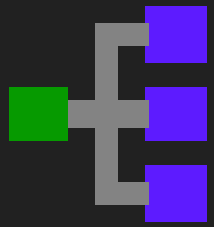


JADN Sandbox

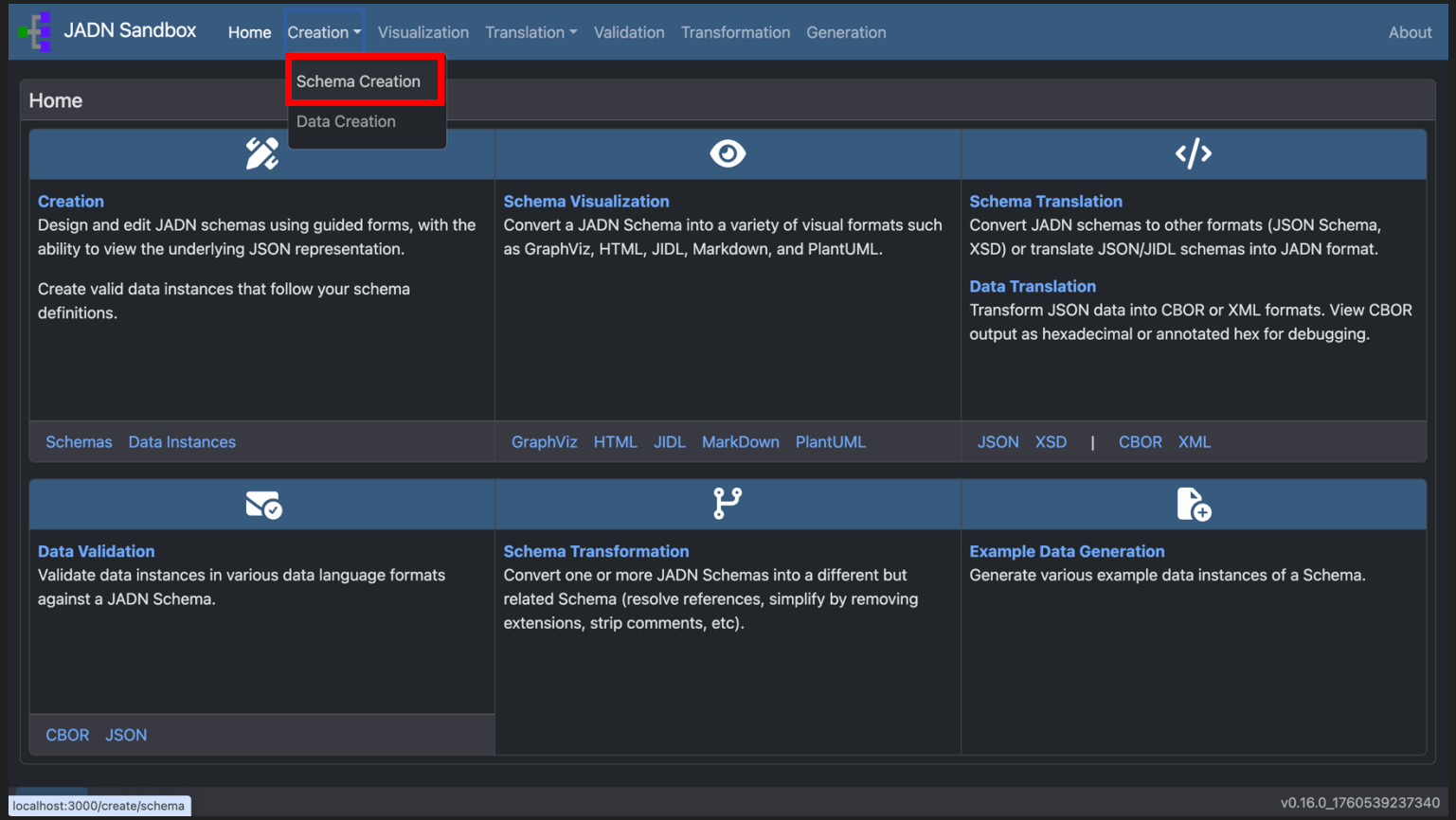
User Guide

High Level Table of Contents

Low Level Table of Contents

Schema Creation

Create valid JADN Schemas

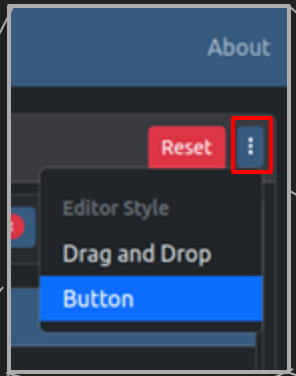


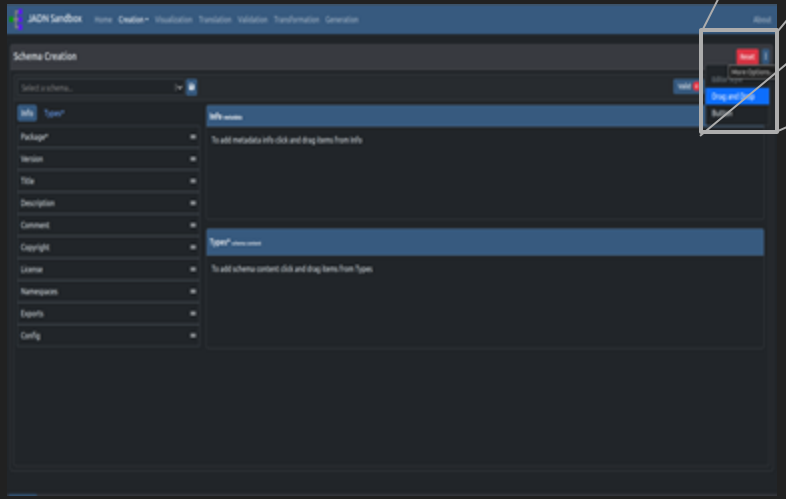
Go to: Creation
When the drop down menu appears, select Schema Creation

Feature: Editor Style

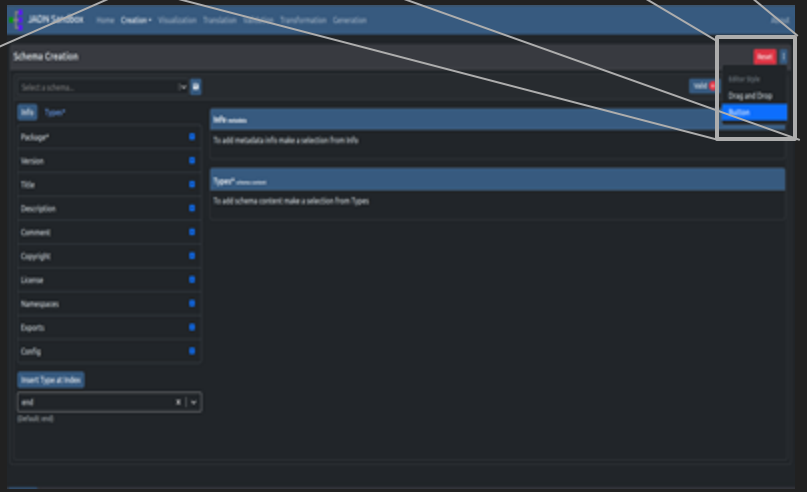
Choose your schema creation editor style:

- Drag and Drop (default)
- Button





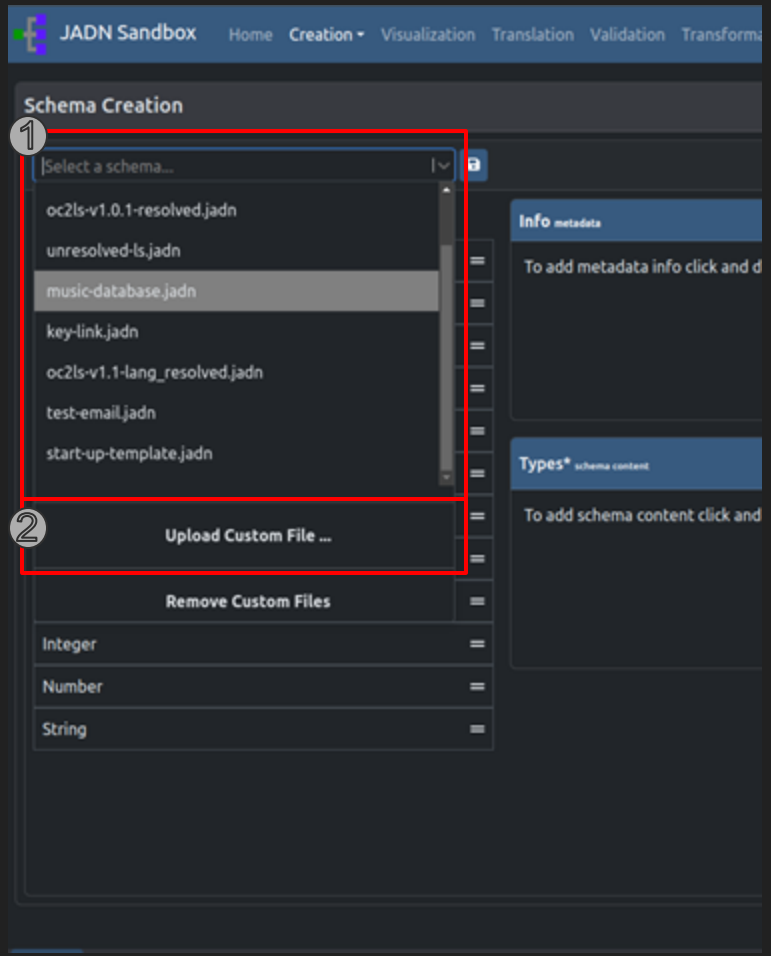
Drag and drop style (default)



Button style

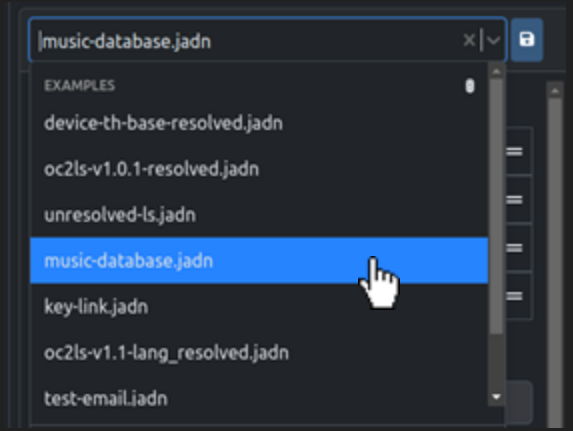
To start…

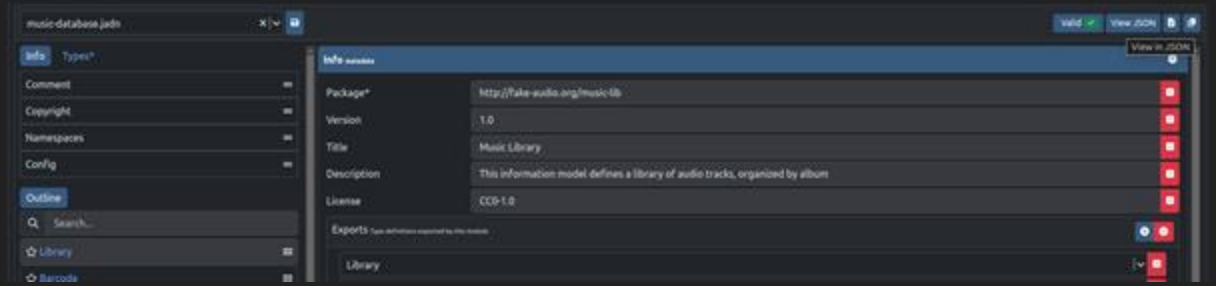
1. Select an example schema
   or
2. Upload a syntactically valid JADN Schema
   or
3. From scratch (blank schema)

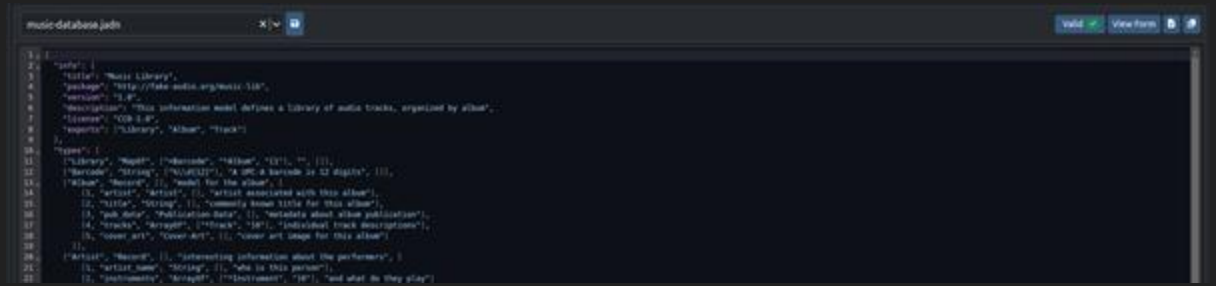


Option 1 to Start: Select a Schema

Selecting a preloaded Schema from the drop down menu will automatically generate the Schema in the Schema Creator.



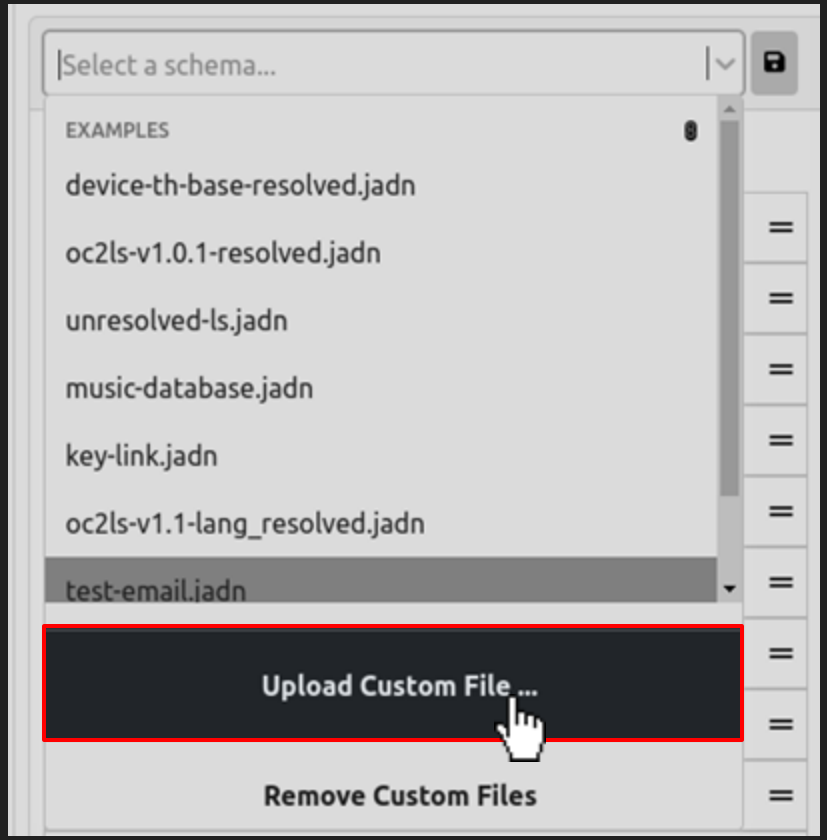




Option 2 to Start: Upload a Schema

Click ‘Upload Custom File…’ to upload a file using the computer’s file loader

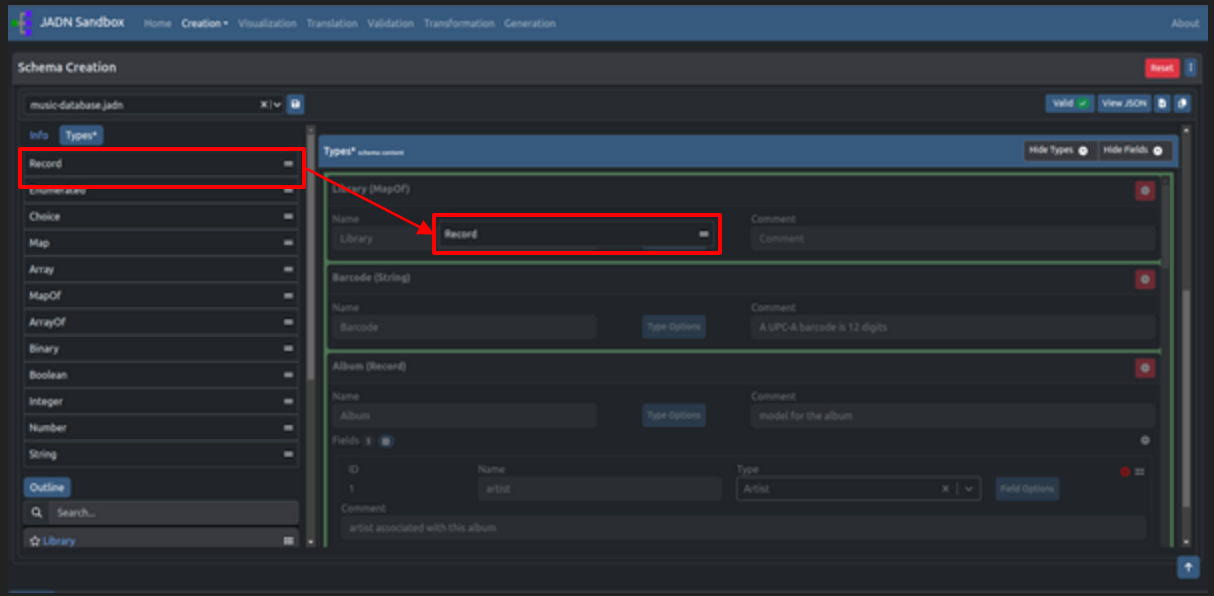
This will upload any JADN file and then attempt to validate it.



Add Data:
Drag and Drop Style

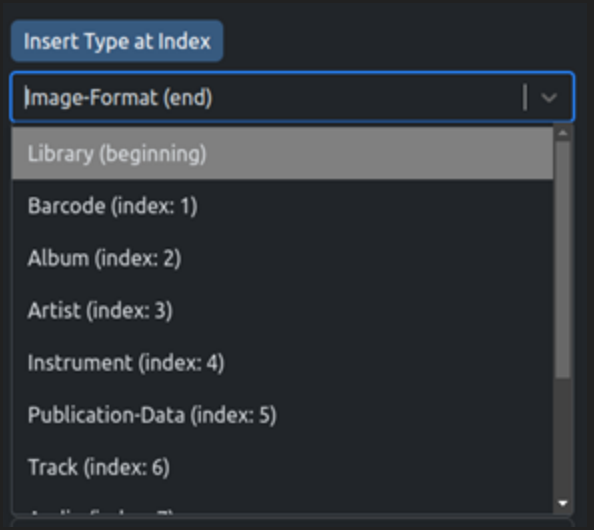
Using the default drag and drop style creator, drag items from left to right.
Drop the card when backgrounds are highlighted green.

When dragging, the background will change colors (in this case, to dark gray) to indicate where you can drop the card. It will then change to a green background when you are able to drop the card.

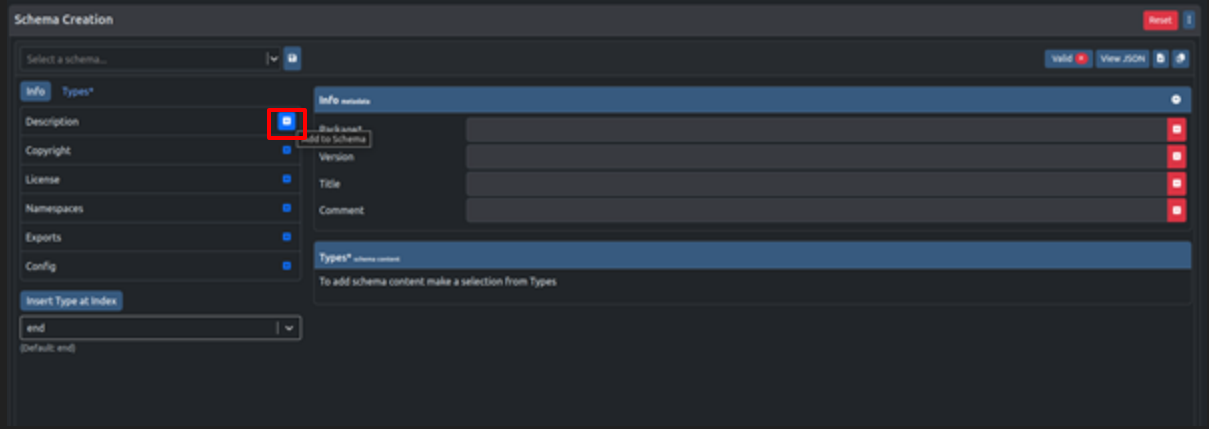


Add Data:
Button Style

The ‘Insert Type at Index’ allows you to select where you would like to add your Type. Types are added to the end of the Schema by default.



Click  to add Info or Type to the schema.



Edit Data: Add, change, or remove Types

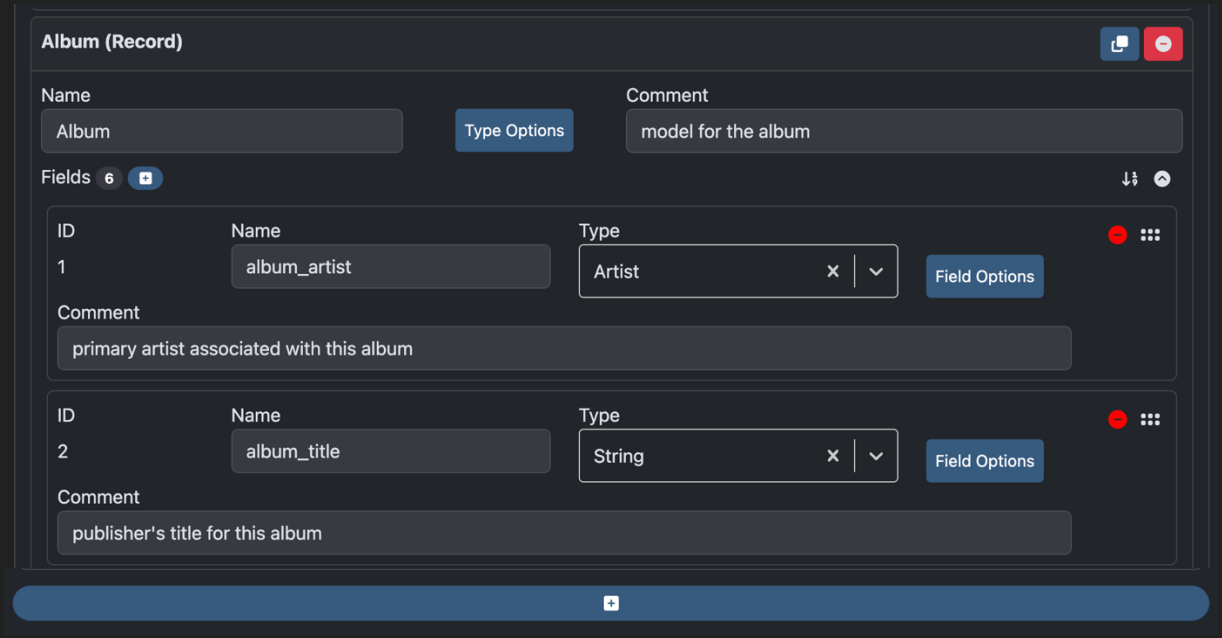
The cards dropped on the right can be edited by clicking within input fields or removed .

Fields, if applicable, can be:

- Added,
- removed,
- hidden,
- easily rearranged.

Types can be:

- Duplicated

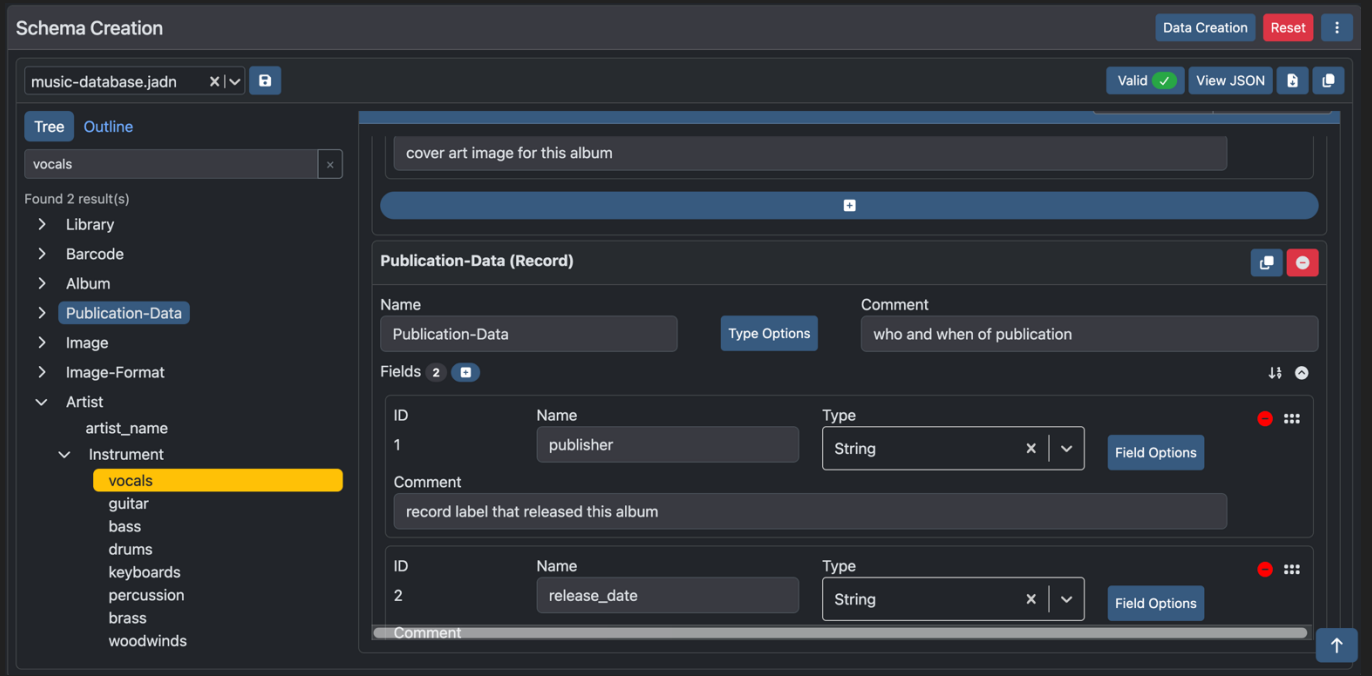


Feature: Schema Tree

You can easily navigate the entire schema tree, or search for types and/or fields.

