

## Global Express Entry: Programmer's Quick Start

### Overview

The Global Express Entry Web Service features real-time autocompletion of addresses that can help create a single view of the customer, help prevent duplicate data, and reduce form abandonment rates.

Global Express Entry saves 50% of keystrokes and will allow your websites and custom applications to autocomplete address input with verified and standardized addresses.



### You can use Global Express Entry to:

- Complete U.S. and International Addresses with verified and standardized addresses using the postal code (ZIP Code), locality (city), an administrative area (state).
- Complete Addresses with a simple Free-Form query that searches all fields.
- Complete Thoroughfares (streets) using the postal code (or ZIP Code).

### The Express Entry Service offers 10 different endpoints which will auto complete address information:

#### U.S.

- ExpressAddress will autocomplete the complete address given the first few characters of the address and (optionally) city, state, and ZIP code.
- ExpressFreeForm will autocomplete the complete address using a Free Form search that searches address line 1, city, state, and ZIP code in one REST or JSONP parameter.
- ExpressCityState will autocomplete the city and return the state given the first few characters of the city name.
- ExpressPostalCode will autocomplete the ZIP code given the first digits and returns the city and state.
- ExpressStreet will autocomplete the street name given the first few characters of the street name and the ZIP code.

#### International

- GlobalExpressAddress will autocomplete the complete address given the first few characters of the address line 1, country, and (optionally) the locality, administrative area, and postal code.
- GlobalExpressFreeForm will autocomplete the complete address using a Free Form search given the country, and searches address line 1, locality, administrative area, and postal code in one REST or JSONP parameter.

- GlobalExpressLocalityAdministrativeArea will autocomplete the locality given the first few characters and will return the administrative area associated with it.
- GlobalExpressPostalCode will autocomplete the postal code given the first few characters and return the locality and administrative area associated with it.
- GlobalExpressThoroughfare will autocomplete the thoroughfare name given its first few characters, the postal code, and the country.

The country must be specified for the Global endpoints.

## FIELDS INPUT AND OUTPUT FROM THE SERVICE

### (U.S.) ExpressAddress:

INPUTs	Description
ID	License String from Melissa Data
Line1	The partial address line to autocomplete
Suite	(Optional) Restrict results to suite given here
City	(Optional) Restrict results to this city
State	(Optional) Restrict results to this state
Postal code	(Optional) Restrict results to this postal code
Maxrecords	Maximum number of addresses to return (default 10)
Format	The desired format of the response (JSON or XML)

OUTPUTs	Description
Version	Version information of the service
ResultCode	XS01, XS02, or XS03 indicating number of results showing (all, some, or none)
Results	
Result	
Address	
AddressLine1	Line 1 of the autocompleted output address
City	The city of the output address
CityAccepted	USPS accepted city name of the address
CityNotAccepted	Vanity city name of the address
State	The state of the address
PostalCode	The postal code of the address
AddressKey	Address Key of the address (useful for geocoding)
SuiteName (if necessary)	The type of suite at the address
SuiteCount	The number of suites at the address
SuiteList (if necessary)	A list of suites at the address
PlusFour (if necessary)	Corresponds to the +4 of each suite at the address

**(U.S.) ExpressFreeForm:**

INPUTs	Description
ID	License String from Melissa Data
FF	Free Form request
Maxrecords	Maximum number of addresses to return (default 10)
Format	The desired format of the response (JSON or XML)

OUTPUTs	Description
Version	Version information of the service
ResultCode	XS01, XS02, or XS03 indicating number of results showing (all, some, or none)
Results	
Result	
Address	
AddressLine1	Line 1 of the autocompleted output address
City	The city of the output address
CityAccepted	USPS accepted city name of the address
CityNotAccepted	Vanity city name of the address
State	The state of the address
PostalCode	The postal code of the address
AddressKey	Address Key of the address (useful for geocoding)
SuiteName (if necessary)	The type of suite at the address
SuiteCount	The number of suites at the address
SuiteList (if necessary)	A list of suites at the address
PlusFour (if necessary)	Corresponds to the +4 of each suite at the address

**(Global) GlobalExpressAddress:**

INPUTs	Description
ID	License String from Melissa Data
Address1	The partial address line to autocomplete
Address2	(optional) Restrict results to line 2 given here
Address3	(optional) Restrict results to line 3 given here
Locality	(optional) Restrict results to this locality
AdministrativeArea	(optional) Restrict results to this administrative area
SubAdministrativeArea	(optional) Restrict results to this subadministrative area
DependentLocality	(optional) Restrict results to this dependent locality
DoubleDependentLocality	(optional) Restrict results to this double dependent locality
PostalCode	(optional) Restrict results to this Postal Code
Country	(required) The country to search
Maxrecords	Maximum number of addresses to return (default 10)
Format	The desired format of the response (JSON or XML)

