DARIAH-EU
Digital Research Infrastructure for the Arts and Humanities

HaS
Humanities at Scale

Open Data Citation for Social Sciences and Humanities

DARIAH's Humanities at Scale Winter School in Prague: 24th-28th October 2016
http://datacite.hypotheses.org/

nakala **Workshop**

Huma-Num

A brief introduction to NAKALA

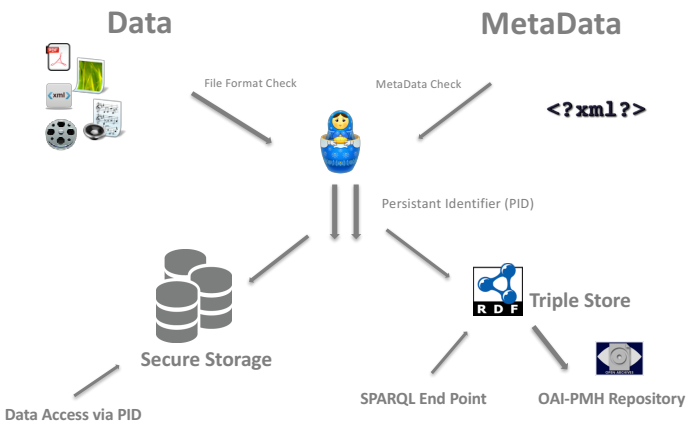
Since many scientific data producers do not have the digital infrastructure to provide persistent and interoperable access to their data, Huma-Num has implemented a tool to expose research data called "NAKALA".

NAKALA provides mainly three types of services:
- A PID (Persistent IDentifier) to data and metadata
- Permanent data access
- An exposition of metadata through a Triple Store and OAI-PMH

NAKALA is a simple repository for sharing resources:
- The main API is the Triple Store
- You can cite your Data and your MetaData
- Data and MetaData are immediately available

But if you wish to show your data, you need another application, not provided by NAKALA:
- A search Engine
- Tools for visualization