The tree is recursive and will show a lot more depth than the Schema Type Outline shown on the next slide.

The current type will be highlighted in blue, while search term(s) found will be highlighted in yellow.

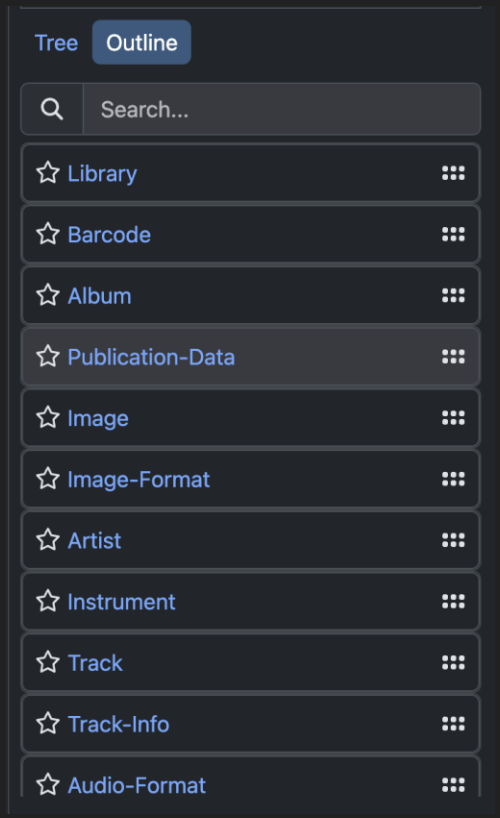


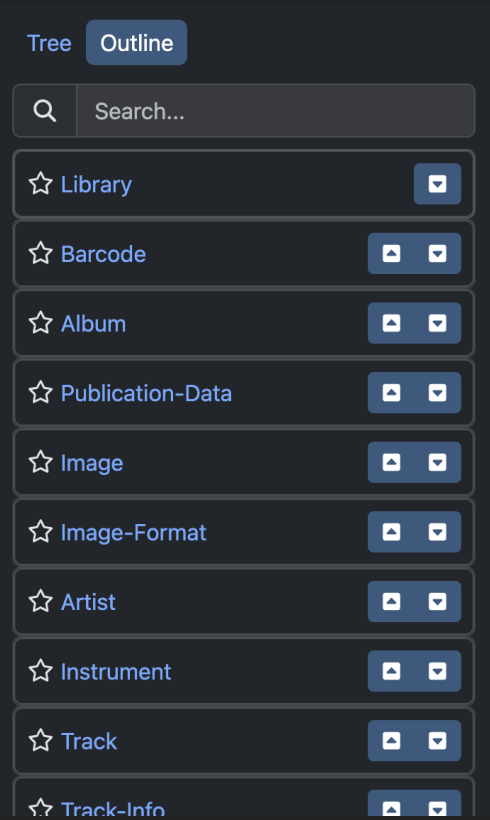
Feature: Schema Types Outline

You can easily search or rearrange the Types within the Outline.

The cards within the outline can also be starred for future reference.

Clicking on the Type Name will take you to the card in the Types section of the schema on the right.



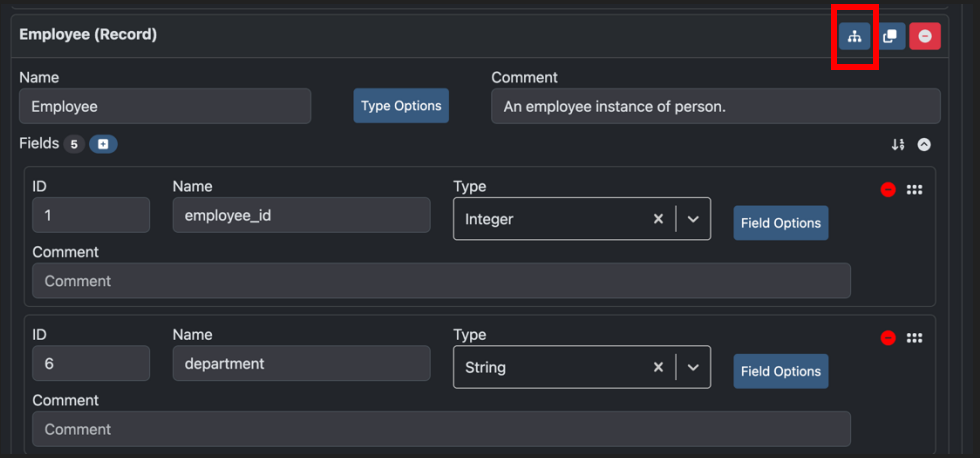


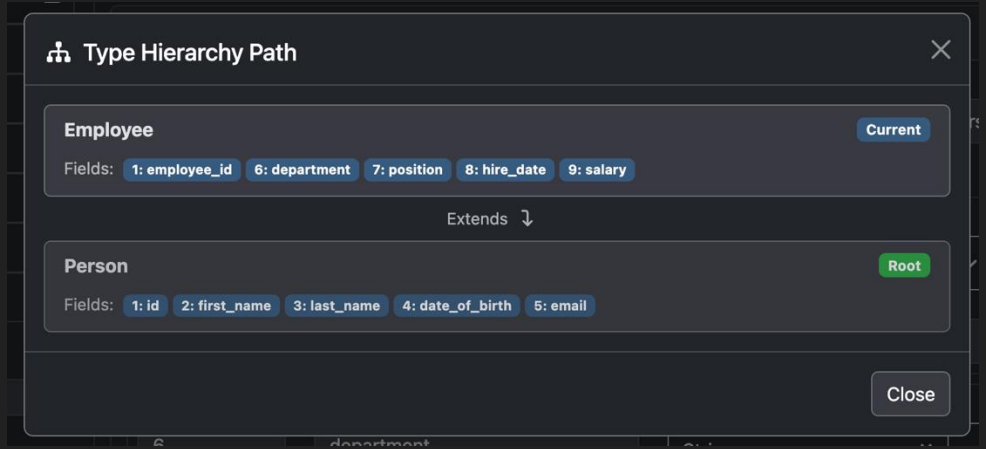
Feature: Inheritance Hierarchy Viewer

For types that inherit their fields, a hierarchy viewer is available to better visualize that relationship.

Example:
Employee extends Person.

Note: this feature is also present in Data Creation.

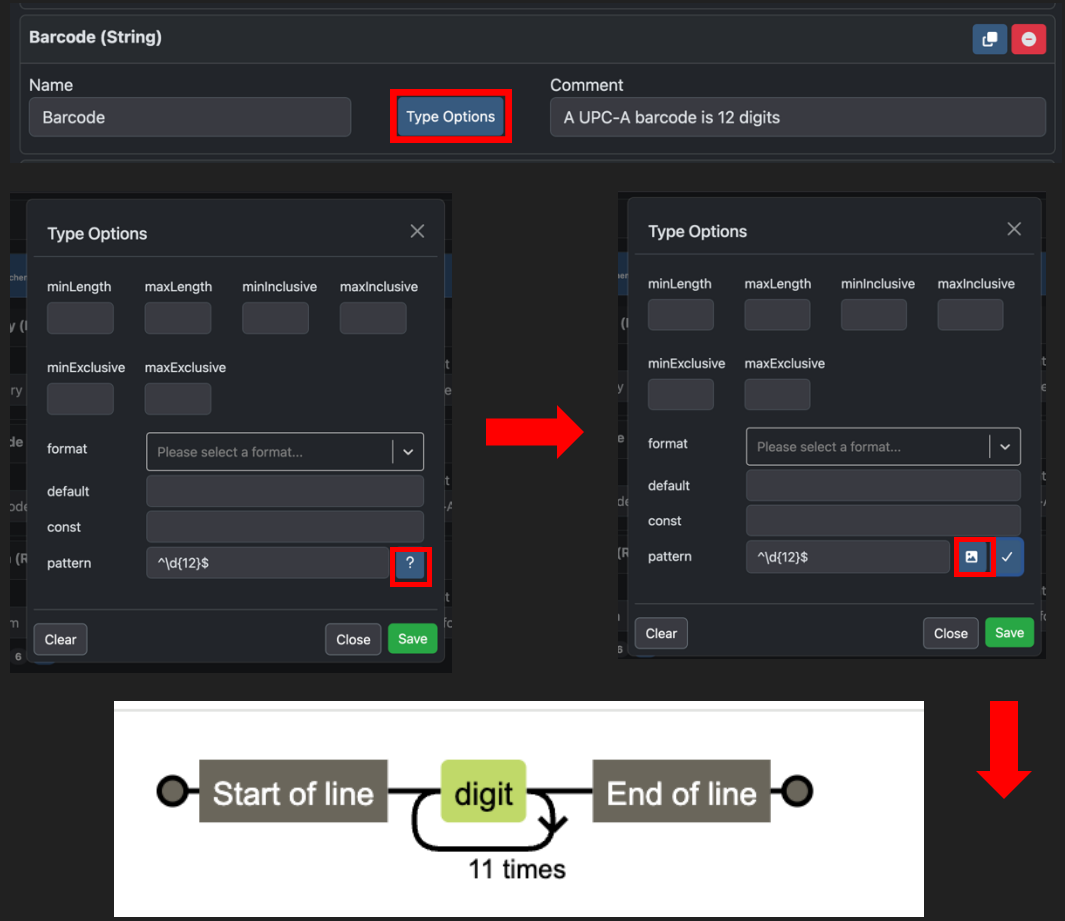




Feature: Pattern Visualizer

For types that contain patterns, the user can visualize the pattern to get a better understanding of its restrictions.

Note: this is also a feature on Data Creation.



Functions

As you build your schema, you can view the JSON code by clicking on ‘View JSON’ View JSON .

This code can be:

- Downloaded to your local storage
- Copied to the clipboard
- Saved onto the file uploader for easy selection

Other features include:

Valid

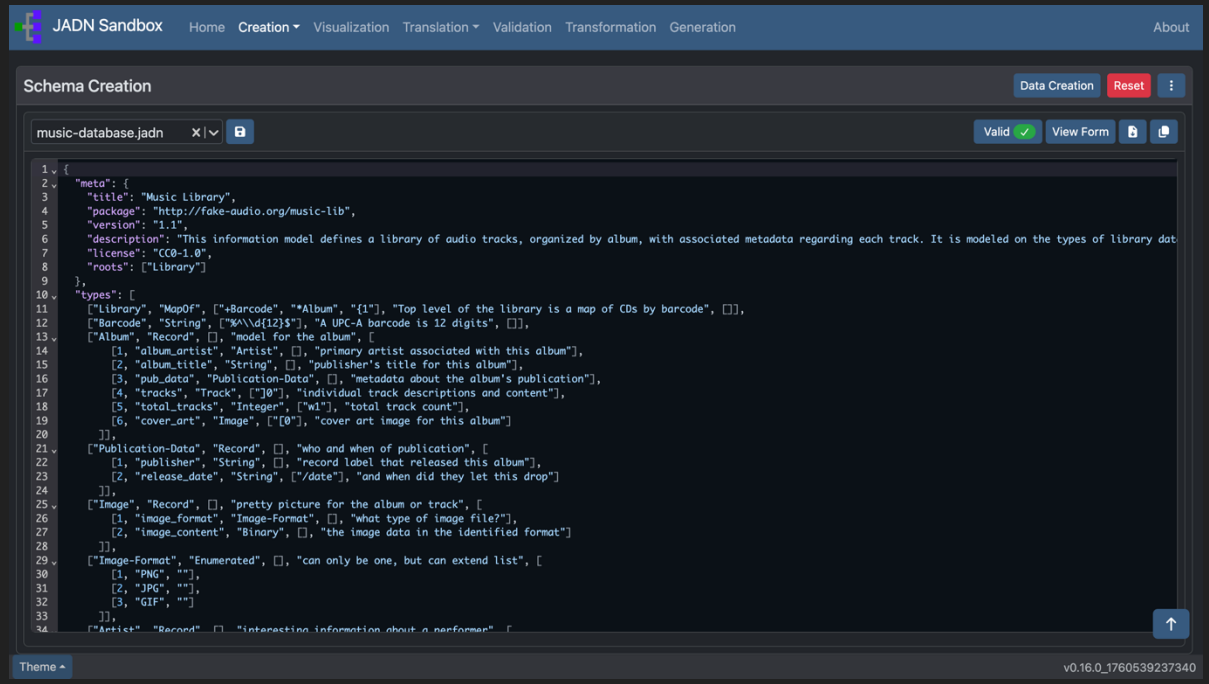
Valid

- Checked for validation

Reset

- Reset to start over

- Scroll to top (appears when you scroll down on window)

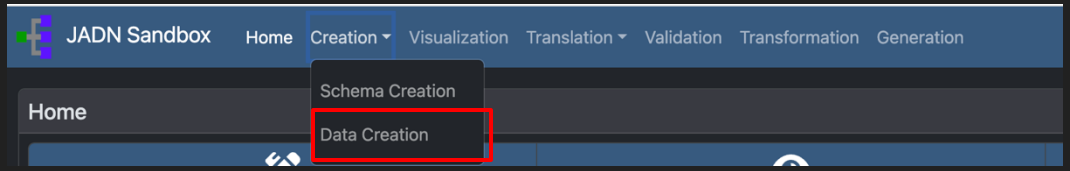


Click ‘View Form’ View Form to return to the Schema Creator.

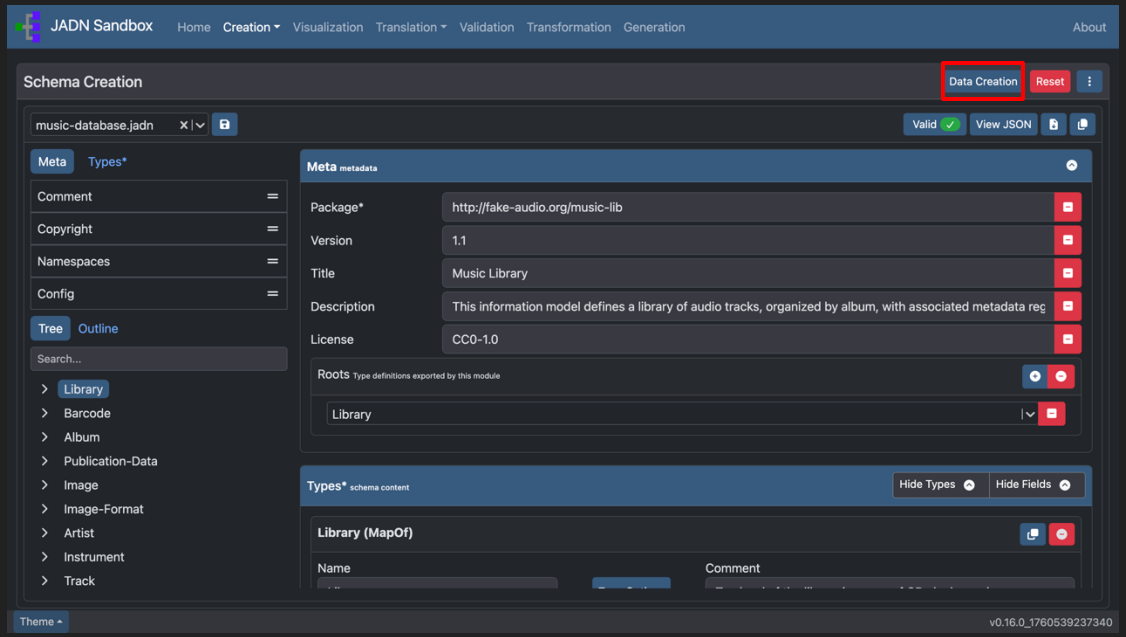
Data Creation

Create valid data instances from a JADN Schema

How to Navigate to Data Creation



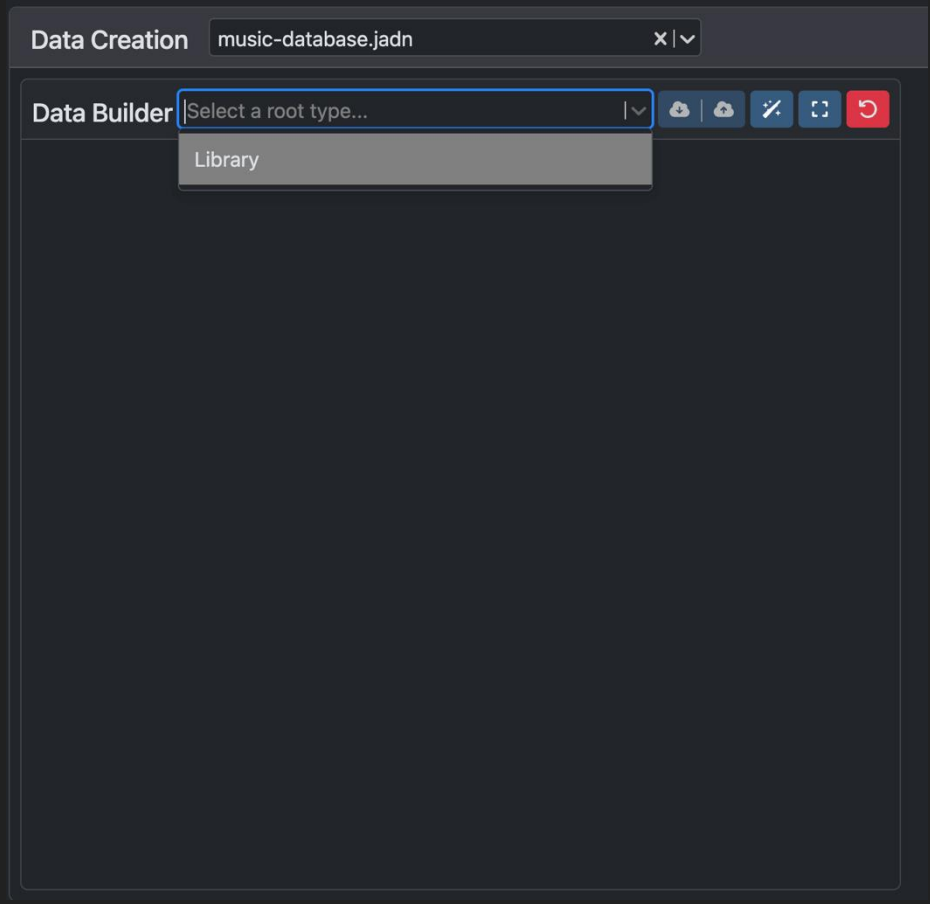
or



To Start : click here
Note: Only a JADN Schema can be uploaded.

After selecting a schema, you should be able to select a data type.
Note: This drop down menu is based on the Schema roots.

Once you have selected a data type, a form will appear to help guide you in building data that is valid against the selected schema.



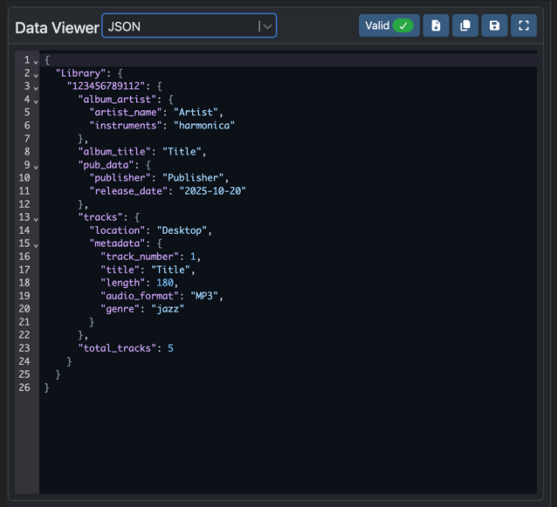
View Data

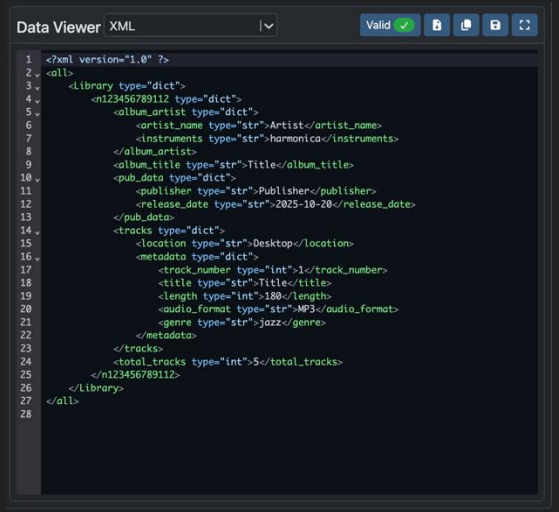
While filling out the form, you can view the JSON you are creating

Other data formats can also be viewed in real time using the dropdown.

The data can also be:

- Downloaded to your local storage
- Copied to the clipboard



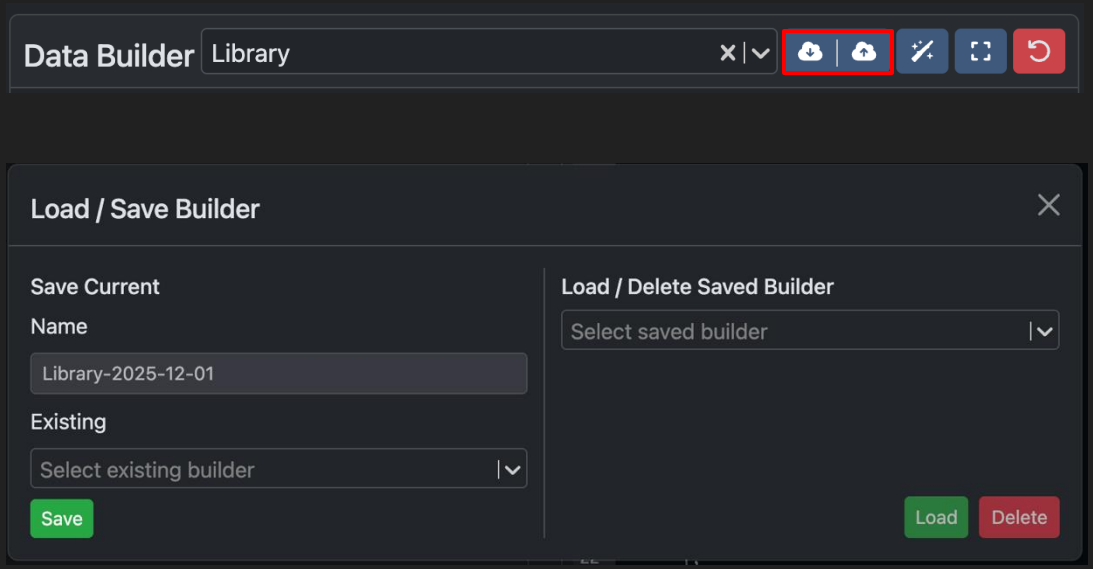


Feature: Load/Save Builder

While working on creating data from a large schema, you may need to take a break and come back later.

Load/Save builder allows you to save your current builder state and restore it at a later point.

Loading a saved state will populate the input fields and recreate the data.



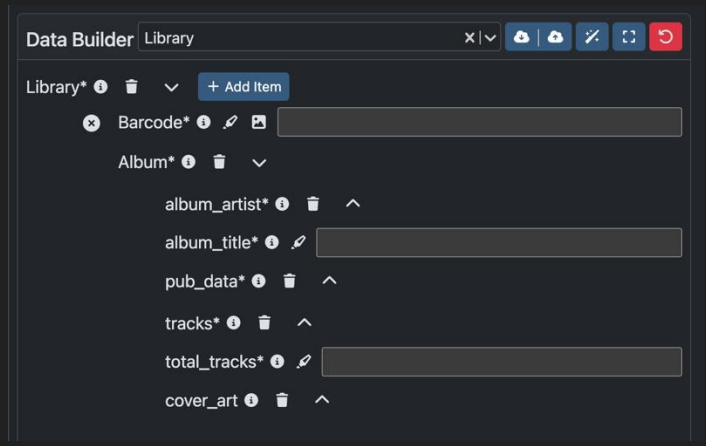
Feature: Magic Wand

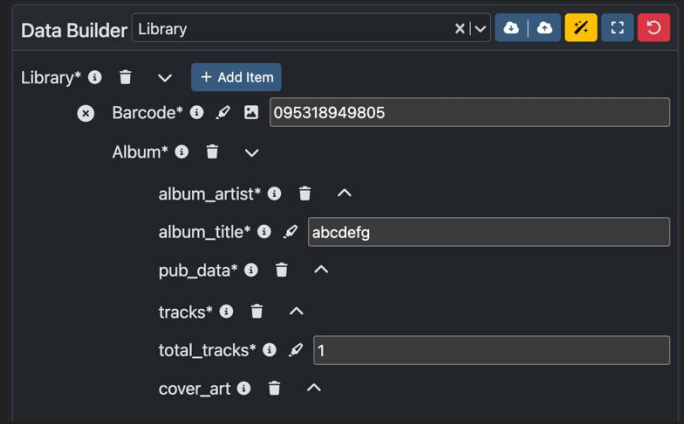
While testing out schemas in Data Creation, the individual inputs may not matter. To make testing quicker, the Magic Wand feature, when toggled on, populates all present input fields.

