Informatica® Cloud

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# Developer Guide

Informatica Cloud Developer Guide
2
June 2015

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# Preface

Welcome to the *Informatica AddressDoctor Cloud Developer Guide*. This guide provides you information about Informatica AddressDoctor Cloud features and configuration settings. This guide also contains some examples that you can use to verify your settings.

# Informatica Resources

## Informatica My Support Portal

As an Informatica customer, the first step in reaching out to Informatica is through the Informatica My Support Portal at https://mysupport.informatica.com. The My Support Portal is the largest online data integration collaboration platform with over 100,000 Informatica customers and partners worldwide.

As a member, you can:

- Access all of your Informatica resources in one place.
- Review your support cases.
- Search the Knowledge Base, find product documentation, access how-to documents, and watch support videos.
- Find your local Informatica User Group Network and collaborate with your peers.

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## Informatica Documentation

The Informatica Documentation team makes every effort to create accurate, usable documentation. If you have questions, comments, or ideas about this documentation, contact the Informatica Documentation team through email at infa_documentation@informatica.com. We will use your feedback to improve our documentation. Let us know if we can contact you regarding your comments.

The Documentation team updates documentation as needed. To get the latest documentation for your product, navigate to Product Documentation from https://mysupport.informatica.com.

## Informatica Product Availability Matrixes

Product Availability Matrixes (PAMs) indicate the versions of operating systems, databases, and other types of data sources and targets that a product release supports. You can access the PAMs on the Informatica My Support Portal at https://mysupport.informatica.com.

## Informatica Web Site

You can access the Informatica corporate web site at https://www.informatica.com. The site contains information about Informatica, its background, upcoming events, and sales offices. You will also find product and partner information. The services area of the site includes important information about technical support, training and education, and implementation services.

## Informatica How-To Library

As an Informatica customer, you can access the Informatica How-To Library at https://mysupport.informatica.com. The How-To Library is a collection of resources to help you learn more about Informatica products and features. It includes articles and interactive demonstrations that provide solutions to common problems, compare features and behaviors, and guide you through performing specific real-world tasks.

## Informatica Knowledge Base

As an Informatica customer, you can access the Informatica Knowledge Base at https://mysupport.informatica.com. Use the Knowledge Base to search for documented solutions to known technical issues about Informatica products. You can also find answers to frequently asked questions, technical white papers, and technical tips. If you have questions, comments, or ideas about the Knowledge Base, contact the Informatica Knowledge Base team through email at KB_Feedback@informatica.com.

## Informatica Support YouTube Channel

You can access the Informatica Support YouTube channel at http://www.youtube.com/user/INFASupport. The Informatica Support YouTube channel includes videos about solutions that guide you through performing specific tasks. If you have questions, comments, or ideas about the Informatica Support YouTube channel, contact the Support YouTube team through email at supportvideos@informatica.com or send a tweet to @INFASupport.

## Informatica Marketplace

The Informatica Marketplace is a forum where developers and partners can share solutions that augment, extend, or enhance data integration implementations. By leveraging any of the hundreds of solutions available on the Marketplace, you can improve your productivity and speed up time to implementation on your projects. You can access Informatica Marketplace at http://www.informaticamarketplace.com.

## Informatica Velocity

You can access Informatica Velocity at https://mysupport.informatica.com. Developed from the real-world experience of hundreds of data management projects, Informatica Velocity represents the collective knowledge of our consultants who have worked with organizations from around the world to plan, develop, deploy, and maintain successful data management solutions. If you have questions, comments, or ideas about Informatica Velocity, contact Informatica Professional Services at ips@informatica.com.

## Informatica Global Customer Support

You can contact a Customer Support Center by telephone or through the Online Support.

Online Support requires a user name and password. You can request a user name and password at http://mysupport.informatica.com.

The telephone numbers for Informatica Global Customer Support are available from the Informatica web site at http://www.informatica.com/us/services-and-training/support-services/global-support-centers/.

CHAPTER 1

# Introduction to Informatica AddressDoctor Cloud

This chapter includes the following topics:

- Informatica AddressDoctor Cloud Overview, 10
- Informatica AddressDoctor DQC Account, 11
- Informatica AddressDoctor Cloud Transactions, 11
- Key Features of Informatica AddressDoctor Cloud, 11
- New Features in Informatica AddressDoctor Cloud V2, 12

## Informatica AddressDoctor Cloud Overview

Informatica AddressDoctor Cloud is an online address validation solution that you can use to verify and validate international postal addresses in real time. Informatica AddressDoctor Cloud is a SOAP-based solution that runs on top of the latest Informatica AddressDoctor software and the most up-to-date reference address databases.

You can integrate Informatica AddressDoctor Cloud with CRM systems, e-commerce sites, or other cloud- or web-based solutions to verify and validate addresses. You can access Informatica AddressDoctor Cloud over Secure Sockets Layer (SSL) connections. To access Informatica AddressDoctor Cloud, you need an Informatica AddressDoctor Data Quality Center (DQC) user account with sufficient valid transactions.

A new version number in the Informatica AddressDoctor Cloud interface indicates a new Informatica AddressDoctor Cloud interface. For example, the current Informatica Cloud URL contains the version number V2. To access the latest Informatica AddressDoctor Cloud features, ensure that your SOAP calls point to the latest Informatica AddressDoctor Cloud URL.

If you do not want to upgrade an Informatica AddressDoctor Cloud implementation, you can continue to access the previous versions until the time Informatica AddressDoctor supports the version. For more details about versions that Informatica AddressDoctor supports, contact an Informatica AddressDoctor sales representative.

# Informatica AddressDoctor DQC Account

To validate addresses over Informatica AddressDoctor Cloud, you need a valid Informatica AddressDoctor DQC account with sufficient number of transactions.

To access the Informatica AddressDoctor DQC portal, you need an Informatica Passport account. If you do not have an Informatica Passport account, you can create one from https://dqc.addressdoctor.com/sso/account/register. After you create an Informatica Passport account, you can assign that account to one or more Informatica AddressDoctor DQC accounts.

If you do not have an Informatica AddressDoctor DQC account, you can use your Informatica Passport credentials to access the DQC portal, and create an account. You can access the Informatica AddressDoctor DQC account at https://dqc.addressdoctor.com/. Alternatively, you can access the Informatica AddressDoctor DQC portal from the Informatica Passport single sign-on dashboard at https://infapassport.okta.com/. When you create the first Informatica AddressDoctor DQC account for your organization, Informatica AddressDoctor assigns multiple free transactions to the new account.

For more information about Informatica AddressDoctor DQC accounts, see the *Informatica AddressDoctor Data Quality Center User Guide*.

# Informatica AddressDoctor Cloud Transactions

To validate addresses over Informatica AddressDoctor Cloud, you must have sufficient valid transactions in your Informatica AddressDoctor DQC account. To authenticate an Informatica AddressDoctor Cloud address validation request, you must include the Informatica AddressDoctor DQC account ID and password in the request.

You can buy transactions online from the Informatica AddressDoctor DQC portal. You can choose the type of transactions that you need and buy sufficient number of transactions based on your requirements.

For example, you can use batch transactions to validate addresses in the batch and the certified modes. Similarly, you can use interactive transactions to validate addresses in the interactive and fast completion modes.

For more information about buying transactions online, see the *Informatica AddressDoctor Data Quality Center User Guide*.

# Key Features of Informatica AddressDoctor Cloud

The following features significantly improve the Informatica AddressDoctor Cloud user experience:

**One Interface**

You can access all the process modes of Informatica AddressDoctor Cloud from the same interface. In Informatica AddressDoctor Web Service 4, you had separate interfaces for each of the process modes. You can enter up to 1000 addresses in the batch mode. In the interactive and fast completion modes, Informatica AddressDoctor Cloud returns up to 100 suggestions.

**Extensibility**

Informatica AddressDoctor Cloud has a flexible interface that helps you access new Informatica AddressDoctor Cloud features without changing the WSDL. For example, the Version 4 Web Service defined enumerators for all parameters. Adding more options to the previous web service meant modifications to the interface. Informatica AddressDoctor Cloud defines the Parameter names, but not the values, which are plain String values. In this way, you can add new values to existing parameters without changing the interface.

If an Interface change does become necessary in the future, Informatica AddressDoctor adds version information such as V1 or V2 in the URL. Customers can stay on a previous version and upgrade to the newer version when they are ready.

**Improved Performance**

Informatica AddressDoctor Cloud makes full use of the multithreading capabilities of Informatica AddressDoctor. Additionally, Informatica AddressDoctor Cloud also benefits from the improved speed of address processing by Informatica AddressDoctor.

**Default Method**

The default call from Informatica AddressDoctor Cloud goes to the web method, `process`. Informatica AddressDoctor Cloud provides you objects for parameters and addresses just as the Web Service 4 did. These objects, however, have a new structure to support the capabilities of the V5 engine.

**Note:** Informatica AddressDoctor Cloud V2 does not support the Expert mode (`ProcessEX`).

# New Features in Informatica AddressDoctor Cloud V2

Informatica AddressDoctor Cloud V2 introduces the following new features.

## Single-Line Address Validation

You can use single-line address validation to validate addresses entered into the `AddressComplete` element as a single line and receive suggestions to complete the address. To use the single-line address validation, set the process mode to `FASTCOMPLETION`.

You can use single-line address validation to validate addresses from the following countries:

- Australia
- Canada
- Germany
- Great Britain
- New Zealand
- United States of America

Informatica AddressDoctor Cloud identifies address elements in a single-line address input based on their position in the sequence you enter the elements. So, it is imperative that you follow the order shown in the following table when you enter single-line addresses in the `AddressComplete` element. When you enter an address in single line, ensure that you do not mix Delivery Address Line (DAL) elements and Country-Specific Locality Line (CSLLN) elements.

The following table shows the order of address elements for the supported countries.

| Country | Order of Address Elements |
|---|---|
| Australia | Sub-building, House Number, Street, Main Locality, Province, Postal Code |
| Canada | Sub-building, House Number, Street, Delivery Service, Main Locality, Province, Postal Code |
| Germany | Street, House Number, Postal Code, Locality, Province |
| Great Britain | Sub-building, House Number, Street, Main Locality, SubLocality, Postal Code |
| New Zealand | Sub-building, House Number, Street, Delivery Service, Locality, Postal Code |
| United States | Sub-building, House Number, Street, Locality, Province, Postal Code |

As you see in the preceding table, the typical sequence of address elements is from the specific to the generic. You must enter the elements in the specified sequence even if you leave out some of the elements from the input. However, to receive optimum results, you provide as many details as possible in the input. Even though delimiters are not mandatory in a single-line address input, Informatica AddressDoctor Cloud considers a comma or semicolon in the input as an element separator. You might receive better suggestions for inputs with element separators. Note that Informatica AddressDoctor Cloud does not support country, organization, building, or contact information in the single-line address input.

If the single-line address input contains only a numeric input, Informatica AddressDoctor Cloud considers it as the Postal Code and returns suggestions accordingly. For countries where the house number appears on the left side of the street name or locality, if the single-line address input begins with a number that is followed by a string, Informatica AddressDoctor Cloud considers the number as a house number and the following string as street name or locality. If Informatica AddressDoctor Cloud does not find a match for this combination, Informatica AddressDoctor Cloud interprets the input as street name without house number or as a combination of postal code and locality.

When there is no perfect match for an input, Informatica AddressDoctor Cloud returns multiple suggestions to help you choose the most appropriate result. If the single-line address input maps to a country that Informatica AddressDoctor does not support for single-line address validation, Informatica AddressDoctor Cloud returns the process status code **W9**. A process status code of W9 denotes that the address was not processed.

### Related Topics:

- “Example: Single Line Address Validation” on page 73

## AddressCodeLookup

You can use the `ADDRESSCODELOOKUP` process mode to enter a country-specific address code and retrieve the complete or partial address for the code.

Because Informatica AddressDoctor Cloud considers the `ADDRESSCODELOOKUP` transactions as batch transactions, you must have sufficient batch transactions in your account to use this process mode. Informatica AddressDoctor Cloud supports the `ADDRESSCODELOOKUP` process mode for the following countries and codes:

- Germany: DEU_AGS, DEU_LOCALITY_ID, DEU_STREET_ID
- South Africa.: ZAF_NADID

- Serbia: SRB_PAK
- UK: GBR_UDPRN
- Japan: JPN_CHOUMEI_AZA_CODE, JPN_CHOUMEI_AZA_GAIKU_CODE

Informatica AddressDoctor Cloud also introduces two new process status codes that denote the status of an `ADDRESSCODELOOKUP` request. A process status of **A0** indicates that Informatica AddressDoctor Cloud could not find any information for the code you entered. A process status of **A1** indicates that partial or complete address was available for the code you entered.

### Related Topics:

- "Example: AddressCodeLookup" on page 78

## Configurable Output Format for Element Descriptors

You can specify the output format for street, building, and subbuilding element descriptors in Australia and New Zealand addresses and the *Strasse* element in Germany addresses.

To specify the output format for the element descriptors, you can configure one of the following values for the `GlobalPreferredDescriptor` parameter:

**DATABASE**. Returns the element descriptor that the reference database specifies for the address. If the database does not specify a descriptor for the address, Informatica AddressDoctor Cloud copies the input value to the output address. DATABASE is the default value.

**LONG**. Returns the expanded form of the element descriptor in the input address.

**SHORT**. Returns the abbreviated form of the element descriptor in the input address.

**PRESERVE_INPUT**. Copies the element descriptor from the input address to the output address. If the input element descriptor is not an official name, Informatica AddressDoctor returns the corresponding value from the reference address database. For example, BD is not an official name for boulevard in Australia. When you validate an Australia address where the input contains BD, Informatica AddressDoctor Cloud corrects the descriptor to BVD. BVD is the short form for boulevard in the Australia reference address database.

### Related Topics:

- "GlobalPreferredDescriptor" on page 36

## Point Address Geocoding

Informatica AddressDoctor Cloud supports the following point address geocoding types.

- Arrival Point (**ARRIVAL_POINT**). The geo-coordinates are calculated for a point that is placed in the center of a street segment in front of the house. If the arrival point geo-coordinates do not exist, Informatica AddressDoctor uses the Standard Geocode database as a fallback to interpolate the geo-coordinates. Arrival Point geocoding is the default option. For United Kingdom addresses, Informatica AddressDoctor Cloud returns the rooftop geo-coordinates if you set the geocoding type to ARRIVAL_POINT. Rooftop geo-coordinates are the measured coordinates for the center of the roof for the primary building on a parcel of land.
- Parcel Centroid (**PARCEL_CENTROID**). The geo-coordinates are calculated for a point that is at the geographic center of the parcel of land.

You can retrieve the point address geo-coordinates for addresses from the following countries:

- Australia
- Austria

- Canada
- Denmark
- Finland
- France
- Germany
- Hungary
- Latvia
- Liechtenstein
- Luxemburg
- Mexico

  **Note:** Informatica AddressDoctor Cloud supports only ARRIVAL_POINT geocoding for Mexico addresses.
- Netherlands
- Norway
- Slovakia

  **Note:** Informatica AddressDoctor Cloud supports only ARRIVAL_POINT geocoding for Slovakia addresses.
- Slovenia
- Sweden
- Switzerland
- UK

  **Note:** Informatica AddressDoctor Cloud supports only ARRIVAL_POINT (rooftop) geocoding for UK addresses.
- USA

### Related Topics:

- “GeoCodingType” on page 35
- “Enrichments Parameter” on page 46
- “Example: A V4 Address with GeoCoding” on page 68
- “Example: A United Kingdom Address with Building-Level Rooftop GeoCoding” on page 83

## Support for Preserving Alias or Vanity Names for Localities and Streets

You can choose to retain the aliases or vanity names for localities and streets in the validated address output. You can set one of the following values for the `AliasLocality` and `AliasStreet` parameters to specify whether you want the vanity name or the official name in the output.

- **PRESERVE**. To retain the alias name or vanity name in the validated output.
- **OFFICIAL**. To receive the alias or the postal name as mandated by the postal regulations of the country in the validated output.
- **OFF**. To receive the postal name for the locality or street in the output.

The default value is OFFICIAL. If you are validating addresses in the certified mode, set these parameters to OFFICIAL.

### Related Topics:

- “AliasStreet and AliasLocality” on page 30

## Ability to Retrieve Address Codes for Outdated Japan Addresses

You can set the MatchingExtendedArchive parameter to retrieve the new address code for deprecated or outdated Japan addresses.

