UPS OnLine® Tools
Tracking
Developers Guide

16 June 2008

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Important Information

UPS OnLine Tools Tracking Tool:

Your development of an application using the UPS OnLine Tools Tracking Tool is 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 OnLine Tools Tracking Too). For more information on all requirements for the UPS OnLine Tools Tracking Tool, please refer to the UPS Technology Agreement or the Customer Technology Agreement.

Key Legal Requirements for UPS OnLine Tools Tracking Tool:

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 OnLine Tools Tracking Tool to third parties, other than to persons having a bona fide interest in such information (e.g., the shipper, consignee or the third party payer).

Tracking Information. You must conspicuously display the following language, or such other language provided by UPS from time to time, in reasonable proximity to the tracking input and output information screens (which may include in a pop-up or daughter window browser accessed through a hypertext link located in reasonable proximity to the tracking input and output screens (See Tracking Information Section of this document):

> "NOTICE: The UPS package tracking systems accessed via this service (the "Tracking Systems") and tracking information obtained through this service (the "Information") are the private property of UPS. UPS authorizes you to use the Tracking Systems solely to track shipments tendered by or for you to UPS for delivery and for no other purpose. Without limitation, you are not authorized to make the Information available on any web site or otherwise reproduce, distribute, copy, store, use or sell the Information for commercial gain without the express written consent of UPS. This is a personal service, thus your right to use the Tracking Systems or Information is non-assignable. Any access or use that is inconsistent with these terms is unauthorized and strictly prohibited."

> You shall further design the application such that any Person must be required to affirmatively acknowledge acceptance of the language provided above before submitting a tracking transaction to the UPS Systems. (See Tracking Information Section of this document).

Consent to Use of UPS Mark.

- All screens or forms generated by your application including information received through the UPS OnLine Tools Tracking Tool 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 Notices. You must include in your application and any POD Letters you prepare 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 OnLine Tools Tracking Tool. Your application must present all data within each field received through the UPS OnLine Tools Tracking Tool without amendment, deletion or modification of any type.

Table of Contents

Welcome to UPS OnLine® Tools

Welcome to the UPS OnLine Tools Developers Guide. This guide provides the information you need to begin using UPS OnLine Tools.

The UPS OnLine Tools offer a fast and convenient way to access UPS service information using the Internet. With these tools, 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.

How to Use this Guide

If you are an experienced developer, you can begin developing applications quickly after reviewing "Required Steps for Integrating with UPS OnLine Tools" for a brief overview of the tools.

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

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

If you would like to learn more about what UPS OnLine Tools can do for your applications, "Understanding Tracking" explains the services that this tool offers.

For a complete technical reference to the OnLine Tools, "Tracking Reference" includes a complete programming reference.

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

What's New for July 2008

The Developer's Guide now presents a Tabular Interface Specification representing the request elements and response elements in a columnar format. The previous format for displaying this information has been abandoned.

New functionality for July 2008:

- A new response container SignatureRequired is now available for tracking when a package requires a Signature at delivery. The container has two elements: Code and Description. Code differentiates between Signature and AdultSignature for the shipment. (see page 75)

- A new response container ProductType is now available for tracking when a packageis part of a WorldEase shipment. The container has two elements: Code and Description. Description indicates WorldEase for the shipment. (se page 86)

- The currency code for Cyprus is now EUR (Euro).   See page 101.
- The currency code for Malta is now EUR (Euro).   See page 103.

Required Steps for Integrating with UPS OnLine Tools

1. Review the UPS Technology Agreement available at www.ups.com. This agreement requires that you follow certain procedures and practices in using UPS OnLine Tools. Among other requirements, these procedures include acquiring a Developer's Key and Access Keys.

2. Develop applications that make use of standard HTTP communications protocols, SSL security, and XML-based document representations.

3. Test your application and/or web site using the designated UPS staging environment.

4. If you are a UPS Ready developer, review your application with UPS.

5. Deploy your application for your customers.

Planning Your Applications

Planning is a key part of any successful development activity, and UPS OnLine Tools applications are no exception. This section helps that planning by describing the important activities of any UPS OnLine Tools 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.

Online Tools Applications

Many different types of applications can take advantage of UPS OnLine Tools. Those application types include dedicated desktop applications, databases, web applications, and documents. The following figures illustrate some of the possibilities for applications using UPS OnLine Tools. The only essential requirement for all of these applications is that they must have access to the Internet.
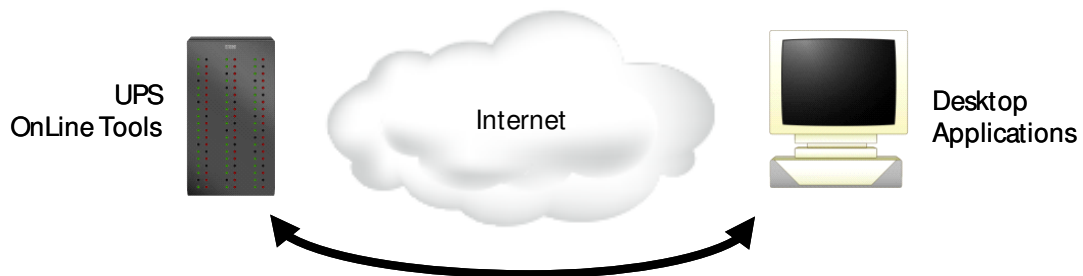
Figure 1: Dedicated applications that users run on their desktops can access UPS OnLine Tools.
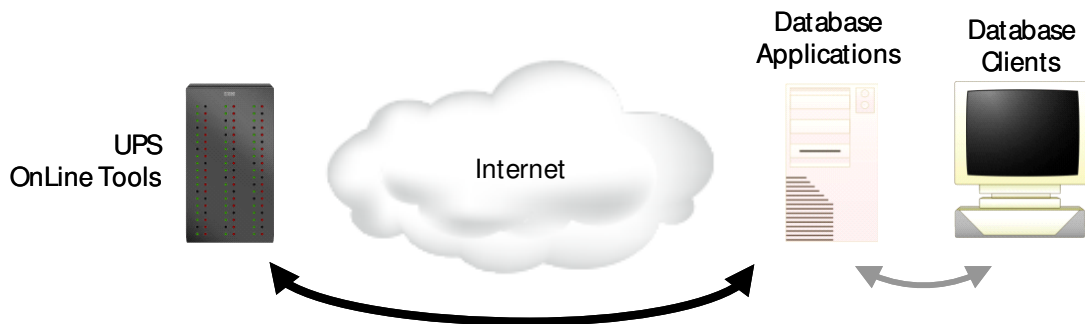
Figure 2: Database applications can access UPS OnLine Tools and return information to their clients.
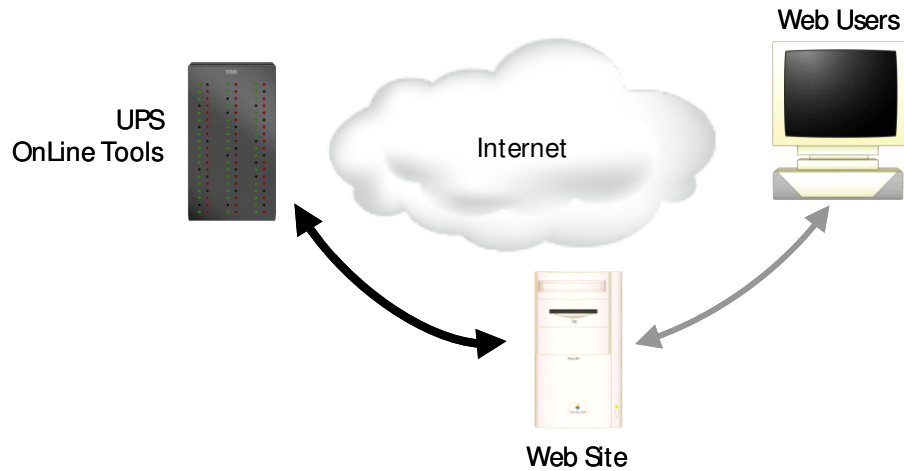
Figure 3: Web sites can access UPS OnLine Tools and return information to users' web browsers.

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

The UPS OnLine Tools support all of these types of applications and many others. Virtually any software that needs instant, up-to-date access to UPS services can take advantage of UPS OnLine Tools.

Licensing the UPS OnLine Tools

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

Branding Requirements

UPS should receive attribution and branding in all applications (including websites and software applications) that use the OnLine Tools. No End User, Third Party Developer or Access User should be permitted to use the OnLine

Tools 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 OnLine Tools in a way that misrepresents the information or the functionality of the service.

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.

Developing Client Applications for OnLine Tools

When you develop software that uses the UPS OnLine Tools, you are building a client application. Because the UPS OnLine Tools rely on standard Internet-based technology, you can develop those applications using a wide variety of software development platforms, including Microsoft's Visual Studio, the Java Standard Edition and Enterprise Edition distributions, and many open source projects. This section introduces important technologies available in each of these development environments. Later sections of this document include more details on using each platform. Look for the icons in the left margin, which identify information relevant to a particular development environment.

Microsoft Visual Studio

Visual Studio

Developers using the Microsoft Visual Studio environment can rely on the Microsoft XML Core Services (MSXML) for interacting with UPS OnLine Tools. Those services include functions to help applications create requests for and interpret responses, and they include functions to manage the communications between applications and UPS.

Java Standard Edition and Enterprise Edition

Java

Java developers can find all the classes they need for UPS OnLine Tools in the Java Standard Edition and Enterprise Edition distributions. The URL class in the java.net package provides the functions required for communication with UPS servers, and the Java API for XML Processing (JAXP) services let programs create requests and interpret responses from UPS.

Open Source

Open Source

There are a number of open source efforts that include technology useful for creating OnLine Tools client applications; open source developers may find two particular projects to be especially helpful. The libcurl project is a library of

functions that can manage the communications with UPS servers. For creating requests and interpreting responses, the xerces project provides essential functions in a variety of software languages.

Getting Technical Support

UPS provides technical support for developers who are using the UPS OnLine Tools Web Services. To get in touch with a UPS technical support engineer, fill out the technical support request form on the UPS web site.

Within the United States

Effective July 2007, there is a phone number for External Customer Technology Support (ECTS):   1-877-289-6420 for customers who have completed testing in the Customer Integration Environment and are ready to process live shipments..

For developers in the United States, the request form may be found by selecting "Contact UPS" from the www.myups.com web site, or from www.ups.com from the steps below.

1. Navigate to the UPS website http://www.ups.com.
2. Select a language, (ex. United States – English).
3. Log into www.ups.com with your User ID and Password.
4. Click the "Support" tab.
5. Click "UPS OnLine Tools" , and then click "Support" on the left-hand navigation window.
6. Click the link for technical support.
7. Complete the e-mail form. Please explain details about errors that are being returned, and under what circumstances.

Outside of the United States

Developers outside the United States can find the technical support request in the OnLine Tools page within the Support section of their country's UPS web site.

1. Navigate to the UPS website http://www.ups.com.
2. Select your country's home page and language (ex. United States – English).
3. Click "UPS OnLine Tools", on the left navigational pane.
4. Click the "Support" tab.

5. Click "Support," on the left navigational pane.

6. Select "Technical Support Question".

7. Complete the e-mail form. Please explain details about errors that are being returned, and under what circumstances.

For more information or assistance with UPS technical support, please contact your UPS OnLine Tools representative.

Testing and Deploying Applications

UPS maintains a special environment to support testing and staging of applications that rely on UPS OnLine Tools. This environment lets developers test and debug their applications by simulating transactions with UPS. This special environment responds to requests just like the UPS production site; however, it does not initiate actual UPS business services.

For example, if you send a shipping request to the UPS production environment, a UPS driver may show up at your location expecting to pick up a package (and expecting payment for the service.) Sending the shipping request to the Customer Integration Environment will avoid this problem.

The environment for testing and staging is the UPS Customer Integration Environment (CIE). You can access this test environment by using the domain name of wwwcie.ups.com.

Keeping Up-to-Date

As UPS adds new services and features, UPS OnLine Tools will evolve, offering more features and service benefits. Once you register to use UPS OnLine Tools, UPS will notify you by e-mail of updates and changes to the OnLine Tools. 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 occur or responsibilities for the OnLine Tools shift within your company. You can also return to the UPS Support area of ups.com for the latest updated information about UPS OnLine Tools.

UPS OnLine Tools Technologies

The foundation technologies for UPS OnLine Tools are the same underlying technologies in use on the Internet today They include the Hypertext Transfer Protocol (HTTP) with Secure Sockets Layer 3 (SSL3) security and the Extensible Markup Language (XML). Because these technologies are critical to the Internet, most software development tools provide many powerful features that make it easy for application programs to use them. This section provides a quick introduction to the technologies and to the tools that can support them.

Hypertext Transfer Protocol and Secure Sockets Layer 3

Today's Internet supports a wide variety of applications including email, instant messaging, web browsing, and voice communications. All of these applications have a well-defined set of rules that determines how they communicate. Those rules are known as *protocols*. As an Internet application themselves, the UPS OnLine tools also rely on protocols to set the rules for their communications. The primary protocol for UPS OnLine Tools is the hypertext transfer protocol, or HTTP.

