Address Validation Street Level Web Services Developers Guide

December 30, 2013

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Table of Contents

1.1 Important Information

UPS Developer APIs

Your development of an application using the UPS Web Service APIs are governed by the UPS Technology Agreement or UPS Customer Technology Agreement you entered into with UPS. The following are key legal requirements from these agreements for the UPS Web Service APIs. For more information on all requirements for the UPS Web Service APIs, please refer to the UPS Technology Agreement or the Customer Technology Agreement.

Key Legal Requirements for UPS Developer APIs

Permitted Territories

This document can only be used in the countries listed in Exhibit C of the UPS Technology Agreement or UPS Customer Technology Agreement.

Use

The application must not be designed to allow distribution of information received through the UPS Web Service APIs to third parties, other than to persons having a bona fide interest in such information (e.g., the shipper, receiver or the third party payer).

Consent to Use of UPS Mark

- All screens or forms generated by your application including information received through the UPS Web Service APIs must include (1) the UPS Mark positioned in reasonable proximity to the Information and of an appropriate size to readily identify the source of the Information as UPS and (2) the following language at the bottom of every screen that displays the UPS Mark: "UPS, the UPS brand mark, and the Color Brown are trademarks of United Parcel Service of America, Inc. All Rights Reserved". Except as set forth in the preceding sentence, you have no right to use the UPS Mark without the prior written approval of UPS.
- You shall not use the UPS Mark in association with any third party trademarks in a manner that might suggest co-branding or otherwise create potential confusion as to source or sponsorship of the application, or ownership of the UPS Mark.
- The UPS Mark shall be used only as provided by UPS electronically or in hard copy form. The UPS Mark may not be altered in any manner, including proportions, colors, elements, etc., or animated, morphed or otherwise distorted in perspective or dimensional appearance.
- The UPS Mark may not be combined with any other symbols, including words, logos, icons, graphics, photos, slogans, numbers or other design elements. A minimum amount of empty space must surround the UPS Mark separating it from any other object, such as type, photography, borders, edges, etc. The required area of empty space around the UPS Mark must be 1/3x, where x equals the height of the UPS Mark.

Copyright and Proprietary Notice

In your application and any POD Letters you prepare you must include a prominent reproduction of UPS's copyright and proprietary notices in a form and format specified by UPS (See Copyright Section of this document).

Display of Information

The application must not display information concerning any other provider of shipping services or such other shipping services on any page, whether comprising one or more frames, displaying information your application receives from the UPS Web Service APIs. Your application must present all data within each field received through the UPS Web Service APIs without amendment, deletion or modification of any type.

1.2 Welcome to the UPS API Developer's Guides

Welcome to the UPS API Developer's Guides. This guide provides the information you need to begin using UPS Developer APIs.

UPS Developer APIs offer a fast and convenient way to access UPS service information using the Internet. With these Developer APIs, UPS lets you easily incorporate UPS technology in your own applications or your own web site. Your users—running your applications or visiting your web site—can have up-to-the-minute access to UPS services.

1.2.1 Release Features

Release	New Features
Jan 2014	No changes
Jul 2013	No changes

1.2.2 How to Use this Guide

If you are an experienced developer, you can begin developing applications quickly after reviewing "Required Steps for Integrating."

If you would like a more step-by-step guide to developing and deploying the Developer APIs, "Planning Your Applications" provides advice and describes options for developing and deploying applications and web sites that use UPS Developer APIs.

The "UPS Developer API Technologies" section explains key technologies on which the Developer APIs rely. That section also includes hints for using those technologies in various software development environments.

If you would like to learn more about what the UPS API covered in this guide can do for your applications, refer to the section on understanding the UPS API Services in this guide.

A complete technical reference to the Developer API covered in this guide is found in the API Reference section with details for the programming interfaces.

Additional material, including reference tables and lists, may be found in the appendices.

1.3 Business Processes and Rules

UPS restricts the usage of the Address Validation Street Level API for only packages manifested, tendered, and delivered by UPS.

- Any customers/developers abusing the Address Validation Street Level API or data mining the API will have their access revoked.
- The Address Validation Street Level API provides residential/commercial classification based on the information provided by the UPS driver network.
- UPS initially provides testing privileges for Address Validation Street Level API. Production Access to the API needs to be requested from the Developer Resource Center on UPS.com using the Access Key already provided.
- To obtain testing and/or production access to the Address Validation Street Level API you need to go through the Request Access Key process from the Developer Resource Center on UPS.com. During the process the user is required to either create a new account number or to add an existing account number from their profile. Access Keys to use the API will not be created unless an account number is provided.
- Authentication - Account numbers can only be added to UPS.com profiles by providing the following additional information for authentication:
  - ➢ Account Number
  - ➢ Account Country Code
  - ➢ Invoice Level Control ID
  - ➢ Plan Level Control ID
  - ➢ Amount Due on Invoice
  - ➢ Date of Invoice

1.4 Required Steps for Integrating WebServices

The required steps for integrating the UPS APIs are listed here for UPS XML Services.

UPS Web Services

Details for accessing UPS Developer API Web Services are defined within WebServices Definition Language (WSDL) files that are part of the UPS Developer Kit. Most modern development environments include support for automatically importing WSDL files and generating skeleton code to access the services. Although the specific details depend on the particular development environment, the general procedure is as follows.

1. Review the UPS Technology Agreement available at www.ups.com. This agreement requires that you follow certain procedures and practices in using UPS Developer API Web Services.
2. Import the WSDL files into the development APIs of choice. Depending on the specific API, this step will result in skeleton code (such as Java or C# classes) for accessing the Web Services
3. Add your functionality specific to your application and/or web site to the skeleton code.

4. Test your application and/or web site using the designated UPS staging environment.
5. If you are a UPS Ready developer, review your application with UPS.
6. Deploy your application for your customers.
7. Ensure the UPS Shipper Account number is added to the user's profile. This can be done at myups.com.

1.5 Planning Your Applications for WebServices

Planning is a key part of any successful development activity, and UPS WebServices applications are no exception. This section helps that planning by describing the important activities of any UPS WebServices application project. It provides an overview of the steps required to develop applications, and it describes key factors and choices necessary to deploy those applications.

1.5.1 Web Service Applications

Many different types of applications can take advantage of WebServices.Those application types include dedicated desktop applications, databases, web applications, and documents. The following figures illustrate some of the possibilities for applications using UPS Developer APIs. The only essential requirement for all of these applications is that they must have access to the Internet.
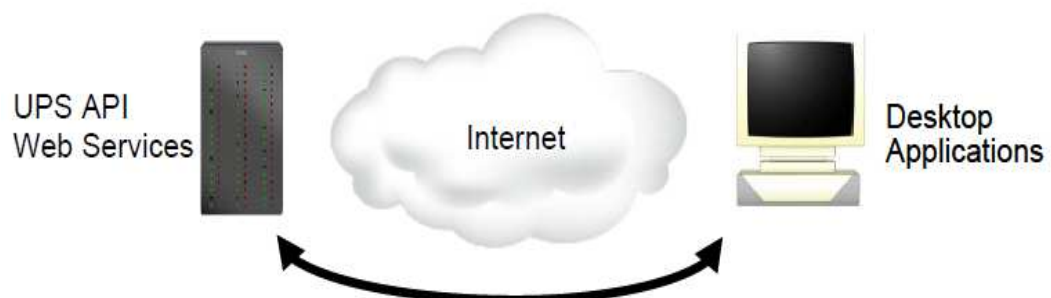
Figure 1: Dedicated applications that users run on their desktops can access UPS Web Services.

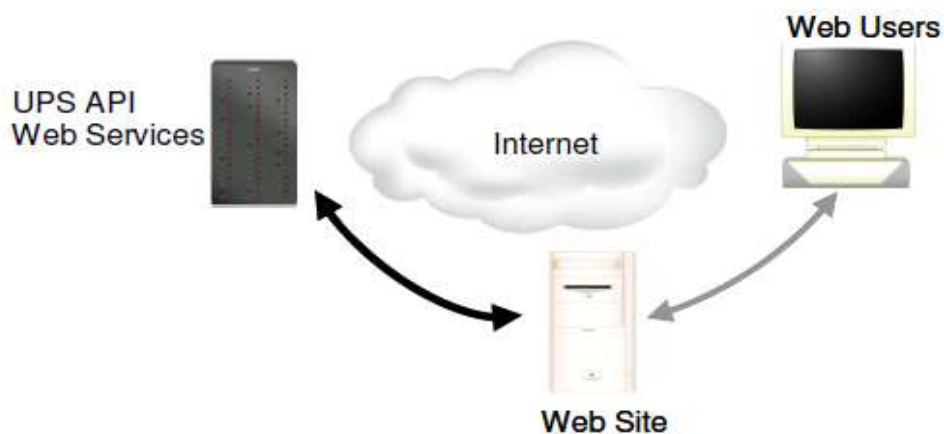Figure 2: Database applications can access UPS Web Services and return information to their clients.

Figure 3: Web sites can access UPS Web Services and return information to users' web browsers.
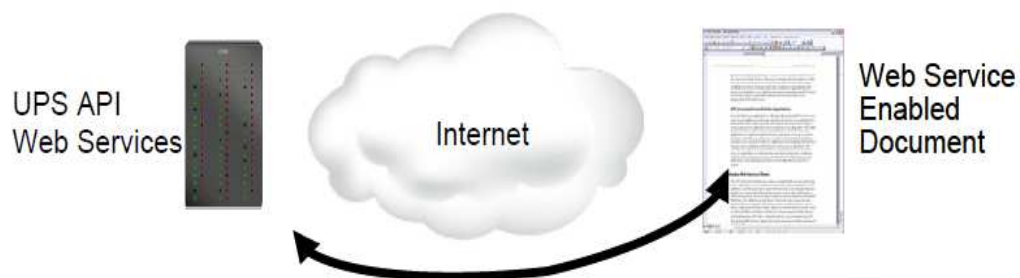

Figure 4: Non-traditional applications such as Microsoft Office or Adobe Acrobat documents can use UPS Web Services to automatically update their content.

The UPS Developer APIs can be implemented withal of these types of applications and many others. Virtually any software that needs instant, up-todate access to UPS services can take advantage of UPS Developer APIs.

1.5.2 Licensing the UPS Developer API WebServices

As part of the UPS Technology Agreement, users of the APIs have certain obligations that are spelled out within the service agreement and its exhibits. Regardless of the manner in which the UPS Developer API WebServices are integrated into your specific e-commerce web site or enterprise application, you must adhere to appropriate usage requirements.

1.5.2.1 Branding Requirements

UPS should receive attribution and branding in all applications (including websites and software applications) that use the Developer API Web Services. No End User, Third Party Developer or Access User should be permitted to use the Developer API Web Services without providing branded recognition to UPS. Your use of the UPS logo can in no way imply endorsement, sponsorship or certification of your e-commerce web site or enterprise application by UPS. You are not allowed to use or alter the information returned by the UPS Developer API Web Service in a way that misrepresents the information or the functionality of the web service.

1.5.2.2 UPS Review of Applications

If you distribute your application as software, please provide UPS access to, or a copy of, your application (and/or any updates). If you host your application for the benefit of others, please provide the Uniform Resource Locator (URL) for each location of your application. If you build your own application, UPS might request the URL in order to review your application. UPS may review each application for compliance with the UPS Technology Agreement. See the Customer Integration Environment chapter for more information on the certification process.

