

FUSION NODE

Web Services API

FUSION NODE
VERSION 1

Web Services API

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1 Overview

The Fusion Node hosts a single SDMX of web service entry point for obtaining both SDMX structure and data.

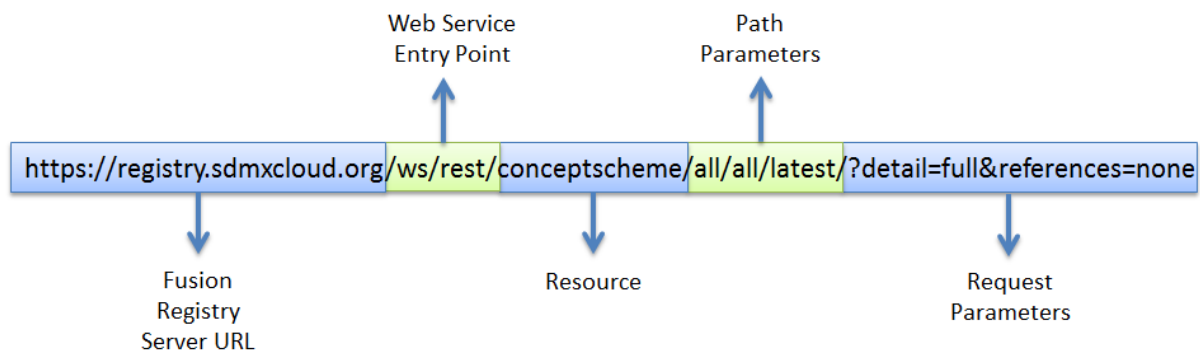
The web services entry point is

ws/public/sdmxapi/rest

Each web service documented by defining the following (where applicable):

1. **Web service entry point** – the URL defining the entry point to the web service
2. **Resource** – the resource that is being requested
3. **Path Parameters** –additional URL path to define the required result
4. **Request Parameters** – optional parameters used to further define the result (such as level of detail, format, further restrictions)
5. **HTTP Header Parameters** – Not part of the URL, but passed in on the http request. Used to pass further information to the server such as response language or response format.

The following shows an example of an HTTP REST GET



The Annexes to this document describe how to make use of HTTP request and response headers to support caching, compression, locale, and authentication. The Annex also discusses how to make public certain parts of the API, whilst keeping other entry points private.

2 Query Structures via REST API (GET)

The Structure REST API conforms to the SDMX Web Service Guidelines which can be found at <http://sdmx.org>.

In addition to the SDMX specification, the Fusion Registry supports some additional Accept header values and query parameters.

Both the SDMX and extended query parameters are included in this document.

2.1.1 Overview

Web Service Entry Point	/ws/public/sdmxapi/rest
Access	Public
HTTP Method	HTTP GET
Response Format	Multiple formats supported. Can be specified in the <i>Accept</i> HTTP Header, or the <i>format</i> parameter of the URL request.
Error Response	SDMX-ML v2.1 Error Response Document

2.1.2 HTTP Headers

The HTTP headers can be used to specify response format. This can also be defined in the request parameter.

HTTP Header	Purpose	Allowed Values
Accept	To define the response format	<p>SDMX Formats</p> <p>application/vnd.sdmx.structure;version=edi application/vnd.sdmx.structure+xml;version=1.0 application/vnd.sdmx.structure+xml;version=2.0 application/vnd.sdmx.structure+xml;version=2.1</p> <p>JSON Format</p> <p>application/vnd.sdmx.json</p>
Accept-Language	<p>This optional header can be used to set the locale to return any multilingual text in (names and descriptions). If the text does not exist in the specified locale, then the default rules will be applied to find the next best appropriate locale.</p> <p>The corresponding locale parameter can be used to override this HTTP Header</p>	<p>Accept-Language : en (English) Accept-Language : fr (French) Accept-Language : * (all languages – no filter)</p>

2.1.3 Resource

The resource is used to determine which structure type is being queried. The resources identified in the following table are supported.

