

SmartMover Cloud Service: Programmer's Quick Start

Overview

Contact data will deteriorate over time as people and businesses move around. SmartMover will allow you to keep that data up to date, both maintaining and confirming accuracy. The SmartMover Cloud Service is able to validate and standardize addresses, detect moves, and provide an updated address for an individual or business. SmartMover is available for both the US and Canada using data from the USPS and Canada Post respectively.

You can use SmartMover to:

- Keep contact addresses from the US and Canada up to date.
- Standardize and validate addresses.

NCOA and CCOA

SmartMover includes two services: one for National Change of Address (US) and one for Canadian Change of Address. They are separate products that have different endpoints and have counts tracked separately. They also have slight differences in functionality, mainly that CCOA does not return the move date nor does it provide summary reports. Both services use an identical request and response schema but US and Canadian records will need to be processed as separate lists.

FIELDS INPUT AND OUTPUT FROM THE SERVICE

INPUTs	Description
Columns	Select additional fields to be returned.
Options	Options to control the web service.
CustomerID	License string from Melissa Data
PAFId	Id from USPS that grants access to NCOA data
JobID	Unique string of characters to identify a group of records, used to group records together for summary reports
ExecutionID	Identifies the thread being used when using multiple threads
OptSmartMoverListName	Name of the list being processed, used in summary reports
Transmission Reference	Unique identifier for the request
RecordID	Unique identifier for a record within a request
Company	Name of the company
Urbanization	Only for addresses in Puerto Rico
AddressLine1	Primary street address
AddressLine2	May include suite, mailbox number, or alternate address
Suite	Suite/apartment number
PrivateMailbox	Private mailbox number
City	City the address is located in
State	State the address is located in
PostalCode	Postal Code of the address
Plus4	Last 4 digits of a 9 digit zip code
Country	Country the address is located in
NameFull	Full name of the resident

NameFirst	First name of the resident
NameMiddle	Middle name of the resident
NameLast	Last name of the resident
NamePrefix	Title or honorific (Mr., Dr., etc.)
NameSuffix	Generational or professional suffix (Jr., Ph.D., etc.)

OUTPUTs	Description
TransmissionReference	Unique ID for the request
TransmissionResults	Returns server error or general error codes if they occur
AddressExtras	Extra address data not parsed into other fields
AddressKey	Amalgamation of zip, plus4, and delivery point code
AddressLine1	Primary street address
AddressLine2	Secondary address, or suite
AddressTypeCode	Type of address
CarrierRoute	Carrier route
DeliveryPointCode	10th and 11th digits of the POSTNET barcode
DeliveryPointCheckDigit	12th digit of the POSTNET barcode
City	The city the address is located in
CityAbbreviation	Abbreviated name for the city if one exists
CompanyName	Name of the company
CountryCode	2 character country code for the address
CountryName	Full name of the country the address is in
MoveEffectiveDate	Date the move took place
MoveTypeCode	Type of move (individual or business)
PostalCode	Postal code for the address
RecordID	Unique id for the record
Results	Result codes
State	Two character code for the state the address is in
StateName	Full name for the state the address is in
Urbanization	Address element for Puerto Rico only

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 SmartMover Cloud Service. This value should be put into the CustomerID 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://smartmover.melissadata.net/v3/WEB/SmartMover/DoSmartMover?t=SmartMoverV3REST&id={CUSTOMERID}&jobid=&pafid=&act=&opt=&cols=MoveReturnCode&List=&comp=melissa%20data&full=&first=&Middle=&Namepre=&Namesfx=&last=&u=&a1=22382%20avenida%20empresa&a2=&ste=&pmb=&city=rsm&state=ca&zip=92688&plus4=&ctry=us&format=xml&callback=>
2. <https://smartmover.melissadata.net/v3/WEB/SmartMover/DoSmartMover?t=SmartMoverV3REST&id={CUSTOMERID}&jobid=&pafid=&act=&opt=&cols=MoveReturnCode&List=&comp=melissa%20data&full=&first=&Middle=&Namepre=&Namesfx=&last=&u=&a1=22382%20avenida%20empresa&a2=&ste=&pmb=&city=rsm&state=ca&zip=92688&plus4=&ctry=us&format=json&callback=>

