

DataCite

DataCite MDS API Application

The DataCite Metadata Store (MDS) API[1] is going to be used for Hub dataset Digital Identifier Object (DOI) and corresponding metadata creation and update.

1. Introduction

The DataCite Metadata Store (MDS) API is the default API for registering DataCite DOIs and associated metadata. Below shows the requirements for using the MDS API.

- (1) The API requires authentication. If your hub or university is member of DataCite and has DataCite credentials then you can configure DataCite to mint DOIs for your hub's publications and tools. DataCite also has a [testing guide](#) to help with troubleshooting.
- (2) DataCite assigns the DOI prefix.
- (3) DOI request needs to transfer through HTTPS.
- (4) HTTP basic authentication is performed in the DataCite Metadata Store API usage.

2. DOI register

The DOI registration takes two steps, first is to register DOI metadata, and second is to register the DOI name and dataset URL.

2.1 Registering DOI metadata

The DOI metadata for dataset includes title, author, dates, description, and so on. All the metadata that a hub collects for a dataset shows in table 1. Metadata element

Identifiers
Creators/creator/creatorName
nameIdentifier

titles/title

Explanation

Identifier type is doi, and the value of identifier is the doi.

Author(s) of the dataset
nameIdentifierScheme is ORCID? and value is the ORCID.

Name of the dataset.

publisher	Holder of the dataset
publicationYear	The year when the dataset is published
Contributors/contributor/contributorName	Project leader's name
dates	There are two metadata elements, one is when dataType is Valid, the value is the date when the dataset is submitted on the hub; Another is when the datatype is Accepted, the value is the date when the dataset is approved for publish on the hub.
language	It is set to en by default
resourceType	resourceTypeGeneral is set to the resourceType designated by the hub. The value is the resourceTypeTitle.
RelatedIdentifiers/relatedIdentifier	relatedIdentifierType is DOI, relationType is IsNewVersionOf, and the value is the relatedDoi, which is DOI of the resource that reference this dataset.
version	Publication version
rights	The license that user selects in the dataset submission workflow on the hub
Descriptions/description	DescriptionType is Abstract, and the value is the abstract of the dataset

The metadata elements in table 1 are saved in xml format as showing below.

```

<resource xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://datacite.org/schema/kernel-4"
xsi:schemaLocation="http://datacite.org/schema/kernel-4
http://schema.datacite.org/meta/kernel-4.1/metadata.xsd">

```

```

<identifier identifierType="DOI">doi</identifier>

```

```

<creators>

```

```

<creator>

```

```

<creatorName>name 1</creatorName>

```

```

</creator>

```

```

<creator>

```

```

<creatorName>name 2</creatorName>

```

</creator>

<creator>

<creatorName>name 3</creatorName>

</creator>

<creator>

<creatorName>name 4</creatorName>

<nameIdentifier nameIdentifierScheme="ORCID">orcid goes here</nameIdentifier>

</creator>

</creators>

<titles>

<title>title</title>

</titles>

<publisher>YOUR HUB's NAME</publisher>

<publicationYear>year</publicationYear>

<contributors>

<contributor contributorType="ProjectLeader">

<contributorName>name</contributorName>

</contributor>

</contributors>

<dates>

<date dateType="Valid">date</date>

<date dateType="Accepted">date</date>

</dates>

```
<language>en</language>

<resourceType resourceTypeGeneral="Dataset">Datasets</resourceType>

<version>1.0</version>

<rights>Attribution 3.0 Unported</rights>

<descriptions>

<description descriptionType="Abstract">

Description goes here

</description>

</descriptions>

</resource>
```

All the metadata elements conform to the DataCite metadata schema [2] standards.

The MDS API can generate random DOI name when prefix is included in the metadata registration. The identifier in the metadata xml can be left empty in this case.

The curl package can be used to submit the metadata to MDS service, see example below. Note that the **[PREFIX]** would need to be replaced with your hub's DataCite prefix.

```
curl -H "Content-Type:application/xml;charset=UTF-8" -X PUT -i --user username:password -d
@[PREFIX].xml https://mds.test.datacite.org/metadata/10.5072
```

The response to the call above is OK (**[PREFIX]**/XXXX-XXXX). We need take the DOI out from there and use for further process.

The identifier value in the metadata xml on DataCite will be replaced by the DOI name that is created in this step.

The DOI is set to Draft state [3] after the metadata are registered.

1.2.2 Registering the URL

The second step is to register the DOI name and the URL that refers to the dataset. Below is an example of the curl command. Note that DOI name and URL to the dataset is included.

```
curl -H "Content-Type:text/plain;charset=UTF-8" -X PUT --user username:password -d  
$'doi=[PREFIX]/0000-03VC' -u http://example.org/publications/1'  
https://mds.test.datacite.org/doi/10.5072/0000-03VC
```

The DOI transits from Draft state to Findable state after the DOI name and URL is registered.

Below table includes the endpoint and other useful information that need to use in the DOI registration in production. The endpoint, prefix, username and password need to be configured on the admin interface for any development and production environments.

	Value
DOI prefix	[PREFIX]
MDS production endpoint	https://mds.datacite.org

2. Update DOI Metadata Records

Update the DOI metadata is the same as storing a new version of the DOI metadata. According to the MDS API document, we need to issue a post of the metadata xml to DataCite. Below is an example on what the curl command should look like for such operation.

```
$ curl -H "Content-Type: application/xml;charset=UTF-8" -X POST -i --user username:password  
-d @ [PREFIX]/JQX3-61AT.xml https://mds.test.datacite.org/metadata
```

Reference list

1. <https://support.datacite.org/docs/mds-api-guide>
2. <http://schema.datacite.org/>
3. <https://support.datacite.org/docs/doi-states>
4. <https://support.datacite.org/docs/testing-guide>

1. Navigate to **/administrator** and login to the backend of the Hub
2. Click on **Components** and then select **Publications**
3. Click on **Options** and then click on **DOI Configuration**
 1. Note: You will only be able to access the Options button if you are a super user.
4. Locate *Enable DataCite or EZID DOI Service* and select from the drop-down the appropriate option
 1. Note: When the "DataCite" is selected, the DataCite DOI service is activated and only DataCite related options on the configuration form are going to show up. When "EZID" is selected, EZID DOI service is activated and only EZID related options on the configuration form are going to show up. When "None" is selected, all options related to DOI service will be hidden. When users publish a dataset in this case, a message saying that "No DOI service is selected and please contact site administrator" is popping up.
5. Click **Save & Close**