EPF Location APIs

Index

#Nominatim API:

https://nominatim.org/release-docs/latest/api/Overview/

1 Server & Database Status

Useful for checking if the service and database is running.
The JSON output also shows when the database was last updated.

1.1 Method 1

Info: will return HTTP status code 200 and print ‘OK’

API: http://localhost/nominatim/status.php?

Method: GET

Headers: false

Request : none

Response Received:

```
[
   OK
]
```

OR

1.2 Method 2

JSON gives you more information. Helpful in case of failure.

status	***message***	***notes***
700	**"No database"**	**connection failed**

701	**"Module failed"**	**database could not load nominatim.so**
702	**"Module call failed"**	**nominatim.so loaded but calling a function failed**
703	**"Query failed"**	**test query against a database table failed**
704	**"No value"**	**test query worked but returned no results**
705	**"Import date is not available"**	**No import dates were returned (enabling replication can fix this)**

API: http://localhost/nominatim/status.php?format=json

Method: GET

Headers: false

Request :

```
{
  “format” : “json”
}
```

Response Received:


```
{
   "status": 0,
   "message": "OK",
   "data_updated": "2023-03-16T18:10:15+00:00",
   "software_version": "4.2.0-0",
   "database_version": "4.2.0-0"
}
```


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2.Geocoding

Geocoding is the process of converting addresses (like a street address) into geographic coordinates (like latitude and longitude), which you can use to place markers on a map, or position the map.

2.1 Search Queries

Info: The search API allows you to look up a location from a textual description or address. i.e by providing some specific parameters, you can fetch respective data.

API: http://localhost/nominatim/search.php?<params>

DEMO : http://localhost/nominatim/search.php?state=assam

- q=< query >
- street =<housenumber> <streetname>
- city=<city>
- county=<county>
- state=<state>
- country=<country>
- postalcode=<postalcode>

Method: GET (all above query search are made with GET Method)

Headers: false

Request :

```
{
   "state" : "assam"
}
```

Response Received:


```
[
        {
            "place_id": 8606411,
            "licence": "Data © OpenStreetMap contributors, ODbL 1.0.
https://osm.org/copyright",
            "osm_type": "relation",
```

```
            "osm_id": 2025886,
            "boundingbox": ["24.136033", "27.9712428", "89.6981764",
"96.0124397"],
            "lat": "26.4073841",
            "lon": "93.2551303",
            "display_name": "Assam, India",
            "place_rank": 8,
            "category": "boundary",
            "type": "administrative",
            "importance": 0.6500099999999999
        },
]
```

2.2 Output Format

Info : The format corresponds to what was selected via the format parameter,Result the output in selected format.

API: http://localhost/nominatim/search.php?<format>

DEMO : http://localhost/nominatim/search.php?format=xml&state=up

Method: GET

Headers: false

Request:


```
{
  “format” : ”xml”
}
```


Response Received:


```
<searchresults
 timestamp="Mon, 20 Mar 23 14:23:45 +0530"
```

```
 attribution="Data © OpenStreetMap contributors, ODbL 1.0.
http://www.openstreetmap.org/copyright"
 querystring="up"
 exclude_place_ids="8575889"

more_url="/search.php?state=up&exclude_place_ids=8575889&format=xml&a
ccept-language=en-GB%2Cen-US%3Bq%3D0.9%2Cen%3Bq%3D0.8"
>
 <place
   place_id="8575889"
   osm_type="relation"
   osm_id="1942587"
   place_rank="8"
   address_rank="8"
   boundingbox="23.8706272,30.4063828,77.0838761,84.6345091"
   lat="27.1303344"
   lon="80.859666"
   display_name="Uttar Pradesh, India"
   class="boundary"
   type="administrative"
   importance="0.55001"
/>
</searchresults>
```


---

3 Reverse Geocoding

The reverse geocoding API does not exactly compute the address for the coordinate it receives. It works by finding the closest suitable OSM object and returning its address information.

3.1 longitude and latitude.

Info: The main parameters of the reverse API are longitude and latitude. The API returns exactly one result or an error when the coordinate is in an area with no OSM data coverage.