Fields that are hidden will not be populated.

Yellow indicates toggled on, blue indicates off.

Note: the wand takes patterns, options, type, etc into account to ensure valid data.

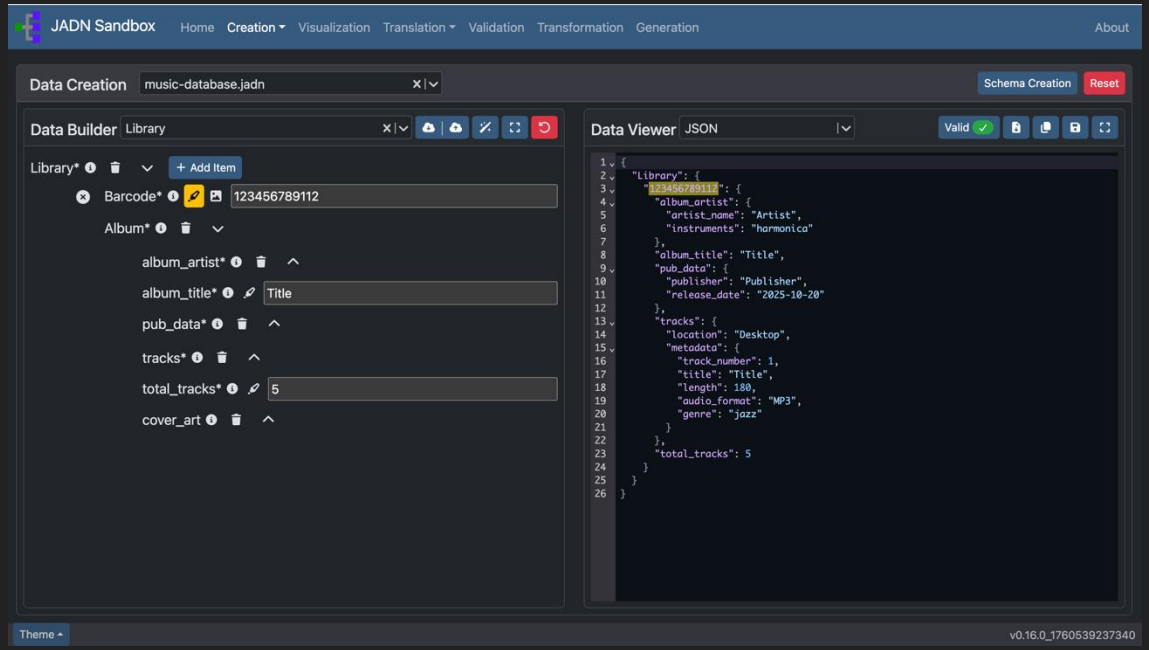




Feature: Highlight Data

While inputting data, you may want to reference previously completed data.

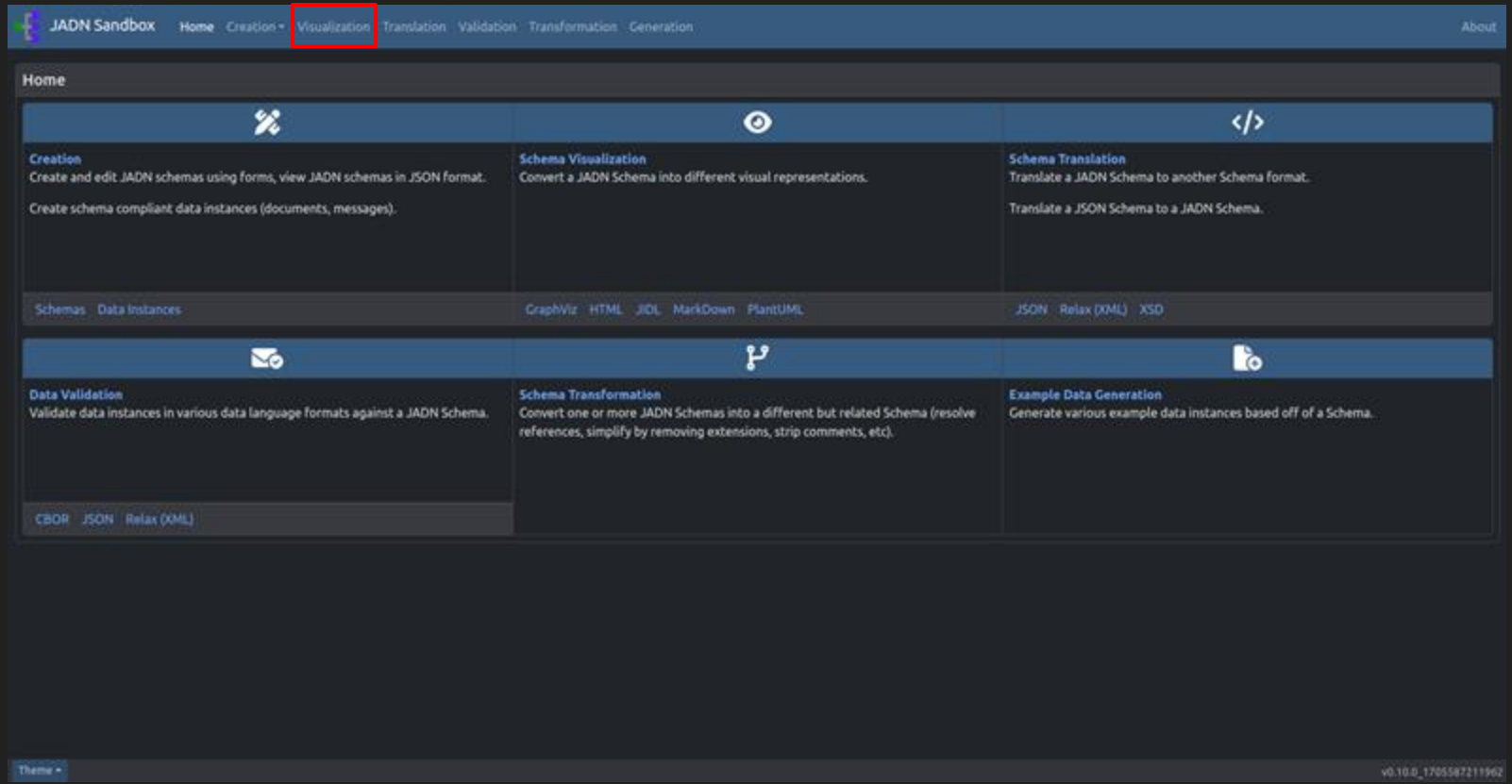
The highlight data function makes that easy, and works if there are multiple equivalent data.



Schema Visualization

View JADN schema in another language format: JIDL[1], HTML, Markdown, PlantUML, GraphViz

1. JADN Interface Definition Language (IDL) is a textual representation of JADN type definitions

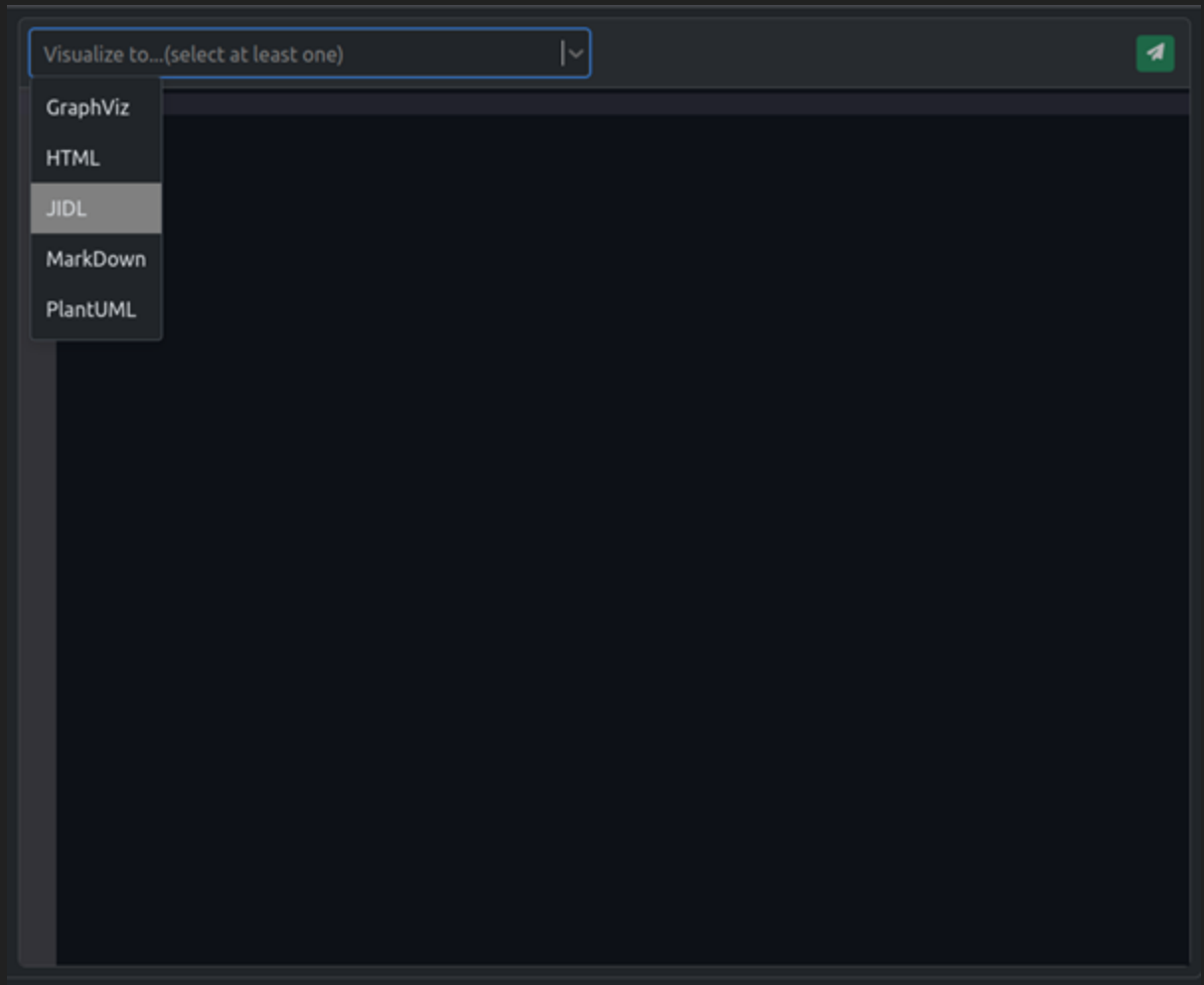


Go to: Visualization

To Start : click here
Note: Only a JADN Schema can be uploaded.

After selecting a valid schema, select the desired languages you would like to convert the schema to.

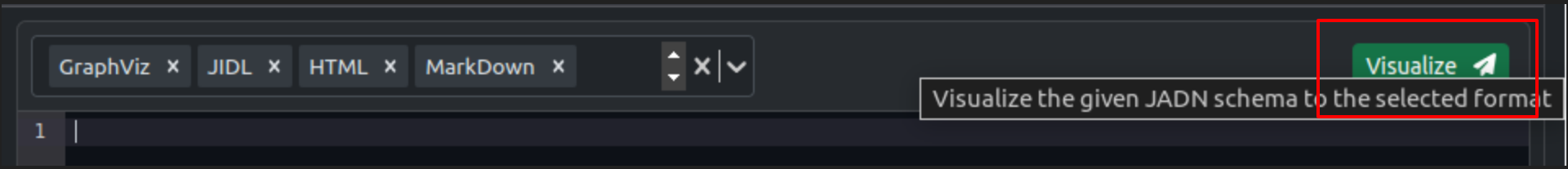
Options on this page are for visual representation of JADN data. For Schema Translations (like to JSON or XML) click here



Visualize

Once you have selected the languages, the green paper airplane button should light up allowing you to proceed to visualize the schema to the selected messages.

Click the Visualize button to proceed.

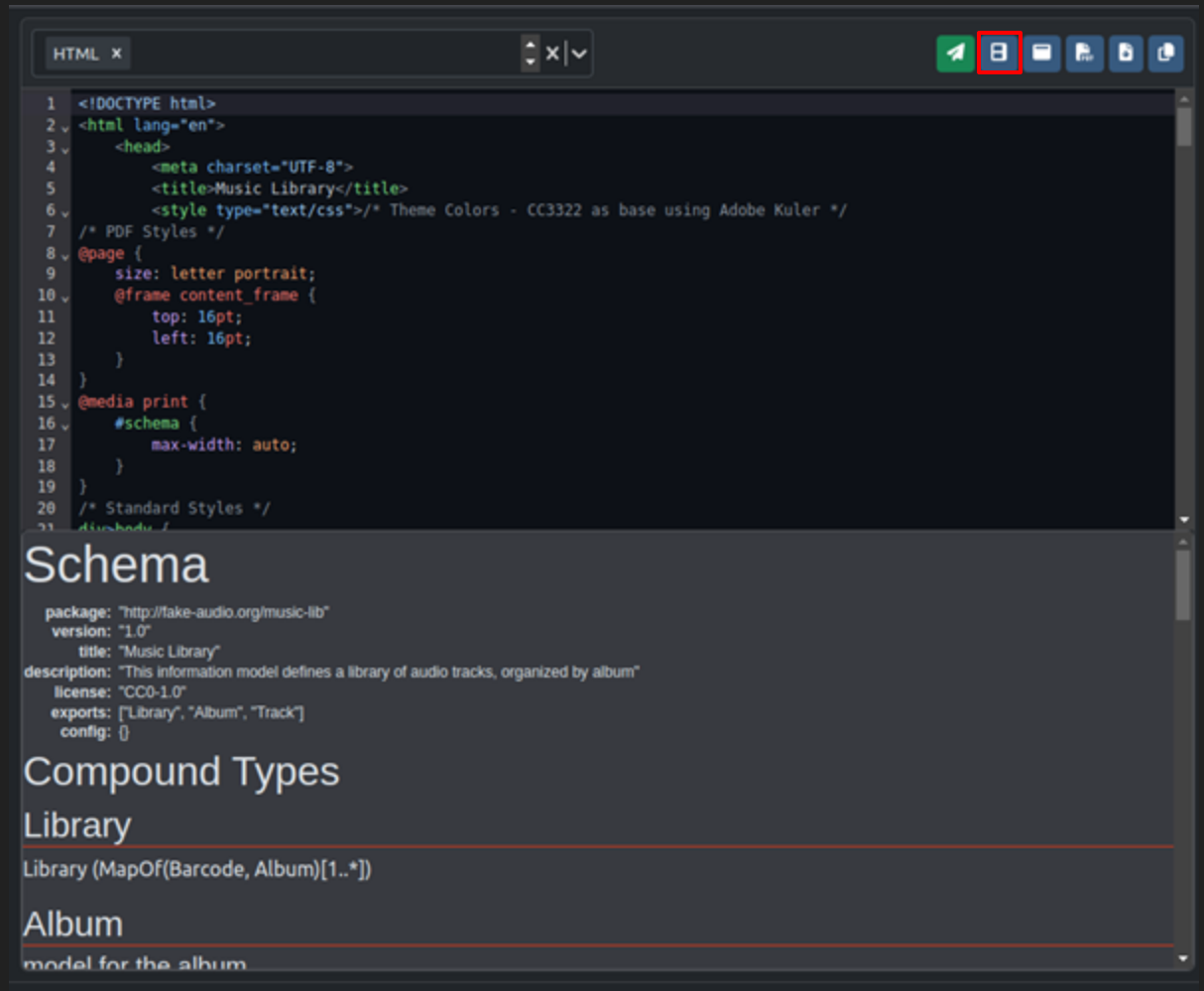


Results: Selecting one language

The result will show you the code in the selected language.

The following features allow you to interact with the visualization as you need.

- Split view (currently shown) : To view the code and visualization simultaneously
- Pop out : See the visualization in a new tab window
- Download visualization as PDF
- Download visualization as an image
- Download code
- Copy code to Clipboard

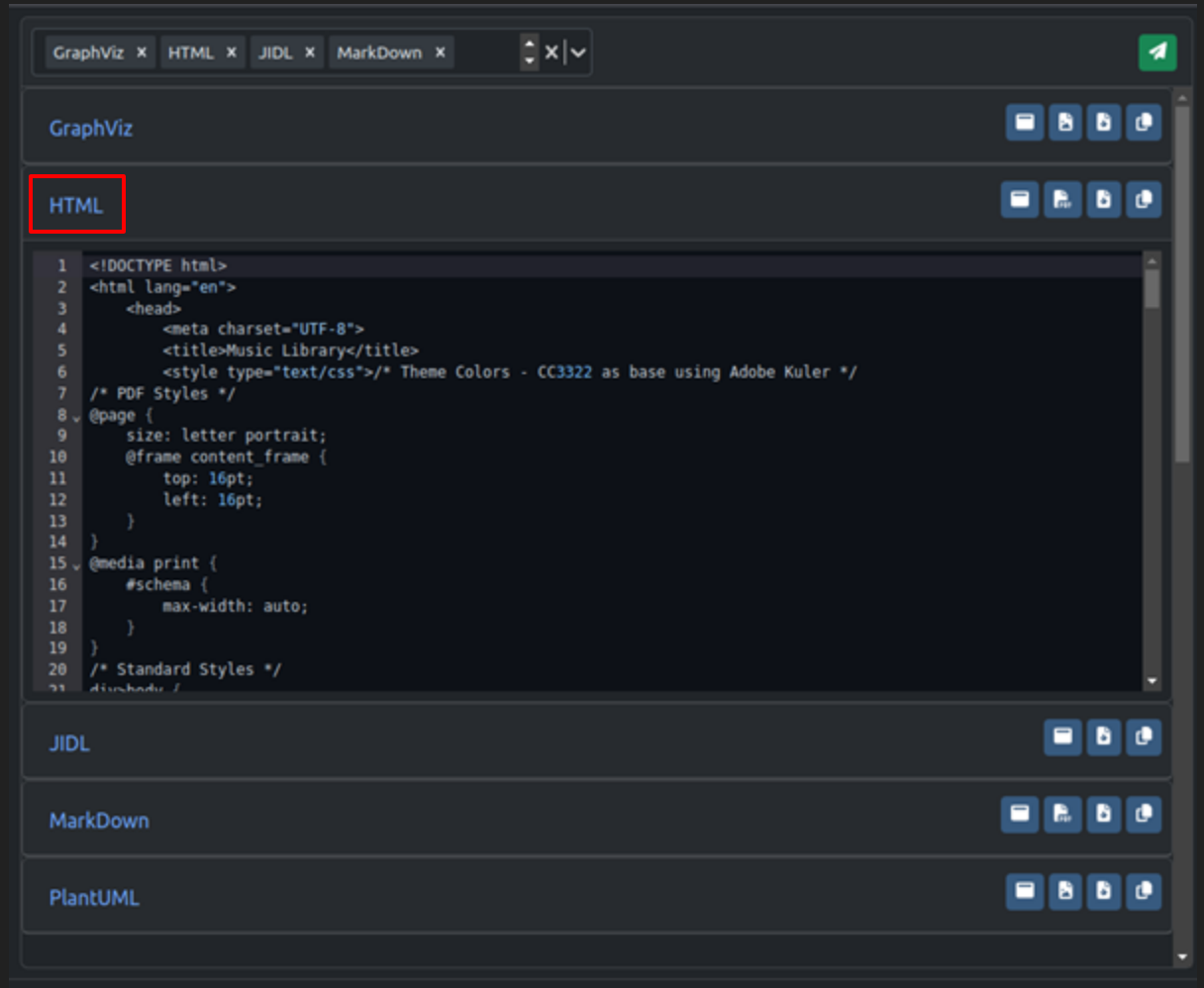


Results: Selecting multiple languages

You also have the ability to visualize multiple languages at once.

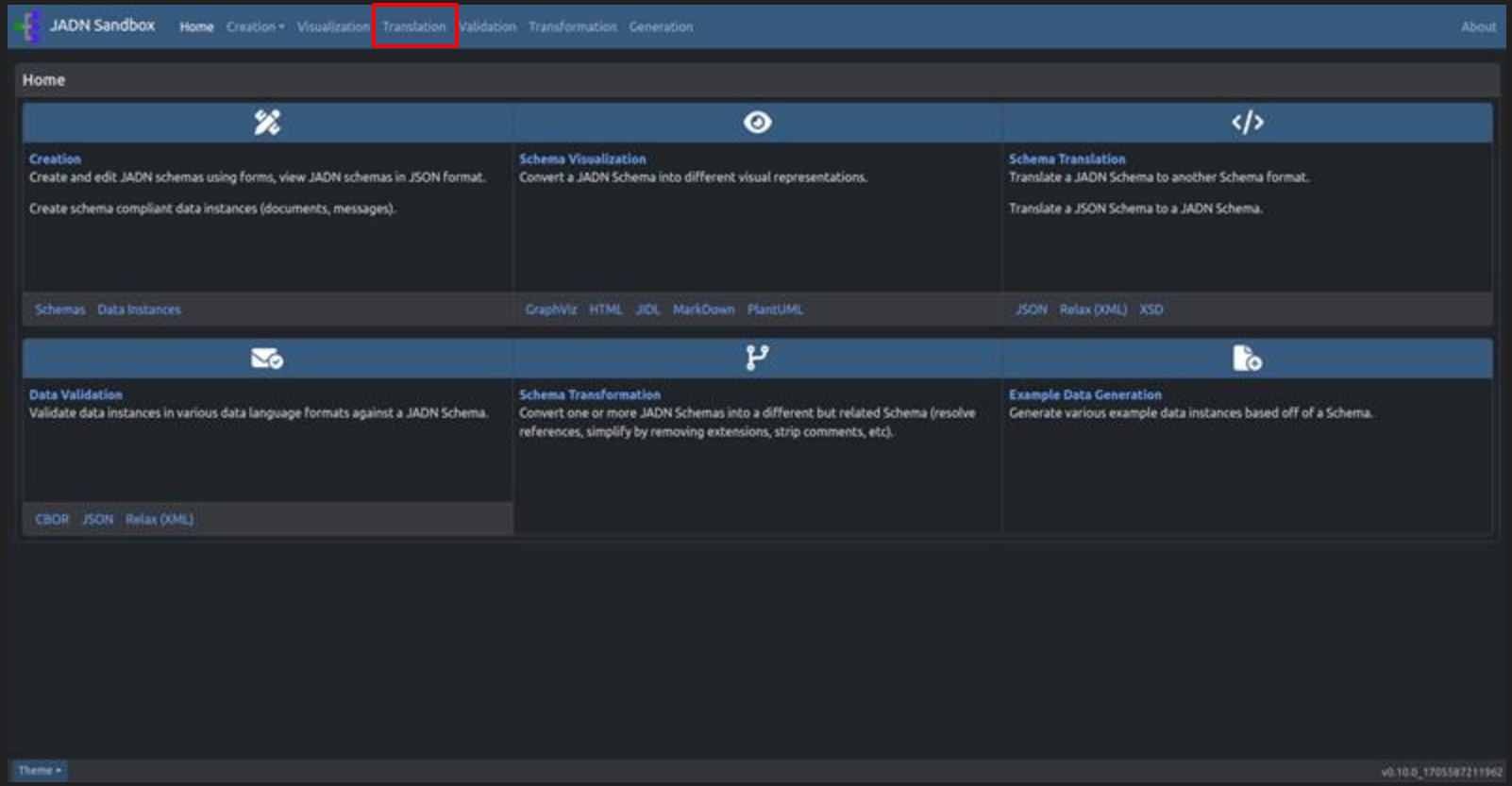
You can view the code for one or multiple languages at once by clicking on the header of each section.

Each language has its own applicable features as seen in each section.



Schema Translation

Convert JADN Schema to JSON , Relax XML, or XSD.
Convert JSON Schema to JADN.



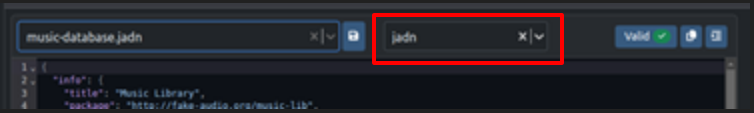
Go to: Translation

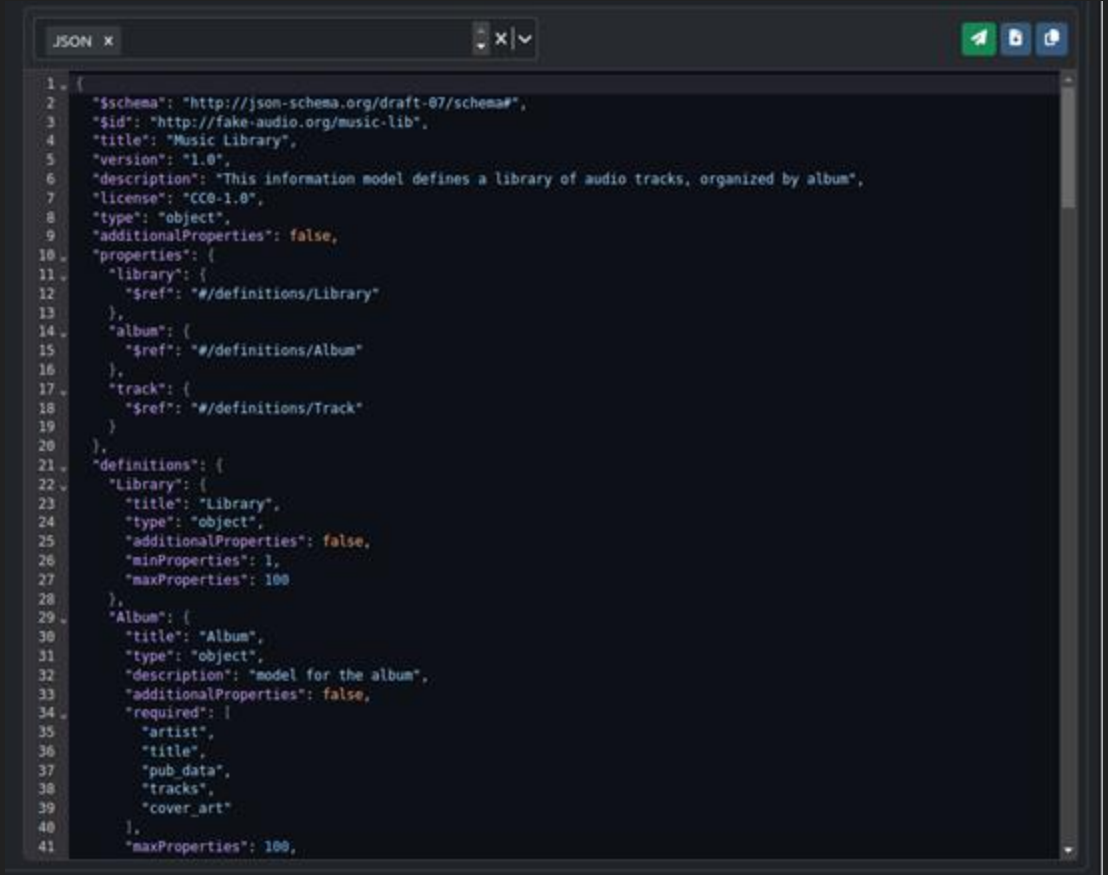
To Start : click here

Note: A JSON or JADN Schema can be uploaded.