1.5.3 Developing Web Services Clients

The UPS Developer API Web Services rely on standard Web Services technology that is supported by a wide variety of software development platforms. Those platforms vary from pure open source environments such as Apache Axis (see Figure 5) to commercial products from vendors such as Microsoft (Figure 6). Other development tools that support Web Services development include BEA WebLogic, Sun's NetBeans, and products from both major systems vendors including IBM and Hewlett-Packard and smaller, specialized vendors such as Altova, Cape Clear, and Stylus Studio. Many nontraditional environments such as Microsoft Office and Adobe Acrobat also include support for Web Services.
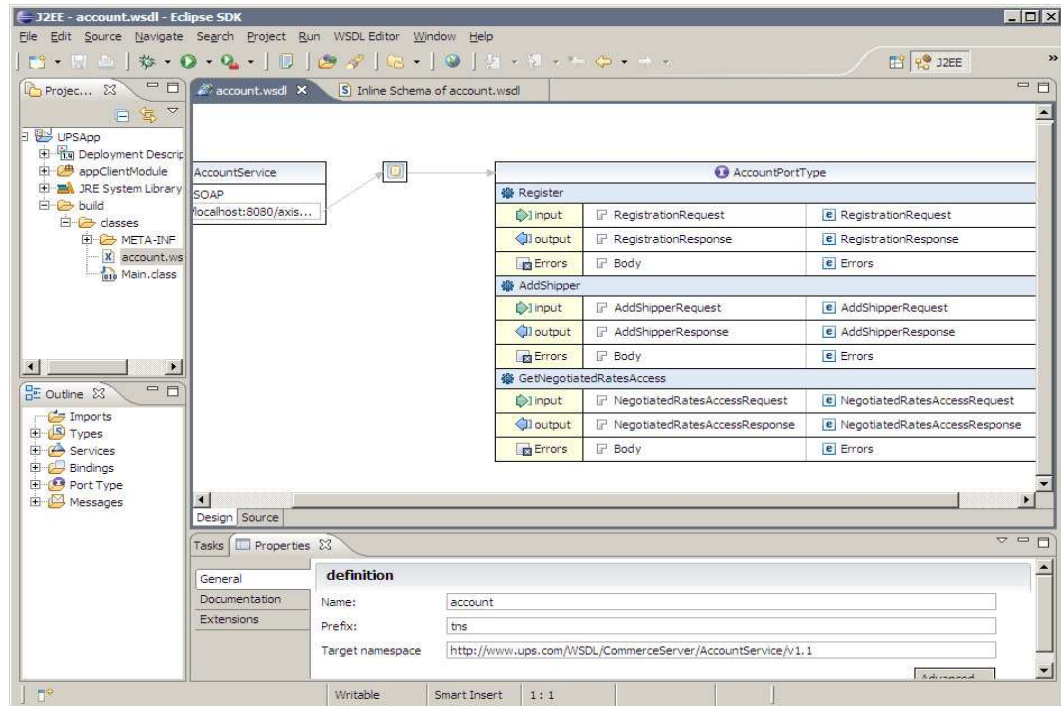
Figure 5: The Eclipse Web Tools Platform (WTP) project provides support for Web Services in a Java development environment.
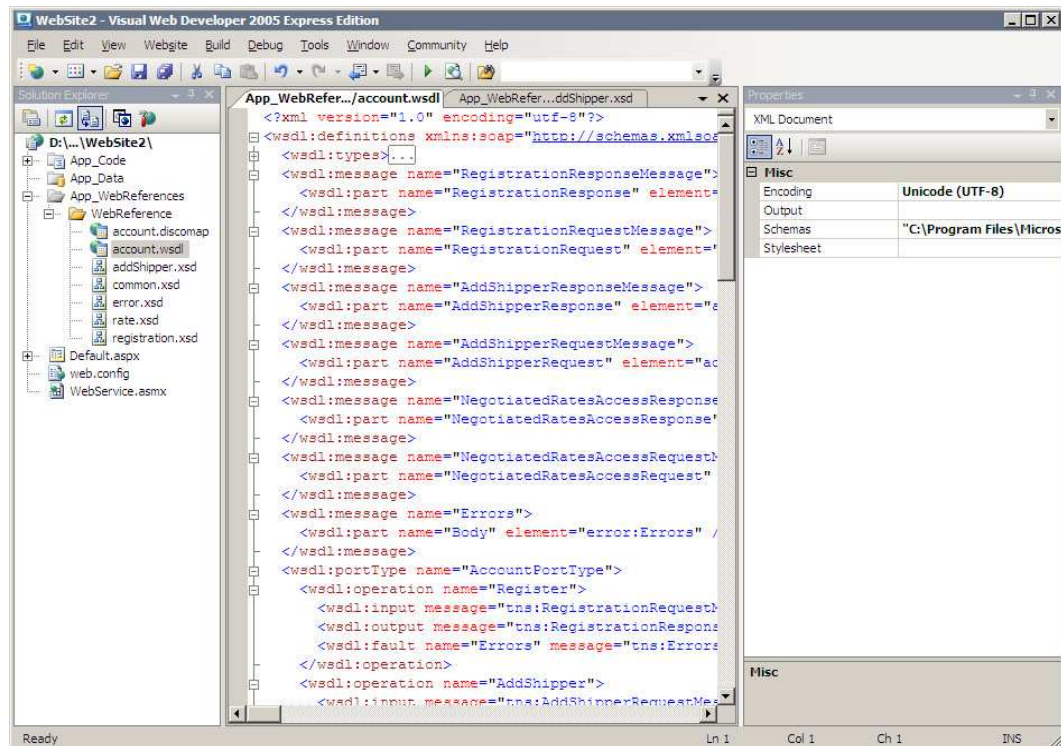

Figure 6: Microsoft's Web Visual Developer 2009 can create client applications for Web Services.

With any particular development environment, key parts of the development process will be similar or the same. Web Services development relies on a technology known as Web Services Definition Language (WSDL). This technology is a formal language based on the Extensible Markup Language (XML). WSDL precisely and completely describes Web Services, and standard Web Services documents themselves by "publishing" one or more WSDL files. The UPS Developer APIs support three different Web Services, each of which it documents in a separate WSDL file. These WSDL files are included in the UPS Developer Kits, and can be imported directly into a software development environment. Note, though, that the default behavior of some tools is to retrieve WSDLs from a central repository accessible on the Internet, most often the Universal Description, Discovery and Integration (UDDI) at http://uddi.xml.org/. UPS does not publish its WSDLs through these repositories. As a result, the development tool should be directed to import the WSDL locally rather than through a public directory.

1.5.4 Getting Technical Support

Technical Support (US)

There are four channels for obtaining support for the UPS Developer Kit (UDK) APIs all of which are accessed through the **UPS Developer Resource Center** at the following link:

http://www.ups.com/content/us/en/resources/techsupport/developercenter.html?WT.svl=SubNav
Or by following these steps:

1. Go to www.UPS.com.
2. Mouse over the Support tab and select Technology Support
3. In the left navigation panel of the page select the link "Developer Resource Center".

- Email Technical Support – available in the right hand column on the **UPS Developer Resource Center** web page. This is *the* support channel for technical support and questions regarding API integration. It is accessed by logging in to myUPS and attaching your XML Request/Response files and any other pertinent information about your integration [please see Appendix A for detailed instructions and screen shots]. UPS Email Technical Support can only support the XML Request/Response pair. They cannot consult customers and developers on how to integrate the XML into their internal or purchased software.

- UPS Developer Kit Community – available in the right hand column of the **UPS Developer Resource Center** web page. This is a community forum for developers to answer one another's questions and share information therefore the response times may be slower. If you have an immediate need for technical support contact UPS Email Tech Support above and they will respond within 4 business hours (see hours below). The remainder of the site contains online versions of all API developer guides and FAQs.

- UPS Developer Kit Knowledge Base – available in the right hand column of the **UPS Developer Resource Center** web page. This is a self-service support .pdf document that can be opened or downloaded. It contains over 240 frequently asked questions about every mode and service supported by the UDK APIs. It's also available in an online version at the UPS Developer Kit Community.

- General Question Phone Support (US only) – available in the right hand column of the **UPS Developer Resource Center** web page. Phone support is the *least comprehensive* support mechanism for the developer. This channel of support addresses questions about the user interface at ups.com and how to gain access to the APIs and navigate the Access Key request process. They do not provide technical support for XML Request/Response issues and questions. Those types of questions must go through Email Technical Support.

Getting Started with Email Technical Support

1. Got to ups.com and log in to My UPS.
2. Hover over the "Support" tab and select "Technology Support".
3. On the Technology Support page select the Developer Resource Center link from the left navigation.
4. On the Developer Resource Center page select the "Email UPS" link in the right hand column.
5. Enter all relevant information including name, enter email address, select Support Category "Technical Support", and select Support Topic "Developer Resource" [which identifies UPS Developer Kit APIs tech support]. Click next.
6. Scroll down to the middle of the email form and complete the fields "Your Telephone", "Stage of Development", "Developer Resource" which is which API you are integrating, "Attach File" where you attach your XML Request/Response Pair, and any pertinent description of the issues in the "What is your question or comment?" field.
7. Select "Send Email" button.
8. A response is provided that explains someone from UPS will contact you. Please base the response time on the detailed information listed below about tech support hours of operation and response times.

(For screen shots of this process please see Appendix A at the end of this guide.)

1st Level Email Technical Support Business Hours and Response Times:

a. Hours of operation for 1st Level Email Tech Support: 7:30am to 9pm EST Monday through Friday and 9am to 6pm EST Saturday and Sunday. The desk is closed on UPS Holidays.
b. 1st Level Email Tech Support email response time is planned to be within 4 business hours of the initial request. Business hours are defined as hours of operation of the tech support desks when service technicians are working.

   This means if you submit an email tech support request after business hours the 4 hour response clock will not begin until the following morning at 7:30am EST M-F and 9am EST Saturday and Sunday (UPS Holidays excluded).

PLEASE NOTE:
If you are sent an email from 1st *Level Email Tech Support stating your case log # has been escalated, the 24 hour planned response clock starts from the time you receive the email from 1*[st] *Level Email Tech Support (provided the Escalation Support desk is open). If not, then the clock will begin when the Escalation Support desk opens.*

Escalation Support Business Hours and Response Times:

    c. Hours of operation: 8am to 8pm EST Monday through Friday. The desk is closed weekends and on UPS Holidays.
    d. Escalation Support desk response time is planned to be within 24 hours during normal hours of operation.

This means if your case log is escalated at 8:30pm on Friday, you will not receive an email response from the Escalation Support desk at the latest until Monday at 8pm (Saturdays, Sundays, and Holidays are excluded). Response times are from the time the case log was escalated plus 24 hours which do NOT include the weekends or UPS holidays.

There may be some scenarios when the tech support team is meeting planned response times but it appears as if it's taking too long. Below is a brief example where the planned response time is met but nothing happened over the weekend.

Example:
        Customer submits tech support email at 7am on Friday. The clock for 4 hour response will not begin until 7:30am EST for the 1st level tech support team. They respond within 4 hours at 11:30am EST that same Friday stating the case log has been escalated and providing the case log #.

        The escalation desk receives the case log at 11:30am EST. They begin work on evaluating the problem and have planned to either update the customer within 24 hours or solve the problem within 24 hours. Either way, the customer will hear from the escalation desk within 24 hours with some type of disposition on their case log. The escalation desk clock begins when they receive a case log from 1st level tech support during business hours, M-F 8am to 8pm EST. In this case, the clock begins at 11:30am EST if the escalation desk does not have an answer by 8pm EST on Friday the desk has until 11:30am EST the following Monday to either provide a resolution or a status update to the customer on the case log. The Escalation Desk continues work on the case log on Monday beginning at 8am EST. They receive resolution at 1030am EST Monday and send the resolution to the customer. The Escalation Desk has met their 24 hour planned response time.

