

Address Information

USPS Web Tools™

Application Programming Interface

User's Guide

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1.0 Introduction

This document contains a Reference Guide to the Address Information Web Tools listed below. See the [Developer's Guide step-by-step instructions](#) to learn the administrative process for gaining access to the Web Tools APIs as well as the basic mechanism for calling the APIs and processing the results. The Developer's Guide also contains information on testing and trouble-shooting.

- Address /Standardization Web Tool, which corrects errors in street addresses, including abbreviations and missing information, and supplies ZIP Codes and ZIP Codes + 4. It supports up to five lookups per transaction. By eliminating address errors, you will improve overall package delivery service.
- ZIP Code Lookup Web Tool, which returns the ZIP Code and ZIP Code + 4 corresponding to the given address, city, and state (use USPS state abbreviations). The ZIP Code Lookup Web Tool processes up to five lookups per request.
- City/State Lookup Web Tool returns the city and state corresponding to the given ZIP Code. The City/State Lookup Web Tool processes up to five lookups per request.

Note: The Request Parameter sections present the XML input tags for generating live requests along with the restrictions on the values allowed. An error message will be returned if an incorrect value is entered. Also, be aware of the maximum character amounts allowed for some tags. If the user enters more than those amounts, an error will not be generated. The Web Tool will simply pass in the characters up to the maximum amount allowed and disregard the rest. This is important since the resulting value could prevent a correct response.

When building the XML request, pay particular attention to the order and case for tags. An error message will be returned if an incorrect value is entered. Remember that all data and attribute values in this document are for illustration purposes and are to be replaced by your actual values. For instance, a line of sample code may be:

```
<State>MD</State>
```

In this instance, you will replace "MD" with the state abbreviation for the address location.

1.1 Before you get started:

For information on registering and getting started with Web Tools, please refer to the [Step-By-Step guide](#) found on the [Technical Documentation](#) section of the Web Tools page on usps.com/webtools.

1.2 Important Notice: User ID

The Web Tools User ID provided is for you and your company to use when requesting data via the Internet from the U.S. Postal Service API servers. As per the Terms and Conditions of Use Agreement you agreed to during the Web Tools registration process, you are responsible to maintain the confidentiality of your User ID as specified. You may not package any APIs with your User ID for resale or distribution to others. The U.S. Postal Service does not prohibit the reuse and/or distribution of the API documentation (User's Guide) with sample code in order to generate awareness, encourage use or provide ease-of-use to customers or affiliates. Warning - If the U.S. Postal Service discovers use of the same User ID from more than one web site, all users will be subject to loss of access to the USPS production server and/or termination of the licenses granted under the Terms and Conditions of Use.

1.3 Important Notice: Address Information API

The Address Validation APIs can be used in conjunction with USPS SHIPPING OR MAILING SERVICES ONLY. The Address API must only be used on an individual transactional basis, i.e. not batch processing or cleansing of a database, but as a customer enters the information into a form on a website. Failure to comply with these terms and conditions can result in termination of USPS API access without prior notice.

1.3.1 Error Responses

Error conditions are handled at the main XML document level. When parsing, it is best to check for an error document first before checking for good data. Error documents have the following format:

```
<Error>
  <Number></Number>
  <Source></Source>
  <Description></Description>
  <HelpFile></HelpFile>
  <HelpContext></HelpContext>
</Error>
```

Where:

- Number = the error number generated by the Web Tools server.
- Source = the component and interface that generated the error on the Web Tools server.
- Description = the error description.
- HelpFile = [reserved for future use].
- HelpContext = [reserved for future use].

For Web Tools that can handle multiple transactions, the error conditions for requests for multiple responses to be returned together are handled at the response level. For example: a Web Tool developer sends a request for rates for two packages. If the addresses are non-existent, an "Error document" is returned to the user. On the other hand, if the address for the first package is acceptable but not the second, the response document contains the information for the first address, but under the XML tag for the second address there is an error tag.

Errors that are further down in the hierarchy also follow the above format.

2.0 Address Web Tool

2.1 Overview

The Address Standardization Web Tool corrects errors in street addresses, including abbreviations and missing information, and supplies ZIP Codes and ZIP Codes + 4. It supports up to five lookups per transaction. By eliminating address errors, you will improve overall package delivery service.