nakala **Architecture**

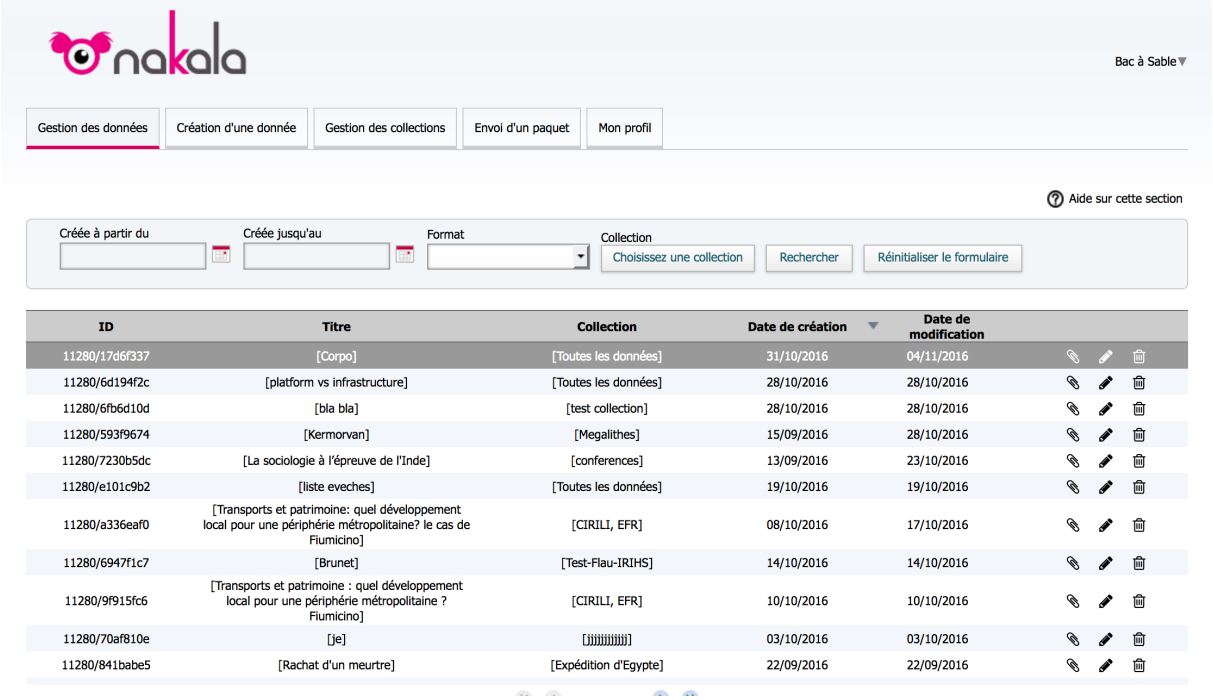


Data deposit in NAKALA

To connect to the NAKALA web interface, go to
http://www.nakala.fr/nakala

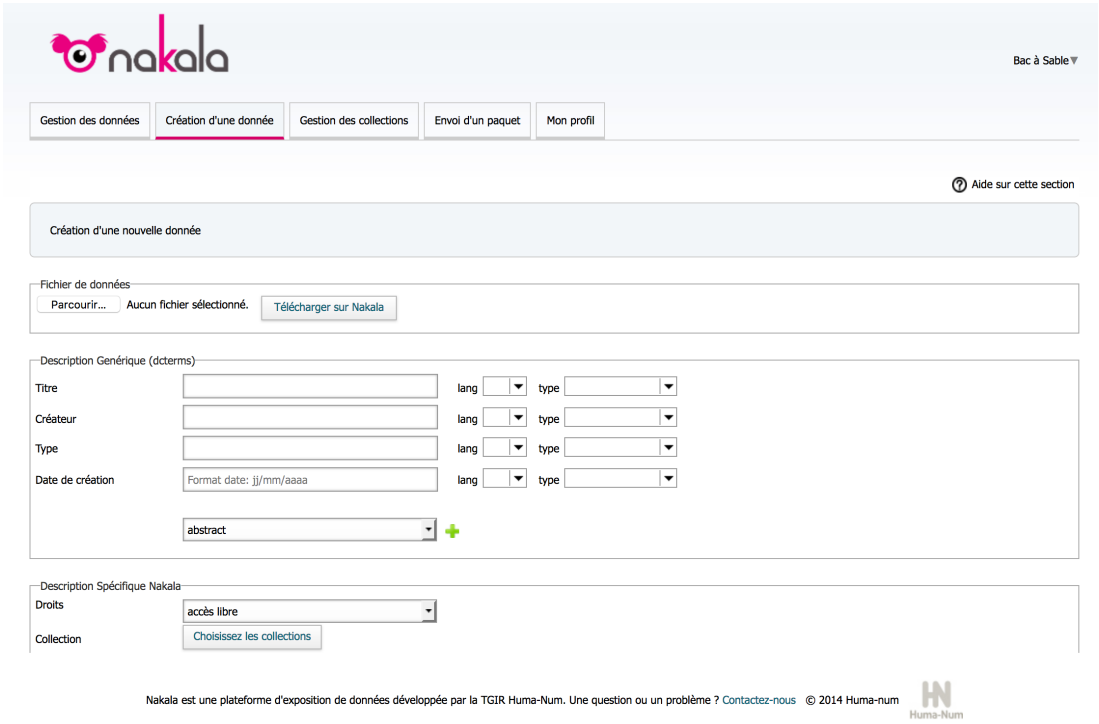
Use the identifier:
winter-school@has.dariah.eu or *winter-school-bis@has.dariah.eu* (in case someone else is already connected)
with the password:
winhasckool!

You are now connected to the NAKALA space “Bac à Sable” (“testbed” in English)
You can see a list of data already there. The left column contains the identifier (handle) of the resource.

