile does not navigate away from the Edit View, but instead modifies the behavior of the Edit Window by setting which panels and elements are displayed and whether or not they are required.

The default Profile is 'full'. When the 'full' profile is selected ALL panels and elements are visible for editing. Requirements for elements are set by the mdJSON schema, which is the minimum information required for a valid metadata record.

Custom profiles can be written to meet the requirements of an organization or the specifications of a particular resource type.

Settings

The settings button will take you to the Settings View, where you'll find options that modify the default behavior of `mdEditor`.

Tutorial -- Primary Sidebar

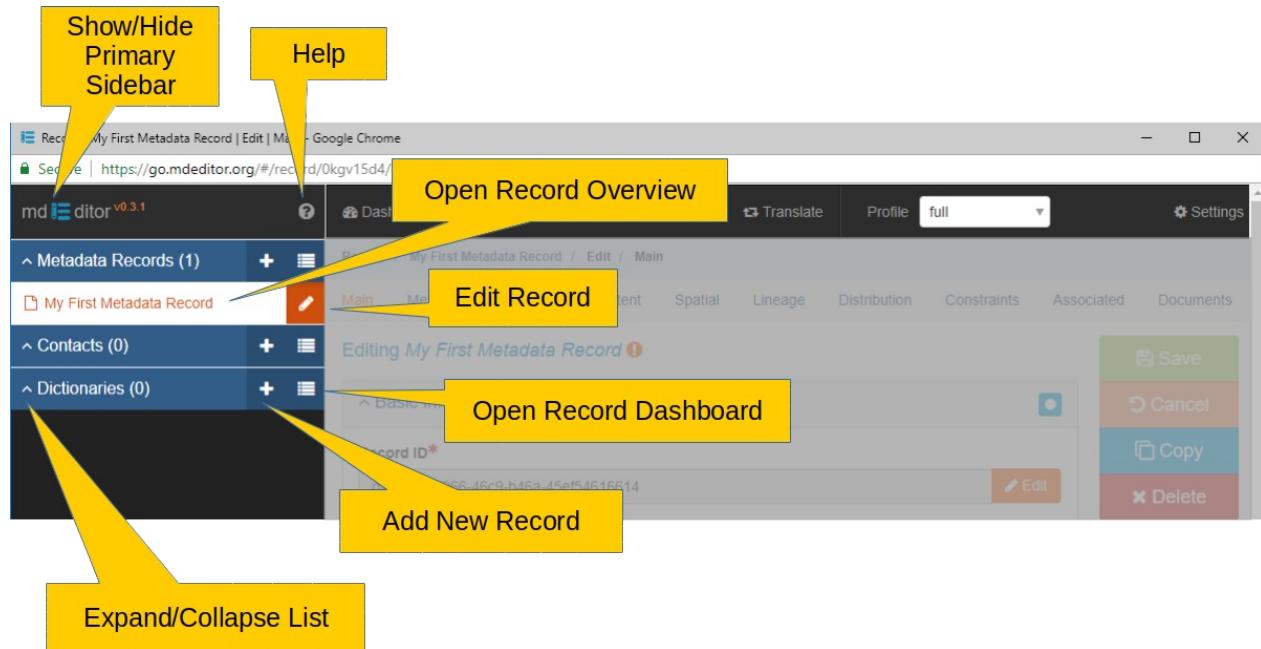


Image 1: The Primary Sidebar

Show/Hide

Toward the top of the PRIMARY SIDEBAR is the mdEditor logo. Clicking on the logo will hide or show the PRIMARY SIDEBAR. This may be helpful to gain more screen real estate while working on smaller devices.

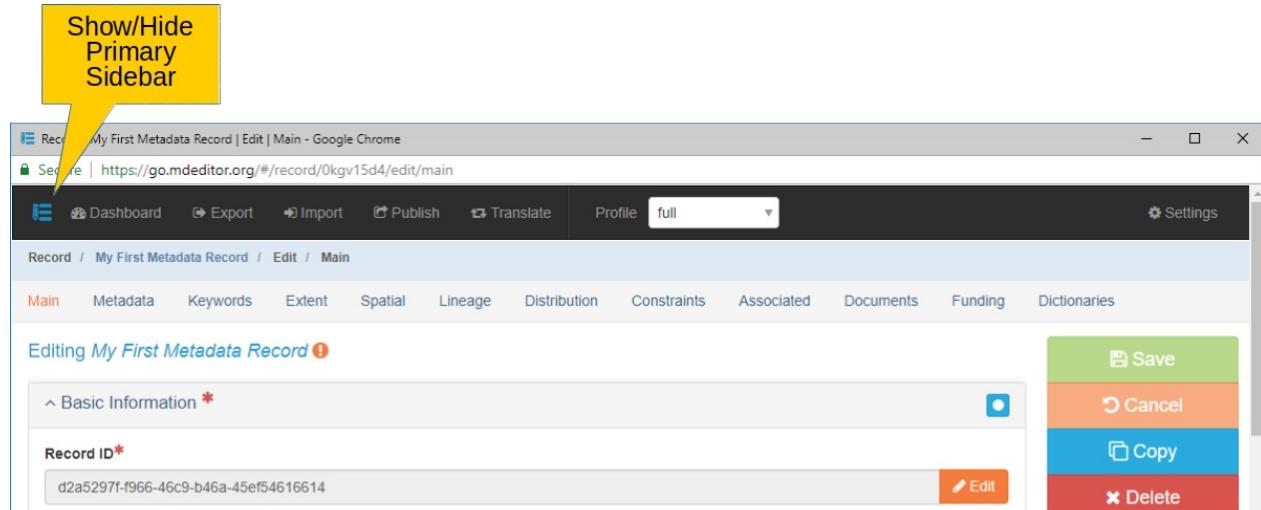


Image 2: The Primary Sidebar Collapsed

Context Sensitive Help

Clicking on the question mark icon will display help appropriate to the current page. The help window will also provide a link back to the corresponding page in this document.

Open Record Overview

Clicking on a [record](#) name, in this case a [metadata record](#), will change the display in the edit window to an overview of the [record's](#) data. Data cannot be edited from this read-only view.

In "Image 1" above, the record name and icon are colored orange because the record contains schema errors. This is to be expected since we just created the record and some required data has yet to be entered. In this case, the record is missing a point-of-contact, citation, and other elements. To enter this missing information we enter the edit mode as described in the next paragraph.

Edit Record

Click on the pencil icon next to any [record](#)'s name to edit the [record](#). The color of the text and icon indicate its current status.

- Green indicates the record is saved and contains no schema errors.
- Orange indicates the record contains some schema errors.
- Red indicates the record's data has not been saved.

Note that all the above colors will be a shade darker for a record currently being edited than for the other records in the [PRIMARY SIDEBAR](#).

When "AutoSave" is turned on (in Settings) you will not see records in red since all entries are automatically saved.

Open Record Dashboard

Click the list icon to display a dashboard with a list of all records of the associated type. This dashboard will allow you to Show, Edit, Delete, Preview, or review errors for any of the records listed.

The dashboard can be particularly helpful when you have more records than can be displayed in the Primary Sidebar or when you want to apply an action to more than one [record](#).

Add New Record

Click the plus icon to create a new [record](#) of that type.

Expand & Collapse Record List

Click an up arrow icon to collapse an open [record](#) list. Or click the down arrow icon on a collapsed list to reveal its contents.

Tutorial -- Secondary Navigation Bar

The **SECONDARY NAVIGATION BAR** buttons allow you to jump between major sections of the **EDIT WINDOW**. The button for the currently active edit section will be highlighted orange. Notice that in the image below **Main** is highlighted as this is currently the active section displayed in the **EDIT WINDOW**.

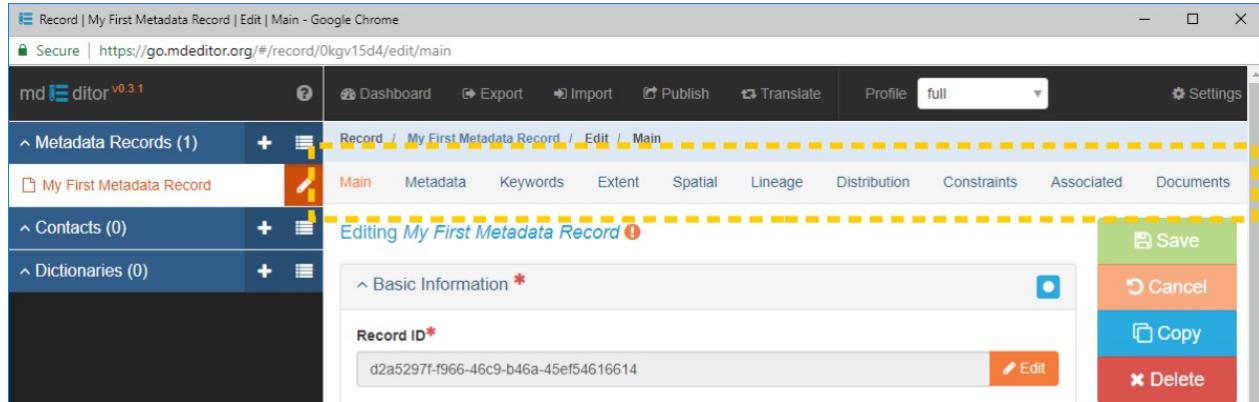


Image 1: The Secondary Navigation Bar

Click one of the other buttons in the **SECONDARY NAVIGATION BAR** to jump to that section. Then return to the **Main** section. We will discuss the details of each **EDIT WINDOW** section later in this document. For now, we will stay on the **Main** section.

Tutorial -- Secondary Sidebar

The **SECONDARY SIDEBAR** is divided into two sections as shown in the screen image below. On the next few pages we will explore these sections one at a time.

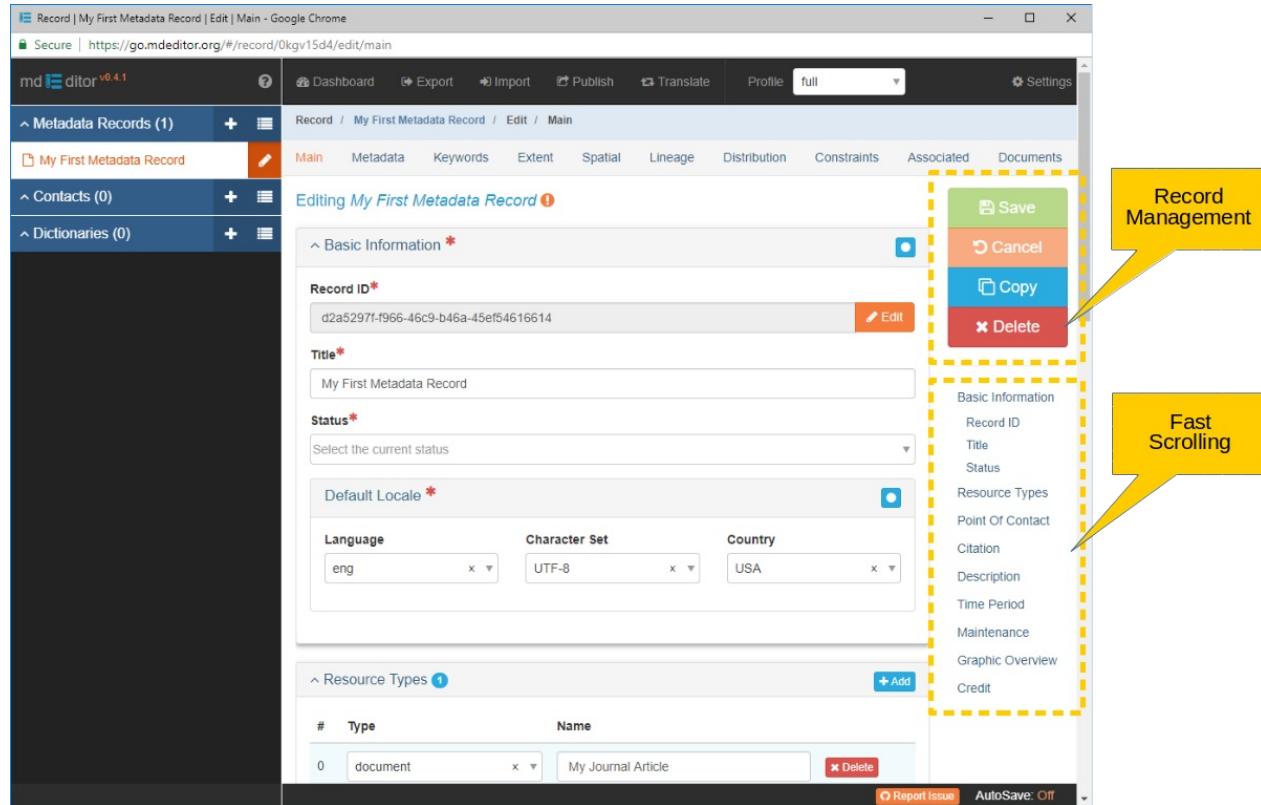


Image 1: The Secondary Sidebar

Tutorial -- Record Management

The **RECORD MANAGEMENT** buttons provide a means of managing the movement of your currently active **record** between **memory** and **browser cache**.

If you are unsure about the differences between **memory**, **browser cache**, and **local storage** please read the Getting Started Section "Before We Begin", again :).

Save **Save to Browser Cache**

The 'Save' button will copy the active **record** in **memory** into **browser cache**.

If the AutoSave option is set to 'On' the 'Save' button will be deactivated. This is because all changes are automatically saved to browser cache for you, so there is nothing else to save! This is the default mode and can be overridden on the 'Settings' panel.

Cancel **Cancel Unsaved Changes**

The 'Cancel' button will undo all changes made to your active **metadata record** since the last 'Save', i.e. will reload the active **record** from **browser cache** into **memory** replacing any changes made since it was last saved.

If the AutoSave option is set to 'On' the 'Cancel' button will be deactivated. This is because all changes were automatically saved to browser cache for you; the record in memory and the browser cache are identical.

Copy **Copy Record**

Clicking 'Copy' will make a copy of the active **record** be it **metadata**, contact, or dictionary. The copied **record** will be added to **browser cache** and displayed in the 'Create New Record' window to provide an opportunity to change the **record** name.

- Click 'Copy' for the current **record**.
- Change the **Record Title** to My Second **Metadata Record**'
- Click 'Save' - you are now editing the copied **record**.
- Click 'Delete' - we don't need to save this **record**.
- Click 'Confirm' - to complete the delete
- The Dashboard for **Metadata Records** is displayed. Click 'Edit' to return to editing 'My First **Metadata Record**'.

Delete **Delete Record**

Delete will delete the active **record** from **memory** and **browser cache**. Clicking 'Delete' will change the button to **Confirm** to give you a chance to reconsider or recover from an errant click. There is no 'Undo' for the delete function.

Tutorial -- Fast Scrolling

Some **EDIT WINDOW** sections are too long to fit on a standard monitor and require some scrolling to see all the elements of the page.

The Edit Window can get even longer as you continue to add your [metadata](#). This can make it inconvenient to locate just the information you're looking for by visually searching the [record](#).

To assist with quickly displaying the portion of the page you need, the **FAST SCROLLING** feature was added to the **SECONDARY SIDEBAR**. This facility provides links to quickly scroll the panel you need to the top of the **EDIT WINDOW**. In addition, the window's current scroll position is highlighted in the **SECONDARY SIDEBAR**.

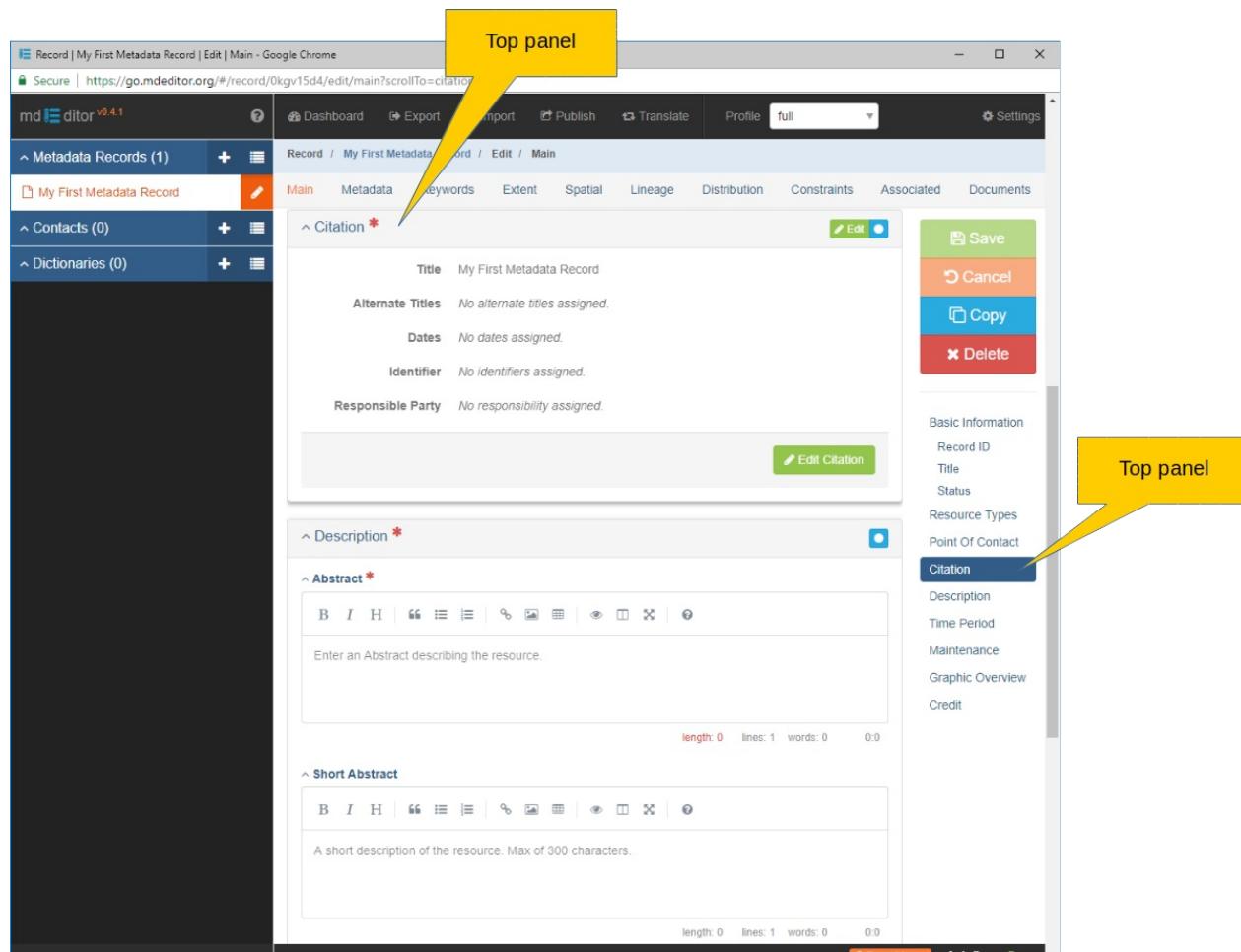


Image 1: Secondary Sidebar Fast Scrolling Facility

The **FAST SCROLLING** buttons are named for the panels in the **EDIT WINDOW** section. Clicking on a **FAST SCROLLING** button will scroll the selected panel to the top of the window, saving you the search. Scrolling the window manually also highlights the **FAST SCROLLING** button for the **EDIT WINDOW**'s top-most panel, providing visual confirmation of the window's scroll position.

Browser scrolling behavior presents a full page whenever possible. Therefore, when a **FAST SCROLLING** button near the bottom of the list is clicked (e.g. 'Graphic Overview' in the above image), that panel will scroll as close to the top of the page as possible while still presenting a full page on your monitor. The **FAST SCROLLING** button for the top-most panel will be highlighted, which may not be the one you clicked. This behavior may vary by browser.

- Scroll the window and watch the highlighting of the **FAST SCROLLING** buttons change. Observe the pairing of the highlighted **FAST SCROLLING** button and the **EDIT WINDOW**'s top panel.
- Click on a few of the **FAST SCROLLING** buttons and observe page scrolling.

Each **EDIT WINDOW** section will have a unique **FAST SCROLLING** section that matches up with the panels for that **EDIT WINDOW** section. However, some **EDIT WINDOW** sections have only a few or even no panels, so not all **EDIT WINDOW** sections will have a **FAST SCROLLING** feature in the **SECONDARY SIDEBAR**.

Tutorial -- Status Bar

The **STATUS BAR** is always present at the bottom of the **mdEditor** window. There are only a few items on the **STATUS BAR** at present which are discussed below.

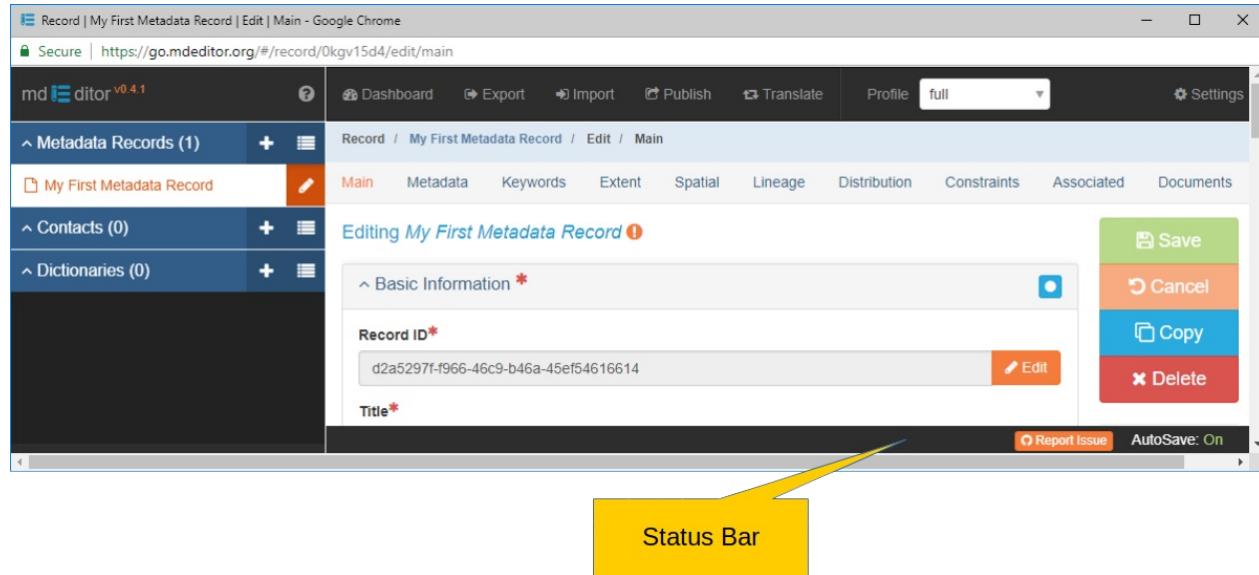


Image 1: The Status Bar

Report Issue Issue Reporting and Tracking

An issue you encounter while using **mdEditor** can be reported and tracked using the 'Report Issue' button. This will open to a page of known **mdEditor** issues and provide a means of posting to an existing issue or creating a new issue if warranted.

You must have a GitHub account to view the list of existing issues or to submit a new issue. GitHub accounts are free to create.

AutoSave Status

No surprise, the 'AutoSave' status reports the status of the 'AutoSave' option and will either be 'On' or 'Off'.

Tutorial -- Metadata Edit Window

And finally, the **big kahuna**, the **EDIT WINDOW**! The **EDIT WINDOW** is where all **metadata** entry and editing takes place. While the buttons and controls described to this point deal primarily with records, the **EDIT WINDOW** gets down to working with individual **metadata** elements.

Let's begin by describing the plethora of buttons and informational icons on the **EDIT WINDOW**. I have collapsed the panels on my **EDIT WINDOW** screen to make the buttons and icons we are discussing more visible.