NativeCharset	When set to true, returns results in the native character set for the country
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OUTPUTs	Description
Version	Version information of the service
ResultCode	XS01, XS02, or XS03 indicating number of results showing (all, some, or none)
Results	
ResultGlobal	
Address	
Address	The formatted address
Address1-8	Lines 1-8 of this address
DeliveryAddress	The address without locality and postal code heirarchies
DeliveryAddress	Lines 1-8 of the delivery address
CountryName	The full country name of this address
ISO3166_2	The ISO 2 character country code of this address
ISO3166_3	The ISO 3 character country code of this address
SuperAdministrativeArea	The Region containing the address
AdministrativeArea	The administrative area of this address
SubAdminstrativeArea	The subadministrative area of this address
Locality	The locality (city) of this address
DependentLocality	The dependent locality of this address
DoubleDependentLocality	The double-dependent locality of this address
Thoroughfare	The thoroughfare (street) of this address
DependentThoroughfare	The dependent thoroughfare of this address
Building	The building of this address
Premise	The premise number of this address
SubBuilding	A list of the subpremise types and numbers at this address
PostalCode	The postal code of this address
PostalCodePrimary	The first piece of the postal code
PostalCodeSecondary	The second piece of the postal code
Organization	The business at this address
PostBox	The PostBox at this address
Unmatched	Words not matched to an individual address component
GeneralDelivery	General delivery type
DeliveryInstallation	Station information for non-civic addresses
Route	Identifies a route address
AdditionalContent	Site specification and compartment for delivery to a rural address

### (Global) GlobalExpressFreeForm:

INPUTs	Description
ID	(required) License String from Melissa Data

FF	(required) Free Form request
Country	(required) The country to search
Maxrecords	Maximum number of addresses to return (default 10)
Format	The desired format of the response (JSON or XML)
NativeCharset	When set to true, returns results in the native character set for the country

<b>OUTPUTs</b>	<b>Description</b>
Version	Version information of the service
ResultCode	XS01, XS02, or XS03 indicating number of results showing (all, some, or none)
Results	
ResultGlobal	
Address	
Address	The formatted address
Address1-8	Lines 1-8 of this address
DeliveryAddress	The address without locality and postal code heirarchies
DeliveryAddress	Lines 1-8 of the delivery address
CountryName	The full country name of this address
ISO3166_2	The ISO 2 character country code of this address
ISO3166_3	The ISO 3 character country code of this address
SuperAdministrativeArea	The Region containing the address
AdministrativeArea	The administrative area of this address
SubAdminstrativeArea	The subadministrative area of this address
Locality	The locality (city) of this address
DependentLocality	The dependent locality of this address
DoubleDependentLocality	The double-dependent locality of this address
Thoroughfare	The thoroughfare (street) of this address
DependentThoroughfare	The dependent thoroughfare of this address
Building	The building of this address
Premise	The premise number of this address
SubBuilding	A list of the subpremise types and numbers at this address
PostalCode	The postal code of this address
PostalCodePrimary	The first piece of the postal code
PostalCodeSecondary	The second piece of the postal code
Organization	The business at this address
PostBox	The PostBox at this address
Unmatched	Words not matched to an individual address component
GeneralDelivery	General delivery type
DeliveryInstallation	Station information for non-civic addresses
Route	Identifies a route address
AdditionalContent	Site specification and compartment for delivery to a rural address

## License String

You should have been provided an encrypted and unique license string or Customer ID from Melissa Data. This is necessary for including with each request to the Global Express Entry Web service. This value should be put into the ID element in each Web service request.

If you do not have a license string, please contact your Melissa Data sales representative at 1-800-MELISSA (1-800-635-4772).