Informatica AddressDoctor Cloud validates the old address against the archived addresses in the reference database if you set MatchingExtendedArchive to **true** and the enrichment type to SUPPLEMENTARY_JP. Along with the validated output, Informatica AddressDoctor Cloud returns the old Choumei Aza code and the new Choumei Aza code as enrichment values. You can provide the new Choumei Aza code as input for the ADDRESSCODELOOKUP processing mode and receive the corresponding new address. If you set MatchingExtendedArchive to **false**, the Informatica AddressDoctor Cloud might reject the input address or correct it to some other address.

For outdated addresses, Informatica AddressDoctor Cloud returns an Extended Element Result Status (EERS) value of F.

### Related Topics:

- “MatchingExtendedArchive” on page 37

## New Features Powered by Informatica AddressDoctor Version 5.7.0

You can access the following Informatica AddressDoctor Version 5.7.0 features from the Informatica AddressDoctor Cloud interface.

**Ability to Remove Locality and Province Descriptors from China and Japan Addresses**

You can remove the locality and province descriptors from China and Japan addresses if you set the following validation parameters:

- PreferredLanguage to ENGLISH.
- PreferredScript to ASCII_SIMPLIFIED, ASCII_EXTENDED, LATIN, LATIN_1, or LATIN_ALT.

For example, when you validate China addresses, Informatica AddressDoctor Cloud returns Chaoyang instead of Chaoyangqu and Beijing instead of Beijingshi.

When you validate Japan addresses, Informatica AddressDoctor Cloud returns Tokyo instead of Tokyo-to and Kyoto instead of Kyoto-fu.

**Ability to Retrieve Building-Level Rooftop Geocoordinates for the United Kingdom Addresses**

You can retrieve rooftop geocoordinates for an United Kingdom address even when the input address does not contain a house number. Informatica AddressDoctor Cloud considers rooftop geocoordinates as arrival point geocoordinates.

To receive rooftop geocoordinates for the United Kingdom addresses, you must have GEOCODING transactions in your account and set the following parameters:

The GeoCodingType validation parameter to ARRIVAL_POINT.

The enrichments Enrichment Type parameter to GEOCODING.

### Multilanguage Support for Locality Information in Switzerland Address Output

You can configure Informatica AddressDoctor Cloud to return the locality information in Switzerland address results consistently in French, German, or Italian. In previous releases, Informatica AddressDoctor Cloud returned all information in the Switzerland address results in the main language of the region to which the address belonged. You can configure the `PreferredLanguage` parameter to one of the following values and receive the locality information in the corresponding language:

**ALTERNATIVE_1**

German

**ALTERNATIVE_2**

French

**ALTERNATIVE_3**

Italian

If you set `PreferredLanguage` to DATABASE, Informatica AddressDoctor Cloud returns the address in the main language of the region to which the address belongs. For example, German in Zurich and French in Geneva.

If you set `PreferredLanguage` to ENGLISH, Informatica AddressDoctor Cloud returns the English name of the locality if it is different from the name in the local language. Informatica AddressDoctor Cloud returns the other address elements in the main language of the region to which the address belongs. Note that English locality names are available only for Zurich addresses.

If you set `PreferredLanguage` to PRESERVE_INPUT, Informatica AddressDoctor Cloud returns the address in the same language in which you input the address. Note that Informatica AddressDoctor Cloud preserves the language only if the reference data is available in the same language that you used for the input. If the input address contains more than one language, Informatica AddressDoctor Cloud returns the output in the main language of the region.

Additionally, Informatica AddressDoctor returns the Street information for addresses in Biel/Bienne in the alternative language that you configured for the `PreferredLanguage` parameter.

### Ability to Validate Bulgaria Addresses in Cyrillic Script

You can validate Bulgaria addresses in the Cyrillic script. By default, you receive the validated results in the Cyrillic script. To receive the results in the Latin script, set the `PreferredScript` parameter to ASCII_EXTENDED, ASCII_SIMPLIFIED, LATIN, LATIN_1, or LATIN_ALT.

The other enhancements to Bulgaria address validation include high-quality reference address data and improved parsing of locality information in Bulgaria address.

### Ability to Validate Slovakia Addresses that Contain Street Name Abbreviations

You can validate Slovakia addresses with the following street name abbreviations:

- SNP. Slovak National Uprising
- ČSA. Czechoslovak Army
- arm. Army
- gen. General
- kpt. Captain
- mjr. Major
- nár. National
- národ. National
- nám. Square

- nábr. Waterfront
- Máj. The May
- pov. Uprising
- povst. Uprising
- čes. Czech

**Note:** Informatica AddressDoctor Cloud supports these abbreviations only in the input address and replaces these abbreviations with the postal authority-specified names in the validated output.

# CHAPTER 2

# Informatica AddressDoctor Cloud Interface

This chapter includes the following topics:

- Interface Overview, 19
- SOAP 1.1 Headers and Envelope, 19
- SOAP 1.2 Headers and Envelope, 20
- Request XML, 20
- Response XML , 24

## Interface Overview

You can use SOAP 1.1 or SOAP 1.2 to communicate with AddressDoctor Cloud. You can access AddressDoctor Cloud over HTTP port 80 or HTTPS port 443. Connections over HTTPS port 443 support encrypted messages and are secure.

SOAP 1.1 and SOAP 1.2 differ in the XML namespaces these two versions use. Additionally, in SOAP 1.2, the action parameter in the `Content-Type` header replaces the `SOAPAction` HTTP header in SOAP 1.1.

Note that the SOAP interface for Informatica AddressDoctor Cloud is case-sensitive. Use of wrong cases for elements, parameters, or values could cause the request to fail. For elements and parameters, use exactly the same case that is given in the Request XML section of this document. For values other than boolean values use UPPERCASE. For boolean values, use either lowercase true or false or numeric values 1 or 0.

## SOAP 1.1 Headers and Envelope

The following example shows a sample SOAP 1.1 request with the headers and the SOAP envelope XML.

```
POST: /Webservice5/v2/AddressValidation.asmx
Host: 127.0.0.1
Content-Type: text/xml; charset=utf-8 Content-Length: length
SOAPAction: "AddressDoctor/Webservice5/v2/Process"
<?xml version="1.0" encoding="utf-8"?>
<soap:Envelope xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
   <soap:Body>
```

```
     <Process xmlns=" http://validator5.AddressDoctor.com/Webservice5/v2">
     </Process>
   </soap:Body>
</soap:Envelope>
```

The following example shows the SOAP response to the preceding request.

```
HTTP/1.1 200 OK
Content-Type: text/xml; charset=utf-8
Content-Length: length
<?xml version="1.0" encoding="utf-8"?>
<soap:Envelope xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
   <soap:Body>
     <ProcessResponse xmlns="http://validator5.AddressDoctor.com/Webservice5/v2">
     </ProcessResponse>
   </soap:Body>
</soap:Envelope>
```

# SOAP 1.2 Headers and Envelope

The following example shows a sample SOAP 1.2 request with headers and envelope. Note the different Content-Type used and xmlns: soap declaration.

```
POST /Webservice5/v2/AddressValidation.asmx HTTP/1.1
Host: 127.0.0.1
Content-Type: application/soap+xml; charset=utf-8 Content-Length: length
<?xml version="1.0" encoding="utf-8"?>
<soap:Envelope xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:soap="http://www.w3.org/2003/05/soap-
envelope">
   <soap:Body>
      <Process xmlns=" http://validator5.AddressDoctor.com/Webservice5/v2">
      </Process>
   </soap:Body>
</soap:Envelope>
```

The following example shows the SOAP 1.2 response to the preceding request.

```
HTTP/1.1 200 OK
Content-Type: application/soap+xml; charset=utf-8
Content-Length: length
<?xml version="1.0" encoding="utf-8"?>
<soap:Envelope xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soap="http://www.w3.org/2003/05/soap-envelope">
   <soap:Body>
     <ProcessResponse xmlns=" http://validator5.AddressDoctor.com/Webservice5/v2">
     </ProcessResponse>
   </soap:Body>
</soap:Envelope>
```

# Request XML

The following example shows the `<process>` tag and its elements for both the SOAP 1.1 and SOAP 1.2 requests.

```
    <Process xmlns="http://validator5.AddressDoctor.com/Webservice5/v2">
      <login>string</login>
```

```
<password>string</password>
<parameters>
  <ProcessMode>string</ProcessMode>
  <!-- <ServiceParameters> is optional -->
  <ServiceParameters>
    <JobToken>string</JobToken>
    <CampaignId>string</CampaignId>
    <ReservedXml>string</ReservedXml>
    <UseTransactionPool>string</UseTransactionPool>
  </ServiceParameters>
  <!-- <ValidationParameters> is optional; If you leave the validation
  parameters blank, Informatica AddressDoctor Cloud uses the default values.-->
  <ValidationParameters>
    <FormatType>string</FormatType>
    <FormatDelimiter>string</FormatDelimiter>
    <DefaultCountryISO3>string</DefaultCountryISO3>
    <ForceCountryISO3>string</ForceCountryISO3>
    <CountryType>string</CountryType>
    <CountryOfOriginISO3>string</CountryOfOriginISO3>
    <StreetWithNumber>boolean</StreetWithNumber>
    <FormatWithCountry>boolean</FormatWithCountry>
    <ElementAbbreviation>boolean</ElementAbbreviation>
    <PreferredScript>string</PreferredScript>
    <PreferredLanguage>string</PreferredLanguage>
    <AliasStreet>string</AliasStreet>
    <AliasLocality>string</AliasLocality>
    <GlobalCasing>string</GlobalCasing>
    <GlobalMaxLength>int</GlobalMaxLength>
    <GlobalPreferredDescriptor>string</GlobalPreferredDescriptor>
    <MatchingScope>string</MatchingScope>
    <MaxResultCount>int</MaxResultCount>
    <DualAddressPriority>string</DualAddressPriority>
    <StandardizeInvalidAddresses>boolean</StandardizeInvalidAddresses>
    <RangesToExpand>string</RangesToExpand>
    <FlexibleRangeExpansion>boolean</FlexibleRangeExpansion>
    <GeoCodingType>string</GeoCodingType>
    <MatchingAlternatives>string</MatchingAlternatives>
    <MatchingExtendedArchive>boolean</MatchingExtendedArchive>
    <DisableCertifiedModeISO3>string</DisableCertifiedModeISO3>
    <FormatMaxLines>int</FormatMaxLines>
    <!-- <Standardizations> is optional -->
    <Standardizations>
      <Element>string</Element>
      <Casing>string</Casing>
      <MaxLength>int</MaxLength>
      <MaxItemCount>int</MaxItemCount>
    </Standardizations>
    <!-- More <Standardizations> elements as needed -->
    <!-- <AdditionalInformationSet> is for Informatica AddressDoctor
    internal use and is not supported in customer requests -->
    <AdditionalInformationSet>
      <Name>string</Name>
      <Value>string</Value>
    </AdditionalInformationSet>
    <!-- More <AdditionalInformationSet> elements as needed -->
    <!-- <OutputOptions> is optional -->
    <OutputOptions>
      <RecordId>string</RecordId>
      <Organization>string</Organization>
      <Department>string</Department>
      <Contact>string</Contact>
      <Email>string</Email>
      <Building>string</Building>
      <SubBuilding>string</SubBuilding>
      <Street>string</Street>
      <HouseNumber>string</HouseNumber>
      <DeliveryService>string</DeliveryService>
      <Locality>string</Locality>
      <PreferredLocality>string</PreferredLocality>
      <PostalCode>string</PostalCode>
      <Province>string</Province>
      <Country>string</Country>
      <Residue>string</Residue>
      <RecipientLines>string</RecipientLines>
      <DeliveryAddressLines>string</DeliveryAddressLines>
      <CountrySpecificLocalityLine>string</CountrySpecificLocalityLine>
      <FormattedAddress>string</FormattedAddress>
      <AddressComplete>string</AddressComplete>
      <AddressDetailed>string</AddressDetailed>
    </OutputOptions>
  </ValidationParameters>
</parameters>
<addresses>
  <Address>
    <RecordId>string</RecordId>
    <Organization>
      <string>string</string>
      <string>string</string>
    </Organization>
    <Department>
      <string>string</string>
      <string>string</string>
    </Department>
    <Contact>
      <string>string</string>
      <string>string</string>
    </Contact>
    <Email>
      <string>string</string>
      <string>string</string>
    </Email>
    <Building>
      <string>string</string>
      <string>string</string>
    </Building>
    <SubBuilding>
      <string>string</string>
      <string>string</string>
    </SubBuilding>
    <Street>
      <string>string</string>
      <string>string</string>
    </Street>
    <HouseNumber>
      <string>string</string>
      <string>string</string>
    </HouseNumber>
    <DeliveryService>
      <string>string</string>
      <string>string</string>
    </DeliveryService>
    <Locality>
      <string>string</string>
      <string>string</string>
    </Locality>
    <PreferredLocality>
      <string>string</string>
      <string>string</string>
    </PreferredLocality>
    <PostalCode>
      <string>string</string>
      <string>string</string>
    </PostalCode>
    <Province>
      <string>string</string>
      <string>string</string>
    </Province>
    <Country>
      <string>string</string>
      <string>string</string>
    </Country>
    <Residue>
```

```
          <string>string</string>
          <string>string</string>
        </Residue>
        <RecipientLines>
          <string>string</string>
          <string>string</string>
        </RecipientLines>
        <DeliveryAddressLines>
          <string>string</string>
          <string>string</string>
        </DeliveryAddressLines>
        <CountrySpecificLocalityLine>
          <string>string</string>
          <string>string</string>
        </CountrySpecificLocalityLine>
        <FormattedAddress>
          <string>string</string>
          <string>string</string>
        </FormattedAddress>
        <AdditionalAddressInformation>
          <Name>string</Name>
          <Value>string</Value>
        </AdditionalAddressInformation>
        <AdditionalAddressInformation>
          <Name>string</Name>
          <Value>string</Value>
        </AdditionalAddressInformation>
        <AddressComplete>string</AddressComplete>
        <AddressCode>
          <CodeType>string</CodeType>
          <Value>string</Value>
        </AddressCode>
        <AddressDetailed>
          <Street xsi:nil="true" />
          <SubBuilding xsi:nil="true" />
          <Residue xsi:nil="true" />
        </AddressDetailed>
      </Address>
      <!-- In Batch and Certified modes, you can include multiple <Address>
      elements. -->
    </addresses>
    <!-- <enrichments> is optional -->
    <enrichments>
      <Enrichment>
        <Type>string</Type>
        <PayloadXml>string</PayloadXml>
      </Enrichment>
      <!-- more <Enrichment> elements as needed. -->
    </enrichments>
</Process>
```

## Notes About Elements in the Request XML

- There are mandatory elements and optional elements. You must include the mandatory elements in the request. However, you can choose not to include the optional elements.
- `<login>` and `<password>` are mandatory elements. If you do not include these elements, an authentication error occurs.
- `<ProcessMode>` is a mandatory element.
- `<ServiceParameters>` is optional. However, in certain process modes, some of the service parameters are mandatory (for example, JobToken is needed when you resubmit a request in the FastCompletion mode).
- `<ValidationParameters>` is optional. If you omit this, Informatica AddressDoctor Cloud uses the default values for the validation parameters.

- `<Standardizations>` is optional.
- `<AdditionalInformationSet>` is for Informatica AddressDoctor internal use and is not supported in customer requests.
- `<OutputOptions>` and its elements are optional.
- `<addresses>` is mandatory.
  - At least one `<Address>` element must be supplied.
  - Depending on the process mode specified, more `<Address>` elements can be supplied.
  - If any element of `<Address>` is omitted, that is considered as empty.
- `<enrichments>` is optional.