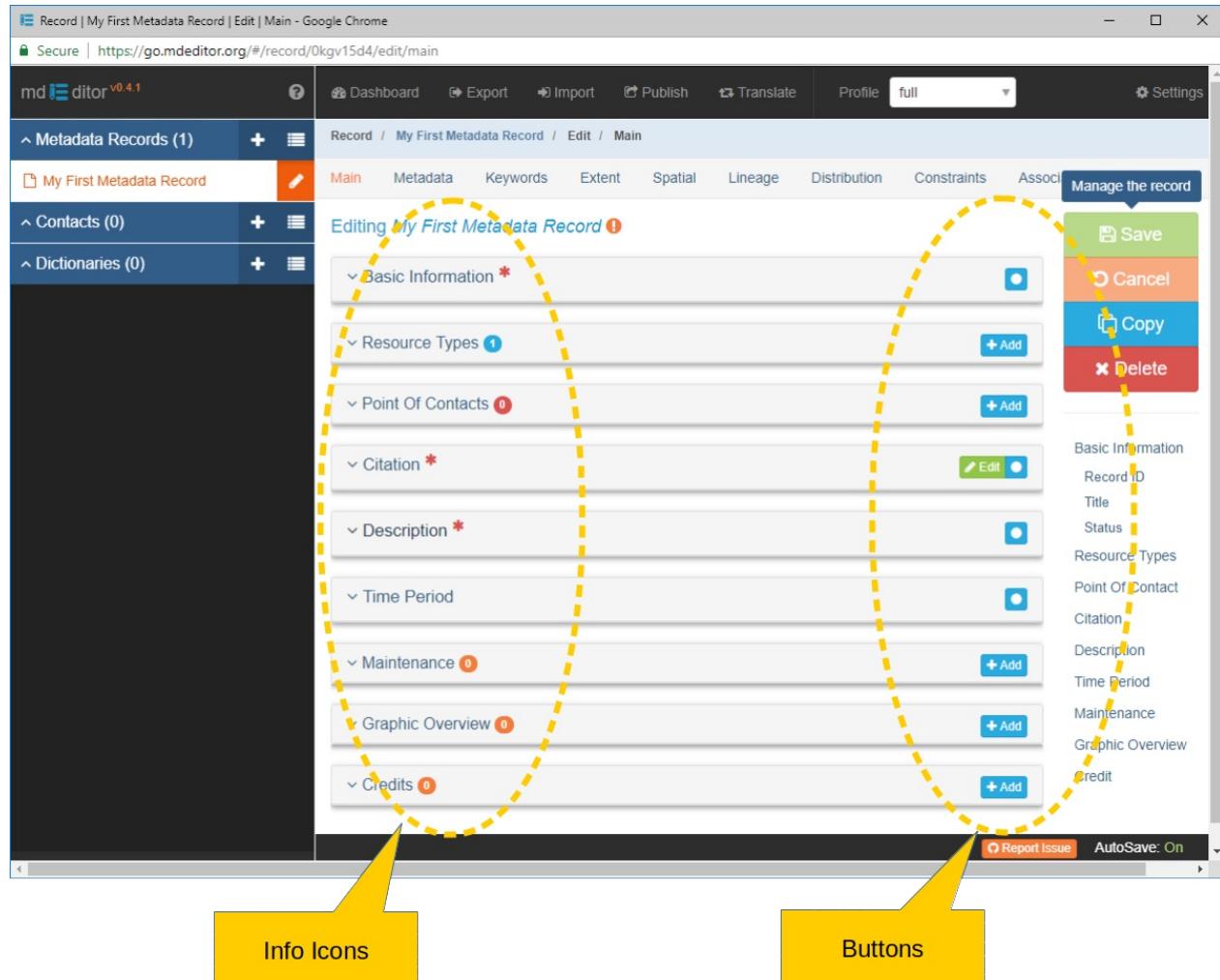


Image 1: The Status Bar

Notice that in general, information icons appear on the left hand side of **PANEL TITLE BARS** following the panel title. Buttons appear on the right side of the **PANEL TITLE BARS**. Both the icons and buttons pertain only to the contents of their respective panels.

Let's divide up the introduction of icons and buttons and discuss each separately over the next few pages.

Tutorial -- Edit Window Icons

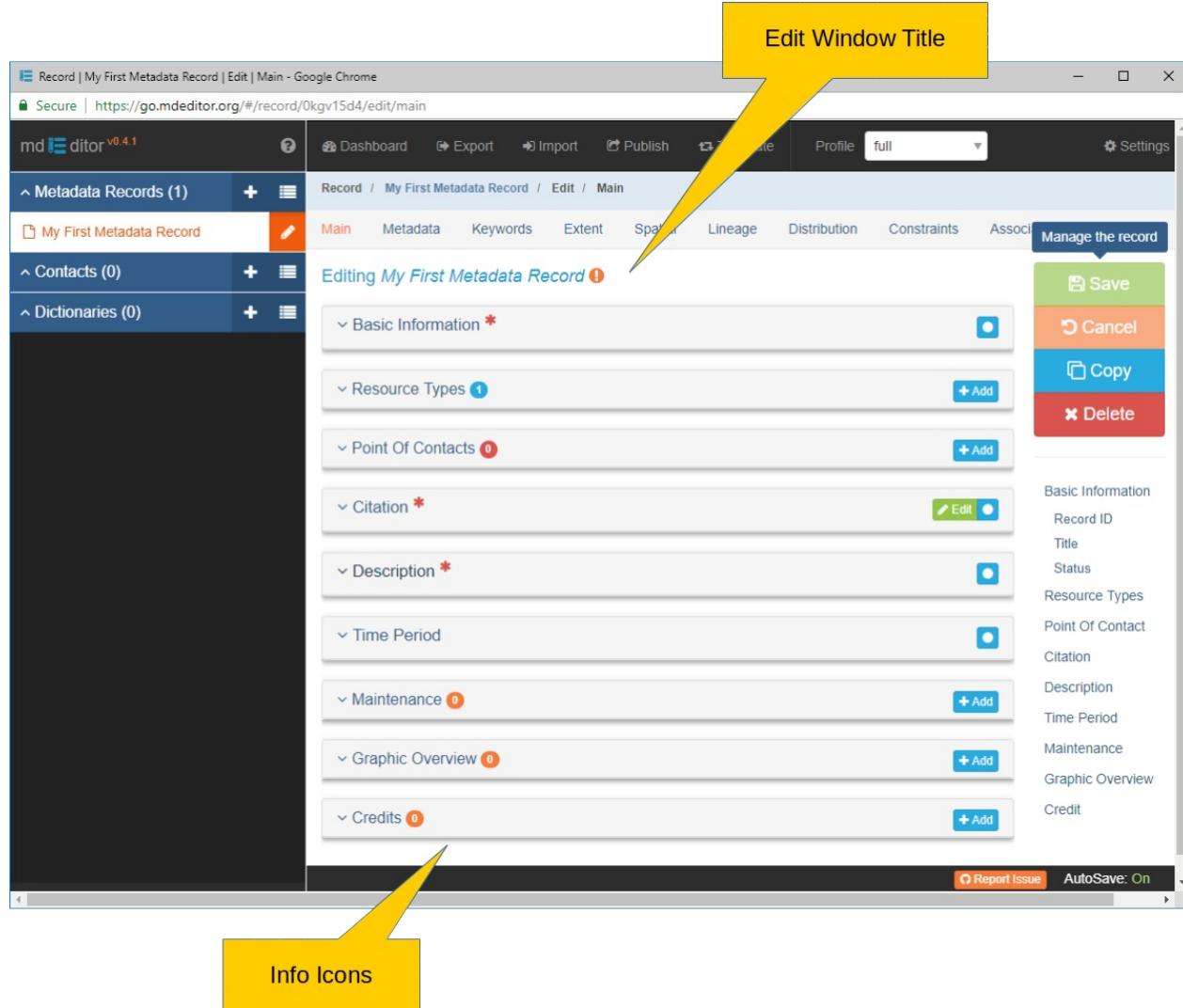


Image 1: Edit Window Icons

Panel has Required Elements

The red asterisk after a panel name indicates that one or more of its elements is required in order to meet the minimal standard for a valid [metadata record](#) - or contact or dictionary depending on which [record](#) type you are editing.

The red asterisk is also used within panels to identify the specific elements that are required.

Many [EDIT WINDOW](#) panels permit multiple instances of a panel's data. These instances will be referred to as "objects" throughout the documentation. [Points Of Contact](#) and [Credits](#) are examples of repeating objects found in the [EDIT WINDOW's](#) [Main](#) section. These array-type panels are easily identified by two characteristics: first, for inserting new objects they have an [Add](#) button on the right side of the panel title bar; and second, following the panel name they have a colored circle with an inscribed number indicating how many objects have been entered. The color of the circle provides information about the optionality of the objects. The colors and their meaning are explained below.

0 Object Required - none found

A red circle with a 0 indicates that at least one object for this panel is required and none have yet been entered.

0 Object Optional - none found

An orange circle with a 0 indicates that objects for this panel are optional and none have yet been entered.

1 Number of Objects Found

A blue circle indicates that at least one object has been entered. The number of objects entered is displayed inside the circle.

Once an object has been added to an array panel, the red or orange circle will change to blue and the inscribed number will be greater than zero, so the optionality of the panel's objects is no longer obvious.

Expand & Collapse Panel

Click an up arrow icon to collapse an open panel. Or click the down arrow icon on a collapsed panel to reveal its contents.

At the top of each **EDIT WINDOW** section there is a title line indicating what is being edited. For example, in the image above the title is "Editing My First *Metadata Record*". Following this title several icons may be present. These are identified below.

! Record Not Saved

An exclamation mark inscribed in a red circle indicates the **record** has unsaved changes. The icon also acts as a **Save** button. Clicking the icon will save your data to **browser cache**.

! Record Has Error(s)

An exclamation mark inscribed in an orange circle indicates the **record** has detectable errors. Clicking the icon will display a list of the detected errors.

Tutorial -- Edit Window Buttons

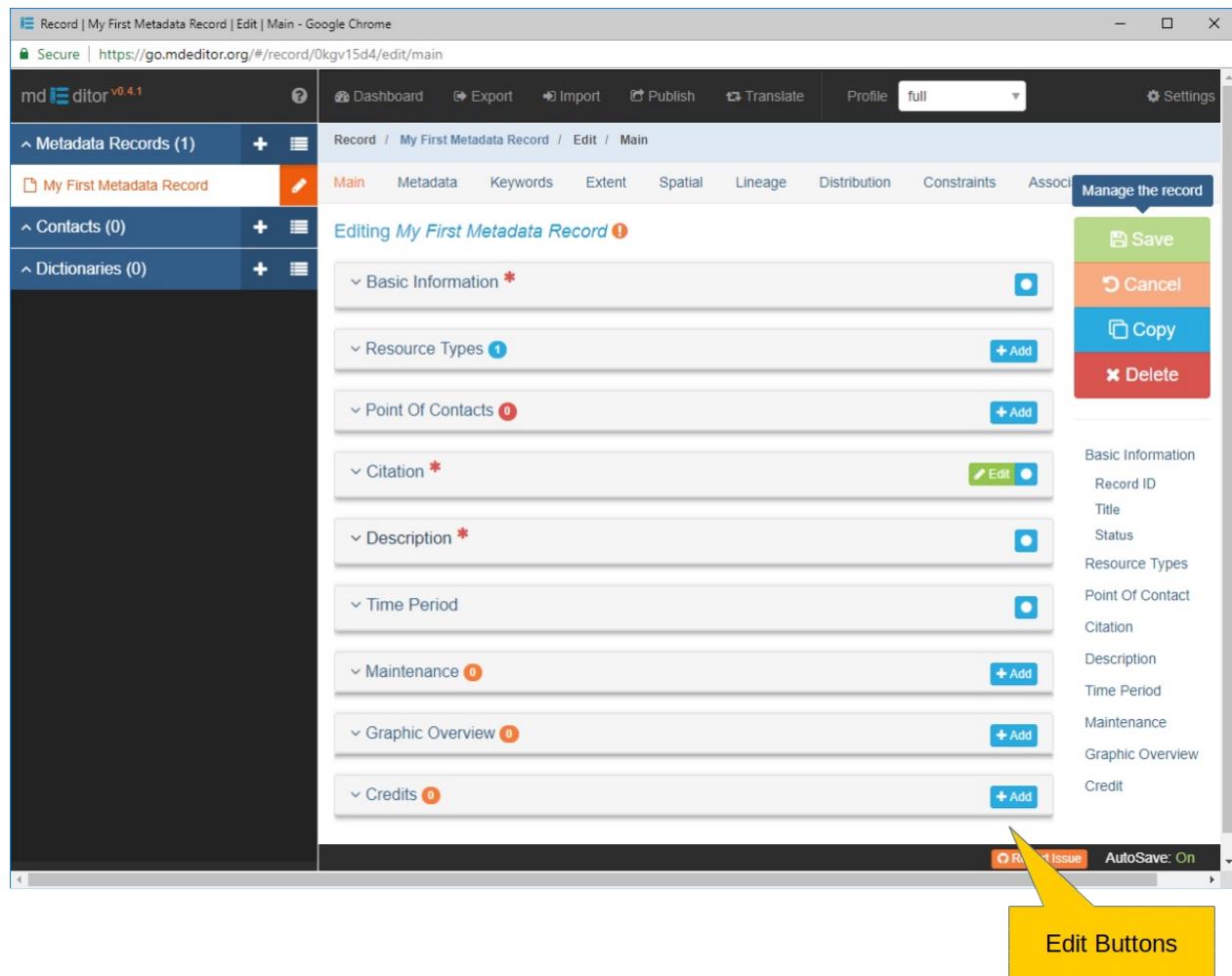


Image 1: Edit Window Buttons

Isolate Panel

Some panels, and even sub-panels (panels within panels), have an 'Isolate' button. Clicking this will visually isolate the panel and all its elements from the surrounding data by dimming information not in scope, making it easier to focus on relevant content. When you are ready to return a normal view of the **EDIT WINDOW**, click on the 'Isolate' button once again, or click simply click anywhere off the isolated panel. In the example below the **Basic Information** panel has been isolated. Notice also that **Default Locale** is a sub-panel that can be further isolated should you choose.

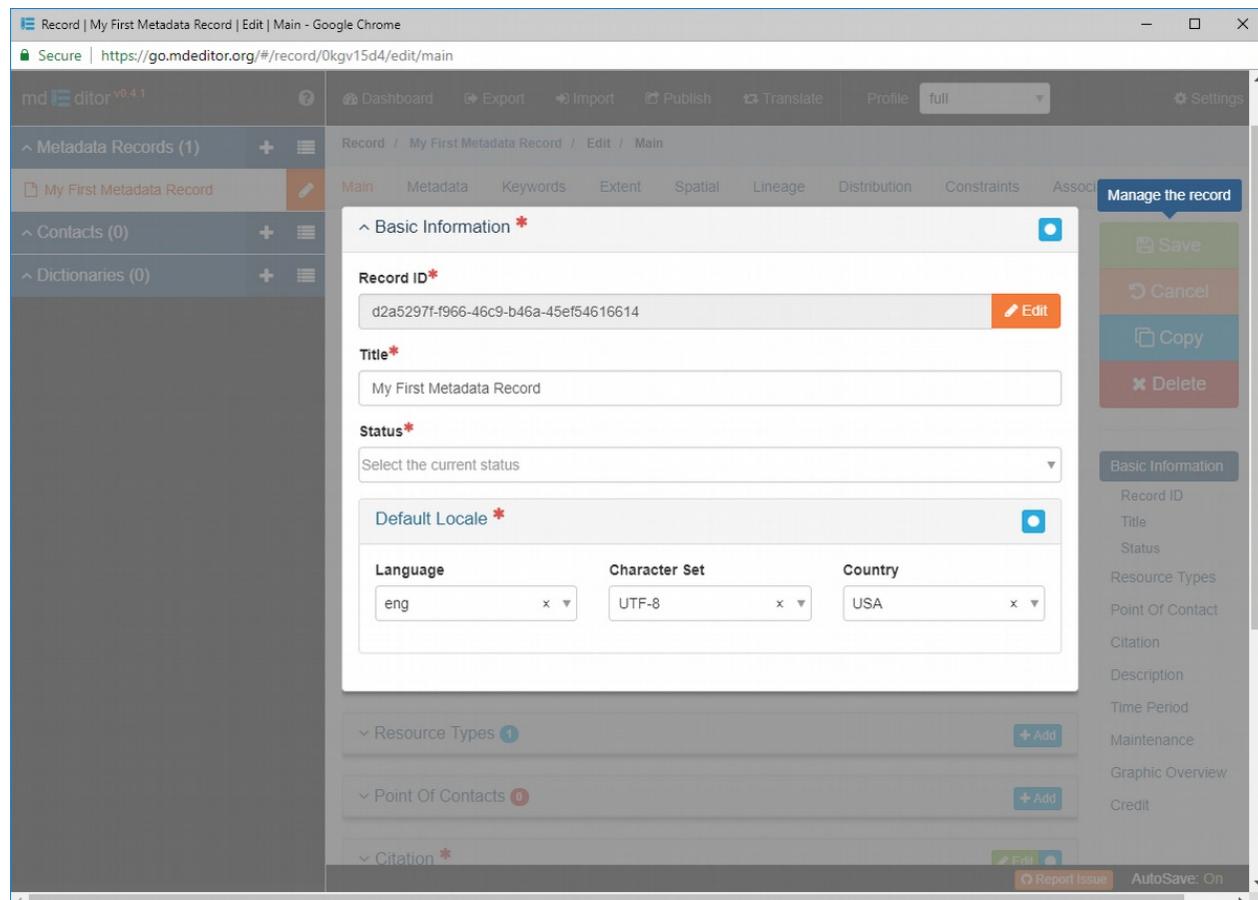


Image 2: Isolated Basic Information Panel

Add Add New Object

Clicking the 'Add' button on a **PANEL TITLE BAR** will add a new object to the panel. The new object can then be edited as needed.

Edit Edit Object

An 'Edit' button will appear on **PANEL TITLE BARS** of panel objects when the object contains more elements than can be presented in the current window without creating clutter.

Clicking the 'Edit' button will navigate you to a new window where the object can be edited on its own. After making your edits, click the **OK** button to bring you back to where you initiated the edit. The 'OK' button may appear at the top, bottom, or both of the object edit window. As an example of how this works, let's look at the **Citation**.

Edit the **Citation**

- On the **Citation** **PANEL TITLE BAR** click **Edit**. You should see the **CITATION EDIT WINDOW** pictured below.

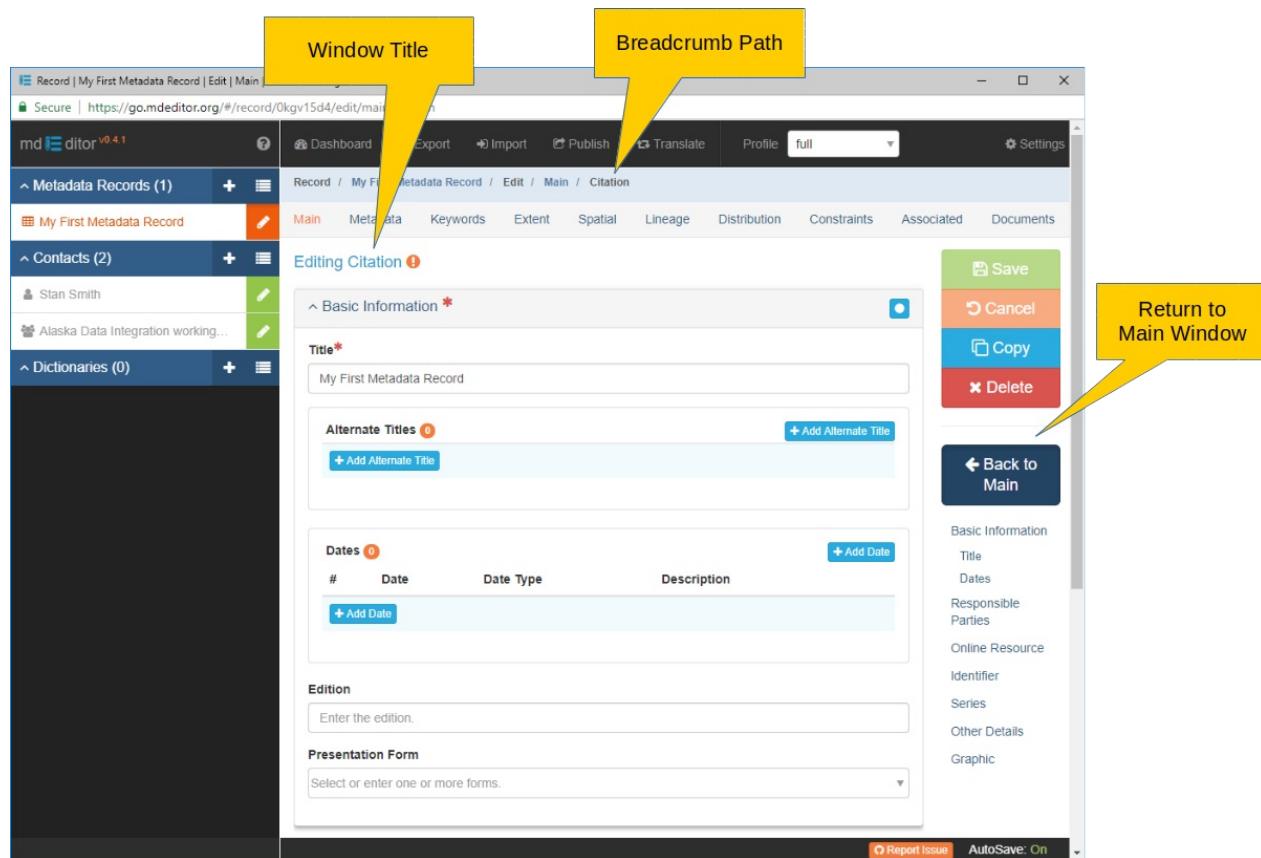


Image 3: Edit Window Buttons

There are a few things to notice on the above window.

- The **EDIT WINDOW TITLE** has changed to indicate you are now editing a citation object.
- The **FAST SCROLLING** buttons have changed to reflect the panels of the **CITATION EDIT WINDOW** rather than the **Main** section.
- There is a new button in **RECORD MANAGEMENT** area of the **SECONDARY SIDEBAR**, **Back to Main**.

Click the **Back to Main** button now to return to the **EDIT WINDOW Main** section.

Above we discussed that clicking the **Add** button will add another object to a panel. Below is an example of an array-type panel with a second object added. To manage the objects independently, several buttons are added to each object.

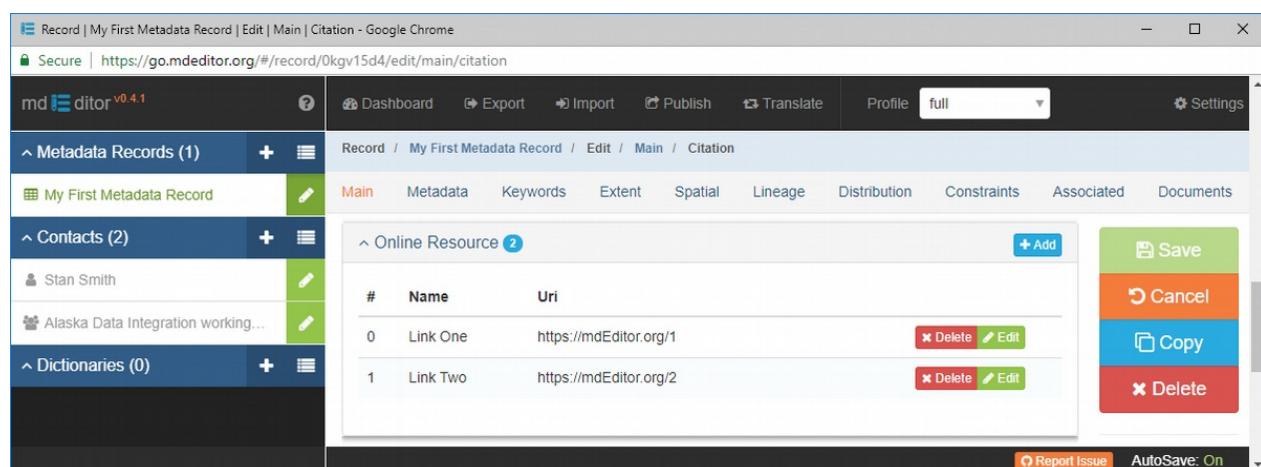


Image 4: Array Panel with Multiple Objects

Edit **Edit Array Object**

When an 'Edit' button appears next to a panel object, clicking it will expand the object for editing. After editing, click the **OK** button to hide the object's detail and restore the **EDIT WINDOW**.

Delete **Delete Array Object**

The 'Delete' button adjacent to an object is used to remove the object from the array. After clicking 'Delete' the button will change to **Confirm**. Clicking 'Confirm' will complete the delete operation.