Sample JSON Response

```
{
  "CASSReportLink": "JobId required to generate summary report links...",
  "NCOAReportLink": "JobId required to generate summary report links...",
  "Records": [
    {
      "AddressExtras": "",
      "AddressKey": "92688211282",
      "AddressLine1": "22382 Avenida Empresa",
      "AddressLine2": "",
      "AddressTypeCode": "S",
      "CarrierRoute": "C059",
      "City": "Rancho Santa Margarita",
      "CityAbbreviation": "Rcho Sta Marg",
      "CompanyName": "Melissa Data",
      "CountryCode": "US",
      "CountryName": "United States",
      "DeliveryPointCheckDigit": "1",
      "DeliveryPointCode": "82",
      "MoveEffectiveDate": "",
      "MoveTypeCode": "",
      "PostalCode": "92688-2112",
      "RecordID": "0",
      "Results": "AS01,CS02",
      "State": "CA",
      "StateName": "California",
      "Urbanization": ""
    }
  ],
  "TotalRecords": "1",
  "TransmissionReference": "Test",
  "TransmissionResults": "",
  "Version": "4.0.4.28"
}
```

Sample XML Response

```
<?xml version="1.0" ?>
<Response xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <ExtensionData />
  <CASSReportLink>JobId required to generate summary report links...</CASSReportLink>
  <NCOAReportLink>JobId required to generate summary report links...</NCOAReportLink>
  <Records>
    <ResponseRecord>
      <ExtensionData />
      <AddressExtras />
      <AddressKey>92688211282</AddressKey>
      <AddressLine1>22382 Avenida Empresa</AddressLine1>
      <AddressLine2 />
      <AddressTypeCode>S</AddressTypeCode>
      <CarrierRoute>C059</CarrierRoute>
      <City>Rancho Santa Margarita</City>
      <CityAbbreviation>Rcho Sta Marg</CityAbbreviation>
      <CompanyName>Melissa Data</CompanyName>
      <CountryCode>US</CountryCode>
      <CountryName>United States</CountryName>
      <DeliveryPointCheckDigit>1</DeliveryPointCheckDigit>
      <DeliveryPointCode>82</DeliveryPointCode>
      <MoveEffectiveDate />
      <MoveTypeCode />
      <PostalCode>92688-2112</PostalCode>
      <RecordID>0</RecordID>
      <Results>AS01,CS02</Results>
      <State>CA</State>
    </ResponseRecord>
  </Records>
</Response>
```

```

        <StateName>California</StateName>
        <Urbanization />
    </ResponseRecord>
</Records>
<TotalRecords>1</TotalRecords>
<TransmissionReference />
<TransmissionResults />
<Version>4.0.4.28</Version>
</Response>

```

Single vs. Batch

Melissa Data cloud services are capable of both single record real-time processing and batch processing. The difference is simply in the number of records sent in each request. Melissa Data cloud services take an array of records. This array can contain a single record or 100 records. For a real-time process like a Web form entry or a call center application, send in a request with one record. For a batch processing scenario like a database, send requests of up to 100 records until all the records are processed. Note: Make sure each record in the request has a unique Record ID.

