

IP2LOCATION™ IP-COUNTRY-REGION-CITY-ISP DATABASE

DATA FILE SPECIFICATIONS

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|------------------------|--|--------------------------------|--|
| Product: | IP2Location™ IP-Country-Region-City-Latitude-Longitude-ISP Database [DB6] | | |
| File Name: | IP2Location_IP_Country_Region_City_Latitude_Latitude_ISP_Specification.PDF | | |
| Total Fields: | 9 | | |
| Data Format Available: | i. CSV | [Comma-Delimited ASCII] | |
| | ii. BIN | [IP2Location™ Binary Format] | |

| FIELD # | FIELD NAME | DATA TYPE | FIELD DESCRIPTION |
|---------|--------------|--|--|
| 1 | IP_FROM | IPv4 DECIMAL(10) IPv6 DECIMAL(39) | Beginning of IP address range. The data is represented in IP number ¹ format. |
| 2 | IP_TO | IPv4 DECIMAL(10) IPv6 DECIMAL(39) | Ending of IP address range. The data is represented in IP number ¹ format. |
| 3 | COUNTRY_CODE | CHAR(2) | Two-character country code based on ISO 3166. |
| 4 | COUNTRY_NAME | VARCHAR(64) | Country name based on ISO 3166. |
| 5 | REGION | VARCHAR(128) | Region name. |
| 6 | CITY | VARCHAR(128) | City name. |
| 7 | LATITUDE | NUMERICAL (DOUBLE) | City latitude. Default to capital city latitude if city is unknown. |
| 8 | LONGITUDE | NUMERICAL (DOUBLE) | City longitude. Default to capital city longitude if city is unknown. |
| 9 | ISP_NAME | VARCHAR(256) | Internet Service Provider registered under the IP address range. |

Note:

¹ IP Address to IP Number Conversion

If the IP address 161.132.13.1, then the IP number is 2709785857.

$$\begin{aligned} \text{IP Number, X} &= 161 \times (256 \times 256 \times 256) + 132 \times (256 \times 256) + 13 \times (256) + 1 \\ &= 2709785857 \end{aligned}$$

In general, this is the formula to convert an IP Address to IP Number.

Let assume the IP Address is A.B.C.D.

$$\text{IP Number, X} = A \times (256 \times 256 \times 256) + B \times (256 \times 256) + C \times 256 + D$$

² Record Matching

First, convert the search IP Address to IP Number, X. Search a record that matches the range condition. You will get only one match per query. The country, city and ISP information is attached to country fields of the record.

$$\text{IP_FROM} \leq X \leq \text{IP_TO}$$