API: http://localhost/nominatim/reverse.php?lat=<latitude>&lon=<longitude>

DEMO: http://localhost/nominatim/reverse.php?lat=27.175&lon=78.042

Method: GET

Headers: false

Request :

```
{
   “lat” : “27.175”,
    “lon” : “78.042”
}
```

Response Received:

```
<reversegeocode
 timestamp="Mon, 20 Mar 23 14:25:37 +0530"
 attribution="Data © OpenStreetMap contributors, ODbL 1.0.
http://www.openstreetmap.org/copyright"
 querystring="lat=27.175&lon=78.042"
>
 <result
   place_id="2090672"
```

```
   osm_type="way"
   osm_id="375257537"
   ref="Тадж Маҳал"
   lat="27.1750123"
   lon="78.04209683661315"
   boundingbox="27.1745358,27.1754823,78.0415593,78.0426212"
   place_rank="30"
   address_rank="30"
   >Taj Mahal, Taj Mahal Internal Path, Taj Ganj, Agra, Agra
division, Uttar
   Pradesh, 282006, India</result
 >
 <addressparts>
   <historic>Taj Mahal</historic>
   <road>Taj Mahal Internal Path</road>
   <suburb>Taj Ganj</suburb>
   <city>Agra</city>
   <state_district>Agra division</state_district>
   <state>Uttar Pradesh</state>
   <ISO3166-2-lvl4>IN-UP</ISO3166-2-lvl4>
   <postcode>282006</postcode>
   <country>India</country>
   <country_code>in</country_code>
 </addressparts>
</reversegeocode>
```

3.2 Output Format

Info: The format corresponds to what was selected via the format parameter.
Result the output in selected format.

API: http://localhost/nominatim/reverse.php?<format>

DEMO: http://localhost/nominatim/reverse.php?format=json&lat=<...>&lon=<...>

Method: GET

Headers: false

Request:

```
{
  “format” : “json”,
  “lat” : “27.175”,
  “lon” : “78.042”
}
```

Response Received:


```
{
   "place_id": 2090672,
   "licence": "Data © OpenStreetMap contributors, ODbL 1.0.
https://osm.org/copyright",
   "osm_type": "way",
   "osm_id": 375257537,
   "lat": "27.1750123",
   "lon": "78.04209683661315",
   "display_name": "Taj Mahal, Taj Mahal Internal Path, Taj Ganj,
Agra, Agra division, Uttar Pradesh, 282006, India",
   "address":
   {
       "historic": "Taj Mahal", "road": "Taj Mahal Internal Path",
       "suburb": "Taj Ganj", "city": "Agra",
       "state_district": "Agra division", "state": "Uttar Pradesh",
       "ISO3166-2-lvl4": "IN-UP", "postcode": "282006",
       "country": "India",
```

```
        "country_code": "in"
    },
    "boundingbox": ["27.1745358", "27.1754823", "78.0415593",
"78.0426212"]
}
```


---

4 Detail API

Show all details about a single place saved in the database.

OSM type is the term used in OpenStreetMap to describe the type of geographic object or feature in a map dataset.

- It identifies the basic shape or object in the dataset, such as a point, line or polygon. For example, a point could be a building, a line could be a street or a polygon could be a park.
- OSM type allows different features to be identified, such as city, village, river or coastline.
- OSM type is typically represented by a code in the dataset, for example, a node point could be represented by "N".

Examples of OSM type include:
- Node: A single point in space, representing a single feature such as a building, church, restaurant, etc.

- Way: An ordered list of node points which can be used to represent a linear feature such as a road, footpath, railway line, etc.

- Relation: An ordered list of ways or nodes and other relations that can be used to group multiple objects together, such as bus routes, postal code boundaries, or administrative boundaries.

- Polygon: A closed region bounded by multiple line segments (ways), representing a feature such as a park, lake, mountain, city, etc.

The details API supports the following two request formats:

4.1.a Using osmtype & osmId

Info: The type is one of nodes (N), way (W) or relation (R). The id must be a number.