Similar to Schema Visualization, Schema Translation allows you to translate your schema into your desired language.

When selecting a schema, make sure to select the type of schema you want to translate from: JADN or JSON.

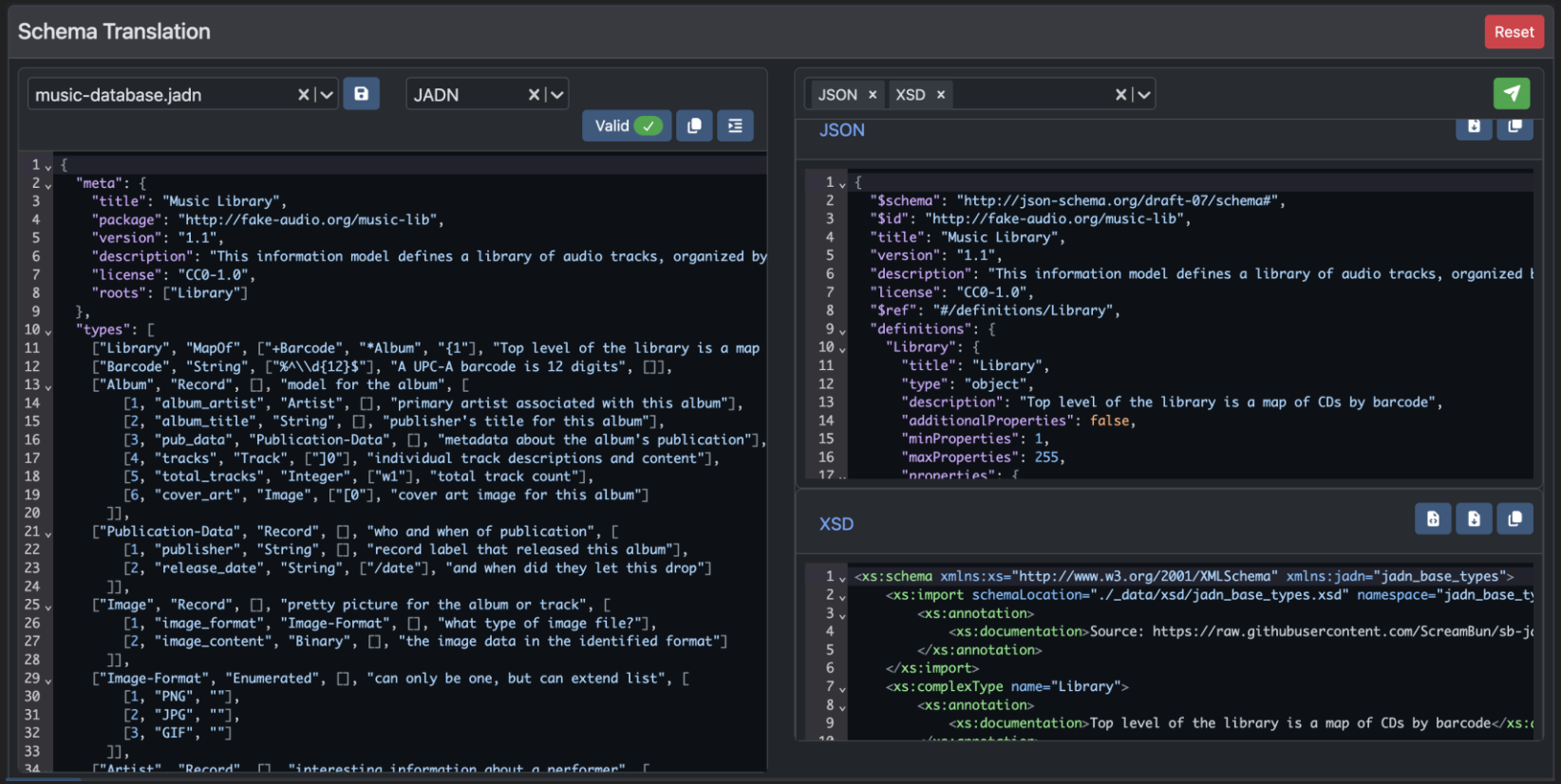




Result: Translated Schema to one language

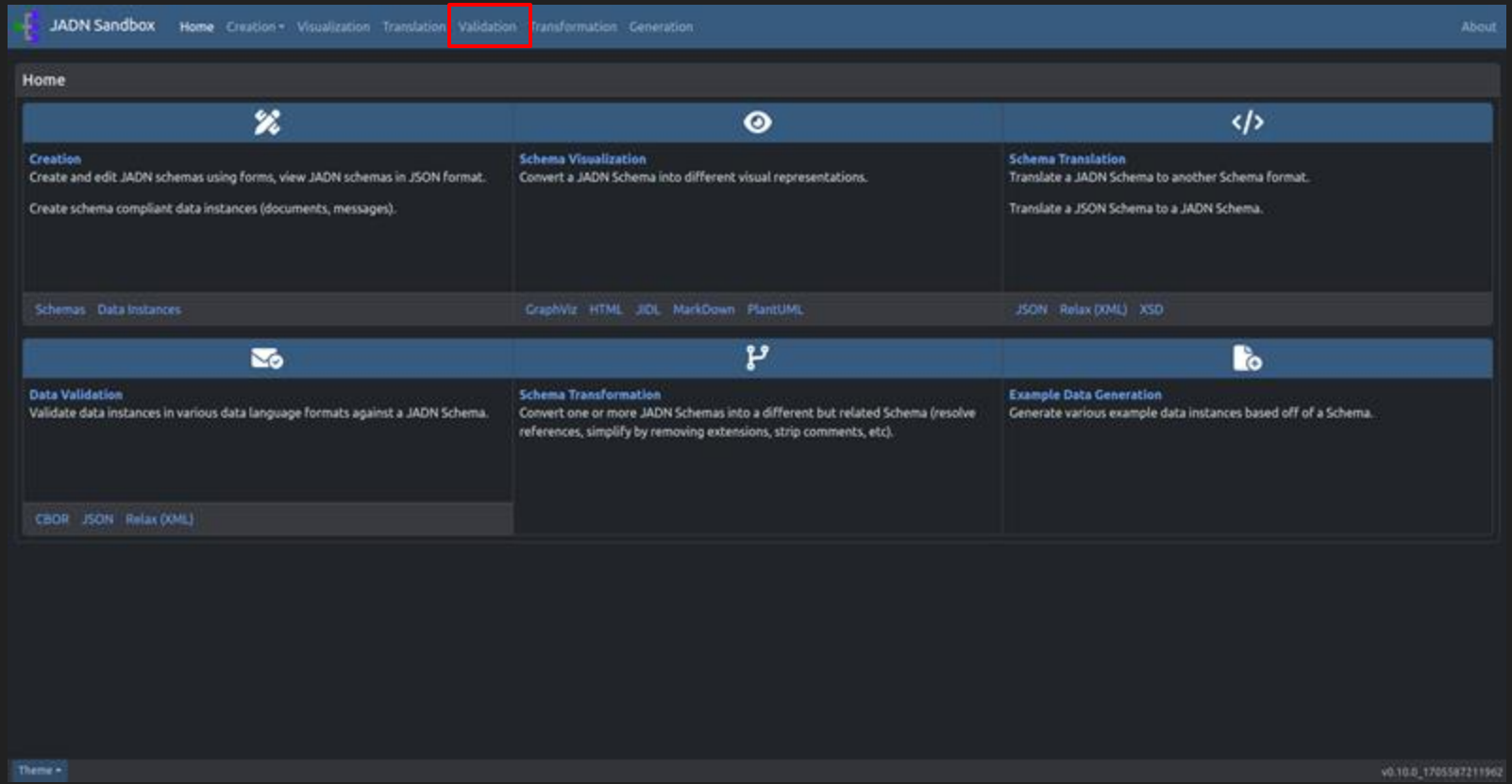
Result: Translated Schema to multiple languages

You can translate from JADN to JSON and XML (XSD or Relax) or from JSON to JADN.



Data Validation

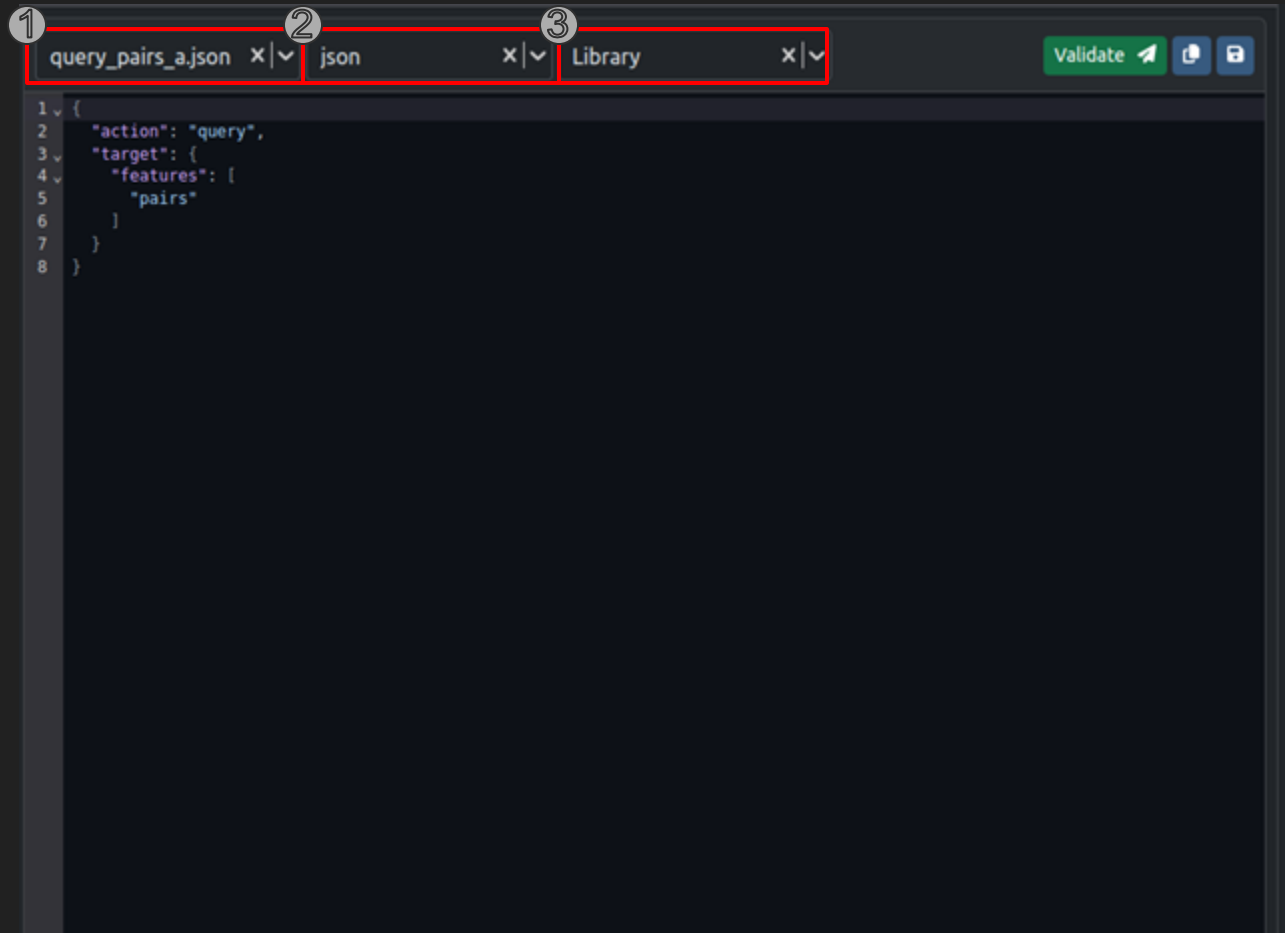
Validate data instances in JSON, XML, CBOR, or JSON Compact against a JADN Schema



Go to: Validation

To Start : click here

Note: Only a JADN Schema can be uploaded.



1. Select data to validate.
2. Make sure the correct data format is selected.
3. Make sure the correct data type being validated is selected.

In this example, the data is a json file being validated against the Library type from the music-database.jadn

Select data to validate

Starting by uploading data:

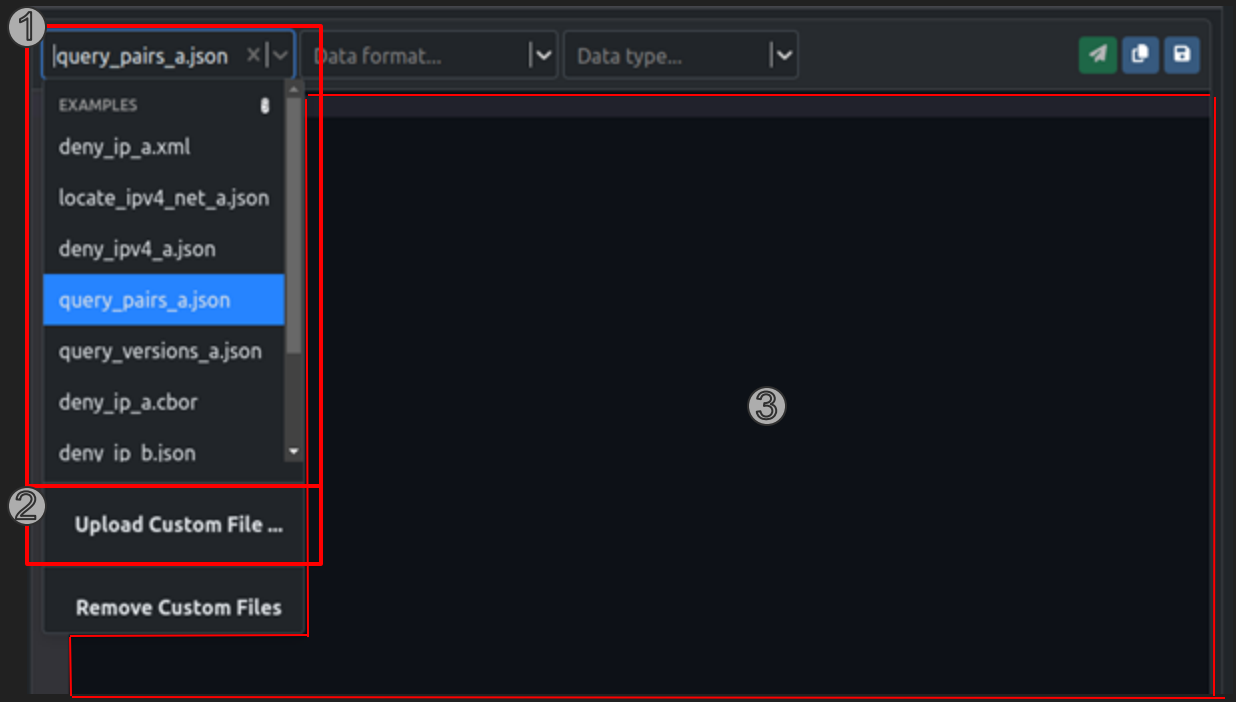
1. Select example data

   or

2. Upload a custom file

   or

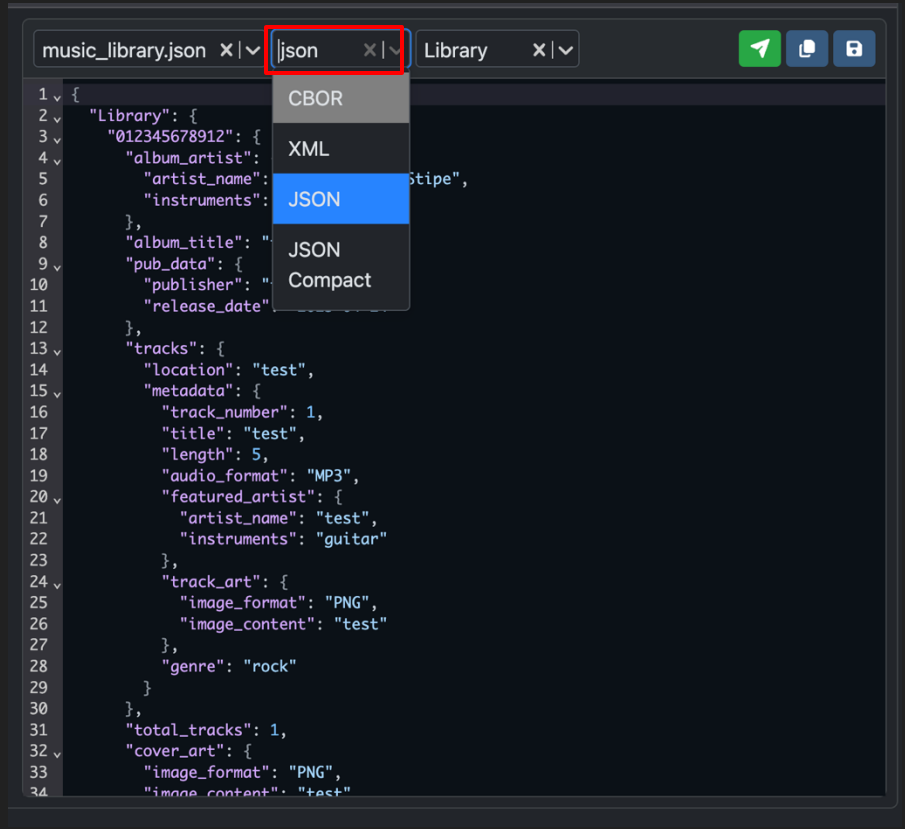
3. type/paste directly into code editor.



Make sure to select the correct data format

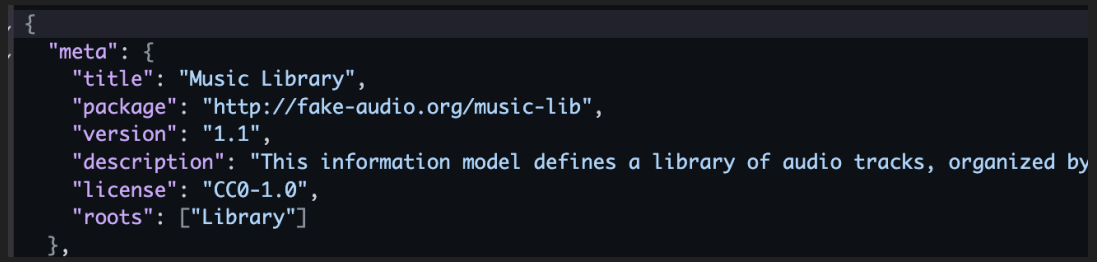
The JADN Sandbox can currently validate JSON, CBOR, XML, and JSON Compact data against a JADN Schema.

If using a data file, the data format drop down may be pre-selected.



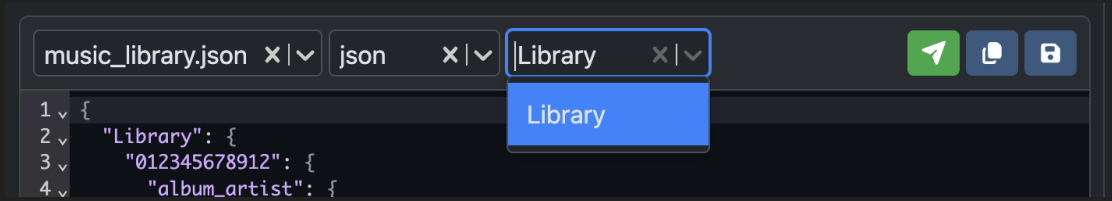
Make sure the correct data type is selected

The Data types available to validate against are based off of the roots from the JADN Schema file.



In this example, notice that the uploaded schema music-database.jadn has exports that correspond to the valid datatypes:

Library

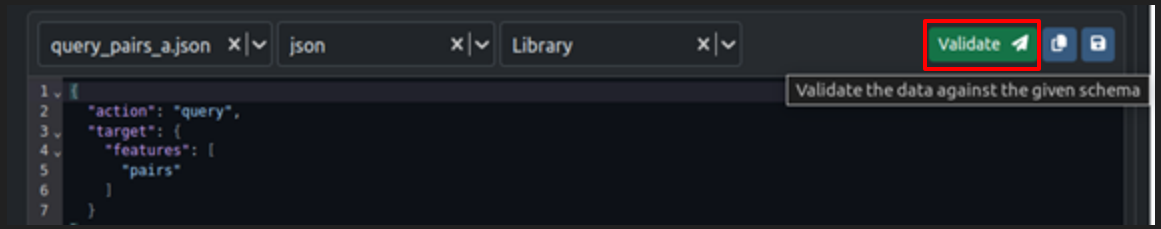


Validate

Once you have selected:

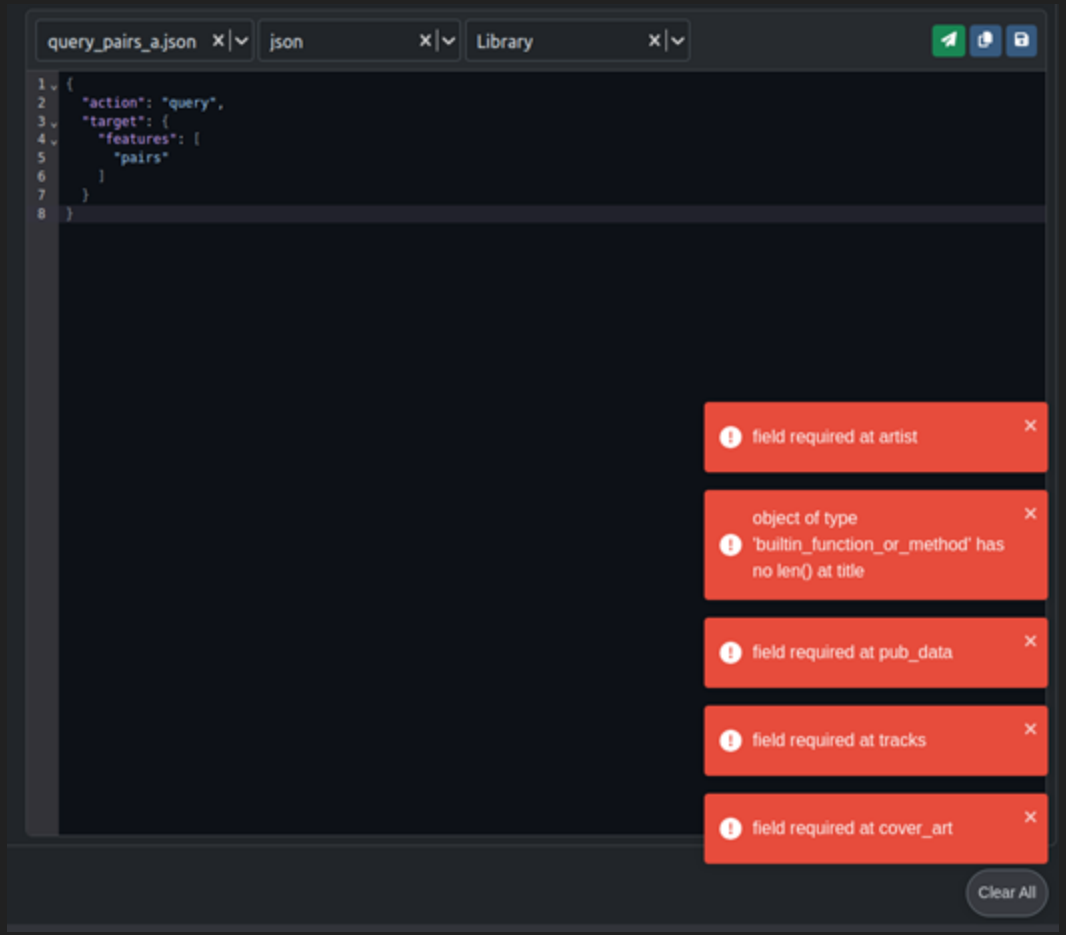
- A Schema,
- Data,
- Data format, and
- Data type

Click the bright, green “Validate” button.