Resource	Purpose
datastructure	Returns all data structure definitions that match the subsequent path parameters
metadatastructure	Returns all metadata structure definitions that match the subsequent path parameters
categoryscheme	Returns all category schemes that match the subsequent path parameters
conceptscheme	Returns all concept schemes that match the subsequent path parameters
codelist	Returns all codelists that match the subsequent path parameters
hierarchicalcodelist	Returns all hierarchical codelists that match the subsequent path parameters
organisationscheme	Returns all organisation schemes that match the subsequent path parameters
agencyscheme	Returns all agency schemes that match the subsequent path parameters
dataproviderscheme	Returns all data provider schemes that match the subsequent path parameters
dataconsumerscheme	Returns all data consumer schemes that match the subsequent path parameters
organisationunitscheme	Returns all organisation unit schemes that match the subsequent path parameters
dataflow	Returns all dataflows that match the subsequent path parameters
metadataflow	Returns all metadata flows that match the subsequent path parameters
reportingtaxonomy	Returns all reporting taxonomies that match the subsequent path parameters
provisionagreement	Returns all provision agreements that match the subsequent path parameters
structureset	Returns all structure sets that match the subsequent path parameters
process	Returns all processes that match the subsequent path parameters
categorisation	Returns all categorisations that match the subsequent path parameters
contentconstraint	Returns all content constraints that match the subsequent path parameters
attachmentconstraint	Returns all attachment constraints that match the subsequent path parameters
structure	Returns All SDMX structures that match the subsequent path parameters

2.1.4 Path Parameters

The path parameters are used to further define the attributes of the request structure(s). All the path parameters are optional. If the path parameters have a default value, it will be used in the absence of the parameter.

Parameter	Purpose	Allowed Values
agencyID	The agency which owns the structure(s)	all – default. any agency Or any string compliant with the SDMX common:NCNameIDType
structureID	The id of the structure(s) to be returned	all – default. all structure ids Or any string compliant with the SDMX common:NCNameIDType
version	The version of the structure(s) to be returned	latest – default. latest version all – all versions Or a specific version number
itemID	If the resource is to an item scheme (Codelist, Concept Scheme, Category Scheme), the item inside the scheme can be identified by this parameter	String

2.1.5 Request Parameters

The request parameters are all optional and can be used to define the response detail, format, and any additional structures which reference, or are referenced by those identified in the query path.

Parameter	Purpose	Allowed Values
detail	To define which structures (if any) are output as stubs.	full – default. Output full response referencestubs – Output the full query result, any structures returned as part of the allstubs – Output all the structures as stubs



		<p><i>Example:</i> detail=allstubs</p>
references	<p>To define if additional structures are returned from the query.</p> <p>The structures can either be ones which reference, or are referenced by the structures in the query result.</p> <p>If the query result is for a specific item in an item scheme, then this parameter will identify the references for that item.</p>	<p>none – default. Do not output any additional structures</p> <p>parents –output structures the reference the structures matching the query</p> <p>parentsandsiblings – same as parents, but also include all the additional structures referenced by the parents</p> <p>children – the structures referenced by the structures in the query result</p> <p>descendants – children and their children (up to any level)</p> <p>In addition, a concrete type of resource may be used, for example: datastructure</p> <p><i>Example:</i> references=datastructure</p>
partial	<p>If set to true creates partial Codelists in the response based on the Fusion Registry Content Constraints defining allowable content.</p> <p>The pre-requisite is that the query must be for a single constrainable structure (Provision Agreements, Dataflow, or Data Structure) and include references.</p>	<p>true/false</p>
format	<p>Can be used to define the response format (as an alternative to the HTTP Accept Header).</p>	<p>sdmx (latest version) sdmx-1.0 sdmx-2.0 sdmx-2.1 sdmx-edi sdmx-edi-lenient sdmx-json</p> <p><i>Example:</i> format=sdmx-edi</p>
includeMetadata	<p>If set to true, then the response structures will contain additional Annotations if there are reference metadata attached.</p> <p>The annotation will have the AnnotationType of 'METADATA' and the AnnotationURI will provide a URI to the MetadataSet.</p>	<p>true/false</p> <p><i>Example:</i> includeMetadata=true</p>
locale	<p>This optional parameter can</p>	<p>Any locale</p>



