IP2LOCATION™

.NET COMPONENT

User Manual

By Hexasoft Development Sdn. Bhd.

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~ Bringing Geography to the Internet ~

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1. INTRODUCTION

IP2Location™ is the solution to identify *country, region, city, latitude & longitude of city, ZIP code, time zone, connection speed, ISP, domain name, IDD country code, area code, weather station code and name, mobile carrier, elevation and usage type* of your site visitors in real-time by using IP address. This document provides important information to help you quickly get up to speed with our products.

Developers use this .NET component for software and web projects related to, but not limited to:

- Display native language and currency
- Redirect based on country
- Digital rights management
- Prevent password sharing and abuse of service
- Reduce credit card fraud
- Web log stats and analysis
- Auto-selection of country on forms
- Filter access from countries you do not do business with
- Geo-targeting for increased sales and click-through

IP2Location™ .NET component is written for .NET Framework and optimized for Windows® operating system performance. The IP2Location .NET component is thread-safe. This component is also compatible with .NET Core 2.x SDK.

2. SYSTEM REQUIREMENTS

IP2Location™ .NET Component has been developed to run exclusively under Windows based machines with support for both WinForm and ASP.NET (for web form). This component required a local IP2Location™ database for lookup purpose. No Internet connection is required to execute this component.

Minimum Requirements	Supported Platforms
▪ .NET Framework 4.0 or later	▪ Microsoft® Windows XP (Home or Professional) ▪ Microsoft® Windows Server 2003 family ▪ Microsoft® Windows Vista ▪ Microsoft® Windows 7 ▪ Microsoft® Windows 8 ▪ Microsoft® Windows 10 ▪ Microsoft® Windows Server 2008 family ▪ Microsoft® Windows Server 2012 family ▪ Microsoft® Windows Server 2016 family
▪ .NET Core 2.x SDK	▪ Any operating system that is capable of running the .NET Core 2.x framework.

2.1 Quick Start Guide

In this document, you will go through these basic steps to use IP2Location™ .NET component:

1. Download and installing IP2Location .NET Component
2. Test your .NET Component installation
3. Start using IP2Location™ in your projects
4. Purchase license to remove random 5 second delay in demo version
5. Update IP2Location™ Component database

Note: For unregistered or demo, the component applies random 5-second in query. Registered version has unlimited real-time query without delay.

3. DOWNLOAD AND INSTALLATION

3.1 Download ZIP File

Please use the following URL to download the latest IP2Location™ .NET Component together with sample database.

- https://www.ip2location.com/software/dot-net-component

3.2 BIN Database Download

You may download free sample databases, DB1 to DB24, at https://www.ip2location.com/developers for your testing. Please take note that the sample databases only contain IP address from **0.0.0.0 to 99.255.255.255(IPv4)** or **2A04:0:0:0:0:0:0:0 to 2A04:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF(IPv6)** only.

If you need full IP address ranges but lower accuracy for testing, you may consider to download the LITE database at https://lite.ip2location.com.

3.3 Component Installation

Installing the IP2Location .NET component system is very easy.

General steps in installing IP2Location™ .NET component.

1. Unzip the "ip2location-dot-net-component-dotnet4.zip" into a temporary directory.
2. Just copy the **IP2Location.dll** file into /bin folder of your .NET project.
3. In your .NET project, add a reference to that **IP2Location.dll** in /bin folder.
4. There is a strong named version of the **IP2Location.dll** in the /Strongnamed folder if you need it.

4. TESTING

4.1 Folders and Files Structure

The unzipped folder should look like below:

```
\IP2Location.dll
\ip2location-dotnet4.0-component-user-manual.pdf
\IP2LOCATION_LICENSE_AGREEMENT.PDF
\Database\IP2LOCATION-LITE-DB1.BIN
\Database\IP2LOCATION-LITE-DB1.IPV6.BIN
\SampleCodes\dotNET4.0\WebForm\C#
\SampleCodes\dotNET4.0\WebForm\VBnet
\SampleCodes\dotNET4.0\WinForm\C#
\SampleCodes\dotNET4.0\WinForm\VBnet
\Strongnamed\IP2Location.dll
```

4.2 Component Testing using WinForm

For desktop-based sample applications, please open the project or solution file to rebuild and execute the application.