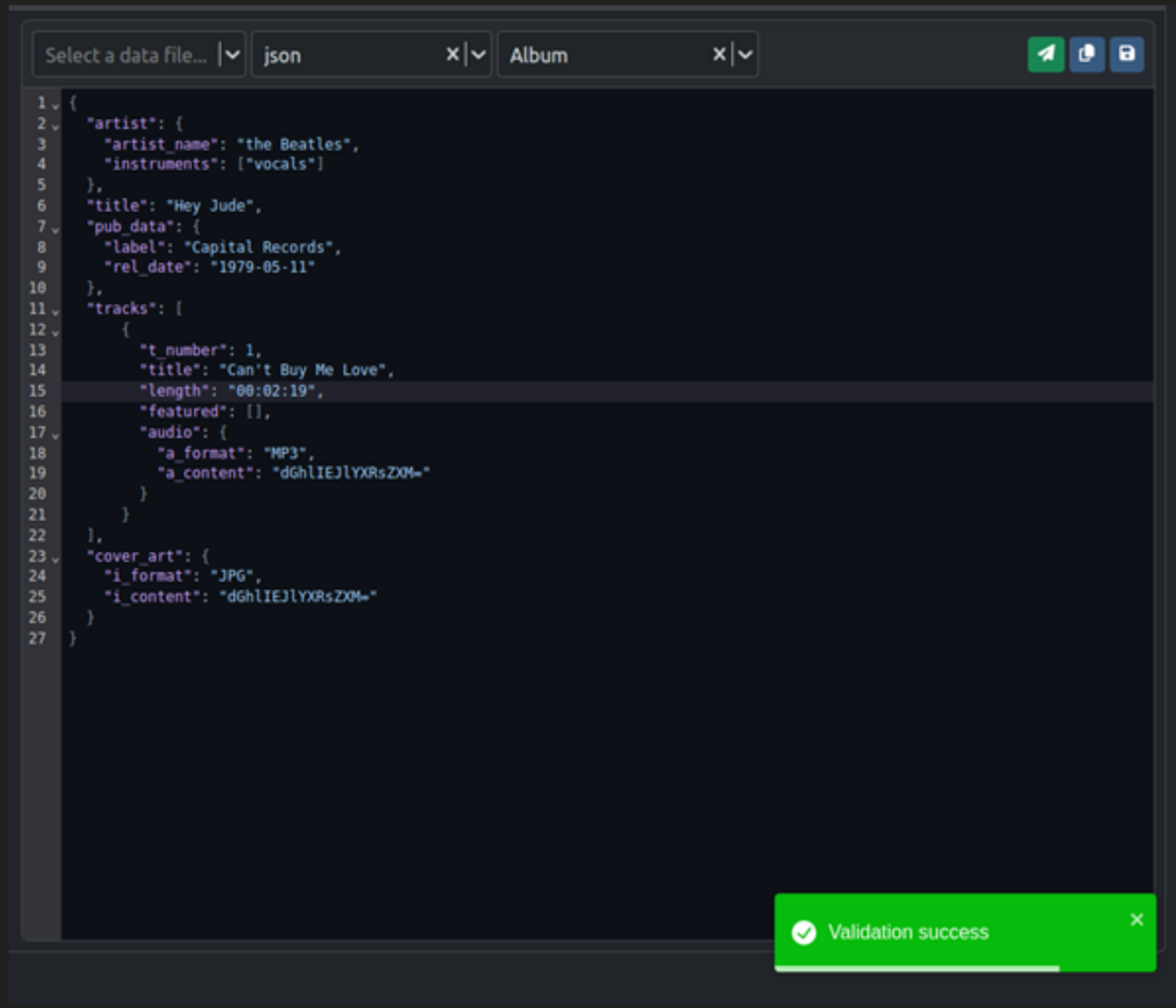
Invalid Results

An invalid data file will return errors to help fix the data.



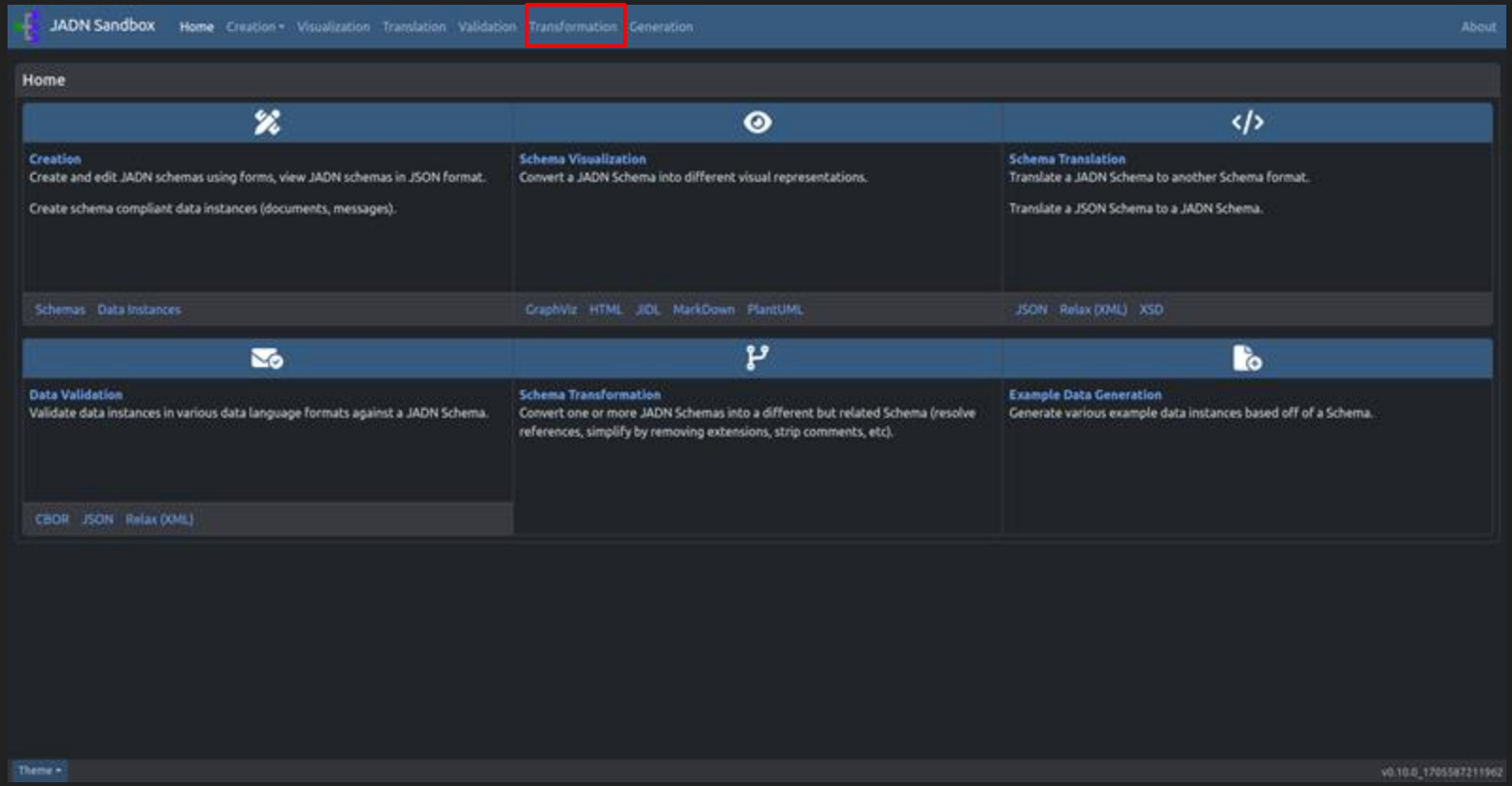
Valid Results

A valid data file will return a green success notification.



Schema Transformation

Strip comments from Schemas
or Resolve a schema with references

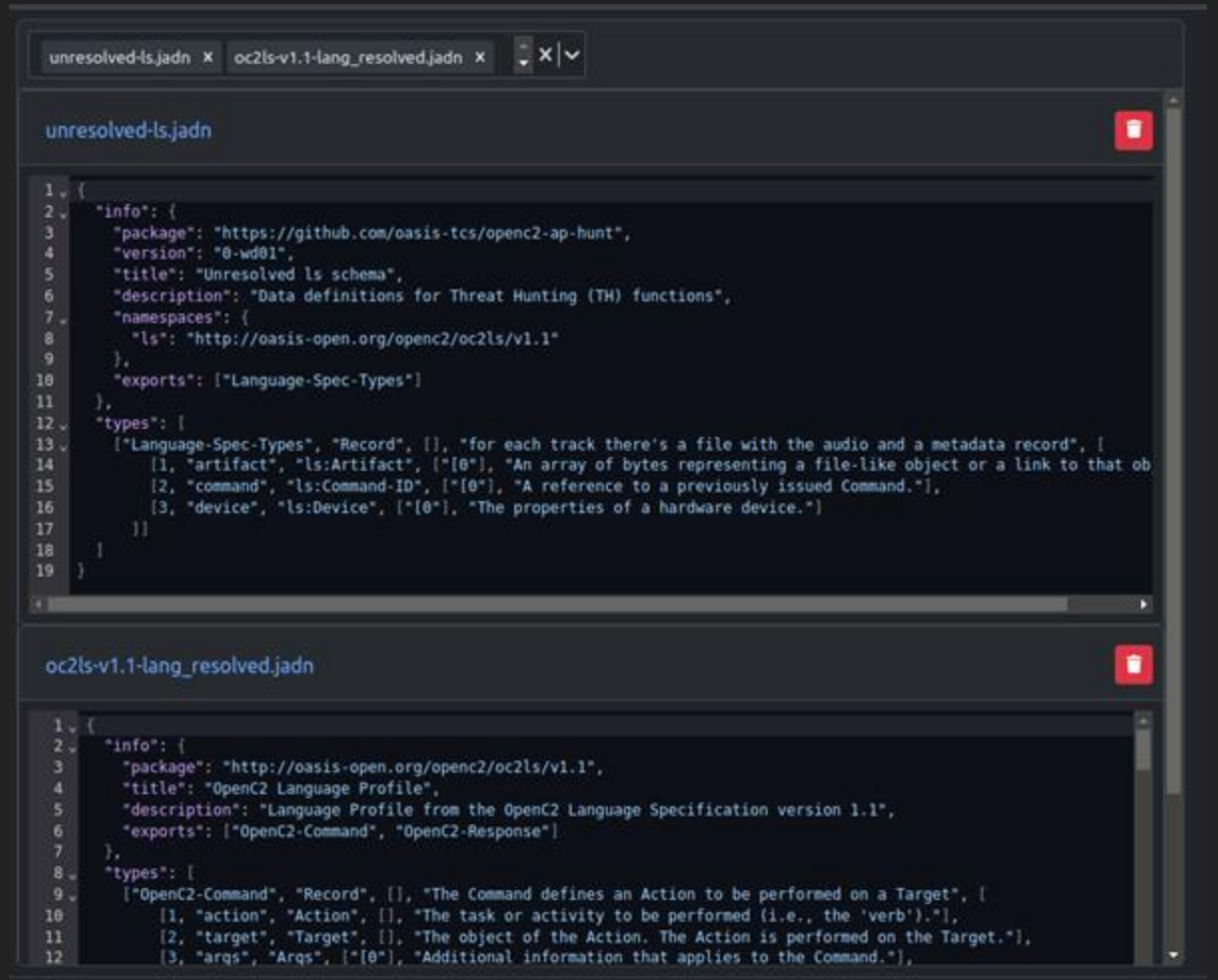


Go to: Transformation

To Start :
Select at least one schema to upload.
Notice that there is no code editor. Therefore, schemas must be uploaded.

Here you can see 2 schemas selected to start:

- unresolved-ls.jadn
- ocls-v1.1-lang_resolved.jadn



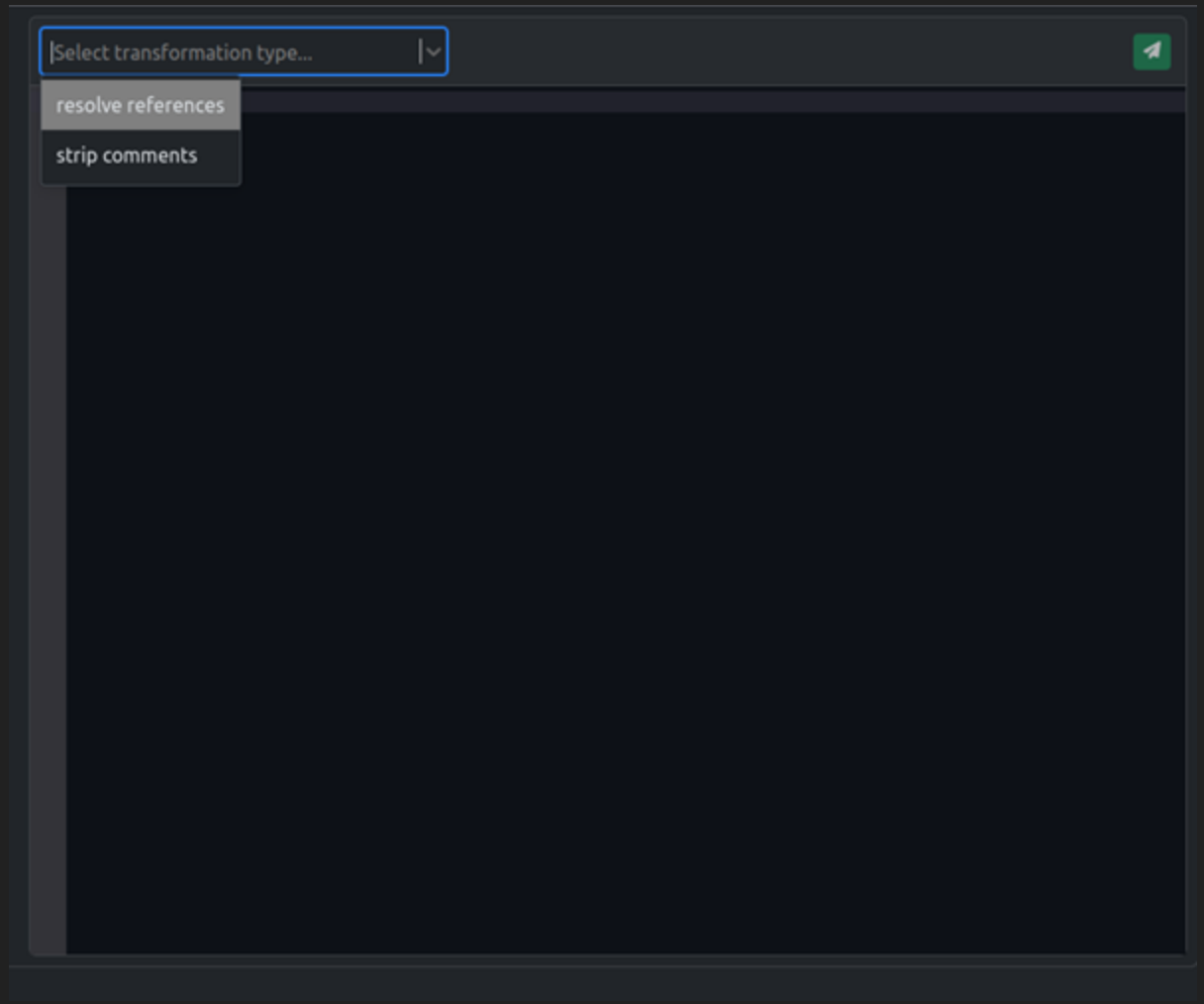
After selecting the desired schemas, you can select your desired transformation:

Resolve references

- Create a single JADN schema from an unresolved schema and its imports

Strip comments

- Remove comments from a JADN schema to reduce size or visual clutter

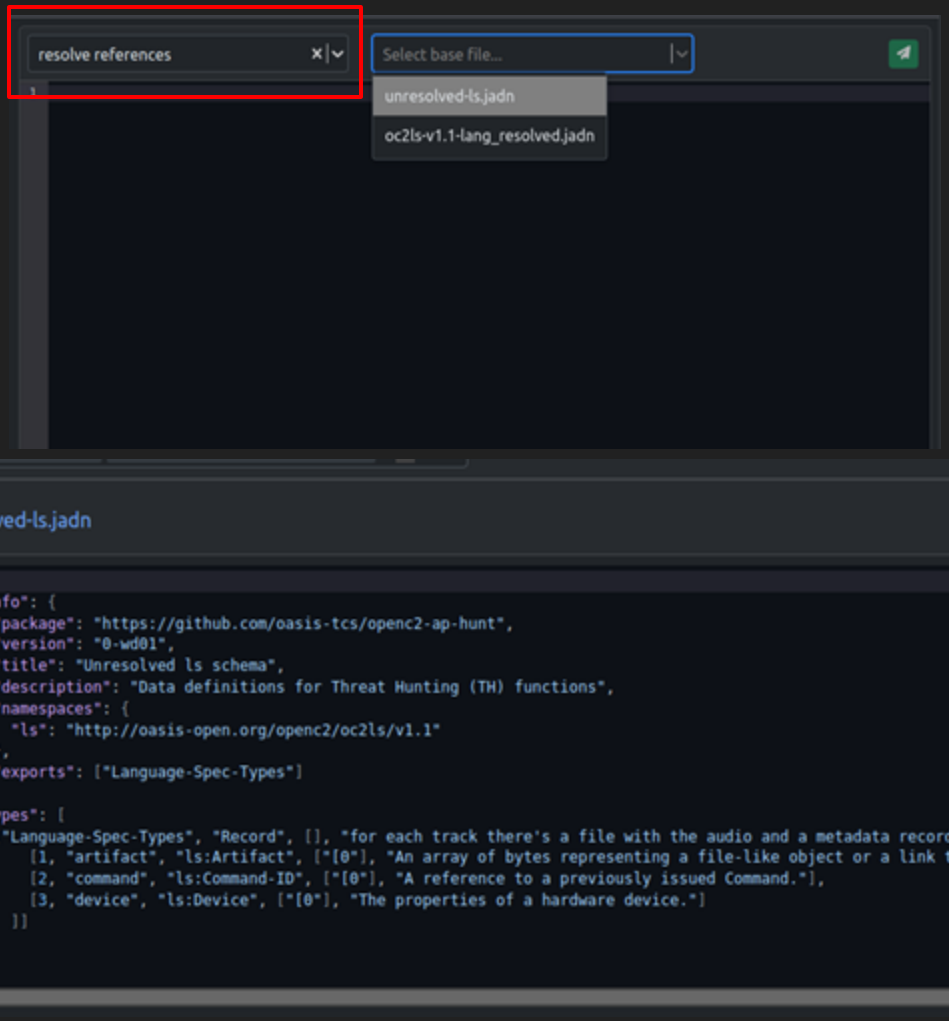


Resolve References [1]

For resolving references, you will need to select a base file. This file is the file you would like to be resolved.

The other uploaded files will be used to help resolve the chosen base file.

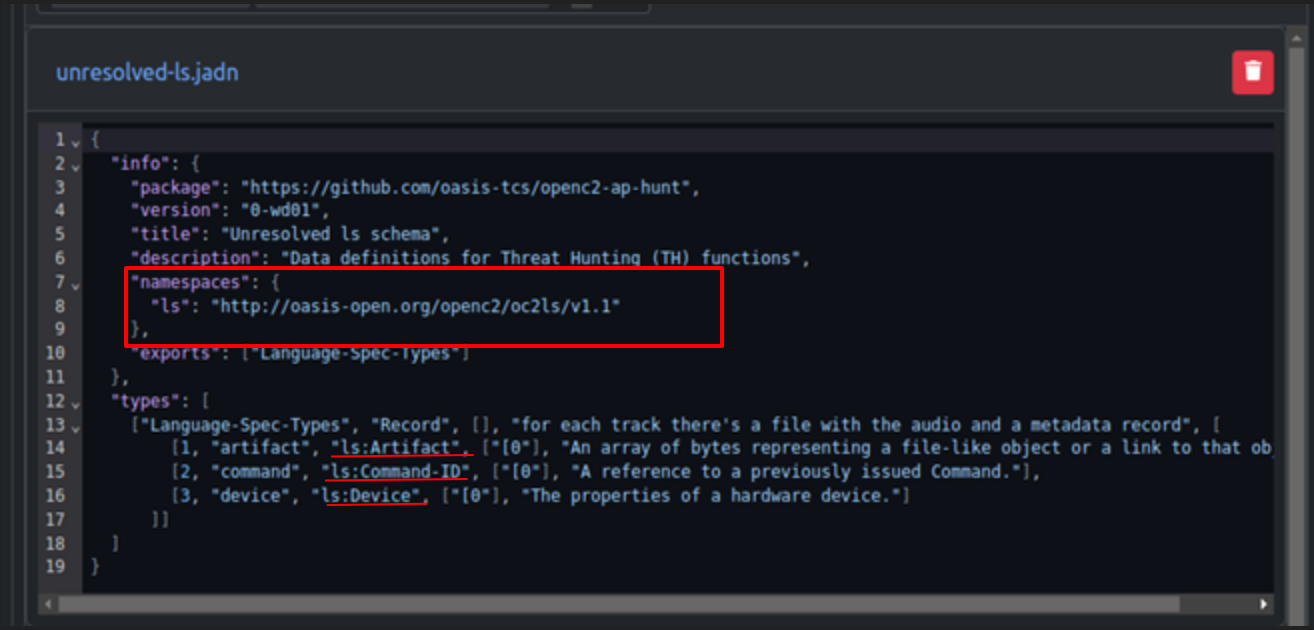
In this example, the base file is : unresolved-ls.jadn



1. A resolved Schema is a schema without references.

What is an unresolved Schema?

A Schema is unresolved if it has namespaces (references to types defined in other schemas).



Click Transform to resolve the base file.

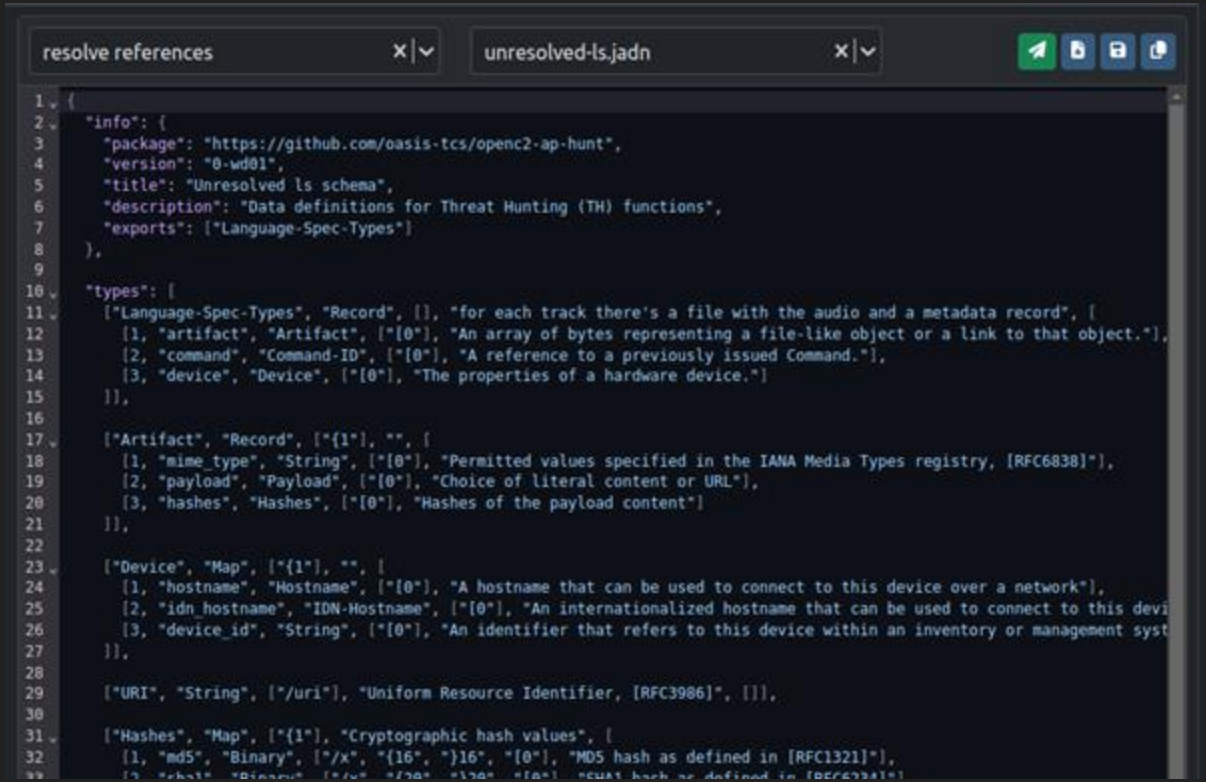
Result: A resolved Schema

Notice there is no namespace and that the types from the unresolved schema can be referenced within the resolved schema.