Okay! That's probably enough orientation to the **EDIT WINDOW's** sections, buttons, and icons. Time to get some actual work done. So let's return to filling in our minimal [metadata record](#).

Tutorial -- Entering Metadata

We have come to that point in our "Getting Started" exercise where we begin entering [metadata](#). To keep this exercise brief and meaningful, we are choosing to enter only the minimal information to create a valid [record](#). But what do we mean by a minimal, valid [record](#)? In this context we refer to entering the fewest [metadata](#) elements possible to satisfy the [mdJSON](#) standard. Admittedly this will not constitute a very healthy [metadata record](#), but it will serve this exercise well enough.

Keep in mind that each established metadata standard, such as ISO 19115 or FGDC CSDGM, will have their own definition for what constitutes a minimal metadata record, and this is certain to be more comprehensive than mdJSON's definition of minimal. Not to worry, the mdJSON standard has the elements you will need to support other standards; we just need to spend more time editing our record and add that standard's specific required elements. We will see how this works later in the exercise.

For now ...

- Return to the [Main](#) section of the [EDIT WINDOW](#) if you are not there already.

Tutorial -- Finding Required mdJSON Elements

In this image of the **EDIT WINDOW** **Main** section all the panels have been collapsed. I have done this to make our discussion easier to follow, but it's not necessary for you to do this in completing the exercise.

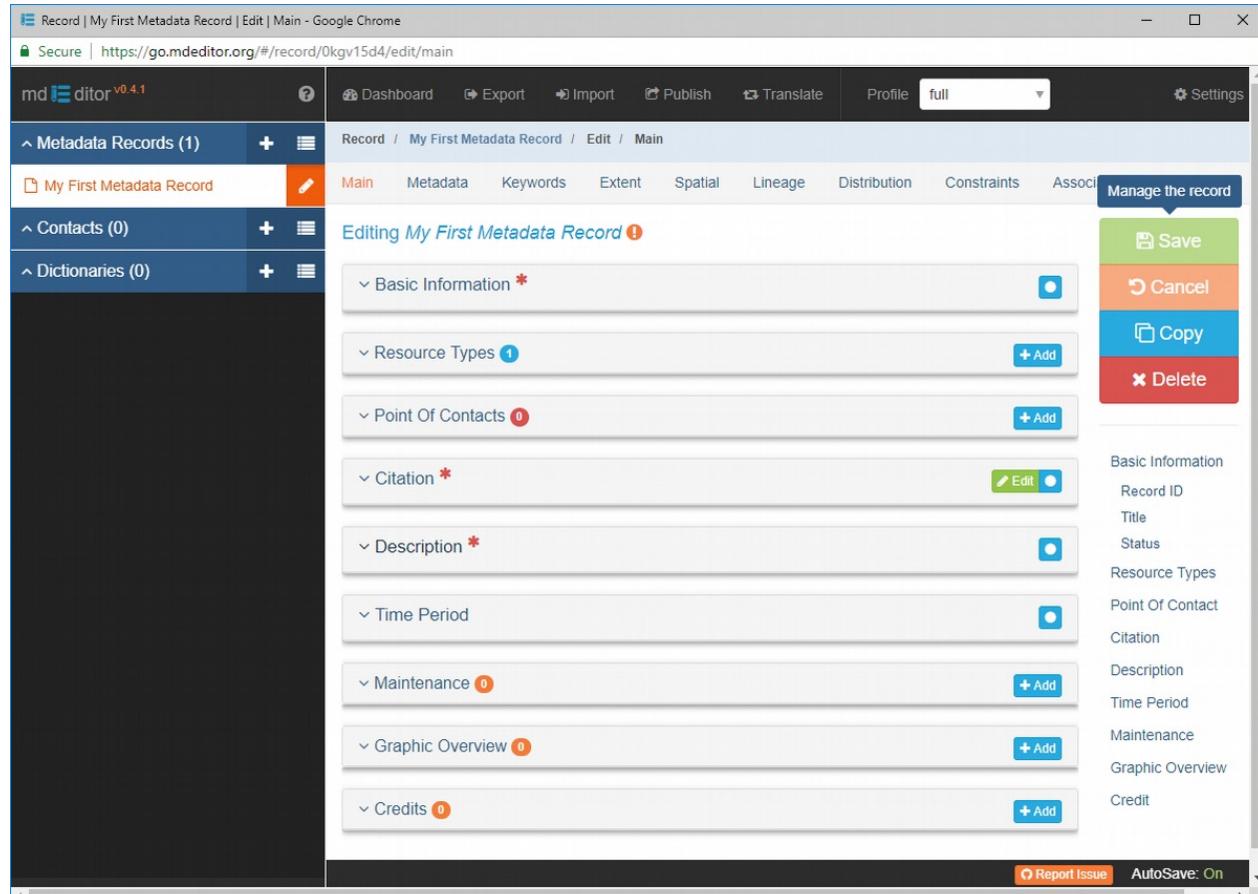


Image 1: Edit Window - Main Section

There are several ways to find the required elements on any **EDIT WINDOW** section. Remember the icons on the **PANEL TITLE BARS**? The icons remind us we need to visit each panel with a red asterisk to fill in the panel's required elements and that we need to add at least one object to panels with a red zero .

Alternatively, we can click the orange exclamation mark  next to the window's title to get a list of all missing and erroneous mdJSON elements as detected by **mdEditor**.

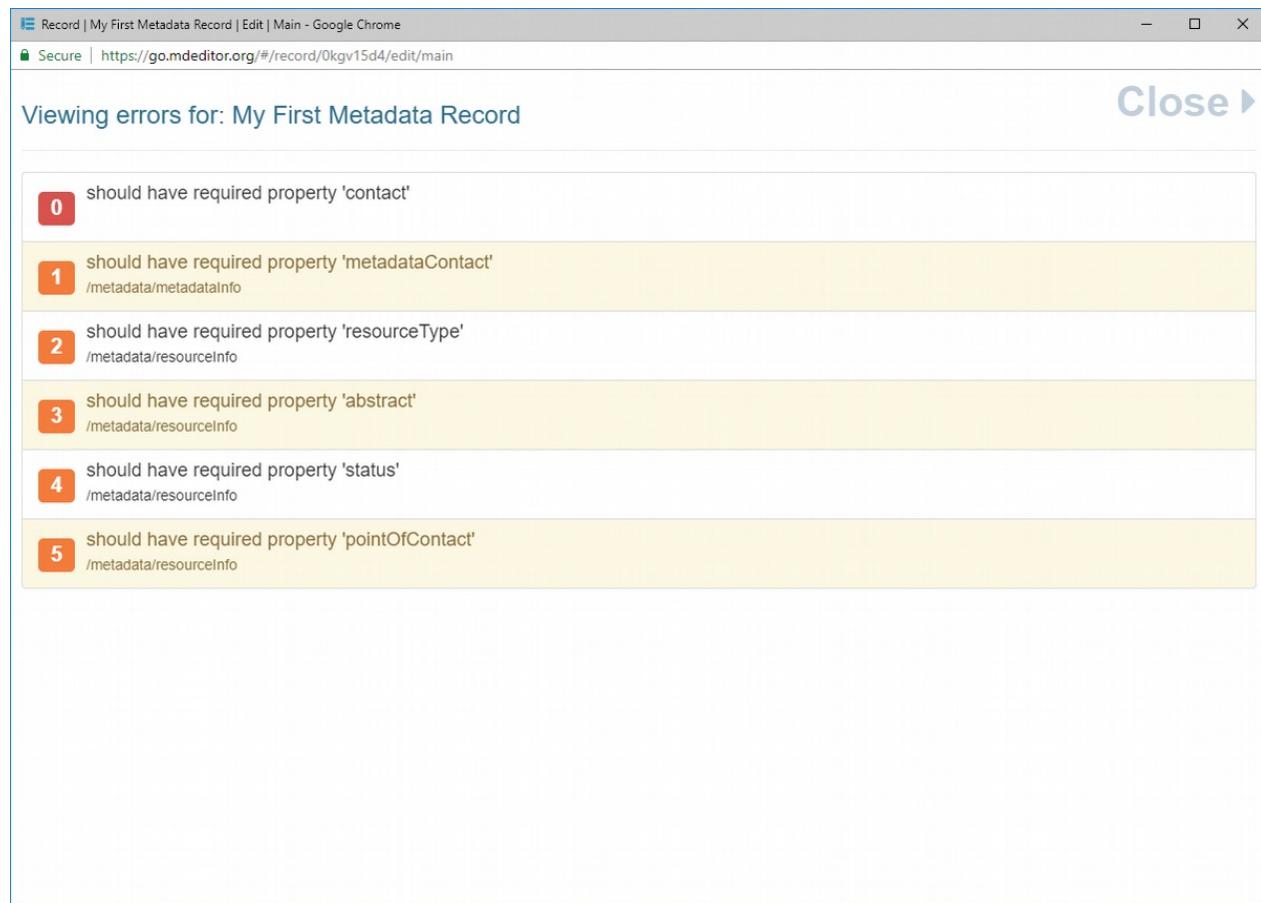


Image 2: mdJSON Record Error List

Let's get started by filling in EDIT WINDOW Main section elements.

Tutorial -- Edit Window "Main" Section

Simply by observing the coded icons on the **EDIT WINDOW** **Main** section we find we need to visit the following panels:

- **Basic Information**
- **Resource Types** 
- **Points Of Contact** 
- **Citation**
- **Description**

Let's look at each in turn...

Tutorial -- Entering Basic Information

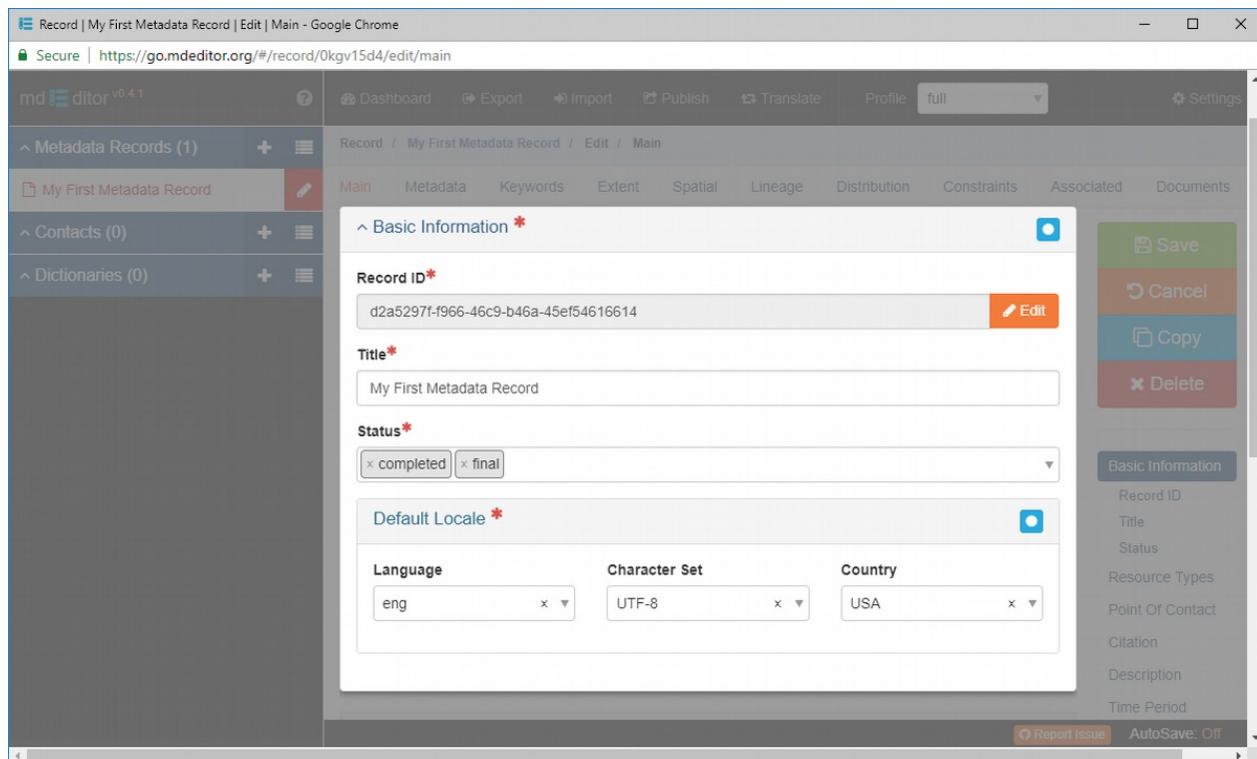


Image 1: Edit Window - Main - Basic Information

To help focus on the **Basic Information** panel I isolated it by clicking the blue isolation dot . This step is, of course, not required and totally your preference.

As it turns out, all of the **Basic Information** elements are required. So let's step through each of them.

Record ID

Let's skip editing the **Record ID** for the moment. Its value was assigned automatically when we created the **record** and we passed over an opportunity to change it at that time. For this exercise, it's enough that there is a **Record ID**.

Use caution whenever changing any **Record ID**! In mdJSON records are related to each other through their IDs. If any associations have been made between records, such as attaching contacts to records, changing an ID could cause the associations to be broken.

Title

Title was also entered when the new **record** was created. Unlike **Record ID**, however, we can change the **Title** without risk of breaking anything. Change it now if you like. Or leave it as is, I did.

Change the **record** Title.

Note the metadata record **Title** and **Citation**. **Title** are one and the same - changing one will change the other.

Status

The **Status** element identifies the current status of the resource or project described by this [metadata record](#). The status is entered using a multi-select control. Clicking on the control will produce a list of pre-loaded (and recommended) values for the **Status** element. If none of these values work for you, just type in your custom value and press "Enter". This type of control is used frequently throughout [mdEditor](#).

When a custom value is entered in a select control it is added to that control's list, but only to that control. The custom value will not appear in other select control lists.

Avoid using spaces and other symbols when creating your own list values. Symbols can cause interpretation issues with some [metadata formats](#).

Enter a status for [metadata](#) resource:

- Choose "complete" from the **Status** control's list.
- Now add "final" from the **Status** control's list. Both tags will show in the control's display.
- After deciding these sound a bit redundant, click the "x" on "final" tag to delete it from the list.
- Add another status item not in the list. Type "releaseHold" in the status field and press enter. A "releaseHold" tag will appear alongside the "completed" tag.
- Delete the "releaseHold" tag also.

Default Locale

Notice that **Default Locale** is actually a sub-panel, yes a panel in a panel! This is another technique used throughout [mdEditor](#).

Default Locale refers to the language, country, and encoding system of the [metadata](#)'s resource. Each of the elements (**Language**, **Country**, **Encoding System**) has a standard drop-down selection list that allows a single value to be selected. As with **Status** above, you can enter your own value if needed.

For these three elements there are literally hundreds of values in the lists, making it rather awkward to find what you need. Further, the values themselves are short ISO standard codes whose meaning may not be immediately obvious. Therefore, we attached descriptions to each item that are accessible by hovering over the dark-gray question mark  next to the list item.

The standard drop-down controls also support a search feature. Click in the control and a search box will appear at the top of the list. Start typing what you are looking for and the list automatically refines to include only items that match your entry. If nothing matches your search criteria just click "Enter" and your custom entry will be accepted.

Change the country from "United States" to "Canada".

- Click in the country control
- Type "ca"
- Hover over the question mark to next to 'CAN' to confirm it is indeed the code for Canada
- Press "Enter"

- You can leave the "Language" and "Character Set" as they are or change them if you like.

Tutorial -- Entering Resource Types

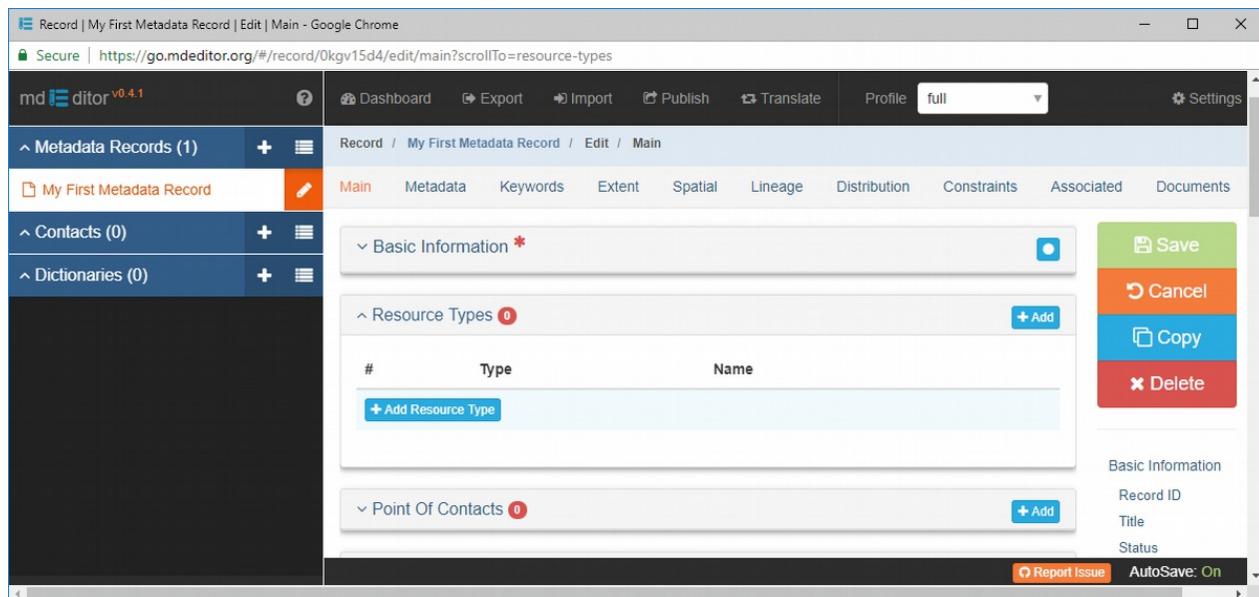


Image 1: Edit Window - Main - Resource Types

As you can see, not all panels have the isolation capability. In general, this feature was not added to panels with just a few elements.

Resource Types has only a single element.

However, this single element is an *object* that has several elements of its own. This is our first encounter with an *array-panel*: a panel that supports multiple objects of the same type. So to get started, we need to "Add" an object.

Add a **Resource Type** object to the array.

- Click the **Add** button to add a new object to the array.

A **Resource Type** object with its two elements was created and is ready for you to edit. Notice that **Type** is required and **Name** is optional.

Notice that the dropdown selection control for the **Type** element uses a ! to indicate the element is required rather than the typical red asterisk used elsewhere. This is a consequence of a software library used by mdEditor and not something we can easily change. Sorry for any confusion.

The 0 on the **PANEL TITLE BAR** has changed to 1 indicating the array-panel now has one object. Note that the object is counted even though the object is not meeting the standard for a valid object. In this case the required element **Type** is missing. The count includes ALL objects, not just valid objects!

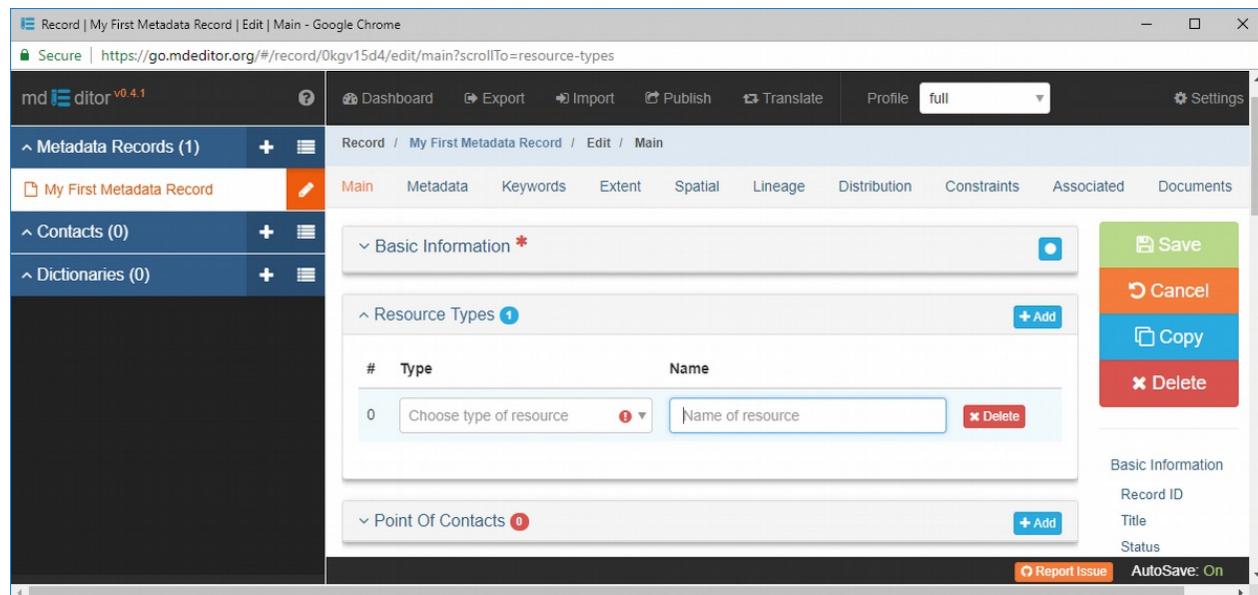


Image 2: Edit Window - Main - Resource Type new object

Type

Type is the type of resource described by this [metadata record](#). Clicking on the **Type** control will pop up a list for you to select one of the standard resource types or allow you to create a custom resource type.

The resource type that you entered when you created the record will already appear here. You can change the resource type or add others here.

Enter a **Type** of "tabularDataset"

Notice that when you assign or change the resource **Type**, the icon preceding the record name in the [PRIMARY SIDEBAR](#) also changes. In this instance it changes to a table or grid to represent a tabular dataset. Most resource types are assigned an icon although some may require a little imagination to visualize the association. The icons are provided to help jog your mind when scanning lists of records or contacts you may not have seen in a while.

Name

Name is an optional element that provides a name for resource referred to by **Type**.

Enter **Name** as "My Dataset Name" (or anything else you like).

Name is optional and may seem redundant when only one resource type is being defined for the [metadata record](#). However, when a data resource is prepared in multiple formats or multiple resources are combined under a single [metadata record](#), the resource type **Name** can be helpful.

Add a second **Resource Type** object to the panel. We don't need the second object to fulfill the minimum metadata requirement, this is just to observe **mdEditor** behavior.

- click the **Add** button
- fill in the new object
- click the **Delete** button next to the newly created object.

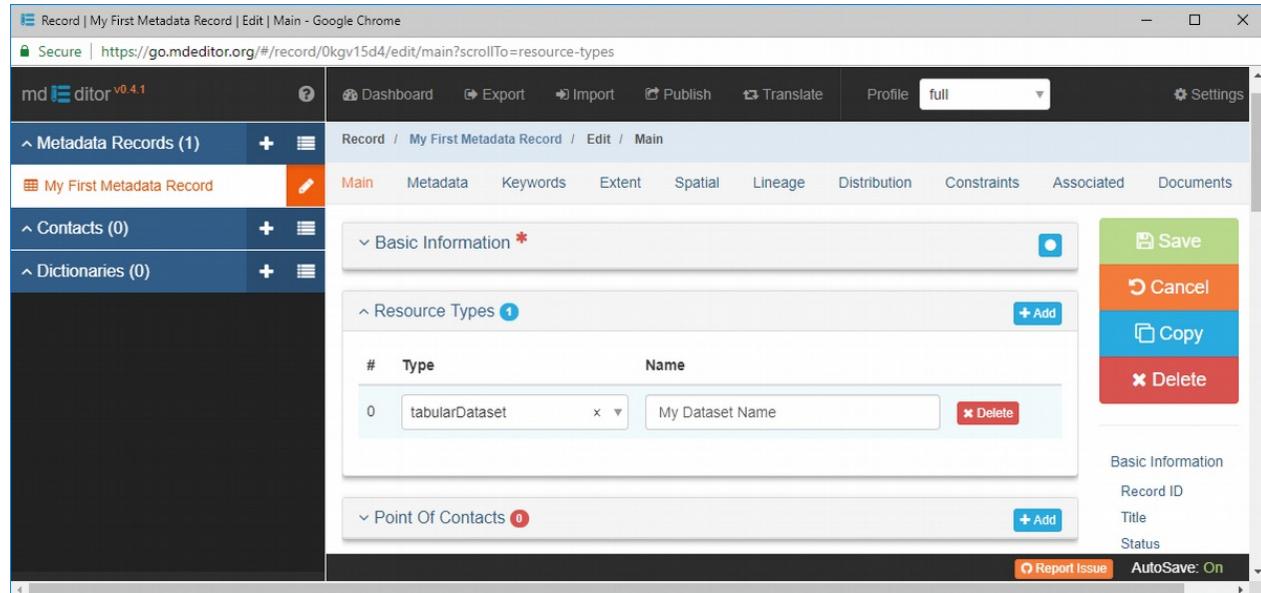


Image 3: Edit Window - Main - Resource Type complete object

Tutorial -- Entering Points Of Contact

As your trained eye can now see, **Points of Contact** is another array-panel containing **Points of Contact** objects. So, let's add our first Point of Contact.