HTTP is a relatively simple protocol. An application that wants to use an OnLine Tool acts as an HTTP client. It sends its request to UPS as part of an HTTP POST message. UPS servers reply to each request using an HTTP response message.
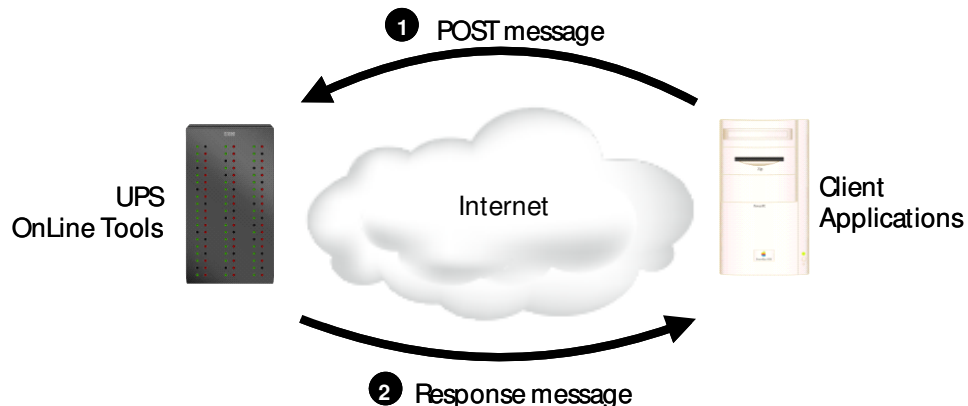
Figure 5. UPS OnLine Tools accept requests from client applications in HTTP POST messages and reply to the requests with HTTP responses.

As part of the POST message, client applications indicate the type of content the message contains using an HTTP Content-Type header. For UPS OnLine Tools, that content type should be application/x-www-form-urlencoded.

In many cases the UPS OnLine tools exchange information that should be kept private. To protect confidential information, the UPS OnLine Tools rely on the Secure Sockets Layer 3 (SSL3) protocol in addition to HTTP. 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 OnLine Tools use is the same protocol used to secure millions of on-line purchases on the web.
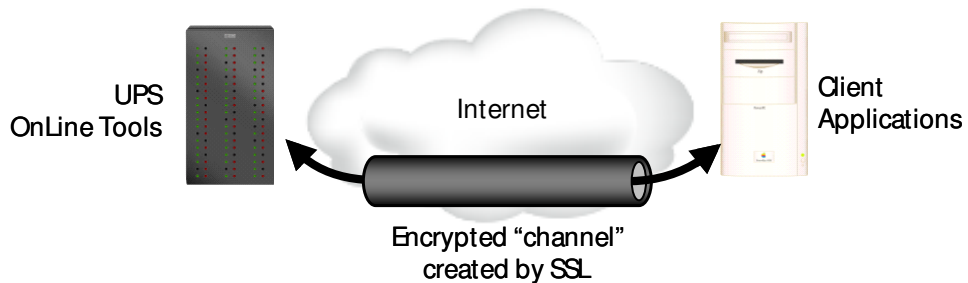
Figure 6: SSL creates a secure channel across a network and protects confidential communications using that channel.

Working with HTTP and SSL in Application Programs

UPS OnLine Tools are not the only Internet services that rely on the HTTP and SSL protocols. Both protocols, in fact, were originally developed for web browsing, and they provide the foundation for the majority of Internet applications. Because HTTP and SSL are so common, software development tools make using these protocols very simple.

Because HTTP and SSL are commonly used for web browsing, software development tools often rely on the same notation and abbreviations as standard web browsers. In particular, most tools identify a specific service (such as a UPS OnLine Tool) using a Uniform Resource Locator (URL). URLs begin with an abbreviation of the communication protocol. For UPS OnLine Tools that abbreviation will always be "https" to indicate HTTP and SSL. The protocol abbreviation is followed by a colon, two slashes, and the name of a server. Additional information about the specific service can follow the server name; it is written like the path to a file in a directory, with slashes separating individual folders. Figure 7 shows how a URL combines these individual components.
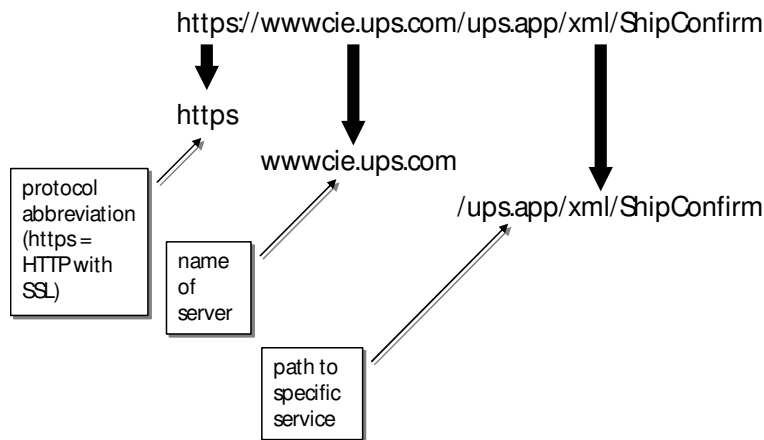
Figure 7. URLs identify communication protocols, servers, and specific services.

The subsections that follow provide brief introductions to using HTTP and SSL with various software development tools, including Microsoft Visual Studio, Java Standard and Enterprise Edition, and popular open source environments.

Microsoft Visual Studio

Visual Studio

The Microsoft Visual Studio environment includes many tools, classes, and libraries that simplify the use of HTTP and SSL protocols. A very convenient set of tools are included in the Microsoft XML Core Services (MSXML). The following code fragment shows how a Visual Basic program can send a request and retrieve the response. To keep the example as simple as possible, no exception handling is included in the figure. Production software should, of course, appropriately handle all exceptions.

```
' create the object that manages the communication
Dim oXMLHttp As XMLHTTP
Set oXMLHttp = New XMLHTTP

' prepare the HTTP POST request
oXMLHttp.open "POST", "https://www.server.com/path", False
oXMLHttp.setRequestHeader "Content-Type", _
                          "application/x-www-form-urlencoded"

' send the request
oXMLHttp.send requestString

' server's response will be available in oXMLHttp.responseXML
```

Figure 8. Visual Basic programs can use features of the MSXML tools to send and receive messages using HTTP and SSL.

Java Standard Edition and Enterprise Edition

Java

In a Java SE or EE environment, the URL class in the java.net package provides a convenient way to manage HTTP and SSL communications. Figure 9 contains a small code fragment that demonstrates the use of this class. As above, the fragment doesn't include exception handling that should be inherent in any production software.

```
import java.io.*;
import java.net.*;

URL url = new URL("https://www.server.com/path");
HttpURLConnection conn = (HttpURLConnection) url.openConnection();
conn.setRequestMethod("POST");
conn.setRequestProperty("Content-Type",
                        "application/x-www-form-urlencoded");
conn.setDoOutput(true);
PrintWriter out = new PrintWriter(conn.getOutputStream());
out.println(requestString);
out.close();
BufferedReader in = new BufferedReader(
    new InputStreamReader(conn.getInputStream()));
/* server response is available by reading the in object */
```

Figure 9. The URL class from the java.net package is a convenient way for Java programs to use HTTP and SSL.

Open Source

Open Source

The libcurl project is an open source project that includes support for using HTTP and SSL protocols. The fragment in Figure 10 shows how to set up libcurl to send a request using HTTP and SSL. It relies on a callback function to accept the server's response.

```
CURL *curl;
```

```
CURLcode res;

/* prepare to send the request */
curl = curl_easy_init();
curl_easy_setopt(curl, CURLOPT_URL, https://www.server.com/path");
curl_easy_setopt(curl, CURLOPT_POSTFIELDS, requestString);
curl_easy_setopt(curl, CURLOPT_WRITEFUNCTION, fnCallback);

res = curl_easy_perform(curl);
```
Figure 10. The open source libcurl library simplifies the use of HTTP and SSL.

Extensible Markup Language (XML)

The Extensible Markup Language (XML) is an international standard developed 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 or, in the case of UPS OnLine tools, a message. Figure 11 shows how a simple XML message could describe a book.

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

As the figure illustrates, XML is a text-based format. XML messages contain regular text, though that text follows specific rules that XML defines. XML distinguishes different parts of a message with a label known as a *tag*. Tags in the example include <book>, <title>, <author>, <firstname>, etc. A tag can indicate the start of information if it begins with an angle bracket (<), and a tag can indicate the end of information if it begins with an angle bracket and a slash (</). A beginning tag, ending tag, and the information between the two make up an *element*. In this example the publisher element tells us that the publisher for the book is "John Wiley and Sons."

The figure also shows how an XML message follows a defined structure. Elements can be contained within other elements, as <firstname> and <lastname>

are included within the <author> element. This structure indicates that firstname and lastname are "children" of the author "parent."

Although XML elements can contain almost any text, there are two special characters that cannot appear within an element. Those characters are the less-than sign (<) and the ampersand (&). Elements that include these contents must replace the special characters with "<" or "&" respectively. The name of a large telecommunications company, for example, would appear as "AT&T" within an XML message.

Because XML is a text-based format, software has to take extra steps to use XML with binary data. For example, some UPS services return binary image data such as the image of a shipping label. To include this data in an XML message, UPS converts it from binary to text format using an algorithm known as *Base64 encoding*. The "The Base16, Base32, and Base64 Data Encodings" standard, also known as RFC 3548, defines that algorithm.

Although XML messages consist of a series of text characters, most software development tools represent XML messages in a tree-like data structure. That representation clarifies the structure of the message. Figure 12 shows the same XML message as Figure 11, but it uses a more visual representation to highlight the message's structure.
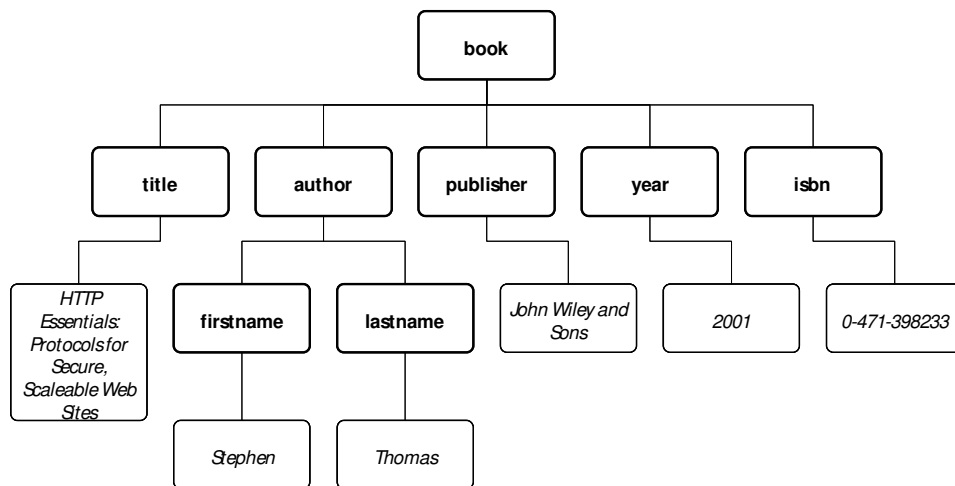
Figure 12. It is often convenient to show XML messages in a tree-like graph to highlight their structure.

The example of Figure 11 and Figure 12 is a relatively simple XML message with just a few elements. UPS OnLine Tools rely on XML messages that are larger than this simple example, and it is difficult to show them in a pure graph like Figure 12 without losing legibility. Figure 13 shows an alternate way of depicting the tree-like structure of XML messages; it uses the same example as before.

```
book
├─title
│   └─"HTTP Essentials: Protocols for Secure, Scaleable Web Sites"
├─author
│   ├─firstname
│   │   └─"Stephen"
│   └─lastname
│       └─"Thomas"
├─publisher
│   └─"John Wiley and Sons"
├─year
│   └─"2001"
└─isbn
    └─"0-471-398233"
```
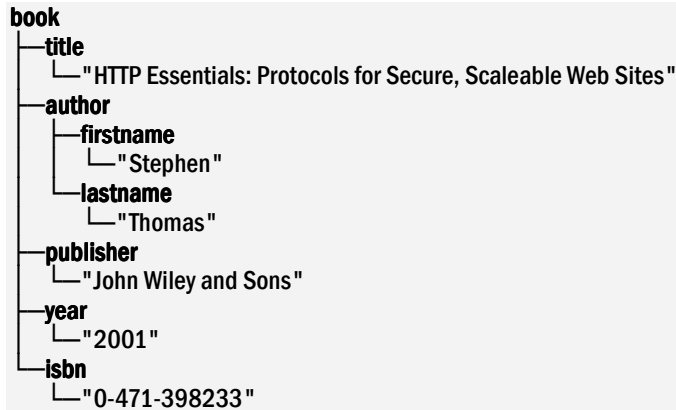
Figure 13. It is possible to show the tree-like structure of XML messages using text.

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

Working with XML in Application Programs

The popularity of Extensible Markup Language means that nearly all development environments include sophisticated support for creating and interpreting XML messages. This subsection provides a brief introduction to working with XML in Microsoft, Java, and Open Source environments. The examples it contains are only representative approaches; many other approaches are possible.

Microsoft Visual Studio

Visual
Studio

The Microsoft XML Core Services (MSXML) offers one way to work with XML documents in Visual Studio applications. Figure 14 shows one approach for creating an XML message in Visual Basic, and Figure 15 demonstrates how Visual Basic programs can interpret XML responses. To remain as simple as possible, the examples do not include any exception handling. Production software should, of course, provide full exception handling.

```
' Define a variable and initialize it to a new XML message
Dim dom
Set dom = New DOMDocument30

' Set properties of the variable
dom.async = False
dom.validateOnParse = False
dom.resolveExternals = False
dom.preserveWhiteSpace = True

' Identify the message as XML version 1.0
Set node = dom.createProcessingInstruction("xml", "version='1.0'")
dom.appendChild node
Set node = Nothing

' Create the root (book) element and add it to the message
Dim root
Set root = dom.createElement("book")
dom.appendChild root
```

```
' Create child elements and add them to the root
Dim node
Set node = dom.createElement("title")
node.text = "HTTP Essentials: ..."
root.appendChild node
Set node = Nothing

Set node = dom.createElement("author")
Dim child
Set child = dom.createElement("firstname")
child.text = "Stephen"
node.appendChild child
Set child = Nothing
Set child = dom.createElement("lastname")
child.text = "Thomas"
node.appendChild child
root.appendChild node

' And so on
```
Figure 14. Visual Basic can create XML messages through the DOMDocument object.

```
' Define a variable to hold the parsed message
Dim dom As New DOMDocument30
dom.async = False
dom.validateOnParse = False
dom.resolveExternals = False
dom.preserveWhiteSpace = True

' Try to parse the message
If dom.loadXML(messageText) = False Then
    ' The text did not contain valid XML
End If

' Get the title information from the message
Dim node As IXMLDOMNode
Set node = dom.selectSingleNode("/title")
If node Is Nothing Then
    ' The message did not contain title information
Else
    ' Do something with node.text
End If
```
Figure 15. Visual Basic can read the contents of XML messages after parsing them with the DOMDocument object.