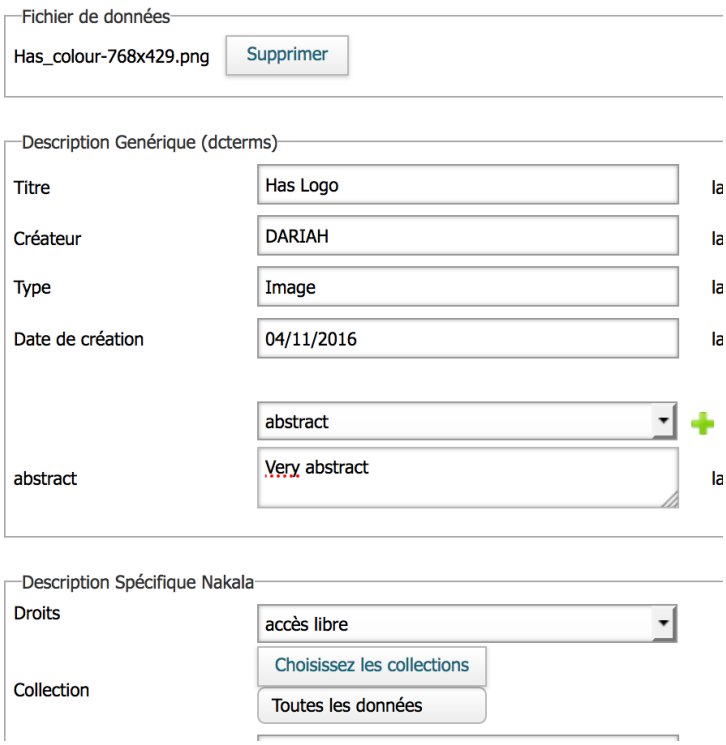


ID	Titre	Collection	Date de création	Date de modification
11280/17d6f337	[Corpo]	[Toutes les données]	31/10/2016	04/11/2016
11280/6d194f2c	[platform vs infrastructure]	[Toutes les données]	28/10/2016	28/10/2016
11280/6fb6d10d	[bla bla]	[test collection]	28/10/2016	28/10/2016
11280/593f9674	[Kermorvan]	[Megalithes]	15/09/2016	28/10/2016
11280/7230b5dc	[La sociologie à l'épreuve de l'Inde]	[conferences]	13/09/2016	23/10/2016
11280/e101c9b2	[liste eveches]	[Toutes les données]	19/10/2016	19/10/2016
11280/a336eaf0	[Transports et patrimoine: quel développement local pour une périphérie métropolitaine? le cas de Fiumicino]	[CIRILI, EFR]	08/10/2016	17/10/2016
11280/6947f1c7	[Brunet]	[Test-Flau-IRIHS]	14/10/2016	14/10/2016
11280/9f915fc6	[Transports et patrimoine : quel développement local pour une périphérie métropolitaine ? Fiumicino]	[CIRILI, EFR]	10/10/2016	10/10/2016
11280/70af810e	[je]	[jjjjjjjjjjj]	03/10/2016	03/10/2016
11280/841babe5	[Rachat d'un meurtre]	[Expédition d'Egypte]	22/09/2016	22/09/2016

To make a deposit, choose the tab “Création d’une donnée” (data creation)



Then upload a file (“Télécharger sur NAKALA”) and enter at least 4 metadata (Title, Creator, Type, Date). You can add more “dcterms” metadata fields by clicking on the “green +” sign after choosing the field type.



Then click on “Envoyer” and that’s it!

You will receive a message with the identifier (handle “11280/31cbb722” in this case) of the resource created.

You can then see the new data in the list by clicking on the tab “Gestion de données” again.

ID	Titre	Collection	Date de création	Date de modification
11280/31cbb722	[Has Logo]	[Toutes les données]	10/11/2016	10/11/2016
11280/17d6f337	[Corpo]	[Toutes les données]	31/10/2016	04/11/2016
11280/6d194f2c	[platform vs infrastructure]	[Toutes les données]	28/10/2016	28/10/2016

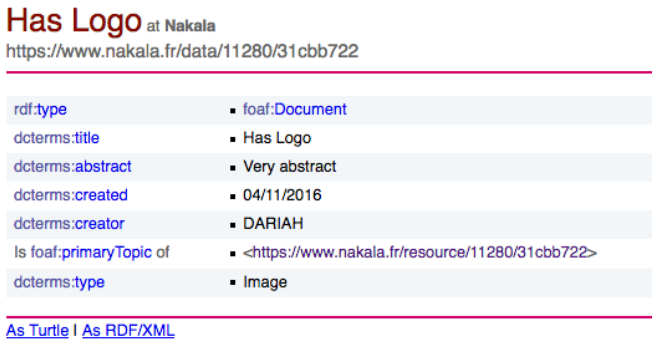
You can edit your deposit (data & metadata), by clicking the “pen”.