Add a Point of Contact:

- Click the **Add** button to "Add" a new object to the array.

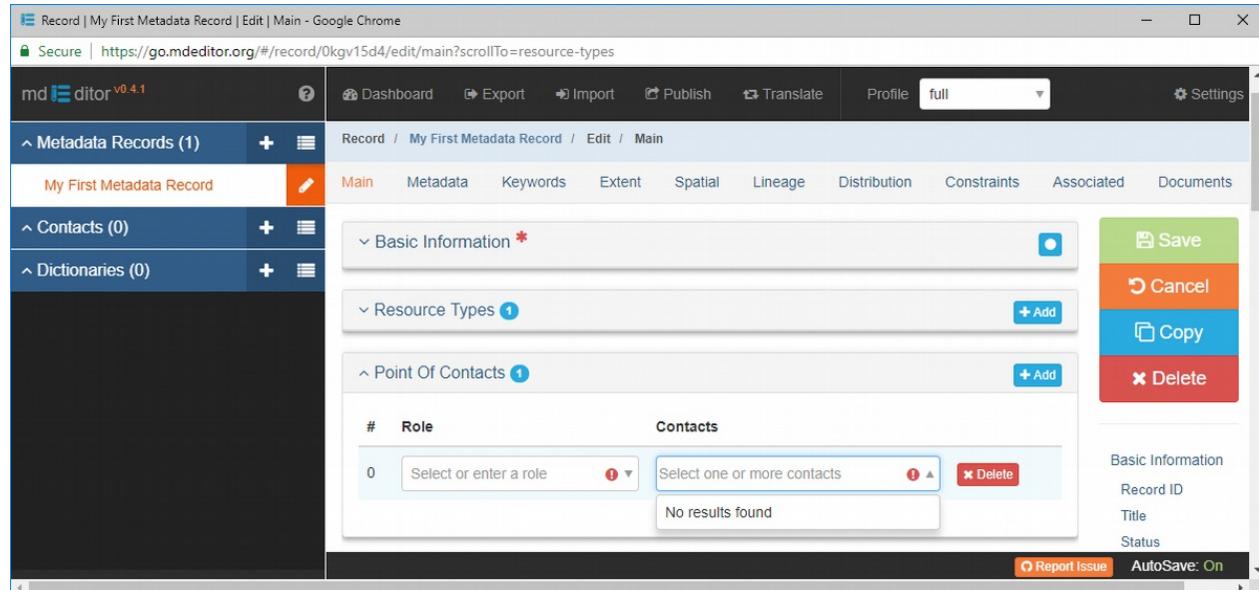


Image 1: Edit Window - Main - Points of Contact

Points of Contact has two elements, **Role** and **Contacts**. Both are required.

Throughout mdEditor, and its underlying mdJson files, contacts are assigned via "responsibilities". A responsibility associates a functional **Role** with one or more individual and/or organization **Contacts**. In our current context for "Point of Contact", a person or organization (contact) is designated as the point-of-contact for a particular topic (role). Example, "Contact John or Mary (contacts) for information about the project's funding (role)."

Role

Role describes the specific area of responsibility for contact(s). The control allows you to select from a list of predefined roles or to add a custom role of your own.

Contacts

Contacts is a multi-select control that allows you to select one or more contacts you currently have loaded in mdEditor.

But wait! We haven't defined any contacts yet! We can't complete the **Points of Contact** requirement until we first define a contact or two.

This is a situation you will likely encounter rather frequently while entering and editing real [metadata](#), so we made sure you would get the chance to practice this during the exercise. You can thank us later.

Create a contact on the fly:

- Save your work. If you have AutoSave set to "Off" click the **Save** button in **RECORD MANAGEMENT** block of the **SECONDARY SIDEBAR**. If AutoSave is "On", your [record](#) is already saved.
- Click the plus sign (+) next to Contacts in the **PRIMARY SIDEBAR** to create a new contact.
- Continue to the next page to complete adding the new Contact [record](#).

Tutorial -- Add a Quick Individual Contact

If you haven't already done so, click the plus sign next to Contacts on the **PRIMARY SIDEBAR** to create a new contact. Your screen should look similar to the image below.

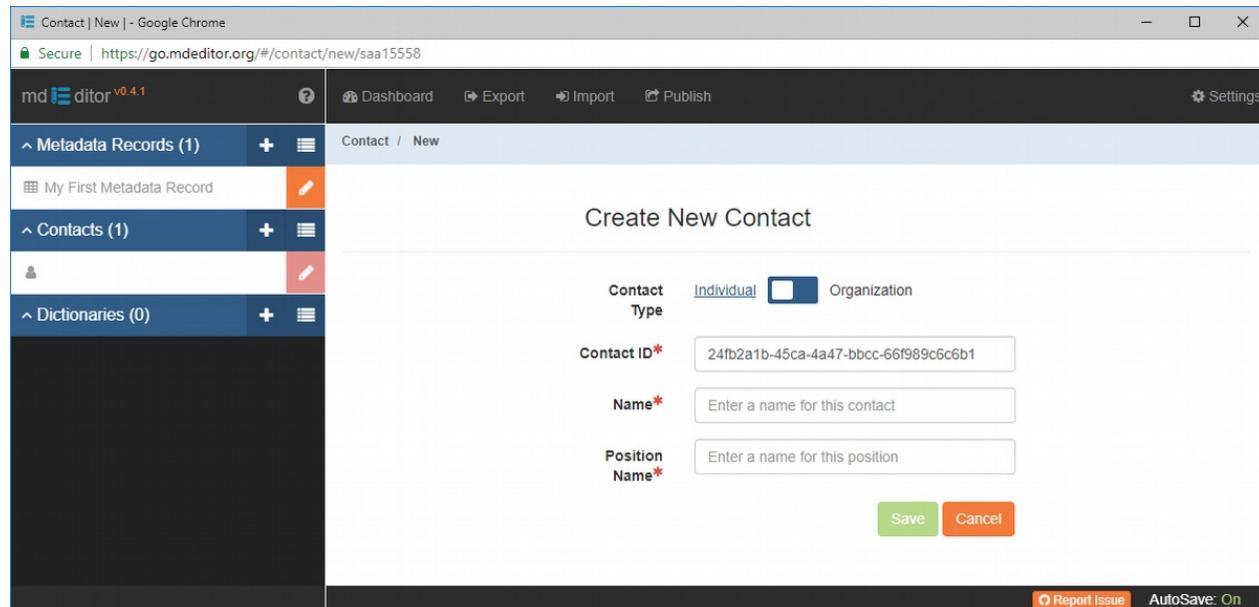


Image 1: Create New Contact Window

In mdJSON, contacts are maintained separately from metadata records and dictionaries. No information about a contact is ever entered in a metadata record. This important feature allows contacts to be reused multiple times within a single metadata record or across multiple metadata records without the necessity of reentering the contact's information each time the contact is referenced. Or worse yet, trying to remember all the places a contact's data needs to be edited when information changes. Whenever a contact is needed for a metadata or dictionary record you will simply select the appropriate contact(s) from a list and mdEditor and mdTranslator will gather up all the pertinent information from the contact record for you - simple!

The "Create New Contact" window has three standard text controls and something new. On this window **Contact Type** is entered via a switch control . Clicking the control will move the switch indicator to the right and change **contact type** from "Individual" to "Organization". Click it again and the original state is restored.

- Click the switch control to change **Contact Type** to "Organization"
- Click the control again to change **Contact Type** back to "Individual"

Notice that when you change the **Contact Type** from "Individual" to "Organization" the icon in the **PRIMARY SIDEBAR** changes from a single person to a group .

Once you have saved your contact, you cannot switch the **Contact Type** from "Individual" to "Organization" or vice versa so be careful to select the correct option when you create the contact.

Individual Contact

An "Individual" contact record collects pertinent contact information for a person including a name, address, phone numbers, email addresses, etc. There are three required elements: **Contact ID**, **Name**, and **Position Name**.

Contact ID

Each contact is assigned a unique ID. This is the ID used to link this contact with one or more of your metadata and dictionary records. When you create a new contact record a UUID is assigned to **Contact ID** automatically. However, if you prefer to use your own system for contact IDs, this would be the best time and place to change the ID.

Name

Name is the full name of the individual.

In mdJSON names are not partitioned into first, middle, last, etc. There is only one name, so include all the parts you want to see in your records including any prefix or suffix.

Position Name

Position Name is the position or official title the individual may hold.

Create an 'Individual' contact record

- Enter "CID001" as the **Contact ID**
- Enter your name in **Name**
- Enter your position or title in **Position Name**
- Click **Save**.

You probably noticed that when you entered your name in the **Name** element the **Position Name** element suddenly became optional. The same would be true of **Name** if you entered the **Position Name** first. This is because one or the other is required, but not both.

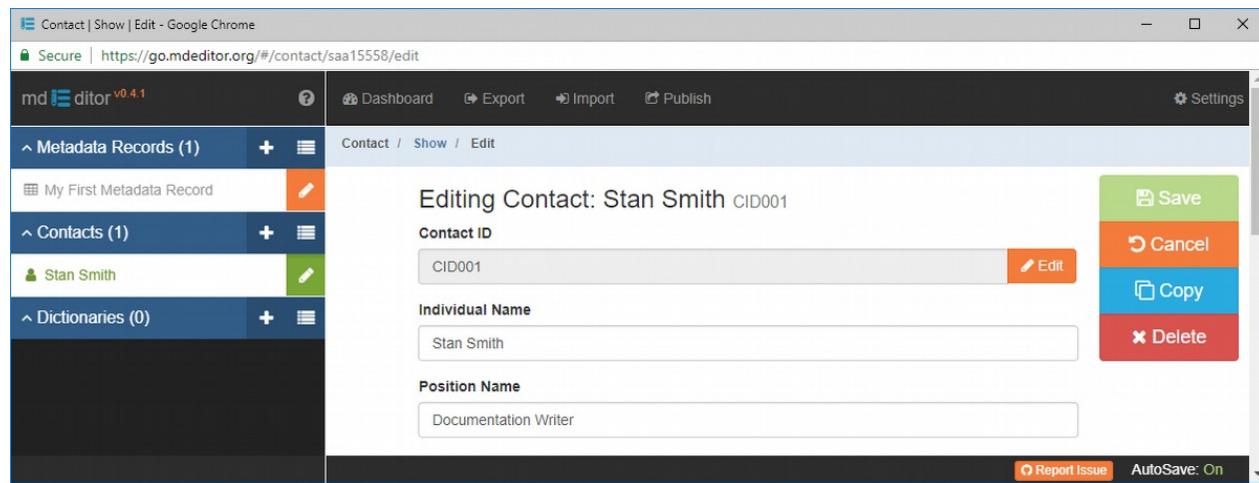


Image 2: Create New Contact Window

After clicking **Save** you are transferred to the **mdEditor** window for contact records. Notice that the individual contact you just entered is colored green in the **PRIMARY SIDEBAR**. This is because the **record** is clean! There are no additional required elements. To be sure, there are still a lot of contact elements that can be entered to further define our contact, but what we have is sufficient to return to editing our **metadata record**.

Although we could return to entering **metadata**, let's add another contact first. This time we will make an "Organization" contact.

Tutorial -- Add a Quick Organization Contact

Add an "Organization" contact:

- Click the "Add New Contact" button (the plus sign to the right of "Contacts" on the **PRIMARY SIDEBAR**)
- Click the **Contact Type** switch to make this an "Organization" contact

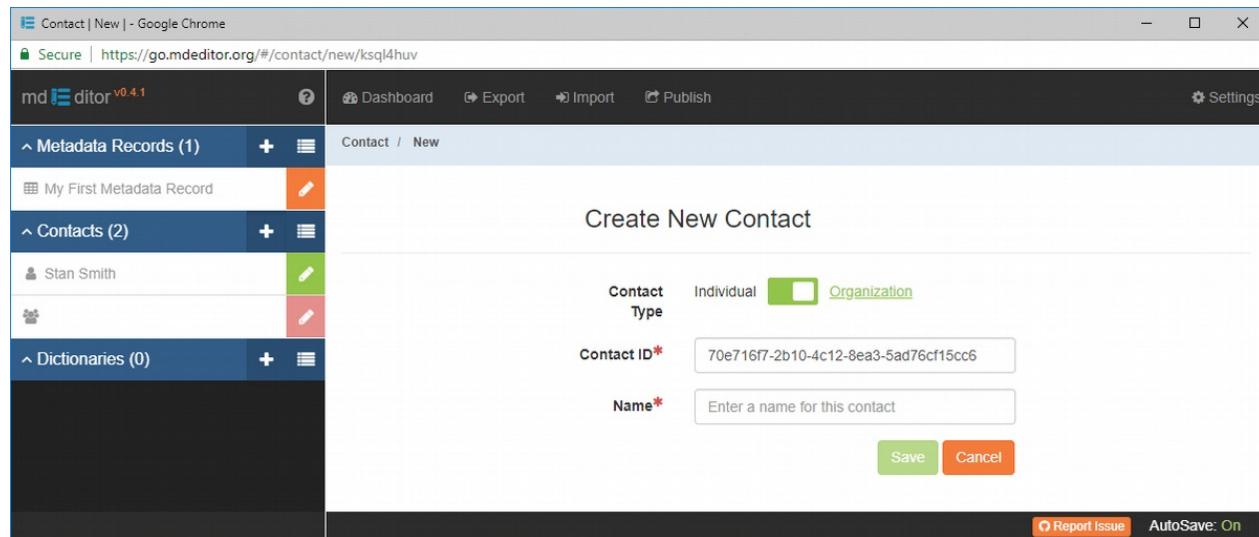


Image 1: Create New Contact Window

Organization Contact

The "Organization" contact **record** collects pertinent contact information for an organization such as name, address, phone numbers, email addresses, etc. There are two required elements for "Organization" contact: **Contact ID** and **Name**.

Contact ID

Each contact is assigned a unique ID. This is the ID used to link this contact with one or more of your **metadata** and dictionary records. When you create a new contact **record** a **UUID** is assigned to **Contact ID** automatically. However, if you prefer to use your own system for contact IDs, this would be the best time and place to change the ID.

Name

Name is the name of the organization or group.

Create an "Organization" contact **record**

- Enter "CID002" as the **Contact ID**
- Enter your organization's name in **Name**
- Click **Save**

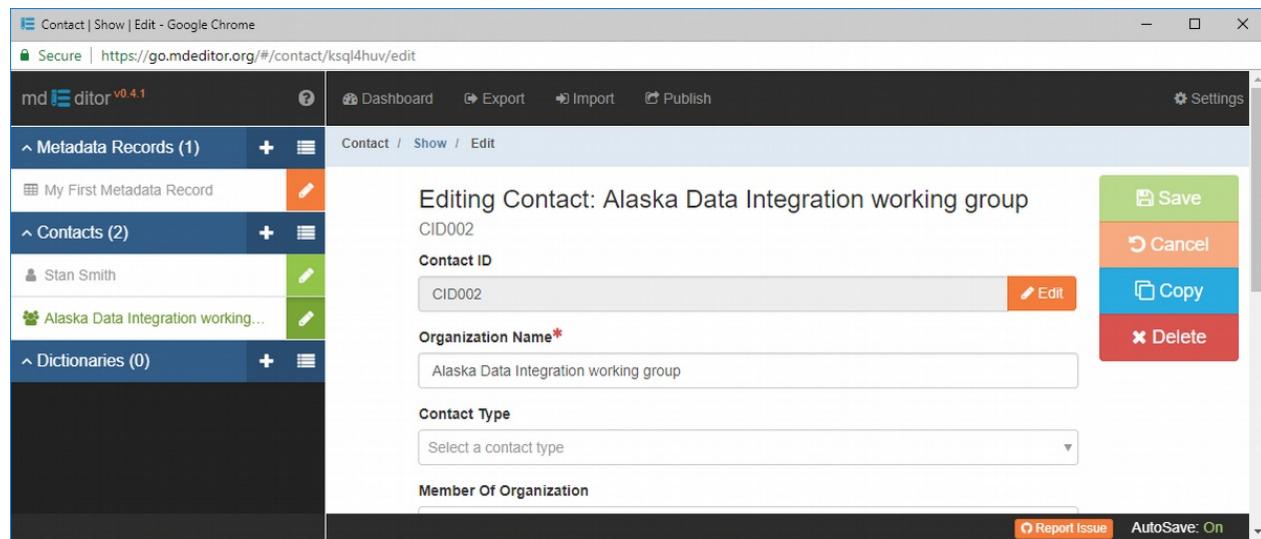


Image 2: Create New Contact Window

As we saw when adding the individual contact [record](#) in the previous exercise, our organization contact is valid after adding just the two elements. We can return later to fill in the optional information about this contact, but for now let's get back to editing our [metadata record](#).

Tutorial -- Resume Entering Points Of Contact

Now that we have created a few contacts, let's pick up where we left off editing "My First Metadata Record." The first order of business will be to get mdEditor refocused on the **Points Of Contact** panel on the **EDIT WINDOW** **Main** section.

Open "My First Metadata Record" to **Points of Contact**

- Click the **—** button for "My First Metadata Record"
- Click **Points of Contact** button in the **SECONDARY SIDEBAR** **FAST SCROLLING** menu to move the panel to the top of the window

Now add a new **Points of Contact** object.

Add a **Point Of Contact**

- Click the **Add** button to both add a new **Point Of Contact** object and expand the array-panel

Your mdEditor screen should look very similar to the following:

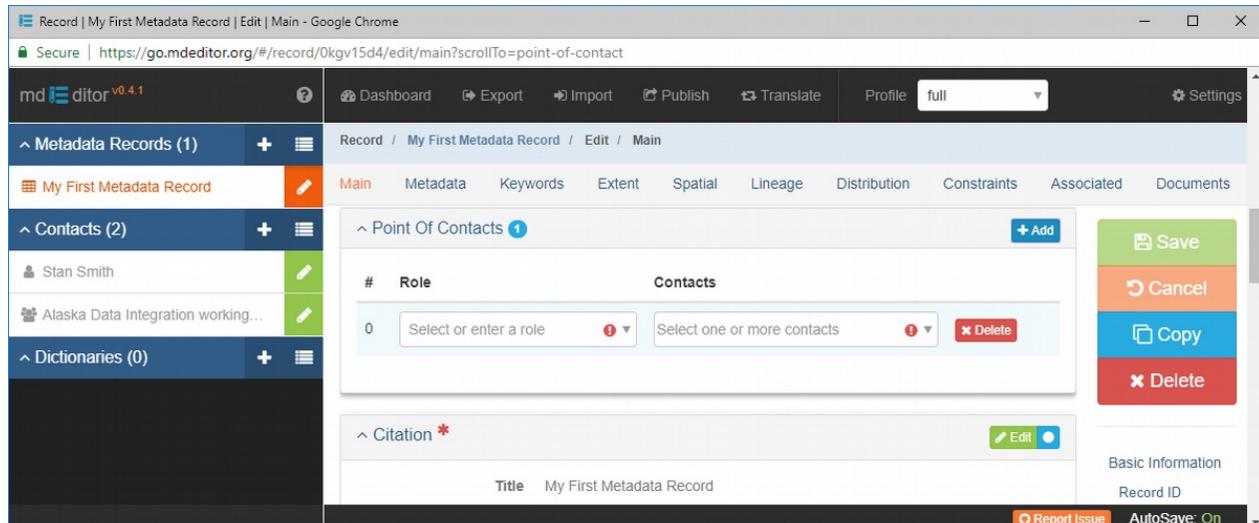


Image 1: Edit Window - Main - Points Of Contact

Edit the new **Point of Contact**

- Click in the **Role** selector control and choose "administrator"
- Click in the **Contacts** selector and choose the individual contact you created in the previous step

The **metadata** requirement for **Points of Contact** has been fulfilled. But let's add a second **Points of Contact** object to observe how these array panels work.

Add a second **Points of Contact** object

- Click the **Add** button
- Click in the **Role** selector control and choose "funder"
- Click in the **Contacts** selector and choose the organization contact created in the previous step

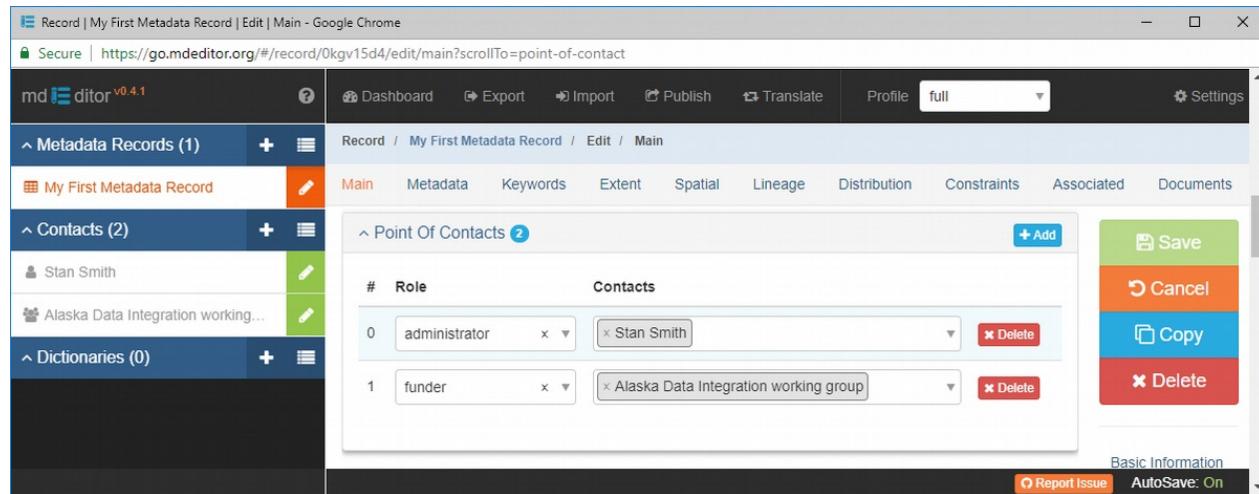


Image 2: Edit Window - Main - Points Of Contact with two objects

Notice the object count has increased to two in the blue circle on the panel title bar, reflecting the actual object count.

The object count can also be found in the panel's content space. Each panel object is preceded by a number that represents its position in the array. Note that the position number starts with zero rather than one. It's a computer thing.

OK, on to "Citation" ...

Tutorial -- Entering Citations

The **Citation** we are editing in this step is the citation for the primary subject of this [metadata record](#), aka the "main resource."

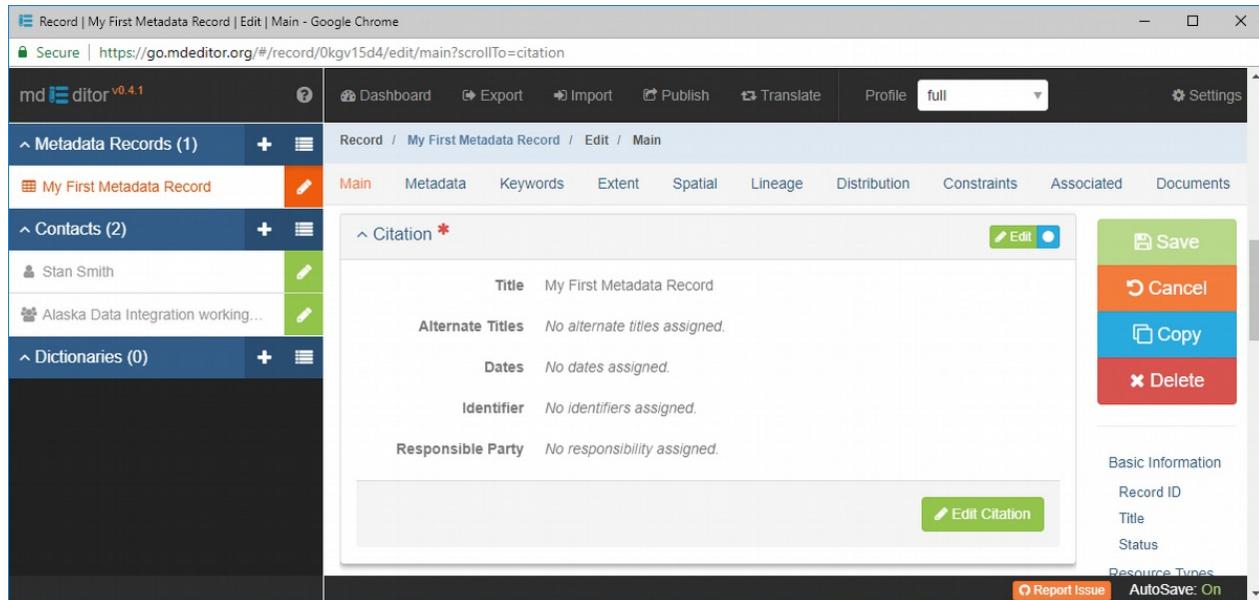


Image 1: Edit Window - Main - Main Resource Citation

As you can see, something is different with this panel. The **Citation** panel does not have any editable element controls. Instead the panel is showing us a view of some the citation's elements. Why is this?