Visual Basic also has built-in classes to interpret Base64-encoded values. The Convert.FromBase64String() function converts from a Base64-encoded string to an array of 8-bit unsigned integers.

Java Standard Edition and Enterprise Edition

Java

The Java API for XML Processing (JAXP) is the preferred approach for working with XML messages in Java. Figure 16 shows how a BookClass object can be converted into an XML message, a process that JAXP calls *marshalling*. Similarly, Figure 17 shows the reverse process, where an XML message is converted into a BookClass object. This reverse process is *unmarshalling*. As above, exception handling code is omitted from these examples to make them as clear as possible.

```
import javax.xml.bind.JAXBContext;
import javax.xml.bind.Marshaller;
import java.io.StringWriter;
```

```
/* create the book object */
BookClass book = new BookClass("HTTP Essentials...",
    new AuthorClass("Stephen", "Thomas"),
    "John Wiley and Sons",
    "2001",
    "0-471-398233");

/* convert it to an XML string */
StringWriter writer = new StringWriter();
JAXBContext context = JAXBContext.newInstance(book.class);
Marshaller m = context.createMarshaller();
m.marshal(book, writer);
```
Figure 16. JAXP provides a convenient way for Java applications to create XML messages from Java objects.

```
import javax.xml.bind.JAXBContext;
import javax.xml.bind.Marshaller;
import java.io.StringReader;

/* xmlMessage contains the XML message */
StringReader reader = new StringReader(xmlMessage);
JAXBContext context = JAXBContext.newInstance(Book.class);
Unmarshaller u = context.createUnmarshaller();
BookClass book = (BookClass) u.unmarshal(reader);

/* access properties of the book */
System.out.println(book.getAuthor().getFirstname())
```
Figure 17. JAXP also gives Java applications a convenient way to retrieve elements from an XML message.

Open Source

Open Source

As of this writing, the most popular open source tool for working with XML is the xerces project. That project includes C++, Java, and Perl implementations of an XML library. The xerces distribution includes extensive sample applications. The code fragment in Figure 18 demonstrates creating an XML message in C++ with the xerces library. Figure 19 shows sample code for accessing an element within an XML message. In both cases exception handling is not shown in order to keep the examples as simple as possible. Production software should always contain full exception handling.

```
DOMImplementation* impl =
    DOMImplementationRegistry::getDOMImplementation(X("Core"));

DOMDocument* doc = impl->createDocument(0, X("book"), 0);
DOMElement* rootElem = doc->getDocumentElement();

DOMElement* titleElem = doc->createElement(X("title"));
rootElem->appendChild(titleElem);

DOMText* titleVal = doc->createTextNode(X("HTTP Essentials..."));
titleElem->appendChild(titleVal);
```
Figure 18. The Xerces C++ library includes classes that can create XML messages.

```
XMLCh* TAG_book;
XMLCh* TAG_title;
xercesc::XercesDOMParser *parser;

XMLPlatformUtils::Initialize();
TAG_book  = XMLString::transcode("book");
TAG_title = XMLString::transcode("title");
```

```
parser = new XercesDOMParser;
parser->parse(inputText);
DOMDocument* xmlDoc = parser->getDocument();
DOMElement* elementRoot = xmlDoc->getDocumentElement();
DOMNodeList* children = elementRoot->getChildNodes();
const XMLSize_t nodeCount = children->getLength();
for (XMLSize_t cnt = 0; cnt < nodeCount; ++cnt ) {
    DOMNode* currentNode = children->item(cnt);
    if( currentNode->getNodeType() &&
        currentNode->getNodeType() == DOMNode::ELEMENT_NODE ) {
        DOMElement* currentElement =
            dynamic_cast< xercesc::DOMElement* >( currentNode );
        if( XMLString::equals(currentElement->getTagName(),
                              TAG_title)) {
            /* do something with the title */
        }
    }
}
```

Figure 19. The Xerces C++ library also supports parsing XML messages to find individual elements.

Understanding Tracking

The Track OnLine Tool gives client applications access to UPS tracking information. With this service, clients query UPS to determine the up-to-the-minute status of a shipment or a package, including its delivery status and the time and location of the latest transit scan.

Identifying a Package or Shipment to Track

Applications can request tracking based on a tracking number, shipment identification number, or reference number. For freight shipments, applications can also use a candidate bookmark.

Tracking Numbers

UPS uses tracking numbers to identify and track small packages in its system. Applications can use this tracking number to track, locate, and verify arrival of a package. A successful query by tracking number returns information for the specific package within a shipment. For example, if a small package shipment contained four individual packages, the query response would show a shipment containing the one package out of four with the associated tracking number. (Note: Tracking numbers are available up to 18 months after delivery. UPS makes every effort to ensure that a tracking number uniquely identifies a package for 18 months; however, it is possible that a tracking number may be reused within a shorter time period. If this occurs, a query by tracking number returns all packages matching the tracking number.

Shipment Identification Numbers

UPS uses shipment identification numbers to identify and track every shipment as it moves through the UPS system. A shipment may be a single transaction with multiple small packages, or it may be a single freight shipment. For small package shipments, a successful query by shipment identification number returns all of the packages within a shipment. For example, if a shipment contained four packages, the query response would show all four packages. (UPS makes every effort to ensure that a shipment identification number uniquely identifies a shipment for up to 18 months. However, it is possible that a shipment identification number may be reused within a shorter time period. If this occurs, a query by shipment identification number returns all shipments matching the shipment identification number.)

Reference Numbers

The ability to track any UPS package or shipment by reference number gives applications added flexibility and convenience. Reference numbers can be a purchase order number, job number, or a group of words identifying a shipment (such as "10 widgets" or "gift for mom"). Applications can assign a reference number to:

- an individual package or to

- all packages in a shipment or to

- a single LTL shipment or to,

- an air or ocean freight shipment.

A reference number can contain any combination of letters and numbers up to 35 characters. Applications assign a reference number when they upload electronic shipping data to UPS. A successful query by reference number returns all of the packages within a shipment identified by the reference number. For example, if a shipment contained four packages, and two of the packages were tagged with the reference number, "10 widgets," the query response would show a shipment containing those two packages. Since reference numbers are assigned by customers, UPS cannot guarantee the uniqueness of a reference number across all packages shipped through the UPS system. To resolve this ambiguity, a search specification may contain any of the following qualifiers:

- Pickup date range: A range of dates within which UPS picked up the package. The default is 30 days before today's date.

- UPS account number: The shipper's UPS account number.

- Destination postal code: A zip code (U.S.) or postal code (international).

- Destination country: The destination country code.

(Note: Reference numbers are available up to 6 months after delivery.)

PRO numbers and Air Waybill numbers

UPS uses PRO numbers to identify and trace a Ground Freight shipment as it moves through the UPS system. For freight shipments, a successful query by PRO number returns all of the commodities within a shipment.

UPS uses Air Waybill numbers to identify and trace an Air Freight shipment as it moves through the UPS system. For freight shipments, a successful query by Air Waybill number returns all of the commodities within a shipment.

Candidate Bookmarks

When an application requests tracking information for a freight shipment using a reference number, it is possible that more than one shipment may match that reference number. In such cases, UPS returns identifying information about each shipment, and it marks each shipment with a unique candidate bookmark. Client applications (or their users) can examine the list of candidates to identify the desired shipment. Once the candidate is identified, the application can issue another tracking request. By including the candidate bookmark information for

the appropriate shipment in this second request, the application eliminates ambiguity and can receive correct tracking results.

Tracking Reference

This section documents the details of the XML messages, including the requests that clients send to UPS and the responses that UPS returns. The first subsection explains the notation that this section uses. It is followed by a section that describes how UPS verifies that client applications are authorized to use the tracking tool. The next two subsections define the messages used for small package and for freight tracking. The final subsection provides a list of error codes.

Authenticating Client Applications

UPS OnLine Tools Shipping Services are only available for authorized UPS customers. To enforce this policy, UPS requires that every message that a client application sends include important authentication information. That information is contained in an AccessRequest XML document that must begin each message.

AccessRequest

```
AccessRequest
 ├─AccessLicenseNumber::string
 ├─UserId::string
 └─Password::string
```

Each AccessRequest contains three child elements: an AccessLicenseNumber, a UserId, and a Password. The following figure shows an example AccessRequest document.

```xml
<?xml version="1.0" ?>
<AccessRequest xml:lang='en-US'>
    <AccessLicenseNumber>
        YOURACCESSLICENSENUMBER
    </AccessLicenseNumber>
    <UserId>
        YOURUSERID
    </UserId>
    <Password>
        YOURPASSWORD
    </Password>
</AccessRequest>
```

Tracking

Tracking relies on a single request and response. Client applications request tracking information by sending a TrackRequest message to UPS. UPS replies with a TrackResponse message.

TrackRequest

The TrackRequest message consists of two complete XML documents. The first document is an AccessRequest. It is immediately followed by (concatenated to) a TrackRequest. When a client application is undergoing testing and integration, the document combination should be sent to the URL:

https://wwwcie.ups.com/ups.app/xml/Track

The TrackRequest document in the request must conform to the following XML structure.

TrackRequest XML Details:

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
TrackRequest	/TrackRequest	Yes	1	Container	N/A	Container for the root Track Request	N/A	Yes	Yes
Request	/TrackRequest /Request	*Yes	1	Container	N/A	Container for the Track Request	N/A	Yes	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
TransactionReference	/TrackRequest /Request /TransactionReference	Yes	1	Container	N/A	TransactionReference identifies transactions between client and server.			
ToolVersion	/TrackRequest /Request /TransactionReference /ToolVersion		1	String		Current Tracking Tool Version.			
RequestAction	/TrackRequest /Request /RequestAction	Yes	1	String	1..15	Indicates the action to be taken by the XML service.	The only valid action for tracking is "Track".	Yes	Yes
RequestOption	/TrackRequest /Request /RequestOption	No	1	String	1..15	Optional processing.	"none" – " " or "0"= Last Activity "activity" or "1" - all activity	Yes	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
TrackingNumber	/TrackRequest /TrackingNumber	Cond	1	String	11..21	The package's tracking number. For small package when the Tracking Number element is supplied, details of the package corresponding to the Tracking Number will be returned. For freight Tracking Number will be treated as the Shipment Identification Number regardless of it is supplied in the ShipmentIdentificationNumber element or Tracking Number element	N/A	Yes	Yes
ShipmentIdentificationNumber	/TrackRequest /ShipmentIdentificationNumber	Cond	1	String	11..21	The shipment's tracking number.	Reference the UPS guide to barcoding for valid Shipment Identification Numbers.	Yes	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
CandidateBookmark	/TrackRequest /CandidateBookmark	No	1	String	0..15	During Tracking and Reference Number searches, it is possible that duplicate shipments will be found. If duplicate shipments are found, then a Candidate Summary with a corresponding "Candidate Bookmark" for each of the Shipments will be returned in the response. The Candidate Bookmark can be passed back to the Tracking Tool in a separate transaction to retrieve tracking information about the particular Shipment of interest. The Candidate Bookmark can be used to return detailed information about the shipment.		No	Yes
ReferenceNumber	/TrackRequest /ReferenceNumber	No	1	Container	N/A	The reference number container tag. Required if a Shipment Identification Number or Tracking Number is not present.	N/A	Yes	Yes
Value	/TrackRequest /ReferenceNumber /Value	No	1	String	1..35	The customer assigned reference number. Required if a Shipment Identification Number or Tracking Number is not present.	None	Yes	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
PickupDateRange	/TrackRequest /PickupDateRange	No	1	Container	N/A	Container for pickup date range.	None	Yes	Yes
BeginDate	/TrackRequest /PickupDateRange /BeginDate	No	1	String	8	The begin pickup date used to narrow a reference number search.	YYYYMMDD	Yes	Yes
EndDate	/TrackRequest /PickupDateRange /EndDate	No	1	String	8	The end pickup date used to narrow a reference number search.	YYYYMMDD	Yes	Yes
ShipperNumber	/TrackRequest /ShipperNumber	Cond	1	String	10-Jun	The UPS account number used to narrow a reference number search.	None.	Yes	Yes
DestinationPostalCode	/TrackRequest /DestinationPostalCode	No	1	String	1..16	A ZIP Code (United States) or postal code (international destination) also narrows the search	The destination country code is required if the destination postal code is present.	Yes	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
DestinationCountryCode	/TrackRequest /DestinationCountryCode	No	1	String	2..3	A country code used to narrow a reference number search.	None.	Yes	Yes
OriginPostalCode	/TrackRequest /OriginPostalCode	No	1	String	1..16	Postal Code of the origin country used to narrow the reference number search. For freight Reference tracking Only		No	Yes
OriginCountryCode	/TrackRequest /OriginCountryCode	No	1	String	2..3	Country code of the origin country used to narrow the reference number search.		No	Yes
ShipmentType	/TrackRequest /ShipmentType	Cond	1	Container	N/A	Container for the type of Shipment when doing a Reference Number search. If this container is not present, tracking defaults to small package.		Yes	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
Code	/TrackRequest /ShipmentType /Code	*Yes Zero or One	1	String	2	This element will be used to indicate the type of the shipment being tracked during a Reference tracking. 01 - Small Package 02 - Freight. When no value is supplied this element defaults to '01' During reference number tracking, the value of this element should be 01 in order to be small package. During reference number tracking, the value of this element should be 02 in order to be freight.	Default value - 01	Yes	Yes
Description	/TrackRequest /ShipmentType /Description	No	1	String	0..15	Description of the type of the shipment being tracked during Reference tracking. 01 - Small Package 02 - Freight		Yes	Yes
IncludeFreight	/TrackRequest /IncludeFreight	No	1	String	2	Flag to indicate whether to include Freight while searching for the information. The valid values for this flag are:- "02" – Small package Only "01"- Small Package and Freight.	Defaults to small package only. Only when this flag is set to '01', Freight is included in the search. For all other values, the search defaults to Small Package only.	Yes	Yes

Example TrackRequest Message:

```xml
<?xml version="1.0" ?>
<AccessRequest xml:lang='en-US'>
    <AccessLicenseNumber>YOURACCESSLICENSENUMBER</AccessLicenseNumber>
    <UserId>YOURUSERID</UserId>
    <Password>YOURPASSWORD</Password>
</AccessRequest>
<?xml version="1.0" ?>
<TrackRequest>
    <Request>
        <TransactionReference>
            <CustomerContext>
                <InternalKey>guidlikesubstance</InternalKey>
            </CustomerContext>
            <XpciVersion>1.0</XpciVersion>
        </TransactionReference>
        <RequestAction>Track</RequestAction>
    </Request>
    <TrackingNumber>1Z9999999999999999</TrackingNumber>
</TrackRequest>
```

TrackResponse

The TrackResponse message contains a single XML document that conforms to the following XML structure.