Technical Support   (Non-US)

For Non-US countries supported by the UPS Developer Kit follow the instructions in Appendix A. However, to get to the UPS Developer Resource Center pages please complete the following steps.

1. Log in to My UPS for the country from which you downloaded the developer guides.
2. Select the Support tab and in the drop-down select Technology Support.
3. Select from the left navigation the "UPS Developer Resource Center" link.
4. Continue with email form as described above.

Please also note that email response times for non-US requests vary. Translations and escalations may delay the process. If a quicker response is required, please access the US web site directly and complete an email technical support form from the US web site.

1.5.5 Keeping Up-to-Date

As UPS adds new services and features, Developer APIs will evolve, offering more features and service benefits. Once you register to use UPS Developer APIs, UPS will notify you by e-mail of updates and changes to the Developer APIs. It is essential that an accurate e-mail address for your company be maintained. In addition, UPS recommends that you complete the secondary contact information to ensure that your organization receives the latest updates. You should update your profile when changes or responsibilities for the UPS Developer APIs change within your company. You can also return to the UPS Support area of ups.com for the latest updated information about UPS Developer APIs.

1.6 UPS Developer API Technologies for WebServices

Web Services are powerful technologies that let business applications in different enterprises communicate directly with each other. For example, a software application program that processes orders for a mail order retailer can use Web Services to communicate with software applications at UPS that automatically schedule the shipment for new orders.

Web Services are governed by standards bodies which include, but are not limited to, W3C and OASIS. They are not limited to particular vendors and are available to any software application. Applications created for one environment (such as Microsoft Windows) can seamlessly communicate with applications in a different environment (such as Linux) without worrying about incompatibility of the different environments.

Web Services are supported by a wide variety of software development environments, so virtually all software developers can easily add Web Services features to their applications.

In effect, Web Services create a World Wide Web, but for computer applications instead of people. With Web Services, communications between enterprises happens rapidly, efficiently, and reliably.

Two technologies make up the core of Web Services—the Extensible Markup Language (XML) and the Simple Object Access Protocol (SOAP). A third technology, Web Services Definition Language (WSDL) uses XML and SOAP to define specific Web Services.

This section concludes by describing security and error reporting for Web Services.

1.6.1 Extensible Markup Language (XML)

The Extensible Markup Language (XML) is a standard governed by the World Wide Web Consortium, the governing body for web standards and guidelines. XML provides a way to identify the structure of content within a document. Figure 1 shows how a simple XML document could describe a book.

As the figure illustrates, XML distinguishes different parts of a document with labels known as tags. Tags in the example include <book>, <title>, <author>, <firstname>, etc. In this example the publisher for the book is John Wiley and Sons.

```xml
<?xml version="1.0" encoding="UTF-8" ?>
<book>
    <title>
        HTTP Essentials: Protocols for Secure, Scaleable Web Sites
    </title>
    <author>
        <firstname>
            Stephen
        </firstname>
        <lastname>
            Thomas
        </lastname>
    </author>
    <publisher>
        John Wiley and Sons
    </publisher>
    <year>
        2001
    </year>
    <isbn>
        0-471-398233
```

Figure 7: XML identifies the structure of documents, as in this document describing a book.

A great deal of information on XML is available on the Internet. A good starting point is the World Wide Web Consortium's main page on XML at http://www.w3.org/XML/.

1.6.2 Simple Object Access Protocol (SOAP)

While XML defines the information that Web Services exchange, the Simple Object Access Protocol (SOAP) defines the methods that Web Services use to transfer those documents. The SOAP standard defines several different approaches for sending XML documents, but most Web Services (including those from UPS) rely on a single approach. That method uses

the Hypertext Transfer Protocol (HTTP) to send a message from a Web Services client to a server. The server replies in the HTTP response. Figure 2 shows an example of a SOAP header portion of a web services message.

SOAP, like XML, is governed by the World Wide Web Consortium. More information can be found on the Internet at the W3C's XML Protocol Working Group's page, located at http://www.w3.org/standards/xml/

This security header block provides a mechanism for attaching security-related information targeted at a specific recipient in the form of a SOAP actor/role. UPSSecurity is a container element which provides the user access verification for the API Web Service.

```
<envr:Envelope xmlns:auth="http://www.ups.com/schema/xpci/1.0/auth"
     xmlns:upss="http://www.ups.com/XMLSchema/XOLTWS/UPSS/v1.0"
     xmlns:envr="http://schemas.xmlsoap.org/soap/envelope/"
     xmlns:xsd="http://www.w3.org/2001/XMLSchema"
     xmlns:common="http://www.ups.com/XMLSchema/XOLTWS/Common/v1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xmlns:wsf="http://www.ups.com/schema/wsf">
<envr:Header>
<upss:UPSSecurity>
<upss:UsernameToken>
<upss:Username></upss:Username>
<upss:Password></upss:Password>
</upss:UsernameToken>
<upss:ServiceAccessToken>
<upss:AccessLicenseNumber></upss:AccessLicenseNumber>
</upss:ServiceAccessToken>
</upss:UPSSecurity>
</env:Body>
</env:Envelope>
```

Figure 2: A sample of the UPSSecurity header portion of a web services message which structures its content as an XML document.

1.6.3 Web Services Definition Language (WSDL)

XML and SOAP are general technologies used widely for many different purposes. The technology that ties them specifically to Web Services is the Web Services Definition Language (WSDL). Enterprises that make Web Services available to other enterprises describe those services using WSDL. In effect, WSDL acts a service contract: it defines exactly what services the enterprise offers and how clients should access those services.

WSDL documents are XML documents which conform to a specific structure. Figure 3 shows a sample WSDL document. The current version of the specification for WSDL (version 1.1) is available as a draft submitted to the World Wide Web Consortium. It can be found on their web site at http://www.w3.org/TR/wsdl.

Although WSDL documents, like all XML documents, are ultimately textual information, they are not primarily intended for humans to read. Instead, WSDL documents are designed to be read by software applications and application development tools. An application tool such as Microsoft's Visual Studio can import a WSDL document and automatically generate software classes that access the Web Services the WSDL defines. Developers then add these classes to their applications, giving the programs the ability to use Web Services.

Some WSDL documents are published in special directories such as the Universal Description, Discovery, and Integration (UDDI) registry on the Internet. UPS does not currently publish WSDL documents for UPS Developer APIs in such directories. Instead, UPS delivers the WSDL documents as part of the software development kit.

```xml
<?xml version="1.0" encoding="UTF-8" ?>
<wsdl:definitions name="Track" xmlns="http://schemas.xmlsoap.org/wsdl/"
    xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/"
    xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"
    xmlns:http="http://schemas.xmlsoap.org/wsdl/http/"
    xmlns:xsd="http://www.w3.org/2001/XMLSchema"
    xmlns:mime="http://schemas.xmlsoap.org/wsdl/mime/"
    xmlns:error="http://www.ups.com/schema/xpci/1.0/error"
    xmlns:common="http://www.ups.com/XMLSchema/XOLTWS/Common/v1.0"
    xmlns:trk="http://www.ups.com/XMLSchema/XOLTWS/Track/v1.0"
    xmlns:tns="http://www.ups.com/XMLSchema/XOLTWS/Track/v1.0/local"
    targetNamespace="http://www.ups.com/XMLSchema/XOLTWS/Track/v1.0/local">
    <xsd:import namespace="http://www.ups.com/XMLSchema/XOLTWS/Common/v1.0"
        schemaLocation="common.xsd" />
    <xsd:import namespace="http://www.ups.com/XMLSchema/XOLTWS/Error/v1.0"
        schemaLocation="error2.xsd" />
    <xsd:import namespace="http://www.ups.com/XMLSchema/XOLTWS/Track/v1.0"
        schemaLocation="track.xsd" />
    <wsdl:types />
    <wsdl:message name="TrackInput">
        <wsdl:part name="Body" element="trk:TrackRequestDeliveryInterceptRequest" />
    </wsdl:message>
    <wsdl:message name="TrackOutput">
        <wsdl:part name="Body" element="trk:TrackResponseDeliveryInterceptResponse" />
    </wsdl:message>
    <wsdl:message name="TrackError">
        <wsdl:part name="TrackError" element="error:Errors" />
    </wsdl:message>
    <wsdl:portType name="TrackPortType">
        <wsdl:operation name="Track">
            <wsdl:input name="TrackRequestDeliveryInterceptRequest" message="tns:TrackInput" />
            <wsdl:output name="TrackResponseDeliveryInterceptResponse"
                message="tns:TrackOutput" />
            <wsdl:fault name="TrackError" message="tns:TrackError" />
        </wsdl:operation>
    </wsdl:portType>
    <wsdl:binding name="TrackBinding" type="tns:TrackPortType">
        <soap:binding transport="http://schemas.xmlsoap.org/soap/http" />
        <wsdl:operation name="Track">

            .
            <wsdl:fault name="TrackError">
                <soap:fault name="TrackError" use="literal" />
            </wsdl:fault>
        </wsdl:operation>
    </wsdl:binding>
    <wsdl:service name="Track">
        <wsdl:port name="TrackPortTypePort" binding="tns:TrackBinding">
            <soap:address location="https://www.developerkits.ups.com/webservices/Track" />
        </wsdl:port>
    </wsdl:service>
</wsdl:definitions>
```

Figure 3: WSDL documents are specialized XML documents that define Web Services. Example ONLY.

1.6.4 Securing Web Services

Organizations can offer Web Services using the public Internet, so Web Services standards provide many options for securing those services. Security options can ensure that only authorized parties are able to access Web Services, and they can protect confidential information that may be exchanged as part of Web Services communications. Because the breadth and depth of security options for Web Services are extensive, this subsection only describes security features relevant to UPS Developer APIs.

The most basic security services protect confidential information from eavesdropping by other devices on a network. To provide that protection, the UPS Developer APIs rely on the Secure Sockets Layer 3 (SSL3) protocol. When two systems communicate using SSL, the protocol creates a secure channel between them, and it encrypts all information that they exchange using this channel. The SSL protocol that UPS Developer APIs use is the same protocol used to secure millions of on-line purchases on the Web.

Figure 4: SSL creates a secure channel across a network and protects confidential communications using that channel.

In addition to protecting confidential information, the UPS Developer APIs also ensure that client applications are authorized to access UPS customer information. To gain that authorization, client applications must supply a username, password, and license key in all requests, as the example in Figure 5 shows. UPS corporate applications verify this information before returning sensitive information for the client applications.

```
<?xml version="1.0" encoding="UTF-8" ?>
<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/"
    xmlns:xsd="http://www.w3.org/2001/XMLSchema"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns:wsse="http://schemas.xmlsoap.org/ws/2002/04/secext"
    xmlns:upsa="http://www.ups.com/XMLschema/XOLTWS/upssa/v1.0
    xmlns:common="http://www.ups.com/XMLschema/XOLTWS/Common/v1.0
    xmlns:upss="http://www.ups.com/XMLschema/XOLTWS/UPSS/v1.0"
    xmlns:wsf="http://www.ups.com/schema/wsf">
    <env:Header>
        < upss:UPSSecurity>
            <upss:UsernameToken >
                < upss:Username></upss:Username >
                < upss:Password></upss:Password >
            </upss:UsernameToken >
            <upss:ServiceAccessToken >
                <upss:AccessLicenseNumber></upsss:AccessLicenseNumber>
            </upss:ServiceAccessToken >
        </upss:UPSSecurity>
    </env:Header>
    <env:Body>
        <!-- the content of the message goes here -->
    </env:Body>
</env:Envelope>
```

Figure 5: UPS Web Service requests must include a Username, Password and AccessLicense.

Included in the WSDL files that document the specific Web Services are the appropriate messages that client applications can use to pass the security credentials as SOAP header elements. Development tools can import the WSDL document and automatically format the request messages appropriately.

1.6.5 SSL Certificate Changes and Renewals

UPS uses the Chained Digital Certificates to improve security for UPS servers. Chained Digital Certificates requires the use of SSL 3.0.

Renewals of UPS.com SSL Certificates are coordinated by UPS Security Services every year. There is a concern that some UPS Developer Kit users who store UPS Certificates internally may have issues when SSL Certificates are renewed. It is recommended that UPS Developer Kit users not store UPS Certificates internally; however if a customer finds this necessary due to specific needs within their company, they may need to add renewed certificates to the their trust store.

There are a number of ways one can add a certificate to the application. One way to obtain the proper certificate is by placing a UPS Developer Kit URL, **https://onlinetools.ups.com/webservices/XAV,** for example, in a browser, connect to the

URL, and double-click on the "lock" on the bottom right of the window (using Internet Explorer 7). After that the steps can be followed to install the certificate.

Also, in the event that the aforementioned solution does not work successfully for you we have been provided with the following certificate which should allow you to connect once it has been successfully added. You should be able to paste the following string into Notepad and save the file locally. Then, it will be necessary to have the client application reference the file so that it will know that this is the trusted certificate for making a connection to UPS.

This is the Verisign Class 3 Secure Server CA - G2 certificate that the client must trust:
-----BEGIN CERTIFICATE-----

MIIGLDCCBZWgAwIBAgIQbk/6s8XmacTRZ8mSq+hYxDANBgkqhkiG9w0BAQUFADCB
wTELMAkGA1UEBhMCVVMxFzAVBgNVBAoTDlZlcmlTaWduLCBJbmMuMTwwOgYDVQQ
L
EzNDbGFzcyAzIFB1YmxpYyBQcmltYXJ5IENlcnRpZmljYXRpb24gQXV0aG9yaXR5
IC0gRzIxOjA4BgNVBAsTMShjKSAxOTk4IFZlcmlTaWduLCBJbmMuIC0gRm9yIGF1
dGhvcml6ZWQgdXNlIG9ubHkxHzAdBgNVBAsTFlZlcmlTaWduIFRydXN0IE5ldHdv
cmswHhcNMDkwMzI1MDAwMDAwWhcNMTkwMzI0MjM1OTU5WjCBtTELMAkGA1UEBhM
C
VVMxFzAVBgNVBAoTDlZlcmlTaWduLCBJbmMuMR8wHQYDVQQLExZWZXJpU2lnbiBU
cnVzdCBOZXR3b3JrMTswOQYDVQQLEzJUZXJtcyBvZiB1c2UgYXQgaHR0cHM6Ly93
d3cudmVyaXNpZ24uY29tL3JwYSAoYykwOTEvMC0GA1UEAxMmVmVyaVNpZ24gQ2xh
c3MgMyBTZWN1cmUgU2VydmVyIENBIC0gRzIwggEiMA0GCSqGSIb3DQEBAQUAA4IB
DwAwggEKAoIBAQDUVo9XOzcopkBj0pXVBXTatRlqltZxVy/iwDSMoJWzjOE3JPMu
7UNFBY6J1/raSrX4Po1Ox/lJUEU3QJ90qqBRVWHxYISJpZ6AjS+wIapFgsTPtBR/
RxUgKIKwaBLArlwH1/ZZzMtiVlxNSf8miKtUUTovStoOmOKJcrn892g8xB85essX
gfMMrQ/cYWIbEAsEHikYcV5iy0PevjG6cQIZTiapUdqMZGkD3pz9ff17Ybz8hHyI
XLTDe+1fK0YS8f0AAZqLW+mjBS6PLlve8xt4+GaRCMBeztWwNsrUqHugffkwer/4
3RlRKyC6/qfPoU6wZ/WAqiuDLtKOVImOHikLAgMBAAGjggKpMIICpTA0BggrBgEF
BQcBAQQoMCYwJAYIKwYBBQUHMAGGGGh0dHA6Ly9vY3NwLnZlcmlzaWduLmNvbTAS
BgNVHRMBAf8ECDAGAQH/AgEAMHAGA1UdIARpMGcwZQYLYIZIAYb4RQEHFwMwVjA
o
BggrBgEFBQcCARYcaHR0cHM6Ly93d3cudmVyaXNpZ24uY29tL2NwczAqBggrBgEF
BQcCAjAeGhxodHRwczovL3d3dy52ZXJpc2lnbi5jb20vcnBhMDQGA1UdHwQtMCsw
KaAnoCWGI2h0dHA6Ly9jcmwudmVyaXNpZ24uY29tL3BjYTMtZzIuY3JsMA4GA1Ud
DwEB/wQEAwIBBjBtBggrBgEFBQcBDARhMF+hXaBbMFkwVzBVFglpbWFnZS9naWYw
ITAfMAcGBSsOAwIaBBSP5dMahqyNjmvDz4Bq1EgYLHsZLjAlFiNodHRwOi8vbG9n
by52ZXJpc2lnbi5jb20vdnNsb2dvLmdpZjApBgNVHREEIjAgpB4wHDEaMBgGA1UE
AxMRQ2xhc3MzQ0EyMDQ4LTEtNTIwHQYDVR0OBBYEFKXvCxHOwEEDo0plkEiyHOBX
LX1HMIHnBgNVHSMEgd8wgdyhgcekgcQwgcExCzAJBgNVBAYTAlVTMRcwFQYDVQQK
Ew5WZXJpU2lnbiwgSW5jLjE8MDoGA1UECxMzQ2xhc3MgMyBQdWJsaWMgUHJpbWFy
eSBDZXJ0aWZpY2F0aW9uIEF1dGhvcml0eSAtIEcyMTowOAYDVQQLEzEoYykgMTk5
OCBWZXJpU2lnbiwgSW5jLiAtIEZvciBhdXRob3JpemVkIHVzZSBvbmx5MR8wHQYD
VQQLExZWZXJpU2lnbiBUcnVzdCBOZXR3b3JrghB92f4Hz6getxB5Z/uniTTGMA0G
CSqGSIb3DQEBBQUAA4GBAGN0Lz1Tqi+X7CYRZhr+8d5BJxnSf9jBHPniOFY6H5Cu
OcUgdav4bC1nHynCIdcUiGNLsJsnY5H48KMBJLb7j+M9AgtvVP7UzNvWhb98lR5e
YhHB2QmcQrmy1KotmDojYMyimvFu6M+O0Ro8XhnF15s1sAIjJOUFuNWI4+D6ufRf
-----END CERTIFICATE-----

Finally, for more information on installing the latest VeriSign CA Root Certificate, please click on the links below:

https://knowledge.verisign.com/support/ssl-certificates-support/index?page=content&id=SO7154&actp=search&viewlocale=en_US&searchid=1308235124970

https://knowledge.verisign.com/support/ssl-certificates-support/index?page=content&actp=CROSSLINK&id=AR1553

https://knowledge.verisign.com/support/ssl-certificates-support/index?page=content&id=SO4785&actp=LIST

1.6.6 Indicating Errors in Client Application Requests

When an error occurs in a client application's request, UPS Developer APIs report that error using the standard SOAP message format. That message format defines a specific message type, known as a *fault*, for error reporting. The essential components of a fault message are the faultcode, faultstring, faultactor, and detail.

The faultcode element can contain one of four values to indicate the type of error that the UPS Developer APIs encountered.

- VersionMismatch: The SOAP message that the client application sent used a version of the SOAP protocol that the UPS Developer APIs could not understand.

- MustUnderstand: The SOAP message that the client application sent included an element in the header that the UPS Developer APIs could not understand.

- Client: The request that the client application sent was not valid.

- Server: Although the client application's request did not have any errors itself, the UPS Developer APIs encountered an error when trying to process it.

The faultstring element contains a textual description of the error.

The faultactor element can indicate which system detected or generated the error. If present, it contains a Uniform Resource Identifier (URI) for that system.

The detail element contains more information about the error. It includes a specific error code and a textual description for that code.

> **Note: UPS encourages application developers to display the description of any unexpected errors or warnings to the user. This information can be invaluable when diagnosing problems, and will normally be required by UPS Technical Support.**
>
> **It will be extremely helpful if the developer implements and maintains logs of all transactions and activity, including errors or warnings.**

1.7 Understanding Address Validation Street Level Web Services

With Address Validation Street Level web services, you can assist your customers by ensuring that addresses they provide are accurate. You can also use the API to determine if an address is a commercial or residential address. The API can help you reduce costly returns, provide better service to your customers, and more accurately determine shipping costs.

1.7.1 Address Validation

The Address Validation Street Level API can check addresses against the United States Postal Service database of valid addresses in the US and Puerto Rico. If an address is not valid according to this database, the API can optionally provide a list of valid addresses that might correspond to the intended address.

Figure 1 shows how client applications use address validation services. The process begins when the client sends an AddressValidationRequest message to UPS API Services. UPS replies to this request with an AddressValidationResponse message.
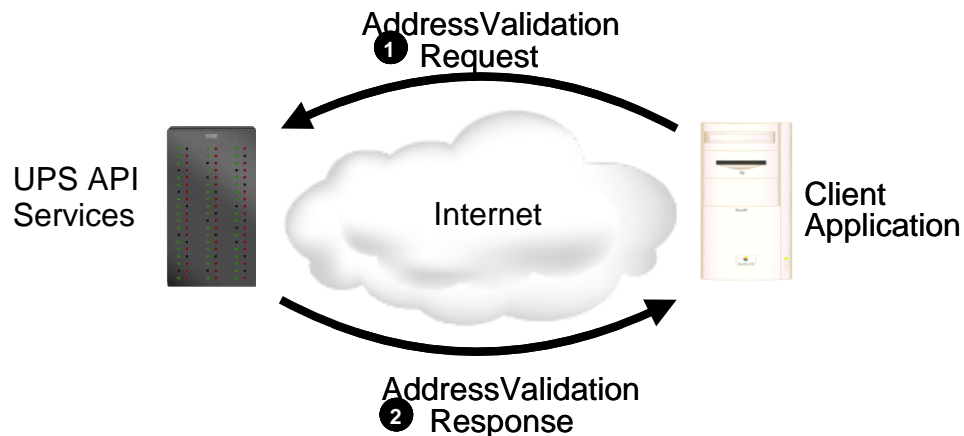
Figure 1. Address Validation Requires a Single Request-Response Exchange

Client applications can request either a general validation of a city, state, and zip code, or a validation of specific, street-level address. The RegionalRequestIndicator in the request determines which type of validation the application desires.

Client applications also indicate the maximum number of candidate addresses they wish to receive in the response. UPS returns candidate addresses only if the address that the client provides is not valid. Candidate addresses are valid addresses that might correspond to the requested address. If a client does not wish to receive candidate addresses, it can specify zero (0) for this value.

Example:

Validation of the SLAV is not at the suite/apt# level but, if a perfect match that contains a suite number or apt# is provided; the API will return a response that contains those elements.

Company or Name:	LAKESIDE PAIN CENTER
AddressLine:	6010 LAKESIDE COMMONS DR.
AddressLine:	STE B
City:	Macon
State:	GA
Zip:	31210
Country:	US

If the following address is sent in a request, the system will check if it exists. In this case, this address does not exist but the API will be able to return an address that maybe similar to the one that was provided as a candidate.

Company or Name:	LAKESIDE PAIN CENTER
AddressLine:	6010 LAKESIDE
AddressLine:	
City:	Macon
State:	
Zip:	312
Country:	US

The response for a request with the address provided below will illustrate the fact that in order to get a correct address including the suite/apt #; those elements must be provided accurately or the address must be distort completely for the system to perform a thorough search.

Company or Name:	LAKESIDE PAIN CENTER
AddressLine:	6010 LAKESIDE COMMONS DR.
AddressLine:	STE X
City:	Macon
State:	GA
Zip:	31210
Country:	US

1.7.2 Address Classification

The Address Validation Street Level API can also determine whether a given address is a residential or commercial address. Address classification uses the same request/response exchange as address validation. In fact, classification and validation can be combined in a single request.

For address classification, UPS determines whether an address is a residence or a commercial location. For address classification requests, it is important that the user include as much information as possible or available about the address, for example, a contact name or "attention to" value. Such information is important for accurate results, as many locations include both commercial and residential entities (such as a deli on the ground floor of an apartment building).
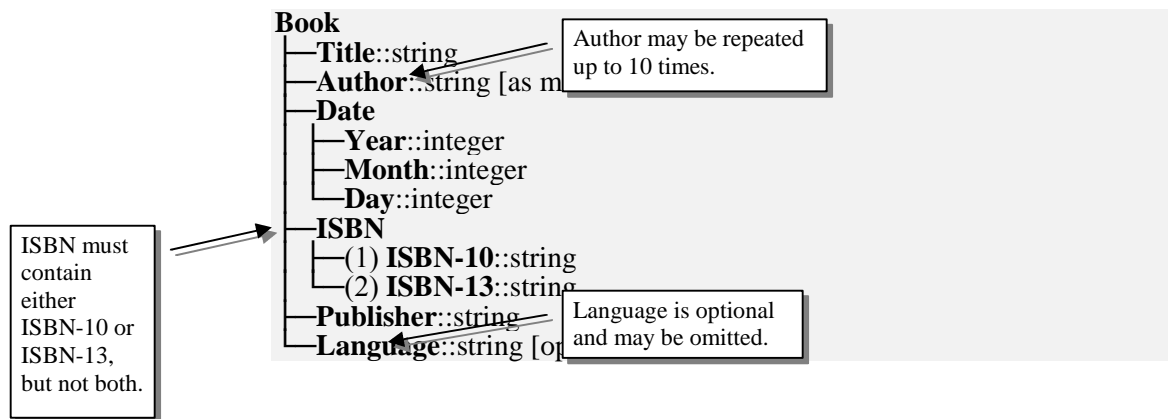
Please Note: Consignee name is heavily weighted when determining resi / comm classification. Contrary to popular assumptions, an "address" in and of itself is not resi or comm, but rather the aggregate of all address elements, including and especially consignee name, are used to determine the classification

1.8 The Address Validation Street Level Web Services Reference

This section documents the details of the web service messages, including the requests that clients send to UPS and the responses that UPS returns. The first subsection explains the notation this document uses, while the following subsection details the address validation web service itself.

Describing UPS API Web Services Messages

As noted previously, all messages that UPS API Web Services send and receive consist of XML documents. This reference section defines the specific elements within those XML documents. Because XML documents follow a defined structure, this reference shows those elements using a compact, graphical notation. Here is an example of that notation, with some additional annotations to highlight important conventions:

Book
  ├─**Title**::string
  ├─**Author**::string [as m

> Author may be repeated up to 10 times.

  ├─**Date**
    ├─**Year**::integer
    ├─**Month**::integer
    └─**Day**::integer
  ├─**ISBN**

> ISBN must contain either ISBN-10 or ISBN-13, but not both.

    ├─(1) **ISBN-10**::string
    └─(2) **ISBN-13**::string
  ├─**Publisher**::string
  └─**Language**::string [op

> Language is optional and may be omitted.

The figure indicates that a "Book" can contain six different child elements: Title, Author, Date, ISBN, Publisher, and Language. The Language element is marked "optional" so it is not required. All of the other five elements are required, however. Notice that the Author element can appear as many as ten times within the Book document. (The technical name for this property is *cardinality*.)

Some of the child elements can themselves contain child elements. The Date element, for example, consists of a Year element, a Month element, and a Day element.

Finally, notice that the children of the ISBN element (ISBN-10 and ISBN-13) have a number in parentheses preceding them. This number indicates a choice. In this example, the ISBN element must have either an ISBN-10 child element or an ISBN-13 child element, but it cannot have both.

If an element has no child elements, the notation convention shows the type of content that the element can contain. In the example, Year, Month, and Day must contain integer numbers, while other primitive elements can contain arbitrary text strings.

1.8.1 XAV WebService Schema

The Address Validation Web Service Schema

Overview

Access the Service at: https://onlinetools.ups.com/webservices/XAV
Service Operation: ValidateAddress

ValidateAddress Operation

Type: Request-Response (client sends a request to UPS and the UPS server replies with a response)
SOAPAction Header: http://onlinetools.ups.com/webservices/XAVBinding

Name	XPath	Required	Max Allowed	Type	Length	Description	Validation Rules
XAVRequest	/XAVRequest	Yes	One	container			
Request	/XAVRequest/Request	Yes	One	container	N/A	XAV Request Container.	Please see country validation and classification matrix for valid request combinations
RequestOption	/XAVRequest/Request/Request Option	Yes	One	string	1	Identifies the optional processing to be performed.	If not present or invalid value then an error will be sent back. Valid Values are: 1 - Address Validation 2 - Address Classification 3 - Address Validation and Address Classification. Note: Please see Country Validation and Classification Matrix for valid request combinations
TransactionReference	/XAVRequest/Request/TransactionReference	No	One	container	N/A	TransactionReference identifies transactions between client and server.	
CustomerContext	/XAVRequest/Request/TransactionReference/CustomerContext	No	One	string	1...512	The client uses CustomerContext to synchronize request/response pairs. The client establishes CustomerContext, which can contain any information you want, as along as it is valid XML; it is echoed back by the server.	
RegionalRequestIndicator	/XAVRequest/RegionalRequestIndicator	No	One	string	0	If this indicator is present then either the region element or any combination of Political Division 1, Political Division 2, PostcodePrimaryLow and the PostcodeExtendedLow fields will be recognized for validation in addition to the urbanization element. If this tag is present, US and PR street level address validation will not occur. The default is to provide street level address validation. Not valid with the address classification request option.	
MaximumCandidateListSize	/XAVRequest/MaximumCandidateListSize	No	One	string	1..2	The maximum number of Candidates to return for this request.	Valid Values : 0 – 50 Default Value : 15

Name	XPath	Required	Max Allowed	Type	Length	Description	Validation Rules
AddressKeyFormat	/XAVRequest/AddressKeyFormat	Yes	One	container	N/A	AddressKeyFormat container.	The Key format is based on addressing standards jointly developed by the Postal Service and mailing industry. The information provided in the Address Key container will be returned in the same format.
ConsigneeName	/XAVRequest/AddressKeyFormat/ConsigneeName	No	One	string	1..40	Name of business, company or person. Ignored if user selects the RegionalRequestIndicator.	
AttentionName	/XAVRequest/AddressKeyFormat/AttentionName	No	One	string	1..40	Name of the building. Ignored if user selects the RegionalRequestIndicator.	Building Name value must to be used for Attention Name.
AddressLine	/XAVRequest/AddressKeyFormat/AddressLine	No	Threee	string	1..100	Address line (street number, street name and street type) used for street level information. Applicable to US and PR only. Ignored if user selects the RegionalRequestIndicator.	
PoliticalDivision2	/XAVRequest/AddressKeyFormat/PoliticalDivision2	Cond	One	string	1..30	City or Town name.	
PoliticalDivision1	/XAVRequest/AddressKeyFormat/PoliticalDivision1	Cond	One	string	1..30	State or Province/Territory name.	
PostcodePrimaryLow	/XAVRequest/AddressKeyFormat/PostcodePrimaryLow	Cond	One	string	1..10	Postal Code.	
PostcodeExtendedLow	/XAVRequest/AddressKeyFormat/PostcodeExtendedLow	Cond	One	string	1..10	4 digit Postal Code extension. For US use only.	
Region	/XAVRequest/AddressKeyFormat/Region	Cond	One	string	1..100	Single entry, containing in this order, PoliticalDivision2, PoliticalDivision1, PostcodePrimaryLow and PostcodeExtendedLow.	If this node is present the following tags will be ignored: Political Division 2, Political Division 1, PostcodePrimaryLow, and PostcodeExtendedLow. Valid only for US or PR origins only. Using this tag for non US/PR origins may cause address format errors.
Urbanization	/XAVRequest/AddressKeyFormat/Urbanization	No	One	string	1...30	Puerto Rico Political Division 3. Only valid for Puerto Rico.	

Name	XPath	Required	Max Allowed	Type	Length	Description	Validation Rules
CountryCode	/XAVRequest/AddressKeyFormat/CountryCode	Yes	One	string	2	Country Code.	Please see Country Validation and Classification Matrix for valid request combinations.
XAVResponse	/XAVResponse	Yes	One	container	N/A	XAV Response Container.	
Response	/XAVResponse/Response	Yes	One	container	N/A	Response Container.	
ResponseStatus	/XAVResponse/Response/ResponseStatus	Yes	One	container	N/A	Response Status Container.	
Code	/XAVResponse/Response/ResponseStatus/Code	Yes	One	string	1	Identifies the success or failure of the transaction. 1 = Success 0 = Failure	
Description	/XAVResponse/Response/ResponseStatus/Description	Yes	One	string	1...35	Describes Response Status Code. Returns text of 'Success' or 'Failure'.	
Alert	/XAVResponse/Response/Alert	No	One	container	N/A	Alert Container. There can be zero to many alert containers with code and description.	
Code	/XAVResponse/Response/Alert/Code	Yes*	One	string	1...10	Warning code returned by the system.	
Description	/XAVResponse/Response/Alert/Description	Yes*	One	string	1...150	Warning messages returned by the system.	
TransactionReference	/XAVResponse/Response/TransactionReference	No	One	container	N/A	Transaction Reference Container.	

Name	XPath	Required	Max Allowed	Type	Length	Description	Validation Rules
CustomerContext	/XAVResponse/Response/TransactionReference/CustomerContext	No	One	string	1...512	The CustomerContext Information which will be echoed during response.	
ValidAddressIndicator	/XAVResponse/ValidAddressIndicator	Cond	One	string	0	Indicates query found an exact match.	
AmbiguousAddressIndicator	/XAVResponse/AmbiguousAddressIndicator	Cond	One	string	0	Indicates query could not find exact match. Candidate list follows.	
NoCandidatesIndicator	/XAVResponse/NoCandidatesIndicator	Cond	One	string	0	No Candidate found.	
AddressClassification	/XAVResponse/AddressClassification	No	One	container	N/a	AddressClassification Container.	
Code	/XAVResponse/AddressClassification/Code	Yes*	One	string	1	Contains the classification code of the input address. 0 - UnClassified 1 - Commercial 2 – Residential	
Description	/XAVResponse/AddressClassification/Description	Yes*	One	string	1..15	Contains the text description of the address classification code: - UnClassified - Commercial - Residential	
Candidate	/XAVResponse/Candidate	No	One	container	N/A	Candidate Container.	
AddressClassification	/XAVResponse/Candidate/AddressClassification	No	One	container	N/A	AddressClassification Container.	
Code	/XAVResponse/Candidate/AddressClassification/Code	Yes*	One	string	1	Contains the classification code of the address: 0 - UnClassified 1 - Commercial 2 - Residential	

Name	XPath	Required	Max Allowed	Type	Length	Description	Validation Rules
Description	/XAVResponse/Candidate/AddressClassification/Description	Yes*	One	string	1..15	Contains the text description of the address classification code: - UnClassified - Commercial - Residential	
AddressKeyFormat	/XAVResponse/Candidate/AddressKeyFormat	Yes	One	container	N/A	AddressKeyFormat Container.	
ConsigneeName	/XAVResponse/Candidate/AddressKeyFormat/ConsigneeName	No	One	string	1..40	Name of business, company or person. Not returned if user selects the RegionalRequestIndicator.	
AttentionName	/XAVResponse/Candidate/AddressKeyFormat/AttentionName	No	One	string	1..40	Name of building. Not returned if user selects the RegionalRequestIndicator.	
AddressLine	/XAVResponse/Candidate/AddressKeyFormat/AddressLine	No	Three	string	1..100	Address line (street number, street name and street type, and political division 1, political division 2 and postal code) used for street level information. Applicable to US and PR only. Not returned if user selects the RegionalRequestIndicator.	
PoliticalDivision2	/XAVResponse/Candidate/AddressKeyFormat/PoliticalDivision2	Cond	One	string	1..30	City or Town name.	
PoliticalDivision1	/XAVResponse/Candidate/AddressKeyFormat/PoliticalDivision1	Cond	One	string	1..30	State/Province. Returned if the location is within a State/Province/Territory. For International: returned if user enters valid Country Code, and City/postal code and it has a match. For Domestic addresses, the value must be a valid 2-character value (per US Mail standards). For International the full State or Province name will be returned.	
PostcodePrimaryLow	/XAVResponse/Candidate/AddressKeyFormat/PostcodePrimaryLow	Cond	One	string	1..10	Low-end Postal Code. Returned for countries with Postal Codes. May be alphanumeric	
PostcodeExtendedLow	/XAVResponse/Candidate/AddressKeyFormat/PostcodeExtendedLow	Cond	One	string	1..10	Low-end extended postal code in a range. Example in quotes: Postal Code 30076-'1234'. Only returned in candidate list. May be alphanumeric	

Name	XPath	Required	Max Allowed	Type	Length	Description	Validation Rules
Region	/XAVResponse/Candidate/AddressKeyFormat/Region	Cond	One	string	1..100	Single entry containing in this order Political Division 2, Political Division 1 and Post Code Primary Low and/or PostcodeExtendedLow.	
Urbanization	/XAVResponse/Candidate/AddressKeyFormat/Urbanization	No	One	string	1...30	Puerto Rico Political Division 3. Only Valid for Puerto Rico.	
CountryCode	/XAVResponse/Candidate/AddressKeyFormat/CountryCode	Yes	One	string	2	A country code. Required to be returned.	

1.9 Customer Integration Environment

The Customer Integration Environment allows customers to test their application prior to launch. This environment is intended for integration testing of customer applications with the UPS servers. No stress testing should ever be performed by customers against any UPS systems.

Once your application has been thoroughly tested, you should redirect the application to the UPS Production Environment.

Please note that while the Customer Integration Environment maintains system availability 24 hours, 7 days each week, there are occasional system down times to allow for server maintenance.

1.9.1 Street Level Address Validation

Test your Address Validation Street Level application with valid and invalid address elements.

Note: In the Customer Integration Environment, Street Level Address Validation will only produce results for addresses in New York (NY) and California (CA).

It is recommended that you use addresses that are familiar to you, for example, your home or business address. This will ensure that your application has the ability to process success and error responses correctly.

For integration testing, you should direct your Address Validation Street Level **WebServices** software to https://wwwcie.ups.com/webservices/XAV.

System Availability

The Customer Integration Environment is available 24 hours a day, 7 days a week.

Server Availability Check

All of the UPS services work using HTTPS POST. Using the same URL as you point your application to, perform an HTTP GET. If the server is available, it will reply with the service name, remote user, server port, and server name and servlet path. To see this in action, type the following URL in your web browser:

https://wwwcie.ups.com/webservices/XAV

You should see the following in the browser window:
Service Name: XAV
Remote User: null
Server Port: 443
Server Name: wwwcie.ups.com
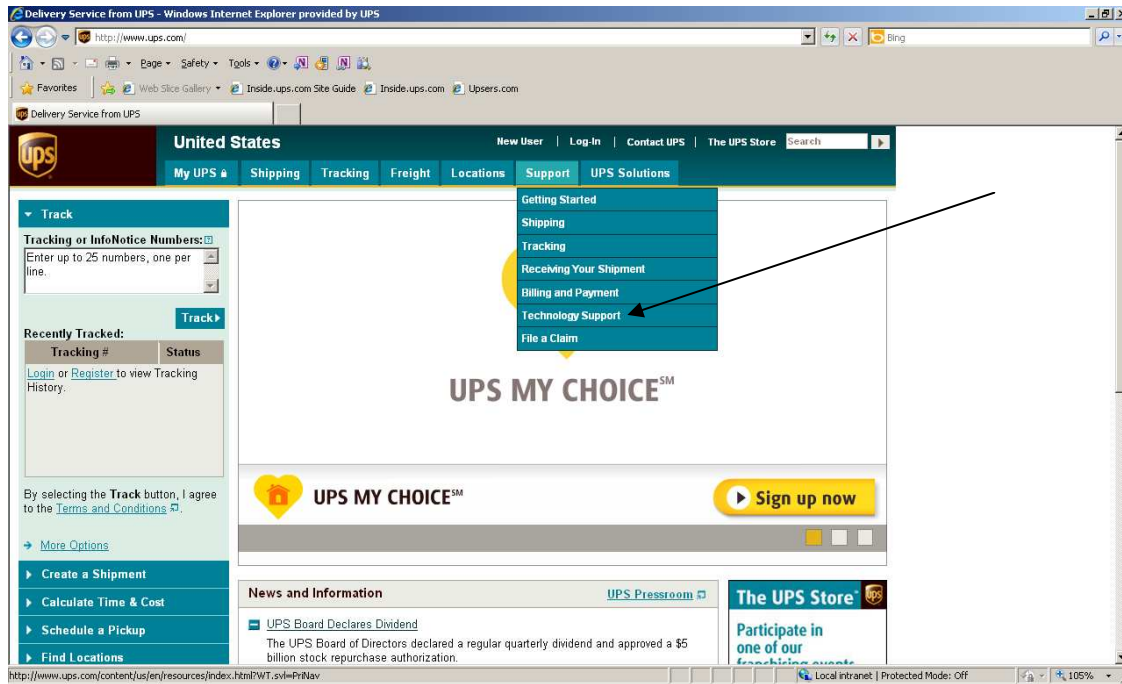**Servlet Path: /XAV**

Once testing is completed please direct your Address Validation Street Level WebServices software to **https://onlinetools.ups.com/webservices/XAV**

Appendix A - Accessing Tech Support (US Site Example)

Go to ups.com and log in to myUPS with your ID and PW.

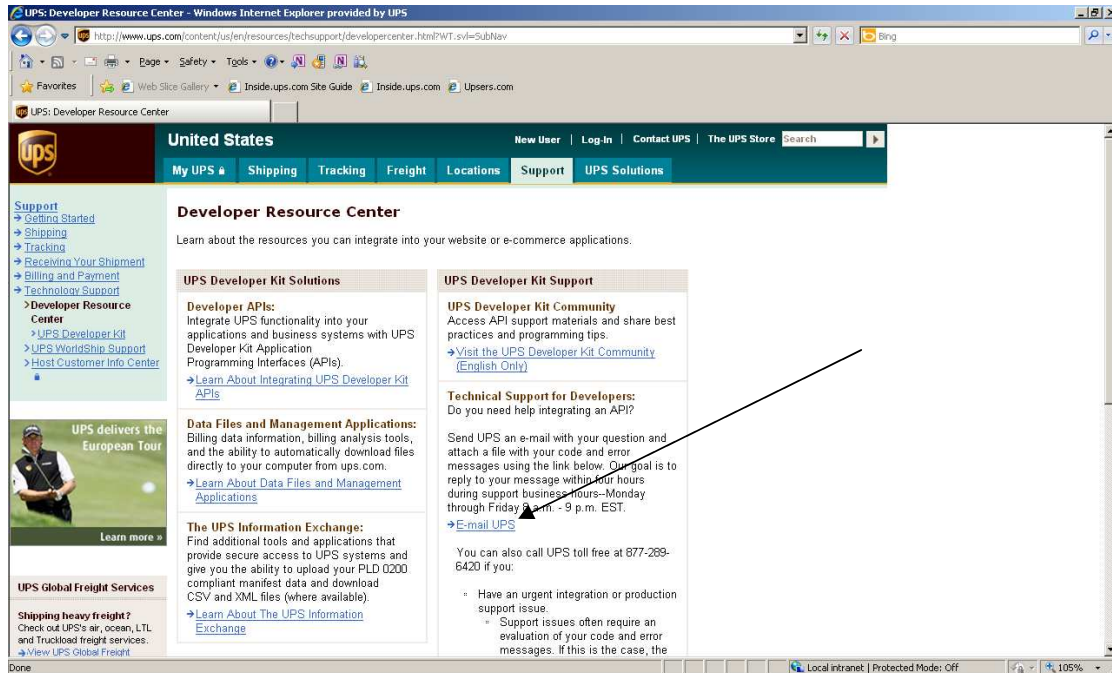Hover over the "Support" tab, and select "Technology Support" from the drop-down.

From the Technology Support page select the Developer Resource Center link from the left navigation.

From the Developer Resource Center page select the "Email UPS" link in right hand column.

Complete Name, email address, Support Category must be "Technical Support", and Support Topic must be "Developer Resource". Select the "Next" button.

Scroll down the page and complete the remainder of the email form including "Your Telephone", "Stage of Development", "Developer Resource" which is which API you are integrating, "Attach File" where you attach your XML Request/Response Pair, and any pertinent description of the issues in the "What is your question or comment?" field. Select "Send Email" button.

The screen below will appear. Please see "Technical Support (US)" within this document for tech support hours of operation and response times.

Appendix B – Address Validation Street Level WebServices Error Codes

To discover errors, check the ResponseStatusCode element. A "1" normally indicates a successful response, whereas a "0" indicates an error, either Transient or Hard. When an error occurs there will also be an error code, and an error description.

Success – Successful responses may or may not include **Warnings**.

- (without warnings) Request is processed as anticipated by the client.
- (with warnings) *Warning* messages indicate that UPS was able to process the request; however (potentially) unanticipated results have also occurred. The warning contains information in the response that should be passed to the end user.

Errors – will return two different levels of severity.

- *Transient* errors are temporary errors, due to temporary high server loads or scheduled maintenance, for example. The application may re-issue the request at a later time.
- *Hard* errors indicate that an error existed in the request that UPS could not resolve. These errors are critical and prevent requests from processing.

Applications should not re-issue requests with Hard errors without first correcting the error.
The following table lists the errors that UPS may return in response to a request.

Error Code	Severity	Description	Condition
264001	Transient	AV Service is not available.	Adapter parsing error, business process calling error, backend service is unavailable, etc.
264002	Hard	Country Code is invalid or missing.	The country code is not US or PR. (or) CountryCode element is missing.
264003	Hard	The Maximum allowable Candidate List size has been exceeded within the User Request.	The maximum candidate list size requested from the user has been exceeded.
264004	Hard	The maximum validation query time has been exceeded due to poor address data.	Request has timed out. Usually due to insufficient or poor address data from client.
264005	Hard	Address classification is not valid for a regional request.	The customer submits a request for address classification with a regional address format.
264006	Hard	Invalid candidate list size.	The maximum candidate list size given by the customer is not a numeric value between 0 and 2147483647.
264007	Hard	Address classification is not allowed for the country requested.	The request contains address classification with a country code that is not supported for classification.
264008	Hard	Country code and address format combination is not allowed.	Country code and address format combination is not allowed.
264027	Hard	Additional address fields are needed to perform the requested operation.	The Country Code is valid but the other fields are blank. Additional fields need to be provided in order to validate or classify the address.
260000	Hard	XAV Web Service currently unavailable.	XAV Web service is not exposed or service is down for some reason.
250065	Hard	Invalid or missing request element.	Occurs when Request Container is missing or invalid in a request.
9261000	Hard	Invalid XAV Request Document	XAV SOAP request in invalid.

Error Code	Severity	Description	Condition
9264028	Hard	Invalid or missing request option.	RequestOption value is empty or outside the range 1 to 3 or element not present in request.
9264029	Hard	Missing address key format.	AddressKeyFormat container is missing.
9264030	Hard	The state is not supported in the Customer Integration Environment.	

XML Errors

Error Code	Severity	Description
10001	Hard	The XML document is not well formed.
10002	Hard	The XML document is well formed but the document is not valid.
10003	Hard	The XML document is either empty or null
10006	Hard	Although the document is well formed and valid, the element content contains values which do not conform to the rules and constraints contained in this specification
10013	Hard	The message is too large to be processed by the Application

Common Architecture Errors

Error Code	Severity	Description
20001	Hard	General process failure
20002	Hard	The specified service name, {0}, and version number, {1}, combination is invalid
20003	Hard	Please check the server environment for the proper J2EE ws apis

Common License and Access Control Errors

Error Code	Severity	Description
250000	Hard	No XML declaration in the XML document
250001	Hard	Invalid Access License for the tool. Please re-license.
250002	Hard	Invalid UserId/Password
250003	Hard	Invalid Access License number
250004	Hard	Incorrect UserId or Password
250005	Hard	No Access and Authentication Credentials provided
250006	Hard	The maximum number of user access attempts was exceeded
250007	Hard	The UserId is currently locked out, please try again in 24 hours
250009	Hard	License Number not found in the UPS database

Appendix C - Country Codes

UPS country code abbreviations generally follow the recommendations of the International Standards Organization, which publishes a list of currency abbreviations in ISO Standard 3166. The following table lists the ISO country codes that ISO had defined when this document was published. The latest information is available from the ISO web site.

Please note that not all UPS services are available in every country. For more information on UPS services, refer to the latest *UPS*

Rate and Service Guide available at http://www.ups.com.

Country Code	Country Name	Classification	Validation
US	United States	X	X
PR	Peurto Rico		X
CA	Canada	X	
AL	Albania		
DZ	Algeria		
AS	American Samoa		
AD	Andorra		
AO	Angola		
AI	Anguilla		
AG	Antigua and Barbuda		
AR	Argentina		
AM	Armenia		
AW	Aruba		
AU	Australia		
AT	Austria		
AZ	Azerbaijan		
AP	Azores		
BS	Bahamas		
BH	Bahrain		
BD	Bangladesh		
BB	Barbados		
BY	Belarus		
BE	Belgium		
BZ	Belize		
BJ	Benin		
BM	Bermuda		
BT	Bhutan		
BO	Bolivia		
BL	Bonaire		
BA	Bosnia and Herzegovina		
BW	Botswana		
BV	Bouvet Island		
BR	Brazil		
IO	British Indian Ocean		

Country Code	Country Name	Classification	Validation
	Territory		
BN	Brunei Darussalam		
BG	Bulgaria		
BF	Burkina Faso		
BI	Burundi		
KH	Cambodia		
CM	Cameroon		
CD	Channel Islands		
IC	Canary Islands		
CV	Cape Verde		
KY	Cayman Islands		
CF	Central African Republic		
TD	Chad		
CL	Chile		
CN	China		
CX	Christmas Island		
CC	Cocos (Keeling) Islands		
CO	Colombia		
KM	Comoros		
ZP	Congo (Democratic Republic of)		
CK	Cook Islands		
CR	Costa Rica		
CI	Cote D' Ivoire (Ivory Coast)		
HR	Croatia (Hrvatska)		
CB	Curacao		
CY	Cyprus		
CZ	Czech Republic		
DK	Denmark		
DJ	Djibouti		
DM	Dominica		
DO	Dominican Republic		
TP	East Timor		
EC	Ecuador		
EG	Egypt		
SV	El Salvador		
EN	England		
GQ	Equatorial Guinea		
ER	Eritrea		
EE	Estonia		
ET	Ethiopia		
FO	Faeroe Islands		
FK	Falkland Islands (Malvinas)		
FJ	Fiji		

Country Code	Country Name	Classification	Validation
FI	Finland		
FR	France		
GF	French Guiana		
PF	French Polynesia		
TF	French Southern Territories		
GA	Gabon		
GM	Gambia		
GE	Georgia		
DE	Germany		
GH	Ghana		
GI	Gibraltar		
GB	Great Britain (UK)		
GR	Greece		
GL	Greenland		
GD	Grenada		
GP	Guadeloupe		
GU	Guam		
GT	Guatemala		
GN	Guinea		
GW	Guinea-Bissau		
GY	Guyana		
HT	Haiti		
HM	Heard Island and McDonald Islands		
HN	Honduras		
HK	Hong Kong		
HU	Hungary		
IS	Iceland		
IN	India		
ID	Indonesia		
IE	Ireland		
IL	Israel		
IT	Italy		
JM	Jamaica		
JP	Japan		
JO	Jordan		
KZ	Kazakhstan		
KE	Kenya		
KI	Kiribati		
KO	Kosrae		
KW	Kuwait		
KG	Kyrgyzstan		
LA	Laos		
LV	Latvia		

Country Code	Country Name	Classification	Validation
LB	Lebanon		
LS	Lesotho		
LR	Liberia		
LY	Libya		
LI	Liechtenstein		
LT	Lithuania		
LU	Luxembourg		
MO	Macau		
MK	Macedonia		
MG	Madagascar		
ME	Madeira		
MW	Malawi		
MY	Malaysia		
MV	Maldives		
ML	Mali		
MT	Malta		
MH	Marshall Islands		
MQ	Martinique		
MR	Mauritania		
MU	Mauritius		
YT	Mayotte		
MX	Mexico		
FM	Micronesia		
MD	Moldova		
MC	Monaco		
MN	Mongolia		
MS	Montserrat		
MA	Morocco		
MZ	Mozambique		
MM	Myanmar		
NA	Namibia		
NR	Nauru		
NP	Nepal		
NL	Netherlands		
AN	Netherlands Antilles		
NT	Neutral Zone		
NC	New Caledonia		
NZ	New Zealand (Aotearoa)		
NI	Nicaragua		
NE	Niger		
NG	Nigeria		
NU	Niue		
NF	Norfolk Island		
KP	North Korea		

Country Code	Country Name	Classification	Validation
NB	Northern Ireland		
MP	Northern Mariana Islands		
NO	Norway		
OM	Oman		
PK	Pakistan		
PW	Palau		
PA	Panama		
PG	Papua New Guinea		
PY	Paraguay		
PE	Peru		
PH	Philippines		
PN	Pitcairn		
PL	Poland		
PO	Ponape		
PT	Portugal		
SA	Saudi Arabia		
QA	Qatar		
RE	Reunion		
RO	Romania		
RT	Rota		
RU	Russian Federation		
RW	Rwanda		
SS	Saba		
KN	Saint Kitts and Nevis		
LC	Saint Lucia		
VC	Saint Vincent and the Grenadines		
SP	Saipan		
WS	Samoa		
SM	San Marino		
ST	Sao Tome and Principe		
SF	Scotland		
SN	Senegal		
CS	Serbia and Montenegro		
SC	Seychelles		
SL	Sierra Leone		
SG	Singapore		
SK	Slovak Republic		
SI	Slovenia		
SB	Solomon Islands		
SO	Somalia		
ZA	South Africa		
GS	South Georgia and South Sandwich Islands.		

Country Code	Country Name	Classification	Validation
KR	South Korea		
ES	Spain		
LK	Sri Lanka		
NT	St. Barthelemy		
SW	St. Christopher		
VI	St. Croix		
EU	St. Eustatius		
SH	St. Helena		
UV	St. John		
KN	St. Kitts and Nevis		
LC	St. Lucia		
MB	St. Maarten		
TB	St. Martin		
PM	St. Pierre and Miquelon		
VL	St. Thomas		
VC	St. Vincent/Grenadine		
SD	Sudan		
SR	Suriname		
SJ	Svalbard and Jan Mayen Islands		
SZ	Swaziland		
SE	Sweden		
CH	Switzerland		
SY	Syria		
TA	Tahiti		
TW	Taiwan		
TJ	Tajikistan		
TZ	Tanzania		
TH	Thailand		
TI	Tinian		
TG	Togo		
TK	Tokelau		
TO	Tonga		
TL	Tortola		
TT	Trinidad and Tobago		
TU	Truk		
TN	Tunisia		
TR	Turkey		
TM	Turkmenistan		
TC	Turks and Caicos Islands		
TV	Tuvalu		
UG	Uganda		
UA	Ukraine		
UI	Union Island		

Country Code	Country Name	Classification	Validation
AE	United Arab Emirates		
UY	Uruguay		
UM	US Minor Outlying Islands		
SU	USSR (former)		
UZ	Uzbekistan		
VU	Vanuatu		
VA	Vatican CityState (Holy See)		
VE	Venezuela		
VN	Vietnam		
VR	Virgin Gorda		
VG	Virgin Islands (British)		
VI	Virgin Islands (U.S.)		
WL	Wales		
WF	Wallis and Futuna Islands		
WS	Western Samoa		
YA	Yap		
YE	Yemen		
ZR	Zaire		
ZM	Zambia		
ZW	Zimbabwe		

Appendix D - Country Classification and Validation Matrix

The correct combinations for Country Classification and Validation are listed below.
The classification determines whether a given address is residential or commercial.
A Country Classification is returned for the countries indicated below.
A Street Level Address Validation is returned for the countries indicated below.

Country	Classification	Validation
US	X	X
PR		X
CA	X	

Appendix E - Frequently Asked Questions: Address Validation Street Level

API	Category	Question	Answer
Address Validation Street Level	General	What countries' addresses can be validated by the Address Validation - Street Level API?	The Address Validation - Street Level API allows the validation of street level address in the US and Puerto Rico only. [Note: AVSL supports classification for US & Canadian addresses only.]
Address Validation Street Level	General	Does the Address Validation API classify addresses?	The Address Validation API does not classify addresses. The Address Validation - Street Level API classifies addresses in both US and Canada. The API classifies addresses as Residential or Commercial in keeping with UPS standards.
Address Validation Street Level	General	Why do we get back a candidate list of addresses even when the response has a Valid Address Indicator?	The API returns a candidate list even when there is a Valid Address Indicator because the parameters entered have more then one valid match. If the address that was entered as part of the request is returned as part of the Candidate list then that address is valid and should be used.
Address Validation Street Level	General	How exactly is street level AV completed? Do we use the USPS to update our information?	Currently the Address Validation Street Level API's database is updated at monthly intervals with new address information from USPS. Generally the database update will occur around the 15th of the month. The actual date changes from month to month dependent upon the amount of testing a given data set might require issues that are found, and other factors that can contribute to the swiftness of data validation. The database updates should synchronize the information with the USPS. Any addresses not currently available through UPS will be added in the following month.
Address Validation Street Level	General	How much time will it take to program/implement the Address Validation - Street Level API?	The programming/implementation of the Address Validation - Street Level APIs may vary and is strictly dependent on the skill level of the developer. An implementation of Address Validation Street Level may take as little as a week for a very skilled developer to as long as months for a less skilled developer.
Address Validation Street Level	Address Validation frequency of updates	How frequently are the databases updated for Address Validation Street Level?	Address Validation Street Level API 1. Classification = weekly on Sunday input from operations. 2. Validation = monthly day varies.
Address Validation Street Level	Batch Upload	Does either the Address Validation or Address Validation Street Level APIs offer the ability to batch upload?	No. Neither API provides batch upload. Only individual requests.