A full [metadata record](#) may contain many different citations. This one is for the primary resource of the [metadata record](#). Others identify various external resource that were used or referenced by the project or product defined by this [metadata record](#). These will be entered from other **EDIT WINDOW** sections such as the citation for a keyword thesaurus or the citation for a taxonomic classification system.

All citations share the same format. Thus what is shown here for the main resource citation applies to all **Citation** panels wherever they appear in **mdEditor**. Because all citations share the same format, they are edited from a **CITATION EDIT WINDOW**. Therefore, when editing any **Citation** object, you will leave the **EDIT WINDOW** section you are on when you click the **Edit** button on the **PANEL TITLE BAR** (or the one at the bottom of the **Citation** panel), make your edits, then return to the initial **EDIT WINDOW** section by clicking the **Back to Main** button in the **SECONDARY SIDEBAR** when finished.

Citation has only one required element in **mdJSON**, **Title**. Since the main resource **Citation Title** is also the **metadata record Title** and that has already been defined, technically there are no missing **Citation** elements. We could skip editing **Citation** and still meet minimal requirements; however **Citation** is so widely used throughout **mdEditor** let's jump in and edit a non-required element.

Remember, **Citation Title** and the **Record Title** are one! Changing the **Citation Title** also changes the **Record Title**.

Edit the main resource **Citation**

- Click either the **Edit** button on the **PANEL TITLE BAR** or the one at the bottom of the panel.

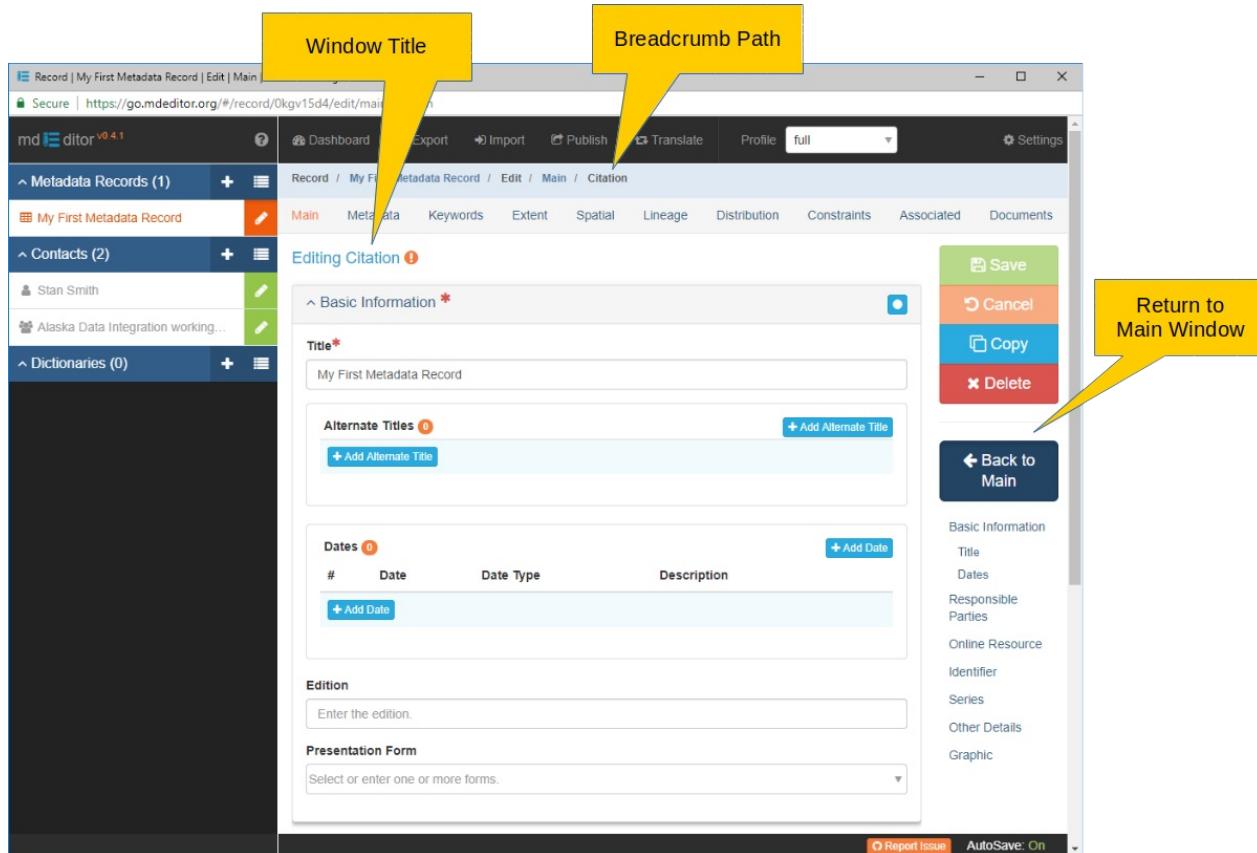


Image 2: Edit Window - Citation

You should now be looking at the **Citation** edit window as shown in the image above. Notice the **EDIT WINDOW** title has changed from "Editing My First *Metadata Record*" to "Editing Citation"; also the path on the **BREADCRUMB BAR** confirms that you have navigated to the **Citation** branch of the **Main EDIT WINDOW**.

From working with **Resource Types** earlier in this exercise you are already familiar with the array-panel control used for entering **Alternate Title** elements, so let's enter a few **Alternate Titles** now.

Enter **Alternate Titles**

- Click either **Add Alternate Title** button
- Enter an **Alternate Title**. I entered "First Alternate."
- Enter a second **Alternate Title**
- Click the **Back to Main** button in the **SECONDARY SIDEBAR** when you have finish entering your **Alternate Titles**.

Clicking **Back to Main** ends editing of the **Citation** object and, as expected, returns you to **EDIT WINDOW Main**.

There are several other ways to return to **EDIT WINDOW Main**.

- Click **Main** in the **BREADCRUMB BAR** path.
- Click the browser's "back" button (you may also need to refresh the window before seeing your changes).
- Click the **–** button for "My First *Metadata Record*" in the **PRIMARY SIDEBAR**.

All three of these methods, as well as the **Back to Main** button, will preserve your entries as you navigate away from the **EDIT WINDOW Citation** section.

So let's see what happened back in Main ...

Tutorial -- Returning from Entering Citations

The entries we made to **Alternate Titles** are now displayed in the **Citation** view. If you don't see your entries, try a window refresh.

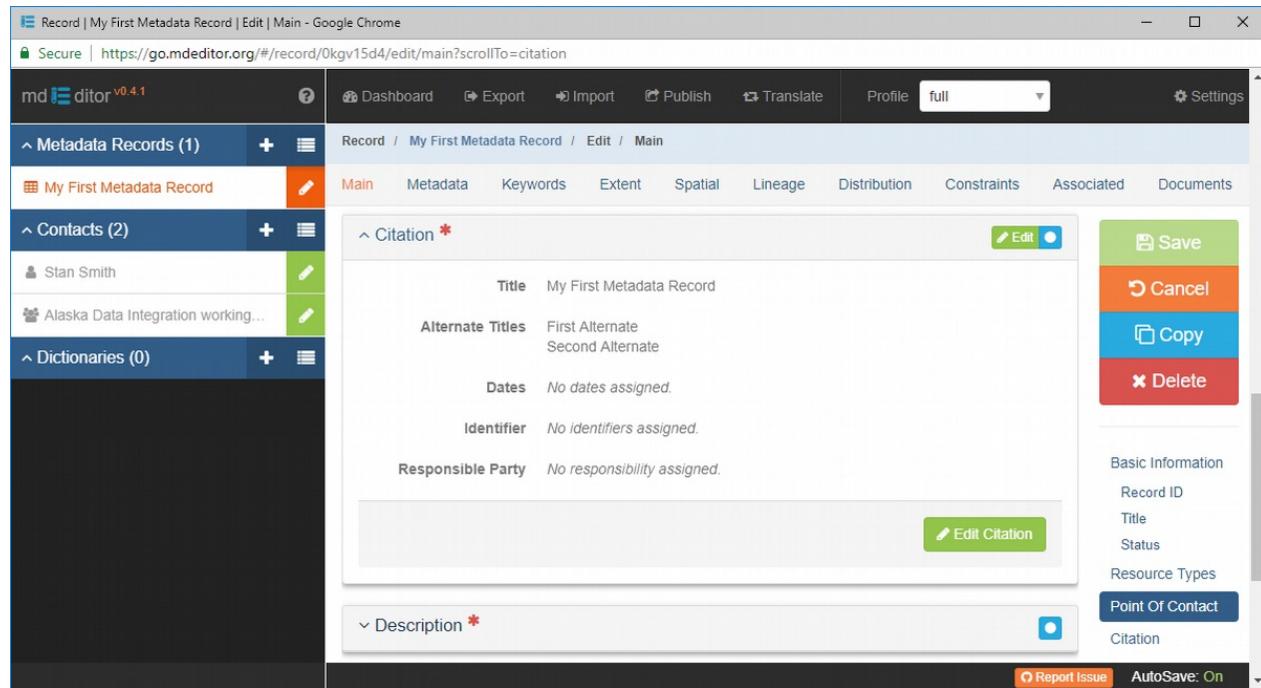


Image 1: Edit Window - Main - Main Resource Citation

Next up, "Description"...

Tutorial -- Entering Descriptions

The **Description** panel, like the **Basic Information** panel, is a collection of elements. The only required element for **Description** is **Abstract**, so let's write or copy in our abstract.

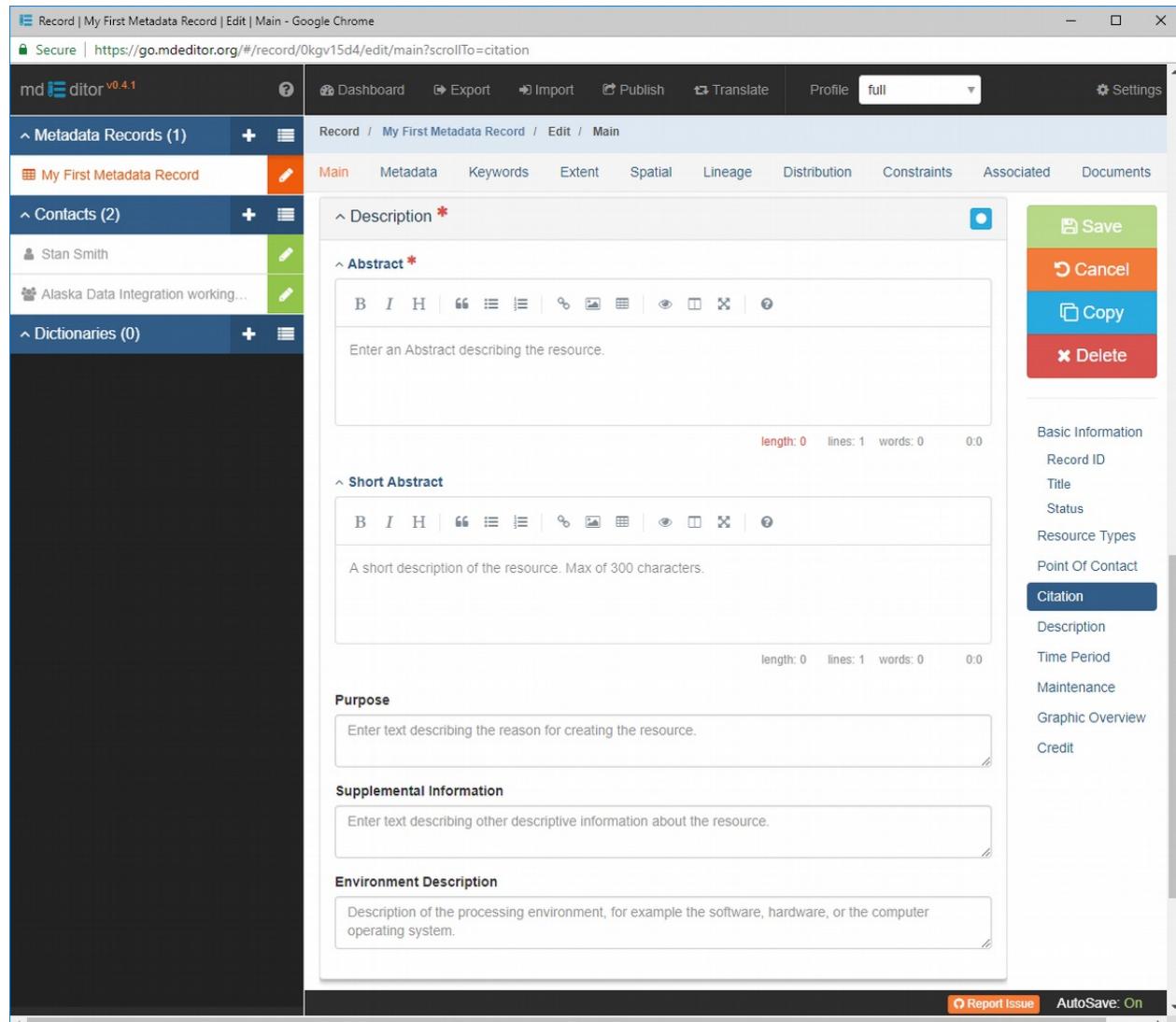


Image 1: Edit Window - Main - Description Elements

Abstract

Abstract is brief narrative describing the content of the main resource whether it be data, a journal article, or a project.

Enter an **Abstract** :

- Type or paste your abstract into the text editor block for the **Abstract** element.
- Experiment with the text formatting options.

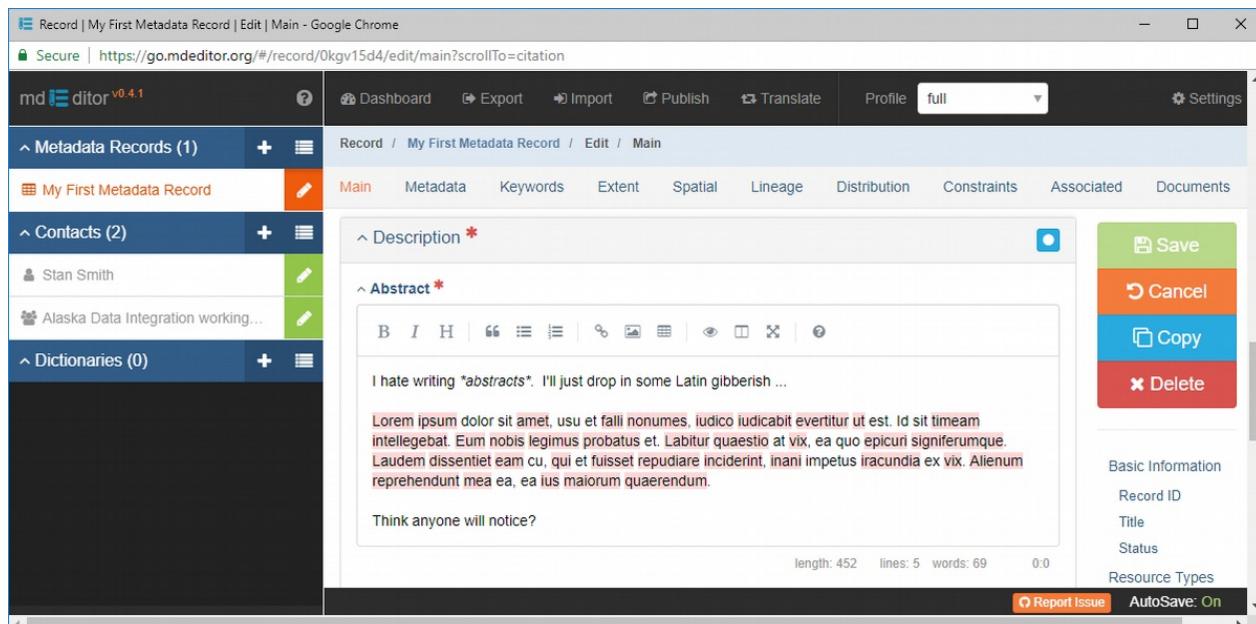


Image 2: Edit Window - Main - Description Elements

As you can see, **mdEditor** has a pretty sweet text editor integrated into the application. The editor supports many standard text formatting options and includes spell check, help, full-screen, and preview modes. It will do pretty much anything but write your abstract for you!

The text formatter used by mdEditor is a "Markdown" editor. Wikipedia defines Markdown "as a lightweight markup language with plain text formatting syntax. It is designed so that it can be converted to HTML and many other formats ..."

If you need help with Markdown, click the  button on the text control button bar for an online guide. You will likely find that using the formatting button will be all the help you need to format your abstract and other text elements, this is only a metadata record after all.

We have only one more required element to enter to satisfy the requirements for a minimal [mdJSON metadata record](#). Let's finish this thing!

Tutorial -- Entering Metadata Contacts

The **Metadata Contact** is our last requirement for a minimal mdJSON record. It is not found on the **EDIT WINDOW Main** section where we have been working; the **Metadata Contacts** panel we need is on the **EDIT WINDOW Metadata** section.

Change the **EDIT WINDOW** to the **Metadata** section.

- Click "Metadata" on the **SECONDARY NAVIGATION BAR**

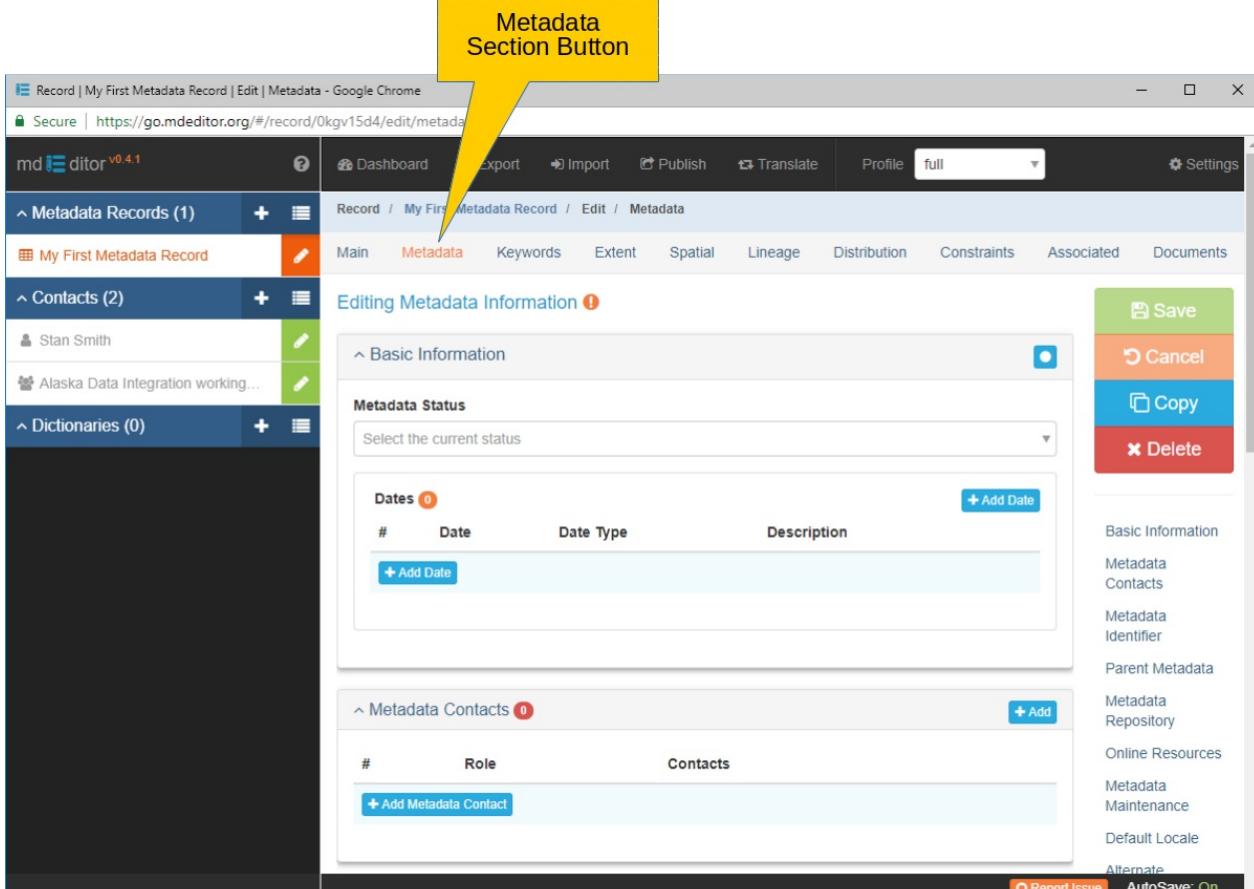


Image 1: Edit Window - Metadata - Metadata Contact

Metadata Contacts

No surprise, **Metadata Contacts** are people and organizations to contact when there are questions about the **metadata**. Since we have entered contacts before, let's enter this one with minimal guidance ...

Enter a **Metadata Contacts**

- Enter a **Role** for the **Metadata Contacts**
- Choose a contact

Verify that your metadata record is no longer missing any required elements. The ! following the **EDIT WINDOW** title, "Editing Metadata Information", should have been removed and the record title, "My First Metadata Record" in the **PRIMARY SIDEBAR** should now be green.

Although all the required elements are entered, there is one more control worth discussing before closing out the topic of basic editing: the date-time control. Let's look at that next - and last ...