# Response XML

The following example shows the `<ProcessResponse>` tag and its elements.

```
<ProcessResponse xmlns="http://validator5.AddressDoctor.com/Webservice5/v2">
      <ProcessResult>
        <StatusCode>int</StatusCode>
        <StatusMessage>string</StatusMessage>
        <JobToken>string</JobToken>
        <CampaignId>string</CampaignId>
        <ReservedXml>string</ReservedXml>
        <Results>
        <!-- There is one <Result> element for each <Address> element in the request -->
          <Result>
            <ProcessStatus>string</ProcessStatus>
            <CountryISO3>string</CountryISO3>
          <!-- There are between one and twenty <ResultData> elements, depending on
               the ProcessMode and the ProcessStatus -->
            <ResultDataSet xsi:nil="true" />
          <!-- There is one <Enrichment> element for each <Enrichment> element
               in the request -->
            <Enrichments xsi:nil="true" />
        </Result>
      </Results>
    </ProcessResult>
 </ProcessResponse>
```

CHAPTER 3

# Informatica AddressDoctor Cloud Request Parameters

This chapter includes the following topics:

- Request Parameters Overview, 25
- Login and Password Parameters, 25
- ProcessMode Parameter, 26
- Service Parameters, 28
- Validation Parameters, 30
- Addresses Parameter, 45
- Enrichments Parameter, 46

## Request Parameters Overview

An Informatica AddressDoctor Cloud request contains many parameters including some optional parameters.

The required parameters in a request include login and password parameters, the process mode parameter, and the addresses parameter. Service parameters, validation parameters, and enrichment parameters are optional.

You need to provide the parameter values in all uppercase letters. For example, BATCH or INTERACTIVE for the `ProcessMode` parameter. However, for parameters that require Boolean values, you need to enter the values in lowercase letters or as numerals. For example, true or false, or 1 or 0, for the `FormatWithCountry` parameter.

## Login and Password Parameters

Informatica AddressDoctor Cloud processes only those requests that contain valid values for the `login` and `password` parameters.

The `login` parameter contains the Informatica AddressDoctor Data Quality Center (DQC) account ID. The `password` parameter contains the password for the Informatica AddressDoctor DQC account ID provided for the `login` parameter.

You can view your Informatica AddressDoctor DQC account ID and password on the Informatica AddressDoctor DQC portal. To log in to the portal, use your Informatica Passport credentials. For more information about accessing the Informatica AddressDoctor DQC portal, see the *Informatica AddressDoctor Data Quality Center User Guide*.

If you leave the `login` and `password` parameters empty or enter incorrect values for these parameters, Informatica AddressDoctor Cloud returns an Authentication Failed error.

**Example**

The following example shows an Informatica AddressDoctor Cloud request. Note that the login and password values are masked for security reasons.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns="http://validator5.AddressDoctor.com/Webservice5/v2">
   <soapenv:Header/>
   <soapenv:Body>
        <Process>
            <login>*****</login>
            <password>**********</password>
            <parameters>
                <ProcessMode>INTERACTIVE</ProcessMode>
            </parameters>
            <addresses>
                <Address>
                    <FormattedAddress>
                        <string>U 8 995 BURKE ROAD</string>
                        <string>CAMBERWELL VIC 3124</string>
                        <string>AUSTRALIA</string>
                    </FormattedAddress>
                </Address>
            </addresses>
        </Process>
   </soapenv:Body>
</soapenv:Envelope>
```

# ProcessMode Parameter

`ProcessMode` is a required parameter that you must specify in the request. You can specify one of the following values for the `ProcessMode` parameter.

**AddressCodeLookup**

To enter a country-specific address code and retrieve the complete or partial address for the code, set `ProcessMode` to `ADDRESSCODELOOKUP`. Informatica AddressDoctor Cloud considers the AddressCodeLookup transactions as batch transactions. You must have sufficient batch transactions in your account to use the AddressCodeLookup process mode. You can use the AddressCodeLookup process mode to retrieve addresses from the following countries:

| Country | Supported Codes |
|---|---|
| Germany | DEU_AGS, DEU_LOCALITY_ID, and DEU_STREET_ID |
| Japan | JPN_CHOUMEI_AZA_CODE and JPN_CHOUMEI_AZA_GAIKU_CODE |
| Serbia | SRB_PAK |

| Country | Supported Codes |
|---|---|
| South Africa | ZAF_NADID |
| United Kingdom | GBR_UDPRN |

**Batch**

To cleanse large data files with minimal user intervention, set `ProcessMode` to `BATCH`. In batch mode, Informatica AddressDoctor Cloud corrects addresses but does not return address suggestions for the user to choose from. You can input up to 1000 addresses in a batch-mode request. For each of the addresses present in the request, Informatica AddressDoctor Cloud returns one result in the response. Each of the results contains one `ResultData` element.

**Certified**

To correct and validate addresses according to the postal certifications of countries such as Australia, Canada, France, New Zealand, or USA, set `ProcessMode` to `CERTIFIED`. You can input up to 1000 addresses in a certified-mode request. The following table lists the postal certifications that Informatica AddressDoctor Cloud supports. If you enter addresses from countries that Informatica AddressDoctor Cloud does not support for the certified mode, Informatica AddressDoctor Cloud processes such requests in the batch mode. If you also want Informatica AddressDoctor Cloud to return enrichments that are available in the certified mode, specify the certification as the enrichment type in the request.

| Country | Certification | Organization | Enrichment Type |
|---|---|---|---|
| Australia | AMAS | Australia Post | `AMAS` |
| Canada | SERP | Canada Post | `SERP` |
| France | SNA | La Poste | `SNA` |
| New Zealand | SendRight | New Zealand Post | `SEND_RIGHT` |

**Interactive**

To receive address suggestions from which you can choose the best available match for the input address, set `ProcessMode` to `INTERACTIVE`. In the interactive mode you can choose the best possible match from the address suggestions that Informatica AddressDoctor Cloud returns.

**FastCompletion**

To receive address suggestions as you enter an address, set `ProcessMode` to `FASTCOMPLETION`. In the fast completion mode, you receive address suggestions with minimum input. For some countries such as the United Kingdom, you need to enter only the postal code and building number to receive a complete address.

Informatica AddressDoctor Cloud also supports the single-line address validation using the `AddressComplete` element in the fast completion mode. The single-line address validation support is available only for select countries.

For interactive and fast completion modes, only one `Address` element can be specified in the request. The response contains one `Result` element, but the `ResultDataSet` might contain up to 100 `ResultData` elements with the suggestions. The following table lists the process modes and how many elements each array can contain.

| ProcessMode | Addresses | Results | ResultDataSet |
|---|---|---|---|
| Batch or Certified | Up to 1000 | Up to 1000 | 0 to 1 |
| Interactive or FastCompletion | 1 | 1 | 0 to 100 |

**Syntax**

```
            <ProcessMode>ADDRESSCODELOOKUP | BATCH | CERTIFIED | FASTCOMPLETION |
INTERACTIVE</ProcessMode>
```

**Example**

The following example shows an Informatica AddressDoctor request for validating an address in the interactive mode.

```
 <soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns="http://validator5.AddressDoctor.com/Webservice5/v2">
    <soapenv:Header/>
    <soapenv:Body>
        <Process>
            <login>*****</login>
            <password>**********</password>
            <parameters>
                <ProcessMode>INTERACTIVE</ProcessMode>
            </parameters>
            <addresses>
                <Address>
                    <FormattedAddress>
                        <string>U 8 995 BURKE ROAD</string>
                        <string>CAMBERWELL VIC 3124</string>
                        <string>AUSTRALIA</string>
                    </FormattedAddress>
                </Address>
            </addresses>
        </Process>
    </soapenv:Body>
</soapenv:Envelope>
```

# Service Parameters

You can optionally include one or more of the following service parameters in an Informatica AddressDoctor Cloud request.

## JobToken

`JobToken` is an optional parameter that is applicable only for the interactive and fast completion mode requests. When an interactive or fast completion mode request fails to receive a **V** or **C** result, Informatica AddressDoctor Cloud includes a job token in the response. A job token is an alphanumeric string that can contain up to 50 characters.

The following is an example of a job token:

```
<JobToken>b89be474-318c-4da3-87c2-f15b2e43c2cb</JobToken>
```

Include `JobToken` in the request when you resubmit an interactive or fast completion mode request that failed to receive a **V** or **C** result. When a request contains a valid job token, Informatica AddressDoctor Cloud recognizes the request as a resubmission of a previously uncompleted request. Informatica AddressDoctor Cloud does not bill requests that are resubmissions.

You can submit up to three interactive requests, including two resubmissions that contain a job token value, without additional cost. Similarly, in the fast completion mode, you can submit up to five requests, including four resubmissions that contain a job token value, without additional cost. If you use a job token value for more than the maximum permitted attempts, Informatica AddressDoctor Cloud bills such requests as new transactions.

## CampaignId

`CampaignId` is an optional parameter for which you can specify an arbitrary string value of up to 20 characters. Informatica AddressDoctor Cloud returns this string in its response.

## ReservedXml

`ReservedXml` is an optional parameter that is reserved for Informatica AddressDoctor internal use. You must exclude this parameter from the request or leave this parameter empty.

## UseTransactionPool

`UseTransactionPool` is an optional parameter. You can include the `UseTransactionPool` parameter to specify the transaction pool that Informatica AddressDoctor Cloud must use for a call.

You can assign one of the following values for the `UseTransactionPool` parameter:

- **ANY**. Informatica AddressDoctor Cloud uses either production or test transaction pools based on the availability. Informatica AddressDoctor Cloud tries to use the production transaction pool first and uses the test transaction pool only if no production transactions are available. This is the default value.
- **PRODUCTION**. Informatica AddressDoctor Cloud uses only the production transaction pool.
- **TEST**. Informatica AddressDoctor Cloud uses only the test transaction pool.

Use the `UseTransactionPool` parameter if you have separate production and development environments. It is technically possible to use both kinds of transactions in either environment. Note that using test transactions for production purposes violates the Terms of Use. Using production (billable) transactions for testing reduces available transactions for the production environment.

**Note:** If you use the `UseTransactionPool` parameter during development, ensure that you change the value to production when you deploy the application to the production environment. We recommend making this externally configurable, for example through a configuration file or Registry setting. Alternatively, you can use compiler switches or such code to distinguish the production environment from the development environment.

## Example: Service Parameters

The following example shows an Informatica AddressDoctor Cloud request that contains the service parameters setting.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns="http://validator5.AddressDoctor.com/Webservice5/v2">
    <soapenv:Header/>
    <soapenv:Body>
        <Process>
```

```
                <login>*****</login>
                <password>**********</password>
                <parameters>
                    <ProcessMode>INTERACTIVE</ProcessMode>
                    <ServiceParameters>
                        <JobToken>b89be474-318c-4da3-87c2-f15b2e43c2cb</JobToken>
                        <CampaignId>AddressDoctorTest</CampaignId>
                        <ReservedXml/>
                        <UseTransactionPool>PRODUCTION</UseTransactionPool>
                    </ServiceParameters>
                </parameters>
                <addresses>
                    <Address>
                        <FormattedAddress>
                            <string>U 8 995 BURKE ROAD</string>
                            <string>CAMBERWELL VIC 3124</string>
                            <string>AUSTRALIA</string>
                        </FormattedAddress>
                    </Address>
                </addresses>
            </Process>
        </soapenv:Body>
    </soapenv:Envelope>
```

# Validation Parameters

Validation parameters are optional. If you do not specify validation parameters in the request, Informatica AddressDoctor Cloud uses the default value for parameters that have default values assigned to them.

## AliasStreet and AliasLocality

You can configure the AliasStreet and AliasLocality parameters to retain the street or locality aliases or vanity names in the validated output. You can set PRESERVE, OFFICIAL, or OFF for AliasStreet and AliasLocality.

The following table describes the available options for AliasStreet and AliasLocality parameters.

| | **PRESERVE** | **OFFICIAL (Default)** | **OFF** |
|---|---|---|---|
| **AliasStreet** | Retains the alias for the street in the output. | Returns either the street name alias or the postal name of the street as mandated by the postal regulations of the country. | Returns the postal name for the street in the output. |
| **AliasLocality** | Retains the alias for the locality in the output. | Returns either the vanity name or the postal name for the locality as mandated by the postal regulations of the country. | Returns the postal name for the locality in the output. |

To validate addresses in the certified mode and generate output that conforms to the postal regulations of the country, set AliasStreet and AliasLocality to OFFICIAL.

### Related Topics:

- "Support for Preserving Alias or Vanity Names for Localities and Streets" on page 15

## CountryOfOriginISO3

CountryOfOriginISO3 is an optional parameter that you can include to specify the country from where a mailing originates.

Informatica AddressDoctor Cloud does not include the country name in FormattedAddress if the country in the input is the same as the value you set for CountryOfOriginISO3. Note that this setting works only if you set the FormatWithCountry parameter to **true** or **1**.

If the country of origin and the country in the input address do not match, Informatica AddressDoctor Cloud retains the input country information in the output. By default, the CountryOfOriginISO3 parameter is left empty. When this parameter is empty, Informatica AddressDoctor Cloud returns the country information in the FormattedAddress field of the output.

**Example**

```
<CountryOfOriginISO3>AUS</CountryOfOriginISO3>
```

## CountryType

CountryType is an optional parameter that you can set to specify the code or language in which you want to receive the country value in the FormattedAddress field. The default value for this parameter is NAME_EN, which denotes the English name of the country.

The following table describes the supported values for the CountryType parameter:

| CountryType | Description |
|---|---|
| ISO2 | ISO-2 code |
| ISO3 | ISO-3 code |
| ISO_NUMBER | ISO number |
| NAME_CN | Chinese |
| NAME_DA | Danish |
| NAME_DE | German |
| NAME_EN | English |
| NAME_KR | Croatian |
| NAME_NL | Dutch |
| NAME_PL | Polish |
| NAME_PT | Portuguese |
| NAME_RU | Russian |

| | |
|---|---|
| NAME_SA | Arabic |
| NAME_SE | Swedish |
| NAME_ES | Spanish |
| NAME_FI | Finnish |
| NAME_FR | French |
| NAME_GR | Greek |
| NAME_HU | Hungarian |
| NAME_IT | Italian |
| NAME_JP | Japanese |

## DefaultCountryISO3

`DefaultCountryISO3` is an optional parameter that you can include to specify the ISO 3 code of the country to which an address belongs to.

Include this parameter if most or all of the addresses that you enter belong to one country and do not contain the country information. By default, this parameter is left empty. If you leave this parameter empty and Informatica AddressDoctor Cloud fails to recognize the country from the input, Informatica AddressDoctor Cloud returns a `ProcessStatus` of **N1**.

**Example**

```
<DefaultCountryISO3>AUS</DefaultCountryISO3>
```

## DisableCertifiedModeISO3

If you set the process mode to CERTIFIED, Informatica AddressDoctor Cloud processes addresses from countries with postal certifications in the certified mode.

You can exclude one or more countries from the certified mode by including the `DisableCertifiedModeISO3` parameter and the ISO 3 code for the countries.

**Example**

The following example shows the configuration to exclude Australia addresses from the certified mode validation:

```
<DisableCertifiedModeISO3>AUS</DisableCertifiedModeISO3>
```

## DualAddressPriority

DualAddresses are addresses that contain both street addresses and delivery service or rural route addresses. Configure the `DualAddressPriority` parameter to specify which address type Informatica AddressDoctor Cloud validates an input address against if the address contains both street addresses and delivery service or rural route addresses. `DualAddressPriority` is an optional parameter.

You can set the `DualAddressPriority` parameter to one of the following values:

- **DELIVERY_SERVICE**. To validate the delivery service part of the input address.

- **STREET**. To validates the street address part of the input address.
- **POSTAL_ADMIN**. To validate addresses based on the postal department's preference for the address type. This is the default value. When you validate addresses in the certified mode, set `DualAddressPriority` to POSTAL_ADMIN.

## ElementAbbreviation

`ElementAbbreviation` is an optional parameter that you can include to specify how Informatica AddressDoctor Cloud handles street and locality names in the output.

If you set `ElementAbbreviation` to **true** in BATCH and INTERACTIVE modes, Informatica AddressDoctor Cloud abbreviates the locality name when the output is longer than the USPS-specified length.

If you set `ElementAbbreviation` to **true** or **1**, Informatica AddressDoctor Cloud abbreviates the output street name in Germany addresses to 22 characters. Note that Informatica AddressDoctor Cloud abbreviates the street name only if a short name is available in the reference database.

If you set `ElementAbbreviation` to **true** or **1**, Informatica AddressDoctor Cloud excludes the word CHOME from Japan addresses, and returns the CHOME number inside the number field. By default, Informatica AddressDoctor Cloud includes the word CHOME in the street field of the output along with the number of CHOME.

If you set `ElementAbbreviation` to **false** or **0**, Informatica AddressDoctor Cloud returns the street and locality names based on the input, field-length setting, and reference address database entries.