API: http://localhost/nominatim/details?osmtype=[N|R|W]&osmid=<value>

DEMO : http://localhost/nominatim/details?osmtype=W&osmid=375257537

Method: GET

Headers: false

Request Payload:

```
{
  “osmtype” : “W”,
  “Osmid” : ”375257537”
}
```

Response Received:


```
{
   "place_id": 2090672,
   "parent_place_id": 2755683,
   "osm_type": "W",
   "osm_id": 375257537,
   "category": "historic",
   "type": "tomb",
   "admin_level": 15,
   "localname": "Taj Mahal",
   "addresstags": [],
   "housenumber": null,
   "calculated_postcode": "282006",
   "country_code": "in",
   "indexed_date": "2023-03-17T16:46:24+00:00",
   "importance": 9.99999999995449e-6,
```

```
    "calculated_importance": 9.99999999995449e-6,
    "extratags": {
        "heritage:operator": "whc",
        "ref:whc": "252",
        "roof:colour": "white",
        "start_date": "1632",
        "tomb": "mausoleum",
        "website": "https://www.tajmahal.gov.in/",
        "whc:criteria": "(i)",
        "whc:inscription_date": "1983",
        "wheelchair": "yes",
        "wikidata": "Q9141",
        "wikipedia": "hi:ताजमहल",
        "wikipedia:ur": "تاج محل"
    },
    "calculated_wikipedia": null,
    "rank_address": 30,
    "rank_search": 30,
    "isarea": true,
    "centroid":
    {
        "type": "Point",
        "coordinates": [78.04209683661315, 27.1750123]
    },
    "geometry":
    {
        "type": "Point",
        "coordinates": [78.042096837, 27.1750123]
    }
}
```

4.1.b Output Format JSON

Info: By default response is JSON, if tried to change the format an error message is received.

API: http://localhost/nominatim/details?osmtype=[N|R|W]&osmid=<value>&format=json

DEMO : http://localhost/nominatim/details?osmtype=W&osmid=375257537&format=xml

Method: GET
&format=xml
Headers: false

Request:

```
{
   “format” : “xml”,
   “osmtype” : “W”,
   “Osmid” : ”375257537”
}
```

Response Received:

```
{
    "error":
    {
        "code": 400,
        "message": "Parameter 'format' must be one of: json"
    }
}
```

4.2.a Using Place Id

Info: Place IDs are assigned sequentially during Nominatim data import. The ID for a place is different between Nominatim installation (servers) and changes when data gets reimported. Therefore it cannot be used as a permanent id and shouldn't be used in bug reports.

API: http://localhost/nominatim/details?place_id=<value>

DEMO : http://localhost/nominatim/details?place_id=2090672

Method: GET

Headers: false

Request:

```
{
  "place_id" : "2090672"
}
```

Response Received:


```
{
   "place_id": 2090672,
   "parent_place_id": 2755683,
   "osm_type": "W",
   "osm_id": 375257537,
   "category": "historic",
   "type": "tomb",
   "admin_level": 15,
   "localname": "Taj Mahal",
   "addresstags": [],
   "housenumber": null,
   "calculated_postcode": "282006",
   "country_code": "in",
   "indexed_date": "2023-03-17T16:46:24+00:00",
   "importance": 9.99999999995449e-6,
   "calculated_importance": 9.99999999995449e-6,
   "extratags": {
```

```
        "heritage:operator": "whc",
        "ref:whc": "252",
        "roof:colour": "white",
        "start_date": "1632",
        "tomb": "mausoleum",
        "website": "https://www.tajmahal.gov.in/",
        "whc:criteria": "(i)",
        "whc:inscription_date": "1983",
        "wheelchair": "yes",
        "wikidata": "Q9141",
        "wikipedia": "hi:ताजमहल",
        "wikipedia:ur": "تاج محل"
    },
    "calculated_wikipedia": null,
    "rank_address": 30,
    "rank_search": 30,
    "isarea": true,
    "centroid":
    {
        "type": "Point",
        "coordinates": [78.04209683661315, 27.1750123]
    },
    "geometry":
    {
        "type": "Point",
        "coordinates": [78.042096837, 27.1750123]
    }
}
```

4.2.b Output Format JSON

Info: By default response is JSON, if tried to change the format an error message is received.

API: http://localhost/nominatim/details?place_id=<value>&format=json

DEMO: http://localhost/nominatim/details?place_id=2090672&format=xml

Method: GET

Headers: false

Request:

```
{
   “format” : “xml”
   “place_id” : ”2090672”
}
```

Response Received:

```
{
   "error":
   {
       "code": 400,
       "message": "Parameter 'format' must be one of: json"
   }
}
```

---

5 Address lookup

Info : The lookup API allows you to query the address and other details of one or multiple OSM objects like node, way or relation.