Sample WinForm Written in VB.NET
`\SampleCodes\dotNET4.0\WinForm\VBnet`

Sample WinForm Written in C#
`\SampleCodes\dotNET4.0\WinForm\C#`

4.3 Component Testing using WebForm

For web-based sample applications, please copy the sample to a web directory that has been configured to run web scripts. Then run these samples using your browser from local web server. Please make sure you have copied the **IP2Location.dll** and sample database to the web application directory /bin.

Sample WebForm Written in VB.NET
`\SampleCodes\dotNET4.0\WebForm\VBnet`

Sample WebForm Written in C#
`\SampleCodes\dotNET4.0\WebForm\C#`

5. IMPLEMENTATION

5.1 IP2Location™ Objects Reference

5.1.1 Object: IP2Location.Component

Parameter	Description
IPDatabasePath	Set IP2Location™ database path. The component will use the database in the component directory by default.
IPLicensePath	Set license file path for component registration. The component will use the license key in the component directory by default.
UseMemoryMappedFile	Set to True to enable memory mapped file feature. This will increase query speed but require more memory. It is set to False by default.

Method	Description
IPQuery (ByVal _IPAddress As String)	Query IP address. This method returns results in IP2Location.IPResult object.
IsRegistered()	Returns True if license key registered. Returns False if license key not registered.

5.1.2 Object: IP2Location.IPResult

Parameter	Description
IPAddress	IP address.
IPNumber	IP address in decimal format.
CountryShort	Two-character country code based on ISO 3166.
CountryLong	Country name based on ISO 3166.
Region	Region or state name.
City	City name.
Latitude	City level latitude.
Longitude	City level longitude.
ZIPCode	ZIP code or postal code.
TimeZone	Time zone in UTC (Coordinated Universal Time)
InternetServiceProvider	Internet Service Provider (ISP) name.
DomainName	Domain name associated to IP address range.
NetSpeed	Internet connection speed • (DIAL) Dial-up • (DSL) DSL/Cable • (COMP) Company/T1
IDDCode	The IDD prefix to call the city from another country.
AreaCode	A varying length number assigned to geographic areas for call between cities.

WeatherStationCode	Special code to identify the nearest weather observation station.
WeatherStationName	Name of the nearest weather observation station.
MCC	Mobile country code.
MNC	Mobile network code.
MobileBrand	Mobile carrier brand.
Status	Status code of query.
Elevation	Average height of city above sea level in meters (m).
UsageType	Usage type classification of ISP or company: • (COM) Commercial • (ORG) Organization • (GOV) Government • (MIL) Military • (EDU) University/College/School • (LIB) Library • (CDN) Content Delivery Network • (ISP) Fixed Line ISP • (MOB) Mobile ISP • (DCH) Data Center/Web Hosting/Transit • (SES) Search Engine Spider • (RSV) Reserved

*Note: The result will return a not supported field message if the field of the result is not supported by the current database.

5.1.3 Possible Status Code Returned

Status Code	Description
OK	The query has been successfully performed.
EMPTY_IP_ADDRESS	The IP address is empty.
INVALID_IP_ADDRESS	The format of the IP address is wrong.
MISSING_FILE	The BIN file path is wrong or the BIN file is unreadable.
IP_ADDRESS_NOT_FOUND	The IP address does not exists in the BIN file.
IPV6_NOT_SUPPORTED	The BIN file does not contain IPv6 data.

6. LICENSE PURCHASE

6.1 License Information

A license is required for each machine the product is installed on, including development or staging machines. Please refer to the **License Agreement** section for the complete license agreement.

Trial/Demo license is only meant to be used for the evaluation purpose.

6.2 Purchase Instruction

Please visit https://www.ip2location.com/software/dot-net-component and select the package that you wish to purchase. Fill in the online form and complete the payment transaction. Once your order has been approved, you will receive your license file (License.Key) immediately through email. Save the license file to the same directory of **IP2Location.dll** in WinForm or /bin directory for WebForm. The random 5-second query delay will be removed once the License Key was successfully installed.

7. UPDATE COMPONENT DATABASE

7.1 Update Component Internal Database

The IP2Location™ .NET Component depends on an internal database for lookup purpose. All users with valid license will be allowed to download the monthly updates from the IP2Location™ download area during subscription period. To update, users need to replace the BIN database with the latest one from the download area. The component will use the latest database once the local copy has been updated. Please refer to the welcome email for more information regarding download updates and account information.