## Sample REST Requests

1. <https://expressentry.melissadata.net/web/ExpressAddress?id=12345678&line1=520+n+13th&suite=&city=LAFAYETTE&state=IN&postalcode=&maxrecords=10&format=XML>
2. <https://expressentry.melissadata.net/web/ExpressFreeForm?id=12345678&ff=520+n+13th+lafayette&maxrecords=10&format=XML>
3. <https://expressentry.melissadata.net/web/globalExpressAddress?id=12345678&address1=44+cedar+h&postalcode=T7S%200A4&maxrecords=10&Country=CA&format=XML>
4. <https://expressentry.melissadata.net/web/globalExpressFreeForm?id=12345678&ff=44+cedar+h&maxrecords=10&country=CA&format=XML>

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## Sample JSON Response

```
{"Version":"2.0.02","ResultCode":"XS01","ErrorString":"","Results":[{"Address":{"AddressLine1":"520 N 13th St","City":"Lafayette","CityAccepted":"La Fayette","CityNotAccepted":"","State":"IN","PostalCode":"47904-2526","AddressKey":"47904252620","SuiteName":"","SuiteCount":0,"SuiteList":[""],"PlusFour":[""]}]}
```

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## Sample XML Response

```
<Response xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
  <Version>2.0.02</Version>
  <ResultCode>XS01</ResultCode>
  <ErrorString/>
  <Results>
    <Result>
      <Address>
        <AddressLine1>520 N 13th St</AddressLine1>
        <City>Lafayette</City>
        <CityAccepted>La Fayette</CityAccepted>
        <CityNotAccepted/>
        <State>IN</State>
        <PostalCode>47904-2526</PostalCode>
        <AddressKey>47904252620</AddressKey>
        <SuiteName/>
        <SuiteCount>0</SuiteCount>
        <SuiteList xmlns:a="http://schemas.microsoft.com/2003/10/Serialization/Arrays">
          <a:string/>
        </SuiteList>
        <PlusFour xmlns:a="http://schemas.microsoft.com/2003/10/Serialization/Arrays">
```

```
<a:string/>
</PlusFour>
</Address>
</Result>
</Results>
</Response>
```

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## Global Express Entry Web Service URLs [Cloud Service Endpoint URLs](#)

### Choosing a Web Service Protocol

The Melissa Data Global Express Entry Web Service supports REST, XML, and JSON. For the undecided, here are some Pros and Cons of one Web Service protocol over the other.

#### **REST**

**Pros:** REST is lightweight and relies upon HTTP to do its work. If you don't need a strict API definition, this is the way to go. REST is also format-agnostic so you can use XML or JSON as responses.

**Cons:** REST can only be used for sending of single records and doesn't support strict contracts or more involved security. The Response is an XML or JSON document.

#### **XML**

**Pros:** XML allows record set structures of more than one record at a time and has very good support with most languages and browsers. Supports namespaces.

**Cons:** Developers need to use tools to serialize/de-serialize the XML structure.

#### **JSON**

**Pros:** JSON relies on simple object serialization based on JavaScript's object initialization. It is very simple to use with JavaScript and easily parsed and understood by developers.

**Cons:** No support for formal definitions. No namespace support. Not much support in Web Service clients with some platforms.

### Basic Order of Operations (Pseudo Code)

1. Choose the endpoint based on the autocompletion service desired
2. Choose JSONP or REST.
3. Create a REST or JSONP request, populating the request element ID with your Product License, the required input fields, and any optional fields desired.
4. Send the request to the service using the JSONP endpoint for JSONP requests or the WEB endpoint for XML and JSON requests
5. Examine and parse the response from the reply from the service.
6. Interpret the results.

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### Interpreting Results

Melissa Data's Global Express Entry Service uses Results Codes to indicate whether the set of records returned is the complete set or a partial set of the total records that can be returned for a request. The Melissa Data Cloud Services use the following Results conventions:

1. CLOUD SERVICE ERRORS: SExx
2. CLOUD TRANSMISSION ERRORS: GExx

### 3. EXPRESS ENTRY RESULTS ERROR CODES: XSxx

For Example: An XS01 Results Code means that the complete set of results is returned, XS02 means that a partial set of results is returned, and XS03 means that no results are returned.

#### **Results Codes**

The service returns a series of results codes to tell you of the status and any changes or errors.

For a full list of the Results Codes returned by Global Express Entry, see [Result Codes](#).

#### **Sample Code**

Fully working examples are available on the wiki pages:

[Click here to go to the Global Express Entry Wiki Page](#).

#### **Wiki Page**

A product support Wiki is available for your convenience. In the Wiki, you will find documentation about the service in more detail.

[Click here to go to the Global Express Entry Wiki Page](#).

#### **Misc. Considerations**

##### **Firewall**

If you are behind a firewall, you may need to allow specific IP addresses access in order to communicate with the service. For a full list of IP Addresses, see [IP Address Information](#).