TrackResponse XML Details:

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
TrackResponse	/TrackResponse	Yes	1	Container	N/A	Container for root Track response		Yes	Yes
Response	/TrackResponse /Response	*Yes	1	Container	N/A	Container for Track Response		Yes	Yes
TransactionReference	/TrackResponse /Response /TransactionReference	No	1	Container	N/A	TransactionReference identifies transactions between client and server.		Yes	Yes
CustomerContext	/TrackResponse /Response /TransactionReference /CustomerContext	No	1	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.		Yes	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
XpciVersion	/TrackResponse /Response /TransactionReference /XpciVersion	No	1	String	4	Message version. Defaults to '1.0001'.		Yes	Yes
ResponseStatusCode	/TrackResponse /Response /ResponseStatusCode	Yes	1	String	1	Identifies the success or failure of the transaction. 1 = Successful 0 = Failure		Yes	Yes
ResponseStatusDescription	/TrackResponse /Response /ResponseStatusDescription	Yes	1	String	1...35	Describes Response Status Code. Returns text of "Success" or "Failure"		Yes	Yes
Error	/TrackResponse /Response /Error	Cond	1	Container		If an error is encountered during the interchange, the Response contains an error. If the error is present, then the ErrorSeverity and ErrorCode are required.		Yes	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
ErrorSeverity	/TrackResponse /Response /Error /ErrorSeverity	*Yes	1	String	1..15	Describes the severity of the error. TransientError - Customer's data has not been processed due to system unavailability. The customer has to wait and try again. HardError - The error was encountered processing the customer's data and that the data needs correction. Warning - The customer's data was successfully processed; however, there were warnings encountered during processing.		Yes	Yes
ErrorCode	/TrackResponse /Response /Error /ErrorCode	*Yes	1	String	1..15	A numeric value that describes the error. Each tool defines a range of error codes. Refer to Error Conditions table in the 'Programming Information' chapter for detailed descriptions of all errors.		Yes	Yes
ErrorDescription	/TrackResponse /Response /Error /ErrorDescription	No	1	String	1..50	Describes the error code.		Yes	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
MinimumRetrySeconds	/TrackResponse /Response /Error /MinimumRetrySeconds	No	1	String	1..5	Number of seconds to wait until retry. This field is populated on special conditions of the Transient Error only, as defined by the service. A number between 1 and 86400 (24 hours)		Yes	Yes
ErrorLocation	/TrackResponse /Response /Error /ErrorLocation	No	Many	Container	N/A	Identifies the element in error.		Yes	Yes
ErrorLocationElementName	/TrackResponse /Response /Error /ErrorLocation /ErrorLocationElementName	No	1	String	1..512	The XPATH name of the element in error. This is a valid XPATH pointing to an element in the request document.		Yes	Yes
ErrorLocationElementReference	/TrackResponse /Response /Error /ErrorLocation /ErrorLocationElementReference	Yes	1	String		Not Used		Yes	Yes
ErrorLocationAttributeName	/TrackResponse /Response /Error /ErrorLocation /ErrorLocationAttributeName	No	1	String	1..50	The name of the attribute in error. This is the name of the attribute contained by the Error Location Element.		Yes	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
ErrorDigest	/TrackResponse /Response /Error /ErrorDigest	No	Many	String	the	The contents of the element in error.		Yes	Yes
Shipment	/TrackResponse /Shipment	Yes	Many	Container	N/A	Shipment Container tag.		Yes	Yes
InquiryNumber	/TrackResponse /Shipment /InquiryNumber	Yes	1	Container	N/A	Shipment Inquiry Number Container		No	Yes
Code	/TrackResponse /Shipment /InquiryNumber /Code	*Yes	1	String	2...6	Code to indicate the type of Inquiry Number The codes returned for Freight HAWB - House Airway BillHBL - House Bill of Lading PRO – PRO Number SUBPRO – Sub-PRO Number DO – Delivery Order		No	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
Description	/TrackResponse /Shipment /InquiryNumber /Description	*Yes	1	String	1..35	Description of the Inquiry Number as indicated by code Description of the codes HAWB - House Airway BillHBL - House Bill of Lading PRO – PRO Number SUBPRO – Sub-PRO Number DO – Delivery Order		No	Yes
Value	/TrackResponse /Shipment /InquiryNumber /Value	*Yes	1	String	1..15	Value of the Inquiry Number		No	Yes
ShipmentIdentificationNumber	/TrackResponse /Shipment /ShipmentIdentificationNumber	No	1	String	1..21	Shipment number to which the package belongs. This element is not returned for track requests by Reference Number.		Yes	No
ShipmentType	/TrackResponse /Shipment /ShipmentType	Cond	1	Container	N/A	Container for the type of Shipment when doing a Reference Number search.		Yes	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
Code	/TrackResponse /Shipment /ShipmentType /Code	*Yes	1	String	2	This element will be used to indicate the type of the shipment being tracked during a Reference tracking. 01 - Small Package 02 - Freight. During reference number tracking, the value of this element should be 01 in order to be small package. 02 will be returned for a Freight reference tracking		Yes	Yes
Description	/TrackResponse /Shipment /ShipmentType /Description	No	1	String	0..15	Description of the type of the shipment being tracked during Reference tracking. 01 - Small Package 02 - Freight. For small package the description will be "Small Package" For Freight the description will be "Freight"		Yes	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
CandidateBookmark	/TrackResponse /Shipment /CandidateBookmark	No	1	String	0..15	During Tracking and Reference Number searches, it is possible that duplicate shipments will be found. If duplicate shipments are found, then a Candidate Summary with a corresponding "Candidate Bookmark" for each of the Shipments will be returned in the response. The Candidate Bookmark can be passed back to the Tracking Tool in a separate transaction to retrieve tracking information about the particular Shipment of interest.		No	Yes
Shipper	/TrackResponse /Shipment /Shipper	No	1	Container	N/A	Shipper Container Tag		Yes	Yes
ShipperNumber	/TrackResponse /Shipment /Shipper /ShipperNumber	No	1	String	6..10	Shipper's six or ten digit account number.		Yes	Yes
Address	/TrackResponse /Shipment /Shipper /Address	No	1	Container	0...1	Shipper's address Container tag.		Yes	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
AddressLine1	/TrackResponse /Shipment /Shipper /Address /AddressLine1	No	1	String	1..35	Shipper's address line 1		Yes	Yes
AddressLine2	/TrackResponse /Shipment /Shipper /Address /AddressLine2	No	1	String	1..35	Shipper's address line 2		Yes	Yes
AddressLine3	/TrackResponse /Shipment /Shipper /Address /AddressLine3	No	1	String	1..35	Shipper's address line 3		Yes	Yes
City	/TrackResponse /Shipment /Shipper /Address /City	No	1	String	1..30	Shipper's city.		Yes	Yes
StateProvinceCode	/TrackResponse /Shipment /Shipper /Address /StateProvinceCode	No	1	String	2..5	Shipper's state or province code. Required for US or Canada.		Yes	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
PostalCode	/TrackResponse /Shipment /Shipper /Address /PostalCode	No	1	String	5...16	Shipper's postal code		Yes	Yes
CountryCode	/TrackResponse /Shipment /Shipper /Address /CountryCode	No	1	String	2...3	Shipper's country code.		Yes	Yes
ShipTo	/TrackResponse /Shipment /ShipTo	No	1	Container	N/A	Consignee's ship to Container tag.		Yes	Yes
Address	/TrackResponse /Shipment /ShipTo /Address	No	1	Container	N/A	Consignee's address Container tag.		Yes	Yes
AddressLine1	/TrackResponse /Shipment /ShipTo /Address /AddressLine1	No	1	String	1..35	Consignee's address line 1		Yes	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
AddressLine2	/TrackResponse /Shipment /ShipTo /Address /AddressLine2	No	1	String	1..35	Consignee's address line 2		Yes	Yes
AddressLine3	/TrackResponse /Shipment /ShipTo /Address /AddressLine3	No	1	String	1..35	Consignee's address line 3		Yes	Yes
City	/TrackResponse /Shipment /ShipTo /Address /City	No	1	String	1..30	Consignee's city.		Yes	Yes
StateProvinceCode	/TrackResponse /Shipment /ShipTo /Address /StateProvinceCode	No	1	String	2..5	Consignee's state or province code. Required for US or Canada.		Yes	Yes
PostalCode	/TrackResponse /Shipment /ShipTo /Address /PostalCode	No	1	String	5...16	Consignee's postal code		Yes	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
CountryCode	/TrackResponse /Shipment /ShipTo /Address /CountryCode	No	1	String	2…3	Consignee's country code.		Yes	Yes
ShipmentWeight	/TrackResponse /Shipment /ShipmentWeight	No	1	Container	N/A	Shipment weight Container tag		Yes	Yes
UnitOfMeasurement	/TrackResponse /Shipment /ShipmentWeight /UnitOfMeasurement	No	1	Container	N/A	Shipment weight unit of measurement Container tag.		Yes	Yes
Code	/TrackResponse /Shipment /ShipmentWeight /UnitOfMeasurement /Code	*Yes	1	String	3	Shipment weight unit of measurement code. Defaults to 'LBS'.		Yes	Yes
Description	/TrackResponse /Shipment /ShipmentWeight /UnitOfMeasurement /Description		1	String					

