ARLAS

The ARLAS API makes the ARLAS catalog available for exploration and browsing. The catalog contains collections of geo-referenced elements. Every element has a geometry, a centroid, a timestamp and a set of fields specific to the collection.

URL Schema

The table below lists the URL endpoints and their optional "parts". A part is composed of optional parameters. The parameters are seperated with the character &.

PATH Template	Description
/arlas/explore/**_list**	List the collections configured in ARLAS
/arlas/explore/{collection}/**_describe**?form	Describe the structure and the content of the given collection
/arlas/explore/{collection}/**_count**?filter & form	Count the number of elements found in the collection, given the filters
/arlas/explore/{collection}/**_search**?filter & form & projection & size & sort	Search and return the elements found in the collection, given the filters
/arlas/explore/{collection}/**_geosearch**?filter & form & projection & size & sort	Search and return the elements found in the collection as features, given the filters
/arlas/explore/{collections}/**_aggregate**?aggregation &filter & form & size & sort	Aggregate the elements in the collection(s), given the filters and the aggregation parameters
/arlas/explore/{collections}/**_geoaggregate**?aggregation &filter & form & size & sort	Aggregate the elements in the collection(s) as features, given the filters and the aggregation parameters
/arlas/explore/{collections}/**_suggest**?filter & form & size & suggest	Suggest the the n (n=size) most relevant terms given the filters

When multiple collections are permitted ({collections}), the comma is used for separating the collection names.

Examples
https://api.gisaia.com/demo/arlas/explore/_describe
https://api.gisaia.com/demo/arlas/explore/city,state,country/_describe
https://api.gisaia.com/demo/arlas/explore/city,state,country/_count?q=bord*&f=country:France&pretty=true&human=true
https://api.gisaia.com/demo/arlas/explore/election/_search?f=country:France&after=1490613808&format=geojson&pretty=true&human=true&size=1000&include=id,name
https://api.gisaia.com/demo/arlas/explore/election/_aggregate?f=country:France&after=1490613808&format=geojson&pretty=true&human=true&size=1000&include=id,name&agg=geohash&agg_interval=4

URL Parts

Part: aggregation

The [aggregation] url part allows the following parameters to be specified:

Parameter	Default value	Description	Multiple
agg	None	Gathers a set of sub-parameters indicating the type of aggregation, the field used as the aggregation key and possibly the interval for numeric values	true for _aggregate only

The agg parameter should be given in the following format :

- {type}:{field}:interval-{interval}:format-{format}:collect_field-{collect_field}:collect_fct-{function}:order-{order}:on-{on}

Where the {type}:{field} part is mandatory AND interval, format, collect_field, collect_fct, order AND on are optional sub-parameters

Example: agg=datehistogram:date:interval-20day:format-yyyyMMdd&agg=term:sexe:collect_field-age:collect_fct-avg:order-asc:on-count

The sub-parameters properties are:

Parameter	Values	Description
interval	interval	Size of the intervals.
format	Date format (https://www.elastic.co/guide/en/elasticsearch/reference/current/search-aggregations-bucket-daterange-aggregation.html#date-format-pattern) for key aggregation	Date format for key aggregation.
collect_field	{collect_field}	The field used to aggregate collections.
collect_fct	avg,cardinality,max,min,sum	The aggregation function to apply to collections on the specified **collect_field**.
order	asc,desc	Sort the aggregation result on the field name or on the result itself, ascending or descending.
on	field,result	{on} is set to specify whether the **order** is on the field name or the result.

In the case of using _geoaggregate service, {field} must be a geometry and preferably a geo-point.

Each aggregation type ({type}) has its own type of interval. The table below lists the semantic of the interval sub-parameter.

Service	Aggregation type	Interval	Description
_aggregate	***datehistogram***	{size} (year,quarter,month,week,day,hour,minute,second)	Size of a time interval with the given unit (no space between number and unit)

_geoaggregate	***geohash***	`{length}`	The geohash length: lower the length, greater is the surface of aggregation. See table below.
_aggregate	***histogram***	`{size}`	The interval size of the numeric aggregation
_aggregate	***term***	None	None

The table below shows the metric dimensions for cells covered by various string lengths of geohash. Cell dimensions vary with latitude and so the table is for the worst-case scenario at the equator.