Tutorial -- Entering Time Periods

Navigate to the **EDIT WINDOW** **Main**

- Click **Main** on the **SECONDARY NAVIGATION BAR**
- Open the **Time Period** panel

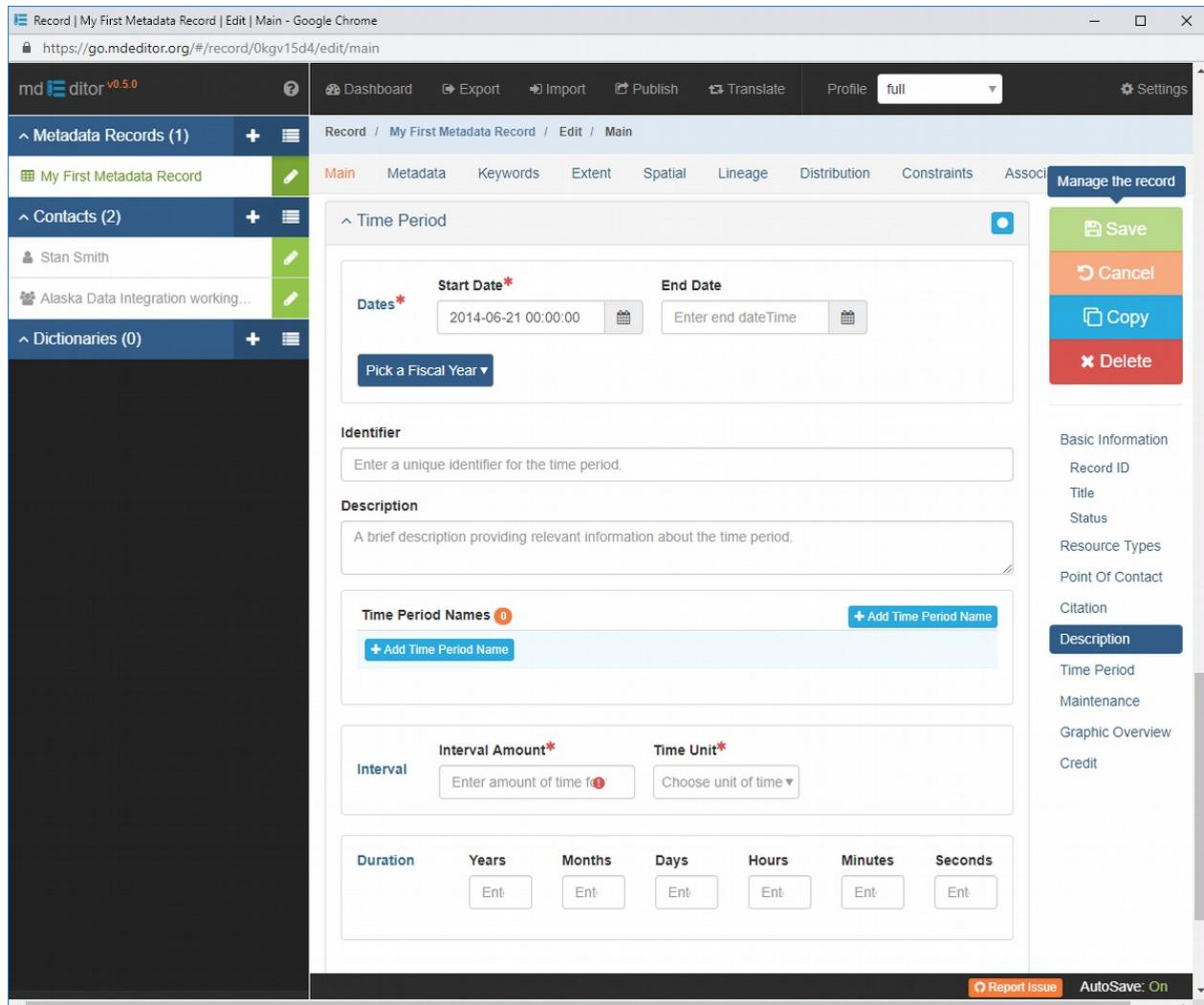


Image 1: Edit Window - Main - Time Period

Notice that there are required elements on the **Time Period** panel that we have not entered and yet there are no errors telling us our metadata record is incomplete. Also notice that there is no on the **PANEL TITLE BAR** following the panel's title. What's up?

When a is on the **PANEL TITLE BAR**, it means that one or more elements of the panel are *always* required for a valid record. When the red asterisk is absent from the **PANEL TITLE BAR**, the panel's required elements are only required when the panel's object is included in the metadata record. Therefore the panel's icons are informing us a **Time Period** object is not required for a valid metadata record; however, if a **Time Period** is included, **Dates** will be required.

Dates

The main resource **Time Period** specifies a date-time range for the data resource or project described by the [metadata record](#). The **Time Period** must have a **Start Date**, **End Date**, or both.

Continue the exercise by first entering the optional **Description** element for **Time Period**.

Add a **Time Period Description**

- Enter a text string in the **Description** element of the **Time Period** object.

Typing the **Description** - or any other element - in the **Time Period** panel caused mdEditor to create a new **Time Period** object. Validation took place immediately. Notice the  has returned to the window title and the record name in the **PRIMARY SIDEBAR** is once again orange indicating missing elements are required.

Enter the **Time Period Start Date**

- Click the calendar  button on the **Start Date** control
- Choose the desired date.

As you have just experienced, there are lots of options connected with the date and time picker controls. Let's go through these on the next page ...

Tutorial -- Entering Dates and Times

Date Picker

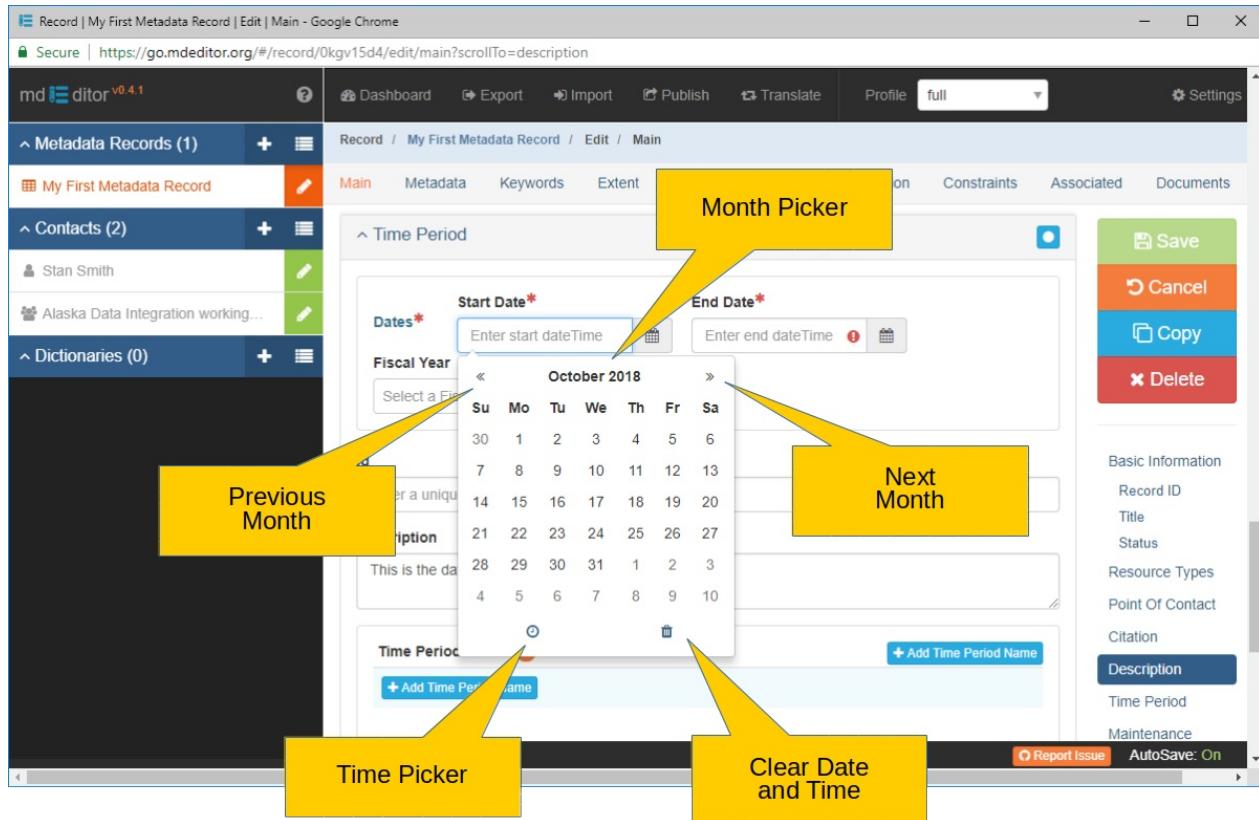


Image 1: Edit Window - Date Picker

Previous Month / Next Month

These buttons decrement or increment the month by one.

Month Picker

If you need to jump backwards or forwards by more than a few months, click the "Month" button. The control will display buttons for all the months of the current year. Click the desired month.

But what if you need the month to be in a different year? Notice that the "Month" button has now become a "Year" button. The same rules will apply. You can increment or decrement the year by one before selecting the correct year.

Need to jump even farther back or ahead in time? Click the "Year" button and a range of years is displayed and the "Year" button becomes a "Year-Range" button.

Time Picker

If you want to enter a time along with the date, click the at the bottom of the date-time control. Refer to the "Time Picker" section below for how to use this control.

The will only appear on elements that support both a date and time. Some elements only allow for a date.

Clear Date and Time

This button will clear both the date and time.

Time Picker

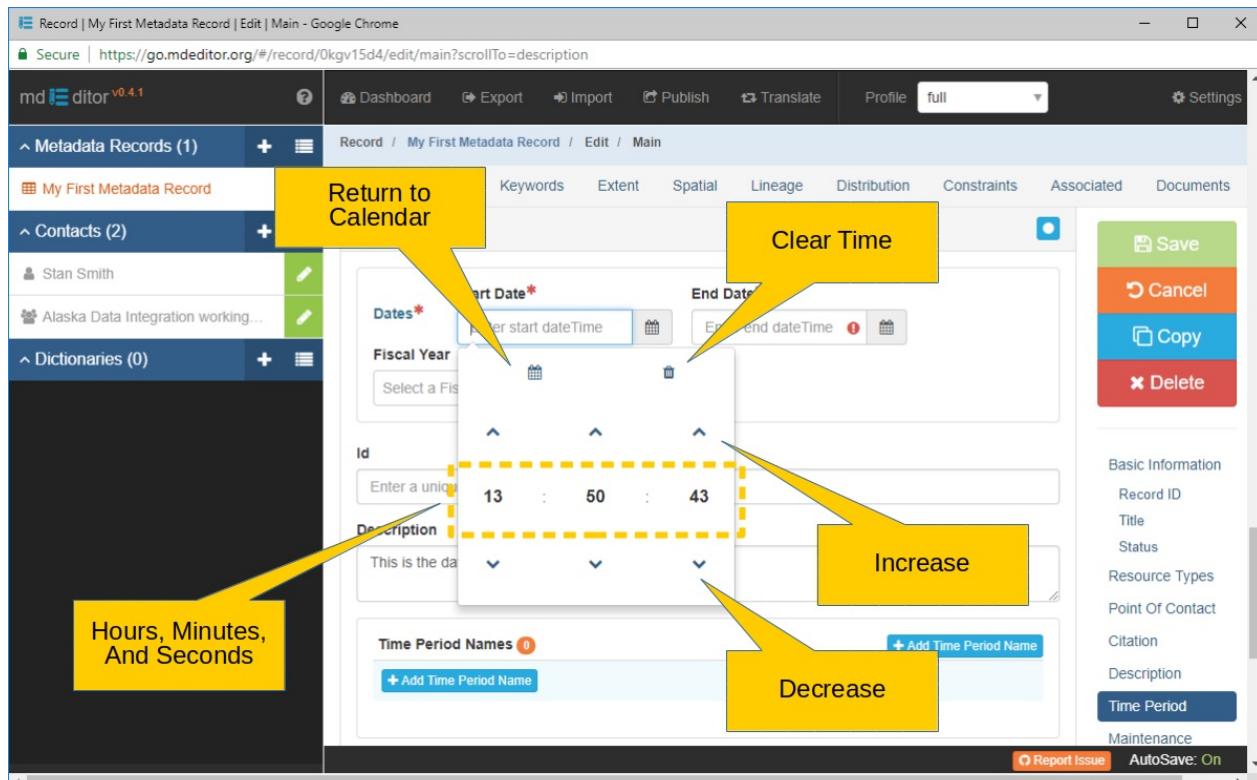


Image 2: Edit Window - Time Picker

Return to Calendar

This button returns control to the calendar. The time displayed on the time control will be attached to the date upon exiting, even if none of the time buttons were touched while the time control was open.

Hours, Minutes, and Seconds

Numbers inside the dashed rectangle represent the hours, minutes, and seconds. These can be incremented or decremented using the up and down arrows. The numbers are actually buttons themselves. Click on the hour for instance, and a table of the 24 possible hours is displayed for you to select from. Click on the minute or second buttons and numbers from 00 to 55 are displayed in increments of 5.

Increase / Decrease

These up and down arrows increment and decrement the hours, minutes, and seconds by one.

Clear Date and Time

This button will clear both the date and time, not just the time.

- Set a **Start Date** and time for the main resource **Time Period**.
- You can also set an **End Date** and time if you like.

Entering an **End Date** that occurs before the **Start Date** will be flagged as an error by `mdEditor`.

We will cover the other elements of the **Time Period** object in a later section. For now, we can rejoice in that we have completed our minimal `mdJSON` metadata record, and learned quite a bit about how `mdEditor` functions in the process. Now it's time to see some of what we can do with it!

Date and time may be entered manually in a year, month, day, hour, minute, second string. Most delimiters are accepted by the control. e.g. Entering "2014-03-15 10:45" is 10:45 a.m. on the Ides of March for 2014, as is "2014 03 15 10 45".

Tutorial -- Translate a Metadata Record

Now that we have entered our minimal [mdJSON metadata record](#) let's see how easy it is to translate the [record](#) into other [metadata](#) formats. With [mdEditor](#) open on the [metadata record](#) you wish to translate - in this example "My First Metadata Record" - click the "Translate" button in the [PRIMARY NAVIGATION BAR](#). This will take you to the Translate [Record](#) window show below.

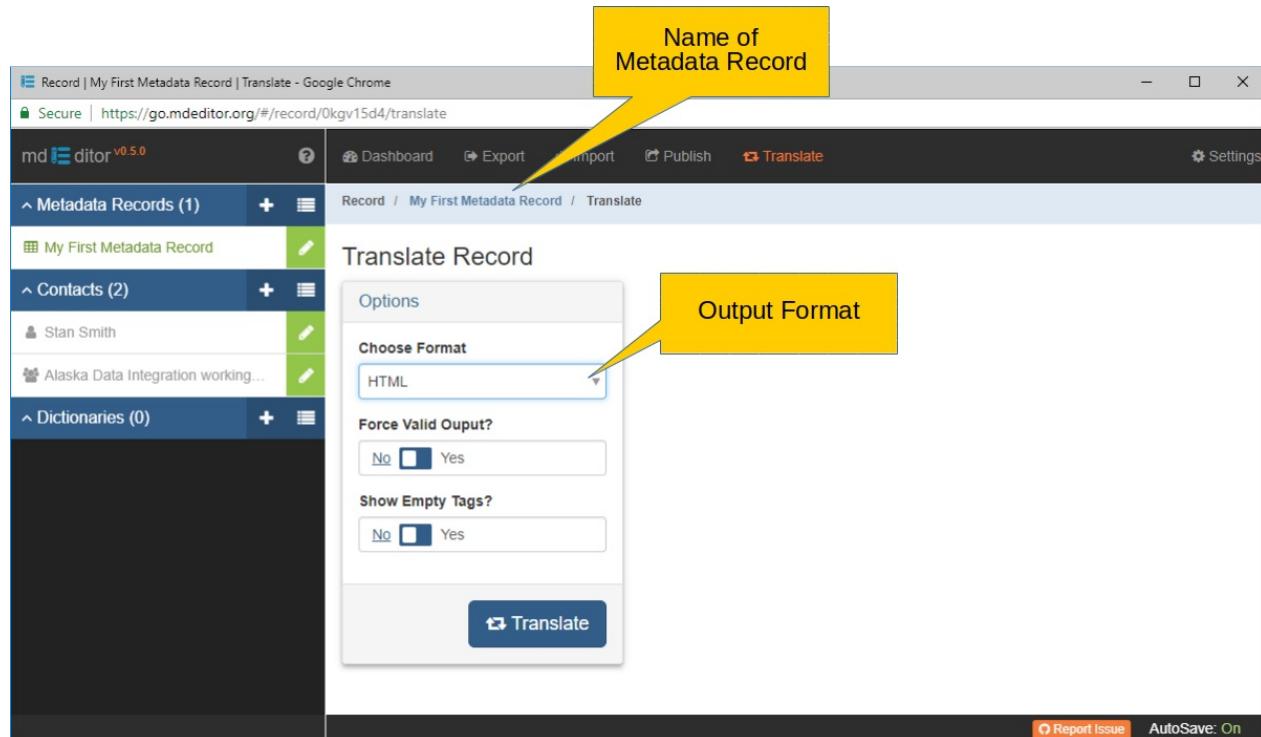


Image 1: Translate Record Window

The "Translate" button on the [PRIMARY NAVIGATION BAR](#) is only accessible when you have a metadata record open in [mdEditor](#); and the open record is the one that will be translated.

You can verify which [metadata record](#) will be translated by checking the name of the [record](#) in the [BREADCRUMB BAR](#) path.

As you can see there are few controls on this page since translating from [mdJSON](#) to other formats is pretty straightforward. Let's try it now.

Translate "My First Metadata Record" to [HTML](#)

- Choose "[HTML](#)" from the [Choose Format](#) control
- Click the [Translate](#) button.

Translation may take a minute or two. The [mdTranslator](#) is hosted by a website that swaps [mdTranslator](#) out of [memory](#) when it is not being actively used. If it was swapped out you may need to wait while [mdTranslator](#) is loaded again before it runs your task.

That's about all there is to it!

When you click **Translate** button, the **mdJSON** record being edited in **mdEditor** (the **record in memory**) will be packaged up and sent to **mdTranslator** for translation into the format you requested, in this case "**HTML**". The "**Translate Record**" window will then wait for a response from **mdTranslator** and display the result in a small **Result** preview panel as shown in the image below.

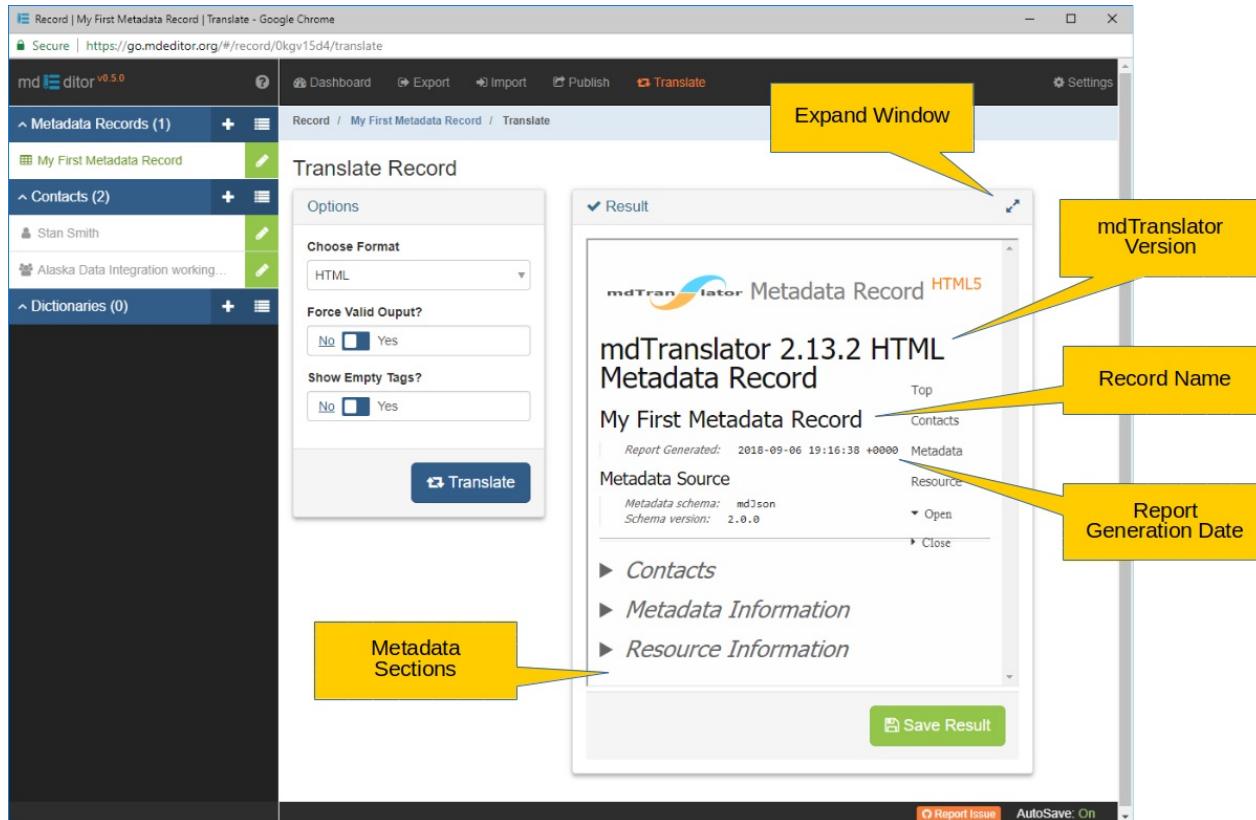


Image 2: Translate **Record** Window - Preview Window

The **Result** preview panel is pretty small for viewing your **record** comfortably. You can expand this into a full window by clicking the expand window button in the upper-right corner of the **Result** preview panel.

Expand the **Result** preview panel to full size.

- Click the expand window button in the upper-right corner of the **Result** preview panel.
- Search the window for all the **metadata** you entered.
- Shrink the **RESULT** window by clicking the expand window button again.

The **HTML** output window is an excellent way to review the full content of your **metadata record**. The **HTML** output presents all your entries in an organized easy-to-read format. It can also be exported by clicking the **Save Result** button, making this a handy way for others to review your **metadata** or embed it in websites.

Notice that the report generation date-time is shown in UTC (Coordinated Universal Time or Greenwich Mean Time).

Let's try the [ISO 19115-2](#) format next ...

Tutorial -- Handling Translation Errors

Let's run another translation on "My First Metadata Record". This time choose the output format as "ISO 19115-2."

Translate "My First Metadata Record" to ISO 19115-2

- Choose "ISO 19115-2" from the **Choose Format** control
- Click the **Translate** button.

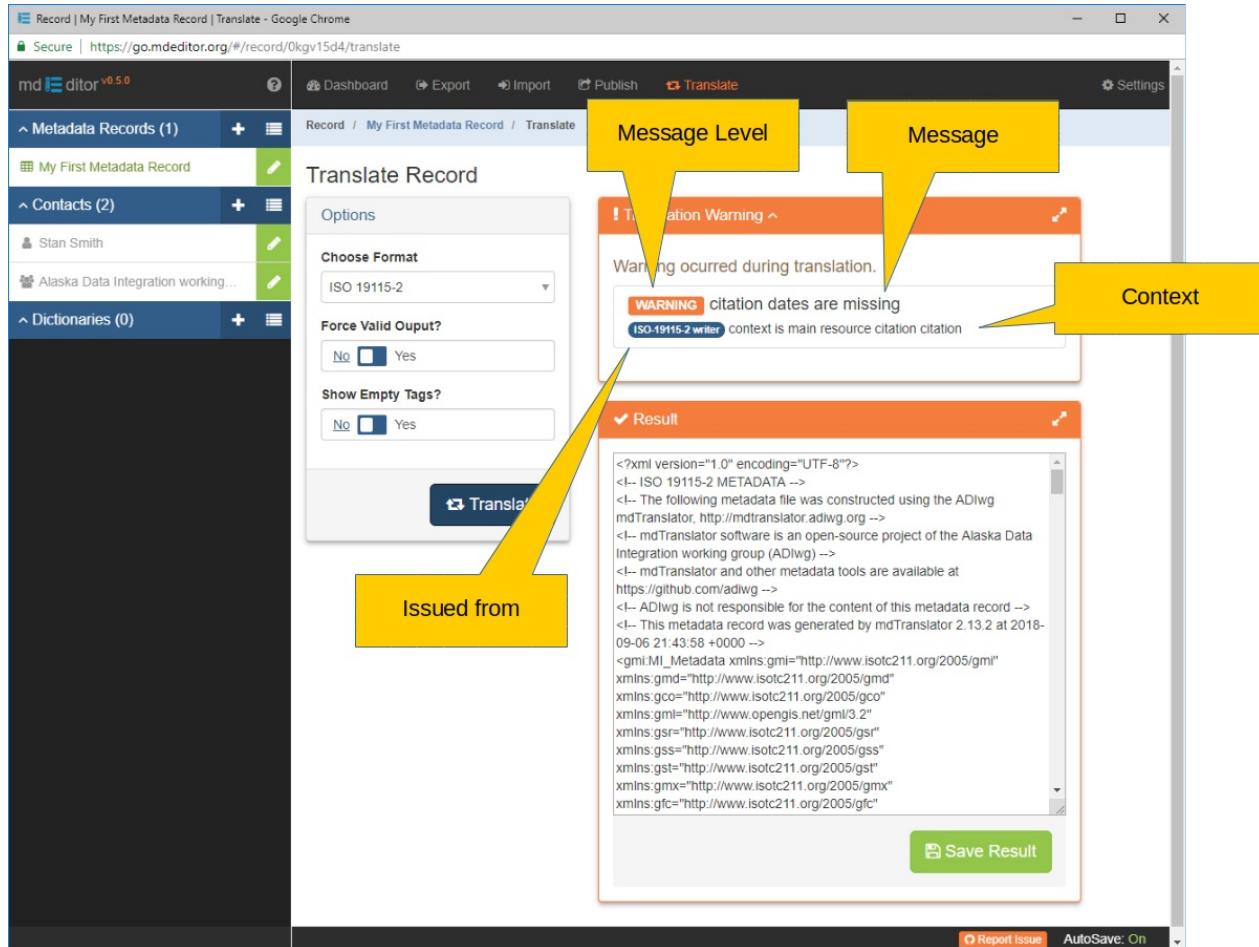


Image 1: Translate Record Window with Warnings

This time things did not go quite so well. A "Translation Warning" panel has popped up along with the expected **Result** panel. You are being warned that although you have met the requirements for a minimal [mdJSON record](#), there are still one or more additional requirements needed to generate a valid [ISO 19115-2 record](#).

