DataCite Services

DataCite Metadata Store API	
Service Details	**Notes**
Provides access to all DOI and metadata related functionality of the web interface (http://mds.datacite.org) through an API. RESTful web service implementation: • Consists of three resources with their own base URIs. • Supports operations using HTTP methods (DELETE, GET, POST) **Resources:** • doi - https://mds.datacite.org/doi • metadata - https://mds.datacite.org/metadata • media - http://mds.datacite.org/media Accepts HTTPS connections only and uses HTTP Basic authentication. Required credentials are the same as web site account. **Constraints:** • DOIs can only be minted using your assigned prefixes. • URLs associated to your DOIs must be in host domains assigned to you. • Your allocator *may* enforce a DOI registration quota. **Test Mode:** In addition to the test prefix 10.5072, the API also supports a test mode query parameter (testMode). If the parameter is set to "true" or "1" the API request will not create or modify anything stored in the MDS database or Handle system. **Example:** https://mds.datacite.org/doi?testMode=true	

DataCite Services

DataCite Metadata Store API

Resource Details	Resource Methods		Notes
Resource: doi **Base URI:** https://mds.datacite.org/doi Used to mint new DOIs, update existing DOIs, and retrieve the URL associated with specific DOIs. Accepts GET and POST service request methods. *Note:* Before a new DOI can be minted, its metadata must be present in the MDS. Therefore all calls to create a new DOI must be preceded by a successful creation of its metadata record (metadata resource).	Method:	**GET** Returns the URL currently associated with a specified DOI.	
	URI:	https://mds.datacite.org/doi/{doi}	
	Request headers:	None	
	Request body:	None	
	Response headers:	Content-Type: text/html;charset=UTF-8	
	Response body:	URL representing a dataset, or short explanation for non-200 status	

Response Statuses:

		Method:	**POST** Will mint a new DOI if it doesn't exist otherwise will attempt to update URL of the existing DOI.	
200 OK	Operation successful			
201 Created	Operation successful (POST)			
204 No Content	DOI is known to MDS, but is not resolvable (might be due to handle's latency)	URI:	https://mds.datacite.org/doi	
400 Bad Request	Request body must be exactly two lines: DOI and URL; or wrong domain, or wrong prefix	Request headers:	Content-Type: text/plain;charset=UTF-8	
401 Unauthorized	No credentials provided, account doesn't exist	Request body:	doi={doi} url={url}	
403 Forbidden	Credentials problem or dataset belongs to another data centre/allocator			
404 Not Found	DOI does not exist in the database			
410 Gone	The requested dataset was marked inactive (using DELETE method)	Response headers:	Content-Type: text/html;charset=UTF-8	
412 Precondition Failed	Metadata must be uploaded before metadata minting	Response body:	Short explanation of status code	
500 Internal Server Error	Server error, try later and if problem persists please contact us			

DataCite Services

DataCite Metadata Store API

Resource Details	Resource Methods		Notes
Resource: metadata **Base URI:** https://mds.datacite.org/metadata Used to register new metadata, update existing metadata, return most recent version of stored metadata, and mark records as inactive. Accepts GET, POST, and DELETE service request methods. *Note:* Records marked as inactive will not appear in search results or be harvestable from the MDS. The DOI itself will still resolve. Using POST to update a record's metadata will return it to active status. **Response Statuses:**	Method:	**GET** Retrieves the most recent version of metadata.	
	URI:	https://mds.datacite.org/metadata/{doi}	
	Request headers:	Accept: application/xml	
	Request body:	none	
	Response headers:	Content-Type: application/xml;charset=UTF-8	
	Response body:	Metadata XML or short explanation for non-200 status.	
	Method:	**POST** Stores a new version of metadata.	
	URI:	https://mds.datacite.org/metadata	
	Request headers:	Content-Type: application/xml;charset=UTF-8	
200 OK — Operation successful 201 Created — Operation successful (POST) 400 Bad Request — Request body must be exactly two lines: DOI and URL; or wrong domain, or wrong prefix	Request body:	UTF-8 encoded metadata	
	Response headers:	Content-Type: text/html;charset=UTF-8 Location: URL of the newly stored metadata	
	Response body:	Short explanation of status code.	
401 Unauthorized — No credentials provided, account doesn't exist 403 Forbidden — Credentials problem or dataset belongs to another data centre/allocator 404 Not Found — DOI does not exist in the database 410 Gone — The requested dataset was marked inactive (using DELETE method) 500 Internal Server Error — Server error, try later and if problem persists please contact us	Method:	**DELETE** Marks record as inactive.	
	URI:	https://mds.datacite.org/metadata/{doi}	
	Request headers:	None	
	Request body:	None	
	Response headers:	Content-Type: text/html;charset=UTF-8	
	Response body:	Short explanation of status code.	