8. APPENDIX I: ISO3166 COUNTRY CODE

This table lists all valid ISO3166 two characters country codes that returns from IP2Location™ .NET component and explain the full country names for these country codes.

Country Code	Country Name
AD	ANDORRA
AE	UNITED ARAB EMIRATES
AF	AFGHANISTAN
AG	ANTIGUA AND BARBUDA
AI	ANGUILLA
AL	ALBANIA
AM	ARMENIA
AO	ANGOLA
AQ	ANTARCTICA

Country Code	Country Name
AR	ARGENTINA
AS	AMERICAN SAMOA
AT	AUSTRIA
AU	AUSTRALIA
AW	ARUBA
AX	ÅLAND ISLANDS
AZ	AZERBAIJAN
BA	BOSNIA AND HERZEGOWINA
BB	BARBADOS
BD	BANGLADESH
BE	BELGIUM
BF	BURKINA FASO
BG	BULGARIA
BH	BAHRAIN
BI	BURUNDI
BJ	BENIN
BL	SAINT BARTHÉLEMY
BM	BERMUDA
BN	BRUNEI DARUSSALAM
BO	BOLIVIA
BQ	BONAIRE, SINT EUSTATIUS AND SABA
BR	BRAZIL
BS	BAHAMAS
BT	BHUTAN
BV	BOUVET ISLAND
BW	BOTSWANA
BY	BELARUS
BZ	BELIZE
CA	CANADA
CC	COCOS (KEELING) ISLANDS
CD	CONGO, THE DEMOCRATIC REPUBLIC OF THE
CF	CENTRAL AFRICAN REPUBLIC
CG	CONGO
CH	SWITZERLAND
CI	CÔTE D'IVOIRE
CK	COOK ISLANDS
CL	CHILE
CM	CAMEROON
CN	CHINA
CO	COLOMBIA
CR	COSTA RICA
CU	CUBA
CV	CAPE VERDE
CW	CURAÇAO
CX	CHRISTMAS ISLAND
CY	CYPRUS
CZ	CZECH REPUBLIC
DE	GERMANY
DJ	DJIBOUTI
DK	DENMARK

Country Code	Country Name
DM	DOMINICA
DO	DOMINICAN REPUBLIC
DZ	ALGERIA
EC	ECUADOR
EE	ESTONIA
EG	EGYPT
EH	WESTERN SAHARA
ER	ERITREA
ES	SPAIN
ET	ETHIOPIA
FI	FINLAND
FJ	FIJI
FK	FALKLAND ISLANDS (MALVINAS)
FM	MICRONESIA, FEDERATED STATES OF
FO	FAROE ISLANDS
FR	FRANCE
GA	GABON
GB	GREAT BRITAIN
GD	GRENADA
GE	GEORGIA
GF	FRENCH GUIANA
GG	GUERNSEY
GH	GHANA
GI	GIBRALTAR
GL	GREENLAND
GM	GAMBIA
GN	GUINEA
GP	GUADELOUPE
GQ	EQUATORIAL GUINEA
GR	GREECE
GS	SOUTH GEORGIA & SOUTH SANDWICH ISLANDS
GT	GUATEMALA
GU	GUAM
GW	GUINEA-BISSAU
GY	GUYANA
HK	HONG KONG
HM	HEARD ISLAND AND MCDONALD ISLANDS
HN	HONDURAS
HR	CROATIA
HT	HAITI
HU	HUNGARY
ID	INDONESIA
IE	IRELAND
IL	ISRAEL
IM	ISLE OF MAN
IN	INDIA
IO	BRITISH INDIAN OCEAN TERRITORY
IQ	IRAQ
IR	IRAN, ISLAMIC REPUBLIC OF
IS	ICELAND