## FlexibleRangeExpansion

`FlexibleRangeExpansion` is an optional parameter that you can use in conjunction with the `RangesToExpand` parameter. You can set `FlexibleRangeExpansion` to either **true** or **false**. The default value is **true**. Alternatively, you can use **1** and **0** instead of true and false, respectively.

If you set `FlexibleRangeExpansion` to **true**, Informatica AddressDoctor Cloud does not expand the ranges at the end of the list. Informatica AddressDoctor Cloud returns both individual numbers and number ranges so that the number of suggestions does not exceed the value that you set for `MaxResultCount`. Therefore, a suggestion list might contain both expanded and unexpanded ranges for house numbers and buildings, based on the values you specified for `MaxResultCount`, `RangesToExpand`, and `FlexibleRangeExpansion`.

## ForceCountryISO3

`ForceCountryISO3` is an optional parameter that you can configure to override the country recognition capability of Informatica AddressDoctor Cloud.

If you configure `ForceCountryISO3`, Informatica AddressDoctor Cloud ignores the country information present in the data, and applies the country that you specified for this parameter. You can set this parameter to the ISO3 code of a country. By default, this parameter is left empty. If you leave this parameter empty, Informatica AddressDoctor Cloud identifies the country based on one of the following features:

The country recognition capabilities.

The value specified for the `DefaultCountryISO3` parameter.

**Example**

```
<ForceCountryISO3>AUS</ForceCountryISO3>
```

## FormatDelimiter

`FormatDelimiter` is an optional parameter that you can configure to specify the element separator for address elements in the `AddressComplete` element. Informatica AddressDoctor Cloud uses this setting for parsing both input and output. Even though single-line address input does not require delimiters, an input with delimiters might fetch better suggestions.

You can specify one of the following delimiters for this parameter:

- **LF** (Line Feed)
- **SEMICOLON** (Default)
- **SPACE**
- **COMMA**
- **PIPE** (|)
- **TAB**

## FormatMaxLines

You can include the `FormatMaxLines` element to specify the maximum number of lines that you want Informatica AddressDoctor Cloud to return in a multiline `AddressComplete` output.

You can specify a value from 1 through 19. The default is 19.

## FormatType

`FormatType` is an optional parameter that you can include in the request to specify what information goes in the `FormattedAddress` field. You can set one of the following values for the `FormatType` parameter:

- **ADDRESS_ONLY**. Specifies that the `FormattedAddress` field contains only `DeliveryAddressLine` (DAL) and `CountrySpecificLocalityLine` (CSLLN).
- **WITH_ORGANIZATION**. Specifies that the `FormattedAddress` field contains organization information, DAL, and CSLLN.
- **WITH_CONTACT**. Specifies that the `FormattedAddress` field contains contact, DAL, and CSLLN.
- **WITH_ORGANIZATION_CONTACT**. Specifies that the `FormattedAddress` field contains organization, contact, DAL, and CSLLN.
- **WITH_ORGANIZATION_DEPARTMENT**. Specifies that the `FormattedAddress` field contains organization, department, DAL, and CSLLN.
- **ALL**. Specifies that the `FormattedAddress` field contains organization, department, contact, DAL, and CSLLN. This is the default value.

You can set the `FormatWithCountry` or `CountryOfOriginISO3` parameters to include the country name in the formatted address field.

## FormatWithCountry

`FormatWithCountry` is an optional parameter that you can configure to specify whether the country name should be included in the `FormattedAddress` field.

If you set `FormatWithCountry` to **false** or **0**, Informatica AddressDoctor Cloud does not include the country name in the `FormattedAddress` field. If you set `FormatWithCountry` to **true** or **1**, and configure the `CountryOfOriginISO3` parameter, Informatica AddressDoctor Cloud returns the country name based on the value you set for the latter. Informatica AddressDoctor does not include the country information in the result if the address belongs to the country specified for `CountryOfOriginISO3`.

## GeoCodingType

You can include the `GeoCodingType` element to specify the type of geocoordinates that you want Informatica AddressDoctor Cloud to include in the output. For the `GeoCodingType` setting to work, you must have valid geocoding transactions, and must set the `Enrichment` type to **GEOCODING**.

You can configure the following values for `GeoCodingType`:

- **NONE**. To receive the standard geocoordinates in the result output.
- **ARRIVAL_POINT**. To receive the arrival point geocoordinates in the result output. For United Kingdom addresses, you receive the rooftop geocoordinates. This is the default value.
- **PARCEL_CENTROID**. To receive the the parcel centroid geocoordinates in the result output.

### Related Topics:

- "Point Address Geocoding" on page 14
- "Enrichments Parameter" on page 46
- "Example: A V4 Address with GeoCoding" on page 68
- "Example: A United Kingdom Address with Building-Level Rooftop GeoCoding" on page 83

## GlobalCasing

`GlobalCasing` is an optional element that you can include to specify the casing for all address elements. You can set one of the following values for `GlobalCasing`:

- **NATIVE**. To receive all address elements in the same case as that is used in the reference address database. Informatica AddressDoctor Cloud applies the same casing to input values that cannot be validated and are copied to the result.
- **UPPER**. To receive all address elements in uppercase.
- **LOWER**. To receive all address elements in lowercase.
- **MIXED**. To receive all address elements in mixed case.

## GlobalMaxLength

`GlobalMaxLength` is an optional element that you can include to specify the maximum number of characters Informatica Address Verification returns in each line of address elements. Informatica Address Verification abbreviates lines that exceed this value.

The default value for `GlobalMaxLength` is **0**, which denotes that there is no restriction on the maximum number of characters.

**Note:** Any non-default value for `GlobalMaxLength` must have at least 20 characters.

## GlobalPreferredDescriptor

You can configure one of the following values for `GlobalPreferredDescriptor` to specify the output format for street, building, and subbuilding element descriptors in Australia and New Zealand addresses and the *Strasse* element descriptor in Germany addresses.

- **DATABASE**. Returns the element descriptor that the reference database specifies for the address. If the database does not specify a descriptor for the address, Informatica AddressDoctor copies the input value to the output address. DATABASE is the default value.
- **LONG**. Returns the expanded form of the element descriptor in the input address.
- **SHORT**. Returns the abbreviated form of the element descriptor in the input address.
- **PRESERVE_INPUT**. Copies the element descriptor from the input address to the output address. If the input element descriptor is not an official synonym, Informatica AddressDoctor Cloud returns the corresponding value from the reference database. For example, when you validate an Australia address that contains BD for boulevard, Informatica AddressDoctor Cloud corrects the descriptor to BVD. BVD is the standard short term for boulevard in Australia.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:v1="http://validator5.AddressDoctor.com/Webservice5/v2">
    <soapenv:Header/>
    <soapenv:Body>
        <Process xmlns="http://validator5.AddressDoctor.com/Webservice5/v2">
            <login>*******</login>
            <password>********</password>
            <parameters>
                <ProcessMode>INTERACTIVE</ProcessMode>
                <ValidationParameters>
                    <GlobalPreferredDescriptor>PRESERVE_INPUT
     </GlobalPreferredDescriptor>
                </ValidationParameters>
            </parameters>
            <addresses>
                <Address>
                    <FormattedAddress>
                        <string>OCEAN BD 2</string>
                        <string>SEACLIFF PARK 5049</string>
                        <string>SOUTH AUSTRALIA</string>
                        <string>AUS</string>
                    </FormattedAddress>
                </Address>
            </addresses>
        </Process>
    </soapenv:Body>
</soapenv:Envelope>
```

Note that in the following response BD has been replaced with BVD, which is the standard short form for boulevard in Australia addresses.

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/
XMLSchema">
   <soap:Body>
      <ProcessResponse xmlns="http://validator5.AddressDoctor.com/Webservice5/v2">
         <ProcessResult>
            <StatusCode>100</StatusCode>
            <StatusMessage>OK</StatusMessage>
            <Results>
               <Result>
                  <ProcessStatus>C4</ProcessStatus>
                  <CountryISO3>AUS</CountryISO3>
                  <ResultDataSet>
                     <ResultData>
                        <ResultNumber>1</ResultNumber>
                        <MailabilityScore>4</MailabilityScore>
                        <ResultPercentage>97.76</ResultPercentage>
                        <ElementInputStatus>60605040600000000060</ElementInputStatus>
                        <ElementResultStatus>F0F0E070F000000000E0</ElementResultStatus>
                        <ElementRelevance>10101010100000000010</ElementRelevance>
                        <ExtElementStatus>00000000000000000000</ExtElementStatus>
                        <AddressResolutionCode>00000000000000000000
                        </AddressResolutionCode>
                        <AddressType>S</AddressType>
                        <LanguageISO3>ENG</LanguageISO3>
                        <Address>
                           <Street>
                              <string>OCEAN BVD</string>
                           </Street>
                           <HouseNumber>
                              <string>2</string>
                           </HouseNumber>
                           <Locality>
                              <string>SEACLIFF PARK</string>
                           </Locality>
                           <PostalCode>
                              <string>5049</string>
                           </PostalCode>
                           <Province>
                              <string>SA</string>
                           </Province>
                           <Country>
                              <string>AUSTRALIA</string>
                           </Country>
                           <DeliveryAddressLines>
                              <string>2 OCEAN BVD</string>
                           </DeliveryAddressLines>
                           <CountrySpecificLocalityLine>
                              <string>SEACLIFF PARK  SA  5049</string>
                           </CountrySpecificLocalityLine>
                           <FormattedAddress>
                              <string>2 OCEAN BVD</string>
                              <string>SEACLIFF PARK  SA  5049</string>
                              <string>AUSTRALIA</string>
                           </FormattedAddress>
                           <AddressComplete>2 OCEAN BVD;SEACLIFF PARK SA 5049;
                            AUSTRALIA</AddressComplete>
                        </Address>
                     </ResultData>
                  </ResultDataSet>
               </Result>
            </Results>
         </ProcessResult>
      </ProcessResponse>
   </soap:Body>
</soap:Envelope>
```

### Related Topics:

- “Configurable Output Format for Element Descriptors” on page 14

## MatchingExtendedArchive

You can configure the `MatchingExtendedArchive` parameter to receive the new address code for deprecated or outdated addresses for Japan.

If you set `MatchingExtendedArchive` to **true** or **1**, Informatica AddressDoctor Cloud validates outdated addresses against the archived addresses in the reference database. If the address is an outdated address, Informatica AddressDoctor Cloud returns the address with an Extended Element Result Status (EERS) code value of F. An EERS value of F indicates that the output address is outdated.

If you have enabled supplementary enrichment for Japan (SUPPLEMENTARY_JP), Informatica AddressDoctor Cloud returns the old and new Choumei Aza codes as enrichments in the result. You can then use the new

Choumei Aza code as an input for the ADDRESSCODELOOKUP processing mode to retrieve the corresponding new address.

If you set `MatchingExtendedArchive` to **false** or **0**, Informatica AddressDoctor Cloud might reject the outdated input address or incorrectly return some other address as the corrected output.

### Related Topics:

- “Ability to Retrieve Address Codes for Outdated Japan Addresses” on page 16

## MatchingScope and MatchingAlternatives

`MatchingScope` and `MatchingAlternatives` are optional parameters that you can include to specify the scope of address validation. You can configure these parameters to specify the level of address matching that you want Informatica AddressDoctor Cloud to do while validating an address.

The `MatchingScope` parameter defines the level of granularity to which Informatica AddressDoctor Cloud validates an address. The `MatchingAlternatives` parameter specifies whether to consider alternate names while validating an address.

You can set the `MatchingScope`parameter to specify which address elements that you want Informatica AddressDoctor Cloud to validate. You can set the matching scope to locality, street, or delivery-point level. The default value of `MatchingScope` is ALL so that Informatica AddressDoctor Cloud validates all possible elements including locality, street, and delivery-point elements in the input address. You receive the best results if you set `MatchingScope` to ALL as Informatica AddressDoctor Cloud validates all possible elements. If you do not want Informatica AddressDoctor Cloud to consider some of the address elements for validation, you can set `MatchingScope` to a value other then ALL.

If the reference address database does not contain the specified level of information, Informatica AddressDoctor Cloud validates only those elements that the database contains.

You can configure Informatica AddressDoctor Cloud to validate address elements based on synonyms or alternate names that are available in the reference address database. Synonyms of an address element include alternate names of a place or a street. For example, vanity names in the U.S. addresses. The archival name of an address element refers to an outdated name of a place or street.

To match input address elements with synonyms or archival names that are available in the reference address database, set `MatchingAlternatives` to SYNONYM_ONLY, ARCHIVE_ONLY, or ALL. The default value of `MatchingAlternatives` is ALL. You can set `MatchingAlternatives` to NONE if you do not want Informatica AddressDoctor Cloud to consider synonyms or archival names when it validates an address.

You can set one of the following values for `MatchingScope`:

- **LOCALITY_LEVEL**. To ignore information other than the Locality and Postal Code information while validating the address.
- **STREET_LEVEL**. To validate up to the street information including the street name along with the LOCALITY_LEVEL elements. If you set `MatchingScope` to STREET_LEVEL, Informatica AddressDoctor Cloud ignores information such as house number and subbuilding.
- **DELIVERYPOINT_LEVEL**. To validate up to the delivery point information including house number and post box number and ignore further elements such as building, subbuilding, and organization.
- **ALL**. To validate all elements, including street, locality, and delivery point information, that Informatica AddressDoctor Cloud can validate.

You can include `MatchingAlternatives` to suppress the use of historical and synonym and exonym data for matching address elements. You can set one of the following values for `MatchingAlternatives`:

- **NONE**

- **SYNONYM_ONLY**
- **ARCHIVE_ONLY**
- **ALL**

Note that the actual scope of address validation is dependent on the corresponding country database.

## MaxResultCount

`MaxResultCount` is an optional parameter that you can include to specify the maximum number of suggestions that you want to receive in interactive and fast completion modes.

The maximum allowed value for this parameter is 100. The default value is 20.

## OutputOptions

`OutputOptions` is an optional parameter that you can include to specify which of the address elements you need in the output. If you do not include `OutputOptions` in the request, AddressDoctor Cloud returns all the available address elements except `PreferredLocality`, which is **OFF** by default.

You can use the `OutputOptions` parameter to filter out information that is not relevant for you.

**Example**

The following example shows the `OutputOptions` setting that filters out Contact and Organization information from the output.

```
<OutputOptions>
   <Contact>OFF</Contact>
   <Organization>OFF</Organization>
</Output>
```

The following example shows the `OutputOptions` setting to include `PreferredLocality` in the output.

```
<OutputOptions>
   <PreferredLocality>ON</PreferredLocality>
</Output>
```

Currently, Informatica AddressDoctor Cloud supports only **ON** and **OFF** for the `OutputOptions` settings.

## PreferredLanguage

Informatica AddressDoctor Cloud supports multiple languages for some countries. When you validate addresses from countries for which Informatica AddressDoctor Cloud supports multiple languages, you can specify the language in which you want the result output. `PreferredLanguage` is the optional parameter that you can configure to specify the output language of certain address elements such as Locality or Province.

For multilanguage countries such as Belgium, Canada, and Switzerland, the reference address databases contain addresses or some of the address elements in multiple languages. For example, a reference address database might contain addresses in the following languages:

- The main, spoken language of the region to which an address belongs. Typically, this is the default language of the address in the reference address database. For example, in the Switzerland reference address database, the default language for addresses from Zurich is German, from Geneva is French, and from Ticino is Italian.
- English or any other language that Informatica AddressDoctor supports for an address. For example, German, French, and Italian in the Switzerland reference address database.

By default, Informatica AddressDoctor Cloud returns the addresses in the default language of the corresponding reference address database entry. To generate the output in one of the supported languages, set one of the following values for the `PreferredLanguage` parameter:

- **DATABASE**. To generate the result output in the default language that the corresponding reference address database entry uses. This is the default value for `PreferredLanguage`.
- **ENGLISH**. To generate the English names of province and locality. For example, if you set `PreferredLanguage` to English, Informatica AddressDoctor Cloud replaces München in Germany addresses with Munich, and Bayern with Bavaria.
- **ALTERNATIVE_1**, **ALTERNATIVE_2**, or **ALTERNATIVE_3**. To generate the output in one of the alternative languages in which reference address data is available. You can specify this option when you validate addresses from multilanguage countries such as Belgium, Canada, and Switzerland.
- **PRESERVE_INPUT**. To generate the output in the same language as that of the address input.

