



Geolocation

geo.txt

Geolocation in elasticsearch

- Geo point
- Geo shape

<http://en.wikipedia.org/wiki/GeoJSON>

Geo point

- Latitude
- Longitude

<http://en.wikipedia.org/wiki/GeoJSON>

Geo point

ไม่สามารถสร้างแบบ dynamic mapping ได้ !!

PUT /my_map

```
{  
  "mappings": {  
    "city": {  
      "properties": {  
        "name": {  
          "type": "string"  
        },  
        "location": {  
          "type": "geo_point"  
        }  
      }  
    }  
  }  
}
```

Index data (1)

เป็น string มีรูปแบบ Lat, Lon

```
PUT /my_map/city/1  
{  
  "name" : "Bangkok",  
  "location" : "13.45, 100.35"  
}
```

Index data (2)

เป็น Object กำหนด Lat, Lon

```
PUT /my_map/city/1
{
  "name" : "Bangkok",
  "location" : {
    "lat" : 13.45,
    "lon" : 100.35
  }
}
```

Index data (3)

เป็น Array ด้วยรูปแบบ **[lon,lat]**

PUT /my_map/city/1

{

"name" : "Bangkok",

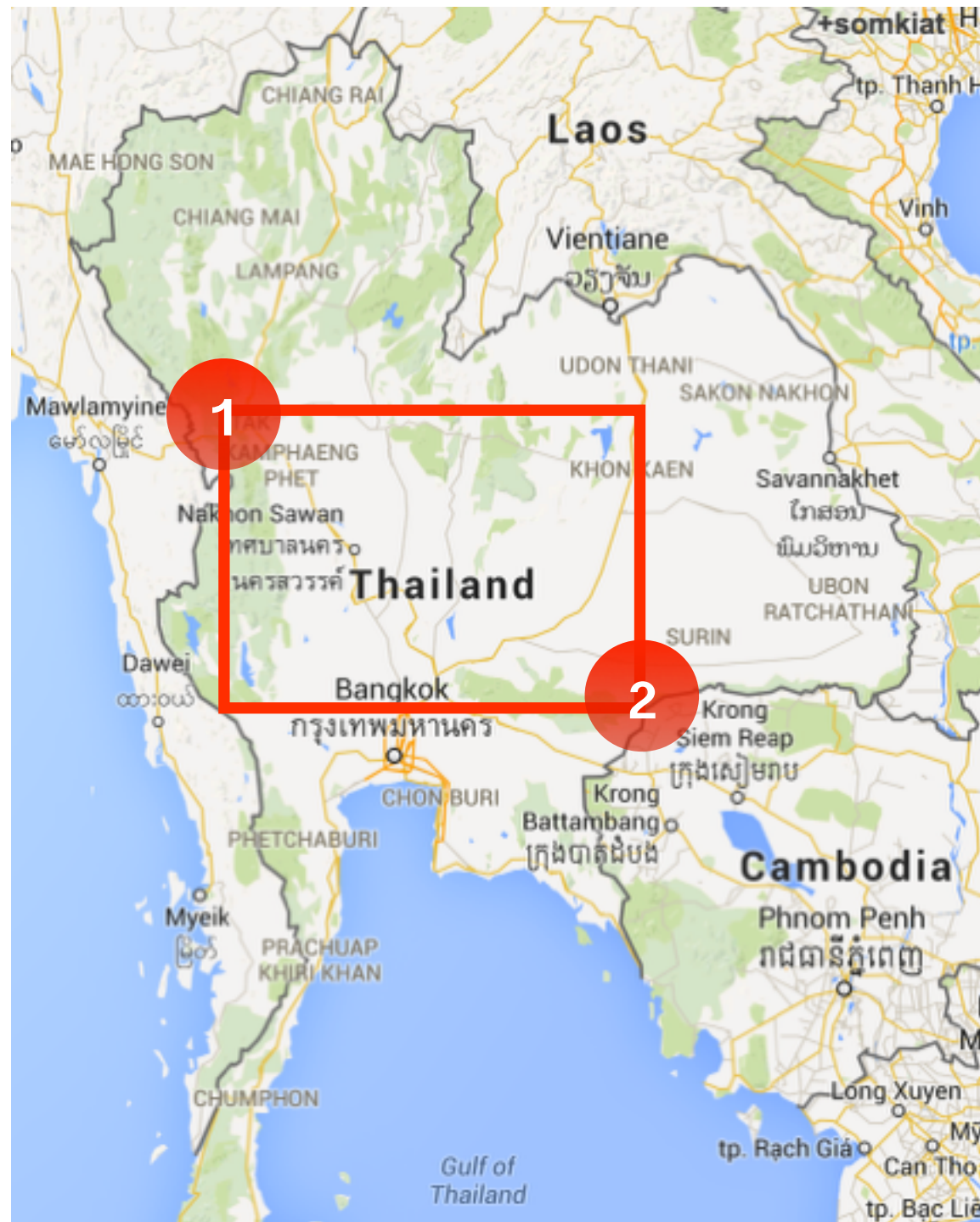
"location" : [100.35,13.45]

}

Filter geo point

- **Geo bounding box**
- **Geo distance**
- **Geo distance range**
- **Geo polygon**

Bounding box



<http://www.elasticsearch.org/guide/en/elasticsearch/reference/current/query-dsl-geo-bounding-box-filter.html>

Demo

GET /my_map/_search

```
{
  "query": {
    "filtered": {
      "filter": {
        "geo_bounding_box": {
          "location": {
            "top_left": {
              "lat": 13.856636,
              "lon": 100.328240
            },
            "bottom_right": {
              "lat": 13.680571,
              "lon": 100.677056
            }
          }
        }
      }
    }
  }
}
```

Optimize bounding box

ย้ายจาก **memory** ไปยัง **indexed**

Geo distance



<http://www.elasticsearch.org/guide/en/elasticsearch/reference/current/query-dsl-geo-distance-filter.html>

Demo

GET /my_map/_search

```
{  
  "query": {  
    "filtered": {  
      "filter": {  
        "geo_distance": {  
          "distance": 100,  
          "distance_unit": "km",  
          "location": {  
            "lat": 18.796143,  
            "lon": 98.979263  
          }  
        }  
      }  
    }  
  }  
}
```


Geo distance range



<http://www.elasticsearch.org/guide/en/elasticsearch/reference/current/query-dsl-geo-distance-range-filter.html>

Demo

GET /my_map/_search

```
{  
  "query": {  
    "filtered": {  
      "filter": {  
        "geo_distance_range": {  
          "from": 0,  
          "to": 200,  
          "distance_unit": "km",  
          "location": {  
            "lat": 13.736717,  
            "lon": 100.523186  
          }  
        }  
      }  
    }  
  }  
}
```

Workshop :: Sort by distance

สามารถเรียงลำดับของตำแหน่งได้นะ