	<p>be used to set the locale to return any multilingual text in (names and descriptions). If the text does not exist in the specified locale, then the default rules will be applied to find the next best appropriate locale.</p> <p>This takes priority over the Accept-Language HTTP header</p>	<p><i>Example:</i> locale=fr</p>
includeMetrics	<p>Enriches Dataflow and Provision Agreements with information about the data that exists, metrics are included in the Annotations, and include series count, data from and to, last updated time reported as milliseconds since 1970 (Epoch time)</p>	<p>includeMetrics=true</p>
saveAs	<p>If provided the HTTP Header 'Content-Disposition' will be set to attachment with the filename being set to the value provided.</p> <p>This will result in the response being saved to a file.</p> <p>The file extension is not required as the Fusion Registry will determine the extension based on the response format. However if a file extension is provided and is .zip then the generated file will be in zip format.</p>	<p>String</p> <p><i>Example:</i> saveAs=myDownload</p> <p><i>Example Zip Format:</i> saveAs=myDownload.zip</p>

2.1.6 Examples

2.1.6.1 All concept schemes in SDMX v2.0 format

[https://registry.sdmxcloud.org/](https://registry.sdmxcloud.org/ws/public/sdmxapi/conceptscheme/all/all/latest/?format=sdmx+2.0&detail=full&references=none)

[ws/public/sdmxapi/conceptscheme/all/all/latest/?format=sdmx+2.0&detail=full&references=none](https://registry.sdmxcloud.org/ws/public/sdmxapi/conceptscheme/all/all/latest/?format=sdmx+2.0&detail=full&references=none)

2.1.6.2 All structures saved to a file

<https://registry.sdmxcloud.org/ws/public/sdmxapi/rest/structure/all/all/latest?saveAs=fullexport>

2.1.6.3 Any concept with Id OBS_CONF and all the data structures that reference it

[https://registry.sdmxcloud.org/](https://registry.sdmxcloud.org/ws/public/sdmxapi/rest/conceptscheme/all/all/all/OBS_CONF?references=datastructure)

[ws/public/sdmxapi/rest/conceptscheme/all/all/all/OBS_CONF?references=datastructure](https://registry.sdmxcloud.org/ws/public/sdmxapi/rest/conceptscheme/all/all/all/OBS_CONF?references=datastructure)

3 Query Data via REST API

The Data REST API conforms to the SDMX Web Service Guidelines which can be found at <http://sdmx.org>.

In addition to the SDMX specification, the Fusion Registry supports some additional Accept header values and query parameters.

Both the SDMX and extended query parameters are included in this document.

3.1.1 Overview

URL Entry Point	/ws/public/sdmxapi/rest/data
Access	Public
HTTP Method	HTTP GET
Response Format	Multiple supported. Can be defined in the Accept HTTP Header, or the format parameter of the URL request.
Error Response	SDMX-ML v2.1 Error Response Document

3.1.2 HTTP Headers

HTTP Header	Purpose	Allowed Values
Accept	To define the response format	<p>SDMX Formats</p> <pre>application/vnd.sdmx.genericdata+xml;version=1.0 application/vnd.sdmx.genericdata+xml;version=2.0 application/vnd.sdmx.genericdata+xml;version=2.1 application/vnd.sdmx.structurespecificdata+xml;version=1.0 application/vnd.sdmx.structurespecificdata+xml;version=2.0 application/vnd.sdmx.structurespecificdata+xml;version=2.1 application/vnd.sdmx.edi application/vnd.sdmx.json application/vnd.sdmx.data+json;version=1.0.0-wd</pre> <p>CSV/Excel Formats</p> <pre>application/vnd.xlsx application/vnd.csv</pre>
Accept-Language	<p>This optional header can be used to set the locale to return any multilingual text in (names and descriptions). If the text does not exist in the specified locale, then the default rules will be applied to find the next best appropriate locale.</p> <p>The corresponding locale parameter can be used to override this HTTP Header</p>	<pre>Accept-Language : en (English) Accept-Language : fr (French) Accept-Language : * (all languages – no filter)</pre>

3.1.3 Resource

The resource is used to determine which structure type is being queried. The resources identified in the following table are supported.