If you set `PreferredLanguage` to a language that is not available in the reference address database, the `Preferredlanguage` setting defaults to the DATABASE value. In such cases, Informatica AddressDoctor Cloud returns the output in the default language of the reference address database. In such cases, Informatica AddressDoctor Cloud returns an extended element result status (EERS) value of E. EERS value of E indicates that the output is in the database language because the reference database does not contain the information in the specified language

The language or format in which Informatica AddressDoctor Cloud returns the country name depends on the value you configure for the `CountryType` validation parameter.

If the input address contains an address element that the reference database does not contain, Informatica AddressDoctor Cloud copies the element to the result output. For such elements, Informatica AddressDoctor Cloud returns the information in the same language as that of the address input. An element input status value of 1 indicates that the reference address database does not contain the element. An element result status value of 1 indicates that Informatica AddressDoctor Cloud has copied the information from the input because the reference database does not contain the information.

## Alternative Language Options for Multilanguage Countries

The following table lists the alternative language options for the multilanguage countries:

| Country | ALTERNATIVE_1 | ALTERNATIVE_2 | ALTERNATIVE_3 |
|---|---|---|---|
| Belgium | Flemish | French | German |
| Canada | English | French | Not available |
| Switzerland | German | French | Italian |

# PreferredScript

The alphabet in which Informatica AddressDoctor returns the output varies from country to country. For most of the countries, the output is in Latin 1 or ASCII irrespective of the preferred language you set. `PreferredScript` is an optional parameter that you can include to specify the script in which Informatica AddressDoctor Cloud returns the result.

You can specify one of the following values for the `PreferredScript` parameter:

- **DATABASE**. To generate the address output in the same unicode script in which the reference address database stores the corresponding address. This is the default value.

- **POSTAL_ADMIN_PREF**. To generate the address output in the same unicode script that is the preferred script for the postal department of the country to which the address belongs. Typically, this is the same as the DATABASE script.
- **POSTAL_ADMIN_ALT**. To generate the address output in the same unicode script that is the postal department-approved alternative script in the country to which the address belongs. For example, if you set `PreferredScript` to POSTAL_ADMIN_ALT when you validate a Japan address, you receive the result in Kana characters instead of the Kanji script. Kanji is the POSTAL_ADMIN_PREF script for Japan.
- **ASCII_SIMPLIFIED**. To generate the address output in ASCII simplified script. Informatica AddressDoctor Cloud converts non-ASCII characters in the output to their basic ASCII equivalents. For example, ö is replaced with o in the output.
- **ASCII_EXTENDED**. To generate the address output in ASCII extended script that supports the expansion of special characters. Informatica AddressDoctor Cloud converts non-ASCII characters in the output to their general ASCII equivalents. For example, ö is replaced with oe in the output.
- **LATIN**. To generate the result in Latin script. If the input was in a different script, AddressDoctor Cloud transliterates such addresses to provide the output in Latin. Note that the Latin output might contain characters from any of the 15 different Latin character sets.
- **LATIN_ALT**. To generate the result in Latin alternate script that is used for transliteration. This settings works only for countries that support multiple Latin transliterations. For example, if you set `PreferredScript` to LATIN_ALT, Informatica AddressDoctor Cloud transliterates Russian addresses according to BGN rules instead of ISO rules.
- **LATIN_1**. To generate the result in Latin-1, Western European, characters.
- **PRESERVE_INPUT**. To generate the address output in the same script that you used for the address input. You can set this value only for addresses from Belarus, China, Greece, Japan, Kazakhstan, Macedonia, Russia, and Ukraine.

**Note:** If the input contains address elements that are not in the corresponding database, Informatica AddressDoctor copies such elements from the input to the output. For such elements, Informatica AddressDoctor uses the same script that you used for the input address irrespective of the value you set for `PreferredScript`.

If you set `PreferredScript` to PRESERVE_INPUT, Informatica AddressDoctor returns the output in the same script that was used for the input. If the input contains more than one script, Informatica AddressDoctor overrides the PRESERVE_INPUT setting and returns the address in the default script used in the reference address database.

For example: If you set `PreferredScript` to PRESERVE_INPUT and enter a Japan address that contains both Kanji and Latin elements, Informatica AddressDoctor returns all address elements in Kanji, which is the default script for Japan reference address database.

## Countries and PreferredScript Options

The following table lists the preferred scripts that Address Verification can specify for different countries:

| Country | DATABASE | POSTAL _ADMIN _PREF | POSTAL _ADMIN _ALT | LATIN | LATIN _ALT | LATIN _1 |
|---|---|---|---|---|---|---|
| **BLR** | Cyrillic | Cyrillic | Cyrillic | Latin-2, transliterated to the ISO standard | ASCII, transliterated to the BGN standard | ASCII, transliterated to the BGN standard |
| **CHN** | Hanzi | Hanzi | Hanzi | Latin, Mandarin transliteration | Latin, Cantonese transliteration | Latin-1 |
| **CRI** | Latin-1 | Latin-1 | Latin-1 | ASCII | Latin-1 | Latin-1 |
| **CZE** | Latin-2 | Latin-2 | Latin-2 | ASCII | Latin-2 | Latin-1 |
| **GRC** | Greek | Greek | Greek | Latin-1, transliterated to the ISO standard | ASCII, transliterated to the BGN standard | ASCII |
| **HKG** | ASCII | ASCII | ASCII | ASCII | ASCII | ASCII |
| **HUN** | Latin-2 | Latin-2 | Latin-2 | ASCII | Latin-2 | Latin-1 |
| **ISR** | ASCII | ASCII | ASCII | ASCII | ASCII | ASCII |
| **JPN** | Kanji | Kanji | Kana | Latin-7 | Latin-7 | ASCII |
| **KAZ** | Cyrillic | Cyrillic | Cyrillic | Latin-2, transliterated to the ISO standard | ASCII, transliterated to the BGN standard | ASCII, transliterated to the BGN standard |
| **KOR** | Hangul | Hangul | Hangul | ASCII | ASCII | ASCII |
| **LVA** | Latin-7 | Latin-7 | Latin-7 | ASCII | Latin-7 | ASCII |
| **MDA** | Latin-2 | Latin-2 | Latin-2 | ASCII | Latin-2 | Latin-1 |
| **MKD** | Cyrillic | Cyrillic | Cyrillic | ASCII | ASCII, transliterated to the Macedonian BGN standard | ASCII, transliterated to the Macedonian BGN standard |
| **POL** | Latin-2 | Latin-2 | Latin-2 | ASCII | Latin-2 | Latin-1 |
| **ROU** | Latin-3 | Latin-3 | Latin-3 | ASCII | Latin-3 | Latin-1 |
| **RUS** | Cyrillic | Cyrillic | Cyrillic | Latin-2, transliterated to the ISO standard | ASCII, transliterated to the BGN standard | ASCII, transliterated to the BGN standard |

| Country | DATABASE | POSTAL _ADMIN _PREF | POSTAL _ADMIN _ALT | LATIN | LATIN _ALT | LATIN _1 |
|---|---|---|---|---|---|---|
| **SVK** | Latin-2 | Latin-2 | Latin-2 | ASCII | Latin-2 | Latin-1 |
| **TWN** | ASCII | ASCII | ASCII | ASCII | ASCII | ASCII |
| **UKR** | Cyrillic | Cyrillic | Cyrillic | ASCII | ASCII, transliterated to the Ukrainian BGN standard | ASCII, transliterated to the Ukrainian BGN standard |

**Note:** Address Verification can return addresses in ASCII-simplified and ASCII-extended characters for each country.

## RangesToExpand

You can include the optional parameter`RangesToExpand` to specify whether Informatica AddressDoctor Cloud should expand the house number ranges for addresses from countries where individual house numbers exist.

You can set one of the following values of this parameter:

- **NONE**. Informatica AddressDoctor Cloud does not expand house number ranges. This is the default value.
- **ALL**. Informatica AddressDoctor Cloud expands the house number ranges for all addresses where individual house numbers exist
- **ONLY_WITH_VALID_ITEMS**. Informatica AddressDoctor Cloud expands only those ranges where all expandable items exist in the reference data.

For example, if you set `RangesToExpand` to **ONLY_WITH_VALID_ITEMS**:

If the database contains individual house numbers, Informatica AddressDoctor Cloud expands the house number range, and lists the individual house numbers in the suggestion list. For example, the United Kingdom addresses.

For countries that have only house number ranges in the reference database, Informatica AddressDoctor Cloud does not expand the ranges. In such cases, Informatica AddressDoctor Cloud returns the house number ranges in the output.

## Standardizations

You can use the standardization elements to specify the `Casing`, `MaxLength`, and `MaxItemCount` values at the address element level and override the corresponding global settings.

For the `Casing` element, the default value is **GLOBAL**. If you set `Casing` to **GLOBAL**, Informatica Address Verification applies the same value of `GlobalCasing` to the `Casing` element of the Standardizations list. You can also set this element to **NATIVE**, **UPPER**, **LOWER**, or **MIXED**. For more information about these values see the *GlobalCasing* section.

The `MaxLength` element works the same way as the `GlobalMaxLength` parameter works. However, the `MaxLength` element under the Standardizations list affects only the specified address element.

`MaxItemCount` has different value ranges for various elements. The following table lists valid values for address elements.

| Element | MaxItemCount |
|---|---|
| RecipientLine | 6 |
| DeliveryAddressLine | 6 |
| CountrySpecificLocalityLine | 6 |
| FormattedAddressLine | 19 |
| Country | 3 |
| Locality | 6 |
| PostalCode | 3 |
| Province | 6 |
| Street | 6 |
| Number | 6 |
| Building | 6 |
| SubBuilding | 6 |
| DeliveryService | 3 |
| Organization | 3 |
| Department | 3 |
| Contact | 3 |
| FirstName | 3 |
| MiddleName | 3 |
| LastName | 3 |
| Title | 3 |
| Function | 3 |
| Salutation | 3 |
| Gender | 3 |
| Residue | 6 |

## StandardizeInvalidAddresses

You can set the optional parameter`StandardizeInvalidAddresses` to specify whether AddressDoctor Cloud should standardize addresses that are not valid (`ProcessStatus = Ix`) .

You can set this parameter to either **true** or **false**. Alternatively, you can set this parameter to **1** or **0** instead of true or false, respectively. If you set this parameter to true, Informatica AddressDoctor Cloud standardizes the following address elements even when the address is not valid:

- Street Types
- Pre and Post Directional
- Delivery Service Item
- Sub-building descriptors
- State/Province/Region (for example, California to CA)

Note that standardization of addresses can improve downstream business processes such as matching and de-duplication.

## StreetWithNumber

You can set the optional parameter `StreetWithNumber` to specify whether house number should be included in the Street field.

If you set this parameter to **true** or **1**, Informatica AddressDoctor Cloud formats the house number to its correct position – before or after the street name – based on the local address conventions. By default, this parameter is set to **false** or **0**.

# Addresses Parameter

`Addresses` is a required parameter that contains an array of Address objects.

You can use the `Addresses` parameter to enter addresses for validation. If you set `ProcessMode` to **INTERACTIVE** or **FASTCOMPLETION**, you can enter only one address. If you set `ProcessMode` to **BATCH** or **CERTIFIED**, you can enter up to 1000 addresses.

# Enrichments Parameter

The enrichments parameter is an optional parameter that contains an array of Enrichment objects. Enrichments supplement the address with useful information that is not part of the address. You can include this parameter to receive additional useful information related to an address.

You can set the Type attribute of the Enrichment parameter to specify the type of enrichment that you want to receive for the address. For some of the enrichments, you need transactions of the corresponding type. The following table describes the values Informatica AddressDoctor Cloud supports for the Type attribute.

| Enrichment Type | Description |
|---|---|
| GEOCODING | Returns geocoordinates for the validated address. To receive geocoordinates as address enrichments, you need transactions of type GEOCODING. |
| AMAS | Returns any additional information that is available as part of the certified mode validation of Australia addresses. |
| SERP | Returns any additional information that is available as part of the certified mode validation of Canada addresses. |
| SEND_RIGHT | Returns any additional information that is available as part of the certified mode validation of New Zealand addresses. |
| SNA | Returns any additional information that is available as part of the certified mode validation of France addresses. |
| CAMEO | Returns CAMEO consumer profiles from the Callcredit Information Group. To receive CAMEO consumer profiles as enrichments, you need transactions of type CAMEO. |
| SUPPLEMENTARY_BR | Returns country-specific enrichments for validated Brazil addresses. |
| SUPPLEMENTARY_DE | Returns country-specific enrichments for validated Germany addresses. |
| SUPPLEMENTARY_JP | Returns country-specific enrichments for validated Japan addresses. |
| SUPPLEMENTARY_RS | Returns country-specific enrichments for validated Serbia addresses. |
| SUPPLEMENTARY_ZA | Returns country-specific enrichments for validated South Africa addresses. |
| SUPPLEMENTARY_CH | Returns country-specific enrichments for validated Switzerland addresses. |
| SUPPLEMENTARY_GB | Returns country-specific enrichments for validated United Kingdom addresses. |
| SUPPLEMENTARY_US | Returns country-specific enrichments for validated United States addresses. |
| SUPPLEMENTARY_FR | Returns country-specific enrichments for validated France addresses. |
| SUPPLEMENTARY_AT | Returns country-specific enrichments for validated Austria addresses. |
| SUPPLEMENTARY_PL | Returns country-specific enrichments for validated Poland addresses. |

For more information about enrichments that Informatica AddressDoctor Cloud supports, contact your Informatica AddressDoctor sales representative.

### Related Topics:

- “Point Address Geocoding” on page 14
- “GeoCodingType” on page 35
- “Example: A V4 Address with GeoCoding” on page 68
- “Example: A United Kingdom Address with Building-Level Rooftop GeoCoding” on page 83

CHAPTER 4

# Informatica AddressDoctor Cloud Response Elements

This chapter includes the following topics:

- Response Elements Overview, 48
- Status Codes and Messages, 49
- Process Status Codes, 50
- JobToken, 52
- CampaignID, 52
- ReservedXml, 52
- Enrichments (Response), 52
- Results, 56

## Response Elements Overview

The Response object contains general status information, results, and any other information that you have requested.

If the `StatusCode` indicates a successful transaction, Informatica AddressDoctor Cloud returns the results and any other information, such as enrichments, that you have requested.

If the `StatusCode` indicates an error, the `StatusMessage` contains a description of the error. In such cases, Informatica AddressDoctor Cloud leaves out the rest of the elements or returns the elements empty.

# Status Codes and Messages

Status code is a number that indicates the status of a request, including any error condition that prevents Informatica AddressDoctor Cloud from processing a request.

The following table lists the status codes and status messages.

| Status Code | Status Message |
|---|---|
| 100 | “OK”<br>No error. The Results array contains the processed result output. |
| 200 | “Parameters must be supplied”<br>The request does not contain the Parameters element. |
| 202 | “Invalid value for parameter ProcessMode value” |
| 203 | "Invalid value for parameter MatchingAlternatives value" |
| 204 | "Invalid value for parameter MatchingScope value" |
| 205 | "Invalid value for parameter FormatDelimiter value" |
| 206 | "Invalid value for parameter CountryType value" |
| 207 | "Invalid value for parameter PreferredScript value" |
| 208 | "Invalid value for parameter PreferredLanguage value" |
| 209 | "Invalid value for parameter GlobalCasing value" |
| 210 | "Invalid value for parameter FormatType value" |
| 211 | "Invalid value for parameter UseTransactionPool: value" |
| 212 | "Invalid value for parameter AliasStreet: value" |
| 213 | "Invalid value for parameter MaxResultCount: value" |
| 214 | "Invalid value for parameter DualAddressPriority: value" |
| 215 | "Invalid value for parameter RangesToExpand: value" |
| 290 | "Invalid Standardize Element value" |
| 291 | "Invalid Standardize Casing value" |
| 300 | "Addresses must be supplied"<br>The request does not contain the Addresses element. |
| 301 | "Addresses must contain at least one element" |
| 302 | "Addresses must contain no more than 1000 elements for ProcessMode value" |
| 303 | "Addresses must contain exactly one element for ProcessMode value" |

| Status Code | Status Message |
|---|---|
| 400 | "Enrichments not supported for ProcessMode value"<br>Informatica AddressDoctor does not support enrichments in the process mode that you specified; for example, fast completion. |
| 500 | "Authentication failed"<br>Either the login and password combination is not correct, or you do not have valid transaction for the process mode you specified. |
| 501 | "Insufficient transactions" You do not have sufficient transactions for the process mode that you specified. |
| 900 | "Server error"<br>An unexpected error has occurred and no details are available. |
| 901 | "The AddressDoctor Cloud service is temporarily not available" |

# Process Status Codes

The `ProcessStatus` element indicates the result of an address validation process. `ProcessStatus` values contain an alphabet followed by a numeral.