Ls: Artifact —> Artifact

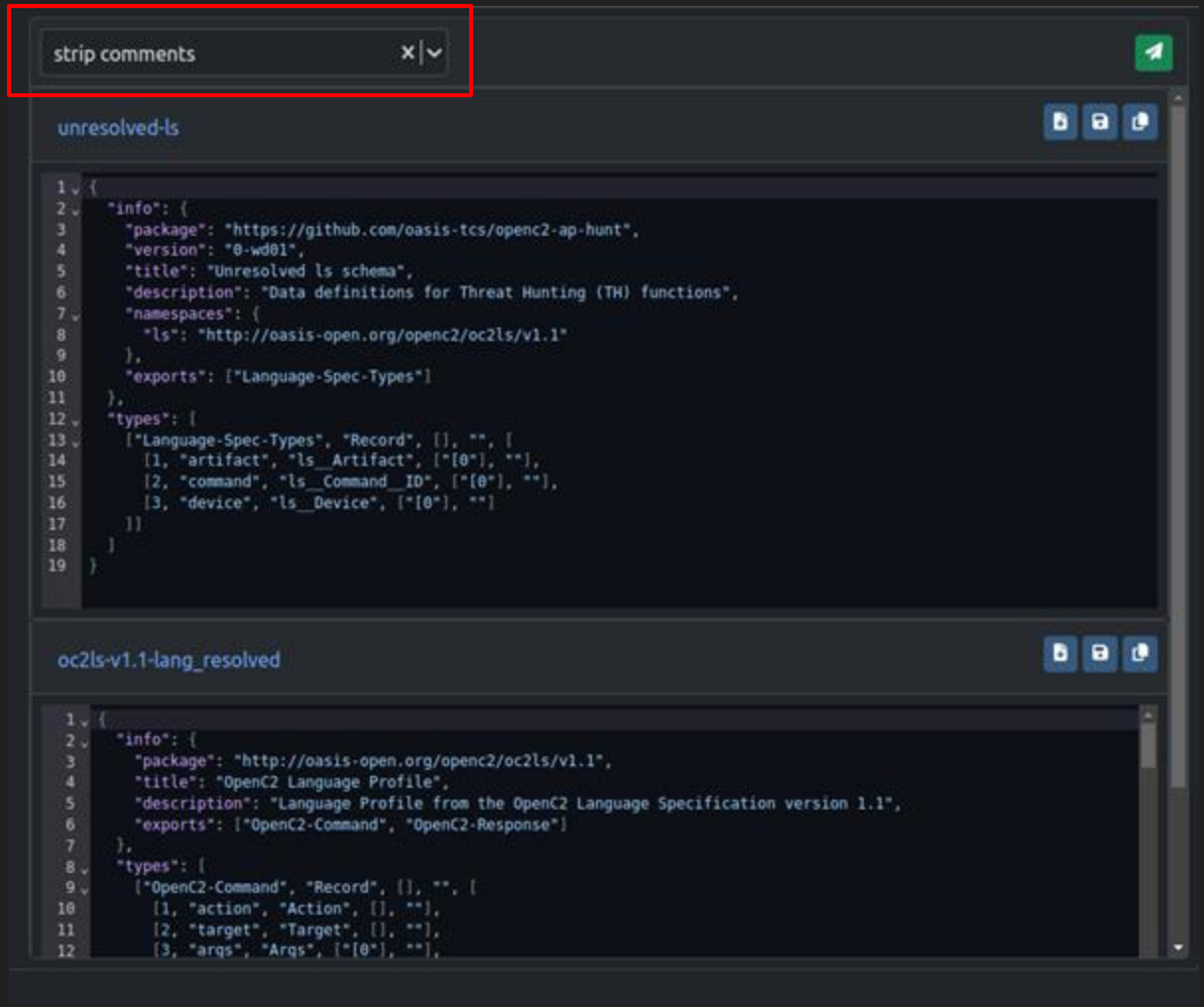
Ls: Command-ID —> Command-ID

Ls: Device —>Device



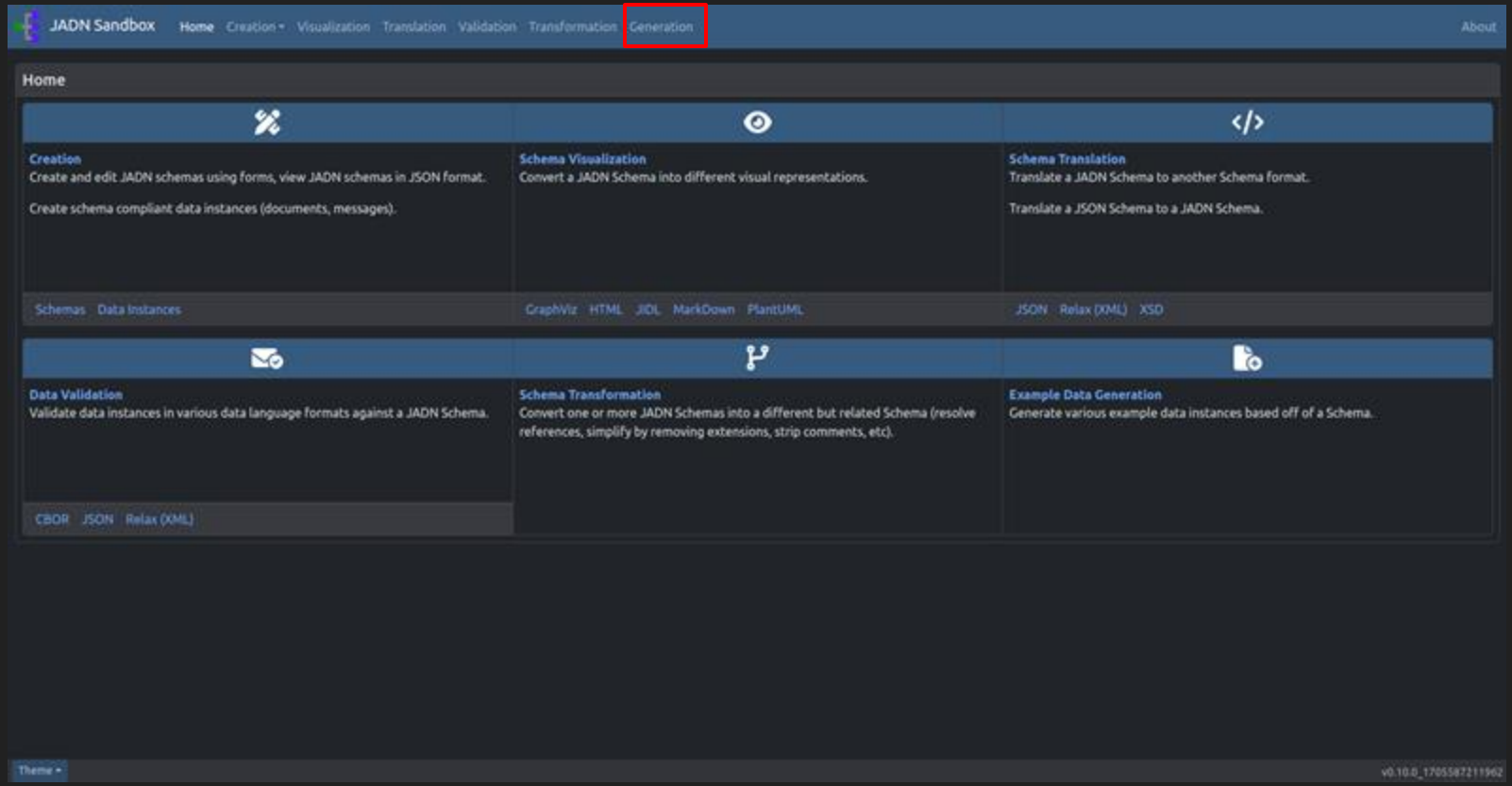
Result: Strip Comments

When stripping comments, results will return all schemas without comments.



Example Data Generation

Automatically create valid data instances given the JADN Schema



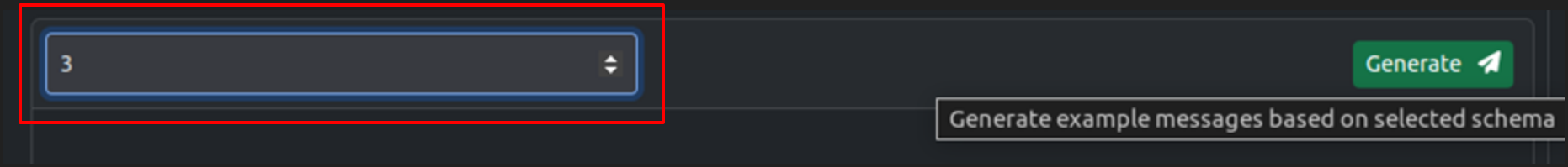
Go to: Generation

To Start : click here
Note: Only a JADN Schema can be uploaded.

Enter the desired number of examples you would like generated. This number should be between 1 - 10.

(In this example, we have selected 3.)

After you input a number, click the green “Generate” button.
Note: The button will only be clickable if you have a valid JADN schema and the number of examples desired.



Warning: Example Generation may fail due to large Schema data. As a result, the application may lock itself. In this case, please restart docker container.

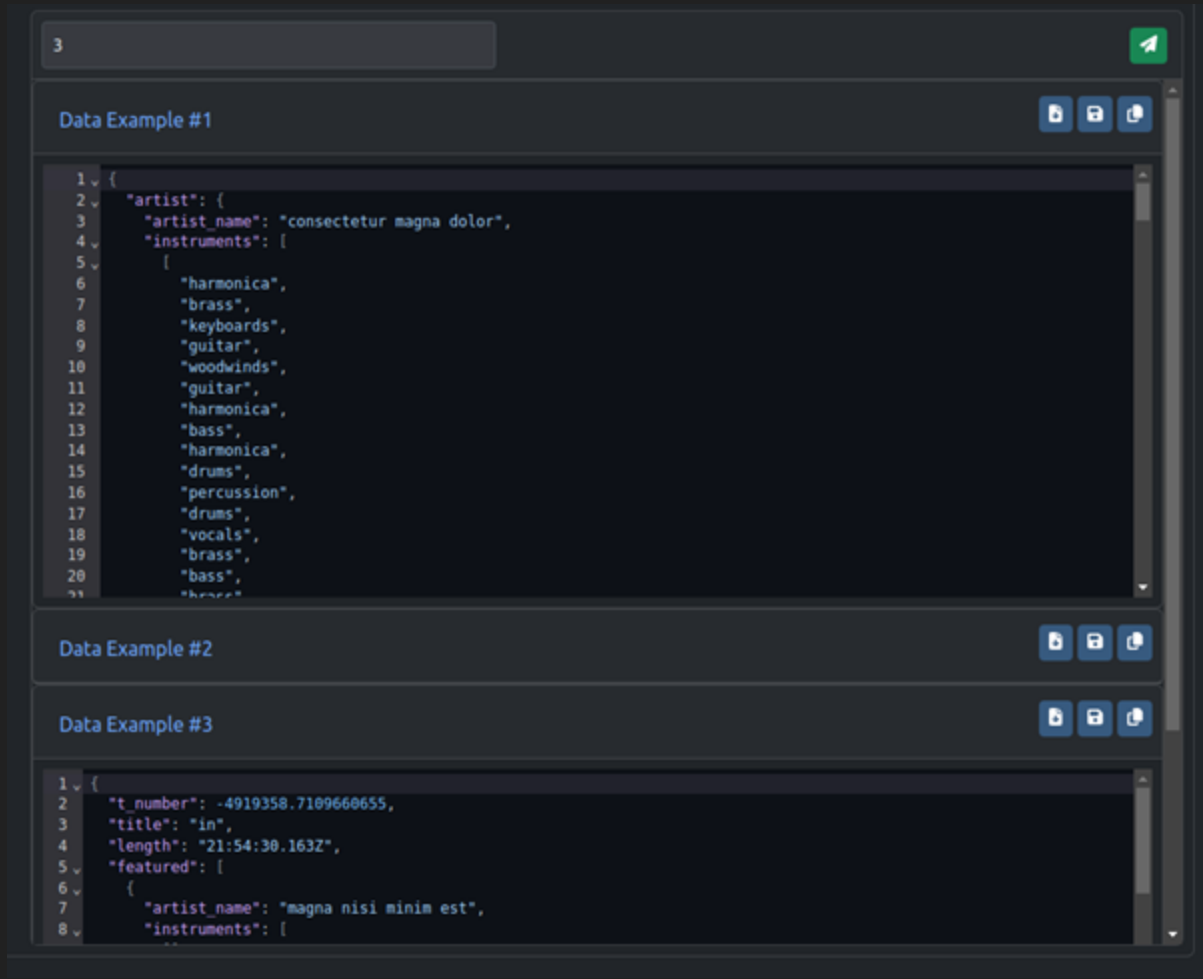
Results

If successfully generated, you will be able to view and hide the example data generated.

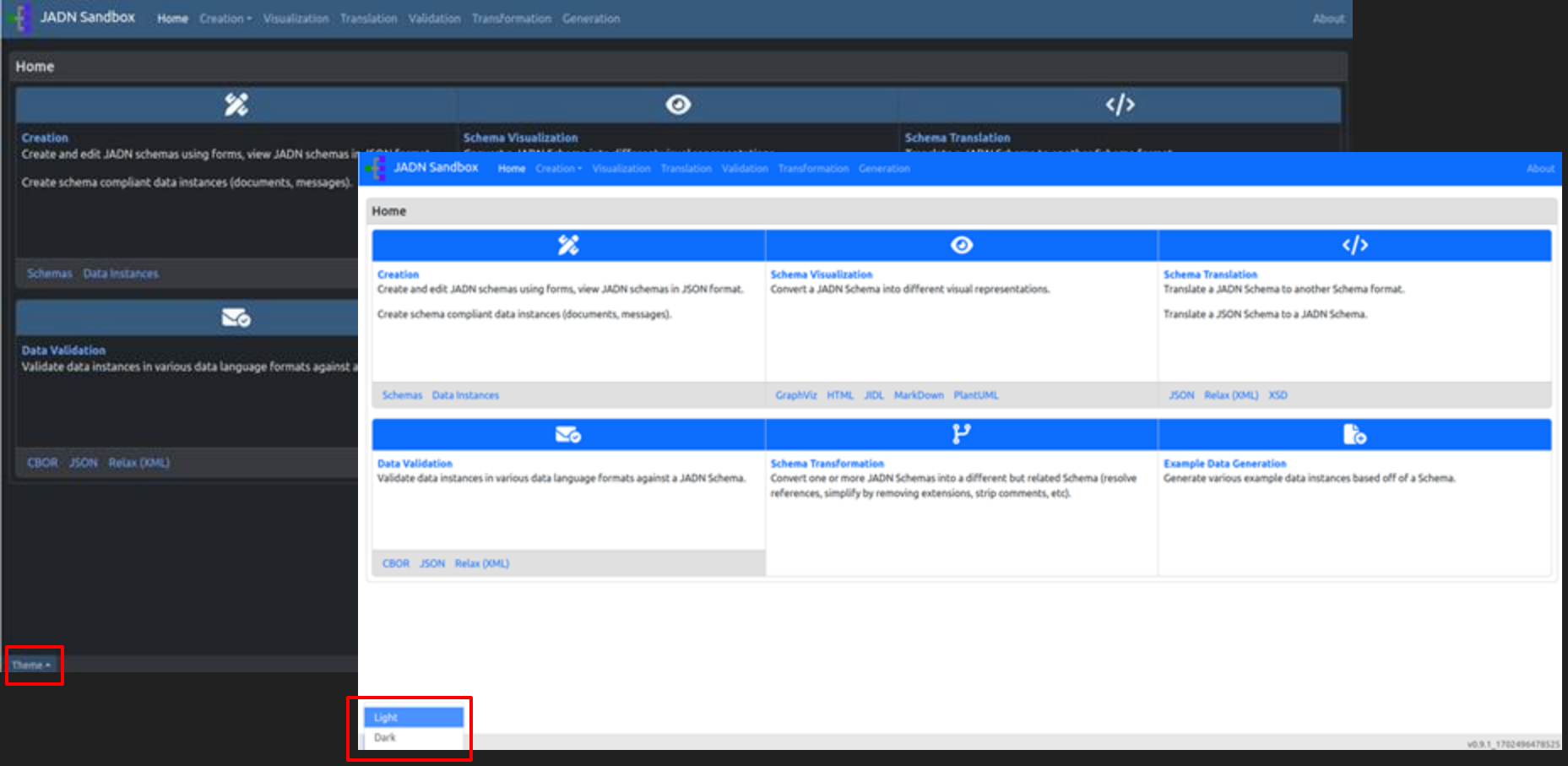
For each example, you can:

- Download to local storage
- Save the file to data uploader
  (The file can then be found for easy access in the Data Validation page)

- Copy to clipboard



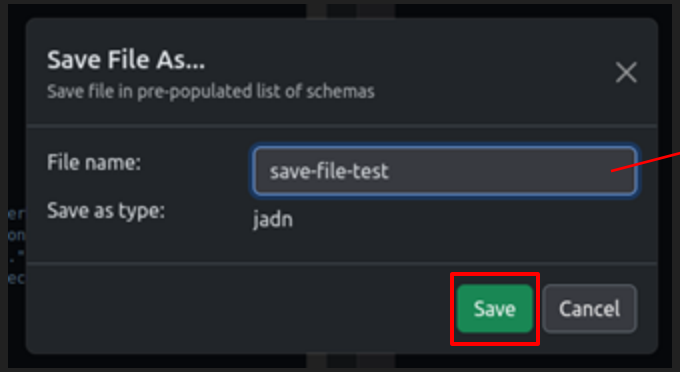
Other Features

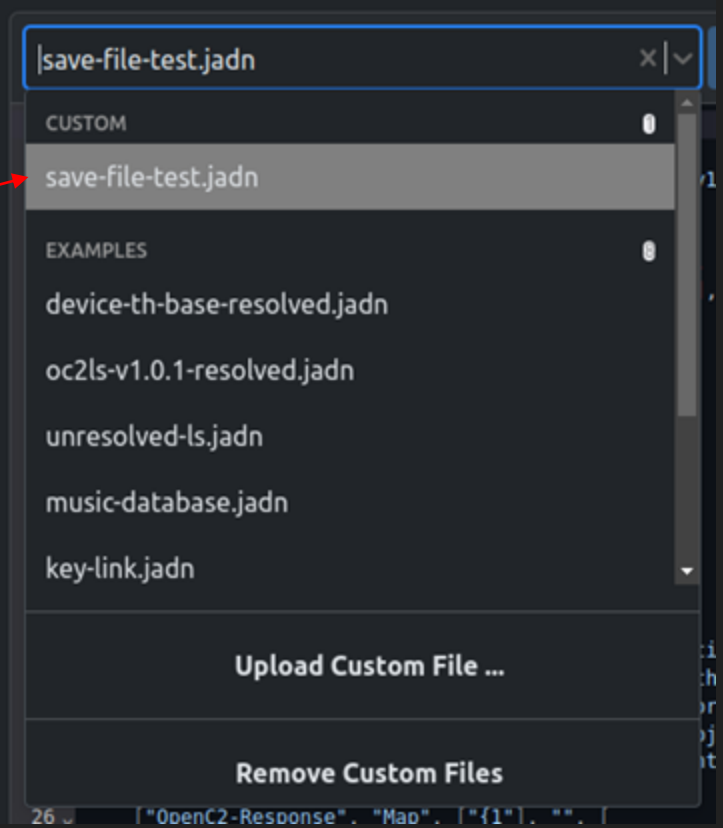


Theme Switcher: Choose between light and dark mode.

Note: Dark is the default theme.

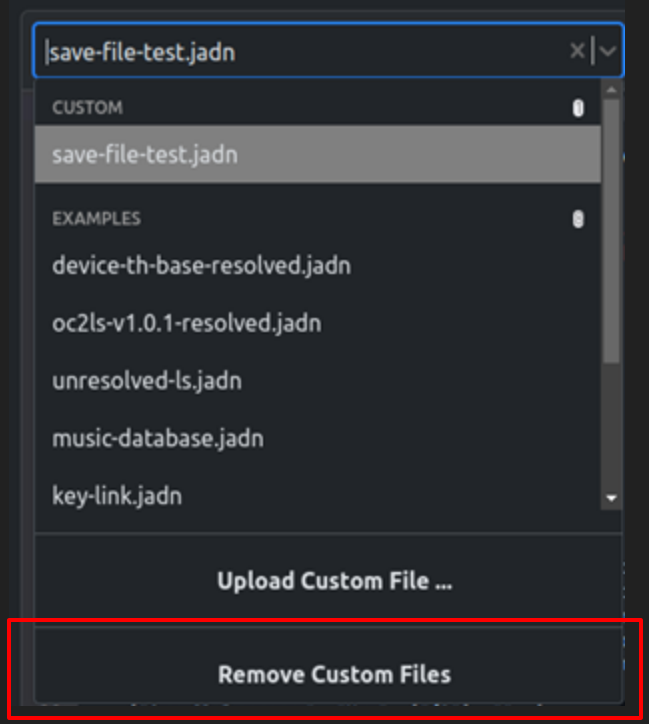
Add custom files (Save as…)



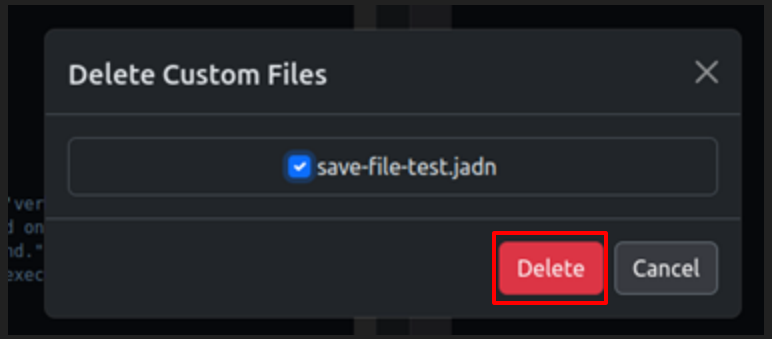


The file saver will allow you to name and save data into a file to be found in the file loader for future use.

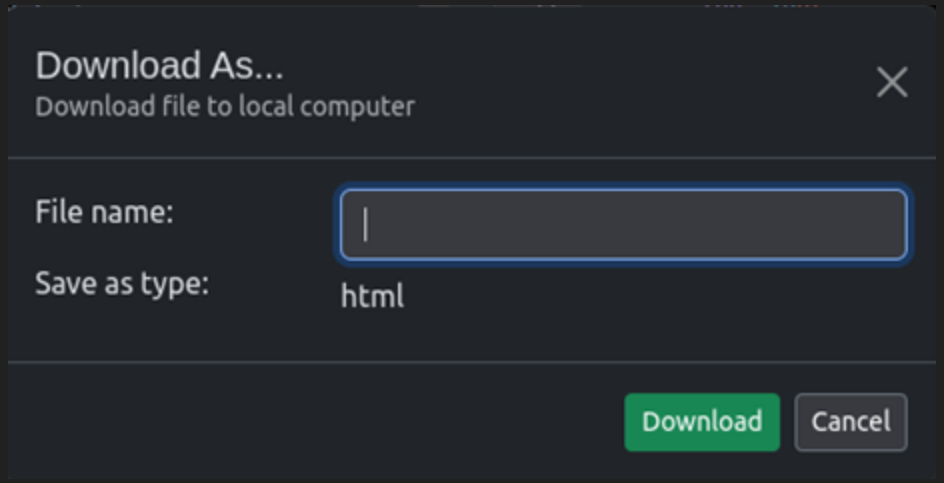
Delete custom files



Custom files can be removed from the file loader if no longer needed.



Download files to local storage (Download As..)



Files can be named and saved to your Downloads Folder.

JADN Sandbox

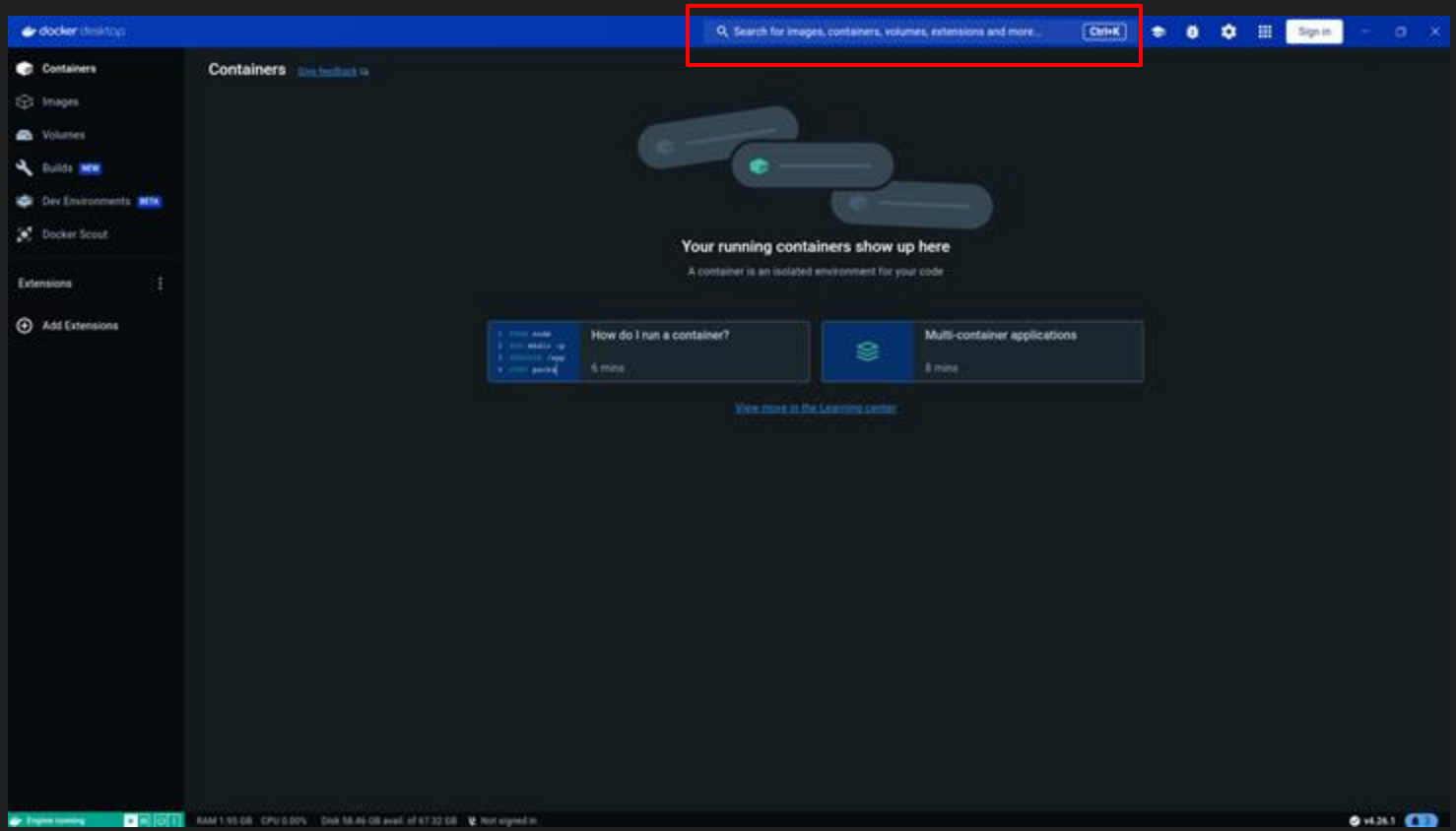
Docker Desktop: Startup Guide

Docker Table of Contents

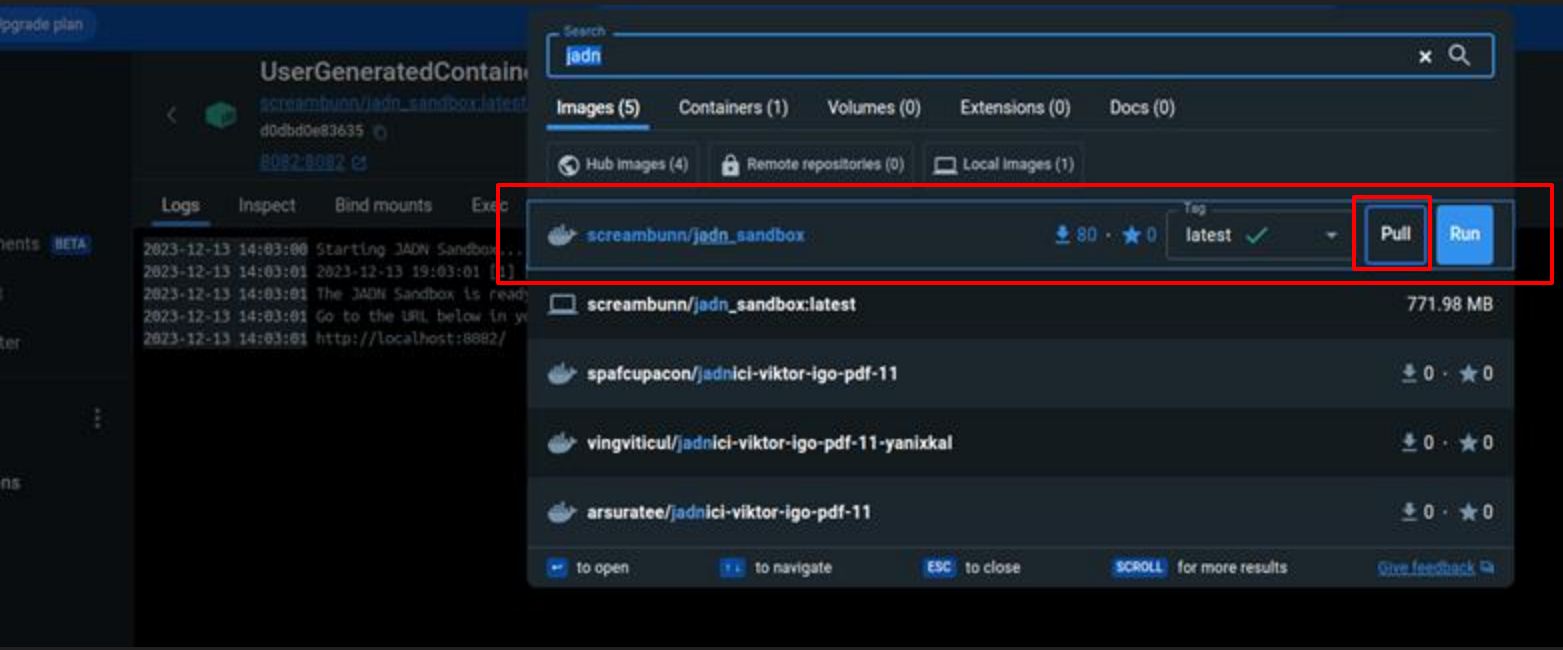
Tips:

1. A Docker image is like a set of instructions. It is the template loaded onto the container to run it.
2. A Docker container is a self-contained, runnable software application or service created from a docker image.