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
Weight	/TrackResponse /Shipment /ShipmentWeight /Weight	No	1	String	8	Shipment's total weight. Set to 0 for shipment with package type of letter.		Yes	Yes
Service	/TrackResponse /Shipment /Service	*Yes	1	Container	N/A	Container tag for UPS service associated with the shipment.		Yes	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
Code	/TrackResponse /Shipment /Service /Code	*Yes	1	String	2	For small package Values are: '01' = Next Day Air '02' = 2nd Day Air '03' = Ground '07' = International Express '08' = International Expedited '11' = International Standard '12' = 3 Day Select '13' = Next Day Air Saver '14' = Next Day Air Early AM '54' = International Express Plus '59' = 2 Day Air A.M. '60' = UPS Select '65' = UPS Saver '82' = UPS Today Standard '83' = UPS Today Dedicated Courier '84' = UPS Today Intercity '85' = UPS Today Express '86' = UPS Today Express Saver For Freight Values returned are: 'TDCB' – Trade Direct Cross Border 'TDA' – Trade Direct Air 'TDO' – Trade Direct Ocean '308' – UPS Freight LTL '309' – UPS Freight LTL Guaranteed '310' – UPS Freight LTL Urgent		Yes	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
Description	/TrackResponse /Shipment /Service /Description	No	1	String	1..35	Description of the service For small package Values are: '01' = Next Day Air '02' = 2nd Day Air '03' = Ground '07' = International Express '08' = International Expedited '11' = International Standard '12' = 3 Day Select '13' = Next Day Air Saver '14' = Next Day Air Early AM '54' = International Express Plus '59' = 2 Day Air A.M. '60' = UPS Select '65' = UPS Saver '82' = UPS Today Standard '83' = UPS Today Dedicated Courier '84' = UPS Today Intercity '85' = UPS Today Express '86' = UPS Today Express Saver For Freight Values returned are: 'TDCB' – Trade Direct Cross Border 'TDA' – Trade Direct Air 'TDO' – Trade Direct Ocean '308' – UPS Freight LTL '309' – UPS Freight LTL Guaranteed '310' – UPS Freight LTL Urgent		Yes	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
ReferenceNumber	/TrackResponse /Shipment /ReferenceNumber	No	1	Container	N/A	Shipment reference number Container tag.		Yes	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
Code	/TrackResponse /Shipment /ReferenceNumber /Code	No	1	String	2	Reference number type code, for signifying PO #'s, Invoice #'s, etc, for the entire shipment. For small package the codes returned are:- "28" -"Purchase Order No." "33"- "Model Number" "34"- "Part Number" "35" -"Serial Number" "50"- "Department Number" "51" -"Store Number" "54" -"FDA Product Code" "55" -"Acct. Rec. Customer Acct." "56" -"Appropriation Number" "57"- "Bill of Lading Number" "59" -"Invoice Number" "60" -"Manifest Key Number" "61"- "Dealer Order Number" "62" -"Production Code" "63" -"Purchase Req. Number" "64" -"Salesperson Number" "67" -"Transaction Ref. No." "RZ" -"RMA" "9V"- "COD Number" For freight this can be BL or PO		Yes	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
Value	/TrackResponse /Shipment /ReferenceNumber /Value	*Yes	1	String	1..35	Customer supplied reference number.		Yes	Yes
CurrentStatus	/TrackResponse /Shipment /CurrentStatus	Cond	1	Container	N/A	Container for the current status of the shipment.		No	Yes
Code	/TrackResponse /Shipment /CurrentStatus /Code	*Yes	1	String	3	Code for the current status of the shipment. For Freight only: The values are:- 001 - Billing Information Received 002 - In Transit 003 - Exception 004 - Delivered Origin CFS 005 - Delivered Destination CFS 006 - Warehousing 007 - Out For Delivery 011 - Delivered 111 - Not Available 222 - Not Available		No	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
Description	/TrackResponse /Shipment /CurrentStatus /Description	*Yes	1	String	1..35	Description for the current status of the shipment. The values are:- 001 - Billing Information Received 002 - In Transit 003 - Exception 004 - Delivered Origin CFS 005 - Delivered Destination CFS 006 - Warehousing 007 - Out For Delivery 011 - Delivered 111 - Not Available 222 - Not Available		No	Yes
PickupDate	/TrackResponse /Shipment /PickupDate	No	1	String	8	Date shipment was picked-up. YYYYMMDD		Yes	Yes
DeliveryDetails	/TrackResponse /Shipment /DeliveryDetails	No	1	Container	N/A	Container for Delivery Details		No	Yes
DeliveryDate	/TrackResponse /Shipment /DeliveryDetails /DeliveryDate	No	1	Container	N/A	Container for Delivery Date and Time		No	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
Date	/TrackResponse /Shipment /DeliveryDetails /DeliveryDate /Date	Yes	1	String	8	Date shipment was delivered. YYYYMMDD		No	Yes
Time	/TrackResponse /Shipment /DeliveryDetails /DeliveryDate /Time	No	1	String	6	Time shipment was delivered. HHMMSS		No	Yes
ServiceCenter	/TrackResponse /Shipment /DeliveryDetails /ServiceCenter	No	1	Container	N/A	Container for the Delivery Service Center		No	Yes
City	/TrackResponse /Shipment /DeliveryDetails /ServiceCenter /City	*Yes	1	String	1..30	Delivery Service center city		No	Yes
StateProvinceCode	/TrackResponse /Shipment /DeliveryDetails /ServiceCenter /StateProvinceCode	*Yes	1	String	2..6	Delivery Service Center State		No	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
Volume	/TrackResponse /Shipment /Volume	No	1	Container	N/A	Container for the volume of the Shipment		No	Yes
Code	/TrackResponse /Shipment /Volume /Code	No	1	String	2	Code indicating the unit of measurement for the volume		No	Yes
Description	/TrackResponse /Shipment /Volume /Description	No	1	String	1..35	Description of the unit of measurement as indicated by code		No	Yes
Value	/TrackResponse /Shipment /Volume /Value	*Yes	1	String	1..35	Value of the total volume of the shipment.		No	Yes
BillToName	/TrackResponse /Shipment /BillToName	No	1	String	1..35	Name of the person to whom the shipment is billed to.		No	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
PickUpServiceCenter	/TrackResponse /Shipment /PickUpServiceCenter	No	1	Container	N/A	Container for the pickup service center.		No	Yes
City	/TrackResponse /Shipment /PickUpServiceCenter /City	*Yes	1	String	1..30	City of the pickup service center.		No	Yes
StateProvinceCode	/TrackResponse /Shipment /PickUpServiceCenter /StateProvinceCode	*Yes	1	String	2..5	State of the pickup service center.		No	Yes
NumberOfPieces	/TrackResponse /Shipment /NumberOfPieces	No	1	String	1..15	Number of pieces in the shipment		No	Yes
NumberOfPallets	/TrackResponse /Shipment /NumberOfPallets	No	1	String	1..15	Number of pallets in the shipment		No	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
ShipmentServiceOptions	/TrackResponse /Shipment /ShipmentServiceOptions	No	1	Container	N/A	Container for Shipment Service Options. Currently contains COD only		No	Yes
COD	/TrackResponse /Shipment /ShipmentServiceOptions /COD	No	1	Container	N/A	Container for COD for the shipment		No	Yes
CODAmount	/TrackResponse /Shipment /ShipmentServiceOptions /COD /CODAmount	No	1	Container	N/A	Container for COD amount		No	Yes
CurrencyCode	/TrackResponse /Shipment /ShipmentServiceOptions /COD /CODAmount /CurrencyCode	*Yes	1	String	2	Currency Code for COD. Default value is 'USD'		No	Yes
MonetaryValue	/TrackResponse /Shipment /ShipmentServiceOptions /COD /CODAmount /MonetaryValue	*Yes	1	String	1..30	Currency Value for COD		No	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
EstimatedDeliveryDetails	/TrackResponse /Shipment /EstimatedDeliveryDetails	No	1	Container	N/A	Container for estimated delivery details		No	Yes
Date	/TrackResponse /Shipment /EstimatedDeliveryDetails /Date	No	1	String	8	Estimated delivery date of the shipment YYYYMMDD		No	Yes
ServiceCenter	/TrackResponse /Shipment /EstimatedDeliveryDetails /ServiceCenter	No	1	Container	N/A	Container for estimated delivery service center		No	Yes
City	/TrackResponse /Shipment /EstimatedDeliveryDetails /ServiceCenter /City	*Yes	1	String	1..30	Estimated delivery service center city		No	Yes
StateProvinceCode	/TrackResponse /Shipment /EstimatedDeliveryDetails /ServiceCenter /StateProvinceCode	*Yes	1	String	2..8	Estimated delivery service center state		No	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
SignedForByName	/TrackResponse /Shipment /SignedForByName	No	1	String	1..35	Shipment signed for by name		No	Yes
Activity	/TrackResponse /Shipment /Activity	No	Many	Container	N/A	Container for shipment activity		No	Yes
ActivityLocation	/TrackResponse /Shipment /Activity /ActivityLocation	No	Many	Container	N/A	Container for shipment activity location		No	Yes
Address	/TrackResponse /Shipment /Activity /ActivityLocation /Address	No	Many	Container	N/A	Container for the address of the shipment activity location		No	Yes
City	/TrackResponse /Shipment /Activity /ActivityLocation /Address /City	No	1	String	1..30	Activity city.		No	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
StateProvinceCode	/TrackResponse /Shipment /Activity /ActivityLocation /Address /StateProvinceCode	No	1	String	2..5	Activity State.		No	Yes
PostalCode	/TrackResponse /Shipment /Activity /ActivityLocation /Address /PostalCode	No	1	String	5...16	Activity postal code		No	Yes
CountryCode	/TrackResponse /Shipment /Activity /ActivityLocation /Address /CountryCode	No	1	String	2...3	Activity country code.		No	Yes
Description	/TrackResponse /Shipment /Activity /Description	No	1	String	1..512	Description of the Activity		No	Yes
Date	/TrackResponse /Shipment /Activity /Date	No	1	String	8	Activity Date. YYYYMMDD		No	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
Time	/TrackResponse /Shipment /Activity /Time	No	1	String	6	Activity Time. HHMMSS		No	Yes
Trailer	/TrackResponse /Shipment /Activity /Trailer	No	1	String	1..30	Trailer Code for the shipment		No	Yes
OriginPortDetails	/TrackResponse /Shipment /OriginPortDetails	No	1	Container	N/A	Details of origin port of the shipment		No	Yes
OriginPort	/TrackResponse /Shipment /OriginPortDetails /OriginPort	No	1	String	1..35	Origin Port of the shipment		No	Yes
EstimatedDeparture	/TrackResponse /Shipment /OriginPortDetails /EstimatedDeparture	No	1	Container	N/A	Container for Estimated Departure Time Stamp at the origin port		No	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
Date	/TrackResponse /Shipment /OriginPortDetails /EstimatedDeparture /Date	*Yes	1	String	8	Date of the Estimated Departure Time Stamp at the origin port. YYYYMMDD format		No	Yes
Time	/TrackResponse /Shipment /OriginPortDetails /EstimatedDeparture /Time	No	1	String	6	Time of the Estimated Departure Time Stamp at the origin port. HHMMSS format		No	Yes
DestinationPortDetails	/TrackResponse /Shipment /DestinationPortDetails	No	1	Container	N/A	Container for the destination port of the shipment		No	Yes
DestinationPort	/TrackResponse /Shipment /DestinationPortDetails /DestinationPort	No	1	String	1..35	Destination port of the shipment		No	Yes
EstimatedArrival	/TrackResponse /Shipment /DestinationPortDetails /EstimatedArrival	No	1	Container	N/A	Container for Estimated Arrival Time Stamp at the Destination Port		No	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
Date	/TrackResponse /Shipment /DestinationPortDetails /EstimatedArrival /Date	*Yes	1	String	8	Date of the Estimated Arrival Time Stamp at the Destination Port. YYYYMMDD format		No	Yes
Time	/TrackResponse /Shipment /DestinationPortDetails /EstimatedArrival /Time	No	1	String	6	Time of the Estimated Arrival Time Stamp at the Destination Port. HHMMSS format		No	Yes
DescriptionOfGoods	/TrackResponse /Shipment /DescriptionOfGoods	No	1	String	1..512	Description of Goods in the shipment		No	Yes
CargoReady	/TrackResponse /Shipment /CargoReady	No	1	Container	N/A	Container for cargo ready date and time		No	Yes
Date	/TrackResponse /Shipment /CargoReady /Date	*Yes	1	String	8	Cargo Ready date for the shipment. YYYYMMDD		No	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
Time	/TrackResponse /Shipment /CargoReady /Time	No	1	String	6	Cargo Ready time for the shipment. HHMMSS		No	Yes
Manifest	/TrackResponse /Shipment /Manifest	No	1	Container	N/A	Container for Manifest date and time		No	Yes
Date	/TrackResponse /Shipment /Manifest /Date	*Yes	1	String	8	Manifest date for the shipment. YYYYMMDD		No	Yes
Time	/TrackResponse /Shipment /Manifest /Time	No	1	String	6	Manifest time for the shipment. HHMMSS		No	Yes
CarrierActivityInformation	/TrackResponse /Shipment /CarrierActivityInformation	No	Many	Container	N/A	Container for carrier activity information for the shipment		No	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
CarrierId	/TrackResponse /Shipment /CarrierActivityInformation /CarrierId	No	1	String	1..30	Id number of the carrier		No	Yes
Description	/TrackResponse /Shipment /CarrierActivityInformation /Description	No	1	String	1..35	Description of the carrier e.g.: flight/vessel		No	Yes
Status	/TrackResponse /Shipment /CarrierActivityInformation /Status	No	1	String	1..35	Status of the carrier		No	Yes
Arrival	/TrackResponse /Shipment /CarrierActivityInformation /Arrival	No	1	Container	N/A	Container for arrival time stamp information of the carrier		No	Yes
Date	/TrackResponse /Shipment /CarrierActivityInformation /Arrival /Date	*Yes	1	String	8	Date of the arrival time stamp. YYYYMMDD format		No	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
Time	/TrackResponse /Shipment /CarrierActivityInformation /Arrival /Time	No	1	String	6	Time of the arrival time stamp. HHMMSS		No	Yes
Departure	/TrackResponse /Shipment /CarrierActivityInformation /Departure	No	1	Container	N/A	Container for Departure time stamp information of the carrier		No	Yes
Date	/TrackResponse /Shipment /CarrierActivityInformation /Departure /Date	*Yes	1	String	8	Date of the Departure time stamp. YYYYMMDD format		No	Yes
Time	/TrackResponse /Shipment /CarrierActivityInformation /Departure /Time	No	1	String	6	Time of the Departure time stamp. HHMMSS		No	Yes
OriginPort	/TrackResponse /Shipment /CarrierActivityInformation /OriginPort	No	1	String	1..30	Origin Port of the Carrier's leg of the journey		No	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
DestinationPort	/TrackResponse /Shipment /CarrierActivityInformation /DestinationPort	No	1	String	1..30	Destination Port of the Carrier's leg of the journey		No	Yes
ScheduledDeliveryDate	/TrackResponse /Shipment /ScheduledDeliveryDate	No	1	String	8	Date shipment was originally scheduled for delivery. Will be returned when available. YYYYMMDD		Yes	Yes
ScheduledDeliveryTime	/TrackResponse /Shipment /ScheduledDeliveryTime	No	1	String	6	HHMMSS		Yes	Yes
FileNumber	/TrackResponse /Shipment /FileNumber	No	1	String	1..30	File Number of the shipment		No	Yes
Appointment	/TrackResponse /Shipment /Appointment	No	1	Container	N/A	Appointment Details		No	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
Made	/TrackResponse /Shipment /Appointment /Made	No	1	Container	N/A	Container for Appointment Made Date and Time		No	Yes
Date	/TrackResponse /Shipment /Appointment /Made /Date	No	1	String	8	Appointment Made Date YYYYMMDD		No	Yes
Time	/TrackResponse /Shipment /Appointment /Made /Time	No	1	String	6	Appointment Made Time HHMMSS		No	Yes
Requested	/TrackResponse /Shipment /Appointment /Requested	No	1	Container	N/A	Container for Appointment Requested Date and Time		No	Yes
Date	/TrackResponse /Shipment /Appointment /Requested /Date	No	1	String	8	Appointment Requested Date YYYYMMDD		No	Yes

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
Time	/TrackResponse /Shipment /Appointment /Requested /Time	No	1	String	6	Appointment Requested Time HHMMSS		No	Yes
BeginTime	/TrackResponse /Shipment /Appointment /BeginTime	No	1	String	6	Appointment Begin Time HHMMSS		No	Yes
EndTime	/TrackResponse /Shipment /Appointment /EndTime	No	1	String	6	Appointment End Time HHMMSS		No	Yes
Package	/TrackResponse /Shipment /Package	No	1	Container	N/A	Package Information.		Yes	No
TrackingNumber	/TrackResponse /Shipment /Package /TrackingNumber	No	1	String	1...21	TrackingNumber of the package.		Yes	No