The alphabet in the process status code indicates the general result or status category, whereas the digit denotes a quality grade. Higher numeric values indicate better results in a category. The following table describes the `ProcessStatus` codes.

| Category | Process Status | Description |
|---|---|---|
| Verified | V4 | The input data is correct. Informatica AddressDoctor Cloud checked all postally-relevant elements, and input matched perfectly. |
| | V3 | The input data is correct, but Informatica AddressDoctor Cloud standardized some or all elements, or the input contains outdated names or exonyms. |
| | V2 | The input data is correct, but Informatica AddressDoctor Cloud could not verify some elements because of incomplete reference data. |
| | V1 | The input data is correct but user standardization has adversely affected the deliverability. For example, the postcode length is too short. |
| Corrected | C4 | Informatica AddressDoctor Cloud has checked all postally-relevant elements. |
| | C3 | Informatica AddressDoctor Cloud could not check some of the elements. |
| | C2 | Delivery status is unclear because the reference data does not contain corresponding information. |

| Category | Process Status | Description |
|---|---|---|
| | C1 | Delivery status is unclear because user standardization has introduced errors. |
| Incorrect | I4 | Informatica AddressDoctor Cloud could not correct the data completely, even though there is a single match with an address in the reference data. Note that the deliverability of an I4 address is very poor. |
| | I3 | Informatica AddressDoctor Cloud could not correct the data completely because there are multiple matches in the reference data. Note that the deliverability of an I3 address is very poor. |
| | I2 | Informatica AddressDoctor Cloud could not correct the data. Batch mode returns partial address suggestions. Note that the deliverability of an I2 address is very poor. |
| | I1 | Informatica AddressDoctor Cloud could not correct the data completely. Batch mode does not have any suggestion to make. Note that the deliverability of an I1 address is very poor. |
| Fast Completion | Q3 | Informatica AddressDoctor Cloud could retrieve multiple complete address suggestions for the input address. |
| | Q2 | Informatica AddressDoctor Cloud could combine the input address elements and elements from the reference address data to generate a complete address suggestion. |
| | Q1 | Informatica AddressDoctor Cloud could not return any complete address suggestions. To generate a complete address suggestion, add data to the input address. |
| | Q0 | The input address does not have sufficient information to receive suggestions. |
| Not Processed | N1 | Informatica AddressDoctor Cloud could not recognize the country and hence could not validate the address. |
| | N2 | Informatica AddressDoctor Cloud could not validate the address because the corresponding reference database was not available. |
| Web Service | W1 | Not allowed - No transactions available for the specified country. |
| | W7 | Input error - Engine has rejected Parameters or Input Data. |
| | W8 | Timeout - Address was not processed. |
| | W9 | Error - Address was not processed. |

# JobToken

Informatica AddressDoctor Cloud includes a JobToken in the response when the following conditions are true:

- The ProcessMode is INTERACTIVE or FASTCOMPLETION
- The ProcessStatus is not Vx or Cx
- The JobToken element in the request was omitted or empty

If the first two conditions are not true, Informatica AddressDoctor Cloud does not include the JobToken element in the response. When the first two conditions are true and if the input contains a JobToken, Informatica AddressDoctor Cloud returns the input JobToken even if the input JobToken is not valid.

# CampaignID

Informatica AddressDoctor Cloud returns the `CampaignId` that you included in the request.

# ReservedXml

This element is reserved for Informatica AddressDoctor internal use.

# Enrichments (Response)

Enrichments supplement the address with useful information that is not part of the actual address. Informatica AddressDoctor Cloud supports many enrichments that provide additional information about addresses. Most of the enrichments require you to have valid transactions for the requested enrichment type in addition to the address validation transactions.

If your account has valid enrichment transactions and you have included the Enrichment parameters in the request, AddressDoctor Cloud returns enrichment values in the response.

Informatica AddressDoctor Cloud considers postal certifications as enrichments and handles certification-related errors and status messages in the same way it handles other enrichment-related status or error messages.

Informatica AddressDoctor Cloud returns the enrichment information in the `PayloadXml` field. Typically, the `PayloadXml` field contains at least a `Status` element. There are several status values that are universal for all enrichments. Based on the enrichment type, Informatica AddressDoctor returns the status value either in plain text or as a 4-letter status code.

## Enrichment Error Codes and Messages

Informatica AddressDoctor Cloud provides enrichment information in the `PayloadXml` field. Typically, the `PayloadXml` field contains at least a `Status` element. There are several status values that are universal for all enrichments. Based on the enrichment type, Informatica AddressDoctor Cloud returns the status values as either plain text or a 4-letter status code.

If an error occurs, Informatica AddressDoctor Cloud returns only the status message or code (`<Status>`Message or code`</Status>`). If the request was successful, Informatica AddressDoctor Cloud adds an XML node with the enrichment type as its root in the response XML. For example: `<GEOCODING><Status/> <LATITUDE/> <LONGITUDE/></GEOCODING>`.

| Error Message and Code | Description |
|---|---|
| INVALID_ENRICHMENT_TYPE,<br>WSEI | The Type element of the requested enrichment is not valid. |
| NOT_AVAILABLE_AT_THIS _LOCATION,<br>WSEL | The requested enrichment is not available for the user location. Some of the enrichments are location-dependent. Such enrichments can only be performed by a server physically located in a certain country. Informatica AddressDoctor hosts several data centers around the world. If you get this error, you have requested a location-based enrichment from a server located outside of the country where the server on which the enrichment database is stored. Each data center has its own URL that enables you to send requests to a data center that has the location-based enrichment available. Contact Informatica AddressDoctor for more information and the URL of the data center you need to access. |
| NOT_ALLOWED,<br>WSEP | The account that is trying to access the enrichment information does not have the necessary permissions to do so. Contact your Informatica AddressDoctor sales representative to obtain necessary permissions. |
| NO_MORE_TRANSACTIONS,<br>WSET | The account that is trying to access enrichment information does not have valid enrichment transactions. Please contact Informatica AddressDoctor Sales to purchase the necessary transactions. |
| NOT_AVAILABLE,<br>EMCN, ECON, EMON, EGCN | The requested enrichment is not available for the country you specified. Some of the enrichments are available only for addresses from certain countries. |
| NOT_REQUESTED,<br>WSEN | The enrichment was not requested because the address validation failed (that is, the `ProcessStatus` for address validation was not V or C). Informatica AddressDoctor does not send addresses that are not validated to external providers of enrichments. |
| SERVICE_DOWN,<br>WSED | Web service of the external provider did not respond to the request or responded with an error flag. |
| TIMEOUT,<br>WSED | The request was aborted to ensure a timely response to your request. |

## AMAS Status Codes and Output Fields

**EAM0**

AMAS output is not available for this address.

**EAM1**

AMAS output is provided – address is corrected or validated and DPID is delivered.

**EAM2**

AMAS output is not provided – no correction or validation possible. No DPID can be returned

### Output Fields

ERRORCODE | RECORD_TYPE | DELIVERY_POINT_ID | LOT_NBR | POSTAL_DELIVERY_NBR | POSTAL_DELIVERY_NBR_PFX | POSTAL_DELIVERY_NBR_SFX | HOUSE_NBR_1 | HOUSE_NBR_SFX_1 | HOUSE_NBR_2 | HOUSE_NBR_SFX_2

## SendRight Status Codes and Output Fields

**ESR0**

SendRight output is not available for this address.

**ESR1**

SendRight output is provided.

### Output Fields

ADDRESS_TYPE | SOA_RECORD_IGNORED | DELIVERY_POINT_ID | DELIVERY_SERVICE_TYPE | DELIVERY_SERVICE_NUMBER | DELIVERY_SERVICE_LOCALITY | HOUSE_NUMBER | HOUSE_NUMBER_ALPHA | RD_NUMBER | HYGIENE | VALIDITY_CODE

## SERP Status Codes and Output Fields

**ESE0**

SERP output is not available for the address.

**ESE1**

SERP output is provided for the address.

### Output Fields

CATEGORY | EXCLUDED_FLAG

## SNA Status Codes and Output Fields

**ESN0**

SNA output not available for the address.

**ESN1**

SNA output is provided for the address.

### Output Fields

CATEGORY

## Additional Country-Specific Information in Validated Output

Informatica AddressDoctor Cloud provides additional country-specific information as enrichment to addresses from select countries. If you have requested additional country-specific information as enrichment, Informatica AddressDoctor Cloud returns additional information, such as CHOUMEI_AZA for Japan and County FIPS code for USA in its response.

The Status code contains three letters - E for enrichment followed by a 2-letter country code; for example EUS for country-specific enrichment for US - and a number (0 or 1). A value of 1 in the status code denotes that the enrichment has been provided, whereas 0 denotes that the enrichment is not available for the requested address. The following table shows the country-specific enrichment status and possible return values.

| Enrichment | Status | Possible Return Values |
|---|---|---|
| SUPPLEMENTARY_US | EUSx | COUNTY_FIPS_CODE \| STATE_FIPS_CODE, MSA_ID \| CBSA_ID \| FINANCE_NUMBER\| RECORD_TYPE |
| SUPPLEMENTARY_GB | EGBx | DELIVERY_POINT_SUFFIXES \| UDPRN \| ADDRESS_KEY |
| SUPPLEMENTARY_JP | EJPx | CHOUMEI_AZA_CODE \| NEW_CHOUMEI_AZA_CODE \| GAIKU_CODE |
| SUPPLEMENTARY_SR | ESRx | POSTAL_ADDRESS_CODE |
| SUPPLEMENTARY_BR | EBRx | IBGE_CODE |
| SUPPLEMENTARY_DE | EDEx | LOCALITY_ID \| STREET_ID \| AGS |
| SUPPLEMENTARY_ZA | EZAx | NAD_ID |
| SUPPLEMENTARY_CH | ECHx | POSTAL_CODE_EXTENSION |
| SUPPLEMENTARY_FR | EFRx | INSEE_CODE \| INSEE_9_CODE |
| SUPPLEMENTARY_AT | EATx | POSTAL_ADDRESS_CODE |
| SUPPLEMENTARY_PL | EPLx | GMINA_CODE \| LOCALITY_TERYT_ID \| STREET_TERYT_ID |

## Consumer Segmentation (CAMEO) Information in Validated Output

Informatica AddressDoctor Cloud provides consumer segmentation (CAMEO) data as an enrichment to addresses. If you have specified CAMEO enrichment in the request, Informatica AddressDoctor Cloud returns the CAMEO information associated with the address in its response.

If you request CAMEO data in interactive mode, Informatica AddressDoctor Cloud does not provide any CAMEO data for the suggestions that are returned. However, in its response, Informatica AddressDoctor Cloud includes a `JobToken` that you can use to resubmit the address that you have selected from the suggestions. When you resubmit the address along with the `JobToken`, AddressDoctor Cloud returns the CAMEO data for the selected address.

When you request CAMEO enrichment, the `PayloadXML` field in the response contains `<CATEGORY>`, `<GROUP>`, `<INTERNATIONAL>`, and `< MVID>` elements apart from the `<Status>` element. Informatica AddressDoctor Cloud also provides additional information for these elements in the corresponding description elements such as `<CATEGORY_DESCRIPTION>`, `<GROUP_DESCRIPTION>`, and `<INTERNATIONAL_DESCRIPTION>`.

The following table lists the CAMEO status codes.

| <Status> | Description |
|---|---|
| ECON | CAMEO Consumer Segmentation codes are not available for this country |
| ECO0 | No CAMEO Consumer Segmentation codes available for this address |
| ECO1 | CAMEO Consumer Segmentation codes have been appended to the address |

## GeoCoding in Validated Output

You can obtain the geo-coordinates for an address as an enrichment in the validated address output.

If you request geocoding in the interactive mode, Informatica AddressDoctor Cloud does not provide any geocoordinates for the suggestions that are returned. However, in its response, Informatica AddressDoctor Cloud includes a `JobToken` that you can use to resubmit the address that you have selected from among the suggestions. When you resubmit the address along with the `JobToken`, Informatica AddressDoctor Cloud returns the geocoordinates for the selected address,

When you request geocoordinates as an enrichment, the `PayloadXml` in the response contains `<LATITUDE>`, `<LONGITUDE>`, and `<LAT_LONG_UNIT>` elements in addition to the `<Status>` element. The `LAT_LONG_UNIT` denotes the projection used; for example, WGS84 for World Geodetic System 1984.

The following table describes the possible status values for the GEOCODING enrichment.

| <Status> | Description |
|---|---|
| EGC0 | Geocoordinates could not be appended to this address |
| EGC4 | Geocoordinates are accurate to partial postal code level |
| EGC5 | Geocoordinates are accurate to postal code level |
| EGC6 | Geocoordinates are accurate to locality level |
| EGC7 | Geocoordinates are accurate to street level |
| EGC8 | Geocoordinates are accurate to house number level (interpolated) |
| EGC9 | High precision arrival point geocoordinates (point addressing) |
| EGCA | High precision parcel centroid geo coordinates |

# Results

For successful transactions, Informatica AddressDoctor Cloud returns the Results object, which is an array of multiple elements such as the Process Status code, validated address, and CountryISO3. Informatica AddressDoctor Cloud returns one result object for each Address object in the addresses array of the request.

## ResultDataSet

The `ResultDataSet` array contains various `ResultData` objects. Based on the `ProcessMode`, `ResultDataSet` can contain corrections for the input address or multiple address suggestions. If it is a response to a batch mode or certified mode, the `ResultDataSet` array might contain up to 1000 validated addresses.

### ResultData

A ResultData object represents one suggestion or a corrected result, depending on the `ProcessMode` and `ProcessStatus`. It also might contain the following information about the processing and the corrected address or suggestions in the form of an address object.

### MailabilityScore

Indicates the possibility of successful delivery to the address on the following 6-point scale:

**5**. Completely confident of delivery.

**4**. Almost certain.

**3**. A good chance of delivery.

**2**. A fair chance of delivery.

**1**. Very low chance of delivery.

**0**. No chance of delivery.

### ResultPercentage

Indicates how similar is the corrected result to the input address. Values close to 100% imply high similarity. The `ResultPercentage` value enables you to filter out extensively corrected addresses, especially when the data quality requirements are very high. You can also use the `ResultPercentage` value to determine which of the interactive mode results show the least deviation from the input.

### Element Status and Relevance values

`ElementStatus` values give a detailed explanation of the outcome of a validation operation. `ElementStatus` values are relevant only when a validation operation has been performed. However, Informatica AddressDoctor Cloud returns some values for `ElementInputStatus` even after a parsing operation. `ElementInputStatus` and `ElementResultStatus` might contain status information for up to 20 address elements.

`ElementInputStatus` provides per-element status on the matching of input elements with the reference data. `ElementResultStatus` provides per-element information about any corrections or modifications done to the input elements while generating the validated output. The following list shows element positions from left to right:

1. PostalCode level 0
2. PostalCode level 1 (for example, ZIP+4 - Plus 4 addition)
3. Locality level 0
4. Locality level 1 (for example, Urbanization, Dependent Locality)
5. Province level 0
6. Province level 1 (for example, Sub Province)
7. Street level 0
8. Street level 1 (for example, Dependent street)
9. HouseNumber level 0
10. HouseNumber level 1
11. Delivery service level 0 (for example, PO Box, GPO, Packstation, Private Bags)
12. Delivery service level 1
13. Building level 0
14. Building level 1
15. SubBuilding level 0
16. SubBuilding level 1
17. Organization level 0
18. Organization level 1
19. Country level 0 (Mother country)

20. Country level 1 (for example, Territory)

**Note:** Level 0 in this list pertains to the Item 1 status information, whereas level 1 summarizes the status information for Items 2-6.

### ElementInputStatus

Each character in the `ElementInputStatus` describes one address element as explained in the preceding bullet. The possible values are:

**0**. The input address contains no data at this position.

**1**. The data at this position cannot be found in the reference data.

**2**. The position cannot be checked because reference data is missing.

**3**. The data is incorrect. The reference database suggests that the Number or DeliveryService value is outside the range expected by the reference data. In batch and certified modes, the input data at this position is passed uncorrected as output. In suggestion list modes, Informatica AddressDoctor can provide alternatives.