How to Get the JADN Sandbox Image



Click in the search bar, search: jadn



Then, click Pull: screambunn/jadn_sandbox

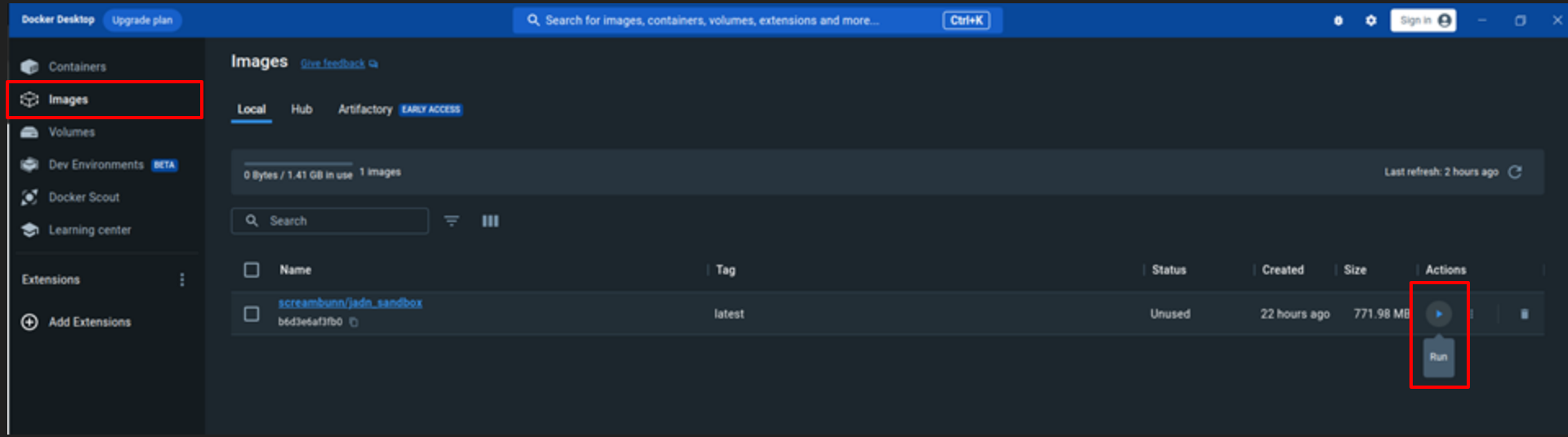
How to Run the JADN Sandbox Image

From Images

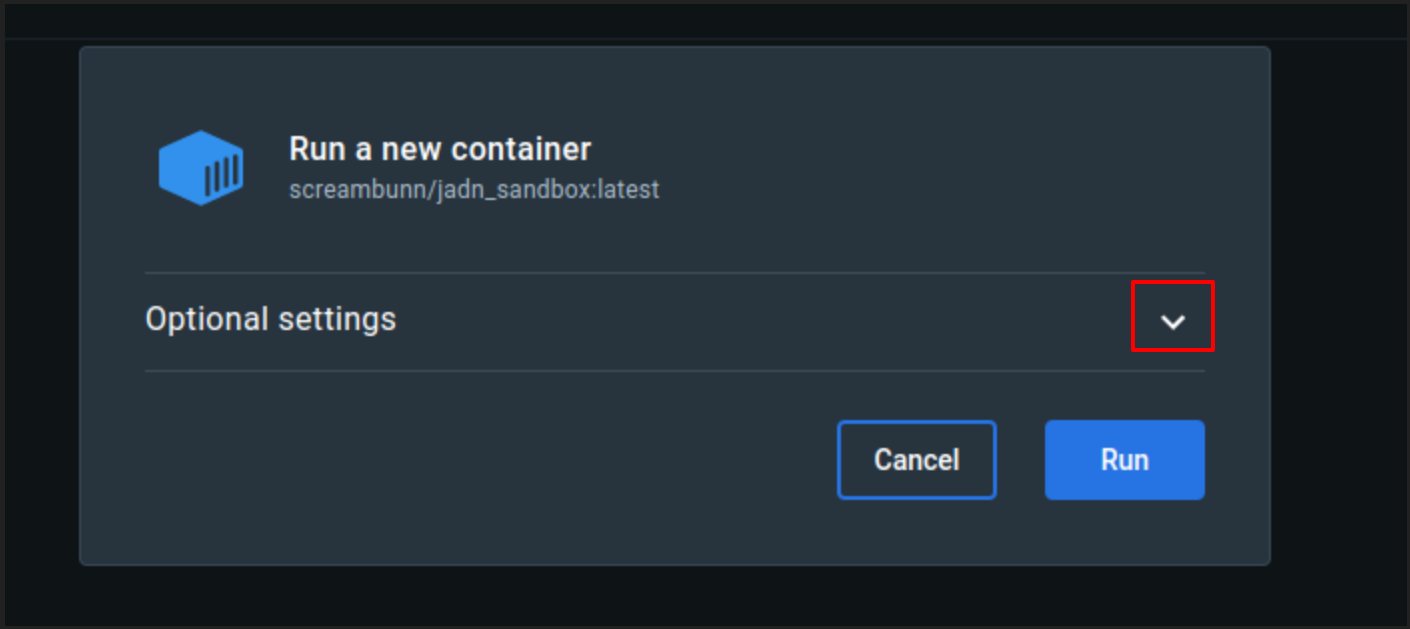
From Containers

From Search Bar

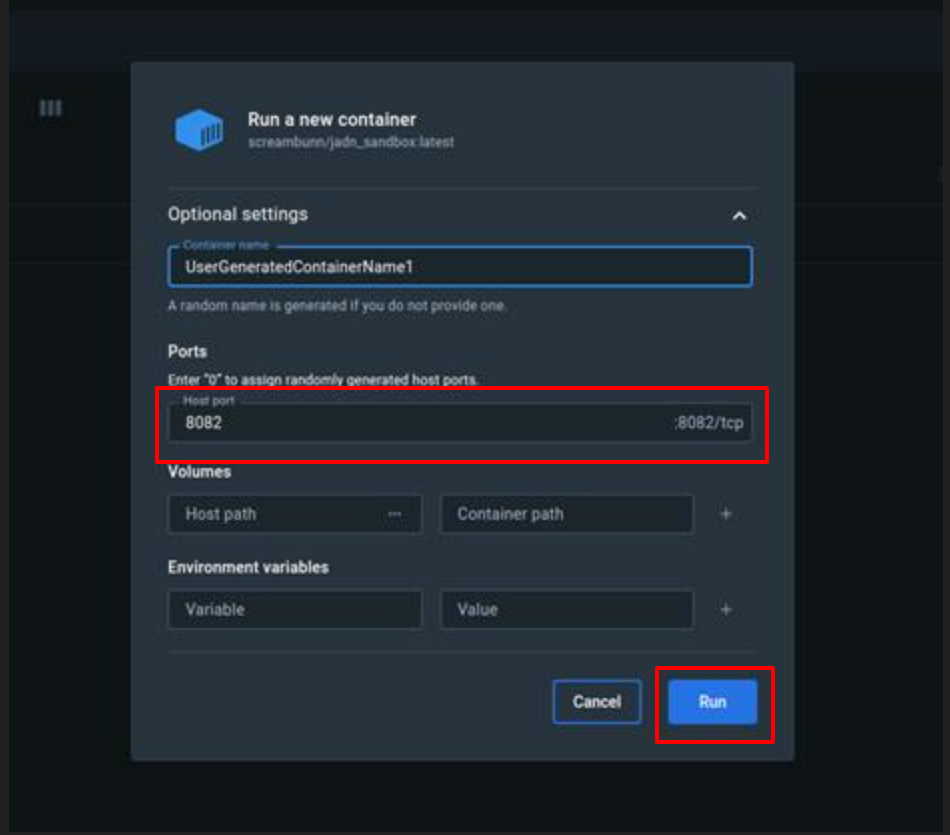
From Images



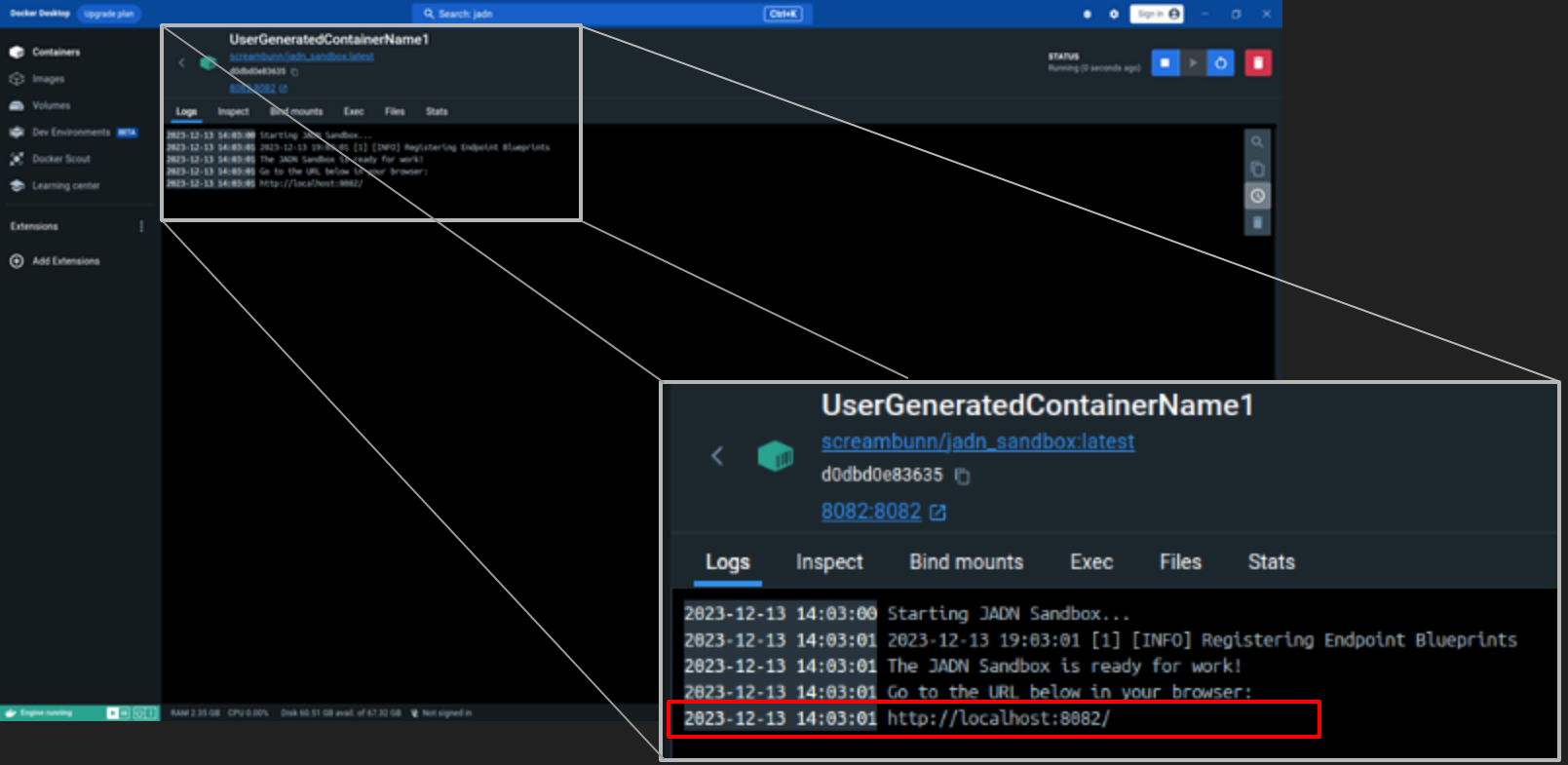
Under Images, find the desired image and click the play button to run the image.



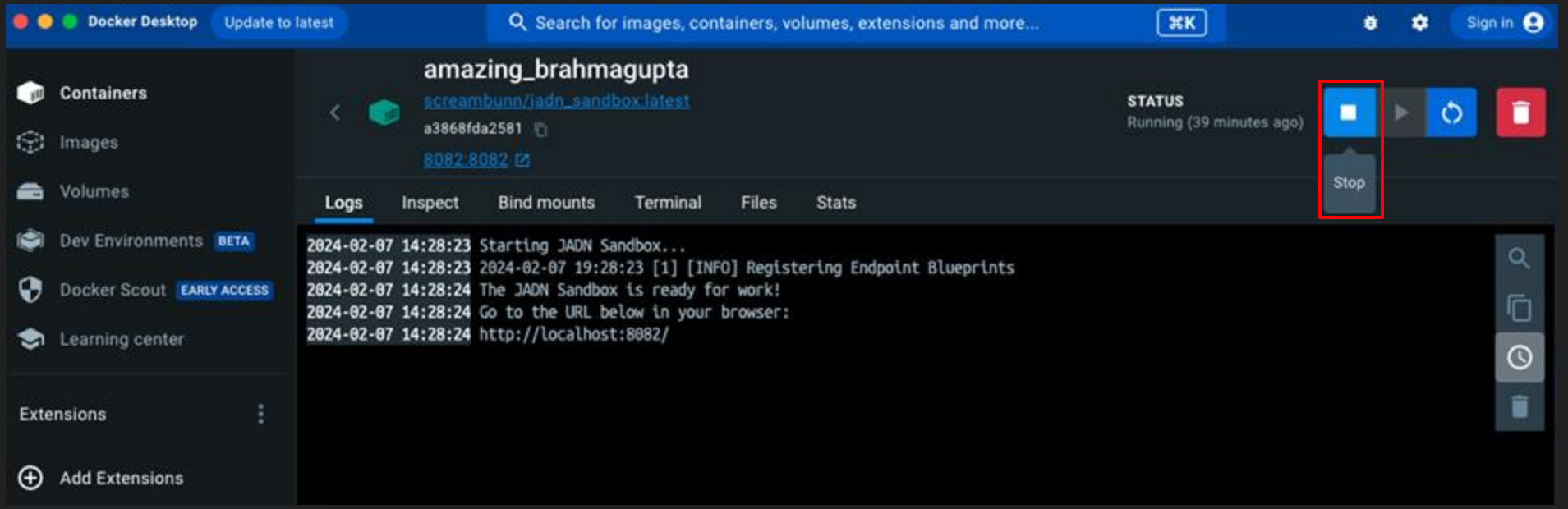
After clicking the play button, this window will appear.
You will need to enter information on the container to be able to run the image.
Click the carrot icon (v) to expand the Optional settings.



After clicking the carrot icon, you will see the settings as shown.
The Container Name is optional, but has been provided as an example *(UserGeneratedContainerName1)*.
Note: no spaces allowed in the container name.
REQUIRED INFORMATION: Host Port - Enter: 8082
Click Run.

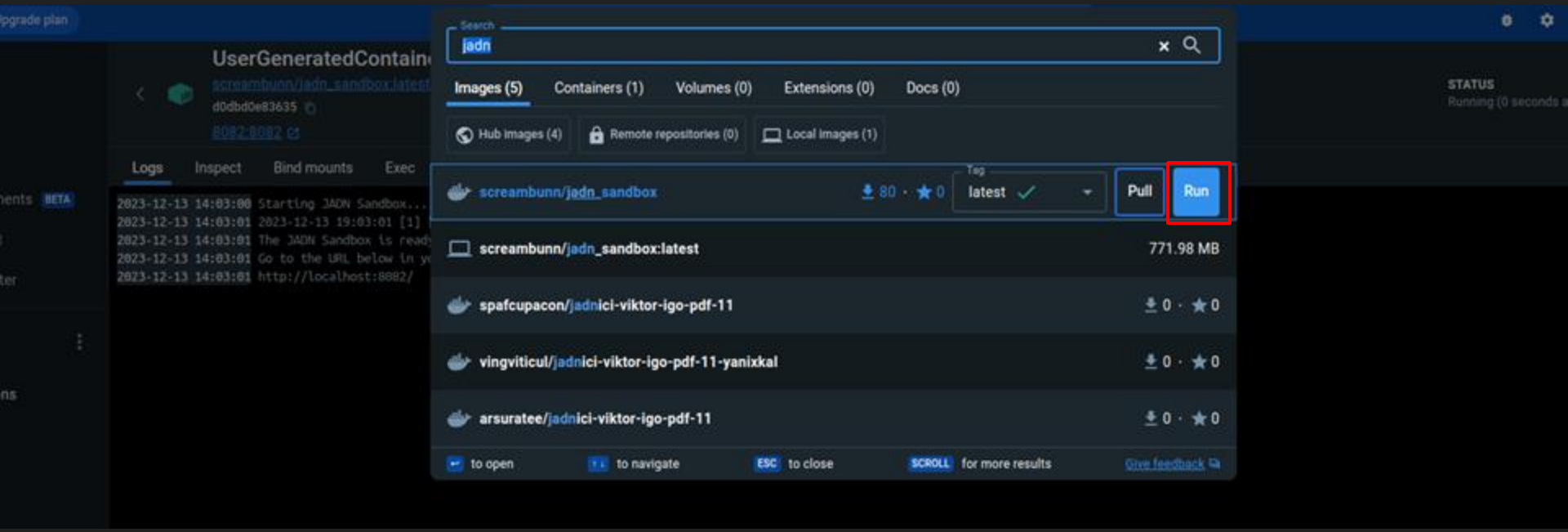


After clicking on Run, a container will appear.
Click on the link provided to open the image in a browser window.
You can also enter the link itself in the browser:
http://localhost:8082/

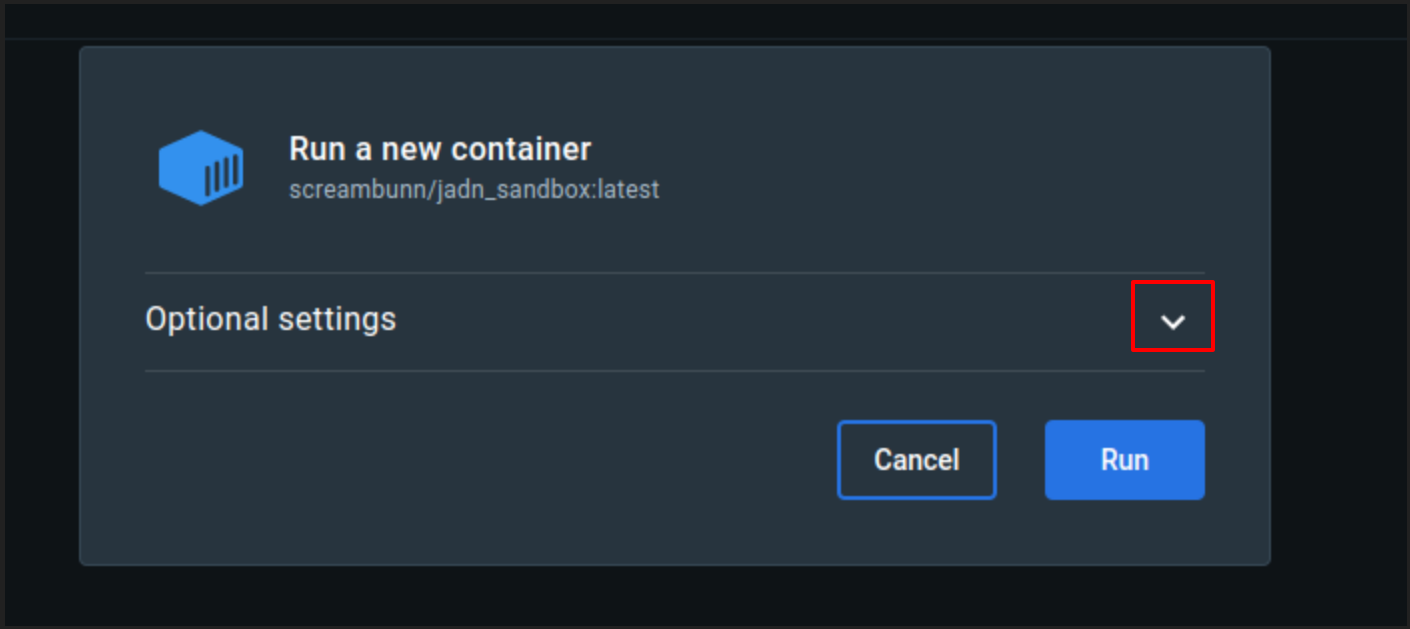


To stop the container, click the stop button.

