



The Standards People

NGSI-LD API POST Query

Released for public comment:

Proposed New Service for Entity Query via POST.

Draft for inclusion in next NGSI-LD release v1.3.1

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Motivation

The reason to provide a way to query NGSI-LD entities via POST (in addition to the proper RESTful way that uses GET), is that, using GET:

1. The client may end up assembling very long URLs, due to the URI parameters for 'id', 'q', 'type', 'attrs', etc, being included in the URL. Problems with too long URLs may arise with some applications that cut URLs to a maximum length. (See discussion on this in [StackOverflow](#)).
2. There is a need to URL-encode the resulting URL. By using POST, there's no need to url-encode

The difference lies in that instead of passing the inputs as URI parameters (as for the GET service), for the POST Query service, the user passes all the query items in the payload body.

Design

We created a novel **/entityOperations/query** endpoint in the API

The new POST query operation has just one single query as input

- It is not allowed to send multiple queries in a single request
- It is not to be considered a “BATCH Operation”

The problem with having multiple queries in the request payload body (as an array) is having a different @context in each item of the array (for Content-Type: application/ld+json)

- would greatly complicate the response
- we simply decided not to allow it

Data Type of the Request Payload Body (with references to relevant NGS-LD API clauses)

Name	Data type	Restrictions	Cardinality	Description
type	string	It shall be equal to "Query"	1	JSON-LD @type
entities	EntityInfo[]	See data type definition on clause 5.2.8. Empty array (0 length) is not allowed	0..1	Entity ids, id pattern and Entity types that shall be matched by Entities in order to be retrieved
attrs	string[]	Attribute Name as short-hand string. Empty array (0 length) is not allowed	0..1	List of Attributes that shall be matched by Entities in order to be retrieved. If not present all Attributes will be retrieved
q	string	A valid query string as per clause 4.9	0..1	Query that shall be matched by Entities in order to be retrieved
geoQ	GeoQuery	See data type definition on clause 5.2.13	0..1	Geo-Query that shall be matched by Entities in order be retrieved
csf	string	A valid query string as per clause 4.9	0..1	Context source filter that shall be matched by Context Source Registrations describing Context Sources to be used for retrieving Entities
temporalQ	TemporalQuery	See data type definition on clause 5.2.21	0..1	Temporal Query to be present only for "Query Temporal Evolution of Entities" operation (clause 5.7.4)

Request URL and Example Payload Data

```
POST /ngsi-ld/v1/entityOperations/query
{
  "type": "Query",
  "entities": [
    {
      "id": "urn:...",
      "type": "",
      "idPattern": ""
    },
    {}, ...
  ],
  "attrs": [ "P1", "P2", "R1", "R2" ],
  "q": "P1.x<12",
  "geoQ": {
    "geometry": "Point",
    "coordinates": [ 1.0, 2.0 ],
    "georel": "near;maxDistance==5000",
    "geoproperty": "loc"
  },
  "csf": "xxx",
  "temporalQ": {
    "timere1": "",
    "timeAt": "",
    "endTimeAt": "",
    "timeProperty": ""
  }
}
```