Resource	Purpose
data	Returns a dataset containing data that matches the subsequent path parameters

3.1.4 Path Parameters

The path parameters are used to further define the attributes of the request structure(s). All the path parameters are optional. If the path parameters have a default value, it will be used in the absence of the parameter.

Parameter	Purpose	Allowed Values
dataflowRef	<p>(required)</p> <p>A string identifying the dataflow.</p> <p>The returned dataset will belong to the dataflow identified by this parameter.</p> <p>This path parameter is mandatory.</p>	<p>The syntax is agency id, artefact id, version, separated by a ",". For example: AGENCY_ID, FLOW_ID, VERSION</p> <p>In case the string only contains one out of these 3 elements, it is considered to be the flow id, i.e. all, FLOW_ID, latest</p> <p>In case the string only contains two out of these 3 elements, they are considered to be the agency id and the flow id, i.e. AGENCY_ID, FLOW_ID, latest</p>
seriesKey	<p>Used to identify the series to return in the result dataset.</p> <p>The key parameter can contain zero to many code id selections for each Dimension of the Dataflow's Data Structure Definition.</p> <p>The absence of this path parameter is interpreted as all series.</p>	<p>The syntax is code selections for the first dimension followed by the '.' separator followed by code selections for the second dimension, and so on.</p> <p>Multiple code selections are concatenated with the '+' separator.</p> <p>The dimension may be wild-carded by omitting code selections for the dimension.</p> <p>The all keyword can be used to indicate all data for each dimension.</p> <p>For example, if the following series key identifies the bilateral exchange rates for the daily US dollar exchange rate against the euro, D.USD.EUR.SP00.A, then the following series key can be used to retrieve the data for all currencies against the euro: D..EUR.SP00.A.</p> <p>The OR operator is supported using the + character. For example, the following series key can be used to retrieve the exchange rates against the euro for both</p> <p>D.USD+JPY.EUR.SP00.A.</p>
providerRef	(optional) Identifies the data provider	The syntax is agency id, provider id,



	that provided the data. A single dataflow may have data provided by multiple data providers. The absence of this path parameter is interpreted as all data providers.	separated by a ",". For example: AGENCY_ID, PROVIDER_ID In case the string only contains one out of these 2 elements, it is considered to be the provider id, i.e. all, PROVIDER_ID
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3.1.5 Request Parameters

Parameter	Purpose	Allowed Values																
startPeriod	Only return observations if the observation time is after the time specified.	Single time period (not a time range). Conforms to the ISO-8601 standard.																
endPeriod	Only return observations if the observation time is before the time specified.	Supported time periods include <table border="1"> <thead> <tr> <th>Period</th> <th>Example</th> </tr> </thead> <tbody> <tr> <td>Annual</td> <td>2009</td> </tr> <tr> <td>Semester</td> <td>2009-S1</td> </tr> <tr> <td>Trimester</td> <td>2009-T1</td> </tr> <tr> <td>Quarterly</td> <td>2009-Q1</td> </tr> <tr> <td>Monthly</td> <td>2009-01</td> </tr> <tr> <td>Daily</td> <td>2009-01-31</td> </tr> <tr> <td>Date Time</td> <td>2009--01T20:22:00</td> </tr> </tbody> </table>	Period	Example	Annual	2009	Semester	2009-S1	Trimester	2009-T1	Quarterly	2009-Q1	Monthly	2009-01	Daily	2009-01-31	Date Time	2009--01T20:22:00
Period	Example																	
Annual	2009																	
Semester	2009-S1																	
Trimester	2009-T1																	
Quarterly	2009-Q1																	
Monthly	2009-01																	
Daily	2009-01-31																	
Date Time	2009--01T20:22:00																	
updatedAfter	Only return data if it was updated after the time specified.																	
firstNObservations	The first 'n' observations to return for each matched series.	Positive Integer																
lastNObservations	The last 'n' observations to return for each matched series.	Positive Integer																
dimensionAtObservation	To define if the observations are grouped or not. This is only supported if the response format is SDMX JSON.	TIME_PERIOD (default) – observations iterate over time. AllDimensions – no grouping.																
detail	Specifies the amount of information to be returned.	full (default) – return the complete dataset dataonly – exclude attributes and groups serieskeyonly – only include series, no observations. nodata – returns the groups and series, including attributes and annotations, without observations structureonly – (sdmx-json format only) returns only the structure part of the json document, no data is included. This is useful for knowing which Dimension values are valid for a dataset. When used in combination with metrics, a client application can know which codes remain valid selections based on current query state.																
format	Used to define the response format (as an alternative to the HTTP Accept Header).	SDMX Formats sdmx-compact-[version] (default) sdmx-generic-[version] sdmx-json sdmx-edi Where [version] is one of the following <ul style="list-style-type: none"> • 1.0 																