Data reuse in NAKALA

You can access your file simply using the handle provided by NAKALA.
You have two possibilities:

- URI based on NAKALA domain name
- http://www.nakala.fr/data/11280/31cbb722
- URI based on handle domain name
  http://hdl.handle.net/11280/31cbb722

You can also access metadata with the following URI based on the same handle:
http://www.nakala.fr/metadata/11280/31cbb722

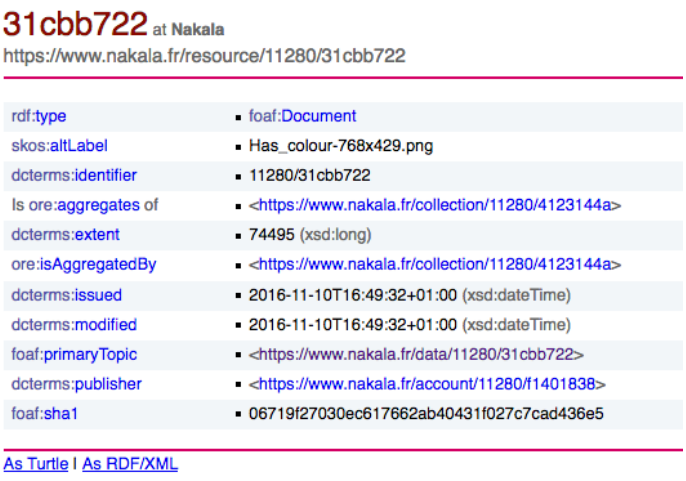


Has Logo at Nakala
https://www.nakala.fr/data/11280/31cbb722

rdf:type	foaf:Document
dcterms:title	Has Logo
dcterms:abstract	Very abstract
dcterms:created	04/11/2016
dcterms:creator	DARIAH
Is foaf:primaryTopic of	<https://www.nakala.fr/resource/11280/31cbb722>
dcterms:type	Image

As Turtle | As RDF/XML

You can also access NAKALA internal metadata (resource) with the following URI based on the same handle:
http://www.nakala.fr/resource/11280/31cbb722



31cbb722 at Nakala
https://www.nakala.fr/resource/11280/31cbb722

rdf:type	foaf:Document
skos:altLabel	Has_colour-768x429.png
dcterms:identifier	11280/31cbb722
Is ore:aggregates of	<https://www.nakala.fr/collection/11280/4123144a>
dcterms:extent	74495 (xsd:long)
ore:isAggregatedBy	<https://www.nakala.fr/collection/11280/4123144a>
dcterms:issued	2016-11-10T16:49:32+01:00 (xsd:dateTime)
dcterms:modified	2016-11-10T16:49:32+01:00 (xsd:dateTime)
foaf:primaryTopic	<https://www.nakala.fr/data/11280/31cbb722>
dcterms:publisher	<https://www.nakala.fr/account/11280/f1401838>
foaf:sha1	06719f27030ec617662ab40431f027c7cad436e5

As Turtle | As RDF/XML

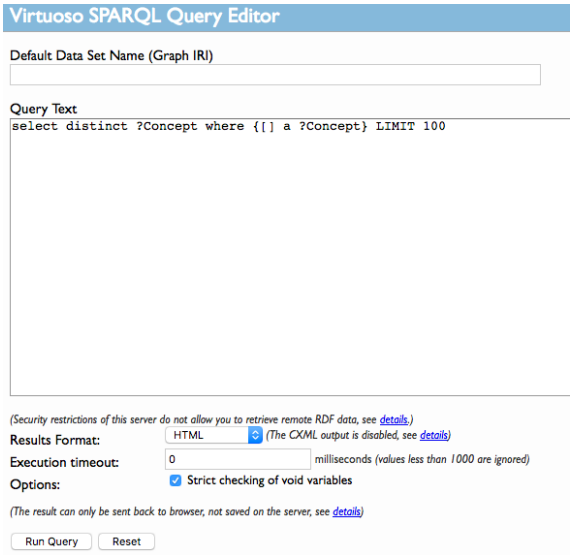
You can see that all NAKALA objects are identified by specific handles.