No problem. The message informs us that we are missing a date for the main resource citation. Let's break the message down by parts before we add the date.

Message Level

The message level can be either Error, Warning, or Notice. In general, all message levels will still generate a [metadata record](#). The message's level speaks more to how well the generated [metadata record](#) conforms to the requested standard. We will have more to say on this topic when we discuss translation in detail. For now, the best approach is to fill in all missing data identified by either an Error or

Warning message.

Message

The message. In this case "citation dates are missing."

Issued From

The "Issued From" indicator tells which [mdTranslator](#) module issued the message. This will be one of the [mdTranslator](#) readers or writers. In our example the message was issued by the "[ISO 19115-2 writer](#)."

Context

A message context is provided to help you find the offending section of your [metadata record](#). For instance, as discussed earlier, [Citation](#) is used in many place throughout the [metadata record](#). It would be insufficient to simply say "citation dates are missing". For which citation?

Context tells us the offending citation is the "main resource citation". Which is not surprising since it's the only [Citation](#) we have entered so far.

Let's add the missing date.

Enter a main resource citation date.

- Click the  button next to the "My First Metadata Record" in the [PRIMARY SIDEBAR](#).
- Click "Citation" on the [FAST SCROLLING](#) section of the [SECONDARY SIDEBAR](#) to scroll [Citation](#) to the top.
- Click the  button on the [Citation](#) [PANEL TITLE BAR](#).
- On the [Dates](#) panel click the  button
- Add a date
- Choose a date type
- Save your edit if "AutoSave" is not "On"

With our citation date entered let's go back and try the translation to ISO one more time ...

Translate "My First Metadata Record" to "ISO 19115-2"

- Click "Translate" on the [PRIMARY NAVIGATION BAR](#)
- Choose "ISO 11915-2" from the [Choose Format](#) control
- Click the  button.

Worked for me! How about you?

With a valid [ISO 19115-2 record](#) in the [Result](#) preview panel let's export the [metadata ISO record](#) so it can be sent to a clearinghouse, repository, or publisher of our choice.

Save the [ISO 19115-2 metadata record](#).

- Click the  button.
- Check your computer's "Downloads" folder for the [metadata record](#).
- Move the file to a safe location on your computer.

- Rename the file if you like.

The downloaded metadata file will have a filename format of {recordName}_{date}.{ext}. As an example, the file I downloaded was named "My First Metadata Record_20180907.xml".

Extra Credit!

- Translate "My First [Metadata Record](#)" to "[FGDC CSDGM](#)"

Now there are a lot of missing elements! [FGDC CSDGM](#) has more required elements than either [mdJSON](#) or ISO. But we don't need to add all those missing elements for this exercise. Let's just move on to "Exporting Records."

Each standard format has its own set of requirements. Getting your record ready for one standard will not guarantee it is ready for another. Thankfully [mdTranslator](#) can sort that out for you by pointing out any missing required elements.

Tutorial -- Exporting a Metadata Record

Now that our very minimal [metadata record](#) can be translated into a valid, but equally minimal, ISO [metadata record](#), it's time to preserve our hard work. By that I mean copy the records from [browser cache](#) to your [local storage](#).

Local storage can be a folder on your hard drive or anywhere on your local network, preferably a location that is backed-up periodically.

Open the [EXPORT WINDOW](#).

- Click "Export" on the [PRIMARY NAVIGATION BAR](#).

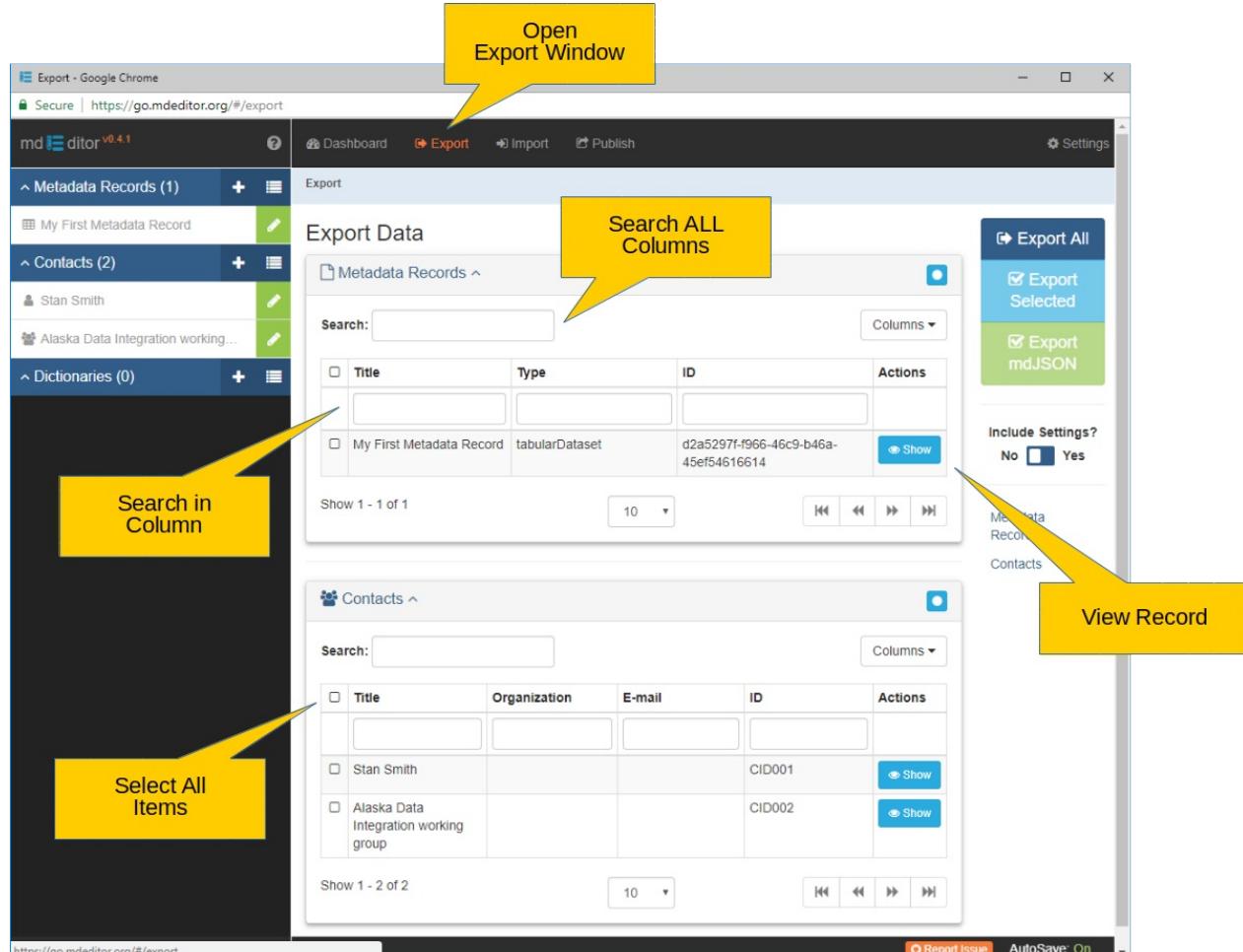


Image 1: Export Window

The [EXPORT WINDOW](#) is showing two panels; one for [Metadata Records](#) and a second for [Contacts](#).

If we had defined a "Dictionary" there would also be a [Dictionaries](#) panel on the [EXPORT WINDOW](#). Instead a banner is displayed proclaiming "No Dictionaries Found."

Selecting Records for Export

To select records ([Metadata](#) Records, Contacts, and/or Dictionaries) for export, simply click the checkbox in the left-hand column next to the items you wish to export. The selected records will all be bundled into a single export file. Bottom line, any [record](#) that is checked when you click "Export" will be exported.

It is not uncommon for a list of records to become too long to fit on a screen, particularly a list of contacts. To help refine a list, search controls have been added to the panels. Typing a string into one of these search controls will cause the panel to display only items with a match to the string. The search controls located below column names refine the list based on the column's contents. The search control located under the panel's [PANEL TITLE BAR](#) refines the list based on a match in ANY of the panel's columns.

Search criteria can also be entered into more than one search control. The multiple search criteria are applied as a logical "AND" not an "OR". This means the selected items will need to match ALL the search criteria, not merely ANY of the criteria.

A checkbox in the panel's label row - identified as "Select All Items" in the screenshot above - will check or uncheck all items in the panel.

If you refine a list using search criteria, the "Check All Items" checkbox will still check or uncheck ALL rows in the panel, even those excluded by the search criteria.

Export All | [Export All Items](#)

The "Easy Button." Export all items in the [Metadata Records](#), [Contacts](#), and [Dictionaries](#) panels, checked or not.

Export Selected | [Export Selected Items](#)

Export all **Checked** items in the [Metadata Records](#), [Contacts](#), and [Dictionaries](#) panels.

Export all records.

- Click the [Export All](#) button.

No questions asked! [mdEditor](#) just exported all the records we created. If you missed it, a file was just dropped into the "Downloads" folder on your hard drive.

The file was given a name using a format of "mdeditor-{date}-{time}.json". For example, my file was named "mdeditor-20180907-150907.json"; the date being September 7, 2018 and time 1:09:07 pm.

Placing files in the "Downloads" folder is the default setting of your internet browser. If you prefer you can usually change this location in your browser settings. Most browser preferences will even let you set a flag to ask for a file location and file name each time download a file.

It's now up to you. Move the download file to a safe location and give it proper name.

Tutorial -- Clearing Browser Cache

Since we just exported our [metadata](#) records to [local storage](#) it stands to reason we should also be able to import [metadata](#) records into the [mdEditor's browser cache](#). And we can.

Exporting [metadata](#) records to [local storage](#) does not clear them from [browser cache](#), they are still there. To have a meaningful import exercise we should first clear the [browser cache](#).

Although this is just an exercise built upon meaningless [metadata](#), it is an essential practice to be sure you have exported all the data you wish to keep and that you know where you put it before clearing [browser cache](#). Have you? And can you find it?

Time to clear [browser cache](#) ...

Open the [SETTINGS WINDOW](#).

- Click the "Settings" button in the [PRIMARY NAVIGATION BAR](#).

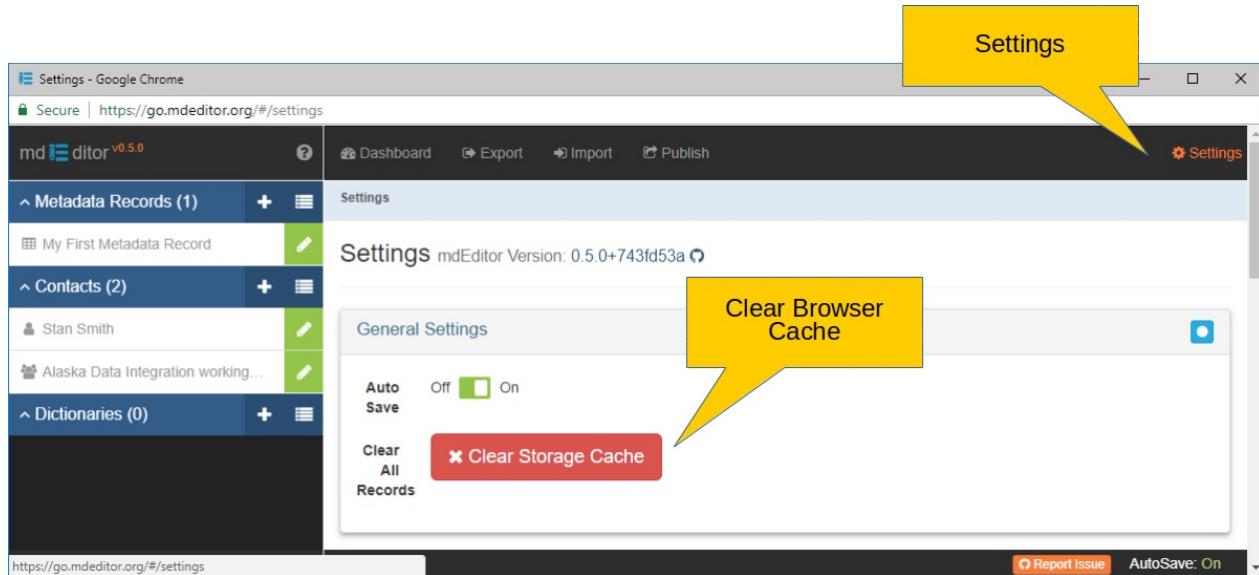


Image 1: Settings Window

Clear [browser cache](#).

- Click the [Clear Storage Cache](#) button.
- Confirm the delete of ALL records.

mdEditor will reset and when it restarts there will be no "Metadata Records", "Contacts", or "Dictionaries" found in [browser cache](#). This is verified by no records being indexed in the [PRIMARY SIDEBAR](#). [Browser cache](#) is empty.

Browser cache can also be emptied by functions built into every browser. Where this function is found is browser dependent. It is generally grouped with other tools that clear browser history and cookies. Make it a practice of saving your metadata records to local storage regularly to avoid unintended loss.

With [browser cache](#) now empty, let's reload our saved [metadata](#) records ...

Tutorial -- Importing Metadata Records

Open the **IMPORT WINDOW**.

- Click "Import" on the **PRIMARY NAVIGATION BAR**.

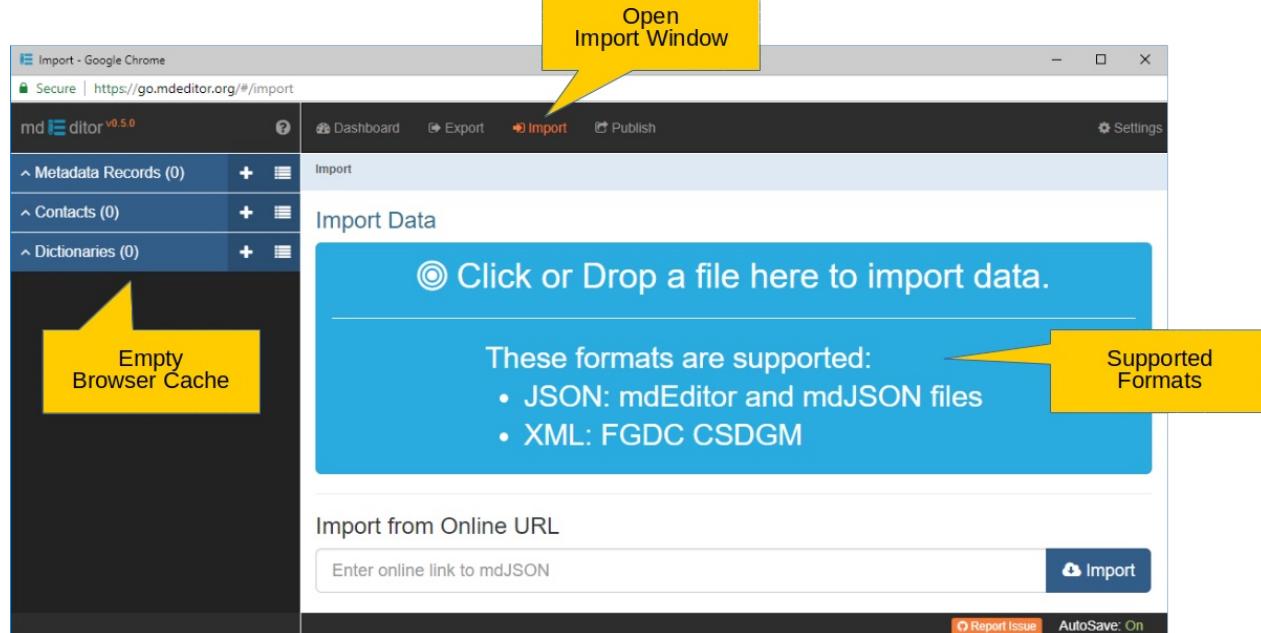


Image 1: Import Window - Home Page

The absence of records showing in the **PRIMARY SIDEBAR** confirms that there are no records loaded in [browser cache](#). However, before proceeding with this exercise be sure the [browser cache](#) is clear so your experience will parallel this dialog.

It is not a requirement that browser cache be empty before importing metadata records; an empty cache will just make this exercise simpler. [mdEditor](#) does allow you to import and merge multiple metadata record files to create a set or collection of metadata records that match your organizational needs.

As identified on the **IMPORT WINDOW**, [mdEditor](#) supports import of [metadata](#) records in three formats:

- [mdEditor \(.json\)](#)
- [mdJSON \(.json\)](#)
- [FGDC CSDGM \(.xml\)](#)

mdEditor format

The [mdEditor](#) export format can contain multiple records, contacts, and dictionaries. This is useful for organizing a collection of records in [mdEditor](#) that are related in some meaningful way, perhaps by project, organization, or principal investigator.

mdJSON format

An mdJSON record may contain only a single metadata record complete with all its contacts and dictionaries attached.

FGDC CSDGM format

The FGDC CSDGM (Federal Geographic Data Committee - Content Standard for Digital Geospatial Metadata) is a widely used but retiring standard. Support for importing this standards was provided to help those involved in migrating CSDGM records to newer ISO standards.

The record we exported in Exporting Metadata Records was written using the mdEditor record format. This format was chosen for us when we clicked the **Export All** button. Although we only had one record - with two contacts), **Export All** always writes the entire contents of browser cache to the output file.

To load the exported file back into mdEditor's browser cache just drag and drop it on the big blue target on the **IMPORT WINDOW**.

Import the mdEditor file.

- Drag the file exported earlier in this exercise over the blue target.
- When the target turns green, release.

You can also enter a link to a file at a remote location and click **Import**.

The **IMPORT WINDOW** should now look similar to the following image:

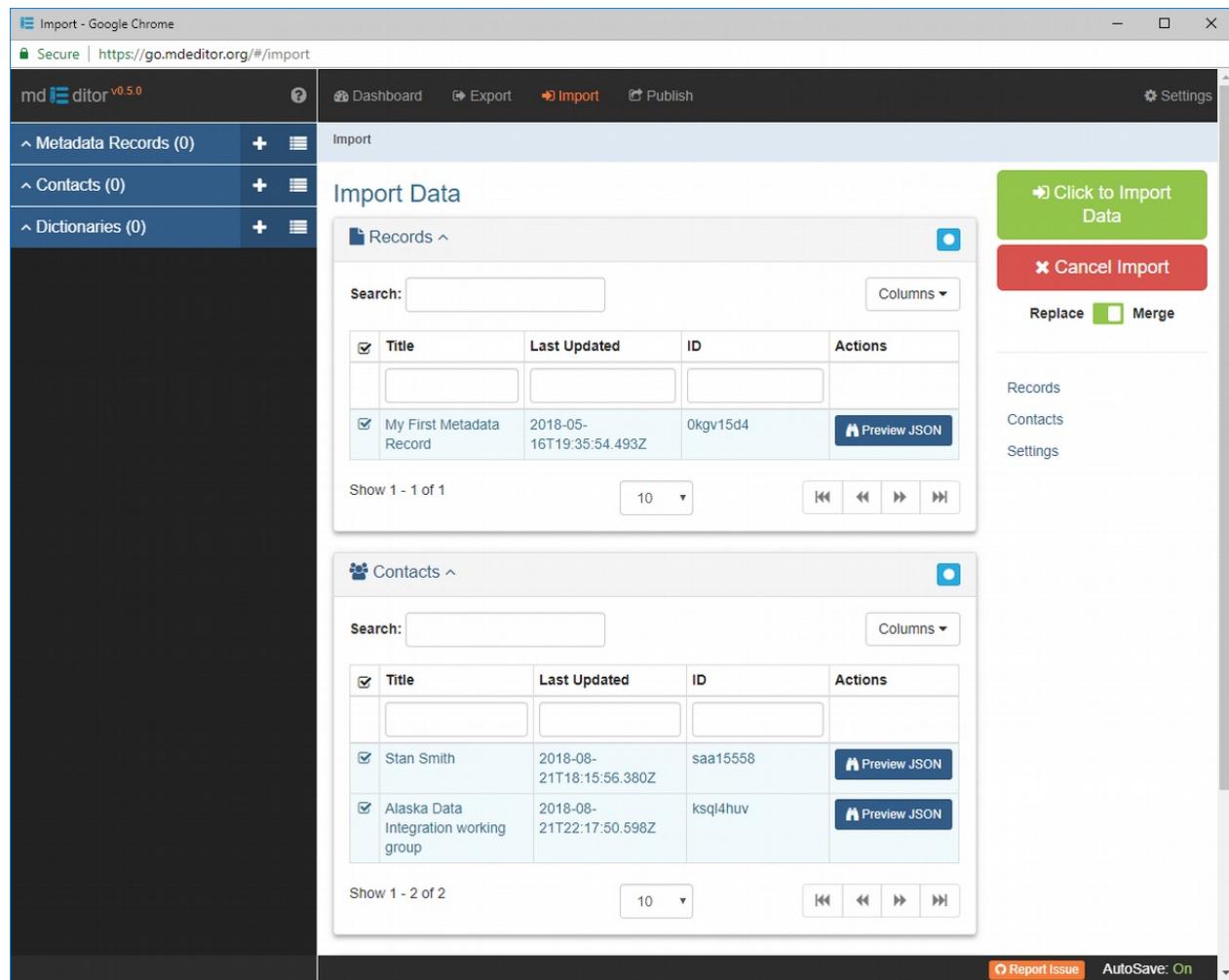


Image 2: Import Window - Choose Records to Import

You can use the **IMPORT WINDOW** selection panels to choose just the records you wish to import. These selection panels work identically to those discussed for the **EXPORT WINDOW**, [Exporting Metadata Records](#), so nothing new here.

Now let's import the entire [mdEditor file](#) using just a single click!

Import all [metadata](#) records in the import file.

- Leave all [record](#) items checked. If you unchecked any, re-check them now.
- Click the **Click to Import Data** button.

The screenshot shows the mdEditor v0.5.0 application interface. The left sidebar lists three categories: 'Metadata Records (1)', 'Contacts (2)', and 'Dictionaries (0)'. The 'Metadata Records' section contains one item: 'My First Metadata Record'. The main area is titled 'Import Data' and displays a table with the following data:

Title	Last Updated	ID	Actions
My First Metadata Record	2018-05-16T19:35:54.493Z	0kgv15d4	Preview JSON

Below the table, there are buttons for 'Replace' and 'Merge'. On the right side of the main area, there are buttons for 'Click to Import Data' (green), 'Cancel Import' (red), 'Replace' (green), and 'Merge' (green). The bottom right corner shows 'Report Issue' and 'AutoSave: On'.

Image 3: Import Window - Import Results

As you can see from the records now listed in the **PRIMARY SIDEBAR**, the **browser cache** has been reloaded with all the records we exported earlier.

Tutorial -- Closing Thoughts

Congratulations! Unless you just skipped directly to this page you have now completed the "Getting Started" guided tour of [mdEditor](#). Admittedly, there are still many details yet to cover. [mdEditor](#) is a very rich [metadata](#) editor. The reference pages attempt to cover this full feature set. So don't close the book just yet. Keep a link to this document handy for when you have a question or need to do something new such as add a map, a dictionary, or other feature not explored in the "Getting Started" tutorial.



Image 1: You Passed!

ADIwg

Alaska Data Integration working group <https://www.adiwg.org/>

Auto-Save

A feature in [mdEditor](#) settings that allows information to be automatically saved as it is entered. Consult the [Settings](#) section of this manual for more information.

Browser Cache

A temporary storage area in [memory](#) or on disk that holds the most recently downloaded Web pages. [mdEditor](#) exploits this non-volatile [memory](#) facility of browsers to cache [metadata](#) records while they are being edited.

CSV

A comma-separated values ([CSV](#)) file is a delimited text file that uses commas to separate values. A [CSV](#) file stores tabular data (numbers and text) in plain text. Each line of the file is a data [record](#). Each data [record](#) consists of one or more fields separated by a comma. The fields most commonly represent the columns in a [record](#). [CSV](#) fields generally use the [.csv](#) extension.

Customization

The ability afforded by open-source code to edit the code of an application (in this case [mdEditor](#)) according to the needs of the users.