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
RescheduledDeliveryDate	/TrackResponse /Shipment /Package /RescheduledDeliveryDate	No	1	String	8	The delivery is rescheduled to this date		Yes	No
RescheduledDeliveryTime	/TrackResponse /Shipment /Package /RescheduledDeliveryTime	No	1	String	6	The delivery is rescheduled to this time		Yes	No
Reroute	/TrackResponse /Shipment /Package /Reroute	No	1	Container	N/A	When a requestor to intercept US50/PR package at the destination center at any time before it has been delivered, Consignee's Reroute Container Tag is provided in the track response.		Yes	No
Address	/TrackResponse /Shipment /Package /Reroute /Address	No	1	Container	N/A	Consignee's Reroute Address Container Tag.		Yes	No
AddressLine1	/TrackResponse /Shipment /Package /Reroute /Address /AddressLine1	No	1	String	1..30	Address line element of Reroute address		Yes	No

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
AddressLine2	/TrackResponse /Shipment /Package /Reroute /Address /AddressLine2	No	1	String	1..30	Address line element of Reroute address		Yes	No
AddressLine3	/TrackResponse /Shipment /Package /Reroute /Address /AddressLine3	No	1	String	1..30	Address line element of Reroute address		Yes	No
City	/TrackResponse /Shipment /Package /Reroute /Address /City	No	1	String	1..30	Consignee's City.		Yes	No
StateProvinceCode	/TrackResponse /Shipment /Package /Reroute /Address /StateProvinceCode	No	1	String	2..5	Consignee's State Or Province Code.		Yes	No

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
PostalCode	/TrackResponse /Shipment /Package /Reroute /Address /PostalCode	No	1	String	5...16	Consignee's Postal Code		Yes	No
CountryCode	/TrackResponse /Shipment /Package /Reroute /Address /CountryCode	No	1	String	2...3	Consignee's Country Code.		Yes	No
ReturnTo	/TrackResponse /Shipment /Package /ReturnTo	No	1	Container	N/A	Return to Container tag that will contain the address information of who the package is returned to.		Yes	No
Address	/TrackResponse /Shipment /Package /ReturnTo /Address	No	1	Container	N/A	Return to sender address Container tag.		Yes	No
AddressLine1	/TrackResponse /Shipment /Package /ReturnTo /Address /AddressLine1	No	1	String	0..35	"Return to AddressLine1. It contains StreetPrefix, StreetName, StreetTypeCode"		Yes	No

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
AddressLine2	/TrackResponse /Shipment /Package /ReturnTo /Address /AddressLine2	No	1	String	0..35	Return to AddressLine2. It contains building floor, room, suite or PO Box No.		Yes	No
AddressLine3	/TrackResponse /Shipment /Package /ReturnTo /Address /AddressLine3	No	1	String	0..35	Return to AddressLine3		Yes	No
City	/TrackResponse /Shipment /Package /ReturnTo /Address /City	No	1	String	0..30	Return to address city.		Yes	No
StateProvinceCode	/TrackResponse /Shipment /Package /ReturnTo /Address /StateProvinceCode	No	1	String	0..5	Return to state or province code.		Yes	No

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
PostalCode	/TrackResponse /Shipment /Package /ReturnTo /Address /PostalCode	No	1	String	0…16	Return to postal code		Yes	No
CountryCode	/TrackResponse /Shipment /Package /ReturnTo /Address /CountryCode	No	1	String	0…3	Return to country code.		Yes	No
PackageServiceOptions	/TrackResponse /Shipment /Package /PackageServiceOptions	No	1	String	N/A	Container for package service options		Yes	No
SignatureRequired	/TrackResponse /Shipment /Package /PackageServiceOptions /SignatureRequired	No	1	Container	N/A	Container tag for SignatureRequired option.		Yes	No

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
Code	/TrackResponse /Shipment /Package /PackageServiceOptions /SignatureRequired /Code	*Yes	1	String	2	Client Application receives Special Instructions via the package detail response indicating Signature Required or Adult Signature Required when a package is delivered. Valid Values: A=Adult Signature Required S=Signature Required		Yes	No
Description	/TrackResponse /Shipment /Package /PackageServiceOptions /SignatureRequired /Description	*Yes	1	String	1..35	Description of the Signature Required. (Currently not populated).		Yes	No
Activity	/TrackResponse /Shipment /Package /Activity	No	Many	Container	N/A	Activity information		Yes	No
ActivityLocation	/TrackResponse /Shipment /Package /Activity /ActivityLocation	No	1	Container	N/A	Location of activity.		Yes	No

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
Address	/TrackResponse /Shipment /Package /Activity /ActivityLocation /Address	No	1	Container	N/A	Address information		Yes	No
AddressLine1	/TrackResponse /Shipment /Package /Activity /ActivityLocation /Address /AddressLine1	No	1	String	1...30	AddressLine1 contains street prefix, street name, street type		Yes	No
AddressLine2	/TrackResponse /Shipment /Package /Activity /ActivityLocation /Address /AddressLine2	No	1	String	1...30	AddressLine2 contains building floor, room, suite and PO Box Number.		Yes	No
AddressLine3	/TrackResponse /Shipment /Package /Activity /ActivityLocation /Address /AddressLine3	No	1	String	1..30	Additional address information		Yes	No

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
City	/TrackResponse /Shipment /Package /Activity /ActivityLocation /Address /City	No	1	String	1..30	Activity location's City		Yes	No
StateProvinceCode	/TrackResponse /Shipment /Package /Activity /ActivityLocation /Address /StateProvinceCode	No	1	String	2...5	Activity location's state of province code.		Yes	No
PostalCode	/TrackResponse /Shipment /Package /Activity /ActivityLocation /Address /PostalCode	No	1	String	1...16	Activity Location's postal codes.		Yes	No
CountryCode	/TrackResponse /Shipment /Package /Activity /ActivityLocation /Address /CountryCode	*Yes	1	String	2	Activity location's country code.		Yes	No

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
AddressArtifactFormat	/TrackResponse /Shipment /Package /Activity /ActivityLocation /AddressArtifactFormat	No	1	Container	N/A	Address location.		Yes	No
StreetNumberLow	/TrackResponse /Shipment /Package /Activity /ActivityLocation /AddressArtifactFormat /StreetNumberLow	No	1	String	0…10	Street Number low		Yes	No
StreetPrefix	/TrackResponse /Shipment /Package /Activity /ActivityLocation /AddressArtifactFormat /StreetPrefix	No	1	String	2	Street Prefix		Yes	No
StreetName	/TrackResponse /Shipment /Package /Activity /ActivityLocation /AddressArtifactFormat /StreetName	No	1	String	0..50	Street Name		Yes	No

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
StreetSuffix	/TrackResponse /Shipment /Package /Activity /ActivityLocation /AddressArtifactFormat /StreetSuffix	No	1	String	2	Street Suffix		Yes	No
StreetType	/TrackResponse /Shipment /Package /Activity /ActivityLocation /AddressArtifactFormat /StreetType		1	String				Yes	No
PoliticalDivision2	/TrackResponse /Shipment /Package /Activity /ActivityLocation /AddressArtifactFormat /PoliticalDivision2	No	1	String	5..16	Activity location's city		Yes	No
PoliticalDivision1	/TrackResponse /Shipment /Package /Activity /ActivityLocation /AddressArtifactFormat /PoliticalDivision1	No	1	String	0..30	PoliticalDivision1State province		Yes	No

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
PostcodePrimaryLow	/TrackResponse /Shipment /Package /Activity /ActivityLocation /AddressArtifactFormat /PostcodePrimaryLow	No	1	String	5..16	Postal Code		Yes	No
CountryCode	/TrackResponse /Shipment /Package /Activity /ActivityLocation /AddressArtifactFormat /CountryCode	No	1	String	2	Activity location's country code.		Yes	No
Code	/TrackResponse /Shipment /Package /Activity /ActivityLocation /Code	*Yes	1	String	2	Activity location code.		Yes	No
Description	/TrackResponse /Shipment /Package /Activity /ActivityLocation /Description	*Yes	1	String	1..35	Activity location Description.		Yes	No

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
SignedForByName	/TrackResponse /Shipment /Package /Activity /ActivityLocation /SignedForByName	No	1	String	0...15	Name of the person who signed		Yes	No
Status	/TrackResponse /Shipment /Package /Activity /Status	No	1	Container	N/A	Package activity status Container.		Yes	No
StatusType	/TrackResponse /Shipment /Package /Activity /Status /StatusType	No	1	Container	0..1	Container tag for activity Status type.		Yes	No
Code	/TrackResponse /Shipment /Package /Activity /Status /StatusType /Code	No	1	String	1	Code for status type of activity I = In Transit D = Delivered X = Exception P = Pickup M = Manifest Pickup		Yes	No

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
Description	/TrackResponse /Shipment /Package /Activity /Status /StatusType /Description	No	1	String	1...20	Status type of activity.		Yes	No
StatusCode	/TrackResponse /Shipment /Package /Activity /Status /StatusCode	No	1	Container	0...1	Container tag for activity status code		Yes	No
Code	/TrackResponse /Shipment /Package /Activity /Status /StatusCode /Code	No	1	String	2	Code for status code of activity. Describes the activity status type in greater detail		Yes	No
Date	/TrackResponse /Shipment /Package /Activity /Date	No	1	String	8	Date of activity		Yes	No

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
Time	/TrackResponse /Shipment /Package /Activity /Time	No	1	String	4	Time of activity		Yes	No
Message	/TrackResponse /Shipment /Package /Message	No	Many	Container	N/A	Container provided when the package has additional delivery information.		Yes	No
Code	/TrackResponse /Shipment /Package /Message /Code	*Yes	1	String	0..2	Code describing what type of message the customer can provide: Valid values: 01 – On Time 02 – Rescheduled 03 – Returned To Shipper Suggested text to provide to the customer when the code equals 01 is "On Time". Suggested Text to provide to the customer when the code equals 02 is "Rescheduled". Suggested Text to provide to the customer when the code equals 03 is "Returned To Shipper".		Yes	No

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
Description	/TrackResponse /Shipment /Package /Message /Description	No	1	String	15	Description of the code provided in /TrackResponse/Package/Message/Code		Yes	No
PackageWeight	/TrackResponse /Shipment /Package /PackageWeight		1	Container	N/A			Yes	No
UnitOfMeasurement	/TrackResponse /Shipment /Package /PackageWeight /UnitOfMeasurement	No	1	Container	N/A	Package weight unit of measurement Container tag.		Yes	No
Code	/TrackResponse /Shipment /Package /PackageWeight /UnitOfMeasurement /Code	*Yes	1	String	3	Package weight unit of measurement code. Defaults to 'LBS'.		Yes	No
Description	/TrackResponse /Shipment /Package /PackageWeight /UnitOfMeasurement /Description	No	1	String	1..35	Description of the package weight measurement units.		Yes	No

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
Weight	/TrackResponse /Shipment /Package /PackageWeight /Weight	No	1	String	7.2	Packages weight. Set to 0 for package type of letters.		Yes	No
ReferenceNumber	/TrackResponse /Shipment /Package /ReferenceNumber	No	Many	Container	N/A	Package reference number Container tag.		Yes	No
Code	/TrackResponse /Shipment /Package /ReferenceNumber /Code	No	1	String	2	Reference number type code, for signifying PO #'s, Invoice #'s, etc.		Yes	No
Value	/TrackResponse /Shipment /Package /ReferenceNumber /Value	*Yes	1	String	1..35	Customer supplied reference number.		Yes	No
ProductType	/TrackResponse /Shipment /Package /ProductType	No	1	Container	N/A	Container tag for the type of the Product.		Yes	No

NAME	XPATH	REQUIRED	MAXALLOWED	TYPE	LENGTH	DESCRIPTION	VALIDATION RULES	SMALL PACKAGE	FREIGHT
Code	/TrackResponse /Shipment /Package /ProductType /Code	No	1	String		Code indicating the type of the Product. Its value is returned from the Tracking Component. (Currently not populated).		Yes	No
Description	/TrackResponse /Shipment /Package /ProductType /Description	*Yes	1	String	1..35	Description of the type of the Product. Valid Value: "World Ease" (when a shipment with single/multiple packages is associated with World Ease movement).		Yes	No

Example TrackResponse Message:

```xml
<?xml version="1.0" ?>
<TrackResponse>
    <Response>
        <TransactionReference>
            <CustomerContext>
                <InternalKey>guidlikesubstance</InternalKey>
            </CustomerContext>
            <XpciVersion>1.0</XpciVersion>
        </TransactionReference>
        <ResponseStatusCode>1</ResponseStatusCode>
        <ResponseStatusDescription>Success</ResponseStatusDescription>
    </Response>
    <Shipment>
        <Shipper>
            <ShipperNumber>123X67</ShipperNumber>
        </Shipper>
        <ShipTo>
            <Address>
                <City>Timonium</City>
                <StateProvinceCode>MD</StateProvinceCode>
                <CountryCode>US</CountryCode>
            </Address>
        </ShipTo>
        <Service>
            <Code>03</Code>
            <Description>Ground</Description>
        </Service>
        <Package>
            <TrackingNumber>1Z9999999999999999</TrackingNumber>
            <Activity>
                <ActivityLocation>
                    <Address>
                        <City>Timonium</City>
                        <StateProvinceCode>MD</StateProvinceCode>
                        <CountryCode>US</CountryCode>
                    </Address>
                    <Code>DL</Code>
                    <Description>Delivered</Description>
                </ActivityLocation>
                <Status>
                    <StatusType>
                        <Code>XX</Code>
                        <Description>Status XX</Description>
                    </StatusType>
                    <StatusCode>
                        <Code>YY</Code>
                        <Description>Code YY</Description>
                    </StatusCode>
                </Status>
            </Activity>
        </Package>
    </Shipment>
</TrackResponse>
```

Error Codes

The following table lists the errors that UPS may return in response to a request. Errors can have different levels of severity. *Warning* messages indicate that UPS was able to process the request; however, there is information in the response about which the user should know. *Transient* errors are temporary errors, due to temporary high server loads or scheduled maintenance, for example. The application may reissue the request at a later time. *Hard* errors indicate that an error existed in the request that UPS could not resolve. Applications should not re-issue the same request without first correcting the error.