5.1 Using Osm Id

API: http://localhost/nominatim/lookup?osm_ids=[N|W|R]<value>,[N|W|R]<value>,..

DEMO : http://localhost/nominatim/lookup?osm_ids=R2025886,N7138559487

Method: GET

Headers: false

Request:

```
{
  "osm_ids" : ["R146656","W104393803","N240109189"]
}
```

Response Received:

```
<lookupresults
 timestamp="Mon, 20 Mar 23 14:39:53 +0530"
 attribution="Data © OpenStreetMap contributors, ODbL 1.0.
http://www.openstreetmap.org/copyright"
 querystring="R2025886,N7138559487"
 more_url=""
>
 <place
   place_id="8606411"
   osm_type="relation"
   osm_id="2025886"
   place_rank="8"
   address_rank="8"
   boundingbox="24.136033,27.9712428,89.6981764,96.0124397"
   lat="26.4073841"
   lon="93.2551303"
   display_name="Assam, India"
   class="boundary"
```

```
   type="administrative"
   importance="0.55001"
 >
   <state>Assam</state>
   <ISO3166-2-lvl4>IN-AS</ISO3166-2-lvl4>
   <country>India</country>
   <country_code>in</country_code>
 </place>
  <place
   place_id="489358"
   osm_type="node"
   osm_id="7138559487"
   place_rank="30"
   address_rank="30"
   boundingbox="24.8695491,24.8696491,92.5569773,92.5570773"
   lat="24.8695991"
   lon="92.5570273"
   display_name="Badarpur Police Station, badarpur, dist karimgang,
assam, NH37, Badarpur, Karimganj, Assam, 788806, India"
   class="amenity"
   type="police"
   importance="9.9999999999545E-6"
 >
   <amenity>Badarpur Police Station</amenity>
   <house_number>badarpur, dist karimgang, assam</house_number>
   <road>NH37</road>
   <town>Badarpur</town>
   <county>Badarpur</county>
   <state_district>Karimganj</state_district>
   <state>Assam</state>
   <ISO3166-2-lvl4>IN-AS</ISO3166-2-lvl4>
   <postcode>788806</postcode>
   <country>India</country>
   <country_code>in</country_code>
 </place>
</lookupresults>
```

5.2 Output Format JSON

Info: The format corresponds to what was selected via the format parameter.Result the output in selected format.

API:
http://localhost/nominatim/lookup?osm_ids=[N|W|R]<value>,[N|W|R]<value>,..&format=json

DEMO :
http://localhost/nominatim/lookup?osm_ids=R2025886,N7138559487&format=json

Method: GET

Headers: false

Request:

```
{
   “format” : “json”,
   “osm_ids” : [“R146656”,”W104393803”,”N240109189”]
}
```

Response Received:


```
   [
       {
           "place_id": 8606411,
           "licence": "Data © OpenStreetMap contributors,
ODbL 1.0. https://osm.org/copyright",
           "osm_type": "relation",
           "osm_id": 2025886,
           "boundingbox": ["24.136033", "27.9712428", "89.6981764",
"96.0124397"],
           "lat": "26.4073841",
           "lon": "93.2551303",
           "display_name": "Assam, India",
           "place_rank": 8,
           "category": "boundary",
           "type": "administrative",
           "importance": 0.6500099999999999
```

```
    },
    {
        "place_id": 489358,
        "licence": "Data © OpenStreetMap contributors, ODbL 1.0.
https://osm.org/copyright",
        "osm_type": "node",
        "osm_id": 7138559487,
        "boundingbox": ["24.8695491", "24.8696491", "92.5569773",
"92.5570773"],
        "lat": "24.8695991",
        "lon": "92.5570273",
        "display_name": "Badarpur Police Station, badarpur, dist
karimgang, assam, NH37, Badarpur, Karimganj, Assam, 788806, India",
        "place_rank": 30,
        "category": "amenity",
        "type": "police",
        "importance": 0.11000999999999997
    }
]
```