DataCite Services

DataCite Metadata Store API

Resource Details	Resource Methods		Notes
Resource: media **Base URI:** https://mds.datacite.org/media Used to register and retrieve MIME type and URL pairs for specific record. Accepts GET and POST service request methods. *Note:* URLs associated to MIME types are subject to the same domain restrictions as URLs associated to DOIs.	Method:	**GET** Returns a list of pairs of MIME types and URLs associated with a specified DOI.	
	URI:	https://mds.datacite.org/media/{doi}	
	Request headers:	none	
	Request body:	none	
	Response headers:	Content-Type: text/html;charset=UTF-8	
	Response body:	Key-value list of MIME types and URLs or a short explanation of a non-200 status.	
Response Statuses: 200 OK — Operation successful 400 Bad Request — Request body must be exactly two lines: DOI and URL; or wrong domain, or wrong prefix 401 Unauthorized — No credentials provided, account doesn't exist 403 Forbidden — Credentials problem or dataset belongs to another data centre/allocator 404 Not Found — DOI does not exist in the database 410 Gone — The requested dataset was marked inactive (using DELETE method) 500 Internal Server Error — Server error, try later and if problem persists please contact us	Method:	**POST** Will add or update pairs of MIME types and URLs for a specified DOI.	
	URI:	https://mds.datacite.org/media/{doi}	
	Request headers:	Content-Type: text/plain;charset=UTF-8	
	Request body:	{mime-type}={url} Can include multiple pairs with each on a new line. UTF-8 encoded.	
	Response headers:	Content-Type: text/html;charset=UTF-8	
	Response body:	Short explanation of status code.	

DataCite Services

DataCite Search API

Service Details	Service Methods		Notes
Provides API access for searching the contents of the DataCite Metadata Store. **Service Address:** http://search.datacite.org/api Publicly accessible, no credentials required. Accepts HTTP connections only (no HTTPS). Uses Solr Search Handler for API calls and therefore accepts Solr common query parameters such as: `q` the main query for the request `sort` for sorting results by score or field `start` used to paginate results `rows` specify the number of results to return `fl` used to specify which fields to return `fq` specify a filter query to restrict super set of documents **Examples:** http://search.datacite.org/api?q=ice+ocean http://search.datacite.org/api?q=ice+ocean&fl=doi,datacentre,title&rows=5 Results are returned in Solr XML format by default. Other supported formats are JSON and CSV and are set using the wt query parameter: `wt=json` sets result format to JSON `wt=csv` sets result format to CSV **Examples:** http://search.datacite.org/api?q=ice+ocean&fl=doi,title&wt=csv http://search.datacite.org/api?q=ice+ocean&fl=doi,title&wt=json Search Service Documentation: http://search.datacite.org/help.html	Method:	**GET** Returns search results for specified query parameters.	
	URI:	http://search.datacite.org/api?{query parameter(s)}	
	Request headers:	none	
	Request body:	none	
	Response headers:	Dependent on format requested, one of: Content-Type: text/plain;charset=UTF-8 Content-Type: application/xml;charset=UTF-8 Content-Type: application/json;charset=UTF-8	
	Response body:	Search results in the format requested	

DataCite Services

DataCite OAI-PMH Data Provider

Service Details	Notes
Allows bulk harvesting of records stored in the DataCite Metadata Store. Adheres to the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH). **Service Address:** http://oai.datacite.org/ This service is open to everyone and is meant to be accessed by OAI-PMH compliant harvesters or any application that issues OAI-PMH requests. Accepts HTTP connections only (no HTTPS). **OAI-PMH Base Address:** http://oai.datacite.org/oai Supports standard selective harvesting by dates, sets, and metadata formats. Each data centre and allocator are represented by a set. **Metadata formats currently supported:**	

Metadata formats currently supported:

OAI_DC	Standard Dublin Core metadata required by OAI-PMH
OAI_DATACITE	DataCite custom metadata format for OAI-PMH dissemination.
	Schema: http://schema.datacite.org/oai/oai-1.0/
DATACITE	Original unmodified DataCite Metadata Kernel metadata stored in the record

Arbitrary Solr Queries:
Additionally supports harvesting by arbitrary Solr queries. This can be done by taking a Solr query (q and/or fq parameters only), then encoding it using Base64url and appending it to the OAI-PMH set restriction preceded by a tilde (~).