FGDC CSDGM

Federal Geographic Data Committee's Content Standard for Digital Geospatial [Metadata](#) - FGDC-STD-001-1998 (Includes Biological Data Profile) <https://www.fgdc.gov/metadata/csdgm/>

FGDC

Federal Geographic Data Committee <https://www.fgdc.gov/>

HTML

Hyper Text Markup Language, the standard markup language for creating Web pages. [HTML](#) is the ‘human-readable’ and printable report of the [metadata](#) content.

International Standards Organization

International Organization for Standardization - ISO is an independent, non-governmental international organization with a membership of 162 [national standards bodies](#).

Through its members, it brings together experts to share knowledge and develop voluntary, consensus-based, market relevant international standards that support innovation and provide solutions to global challenges. <https://www.iso.org/home.html>

ISO 19110

[International Standards Organization](#) Geographic Information - Feature Catalogue 19110:2005. more ...

ISO 19110:2005 defines the methodology for cataloguing feature types and specifies how the classification of feature types is organized into a feature catalogue and presented to the users of a set of geographic data. (International Organization for Standardization (2016).

[ISO 19110:2016](#) <https://www.iso.org/standard/57303.html>.

ADIwg mdJSON and mdEditor use this standard to describe tabular datasets in ISO [metadata](#) records. It is not a perfect fit, but it is all that is available for data descriptions in ISO [metadata](#).

ISO 19115-1

[International Standards Organization](#) Geographic Information - [Metadata](#) 19115-1:2014. more ...

Defines the schema required for describing geographic information and services by means of [metadata](#). It provides information about the identification, the extent, the quality, the spatial and temporal aspects, the content, the spatial reference, the portrayal, distribution, and other properties of digital geographic data and services. (International Organization for Standardization (2014). [ISO 19115-1:2014](#). Retrieved from: <https://www.iso.org/standard/53798.html>)

ISO 19115-2

[International Standards Organization](#) Geographic Information - [Metadata](#) 19115-2:2009. more ...

Extends the existing geographic [metadata](#) standard by defining the schema required for describing imagery and gridded data. It provides information about the properties of the measuring equipment used to acquire the data, the geometry of the measuring process employed by the equipment, and the production process used to digitize the raw data. This extension deals with [metadata](#) needed to describe the derivation of geographic information from raw data, including the properties of the measuring system, and the numerical methods and computational procedures used in the derivation. The [metadata](#) required to address coverage data in general is addressed sufficiently in the general part of ISO 19115. (International Organization for Standardization (2009). [ISO 19115-2:2009](#). Retrieved from: <https://www.iso.org/standard/39229.html>)

JSON

Javascript Object Notation, a general purpose format like [CSV](#).

Keywords

Words used in an information retrieval system to indicate the content of a document.

Local Storage

The user's standard storage system of directories, files, and folders. [Local Storage](#) may be on a user's hard drive or SSD (Solid State Device). In this document the term [Local Storage](#) is also meant to include any network storage accessible by the user.

Markdown

[Markdown](#) is a lightweight markup language with plain text formatting syntax. It is designed so that it can be converted to [HTML](#) and many other formats using a tool by the same name.

mdEditor File

A [mdJSON file](#) created by [mdEditor](#) that contains all of the information contained in [mdJSON](#), along with [mdEditor](#) settings. This can be exported and shared with collaborators, imported into another [record](#) set, or saved to a local workstation as a backup or archival copy.

mdEditor

Web application for authoring and editing [metadata](#), for both projects and datasets.

mdJSON File

An [mdJSON file](#) that is proprietary to the [Metadata](#) toolkit developed by the Alaska Data Integration Working Group ([ADIwg](#)), learn more at <https://adiwg.github.io/mdTools/>.

mdJSON

[ADIwg](#) standard for encoding project and data [metadata](#), based on JavaScript Object Notation ([JSON](#)).

mdTranslator

Open-source Ruby software application for translating between [metadata](#) standards. [Metadata](#) is input in one of the supported ‘reader’ formats and output in one of the supported ‘writer’ formats. Available as Ruby gem or Command-Line-Interface.

Memory

The volatile high-speed RAM (Random Access [Memory](#)) that is the temporary working storage for all computer applications and data. Once a unit of work is complete it must be moved to a non-volatile storage area such as [browser cache](#) or [local storage](#) to be saved for later access. Once an application is closed its [memory](#) space is cleared to be used by other applications.

Metadata Repository

A server where [metadata](#) is published.

Metadata

A set of data that describes and gives information about other data.

Record

In [mdJSON](#) records can be one of three types; [metadata record](#), contact, or dictionary. All records that have been loaded into [browser cache](#) can be accessed from the [PRIMARY SIDEBAR](#).

sbJSON

U.S. Geological Survey's standard for documenting records ingested into [ScienceBase](#) Catalog. The format used to define the attributes of [ScienceBase](#) items.

ScienceBase

A USGS collaborative scientific data and information management platform used directly by science teams. [ScienceBase](#) provides access to aggregated information derived from many data and information domains, including feeds from existing data systems, [metadata](#) catalogs, and scientists contributing new and original content. [ScienceBase](#) architecture is designed to help science teams and data practitioners centralize their data and information resources to create a foundation needed for their work. [ScienceBase](#), both original software and engineered components, is released as an open source project to promote involvement from the larger scientific programming community both inside and outside the USGS. (USGS (2018). *About ScienceBase*. Retrieved from: <https://www.sciencebase.gov/about/content/about-sciencebase>).

UUID

A [UUID](#) (Universal Unique Identifier) is a 128-bit number used to uniquely identify an object on the Internet. A [UUID](#) is either guaranteed to be different or is, at least, extremely likely to be different from any other [UUID](#) generated until 3400 A.D.

URI

Uniform Resource Identifier; a string of characters used to identify a resource. A URL is a type of [URI](#).

Appendix

1. [mdToolkit](#)
2. [Documentation Guide](#)

Appendix 1: ADIwg Metadata Toolkit Architecture

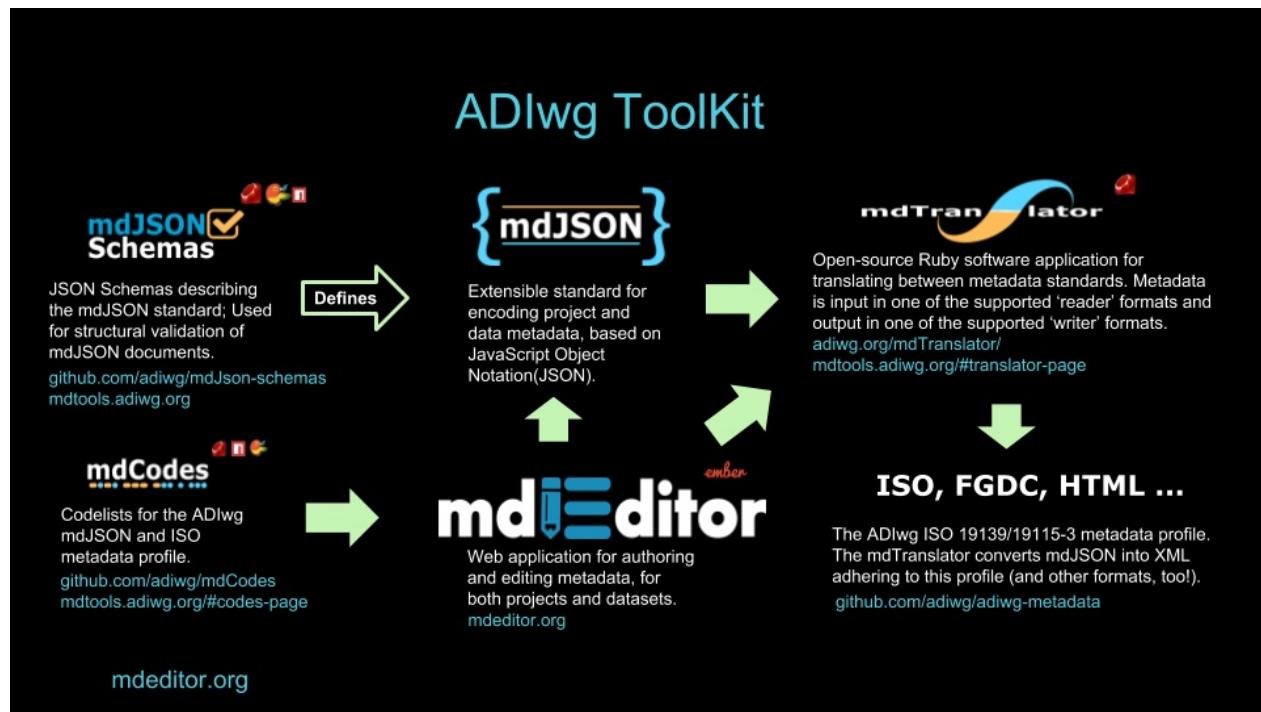


Image 1: ADIwg mdToolkit architecture overview.

1. **mdEditor** writes an **mdJSON file**.
2. The **mdJSON file** is read by the **mdTranslator API**.
3. The **mdTranslator API** uses the **mdTranslator software application** to convert the **mdJSON file** into the requested format.

Appendix 2: Documentation Authoring Guide

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About this guide

Who is this guide for?

This guide is intended for parties interested in contributing to this documentation.

What is it about?

This guide describes a recommended workflow and required conventions to be used when creating content.

Workflow

Setup Environment

While the online editor may be used, the most efficient way to create documentation is to install the GitBook Toolchain locally. See <https://toolchain.gitbook.com/> for detailed instructions. The short version follows.

The following is required:

- NodeJS (v4.0.0 and above is recommended)
- git
- A Markdown editor/IDE (ATOM is a good open source choice)

- Windows, Linux, Unix, or Mac OS X

1. Install `gitbook-cli` using npm:

```
$ npm install gitbook-cli -g
```

2. Clone the [mdEditor](#) GitBook:

```
$ git clone git@github.com:adiwg/mdEditor-doc.git
```

or

```
$ git clone https://github.com/adiwg/mdEditor-doc.git
```

3. Setup GitBook

```
$ cd mdEditor-doc
$ gitbook install
```

4. Start the local GitBook server

```
$ gitbook serve
```

5. Open a browser to: <http://localhost:4000>

Contributing using GitHub

Fork this repository (click "fork" on the [repository's home page](#) in GitHub)

Clone the forked repository with `git clone <your fork's url>` and create a branch with `git checkout -b some-branch-name`.

As you make commits, reference the issue number, if any, in your commit message, such as `git commit -m "added information on important subject (#62)"`

Once you're at the point that you'd like feedback, submit a Pull Request (new Pull Request button). Choose `master` for the base and your branch name for `compare`, then submit it!

Your PR will be reviewed by another contributor, and then either merged or have changes requested.

Style Guide

This section covers styling conventions required for this documentation. Some of the conventions rely on plug-ins that enhance the native GitBook [Markdown](#) functionality. In some instances, the effects of the plugins are not displayed until after the book has been generated.

Headings

Please use headings to define page sections. Heading levels should appear sequentially without gaps (don't skip heading levels). Headings should start at Level 1 for the page title. Headings should not be used purely to define font styles - if absolutely necessary, use CSS for that. Following this convention will make it possible to parse the [markdown](#) programmatically, e.g. to dynamically create a table of contents.

Lists

Ordered lists

Ordered lists are processed irrespective of the actual number assigned to each list item. For Example:

```
1. first
2. second
3. third
```

```
1. first
2. second
3. third
```

is rendered the same as:

```
1. first
12. twelfth
30. thirtieth
```

```
1. first
2. twelfth
3. thirtieth
```

Therefore, one recommended convention is to use `1.` for every item in an ordered list. This makes it easier to insert or remove items from the list, at the expense of slightly less readable [Markdown](#). If you choose to sequentially order the list items, you **must** make sure the numbers are sequential to avoid confusion.

List headings

Headings may be used in lists. However, special handling is required to ensure bullets for ordered lists are styled appropriately.

The `tasks` tag is available for styling "task lists". For simplicity, all of the various heading levels are styled the same.

Example without task tag

```
1. ## Level 2
1. ### Level 3
1. ##### Level 6
```

Example without task tag

1. **Level 2**

2. **Level 3**

3. **Level 6**

Example with task tag

```
<!-- tasks -->
1. ## Level 2
1. ### Level 3
1. ##### Level 6
<!-- endtasks -->
```

Example with task tag

1. Level 2

2. Level 3

3. Level 6

Icons

FontAwesome icons are available. Use an `<i>` tag to render the chosen icon.

```
<i class="fa fa-smile-o"> </i> Happy Birthday <i class="fa fa-birthday-cake"> </i>
```

Happy Birthday

Buttons

Bootstrap 3 style buttons are supported. Use a `` tag since these are for documentation only. Icons may be combined with buttons.

[Default](#) [Primary](#) [Success](#) [Info Extra - Small](#) [Warning - Small](#) [Danger - Large](#) [Link](#)

```
<!-- Standard button -->
<span class="btn btn-default">Default</span>

<!-- Provides extra visual weight and identifies the primary action in a set of buttons -->
<span class="btn btn-primary">Primary</span>

<!-- Indicates a successful or positive action -->
<span class="btn btn-success"><i class="fa fa-check"> </i> Success</span>

<!-- Contextual button for informational alert messages -->
<span class="btn btn-info btn-xs">Info Extra - Small</span>

<!-- Indicates caution should be taken with this action -->
<span class="btn btn-warning btn-sm">Warning - Small</span>

<!-- Indicates a dangerous or potentially negative action -->
<span class="btn btn-danger btn-lg">Danger - Large</span>

<!-- Deemphasize a button by making it look like a link while maintaining button behavior -->
<span class="btn btn-link">Link</span>
```

Hints

Styled hint blocks are supported.

```
{% hint style='info' %}
Important info: this note needs to be highlighted
{% endhint %}
```

There are five supported variations.

- `info` (default)
- `tip`
- `danger`
- `working`
- `plain`

`Info`: this note needs to be highlighted.

`Tip`: 20% is customary.

`Danger`: this is going to blow up!

`Working`: for the man every night and day...

`Plain`: booooooorrrring.

User Interface Elements

The following classes may be used to highlight text that refers to elements of the user interface:

```
<span class="md-window">window</span>
<span class="md-section">section</span>
<span class="md-panel">panel</span>
<span class="md-element">element</span>
```

`WINDOW PART` `Edit Window Section` `Panel Name` `panel element`

Screenshots

The following software is required:

- Libre Office Draw
- A tool to capture screenshots
- Windows, Linux, Unix, or Mac OS X

Types of screenshots

1. *basic* screenshots have no annotation or markup applied
2. *annotated* screenshots have markup applied, e.g. callouts, highlights, etc.

Requirements for all screenshots

1. Minimum 1200px wide
2. Must include a caption
3. PNG format
4. Generally browser window captures should only contain minimum user interface controls, without navigation toolbar, tab bar, bookmarks toolbar, or status bar. See [Bookmarlet for Screenshots](#).



Image 1: Example browser screenshot.

5. Images should be stored in the `assets` directory corresponding to the section in which the image appears. Exceptions to this requirement are made for images used in multiple sections.
6. Image sizes should be as small as possible without sacrificing quality. Usually significant size reduction can be achieved by color-type or bit-depth reduction. [pngcrush](#) is a good tool for this.

Requirements for annotated screenshots

1. Use LibreOffice Draw to create the annotations
 - o A template is available here [/assets/documentation-guide/callouts-template.odg](#)
 - o Each screenshot should be placed on a new page
 - o Whenever possible place annotations in callouts *outside* of the image or in a way that does not cover user interface elements
 - o Export only the image by
 - selecting all content on the LibreOffice Draw page using **ctrl-A**
 - choose 'Export ...' from the file menu
 - select 'PNG' from the 'Format' drop-down selection list
 - check the 'Selection' box on the Export window
 - click the 'Save' button
 - set the pixels width to 1200
 - choose a compression level of 6
 - click the 'OK' button
2. All annotated screenshots for a section should be stored on separate pages in a single `.odg` file.
3. Save the LibreOffice Draw file (`.odg`) in the same directory as the screenshots

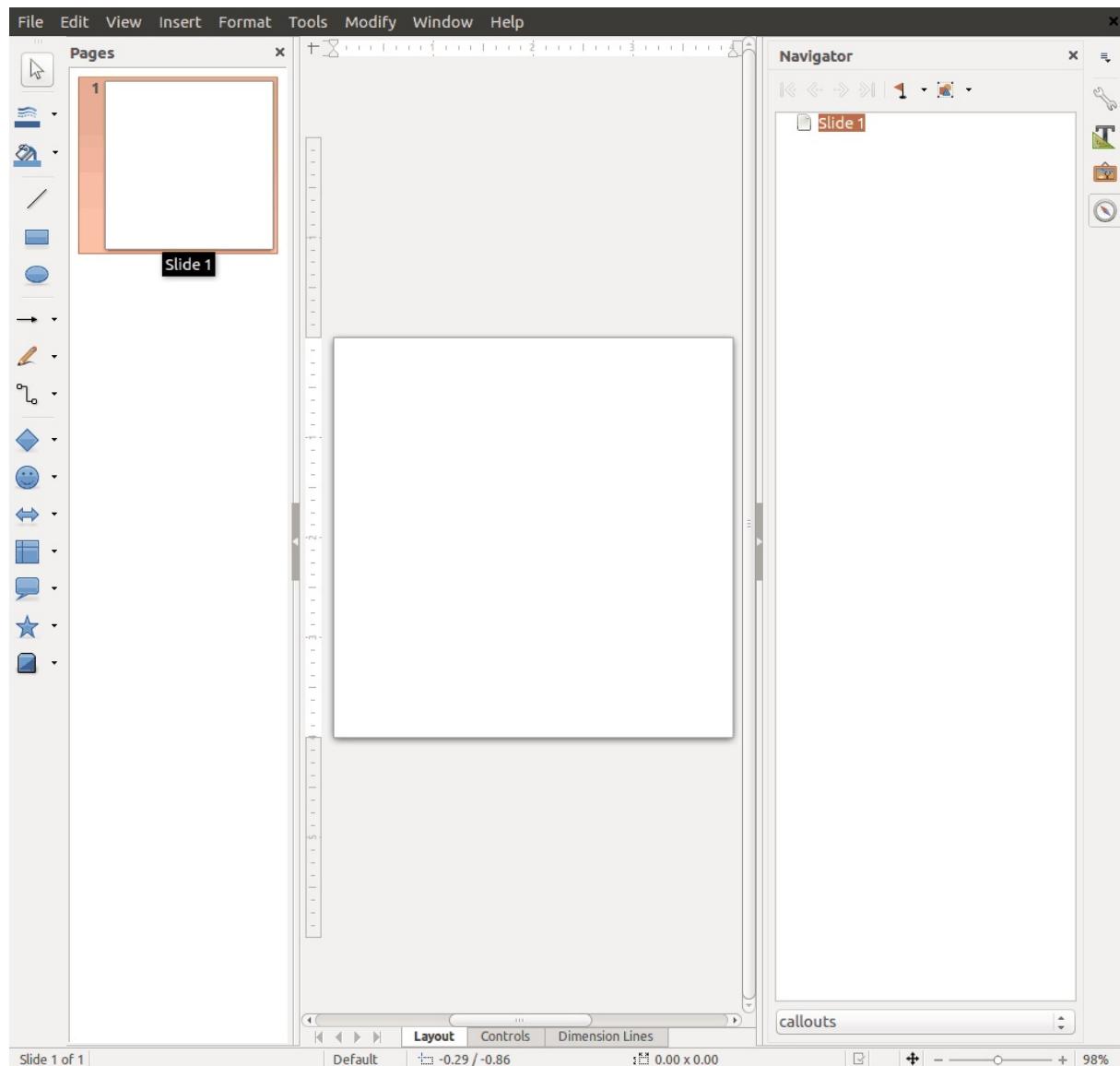


Image 2: Creating screenshots using LibreOffice Draw

Screenshot captions

To apply a caption to a screenshot use this syntax in the [Markdown](#).

```
![caption goes here](/assets/path/to/image){caption}
```

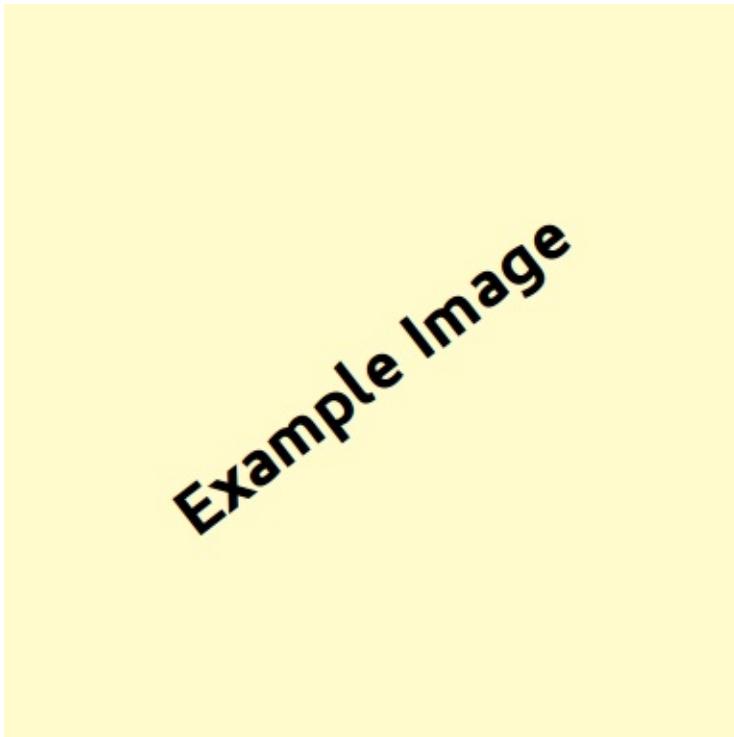


Image 3: Screenshot with caption

To apply a border to a screenshot, add `class=border`.

```
![caption goes here](/assets/path/to/image){caption class=border}
```

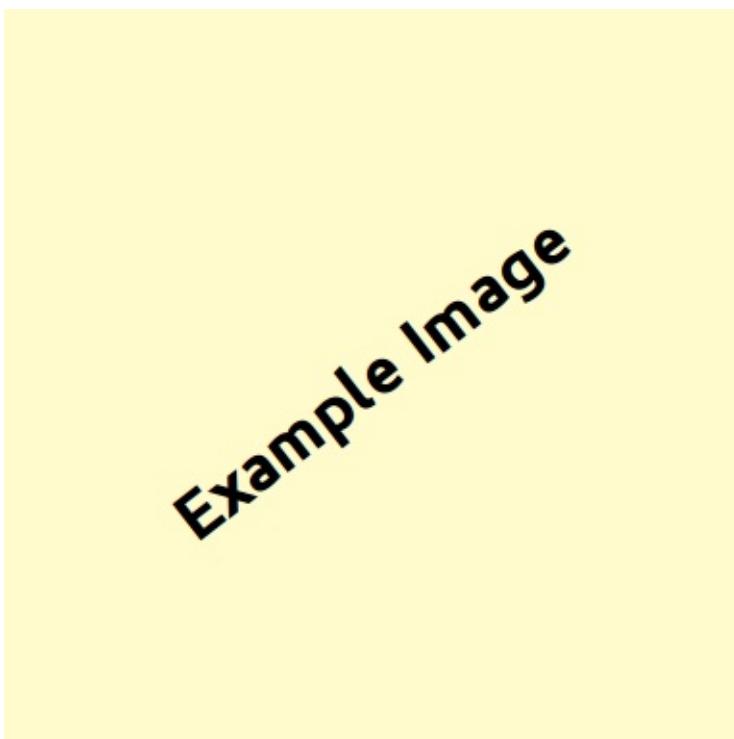


Image 4: Screenshot with border

Applying the `{caption}` to a image will also indent the image from the surrounding text.

Bookmarlet for Screenshots

Use this bookmarklet: [Plain Window](#). Drag the link to your bookmarks bar or create a bookmark with the code below. Clicking the bookmark will open the current webpage in a plain window that is 1200px wide. Re-size to needed height and take a screenshot. More about bookmarklets here: <https://www.wikipedia.org/wiki/Bookmarklet>.

```
javascript:(function(){var windowObjectReference;var strWindowFeatures='menubar=no,location=yes,resizable=yes,scrollbars=yes,status=no,width=1200,height=1200';windowObjectReference=window.open(window.location.href,'Plain Window',strWindowFeatures);})();
```