IP2LOCATION™ IP-COUNTRY-REGION-CITY-LATITUDE-LONGITUDE DATABASE

DATA FILE SPECIFICATIONS

Product:	IP2Location™ IP-Country-Region-City-Latitude-Longitude Database [DB5]
File Name:	IP2Location_IP_Country_Region_City_Latitude_Longitude_Specification.PDF
Total Fields:	8
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.

Note:
[1] IP Address to IP Number Conversion

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

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

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

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

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

$$\text{IP\_FROM} <= X <= \text{IP\_TO}$$

[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 and city information is attached to country fields of the record.

$$\text{IP\_FROM} <= X <= \text{IP\_TO}$$