Example:
Query: q=ocean+ice
Base64 for URL encoded: cT1vY2Vhbitp Y2U
Add to set spec pre-pended with tilde(~):
http://oai.datacite.org/oai?verb=ListRecords&metadataPrefix=oai_datacite&set=~cT1vY2Vhbitp Y2U

Note: Make sure that the encoded string produced does not contain a padding character (=).

DataCite Services

DataCite Content Resolver	
Service Details	**Notes**
Can be used to provide direct access to underlying datasets or other custom metadata formats created for a specific DOI by Data centres using the Media API. **Service Address:** http://data.datacite.org/ Publicly accessible, no credentials required. Only available for DataCite DOIs currently. Does not require the setting of a custom HTTP Accept header, therefore can be used just by creating specially formed links which can be accessed through regular web browsers. **Link format:** http://data.datacite.org/{mime_type}/{doi} {doi}: The specific DOI {mime_type}: The MIME type of the custom metadata format/dataset that is to be retrieved. **Example:** For DOI: 10.4224/21268323 • Regular DOI resolution to a landing page: http://doi.org/10.4224/21268323 • The DOI's dataset is a PDF document. • Using the Media API, the MIME type 'application/pdf' was mapped to a direct link to the PDF document. • Direct access to the dataset is now available by constructing the following link: http://data.datacite.org/application/pdf/10.4224/21268323	

DataCite Services

HTTP Content Negotiation	
Service Details	**Notes**
A way to access metadata associated with a DOI directly and in multiple different formats. Works by resolving the DOI itself and specifying the metadata format that you want to receive back. The format is specified by setting the HTTP Accept header. This requires a client capable of doing so which is usually not a typical web browser. Through a collaboration between CrossRef and DataCite, metadata for all registered DOIs can be retrieved using the following formats: **Format** **Content Type/Accept header** RDF XML application/rdf+xml RDF Turtle text/turtle Citeproc JSON application/vnd.citationstyles.csl+json Formatted text citation text/x-bibliography RIS application/x-research-info-systems BibTeX application/x-bibtex CrossRef Unixref XML (for CrossRef DOIs only) application/vnd.crossref.unixref+xml DataCite XML (for DataCite DOIs only) application/vnd.datacite.datacite+xml **Example:** curl -LH "Accept: application/rdf+xml" http://doi.org/10.1126/science.169.3946.635 **Response Codes:** `200 OK` The request was OK `204 Partial Content` The request was OK but there was no metadata available `404 Not Found` The DOI requested doesn't exist `406 Not Acceptable` Can't serve any requested content type **Citation Formatter:** Uses HTTP content negotiation to return a citation for a DOI in various selected formats. Supported by both CrossRef and DataCite DOIs. The Accept header content type accepts two extra parameters; style and locale. **Examples:** curl -LH "Accept: text/x-bibliography; style=apa" http://doi.org/10.1126/science.169.3946.635 curl -LH "Accept: text/x-bibliography; style=harvard3; locale=fr-FR" http://dx.doi.org/10.1126/science.169.3946.635 Can also be done using a web site: http://crosscite.org/citeproc/ (All styles and locales are listed on the website) Full HTTP Content Negotiation documentation: http://www.crosscite.org/cn/	

DataCite Services

Other DataCite Services		
Name	**Details**	**Notes**
DataCite Schema Repository	Provides access to all DataCite XML schemas, relevant documentation, and examples. http://schema.datacite.org	
DataCite Statistics	Provides statistics on DOI registrations and resolutions. Can be filtered by allocator, data centre, or prefix. http://stats.datacite.org	
DataCite Test Environment	Provides test instances of all DataCite services and APIs. http://test.datacite.org	
DataCite on GitHub	Source code for DataCite services and applications is available on GitHub. http://github.com/datacite/	
Contacts	For technical information: DataCiteTech.CISTI@nrc-cnrc.gc.ca	