- NAKALA space (here the “Bac à Sable”)
  http://www.nakala.fr/account/11280/f1401838
- A collection
  http://www.nakala.fr/collection/11280/4123144a

NAKALA API

NAKALA uses exclusively Semantic Web technologies to store and manage information. Therefore the “natural” API is a SPARQL EndPoint associated to NAKALA’s TripleStore,

You can access the SPARQL EndPoint with the following URI:
http://nakala.fr/sparql/
where you can enter queries.



Another way to access the Triple Store content is simply to use NAKALA’s URIs which are “dereferencable”: this was done using the same software as DBPedia.
As an example, you can try it with the NAKALA space URI of “Bac à Sable”
http://nakala.fr/account/11280/f1401838
By following links, you can finally retrieve your deposit.

You can enter the following queries in the SPARQL editor (http://nakala.fr/sparql/)
The predefined query is

```
SELECT distinct ?Concept
WHERE
{[] a ?Concept}
LIMIT 100
```

The result is a list of different types of concepts stored in the NAKALA TripleStore. Generally, this is the first step to take when you want to discover the content of a TripleStore.

Concept
http://www.w3.org/2004/02/skos/core#Concept
http://www.w3.org/2004/02/skos/core#ConceptScheme
http://xmlns.com/foaf/0.1/Agent
http://xmlns.com/foaf/0.1/Document

Then you may want to see all objects of the type
“<http://xmlns.com/foaf/0.1/Agent>“

```
SELECT ?objects
      WHERE {
      ?objects rdf:type <http://xmlns.com/foaf/0.1/Agent> .
      }
```

objects
http://www.nakala.fr/account/11280/14fa8bf4
http://www.nakala.fr/account/11280/334034dd
http://www.nakala.fr/account/11280/e2837bfe
http://www.nakala.fr/account/11280/f11c44e1
http://www.nakala.fr/account/11280/67481ef7
http://www.nakala.fr/account/11280/ebabe5fa
http://www.nakala.fr/account/11280/689e2bea
http://www.nakala.fr/account/11280/8801ede3

Then you can “ follow the graph” by querying all the objects linked to the NAKALA space “Bac à Sable” (which is an “Agent”) identified by the URI.
<http://www.nakala.fr/account/11280/f1401838>

```
SELECT ?things
WHERE
{ ?things ?linked
<http://www.nakala.fr/account/11280/f1401838> .
}
```

things
http://www.nakala.fr/scheme/11280/4d1a0e5c
http://www.nakala.fr/resource/11280/b752c58a
http://www.nakala.fr/resource/11280/2eb2db03
http://www.nakala.fr/resource/11280/8abe7b99
http://www.nakala.fr/resource/11280/49e9396c
http://www.nakala.fr/resource/11280/ce1564b9
http://www.nakala.fr/resource/11280/7c0dd5be
http://www.nakala.fr/resource/11280/d819837c
http://www.nakala.fr/resource/11280/8121462d
http://www.nakala.fr/resource/11280/53522bfc
http://www.nakala.fr/resource/11280/8b653206
http://www.nakala.fr/resource/11280/58a74332
http://www.nakala.fr/resource/11280/450fdb59
http://www.nakala.fr/resource/11280/aa084f00

Afterwards, you can query all the objects linked to your deposit identified by the URI: <http://www.nakala.fr/data/11280/31cbb722>
In this case, the external metadata that you entered

```
SELECT ?objects
WHERE
{<http://www.nakala.fr/data/11280/31cbb722> ?linked ?objects.
}
```

objects
http://xmlns.com/foaf/0.1/Document
"04/11/2016"
"Very abstract "
"DARIAH"
"Has Logo"
"Image"

Or objects related to your deposit. In this case, internal NAKALA metadata.

```
SELECT ?objects
WHERE
{?objects ?related <http://www.nakala.fr/data/11280/31cbb722>.
}
```

objects
http://www.nakala.fr/resource/11280/31cbb722

To discover more of the Triple Store content, you can use the NAKALA Data Model: