07 Indexación: Geoespacial

Geospatial Data

In MongoDB, you can store geospatial data as GeoJSON objects or as legacy coordinate pairs.

GeoJSON Objects

To calculate geometry over an Earth-like sphere, store your location data as GeoJSON objects.

To specify GeoJSON data, use an embedded document with:

- a field named type that specifies the GeoJSON object type and

- a field named coordinates that specifies the object's coordinates. If specifying latitude and longitude coordinates, list the longitude first and then latitude:

    - Valid longitude values are between -180 and 180, both inclusive.
    - Valid latitude values are between -90 and 90, both inclusive.

Sintaxis

<field>: { type: <GeoJSON type> , coordinates: <coordinates> }
For example, to specify a GeoJSON Point:

```
location: {
    type: "Point",
    coordinates: [-73.856077, 40.848447]
}
```

MongoDB geospatial queries on GeoJSON objects calculate on a sphere; MongoDB uses the WGS84 reference system for geospatial queries on GeoJSON objects.

Legacy Coordinate Pairs

To calculate distances on a Euclidean plane, store your location data as legacy coordinate pairs and use a 2d index. MongoDB supports spherical surface calculations on legacy coordinate pairs via a 2dsphere index by converting the data to the GeoJSON Point type.

To specify data as legacy coordinate pairs, you can use either an array (preferred) or an embedded document.

Specify via an array (Preferred):

Sintaxis

<field>: [<x>, <y>]

If specifying latitude and longitude coordinates, list the longitude first and then latitude; i.e.

<field>: [<longitude>, <latitude>]

- Valid longitude values are between -180 and 180, both inclusive.
- Valid latitude values are between -90 and 90, both inclusive.

Specify via an embedded document:

<field>: { <field1>: <x>, <field2>: <y> }

If specifying latitude and longitude coordinates, the first field, regardless of the field name, must contains the longitude value and the second field, the latitude value ; i.e.

<field>: { <field1>: <longitude>, <field2>: <latitude> }

- Valid longitude values are between -180 and 180, both inclusive.
- Valid latitude values are between -90 and 90, both inclusive.

To specify legacy coordinate pairs, arrays are preferred over an embedded document as some languages do not guarantee associative map ordering.

2dsphere Indexes

A 2dsphere index supports queries that calculate geometries on an earth-like sphere. 2dsphere index supports all MongoDB geospatial queries: queries for inclusion, intersection and proximity.

Sintaxis

db.collection.createIndex({ <location field> : "2dsphere" })

where the <location field> is a field whose value is either a GeoJSON object or a legacy coordinates pair.