2.2 API Signature

Scheme	Host	Path	API	XML
https://	secure.shippingapis.com	/ShippingAPI.dll?	API=Verify	&XML=(see below)
http://	production.shippingapis.com	/ShippingAPI.dll?	API=Verify	&XML=(see below)

2.3 Tag Descriptions

The table below presents the XML input tags for generating live requests and the restrictions on the values allowed. An error message will be returned if an incorrect value is entered. Also, be aware of the maximum character amounts allowed for some tags. If the user enters more than those amounts, an error will not be generated. **The Web Tool will simply pass in the characters up to the maximum amount allowed and disregard the rest.** This is important since the resulting value could prevent a correct response

2.3.1 Request Parameters

Tag Name	Occurs	Description	Type	Validation
AddressValidateRequest	Required Once	API = AddressValidateRequest	(group)	
AddressValidateRequest / Userid	Required Once		NMTOKEN	
AddressValidateRequest / Password	Required Once		String	
AddressValidateRequest / APPID	Optional		String	
AddressValidateRequest / Version	Required	Integer value used to flag return of all response fields. When the tag is included in the request, the value must be set to a valid value. Set this value to 1 to return all currently documented response fields.	String	minLength=0 pattern=\d{1} pattern=
AddressValidateRequest / Address /	Required	Up to 5 address verifications can be included per transaction.	(group)	
AddressValidateRequest / Address / FirmName	Optional	Firm Name	String	<FirmName>XYZ Corp.</FirmName>
AddressValidateRequest / Address / <Address1>	Optional	Delivery Address in the destination address.	String	Required for all mail and packages, however 11-digit Destination Delivery Point ZIP+4 Code can be provided as an alternative in the Detail 1 Record.
AddressValidateRequest / Address / <Address2>	Optional	Delivery Address in the destination address.	String	May contain secondary unit designator, such as APT or SUITE, for Accountable mail.)
AddressValidateRequest / Address / City	Optional	City name of the destination address.	String	Maximum characters allowed: 15
AddressValidateRequest / Address / State	Optional	Two-character state code of the destination address.	String	Maximum characters allowed: 2
AddressValidateRequest / Address / Urbanization	Optional	Urbanization	String	Maximum characters allowed: 28. For Puerto Rico addresses only.
AddressValidateRequest / Address / Zip5	Optional	Destination 5-digit ZIP Code.	String	Must be 5-digits. Numeric values (0-9) only. If International, all zeroes.
AddressValidateRequest / Address / Zip4	Optional	Destination ZIP+4	String	Numeric values (0-9) only. If International, all zeroes. Default to spaces if not available.

2.3.1.1 URL

All users will receive access to Address Information APIs upon registration and agreement to terms and conditions of use. Users will need to enter their own User ID in the examples shown below.

2.3.1.2 XML Request Example

The XML request should be in the following form and sequence:

```
<AddressValidateRequest USERID="XXXXXXXXXXXX">
<Revision>1</Revision>
<Address ID="0">
  <Address1>SUITE K</Address1>
  <Address2>29851 Aventura</Address2>
  <City/>
  <State>CA</State>
  <Zip5>92688</Zip5>
  <Zip4/>
</Address>
</AddressValidateRequest>
```

2.3.1.3 Make the Internet Connection & Send the XML Request

This step involves four separate functions:

1. Making the connection to the USPS Shipping Web Tools server.
2. Sending the request (whether Perl, ASP, or any other language).
3. Receiving the response from the Web Tools server.
4. Closing the Internet connection.

If you have recently registered, the registration e-mail will have the name of the server. If you are an existing user and do not have the name of the server, please contact the ICC. When sending the XML request, the Web Tool name must be specified. The server name can be found in your Web Tools registration e-mail. The Web Tool name is Verify. The format of the XML transaction is:

```
http://stg-production.shippingapis.com/ShippingApi.dll?API=Verify&XML=<AddressValidateRequest
USERID="425USPS00195">
```

2.3.2 Response Parameters

When the USPS Shipping Web Tools returns a response, it will either return a successful response document or an error document.

After unpacking the XML response, you will have the output from your request—an XML response with the following tags:

Tag Name	Occurs	Description	Type	Validation
AddressValidateResponse / Address	Required		(group)	
AddressValidateResponse / Address / FirmName	Optional		String	
AddressValidateResponse / Address / Address1	Optional		String	
AddressValidateResponse / Address / Address2	Optional		String	
AddressValidateResponse / Address / City	Optional	City name of the destination address.	String	
AddressValidateResponse / Address / State	Optional	Two-character state code of the destination address.	String	
AddressValidateResponse / Address / Urbanization	Optional		String	
AddressValidateResponse / Address / Zip5	Optional	Destination 5-digit ZIP Code.	String	Must be 5-digits. Numeric values (0-9) only. If International, all zeroes.
AddressValidateResponse / Address / Zip4	Optional	Destination ZIP+4	String	Numeric values (0-9) only. If International, all zeroes. Default to spaces if not available.
AddressValidateResponse / Address / DeliveryPoint	Optional		String	
AddressValidateResponse / Address / CarrierRoute	Optional	Carrier Route code.	String	Default is spaces. Alphanumeric(5)
AddressValidateResponse / Address / DPVConfirmation	Optional	The DPV Confirmation Indicator is the primary method used by the USPS to determine whether an address was considered deliverable or undeliverable.	String	Y or N
AddressValidateResponse / Address / DPVCMRA	Optional	CMRA Indicates a private business that acts as a mail-receiving agent for specific clients.	String	Y or N

AddressValidateResponse / Address / DPVFootnotes	Optional	DPV® Standardized Footnotes - EZ24x7Plus and Mail*STAR are required to express DPV results using USPS standard two character footnotes.	String	<p>Example: AABB</p> <p>Footnotes Reporting CASS™ ZIP+4™ Certification</p> <p>AA – Input address matched to the ZIP+4 file. A1 – Input address not matched to the ZIP+4 file.</p> <p>Footnotes Reporting DPV Validation Observations</p> <p>BB - Matched to DPV (all components). CC - Secondary number not matched (present but invalid). N1 - High-rise address missing secondary number. M1 - Primary number missing. M3 - Primary number invalid. P1 - Input Address RR or HC Box number Missing. P3 - Input Address PO, RR, or HC Box number Invalid. F1 - Input Address Matched to a Military Address. G1 - Input Address Matched to a General Delivery Address. U1- Input Address Matched to a Unique ZIP Code™.</p>
AddressValidateResponse / Address / Business	optional	Indicates whether address is a business or not	String	Y or N
AddressValidateResponse / Address / CentralDeliveryPoint	optional	Central Delivery is for all business office buildings, office complexes, and/or industrial/professional parks. This may include call windows, horizontal locked mail receptacles, cluster box units.	String	Y or N
AddressValidateResponse / Address / Vacant	optional	Is the location is not occupied.	string	Y or N
AddressValidateResponse / Address / Error	Optional		String	

2.3.2.1 XML Response Example

The Address Standardization Web Tool returns the following information to the supplied address:

```
<AddressValidateResponse>
  <Address ID="0">
    <Address1> STE K</Address1>
    <Address2>29851 AVENTURA</Address2>
    <City>RANCHO SANTA MARGARITA</City>
    <CityAbbreviation>RCHO STA MARG</CityAbbreviation>
    <State>CA</State>
    <Zip5>92688</Zip5>
    <Zip4>2014</Zip4>
    <DeliveryPoint>83</DeliveryPoint>
    <CarrierRoute>C057</CarrierRoute>
    <Footnotes>N</Footnotes>
    <DPVConfirmation>Y</DPVConfirmation>
    <DPVCMRA>N</DPVCMRA>
    <DPVFootnotes>AABB</DPVFootnotes>
    <Business>Y</Business>
    <CentralDeliveryPoint>N</CentralDeliveryPoint>
    <Vacant>N</Vacant>
  </Address></AddressValidateResponse>
```

If an error message is returned, refer to the *Error Responses* section for an explanation.

3.0 ZIP Code Lookup Web Tool

3.1 Overview

The ZIP Code Lookup Web Tool returns the ZIP Code and ZIP Code + 4 corresponding to the given address, city, and state (use USPS state abbreviations). The ZIP Code Lookup Web Tool processes up to five lookups per request.

3.1.1 API Signature

Scheme	Host	Path	API	XML
https://	secure.shippingapis.com	/ShippingAPI.dll?	API=CityStateLookup	&XML=(see below)
http://	production.shippingapis.com	/ShippingAPI.dll?	API=CityStateLookup	&XML=(see below)

3.1.2 Request Parameters

The table below presents the XML input tags for generating requests and the restrictions on the values allowed. An error message will be returned if an incorrect value is entered. Also, be aware of the maximum character amounts allowed for some tags. If the user enters more than those amounts, an error will not be generated. **The Web Tool will simply pass in the characters up to the maximum amount allowed and disregard the rest.** This is important since the resulting value could prevent a correct response.

Tag Name	Occurs	Description	Type	Validation
ZipCodeLookupRequest	Required	API = ZipCodeLookupRequest	(group)	
ZipCodeLookupRequest / Address	Optional		(group)	
ZipCodeLookupRequest / Address / FirmName	Optional	Up to 5 address verifications can be included per transaction.	String	Default is spaces.
ZipCodeLookupRequest / Address / Address1	Optional	Delivery Address in the destination address.	String	Required for all mail and packages, however 11-digit Destination Delivery Point ZIP+4 Code can be provided as an alternative in the Detail 1 Record.
ZipCodeLookupRequest / Address / Address2	Optional	Delivery Address in the destination address.	String	May contain secondary unit designator, such as APT or SUITE, for Accountable mail.)
ZipCodeLookupRequest / Address / City	Optional	City name of the destination address.	String	Field is required, unless a verified 11 digit DPV is provided for the mailpiece.
ZipCodeLookupRequest / Address / State	Optional	Two-character state code of the destination address.	String	Default is spaces for International mail.
ZipCodeLookupRequest / Address / Urbanization	Optional		String	

4.1.2.1 URL

All users will receive access to Address Information APIs upon registration and agreement to terms and conditions of use. Users will need to enter their own User ID in the examples shown below.

4.1.2.2 Request Example

The XML request should be in the following form and sequence:

```
https://production.shippingapis.com/ShippingApi.dll?API=CityStateLookup&XML=
<CityStateLookupRequest USERID="XXXXXXXXXXXX">
<ZipCode ID='0'>
```

```
<Zip5>20024</Zip5>  
</ZipCode>  
</CityStateLookupRequest>
```

4.1.2.3 Make the Internet Connection & Send the XML Request

This step involves four separate functions:

1. Making the connection to the USPS Shipping Web Tools server.
2. Sending the request (whether Perl, ASP, or any other language).
3. Receiving the response from the Web Tools server.
4. Closing the Internet connection.

If you have recently registered, the registration e-mail will have the name of the server. If you are an existing user and do not have the name of the server, please contact the ICC. When sending the XML request, the Web Tool name must be specified. The server name can be found in your Web Tools registration e-mail. The Web Tool name is ZipCodeLookup. The format of the XML transaction is:

```
https://production/ShippingAPI.dll?API=ZipCodeLookup&XML=<ZipCodeLookupRequest  
USERID="username">..... </ZipCodeLookupRequest>
```

4.1.3 Response Parameters

Tag Name	Occurs	Description	Type	Validation
ZipCodeLookupResponse	Required	API = ZipCodeLookupResponse	(group)	
ZipCodeLookupResponse / Address			(group)	
ZipCodeLookupResponse / Address / FirmName		Up to 5 address verifications can be included per transaction.	String	Default is spaces.
ZipCodeLookupResponse / Address / Address1		Delivery Address in the destination address.	String	Required for all mail and packages, however 11-digit Destination Delivery Point ZIP+4 Code can be provided as an alternative in
ZipCodeLookupResponse / Address / Address2		Delivery Address in the destination address.	String	May contain secondary unit designator, such as APT or SUITE, for Accountable mail.)
ZipCodeLookupResponse / Address / City		City name of the destination address.	String	Field is required, unless a verified 11 digit DPV is provided for the mailpiece.
ZipCodeLookupResponse / Address / State	Optional	Two-character state code of the destination address.	String	Default is spaces for International mail.
ZipCodeLookupResponse / Address / Zip5	Optional	Destination 5-digit ZIP Code.	String	Must be 5-digits. Numeric values (0-9) only. If International, all zeroes.
ZipCodeLookupResponse / Address / Zip4	Optional	Destination ZIP+4	String	Numeric values (0-9) only. If International, all zeroes. Default to spaces if not available.
ZipCodeLookupResponse / Address / Error	Optional	Two-character state code of the destination address.	String	

4.1.3.1 XML Output Example

The ZIP Code Lookup Web Tool returns the following information to the user.

```
<?xml version="1.0" ?>
<ZipCodeLookupResponse>
<Address ID="0">
<FirmName>XYZ CORP.</FirmName>
<Address2>6406 IVY LN</Address2>
<City>GREENBELT</City>
```

```

<State>MD</State>
<Zip5>20770</Zip5>
<Zip4>1441</Zip4>
</Address>
<Address ID="1">
<FirmName>ABC COMPANY</FirmName>
<Address1>Apt/Suite 2</Address1>
<Address2>435 S MAIN ST</Address2>
<City>LOS ANGELES</City>
<State>CA</State>
<Zip5>90013</Zip5>
<Zip4>1310</Zip4>
</Address>
</ZipCodeLookupResponse>

```

5.0 City/State Lookup Web Tool

The City/State Lookup Web Tool returns the city and state corresponding to the given ZIP Code. This Web Tool processes up to five lookups per request.

5.1 Build the XML Request

5.1.1 API Signature

<i>Scheme</i>	<i>Host</i>	<i>Path</i>	<i>API</i>	<i>XML</i>
https://	secure.shippingapis.com	/ShippingAPI.dll?	API=CityStateLookup	&XML=(see below)
http://	production.shippingapis.com	/ShippingAPI.dll?	API=CityStateLookup	&XML=(see below)

5.1.2 Request Parameters

The table below presents the XML input tags for generating requests and the restrictions on the values allowed. An error message will be returned if an incorrect value is entered. Also, be aware of the maximum character amounts allowed for some tags. If the user enters more than those amounts, an error will not be generated. **The Web Tool will simply pass in the characters up to the maximum amount allowed and disregard the rest.** This is important since the resulting value could prevent a correct response.

Tag Name	Occurs	Description	Type	Validation
CityStateLookupRequest /	Required	API = CityStateLookupRequest	(group)	
CityStateLookupRequest / Revision	Optional		string	pattern=\d+\.\d+
CityStateLookupRequest / ZipCode		.Max 5 Zips	(Group)	
CityStateLookupRequest / ZipCode / Zip5	Optional		string	
CityStateLookupRequest / ZipCode / ID	Optional		string	
CityStateLookupRequest / USERID	Required	This attribute specifies your Web Tools ID. See the Developer's Guide for information on obtaining your USERID.	NMTOKEN	
CityStateLookupRequest / PASSWORD	Optional		string	
CityStateLookupRequest / APPID	Optional		NMTOKEN	
CityStateLookupRequest / VERSION	Optional		string	pattern value="\d+\.\d+

5.1.2.1 URL

All users will receive access to Address Information APIs upon registration and agreement to terms and conditions of use. Users will need to enter their own User ID in the examples shown below.

5.1.2.2 Request Example

The XML request should be in the following form and sequence:

```
https://secure.shippingapis.com/shippingapi.dll?API=CityStateLookup&XML=<CityStateLookupRequest USERID="XXXXXXXXXXXX">
<ZipCode>
<Zip5>10002</Zip5>
</ZipCode>
</CityStateLookupRequest>
```

5.1.2.3 Make the Internet Connection & Send the XML Request

This step involves four separate functions:

1. Making the connection to the USPS Shipping Web Tools server.
2. Sending the request (whether Perl, ASP, or any other language).
3. Receiving the response from the Web Tools server.
4. Closing the Internet connection.

5.3 Response Parameters

When the USPS Shipping Web Tools returns a response, it will either return a successful response document or an error document.

Tag Name	Occurs	Description	Type	Validation
CityStateLookupResponse /	Required	API = CityStateLookupResponse	(Group)	
CityStateLookupResponse / ZipCode	Optional	Max 5	(Group)	
CityStateLookupResponse / ZipCode / Zip5	Optional	Five-digit ZIP.	String	
CityStateLookupResponse / City	Optional		String	
CityStateLookupResponse / State	Optional	2 characters	String	
CityStateLookupResponse / Error	Optional		String	

5.3.1 XML Output from Unpacked Response

After unpacking the XML response, you will have the output from your request—an XML response with the following tags:

5.3.2 Response Example

The City/State Lookup Web Tool returns the following information for the supplied address:

```
<CityStateLookupResponse>
  <ZipCode ID="0">
    <Zip5>90210</Zip5>
    <City>BEVERLY HILLS</City>
    <State>CA</State>
    <FinanceNumber></FinanceNumber>
    <ClassificationCode></ClassificationCode>
  </ZipCode>
  <ZipCode ID="1">
    <Zip5>20770</Zip5>
    <City>GREENBELT</City>
    <State>MD</State>
    <FinanceNumber></FinanceNumber>
    <ClassificationCode></ClassificationCode>
  </ZipCode>
</CityStateLookupResponse>
```