Country Code	Country Name
IT	ITALY
JE	JERSEY
JM	JAMAICA
JO	JORDAN
JP	JAPAN
KE	KENYA
KG	KYRGYZSTAN
KH	CAMBODIA
KI	KIRIBATI
KM	COMOROS
KN	SAINT KITTS AND NEVIS
KP	KOREA, DEMOCRATIC PEOPLE'S REPUBLIC OF
KR	KOREA, REPUBLIC OF
KW	KUWAIT
KY	CAYMAN ISLANDS
KZ	KAZAKSTAN
LA	LAO PEOPLE'S DEMOCRATIC REPUBLIC
LB	LEBANON
LC	SAINT LUCIA
LI	LIECHTENSTEIN
LK	SRI LANKA
LR	LIBERIA
LS	LESOTHO
LT	LITHUANIA
LU	LUXEMBOURG
LV	LATVIA
LY	LIBYA
MA	MOROCCO
MC	MONACO
MD	MOLDOVA, REPUBLIC OF
ME	MONTENEGRO
MF	SAINT MARTIN (FRENCH PART)
MG	MADAGASCAR
MH	MARSHALL ISLANDS
MK	MACEDONIA, THE FORMER YUGOSLAV
ML	MALI
MM	MYANMAR
MN	MONGOLIA
MO	MACAU
MP	NORTHERN MARIANA ISLANDS
MQ	MARTINIQUE
MR	MAURITANIA
MS	MONTSERRAT
MT	MALTA
MU	MAURITIUS
MV	MALDIVES
MW	MALAWI
MX	MEXICO
MY	MALAYSIA
MZ	MOZAMBIQUE

Country Code	Country Name
NA	NAMIBIA
NC	NEW CALEDONIA
NE	NIGER
NF	NORFOLK ISLAND
NG	NIGERIA
NI	NICARAGUA
NL	NETHERLANDS
NO	NORWAY
NP	NEPAL
NR	NAURU
NU	NIUE
NZ	NEW ZEALAND
OM	OMAN
PA	PANAMA
PE	PERU
PF	FRENCH POLYNESIA
PG	PAPUA NEW GUINEA
PH	PHILIPPINES
PK	PAKISTAN
PL	POLAND
PM	SAINT PIERRE AND MIQUELON
PN	PITCAIRN
PR	PUERTO RICO
PS	PALESTINIAN, STATE OF
PT	PORTUGAL
PW	PALAU
PY	PARAGUAY
QA	QATAR
RE	RÉUNION
RO	ROMANIA
RS	SERBIA
RU	RUSSIAN FEDERATION
RW	RWANDA
SA	SAUDI ARABIA
SB	SOLOMON ISLANDS
SC	SEYCHELLES
SD	SUDAN
SE	SWEDEN
SG	SINGAPORE
SH	SAINT HELENA, ASCENSION AND TRISTAN DA CUNHA
SI	SLOVENIA
SJ	SVALBARD AND JAN MAYEN
SK	SLOVAKIA
SL	SIERRA LEONE
SM	SAN MARINO
SN	SENEGAL
SO	SOMALIA
SR	SURINAME
SS	SOUTH SUDAN
ST	SAO TOME AND PRINCIPE

Country Code	Country Name
SV	EL SALVADOR
SX	SINT MAARTEN (DUTCH PART)
SY	SYRIAN ARAB REPUBLIC
SZ	SWAZILAND
TC	TURKS AND CAICOS ISLANDS
TD	CHAD
TF	FRENCH SOUTHERN TERRITORIES
TG	TOGO
TH	THAILAND
TJ	TAJIKISTAN
TK	TOKELAU
TL	TIMOR-LESTE
TM	TURKMENISTAN
TN	TUNISIA
TO	TONGA
TR	TURKEY
TT	TRINIDAD AND TOBAGO
TV	TUVALU
TW	TAIWAN, PROVINCE OF CHINA
TZ	TANZANIA, UNITED REPUBLIC OF
UA	UKRAINE
UG	UGANDA
UK	UNITED KINGDOM
UM	UNITED STATES MINOR OUTLYING ISLANDS
US	UNITED STATES
UY	URUGUAY
UZ	UZBEKISTAN
VA	HOLY SEE (VATICAN CITY STATE)
VC	SAINT VINCENT AND THE GRENADINES
VE	VENEZUELA
VG	VIRGIN ISLANDS, BRITISH
VI	VIRGIN ISLANDS, U.S.
VN	VIET NAM
VU	VANUATU
WF	WALLIS AND FUTUNA
WS	SAMOA
YE	YEMEN
YT	MAYOTTE
ZA	SOUTH AFRICA
ZM	ZAMBIA
ZW	ZIMBABWE

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