Sample Batch XML Response

```

<?xml version="1.0" ?>
<Response xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema">
    <ExtensionData />
    <CASSReportLink>JobId required to generate summary report links...</CASSReportLink>
    <NCOAReportLink>JobId required to generate summary report links...</NCOAReportLink>
    <Records>
        <ResponseRecord>
            <ExtensionData />
            <AddressExtras />
            <AddressKey>92688211282</AddressKey>
            <AddressLine1>22382 Avenida Empresa</AddressLine1>
            <AddressLine2 />
            <AddressTypeCode>S</AddressTypeCode>
            <CarrierRoute>C059</CarrierRoute>
            <City>Rancho Santa Margarita</City>
            <CityAbbreviation>Rcho Sta Marg</CityAbbreviation>
            <CompanyName>Melissa Data</CompanyName>
            <CountryCode>US</CountryCode>
            <CountryName>United States</CountryName>
            <DeliveryPointCheckDigit>1</DeliveryPointCheckDigit>
            <DeliveryPointCode>82</DeliveryPointCode>
            <MoveEffectiveDate />
            <MoveTypeCode />
            <PostalCode>92688-2112</PostalCode>
            <RecordID>0</RecordID>
            <Results>AS01,CS02</Results>
            <State>CA</State>
            <StateName>California</StateName>
            <Urbanization />
        </ResponseRecord>
        <ResponseRecord>
            <ExtensionData />

```

```
<AddressExtras />
<AddressKey>92688211282</AddressKey>
<AddressLine1>22382 Avenida Empresa</AddressLine1>
<AddressLine2 />
<AddressTypeCode>S</AddressTypeCode>
<CarrierRoute>C059</CarrierRoute>
<City>Rancho Santa Margarita</City>
<CityAbbreviation>Rcho Sta Marg</CityAbbreviation>
<CompanyName>Melissa Data</CompanyName>
<CountryCode>US</CountryCode>
<CountryName>United States</CountryName>
<DeliveryPointCheckDigit>1</DeliveryPointCheckDigit>
<DeliveryPointCode>82</DeliveryPointCode>
<MoveEffectiveDate />
<MoveTypeCode />
<PostalCode>92688-2112</PostalCode>
<RecordID>1</RecordID>
<Results>AS01,CS02</Results>
<State>CA</State>
<StateName>California</StateName>
<Urbanization />
</ResponseRecord>
</Records>
<TotalRecords>2</TotalRecords>
<TransmissionReference />
<TransmissionResults />
<Version>4.0.4.28</Version>
</Response>
```

SmartMover Cloud Service URLs [SmartMover Cloud Service Endpoint URLs](#)

Choosing a Web Service Protocol

The Melissa Data SmartMover Cloud Service supports REST, JSON, XML, and SOAP. 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.

SOAP

Pros: SOAP (using a WSDL) is a heavy-weight XML standard that is centered around document passing. The advantage with this is that your requests and responses can be very well structured.

Cons: SOAP documents are very verbose and hard to consume without a SOAP toolkit and generally carry more overhead.

Basic Order of Operations (Pseudo Code)

1. Choose SOAP, XML, or the REST service.
2. Create an instance of the request object.
3. Populate the request element CustomerID with your Product License.
4. Set the options for the Web service.
5. Add input addresses and names to the array with anywhere from 1 to 100 items. (SOAP, XML)
6. Call the method and pass in the request to the service using the SOAP endpoint for SOAP request and the WEB endpoint for XML or JSON requests.
7. Examine and parse the response from the reply object back from the service.
8. Interpret the results.

Interpreting Results

Melissa Data's SmartMover Cloud Service uses Result Codes to communicate whether a record is a move or not. The SmartMover Cloud Service uses the following Results conventions:

1. CLOUD SERVICE ERRORS: SExx
2. CLOUD TRANSMISSION ERRORS: GExx
3. ADDRESS STATUS CODES: ASxx
4. ADDRESS ERROR CODES: AExx
5. ADDRESS CHANGE CODES: ACxx
6. MOVE STATUS CODES: CSxx
7. MOVE INFORMATION CODES: CMxx

Please check the documentation for any additional information on Results.

Results Codes

The service returns a series of results codes to tell you of the move status of a record.

For a full list of the Results Codes returned by the SmartMover Cloud Service, see [SmartMover Result Codes](#).

Sample Code

Fully working examples are available on the wiki pages:
[Click here to go to the SmartMover Cloud Service 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 SmartMover Cloud Service 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](#).