Code	Severity	Error Message
20011	Hard	The Integration indicator is no longer supported
150000	Transient	Tracking service unavailable
150020	Hard	Invalid pickup date range
150021	Hard	Invalid shipment identification number length
150022	Hard	Invalid tracking number length
150023	Hard	Invalid reference number value length
150024	Hard	Invalid destination postal code length
150025	Hard	Invalid destination country code length
150026	Hard	Invalid begin date length
150027	Hard	Invalid end date length
150028	Hard	Invalid shipper number length
150029	Hard	Duplicate Tracking Numbers found in Package Detail
150030	Hard	Invalid Request/ RequestOption
150099	Transient	Delivery Change Request System Unavailable
151018	Hard	Invalid tracking number
151019	Hard	No activity records found for tracking number
151036	Hard	Either tracking number or reference number required
151038	Hard	Shipment number required with reference number
151040	Hard	Both tracking number and reference number invalid
151044	Hard	No tracking information available
151045	Hard	No information found
151050	Hard	Too many records to display
151051	Hard	Some Records are not returned
151062	Hard	No tracking information available
151068	Hard	Invalid Shipper Number
151085	Hard	Multiple shipper numbers found
151086	Hard	Maximum candidate exceeded for Reference number search. Use the tracking number search
151091	Hard	Multiple reference numbers found, it may be possible to narrow the search with additional data.
151602	Hard	Destination Country Code must be entered
152012	Hard	Number of records selected exceeds limit of 175
152100	Hard	Enter shipper number - additional shippers used the reference
152110	Hard	No information found for reference number
152315	Hard	Multiple reference numbers found, it is not possible to qualify further.
154010	Hard	Invalid inquiry number
154030	Hard	No information for this tracking number
154040	Hard	Invalid tracking type
154050	Hard	Non-unique BCD number - Candidate List returned
154070	Hard	Signature Tracking Options not available without successful login

Code	Severity	Error Message
154080	Warning	Could not verify Signature rights
154081	Warning	Your search returned multiple Shipments. Please select from the provided results.
154082	Hard	The supplied Candidate Bookmark fails validation
154083	Hard	Specific Tracking data could not be found. It may be possible to narrow the search with additional data.
154084	Hard	Invalid origin postal code length
154085	Hard	Invalid origin country code length
154086	Hard	Missing origin country code when postal code supplied

Customer Integration Environment

The Customer Integration Environment (CIE) 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 CIE maintains system availability 24 hours, 7 days each week, there are occasional system down times to allow for server maintenance.

For integration testing, you should direct your test Quantum View Events software to:

https://wwwcie.ups.com/ups.app/xml/Track

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 HTTPS GET. If the server is available, it will reply with the service name, remote user, server port, server name, and servlet path. To see this in action, type the following URL in your web browser:

https://wwwcie.ups.com/ups.app/xml/Track

The following will be returned:

Service Name: Track
Remote User: null
Server Port: 443
Server Name: wwwcie.ups.com
Servlet Path: /Track

Appendix A: UPS Service Codes

UPS offers a wide variety of package delivery services. The following tables list the service code values for these services; they are ordered by the origin of the shipment. The final table lists service codes for freight shipments. For more information on UPS services, refer to the latest *UPS Rate and Service Guide* available at http://www.ups.com.

Code	United States Domestic Shipments
01	UPS Next Day Air®
02	UPS Second Day Air®
03	UPS Ground
12	UPS Three-Day Select®
13	UPS Next Day Air Saver®
14	UPS Next Day Air® Early A.M. SM
54	UPS Worldwide Express Plus SM
59	UPS Second Day Air A.M.®

Code	Shipments Originating in United States
01	UPS Next Day Air®
02	UPS Second Day Air®
03	UPS Ground
07	UPS Worldwide Express SM
08	UPS Worldwide Expedited SM
11	UPS Standard
12	UPS Three-Day Select®
14	UPS Next Day Air® Early A.M. SM
54	UPS Worldwide Express Plus SM
59	UPS Second Day Air A.M.®
65	UPS Saver

Code	Shipments Originating in Puerto Rico
01	UPS Next Day Air®
02	UPS Second Day Air®
03	UPS Ground
07	UPS Worldwide Express SM
08	UPS Worldwide Expedited SM
14	UPS Next Day Air® Early A.M. SM
54	UPS Worldwide Express Plus SM
65	UPS Saver

Code	Shipments Originating in Canada
01	UPS Express
07	UPS Worldwide Express SM
08	UPS Worldwide Expedited SM
11	UPS Standard
12	UPS Three-Day Select®
13	UPS Saver
14	UPS Express Early A.M. SM

Code	Shipments Originating in Mexico
07	UPS Express
08	UPS Expedited[SM]
54	UPS Express Plus
65	UPS Saver

Code	Polish Domestic Shipments
07	UPS Express
08	UPS Expedited[SM]
11	UPS Standard
54	UPS Worldwide Express Plus[SM]
65	UPS Saver
82	UPS Today Standard[SM]
83	UPS Today Dedicated Courrier[SM]
84	UPS Today Intercity
85	UPS Today Express
86	UPS Today Express Saver

Code	Shipments Originating in the European Union
07	UPS Express
08	UPS Expedited[SM]
11	UPS Standard
54	UPS Worldwide Express Plus[SM]
65	UPS Saver

Code	Shipments Originating in Other Countries
07	UPS Express
08	UPS Worldwide Expedited[SM]
11	UPS Standard
54	UPS Worldwide Express Plus[SM]
65	UPS Saver

Code	Freight Shipments
TDCB	Trade Direct Cross Border
TDA	Trade Direct Air
TDO	Trade Direct Ocean
308	UPS Freight LTL
309	UPS Freight LTL Guaranteed
310	UPS Freight LTL Urgent

Appendix B: Reference Number Codes

Shipments and packages may include a reference number. The type of reference number may be indicated by a reference number code. The following table lists the reference number code values.

Code	Reference Number Type
AJ	Accounts Receivable Customer Account
AT	Appropriation Number
BM	Bill of Lading Number
9V	Collect on Delivery (COD) Number
ON	Dealer Order Number
DP	Department Number
3Q	Food and Drug Administration (FDA) Product Code
IK	Invoice Number
MK	Manifest Key Number
MJ	Model Number
PM	Part Number
PC	Production Code
PO	Purchase Order Number
RQ	Purchase Request Number
RZ	Return Authorization Number
SA	Salesperson Number
SE	Serial Number
ST	Store Number
TN	Transaction Reference Number

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
Afghanistan	AF
Åland Islands	AX
Albania	AL
Algeria	DZ
American Samoa	AS
Andorra	AD
Angola	AO
Anguilla	AI
Antarctica	AQ
Antigua and Barbuda	AG
Argentina	AR
Armenia	AM
Aruba	AW
Australia	AU
Austria	AT
Azerbaijan	AZ
Bahamas	BS
Bahrain	BH
Bangladesh	BD
Barbados	BB
Belarus	BY
Belgium	BE
Belize	BZ
Benin	BJ
Bermuda	BM
Bhutan	BT
Bolivia	BO
Bosnia and Herzegovina	BA
Botswana	BW
Bouvet Island	BV
Brazil	BR
British Indian Ocean Territory	IO
Brunei Darussalam	BN
Bulgaria	BG
Burkina Faso	BF
Burundi	BI
Cambodia	KH
Cameroon	CM
Canada	CA
Cape Verde	CV

Country	Code
Cayman Islands	KY
Central African Republic	CF
Chad	TD
Chile	CL
China	CN
Christmas Island	CX
Cocos (Keeling) Islands	CC
Colombia	CO
Comoros	KM
Congo	CG
Congo, The Democratic Republic of	CD
Cook Islands	CK
Costa Rica	CR
Côte D'ivoire	CI
Croatia	HR
Cuba	CU
Cyprus	CY
Czech Republic	CZ
Denmark	DK
Djibouti	DJ
Dominica	DM
Dominican Republic	DO
Ecuador	EC
Egypt	EG
El Salvador	SV
Equatorial Guinea	GQ
Eritrea	ER
Estonia	EE
Ethiopia	ET
Falkland Islands (Malvinas)	FK
Faroe Islands	FO
Fiji	FJ
Finland	FI
France	FR
French Guiana	GF
French Polynesia	PF
French Southern Territories	TF
Gabon	GA
Gambia	GM
Georgia	GE
Germany	DE
Ghana	GH
Gibraltar	GI
Greece	GR
Greenland	GL
Grenada	GD
Guadeloupe	GP
Guam	GU
Guatemala	GT
Guernsey	GG
Guinea	GN
Guinea-Bissau	GW
Guyana	GY
Haiti	HT
Heard Island and Mcdonald Islands	HM

Country	Code
Holy See (Vatican City State)	VA
Honduras	HN
Hong Kong	HK
Hungary	HU
Iceland	IS
India	IN
Indonesia	ID
Iran, Islamic Republic of	IR
Iraq	IQ
Ireland	IE
Isle of Man	IM
Israel	IL
Italy	IT
Jamaica	JM
Japan	JP
Jersey	JE
Jordan	JO
Kazakhstan	KZ
Kenya	KE
Kiribati	KI
Korea, Democratic People's Republic of	KP
Korea, Republic of	KR
Kuwait	KW
Kyrgyzstan	KG
Lao People's Democratic Republic	LA
Latvia	LV
Lebanon	LB
Lesotho	LS
Liberia	LR
Libyan Arab Jamahiriya	LY
Liechtenstein	LI
Lithuania	LT
Luxembourg	LU
Macao	MO
Macedonia, The Former Yugoslav Republic of	MK
Madagascar	MG
Malawi	MW
Malaysia	MY
Maldives	MV
Mali	ML
Malta	MT
Marshall Islands	MH
Martinique	MQ
Mauritania	MR
Mauritius	MU
Mayotte	YT
Mexico	MX
Micronesia, Federated States of	FM
Moldova, Republic of	MD
Monaco	MC
Mongolia	MN
Montenegro	ME
Montserrat	MS
Morocco	MA
Mozambique	MZ

Country	Code
Myanmar	MM
Namibia	NA
Nauru	NR
Nepal	NP
Netherlands	NL
Netherlands Antilles	AN
New Caledonia	NC
New Zealand	NZ
Nicaragua	NI
Niger	NE
Nigeria	NG
Niue	NU
Norfolk Island	NF
Northern Mariana Islands	MP
Norway	NO
Oman	OM
Pakistan	PK
Palau	PW
Palestinian Territory, Occupied	PS
Panama	PA
Papua New Guinea	PG
Paraguay	PY
Peru	PE
Philippines	PH
Pitcairn	PN
Poland	PL
Portugal	PT
Puerto Rico	PR
Qatar	QA
Réunion	RE
Romania	RO
Russian Federation	RU
Rwanda	RW
Saint Helena	SH
Saint Kitts and Nevis	KN
Saint Lucia	LC
Saint Pierre and Miquelon	PM
Saint Vincent and The Grenadines	VC
Samoa	WS
San Marino	SM
Sao Tome and Principe	ST
Saudi Arabia	SA
Senegal	SN
Serbia	RS
Seychelles	SC
Sierra Leone	SL
Singapore	SG
Slovakia	SK
Slovenia	SI
Solomon Islands	SB
Somalia	SO
South Africa	ZA
South Georgia and The South Sandwich Islands	GS
Spain	ES
Sri Lanka	LK

Country	Code
Sudan	SD
Suriname	SR
Svalbard and Jan Mayen	SJ
Swaziland	SZ
Sweden	SE
Switzerland	CH
Syrian Arab Republic	SY
Taiwan, Province of China	TW
Tajikistan	TJ
Tanzania, United Republic of	TZ
Thailand	TH
Timor-Leste	TL
Togo	TG
Tokelau	TK
Tonga	TO
Trinidad and Tobago	TT
Tunisia	TN
Turkey	TR
Turkmenistan	TM
Turks and Caicos Islands	TC
Tuvalu	TV
Uganda	UG
Ukraine	UA
United Arab Emirates	AE
United Kingdom	GB
United States	US
United States Minor Outlying Islands	UM
Uruguay	UY
Uzbekistan	UZ
Vanuatu	VU
Venezuela	VE
Viet Nam	VN
Virgin Islands, British	VG
Virgin Islands, U.S.	VI
Wallis and Futuna	WF
Western Sahara	EH
Yemen	YE
Zambia	ZM
Zimbabwe	ZW

Appendix D: Currency Codes

UPS currency code abbreviations generally follow the recommendations of the International Standards Organization, which publishes a list of currency abbreviations in ISO Standard 4217, for which the latest information is available from the ISO web site. Exceptions are noted in bold in the table below.

Note that countries sometimes change their official currency. UPS may require some time after the introduction of a new currency before it can fully support that currency. In addition, UPS may continue to support the older currency for an interim period in order to provide backwards compatibility. UPS may also require the use of currencies other than the official currency for some countries. For the latest information, please contact your UPS OnLine Tools representative.