**4**. The data at this position matches the reference data, but with errors.

**5**. The data at this position matches the reference data, but the data element was corrected or standardized.

**6**. The data at this position matches the reference data without any error.

### ElementResultStatus

Each character in the `ElementResultStatus` maps to one address element as explained earlier in this topic. The possible values for the first 18 positions (address elements without country) are:

**0**. The output address contains no data at this position.

**1**. The data at this position cannot be found in the reference data. The input data is copied to the output data.

**2**. Data at this position is not checked but is standardized.

**3**. Data at this position is checked but does not match the expected reference data. The reference data suggests that the number data is not in the valid range. The input data is copied to the output. The status value applies in batch mode only.

**4**. Data at this position is copied from the input because the corresponding reference data is not available.

**5**. Data at this position is validated but not changed because multiple matches exist in the reference data. The status value applies in batch mode only.

**6**. Data validation deleted the input value at this position.

**7**. Data at this position is validated but contained a spelling error. Validation corrected the error by copying the value from the reference data.

**8**. Data at this position is validated and updated by adding a value from the reference data. It can also mean that the reference database contains additional data for the input element. For example, validation can add a building or sub-building number if a perfect match is found for the street name or building name.

**9**. Data at this position is validated but not changed, and the delivery status is not clear. For example, the DPV value is wrong.

**C**. Data at this position is validated and verified, but the name data is out of date. Validation changed the name data.

**D**. Data at this position is validated and verified but changed from an exonym to an official name.

**E**. Data at this position is validated and verified. However, data validation standardized the character case or the language. Address validation can change the language if the value fully matches a language alternative. For example, address validation can change "Brussels" to "Bruxelles" in a Belgian address.

**F**. Data at this position is validated, verified, and not changed, due to a perfect match with reference data.

Positions 19 and 20 in the output string relate to country data. The following values are possible for positions 19 and 20.

**0**. The output address contains no data at this position.

**1**. The country is not recognized.

**4**. The country is recognized from the DefaultCountryISO3 setting.

**5**. The country is not recognized because multiple matches are available.

**6**. The country is recognized from a script.

**7**. The country is recognized from the address format.

**8**. The country is recognized from major town data.

**9**. The country is recognized from province data.

**C**. The country is recognized from territory data.

**D**. The country is recognized from the country name, but the name contains errors.

**E**. The country is recognized from the country name without errors.

**F**. The country is recognized from the ForceCountryISO3 setting.

### ElementRelevance

In addition to the element status values described in the preceding bullets, Informatica AddressDoctor Cloud provides you information about the relevance of various address elements with regard to the postal guidelines of the region. The possible values for each address element are 1 for relevant and 0 for not relevant. For any given address, all address elements with a value of 1 must be present for an output address to be deemed valid by the local postal authority. `ElementRelevance` may vary from address to address for countries with different address types, for example, rural verus metropolitan addressing. Furthermore, `AddressElements` that have actually been validated against reference data with `ElementResultStatus` 7 and higher may override the default `ElementRelevance` value defined for that `AddressElement`.

Note that that `ElementRelevance` is meaningful only for addresses with the `ProcessStatus` value of C or V in batch and I3 and I4 for INTERACTIVE requests.

### ExtElementStatus

The Extended Element Result Status or EERS code is a twenty-character output field for all valid or corrected addresses. The EERS indicates that additional information might be available in the reference database for the given address. The following EERS codes are available:

**1**. Data available for the element in the database, but not used for validation.

**2**. Element unchecked, but changed because of wrong syntax/format.

**3**. Numeric in element correct, but element changed because of wrong syntax/descriptor.

**4**. Element correct or unchecked, but moved because of wrong format.

**5**. Alternative available in database – for example, language, preferred locality name, alias name.

**6**. Unvalidated parts inside element like additional information.

**7**. Level change like moving HNO1 to HNO2 or swapping Locality2 with Locality1.

**8**. Type change for fielded input only; for example, moving SubBuilding to Building Level 2.

**9**. General Postal Authority Rule.

**A**. Dominant match for dual address processing.

**B**. Relevance is only a country-wide default and cannot be trusted.

**C**. Fast Completion Overflow.

**D**. Numeric for range expansion (interpolated).

**E**. Language not available for the country, database language returned.

**F**. Output address is outdated.

For all other scenarios, Informatica AddressDoctor Cloud returns an EERS value of zero.

### AddressResolutionCode

The Address Resolution Code or ARC is a twenty-character output field for all invalid records. The ARC explains why an address is rejected. The following ARC codes are available:

**2**. Missing element in address.

**3**. Numeric provided inside element is outside permissible range – for example, wrong numeric inside street name or house number; 100 Main St when house numbers range from 400-800.

**4**. Multiple inputs for the element.

**5**. Input element ambiguous / multiple matches.

**6**. Element contradicts other elements. For example, the postal code information and locality information do not match.

**7**. 3 strike rule/too many corrections in combination of several elements.

**8**. General Postal Authority Rule.

For all other scenarios, Informatica AddressDoctor Cloud returns an ARC value of zero.

### LanguageISO3

The LanguageISO3 field contains the ISO 639 3-letter code of the language in which Informatica AddressDoctor Cloud returns the result. For example, `DEU` for German.

For transliterated output, Informatica AddressDoctor Cloud specifies the original language in the output. For example, `JPN` in case of romanized Japanese output.

If the language information is not available, Informatica AddressDoctor returns a value of `XXX` in the LanguageISO3 code field.

### Address

The `Address` object contains the address elements of a result. If there were multiple items, such as Locality and Dependent Locality, they are stored in a sequence of the same element.

```
<Locality>
    <string>Locality</string>
    <string>DependentLocality</string>
</Locality>
```

In VB.NET this is represented as an Array. Note that AddressDoctor Cloud does not include the empty elements in the XML response.

The `Address` object also contains a `Residue` element that contains information that was part of the input but is not required for mail delivery in the country to which the address belongs. The `Residue` element can contain multiple strings of data that is superfluous to the validated output. You can set the `MaxItemCount` value for the `Residue` element to specify the maximum number of strings to include in the `Residue` element.

## Address Types

You can use the AddressType information in the result output to identify the type of mail box an address points to.

For United States addresses, Informatica Address Verification returns the address type values that the United States Postal Service specifies. The United States Postal Service includes a Record Type value in the reference data for domestic addresses.

New Zealand Posts provides a rural address identifier. Canada Post provides a large volume receiver identifier.

If the reference data does not contain a formal address type designator, Address Verification uses different data elements to assign address types to addresses. Address Verification assign address type values to addresses from countries that do not define address types based on criteria that Address Verification defined.

Address Verification employs a range of criteria to decide the address type for the following countries:

- Australia
- Canada
- France
- New Zealand

Address Verification has a separate set of criteria for identifying the address type when verifying the United States addresses in the Fast Completion mode.

## Address Types from the United States Postal Service

Informatica Address Verification returns the United States Postal Service address type for a United States address when you perform verification in Batch, Certified, or Interactive mode.

The United States Postal Service provides the following address types for United States addresses:

- F. The address identifies an organization.
- G. The address is a general delivery address. In a general delivery address, the postal code and the recipient data identify the address.
- H. The address identifies a high-rise building. The address contains subbuilding elements such as apartment or suite.
- P. The address identifies a Post Office Box or a delivery service.
- R. The address is a rural route/highway contract address.
- S. The address identifies a street.
- U. Unidentified. The address is not valid, and Address Verification does not assign an address type.

## Address Type Indicators for the United States Addresses in Fast Completion Mode

When verifiying addresses in the fast completion mode, Informatica Address Verification returns the following address type values:

- B. The address identifies a building.
- F. The address identifies an organization.
- L. The address post code identifies the organization as a large volume receiver. The reference data adds or verifies the organization name.

Address Verification can determine that the address is a large volume receiver in one of the following ways:

  - The address post code identifies the organization as a large volume receiver.
  - The reference data does not contain street or building information.
- P. The address identifies a Post Office Box or a delivery service.
- S. The address identifies a street. S is the default address type. If Address Verification cannot determine the address type from the address data, it returns the default value.
- U. Unidentified. The address is not valid, and Address Verification does not assign an address type.

If an address meets the criteria for more than one address type, Address Verification assigns the first applicable address type from the following list:

L, F, P, B, S

## Address Type Indicators for Australia Addresses

Informatica Address Verification returns the following address type values for Australia addresses:

- B. The address identifies a building.
- F. The address identifies an organization.
- L. The address post code identifies the organization as a large volume receiver. The reference data adds or validates the organization name.
  Address Verification can determine that the address is a large volume receiver in one of the following ways:
  - The address post code identifies the organization as a large volume receiver.
  - The reference data does not contain street or building information.
- P. The address identifies a Post Office Box or a delivery service.
- S. The address identifies a street. S is the default address type. If Address Verification cannot determine the address type from the address data, it returns the default value.
- U. Unidentified. The address is not valid, and Address Verification does not assign an address type.

If an address meets the criteria for more than one address type, Address Verification assigns the first applicable address type from the following list:

L, F, P, B, S

## Address Type Indicators for Canada Addresses

Informatica Address Verification returns the following address types for Canada addresses:

- B. The address identifies a building.
- F. The address identifies an organization. In Canada addresses, the type F addresses are a subset of the type L addresses. Therefore, the address type F also indicates a large volume receiver.
- G. The address is a general delivery address. In a general delivery address, the postal code and the recipient data identify the address. Address Verification uses the delivery record in the reference data to identify the address type.
- L. The address post code identifies the organization as a large volume receiver. The address might or might not contain an organization name.
- P. The address identifies a Post Office Box or a delivery service.

- R. The address identifies a rural route. Address Verification uses the delivery record in the reference data to identify the address type.
- S. The address identifies a street. S is the default address type. If Address Verification cannot determine the address type from the address data, it returns the default value.
- U. Unidentified. The address is not valid, and Address Verification does not assign an address type.

If an address meets the criteria for more than one address type, Address Verification assigns the first applicable address type from the following list:

F, L, P, B, R, S, G.

## Address Type Indicators for France Addresses

Informatica Address Verification returns the following address type values for France addresses:

- B. The address identifies a building.
- F. The address identifies an organization. The address does not include a CEDEX post code.
- G. The address is a general delivery address. The reference data does not contain a match for the street information. However, the reference data contains a match for the CEDEX postal code in the address.
- L. The postal code identifies the organization as a large volume receiver. The address might or might not contain an organization name. The reference data uses the CEDEX postal code to add or validate the organization name.
- P. The address identifies a Post Office Box or a delivery service.
- S. The address identifies a street address. S is the default address type. If Address Verification returns S as the default value if Address Verification cannot determine the address type from the address data.
- U. Unidentified. The address is not valid, and Address Verification does not assign an address type.

If an address meets the criteria for more than one address type, Address Verification assigns the first applicable address type from the following list:

L, F, P, B, S, G.

## Address Type Indicators for New Zealand Addresses

Informatica Address Verification returns the following address type values for New Zealand addresses:

- B. The address identifies a building.
- F. The address identifies an organization.
- L. The address post code identifies the organization as a large volume receiver. The reference data adds or validates the organization name.

  Address Verification can determine that the address is a large volume receiver in one of the following ways:

  - The address post code identifies the organization as a large volume receiver.
  - The reference data does not contain street or building information.
- P. The address identifies a Post Office Box or a delivery service.
- R. The address identifies a rural route. Address Verification uses the delivery record in the reference data to identify the address type.
- S. The address identifies a street. S is the default address type. If Address Verification cannot determine the address type from the address data, it returns the default value.
- U. Unidentified. The address is not valid, and Address Verification does not assign an address type.

If an address meets the criteria for more than one address type, Address Verification assigns the first applicable address type from the following list:

L, F, P, B, R, S

## Address Type Indicators for Addresses from the Rest of the World

Informatica Address Verification returns the following address type values for addresses from countries other than Australia, Canada, France, New Zealand, and the United States:

- B. The address identifies a building.
- F. The address identifies an organization.
- L. The address post code identifies the organization as a large volume receiver. The reference data adds or validates the organization name.
  Address Verification can determine that the address is a large volume receiver in one of the following ways:
  - The address post code identifies the organization as a large volume receiver.
  - The reference data does not contain street or building information.
- P. The address identifies a Post Office Box or a delivery service.
- S. The address identifies a street. S is the default address type. If Address Verification cannot determine the address type from the address data, it returns the default value.
- U. Unidentified. The address is not valid, and Address Verification does not assign an address type.

If an address meets the criteria for more than one address type, Address Verification assigns the first applicable address type from the following list:

L, F, P, B, S

**Note:** Address Verification can return information relevant to the address type on other output elements. Consult the Process Status, Element Input Status, and Element Result Status values.

## ARC Example

When you validate a Canada (CAN) address without the SubBuilding information in the certified mode, Informatica AddressDoctor Cloud returns an ARC value of 2 to indicate that the SubBuilding information was missing.

### Input Address

```
1555 Finch Avenue E
North York ON M2J4X9
```

### Output Address

```
1555 Finch Avenue E
North York ON M2J 4X9
```

Process Status is I3 indicating that the address was rejected.

| | EIS | ERS | ARC | Relevance | Explanation |
|---|---|---|---|---|---|
| SubBuilding | 0 | 0 | 2 | 0 | Sub-building missing |

The ARC value in this example explains why the address was rejected.

## EERS Example

In Hong Kong (HKG), it is possible that one or more buildings are available for a given street and house number combination. In this example, the address does not contain a building in the input, but several buildings exist in the reference data for the given street and house number combination.

### Input Address

```
1 Harbour Rd.
Wan Chai
Hong Kong Island
```

### Output Address

```
1 Harbour Rd.
Wan Chai
Hong Kong Island
```

Process status code is V4, which indicates that the addresses are a perfect match.

| | EIS | ERS | EERS | Relevance | Explanation |
|---|---|---|---|---|---|
| Building | 0 | 0 | 1 | 0 | Several building records available for the given Street/HNO |

Several building records exist for this address. To avoid false positives, Informatica AddressDoctor Cloud does not appended any building information to the output. The EERS code indicates that building information is available in the reference database, but was not used for validation.

CHAPTER 5

# Examples

This chapter includes the following topics:

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- Example: A V4 Address with GeoCoding, 68
- Example: An Austria Address with Country-Specific Enrichment, 70
- Example: Single Line Address Validation, 73
- Example: AddressCodeLookup, 78
- Example: An India Address with Multiple Levels of Locality Information, 79
- Example: Address with Residue Information, 81
- Example: A United Kingdom Address with Building-Level Rooftop GeoCoding, 83
- Example: Bulgaria Address Validation Results in Cyrillic and Latin Scripts, 85
- Example: Address Output with Address Type Values, 88

## Example: VisualBasic .NET Interface

The following examples show how you can use Visual Studio 2010 to add a Service Reference to Informatica AddressDoctor Cloud. The example uses proxy classes to make calling Informatica AddressDoctor Cloud easy. You do not need to construct the SOAP XML request or parse the response. When adding a Service Reference to a project, you can click the **Advanced…** button to change the Collection type from `System.Array` to `System.Collections.Generic.List`. For example, the addresses parameter is defined as *addresses() As Address*. instead of *addresses As List(Of Address)* This setting is assumed in the following description of the Interface.