		<ul style="list-style-type: none"> • 2.0 • 2.1 (default) <p>Excel Format excel (use code ids and determine observation cells from Primary Measure)</p> <p>excel-[resolve]-[obsCellFormat]</p> <p>Where: [resolve] used to indicate if code names are used instead of code ids, or if both ids and names should be included.</p> <p>Valid values are: id, name, both</p> <p>[obsCellFormat] used to specify the type of the formatting to be used on Observation Cells in the Excel workbook. If not specified then the default behaviour will be to try and determine the cell type from the primary measure of the DSD. If specified as string, integer or double then this value will be applied to the Observation Cells regardless of observation value.</p> <p>Valid values are: primarymeasure, string, integer, double</p> <p>CSV Format csv-[keyseparator]-[delimiter]-[decode]-[time]</p> <p>Where: [keyseparator] character used to separate component parts of the series key. E.g ':' would output a key like A:UK:EMPLOYMNET</p> <p>[delimiter] the CSV delimiter, can be one of the following strings: comma, tab, semicolon, space</p> <p>[decode] if true will output code names, if false will output code ids</p> <p>[time] whether time is output on the x axis or y axis. Allowed values are either x or y.</p>
includeMetrics	For sdmx-json format only If true then the dataset	Example: Include full metrics

	will contain metrics about the number of series and observations that will be returned with the query. The structure section of the dataset will include codes which may not necessarily appear in the data, but remain valid future selections. The size of the cube for each code selection is also provided.	includeMetrics=true <i>Example:</i> For performance reasons the metrics on the Time Dimension can be ignored includeMetrics=excludeTime <i>Example:</i> Do not include metrics includeMetrics=false
saveAs	This will result in the response being saved to a file. The file extension is not required as the Fusion Registry will determine the extension based on the response format. However if a file extension is provided and is .zip then the generated file will be in zip format.	<i>Example:</i> saveAs=myDownload <i>Example Zip Format:</i> saveAs=myDownload.zip
locale	This optional parameter can be used to set the locale to return any multilingual text in (names and descriptions). If the text does not exist in the specified locale, then the default rules will be applied to find the next best appropriate locale.	Any locale <i>Example:</i> locale=fr

3.1.6 Examples

3.1.6.1 All World Bank Education data

https://registry.sdmxcloud.org/ws/public/sdmxapi/rest/data/WB,WDI_EDUCATION,1.0/all

3.1.6.2 World Bank Education data for New Zealand and Australia

https://registry.sdmxcloud.org/ws/public/sdmxapi/rest/data/WB,WDI_EDUCATION,1.0/..NZL+AUS

3.1.6.3 ONS Gross Domestic Product data since 2008 include historical revisions

<https://registry.sdmxcloud.org/ws/public/sdmxapi/rest/data/ONS,GDP,1.0/ALL?startPeriod=2008&includeHistory=true>

3.1.6.4 ONS Gross Domestic Product, structure only, include metrics

<https://registry.sdmxcloud.org/ws/public/sdmxapi/rest/data/ONS,GDP,1.0/ALL?detail=structureOnly&includeMetrics=true>