GeoHash length	Area width x height
1	5,009.4km x 4,992.6km
2	1,252.3km x 624.1km
3	156.5km x 156km
4	39.1km x 19.5km
5	4.9km x 4.9km
6	1.2km x 609.4m
7	152.9m x 152.4m
8	38.2m x 19m
9	4.8m x 4.8m
10	1.2m x 59.5cm
11	14.9cm x 14.9cm
12	3.7cm x 1.9cm

For _aggregate only, agg parameter is multiple. Every agg parameter specified is a subaggregation of the previous one : the order matters.

Part: `filter`

The `filter` url part allows the following parameters to be specified:

Parameter	Default value	Values	Description	Multiple
f	None	`{fieldName}{operator}{value}`	A triplet for filtering the result. Multiple filter can be provided. The order does not matter. A triplet is composed of a field name, a comparison operator and a value. The **AND** operator is applied between filters having different fieldNames. The **OR** operator is applied on filters having the same fieldName. If the fieldName starts with - then a **must not** filter is used	true
q	None	text	A full text search	false
before	None	timestamp	Any element having its point in time reference before the given timestamp	false
after	None	timestamp	Any element having its point in time reference after the given timestamp	false
pwithin	None	geometry	Any element having its centroid contained within the given BBOX	false
gwithin	None	geometry	Any element having its geometry contained within the given geometry	false
gintersect	None	geometry	Any element having its geometry intersecting the given geometry (WKT)	false

Operator	Description	Value type
`:`	`{fieldName}` equals `{value}`	numeric or strings
`:gte:`	`{fieldName}` is greater than or equal to `{value}`	numeric
`:gt:`	`{fieldName}` is greater than `{value}`	numeric
`:lte:`	`{fieldName}` is less than or equal to `{value}`	numeric
`:lt:`	`{fieldName}` is less than `{value}`	numeric

Example: `f=city:Toulouse&f=city:Bordeaux&after=1490613808&`

Part: `form`

The `form` url part allows the following parameters to be specified:

Parameter	Default value	Values	Description	Multiple
pretty	`false`	`true,false`	Pretty print	false
human	`false`	`true,false`	Human readable print	false

Example: `pretty=true&human=true`

Part: `format`

The `format` url part allows the following parameters to be specified:

Parameter	Default value	Values	Description	Multiple
format	`false`	json,geojson	JSON or GeoJSON format	false

Example: `format=geojson`

Part: `projection`

The `projection` url part allows the following parameters to be specified:

Parameter	Default value	Values	Description	Multiple
include	*	`{fieldNamePattern}`	List the name patterns of the field to be included in the result. Seperate patterns with a comma.	true
exclude	*	`{fieldNamePattern}`	List the name patterns of the field to be excluded in the result. Seperate patterns with a comma.	true

Example: `include=*&exclude=city,state`

Part: `suggest`

The `suggest` url part allows the following parameters to be specified:

Parameter	Default value	Values	Description	Multiple
field	`_all`	`{fieldName}`	Name of the field to be used for retrieving the most relevant terms	false

Example: `field=recommended`

Part: `size`

The `size` url part allows the following parameters to be specified:

Parameter	Default value	Values	Description	Multiple

size	10	>0	The maximum number of entries or sub-entries to be returned.	false
from	0	>0	From index to start the search from. Defaults to 0.	false

Example: `size=1000`

Part: `sort`

The `sort` url part allows the following parameters to be specified:

Parameter	Default value	Values	Description	Multiple
sort	None	`((-?){field})(,(-?){field})*`	Sort the result on the given fields ascending or descending. Fields can be provided several times by separating them with a comma. The order matters. For a descending sort, precede the field with '-'. The sort will be ascending otherwise. For aggregation, provide the *agg* keyword as the `{field}`.	false (separate fields with comma in the same parameter)

Example: `sort=-country,city`