Country / Region	Currency	Code
Afghanistan	Afghani	AFN
Albania	Lek	ALL
Algeria	Algerian Dinar	DZD
American Samoa	US Dollar	USD
Andorra	Euro	EUR
Angola	Kwanza	AOA
Anguilla	East Caribbean Dollar	XCD
Antigua And Barbuda	East Caribbean Dollar	XCD
Argentina	Argentine Peso	ARS
Armenia	Armenian Dram	AMD
Aruba	Aruban Guilder	AWG
Australia	Australian Dollar	AUD
Austria	Euro	EUR
Azerbaijan	Azerbaijanian Manat	AZN
Bahamas	Bahamian Dollar	BSD
Bahrain	Bahraini Dinar	BHD
Bangladesh	Taka	BDT
Barbados	Barbados Dollar	BBD
Belarus	Belarussian Ruble	BYR
Belgium	Euro	EUR
Belize	Belize Dollar	BZD
Benin	CFA Franc BCEAO	XOF
Bermuda	Bermudian Dollar (customarily known as Bermuda Dollar)	BMD
Bhutan	Indian Rupee	INR
Bhutan	Ngultrum	BTN
Bolivia	Boliviano	BOB
Bolivia	Mvdol	BOV
Bosnia & Herzegovina	Convertible Marks	BAM
Botswana	Pula	BWP

Country / Region	Currency	Code
Bouvet Island	Norwegian Krone	NOK
Brazil	Brazilian Real	BRL
British Indian Ocean Territory	US Dollar	USD
Brunei Darussalam	Brunei Dollar	BND
Bulgaria	Bulgarian Lev	BGN
Burkina Faso	CFA Franc BCEAO	XOF
Burundi	Burundi Franc	BIF
Cambodia	Riel	KHR
Cameroon	CFA Franc BEAC	XAF
Canada	Canadian Dollar	CAD
Cape Verde	Cape Verde Escudo	CVE
Cayman Islands	Cayman Islands Dollar	KYD
Central African Republic	CFA Franc BEAC	XAF
Chad	CFA Franc BEAC	XAF
Chile	Chilean Peso	CLP
	Unidades de formento	CLF
China	**Yuan Renminbi**	**RMB**
Christmas Island	Australian Dollar	AUD
Cocos (Keeling) Islands	Australian Dollar	AUD
Colombia	Colombian Peso	COP
	Unidad de Valor Real	COU
Comoros	Comoro Franc	KMF
Congo	CFA Franc BEAC	XAF
Congo, The Democratic Republic of	Franc Congolais	CDF
Cook Islands	New Zealand Dollar	NZD
Costa Rica	Costa Rican Colon	CRC
Côte D'ivoire	CFA Franc BCEAO	XOF
Croatia	Croatian Kuna	HRK
Cuba	Cuban Peso	CUP
Cyprus	Euro	EUR
Czech Republic	Czech Koruna	CZK
Denmark	Danish Krone	DKK
Djibouti	Djibouti Franc	DJF
Dominica	East Caribbean Dollar	XCD
Dominican Republic	Dominican Peso	DOP
Ecuador	US Dollar	USD
Egypt	Egyptian Pound	EGP
El Salvador	El Salvador Colon	SVC
	US Dollar	USD
Equatorial Guinea	CFA Franc BEAC	XAF
Eritrea	Nakfa	ERN
Estonia	Kroon	EEK

Country / Region	Currency	Code
Ethiopia	Ethiopian Birr	ETB
Falkland Islands (Malvinas)	Falkland Islands Pound	FKP
Faroe Islands	Danish Krone	DKK
Fiji	Fiji Dollar	FJD
Finland	Euro	EUR
France	Euro	EUR
French Guiana	Euro	EUR
French Polynesia	CFP Franc	XPF
French Southern Territories	Euro	EUR
Gabon	CFA Franc BEAC	XAF
Gambia	Dalasi	GMD
Georgia	Lari	GEL
Germany	Euro	EUR
Ghana	Cedi	GHC
Gibraltar	Gibraltar Pound	GIP
Greece	Euro	EUR
Greenland	Danish Krone	DKK
Grenada	East Caribbean Dollar	XCD
Guadeloupe	Euro	EUR
Guam	US Dollar	USD
Guatemala	Quetzal	GTQ
Guinea	Guinea Franc	GNF
Guinea-Bissau	Guinea-Bissau Peso	GWP
Guinea-Bissau	CFA Franc BCEAO	XOF
Guyana	Guyana Dollar	GYD
Haiti	Gourde	HTG
Haiti	US Dollar	USD
Heard Island ond Mcdonald Islands	Australian Dollar	AUD
Holy See (Vatican City State)	Euro	EUR
Honduras	Lempira	HNL
Hong Kong	Hong Kong Dollar	HKD
Hungary	Forint	HUF
Iceland	Iceland Krona	ISK
India	Indian Rupee	INR
Indonesia	Rupiah	IDR
Iran (Islamic Republic of)	Iranian Rial	IRR
Iraq	Iraqi Dinar	IQD
Ireland	Euro	EUR
Israel	New Israeli Sheqel	ILS
Italy	Euro	EUR
Jamaica	Jamaican Dollar	JMD
Japan	Yen	JPY

Country / Region	Currency	Code
Jordan	Jordanian Dinar	JOD
Kazakhstan	Tenge	KZT
Kenya	Kenyan Shilling	KES
Kiribati	Australian Dollar	AUD
Korea, Democratic People's Republic of	North Korean Won	KPW
Korea, Republic of	Won	KRW
Kuwait	Kuwaiti Dinar	KWD
Kyrgyzstan	Som	KGS
Lao People's Democratic Republic	Kip	LAK
Latvia	Latvian Lats	LVL
Lebanon	Lebanese Pound	LBP
Lesotho	Rand	ZAR
	Loti	LSL
Liberia	Liberian Dollar	LRD
Libyan Arab Jamahiriya	Libyan Dinar	LYD
Liechtenstein	Swiss Franc	CHF
Lithuania	Lithuanian Litas	LTL
Luxembourg	Euro	EUR
Macao	Pataca	MOP
Macedonia, The Former Yugoslav Republic of	Denar	MKD
Madagascar	Malagascy Ariary	MGA
Malawi	Kwacha	MWK
Malaysia	Malaysian Ringgit	MYR
Maldives	Rufiyaa	MVR
Mali	CFA Franc BCEAO	XOF
Malta	Euro	EUR
Marshall Islands	US Dollar	USD
Martinique	Euro	EUR
Mauritania	Ouguiya	MRO
Mauritius	Mauritius Rupee	MUR
Mayotte	Euro	EUR
Mexico	Mexican Peso	MXN
	Mexican Unidad de Inversion (UID)	MXV
Micronesia (Federated States of)	US Dollar	USD
Moldova, Republic of	Moldovan Leu	MDL
Monaco	Euro	EUR
Mongolia	Tugrik	MNT
Montenegro	Euro	EUR
Montserrat	East Caribbean Dollar	XCD
Morocco	Moroccan Dirham	MAD

Country / Region	Currency	Code
Mozambique	Metical	MZN
Myanmar	Kyat	MMK
Namibia	Rand	ZAR
	Namibian Dollar	NAD
Nauru	Australian Dollar	AUD
Nepal	Nepalese Rupee	NPR
Netherlands	Euro	EUR
Netherlands Antilles	Netherlands Antillian Guilder	ANG
New Caledonia	CFP Franc	XPF
New Zealand	New Zealand Dollar	NZD
Nicaragua	Cordoba Oro	NIO
Niger	CFA Franc BCEAO	XOF
Nigeria	Naira	NGN
Niue	New Zealand Dollar	NZD
Norfolk Island	Australian Dollar	AUD
Northern Mariana Islands	US Dollar	USD
Norway	Norwegian Krone	NOK
Oman	Rial Omani	OMR
Pakistan	Pakistan Rupee	PKR
Palau	US Dollar	USD
Panama	Balboa	PAB
	US Dollar	USD
Papua New Guinea	Kina	PGK
Paraguay	Guarani	PYG
Peru	Nuevo Sol	PEN
Philippines	Philippine Peso	PHP
Pitcairn	New Zealand Dollar	NZD
Poland	Zloty	PLN
Portugal	Euro	EUR
Puerto Rico	US Dollar	USD
Qatar	Qatari Rial	QAR
Réunion	Euro	EUR
Romania	New Leu	RON
Russian Federation	Russian Ruble	RUB
Rwanda	Rwanda Franc	RWF
Saint Helena	Saint Helena Pound	SHP
Saint Kitts and Nevis	East Caribbean Dollar	XCD
Saint Lucia	East Caribbean Dollar	XCD
Saint Pierre and Miquelon	Euro	EUR
Saint Vincent and The Grenadines	East Caribbean Dollar	XCD
Samoa	Tala	WST
San Marino	Euro	EUR
São Tome and Principe	Dobra	STD

Country / Region	Currency	Code
Saudi Arabia	Saudi Riyal	SAR
Senegal	CFA Franc BCEAO	XOF
Serbia	Serbian Dinar	RSD
Seychelles	Seychelles Rupee	SCR
Sierra Leone	Leone	SLL
Singapore	Singapore Dollar	SGD
Slovakia	Slovak Koruna	SKK
Slovenia	Euro	EUR
Solomon Islands	Solomon Islands Dollar	SBD
Somalia	Somali Shilling	SOS
South Africa	Rand	ZAR
Spain	Euro	EUR
Sri Lanka	Sri Lanka Rupee	LKR
Sudan	Sudanese Dinar	SDD
Suriname	Surinam Dollar	SRD
Svalbard and Jan Mayen	Norwegian Krone	NOK
Swaziland	Lilangeni	SZL
Sweden	Swedish Krona	SEK
Switzerland	Swiss Franc	CHF
	WIR Franc	CHW
	WIR Euro	CHE
Syrian Arab Republic	Syrian Pound	SYP
Taiwan, Province of China	New Taiwan Dollar	TWD
Tajikistan	Somoni	TJS
Tanzania, United Republic of	Tanzanian Shilling	TZS
Thailand	Baht	THB
Timor-Leste	US Dollar	USD
Togo	CFA Franc BCEAO	XOF
Tokelau	New Zealand Dollar	NZD
Tonga	Pa'anga	TOP
Trinidad And Tobago	Trinidad and Tobago Dollar	TTD
Tunisia	Tunisian Dinar	TND
Turkey	New Turkish Lira	TRY
Turkmenistan	Manat	TMM
Turks And Caicos Islands	US Dollar	USD
Tuvalu	Australian Dollar	AUD
Uganda	Uganda Shilling	UGX
Ukraine	Hryvnia	UAH
United Arab Emirates	UAE Dirham	AED
United Kingdom	Pound Sterling	GBP
United States	US Dollar	USD
United States Minor Outlying Islands	US Dollar	USD

Country / Region	Currency	Code
Uruguay	Peso Uruguayo	UYU
	Uruguay Peso en Unidades Indexadas	UYI
Uzbekistan	Uzbekistan Sum	UZS
Vanuatu	Vatu	VUV
Venezuela	Bolivar	VEB
Viet Nam	Dong	VND
Virgin Islands (British)	US Dollar	USD
Virgin Islands (US)	US Dollar	USD
Wallis And Futuna	CFP Franc	XPF
Western Sahara	Moroccan Dirham	MAD
Yemen	Yemeni Rial	YER
Zambia	Kwacha	ZMK
Zimbabwe	Zimbabwe Dollar	ZWD

Appendix E: Tracking Test Numbers

UPS has set aside several shipping and tracking numbers to help developers test their applications. These special numbers are only valid with the Customer Integration Environment at wwwcie.ups.com. The following table lists those special numbers and describes the results that developers should expect when attempting a TrackRequest.

When using the Customer Integration Environment with tracking numbers other than those designated for testing, the numbers will be evaluated as production tracking numbers.

Type	Value	Option	Service	Response
Tracking	1Z12345E0291980793	Activity (All)	2nd Day Air	Delivered
Tracking	1Z12345E6692804405	None (Last)	World Wide Express	Delivered
Shipping	1Z12345E0390515214 (Second Package: 1Z12345E0393657226)	None (Last)	Ground	Delivered
Tracking	1Z12345E1392654435	None (Last)	Next Day Air Saver	Transit
Tracking	1Z12345E6892410845	Activity (All)	Next Day Air Saver	2nd Delivery attempt
Tracking	1Z12345E029198079	None (Last)		Invalid Tracking Number
Tracking	1Z12345E1591910450	None (Last)		No Tracking Information Available
Tracking	990728071	Activity(All)	UPS Freight LTL	Delivered
Tracking	3251026119	Activity(All)		Delivered Origin CFS

Appendix F: State/Province Codes

UPS state/province (for the US and Canada) codes

State/Province	Code
Alaska	AK
Alabama	AL
Arkansas	AR
Arizona	AZ
California	CA
Colorado	CO
Connecticut	CT
District of Columbia	DC
Delaware	DE
Florida	FL
Georgia	GA
Hawaii	HI
Iowa	IA
Idaho	ID
Illinois	IL
Indiana	IN
Kansas	KS
Kentucky	KY
Louisiana	LA
Massachusetts	MA
Maryland	MD
Maine	ME
Michigan	MI
Minnesota	MN
Missouri	MO
Mississippi	MS
Montana	MT
North Carolina	NC
North Dakota	ND
Nebraska	NE
New Hampshire	NH
New Jersey	NJ
New Mexico	NM
Nevada	NV
New York	NY
Ohio	OH
Oklahoma	OK
Oregon	OR
Pennsylvania	PA
Rhode Island	RI
South Carolina	SC
South Dakota	SD
Tennessee	TN
Texas	TX
Utah	UT
Virginia	VA
Vermont	VT
Washington	WA

State/Province	Code
Wisconsin	WI
West Virginia	WV
Wyoming	WY
Alberta	AB
British Columbia	BC
Manitoba	MB
New Brunswick	NB
Newfoundland and Labrador	NL
Nova Scotia	NS
Northwest Territories	NT
Nunavut	NU
Ontario	ON
Prince Edward Island	PE
Quebec	QC
Saskatchewan	SK
Yukon Territory	YT

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