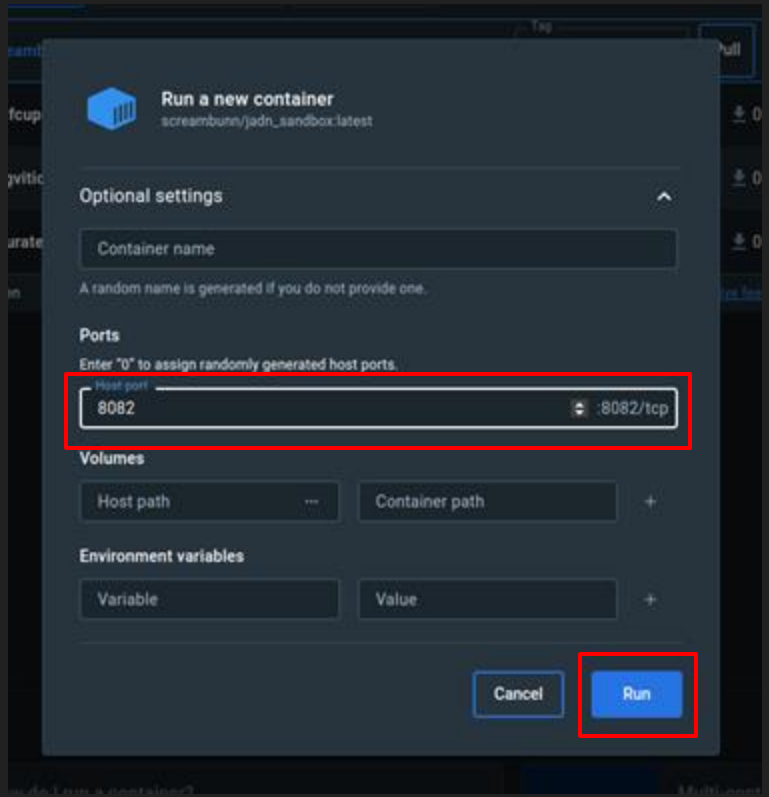
From the Search Bar



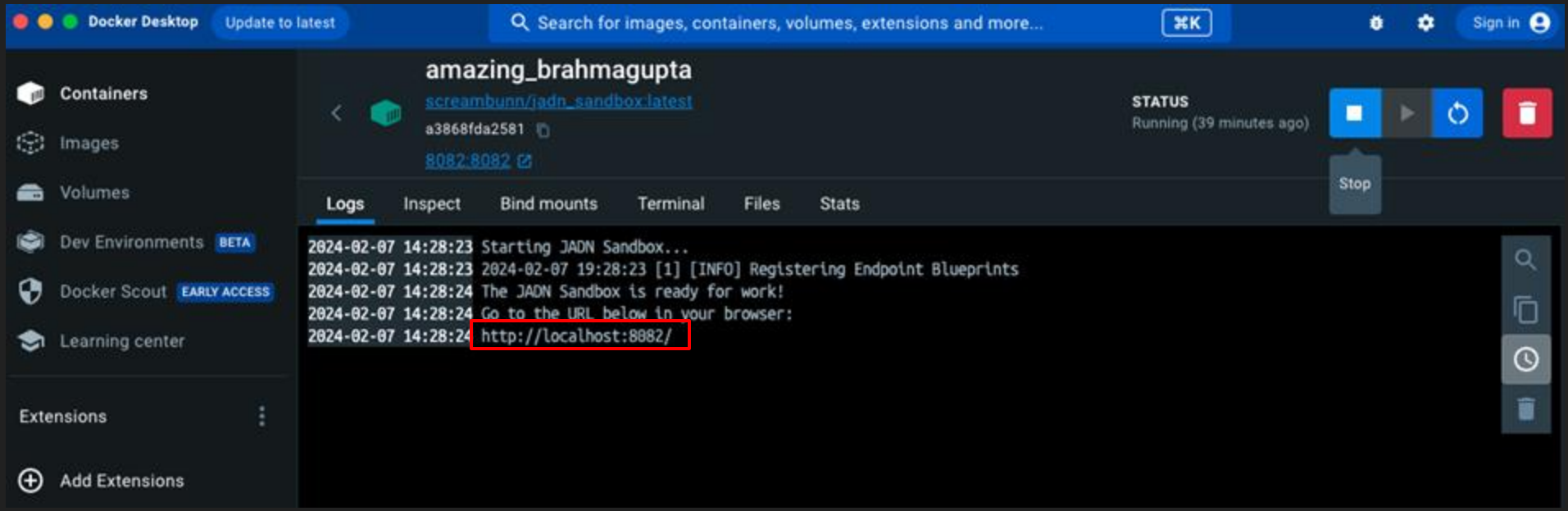
In the search bar, search: jadn
Then, click Run: screambunn/jadn_sandbox



After clicking the play button, this window will appear.
You will need to enter information on the container to be able to run the image.
Click the carrot icon (v) to expand the Optional settings.

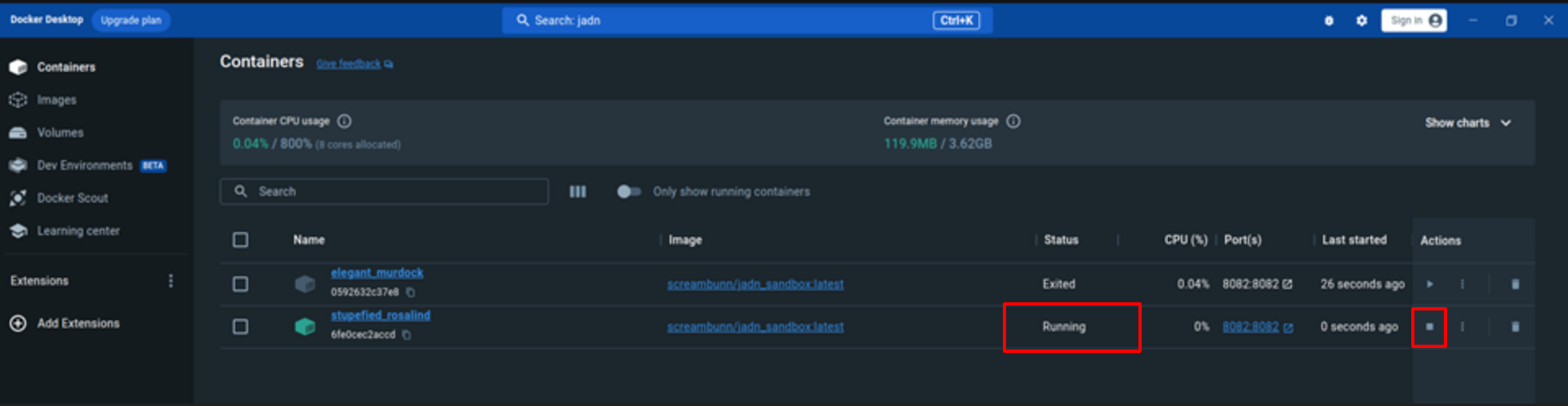


After clicking the carrot icon, you will see the settings as shown.
The Container Name is optional.
Note: no spaces allowed in the container name.
REQUIRED INFORMATION: Host Port - Enter: 8082
Click Run.

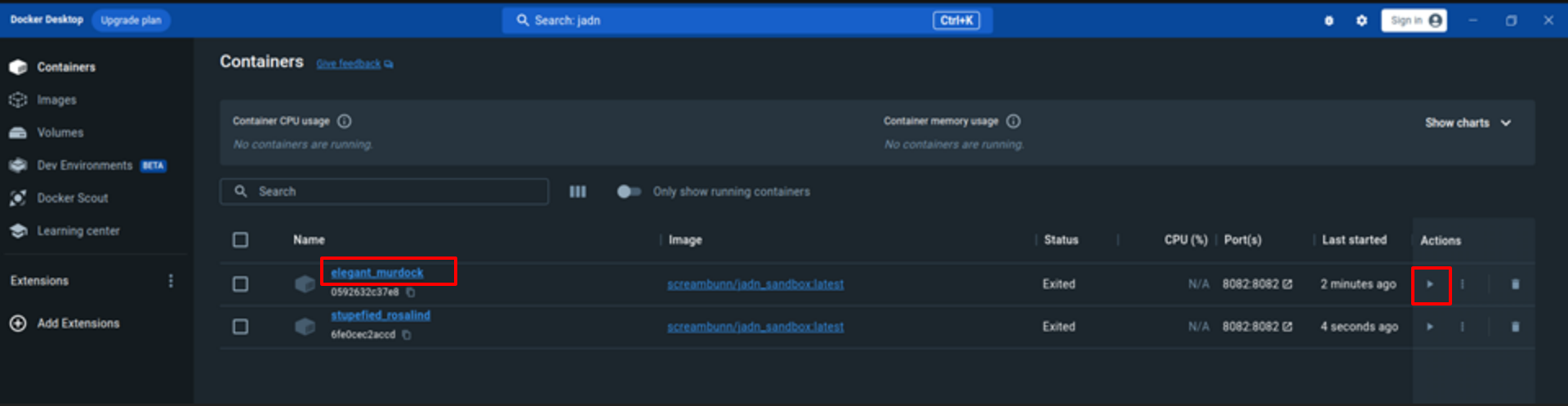


After clicking on Run, a container will appear.
Click on the link provided to open the image in a browser window.
You can also enter the link itself in the browser:
http://localhost:8082/

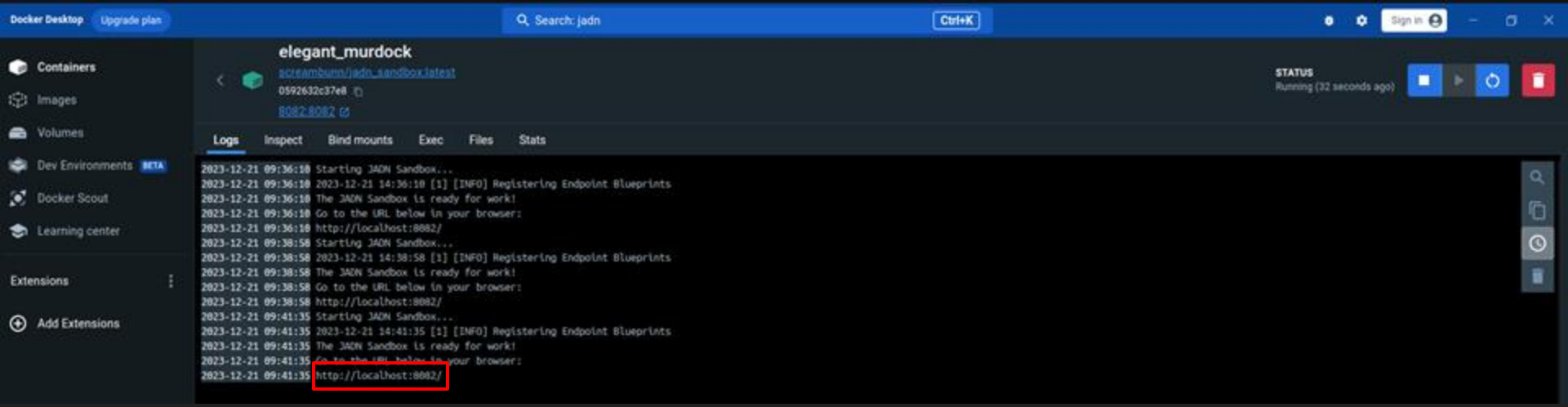
From Containers



First, make sure to stop any running containers.



Click play on the desired container and then click on link to see terminal of running container.



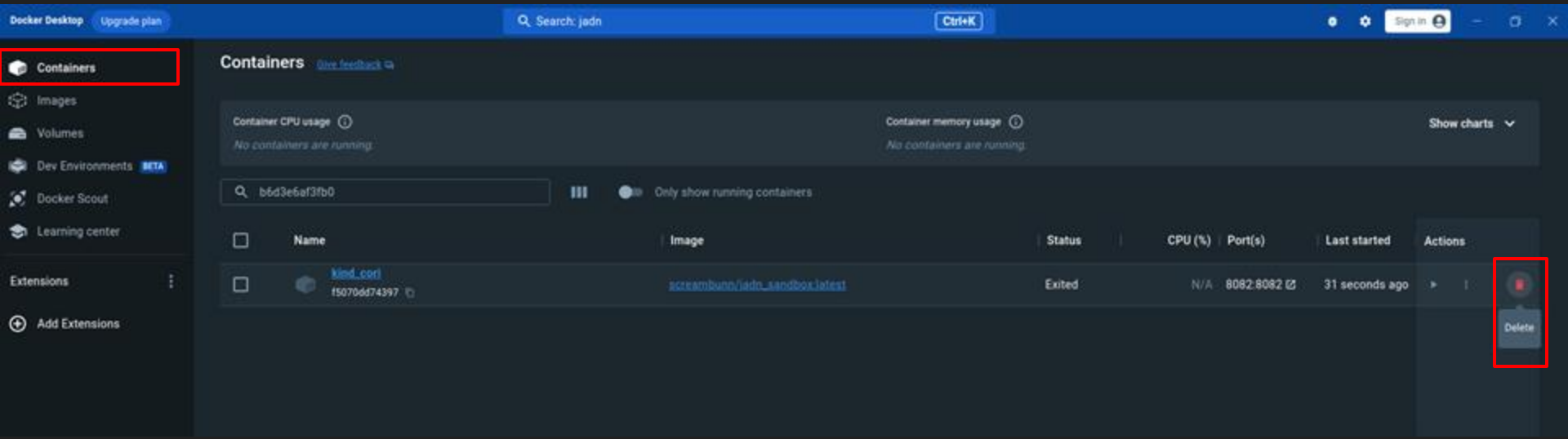
Click on the link provided to open the image in a browser window.
You can also enter the link itself in the browser:
http://localhost:8082/

How to Update the JADN Sandbox Image

From Images

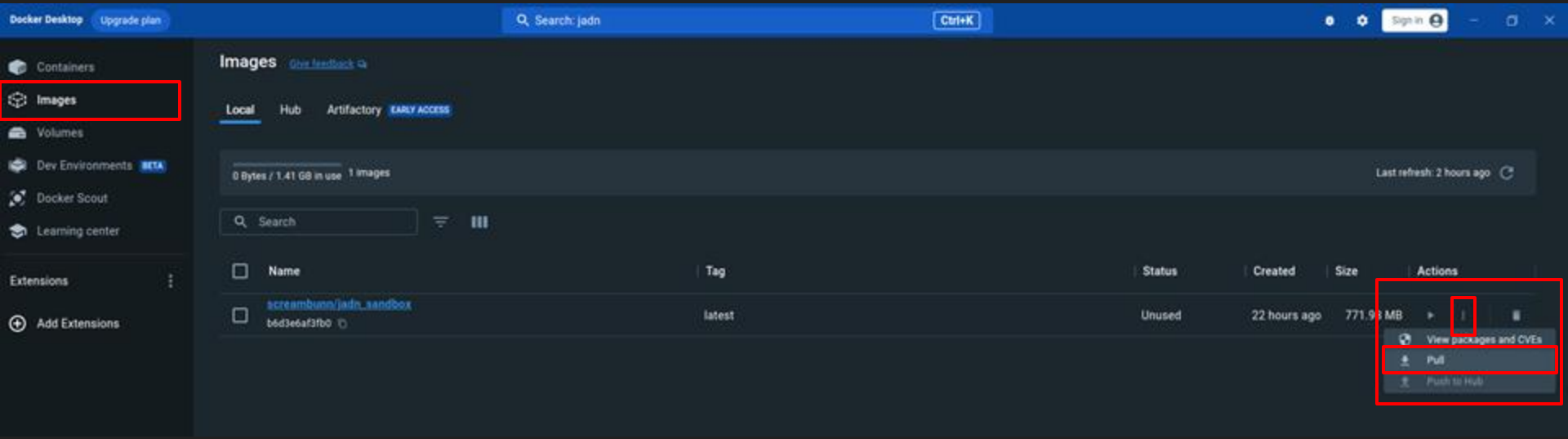
From Search Bar

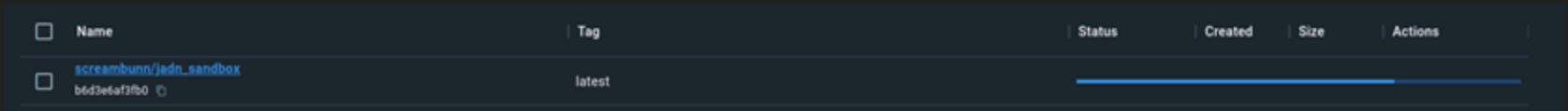
From Images



OPTIONAL: Delete all containers related to the image (screambunn/jadn_sandbox:latest) by clicking the delete button (trash can icon) under Action.

Note: Containers use the image that it was created with. Even though the image is named the same, its versioning is different. Therefore older containers will be out of date.

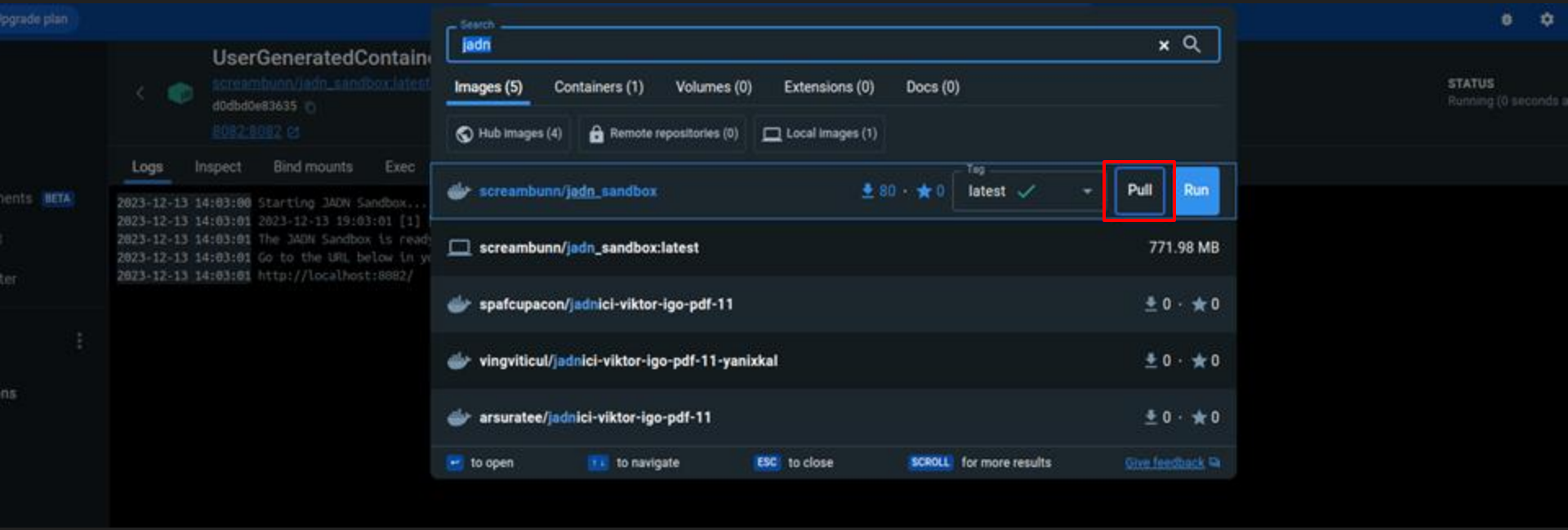




Pulling image..

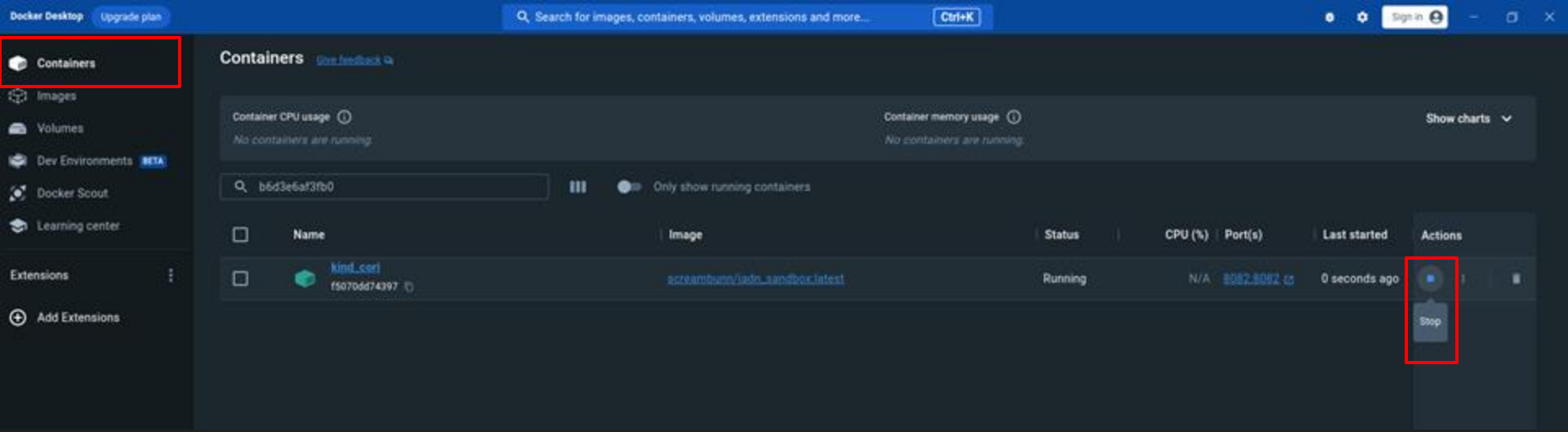
Under Images, Go to Actions and click the 3 dotted icon.
A menu drop down will appear. Click Pull.
Then go through the steps to run the image.

From the Search Bar

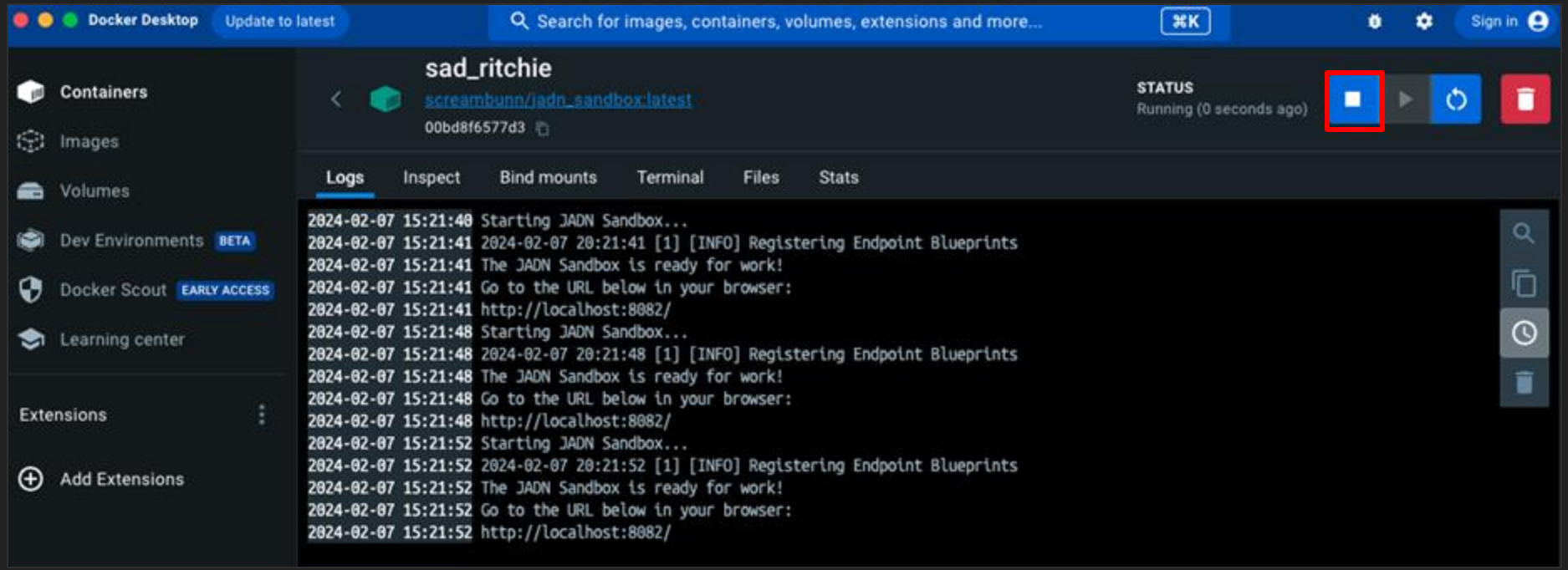


In the search bar, search: jadn
Then, click Pull: screambunn/jadn_sandbox

How to Stop the JADN Sandbox Image

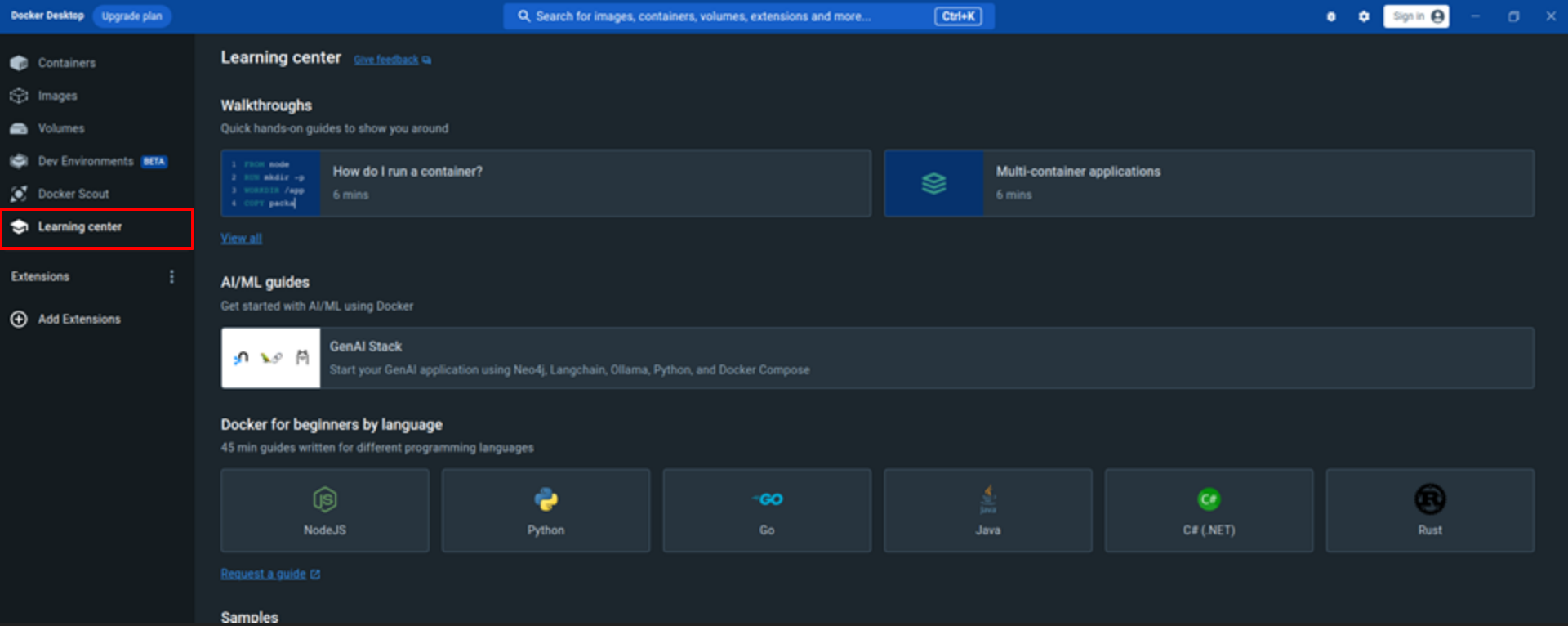


Click the stop button under Action in Containers.



Alternatively, Click the stop button within the running container

How to Learn More about Docker



Go to the Learning center to learn more about Docker.