API	Category	Question	Answer
Address Validation Street Level	Suite/ Apt #	Does Address Validation Street Level API provide a candidate list for addresses that have suite/apt information?	The API does not return candidate lists for suite or apartment number ranges.
Address Validation Street Level	CASS Certified	Is the Address Validation Street Level API CASS certified or the data we receive CASS certified?	UPS doesn't provide any API or application with customer-facing CASS-certified address validation. CASS certification is required for discounts on USPS services, but not required for any UPS services or discounts. UPS address validation is not CASS-certified; it's also free as we are not competing with vendors that provide CASS-certified Address Validation software. The Address Validation API is provided to allow customers who don't already use CASS-certified Address Validation software, our Address Validation Street Level API can be used to help clean-up addresses for UPS shipments. UPS delivers to addresses that are not in the USPS database (some examples are addresses that are warehouses that don't accept mail and areas where the USPS only provides PO Box delivery) - so an invalid address may still be deliverable. Also, a valid address may be the wrong address, and still require an address correction. NOTE: The source of our data for address validation is the USPS that we subscribe to and refresh monthly. So for customers who do scrub their addresses with CASS-certified Address Validation software, the Address Validation API provided by UPS doesn't provide any additional benefit.
Address Validation Street Level	Resi/Comm Indicator	Which APIs provide address classification?	The Address Validation Street Level API provides address classification only.

API	Category	Question	Answer
Address Validation Street Level	Ambigous Address Indicator	How do we determine whether an address is "ambiguous" or not?	Ambiguous Address Indicator = returned when the address validation score for the entire address is below a UPS specified confidence threshold. Address Validation Score = average of detailed validation score and regional validation score. Detailed Validation Score = street number information validated based upon USPS feed using proprietary UPS validation database. Regional Validation Score = city, state, zip validated based upon USPS feed using proprietary UPS validation database. UPS address information is updated monthly through a subscription with USPS. In the case of the address you specified... "2724 S. PECK ROAD 91016". Detail portion 2724 S. PECK ROAD gets a grade of B 2724 PECK ROAD gets a grade of A Regional portion 91016 gets a grade of C Monrovia CA 91016 gets a grade of A When the two scores were averaged the score was below the threshold and therefore the ambiguous address indicator returned. In this scenario, had you removed the "S." with the same information you provided the validation score average would have been high enough and the Valid Address Indicator returned. Also, had you provided the city & state for the regional portion then the score on the regional side would have been high enough that when we averaged the two it would have raised the average over the threshold, even though the detailed portion had the "S." included, and a Valid Address Indicator would have been returned.
Address Validation Street Level	Batch Upload	Does the Address Validation Street Level API offer the ability to batch upload?	No. The API does not allow batch upload but only individual requests.
Address Validation Street Level	Resi/Comm Database	What process do UPS use to apply residential/commercial designations?	Driver classification at delivery is used to create a database. All tools, all shipping applications, all Driver classifications, all center audits, and all Billing access the same database. The information entered by the driver for changes is audited and edited by the center team prior to changes to the database being entered.
Address Validation Street	Valid/Invalid Address	How do I know whether the address I submitted is	If the address is entered incorrectly the API will return an AmbiguousAddressIndicator and a list of candidate addresses.

API	Category	Question	Answer
Level		correct?	If the address is entered correctly the API will return a ValidAddressIndicator and the correct address.
All	General - security	Do UPS support chained or unchained digital certificates?	Currently, the Ship API uses an unchained cert which will be migrated to chain Sept '09. In the case of the Ship API, INET is responsible for those urls and corresponding Digital Certs. They are being renewed at the end of this month as unchained. They will migrate to chain in Sept '09.
All	General XML - Coding - Limited XML Coding Knowledge	I have no XML coding knowledge do you have any recommendations for how to get started?	Thank you for your inquiry. The only direct example of the XML APIs implemented is the Brown and Brown store whose demo can be viewed by clicking the following link and viewing the .pdf document: http://www.ups.com/content/us/en/bussol/offering/online_tools/downloads.html. To become more familiar with XML we would have to recommend reviewing some of the references listed in the Bibliography section at the end of the Rating API - Package Developer's Guide. There are also examples of XML in both the Developer's and Reference Guides. The Xpath in the Developer's Guide lists the descriptions of the XML tags and potential values. Once one is familiar with XML, the Xpath will help you fashion specific requests which can be posted to our servers and receive a proper XML response. The "readme.html" document in the Developer's Kit will help you get started using the two guides. Please note that the APIs were designed to be implemented by customers with a prior knowledge of XML along with a programming language. The main programming requirements the UPS Developer APIs have is that the XML document must be submitted to our servers via a POST using HTTPS (SSL). Depending upon your business needs and programming knowledge, your application can be simple or elaborate. Unfortunately, we do not support code directly; however, Java and Visual Basic code examples are supplied in the Reference Guide which can help guide customers to develop their own application. These examples are for a theoretical implementation and one may use portions of the code provided based on their environment and their application's design. If you are still deciding if the UPS Developer APIs will fulfill your business needs, you may also want to contact your UPS Account Representative for further guidance.

API	Category	Question	Answer
All	UPS Logos High Resolution	How do I get access to higher resolution logos than what is available with downloads for the UPS Developer Kit - Developer APIs?	Customers are not routinely provided these UPS shield graphics without having a design/layout submitted to UPS Brand Management for approval. The customer needs to visit: https://www.upsbrandexchange.com/brandHome.awsp This site will take them through the process for downloading a limited set of sample images for layout, and how to secure an approval for customer use, as well as the high-resolution graphics.
All	Technical Support email form	Is XPCI a required field within the email support form?	No.
All	Technical Support email form	From where XPCI version number obtained is and what does it mean?	XPCI stands for XML Package Carrier Interface (XPCI) and defines a vocabulary and structure for describing packages, shipments, and the activity details for package carriers and their customers. XPCI is a set of DTDs that defines the terminology, transaction enveloping, and XML message definitions. For a client to be XPCI-compliant, the client must generate a well-formed XML message that validates against the XPCI DTDs. Several DTDs, organized into three categories, define XPCI: Vocabulary — This DTD defines the basic business vocabulary of XPCI. All tags used in a message are defined in this DTD. Interchange — This DTD defines the transaction-enveloping scheme. Every message includes transaction information. Message — Each message has an associated DTD that defines the vocabulary of the message. The version and date would have been related to versioning however the APIs were not versioned so they currently do not carry significance. They remain as part of the APIs so that in the event they are versioned, we have these elements "just in case".
All	Technical Support	How do I get technical support for the APIs at ups.com?	Go to the Developer Resource Center and select email support under the UPS Developer Kit Support Column.
All	System Down-Times	Are there any designated systems down times for the Developer APIs?	Yes. The overall reserved downtime for the CGI servers is Saturday 10:00 PM ET through Sunday 12:00 PM ET. However, often the window is shortened to two 15 minute intervals with one starting at 11 PM and the other occurring sometime between 1 and 3 AM ET Sunday morning for most weekends.

API	Category	Question	Answer
			The back end goes through numerous updates typically beginning at 11:00PM Saturday through 4:00AM Sunday. Typically traffic is handled in such a way that there is very little impact to customers, and any impact which does occur does so in the small 15 minute intervals mentioned previously. Having said this as this entire time is reserved for maintenance we inform customers of the possibility of experiencing issues throughout this time period so that if there are any issues which occur during maintenance we have a time window to troubleshoot and perform measures to resolve. On Sunday, the maintenance is really relegated to just ABR and freight.
All	ASMX	Are the Web Services versions of the APIs ASMX based?	No. All Web Services are XML based.
All	Web Services - Empty folders within the documentati on zip file.	The ship_dev_guide and Ship_Reference_gui de folders have some sub folders that look like they should contain some code examples / samples but they are all empty? XML_Samples Visual_Basic Code_samples All empty?	Unfortunately code samples are not provided with the Shipping API - Web Services version. The reason being is that a WSDL is included which provides all of the necessary information needed to successfully implement the API. These folders are typically utilized in the XML version of the APIs as there is no WSDL present. If the customer wishes to view the samples contained in the Shipping API they can download the documentation by logging into UPS.com, navigating to the UPS Developer Kit, and then clicking on the Shipping API link.

API	Category	Question	Answer
All	Pointing to the wrong URL for API	I keep getting, "XML document is well formed but the document is not valid." error message. What am I doing wrong?	The "XML document is well formed but the document is not valid" error message is generally returned when an element in the XML request does not adhere to the formatting defined within the Xpath section of that API's developer guide. When the API returns this error it indicates the field which is not valid in the ErrorLocationElementName element in the XML response. When we test the XML provided by you earlier in this email chain we are able to receive a successful response. This would indicate that you may be posting to an incorrect URL. The error message returned from the API should have contained a line similar to the following: <ErrorLocationElementName>XPATH TO FIRST ELEMENT WHERE XML DOESN'T MATCH EXPECTED FORMAT</ErrorLocationElementName> As previously stated, this element is included in the XML error response to point you to the element of the posted request which is not valid for the Tool. When further clarification is needed you can look up the element in question in the Xpath section of the Developer Guide for the particular API. If this element lists another API's request such as "TrackRequest" it would indicate that you are posting to that API's URL and need to adjust the URL you are sending your XML to.
All	Phone Support	Is phone support provided for the UPS Developer Kit - Developer APIs? If so, what is the number and what are the hours of operation?	Yes. Phone support is provided at 1st Level only and for basic API questions. This includes integration questions and production questions. However, customer's questions that cannot be answered verbally will be directed to the email support form at ups.com to escalate to 3rd level via email.Phone Support Hours: M-F 730am- 9pm EST Sa-Su 9am - 6pm EST 1800-247-9035

API	Category	Question	Answer
All	Examples of API Implementations	Are there any examples of implementations that we can review to understand how best to utilize the APIs?	We do not share customer implementations of our tools amongst customers. On occasion we do post case studies on ups.com and articles in customer-facing newsletters, but that is only after gaining permission from the customer and working with Legal, Customer Communications, etc. Please understand that the XML tool is only data, which is transparent to the end user. How the developer implements the tool and presents results back to the end user can vary from web site to web site. These web sites may not highlight the full functionality of the tool. We need to be able to describe the value proposition of the tool without depending on another customer's usage. If they must see a visual, Daniel Franz, the UPS Developer Kit product manager refers customers to a UPS Ready provider that actually shows a demo of our tools. This may be better than just a screenshot from one customer's web site. Interactive example at shipworks.com http://www.interapptive.com/shipworks/quicktour.html Also, UPS is a user of our tools. Our Calculate Time and Cost application uses our Rating and Time in Transit Tools; Internet Shipping using our Shipping Tool; and Tracking at ups.com uses our Tracking Tool.
All	Code languages supported	Do the APIs support PHP or Perl with code sample within the Developer Guides or the developer kit zip files?	Yes. We currently support PHP or Perl with sample code.