### The Process method

```
Function Process(login As String, password As String, parameters As Parameters,
    Addresses() As Address, enrichments() As Enrichment) As Response
```

### The Parameter classes

```
Public Class Parameters
    Public ProcessMode As String
    Public ServiceParameters As ServiceParameters
    Public ValidationParameters As ValidationParameters
End Class

Public Class ServiceParameters
    Public JobToken As String
    Public CampaignId As String
    Public ReservedXml As String
    Public UseTransactionPool As String
End Class
Public Class ValidationParameters
    Public FormatType As String
    Public FormatDelimiter As String
    Public DefaultCountryISO3 As String
    Public ForceCountryISO3 As String
    Public CountryType As String
    Public CountryOfOriginISO3 As String
    Public StreetWithNumber As Boolean
    Public FormatWithCountry As Boolean
    Public ElementAbbreviation As Boolean
    Public PreferredScript As String
    Public PreferredLanguage As String
    Public AliasStreet As String
 Public AliasLocality As String
    Public GlobalCasing As String
    Public GlobalMaxLength As Integer
 Public GlobalPreferredDescriptor As String
    Public MatchingScope As String
    Public MaxResultCount As Integer
    Public DualAddressPriority As String
    Public StandardizeInvalidAddresses As Boolean
    Public RangesToExpand As String
    Public FlexibleRangeExpansion As Boolean
 Public GeoCodingType As String
 Public MatchingAlternatives As String
    Public MatchingExtendedArchive As Boolean
 Public DisableCertifiedModeISO3 As String
 Public FormatMaxLines As Integer
    Public Standardizations() As Standardize
    Public OutputOptions As AddressOptions
End Class
```

## The Address class

```
Public Class Address
    Public RecordId As String
    Public Organization() As String
    Public Department() As String
    Public Contact() As String
    Public Email() As String
    Public Building() As String
    Public SubBuilding() As String
    Public Street() As String
    Public HouseNumber() As String
    Public DeliveryService() As String
    Public Locality() As String
    Public PreferredLocality() As String
    Public PostalCode() As String
    Public Province() As String
    Public Country() As String
    Public Residue() As String
    Public DeliveryAddressLines() As String
    Public CountrySpecificLocalityLine() As String
    Public FormattedAddress() As String
End Class
```

All address elements are defined as arrays because address formats differ from country to country. In some countries, there are two or more street lines, such as street and dependent street, whereas some other countries have multiple entries for locality. The current Informatica AddressDoctor version supports up to six lines for each address element.

## The Enrichment class

```
Public Class Enrichment
    Public Type As String
    Public PayloadXml As String
End Class
```

### The Standardize class

```
Public Class Standardize
    Public Element As String
    Public Casing As String
    Public MaxLength As Integer
    Public MaxItemCount As Integer
End Class
```

### The Response class

```
Public Class Response
    Public StatusCode As Integer
    Public StatusMessage As String
    Public JobToken As String
    Public CampaignId As String
    Public ReservedXml As String
    Public Results() As Result
End Class
```

### The Result class

```
Public Class Result
    Public ProcessStatus As String
    Public CountryISO3 As String
    Public ResultDataSet() As ResultData
    Public Enrichments() As Enrichment
End Class
```

### The ResultData class

```
Public Class ResultData
    Public MailabilityScore As String
    Public ResultPercentage As String
    Public ElementInputStatus As String
    Public ElementResultStatus As String
    Public ElementRelevance As String
    Public ExtElementStatus As String
    Public AddressResolutionCode As String
    Public Address As Address
End Class
```

# Example: A V4 Address with GeoCoding

The following example shows a Germany address that Informatica AddressDoctor Cloud validates with a V4 status. The example also shows the following settings:

- `Enrichment` type is set to GEOCODING, and `GeoCodingType` to NONE.
- `GlobalPreferredDescriptor` is set to LONG.
- `PreferredLanguage` is set to ENGLISH.
- `PreferredScript` is set to LATIN.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:v1="http://validator5.AddressDoctor.com/Webservice5/v2">
    <soapenv:Header/>
    <soapenv:Body>
        <Process xmlns="http://validator5.AddressDoctor.com/Webservice5/v2">
            <login>*****</login>
            <password>******</password>
            <parameters>
                <ProcessMode>INTERACTIVE</ProcessMode>
                <ValidationParameters>
                    <PreferredLanguage>ENGLISH</PreferredLanguage>
                    <PreferredScript>LATIN</PreferredScript>
                    <GlobalPreferredDescriptor>LONG</GlobalPreferredDescriptor>
                    <GeoCodingType>NONE</GeoCodingType>
                </ValidationParameters>
            </parameters>
            <addresses>
                <Address>
                    <FormattedAddress>
                        <string>Röntgenstr. 9</string>
                        <string>67133 Maxdorf</string>
                        <string>DEU</string>
                    </FormattedAddress>
                </Address>
            </addresses>
            <enrichments>
                <Enrichment>
                    <Type>GEOCODING</Type>
                </Enrichment>
            </enrichments>
        </Process>
    </soapenv:Body>
</soapenv:Envelope>
```

Informatica AddressDoctor Cloud returns the following response:

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/
XMLSchema">
   <soap:Body>
      <ProcessResponse xmlns="http://validator5.AddressDoctor.com/Webservice5/v2">
         <ProcessResult>
            <StatusCode>100</StatusCode>
            <StatusMessage>OK</StatusMessage>
            <Results>
               <Result>
                  <ProcessStatus>V4</ProcessStatus>
                  <CountryISO3>DEU</CountryISO3>
                  <ResultDataSet>
                     <ResultData>
                        <ResultNumber>1</ResultNumber>
                        <MailabilityScore>5</MailabilityScore>
                        <ResultPercentage>100.00</ResultPercentage>
                        <ElementInputStatus>60600060600000000060</ElementInputStatus>
                        <ElementResultStatus>F0F080F0F000000000E0</ElementResultStatus>
                        <ElementRelevance>10100010100000000010</ElementRelevance>
                        <ExtElementStatus>00E000E0000000000000</ExtElementStatus>
                        <AddressResolutionCode>00000000000000000000
                        </AddressResolutionCode>
                        <AddressType>S</AddressType>
                        <LanguageISO3>ENG</LanguageISO3>
                        <Address>
                           <Street>
                              <string>Roentgenstrasse</string>
                           </Street>
                           <HouseNumber>
                              <string>9</string>
                           </HouseNumber>
                           <Locality>
                              <string>Maxdorf</string>
                           </Locality>
                           <PostalCode>
                              <string>67133</string>
                           </PostalCode>
                           <Province>
                              <string>Rhineland-Palatinate</string>
                           </Province>
                           <Country>
                              <string>GERMANY</string>
                           </Country>
                           <DeliveryAddressLines>
                              <string>Roentgenstrasse 9</string>
                           </DeliveryAddressLines>
                           <CountrySpecificLocalityLine>
                              <string>67133 Maxdorf</string>
                           </CountrySpecificLocalityLine>
                           <FormattedAddress>
                              <string>Roentgenstrasse 9</string>
                              <string>67133 Maxdorf</string>
                              <string>GERMANY</string>
                           </FormattedAddress>
                           <AddressComplete>Roentgenstrasse 9;67133 Maxdorf;GERMANY
                           </AddressComplete>
                        </Address>
                     </ResultData>
                  </ResultDataSet>
                  <Enrichments>
                     <Enrichment>
                        <Type>GEOCODING</Type>
                        <PayloadXml><![CDATA[<GEOCODING><Status>EGC8</
Status><COMPLETE>49.490461, 8.290109 WGS84</COMPLETE><LATITUDE>49.490461</
LATITUDE><LONGITUDE>8.290109</LONGITUDE><LAT_LONG_UNIT>WGS84</LAT_LONG_UNIT></
GEOCODING>]]></PayloadXml>
                     </Enrichment>
                  </Enrichments>
               </Result>
            </Results>
         </ProcessResult>
      </ProcessResponse>
   </soap:Body>
</soap:Envelope>
```

Note the following points in the response:

- The output is in English using LATIN script.
- Str in the input has been expanded to its longer form: strasse.
  Röntgenstr has been converted to Roentgenstrasse.
- The output contains interpolated geo-coordinates as specified by the GeoCodingType **NONE**.
- Address elements in the AddressComplete field are separated by semicolon, which is the default format delimiter.

### Related Topics:

- “Point Address Geocoding” on page 14
- “GeoCodingType” on page 35
- “Enrichments Parameter” on page 46
- “Example: A United Kingdom Address with Building-Level Rooftop GeoCoding” on page 83

## Example: An Austria Address with Country-Specific Enrichment

The following example shows an Informatica AddressDoctor Cloud request to validate an Austria address and retrieving the PAC information for the address.

The following validation parameters are set in this request:

- FormatDelimiter is set to COMMA.
- PreferredScript is set to LATIN.

- `PreferredLanguage` is set to ENGLISH.
- `MaxResultCount` is set to 100.
- Under `Standardizations` for LOCALITY, `Casing` is set to UPPER.
- Type of `Enrichment` is set to SUPPLEMENTARY_AT.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:v1="http://validator5.AddressDoctor.com/Webservice5/v2">
    <soapenv:Header/>
    <soapenv:Body>
        <Process xmlns="http://validator5.AddressDoctor.com/Webservice5/v2">
            <login>********</login>
            <password>*******</password>
            <parameters>
                <ProcessMode>INTERACTIVE</ProcessMode>
                <ValidationParameters>
                    <FormatDelimiter>COMMA</FormatDelimter>
                    <PreferredScript>LATIN</PreferredScript>
                    <PreferredLanguage>ENGLISH</PreferredLanguage>
                    <MaxResultCount>100</MaxResultCount>
                    <Standardizations>
                        <Element>LOCALITY</Element>
                            <Casing>UPPER</Casing>
                            <MaxLength>50</MaxLength>
                            <MaxItemCount>2</MaxItemCount>
                    </Standardizations>
                </ValidationParameters>
            </parameters>
            <addresses>
                <Address>
                    <FormattedAddress>
                        <string>Grafenweg 3</string>
                        <string>6714 Nüziders</string>
                        <string>AUT</string>
                    </FormattedAddress>
                </Address>
            </addresses>
            <enrichments>
                <Enrichment>
                    <Type>SUPPLEMENTARY_AT</Type>
                </Enrichment>
            </enrichments>
        </Process>
    </soapenv:Body>
</soapenv:Envelope>
```

Note the following points in the response:

- The elements in `AddressComplete` are separated by commas.
- The Locality element is returned in all capital letters because of the element standardization setting in the request.
- The output is in English language using the Latin script.
- The PAC code for the address.

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/
XMLSchema">
   <soap:Body>
      <ProcessResponse xmlns="http://validator5.AddressDoctor.com/Webservice5/v2">
         <ProcessResult>
            <StatusCode>100</StatusCode>
            <StatusMessage>OK</StatusMessage>
            <Results>
               <Result>
                  <ProcessStatus>V4</ProcessStatus>
                  <CountryISO3>AUT</CountryISO3>
                  <ResultDataSet>
```

```
                     <ResultData>
                        <ResultNumber>1</ResultNumber>
                        <MailabilityScore>5</MailabilityScore>
                        <ResultPercentage>100.00</ResultPercentage>
                        <ElementInputStatus>60600060600000000060</ElementInputStatus>
                        <ElementResultStatus>F0F080F0F000000000E0</ElementResultStatus>
                        <ElementRelevance>10100010100000000010</ElementRelevance>
                        <ExtElementStatus>00E0E0E0000000000000</ExtElementStatus>
                        <AddressResolutionCode>00000000000000000000
                        </AddressResolutionCode>
                        <AddressType>S</AddressType>
                        <LanguageISO3>DEU</LanguageISO3>
                        <Address>
                           <Street>
                              <string>Grafenweg</string>
                           </Street>
                           <HouseNumber>
                              <string>3</string>
                           </HouseNumber>
                           <Locality>
                              <string>NUEZIDERS</string>
                           </Locality>
                           <PostalCode>
                              <string>6714</string>
                           </PostalCode>
                           <Province>
                              <string>Vorarlberg</string>
                           </Province>
                           <Country>
                              <string>AUSTRIA</string>
                           </Country>
                           <DeliveryAddressLines>
                              <string>Grafenweg 3</string>
                           </DeliveryAddressLines>
                           <CountrySpecificLocalityLine>
                              <string>6714 Nueziders</string>
                           </CountrySpecificLocalityLine>
                           <FormattedAddress>
                              <string>Grafenweg 3</string>
                              <string>6714 Nueziders</string>
                              <string>AUSTRIA</string>
                           </FormattedAddress>
                           <AddressComplete>Grafenweg 3,6714 Nueziders,AUSTRIA
                           </AddressComplete>
                        </Address>
                     </ResultData>
                  </ResultDataSet>
                  <Enrichments>
                     <Enrichment>
                        <Type>SUPPLEMENTARY_AT</Type>
                        <PayloadXml><![CDATA[<SUPPLEMENTARY_AT><Status>EAT1
                        </Status><POSTAL_ADDRESS_CODE>100501606
                        </POSTAL_ADDRESS_CODE></SUPPLEMENTARY_AT>]]></PayloadXml>
                     </Enrichment>
                  </Enrichments>
               </Result>
            </Results>
         </ProcessResult>
      </ProcessResponse>
   </soap:Body>
</soap:Envelope>
```

# Example: Single Line Address Validation

The following example shows an Australia addresses validated using the single line address validation feature. Note the following settings in the input:

- `ProcessMode` is set to FASTCOMPLETION.
- Address is entered in the `AddressComplete` field.
- `MaxResultCount` is set to 5.
- No `FormatDelimiter` is specified.
- `GlobalPreferredDescriptor` is set to SHORT.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:v1="http://validator5.AddressDoctor.com/Webservice5/v2">
    <soapenv:Header/>
    <soapenv:Body>
        <Process xmlns="http://validator5.AddressDoctor.com/Webservice5/v2">
            <login>******</login>
            <password>*******</password>
            <parameters>
                <ProcessMode>FASTCOMPLETION</ProcessMode>
                <ValidationParameters>
                    <MaxResultCount>5</MaxResultCount>
                    <GlobalPreferredDescriptor>SHORT</GlobalPreferredDescriptor>
                </ValidationParameters>
            </parameters>
            <addresses>
                <Address>
                    <Country>
                        <string>AUS</string>
                    </Country>
                    <AddressComplete>255 George Street 2000 Sydney</AddressComplete>
                </Address>
            </addresses>
        </Process>
    </soapenv:Body>
</soapenv:Envelope>
```

In the response, note the following:

- Only five suggestions are returned because of the `MaxResultCount` setting.
- Address elements in the `AddressComplete` field of the output are separated by semicolon, which is the default `FormatDelimiter`.
- Element descriptors use the short form. For example, ST for Street.

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/
XMLSchema">
   <soap:Body>
      <ProcessResponse xmlns="http://validator5.AddressDoctor.com/Webservice5/v2">
         <ProcessResult>
            <StatusCode>100</StatusCode>
            <StatusMessage>OK</StatusMessage>
            <JobToken>4ab1d710-a854-4d88-a321-202014996462</JobToken>
            <Results>
               <Result>
                  <ProcessStatus>Q3</ProcessStatus>
                  <CountryISO3>AUS</CountryISO3>
                  <ResultDataSet>
                     <ResultData>
                        <ResultNumber>1</ResultNumber>
                        <MailabilityScore>2</MailabilityScore>
                        <ResultPercentage>100.00</ResultPercentage>
                        <ElementInputStatus>60600050600000000060</ElementInputStatus>
                        <ElementResultStatus>F0F080E0F000800000E0</ElementResultStatus>
                        <ElementRelevance>10101010100000000010</ElementRelevance>
                        <ExtElementStatus>00000000000000100000</ExtElementStatus>
                        <AddressResolutionCode>00000000000000000000
                        </AddressResolutionCode>
                        <AddressType>S</AddressType>
                        <LanguageISO3>ENG</LanguageISO3>
                        <Address>
                           <Building>
                              <string>NATIONAL AUSTRALIA BANK HOUSE</string>
                           </Building>
                           <Street>
                              <string>GEORGE ST</string>
                           </Street>
                           <HouseNumber>
                              <string>255</string>
                           </HouseNumber>
                           <Locality>
                              <string>SYDNEY</string>
                           </Locality>
                           <PostalCode>
                              <string>2000</string>
                           </PostalCode>
                           <Province>
                              <string>NSW</string>
                           </Province>
                           <Country>
                              <string>AUSTRALIA</string>
                           </Country>
                           <DeliveryAddressLines>
                              <string>NATIONAL AUSTRALIA BANK HOUSE</string>
                              <string>255 GEORGE ST</string>
                           </DeliveryAddressLines>
                           <CountrySpecificLocalityLine>
                              <string>SYDNEY  NSW  2000</string>
                           </CountrySpecificLocalityLine>
                           <FormattedAddress>
                              <string>NATIONAL AUSTRALIA BANK HOUSE</string>
                              <string>255 GEORGE ST</string>
                              <string>SYDNEY  NSW  2000</string>
                              <string>AUSTRALIA</string>
                           </FormattedAddress>
                           <AddressComplete>NATIONAL AUSTRALIA BANK HOUSE;255
                            GEORGE ST; SYDNEY  NSW  2000;AUSTRALIA
                            </AddressComplete>
                        </Address>
                     </ResultData>
                     <ResultData>
                        <ResultNumber>2</ResultNumber>
                        <MailabilityScore>2</MailabilityScore>
                        <ResultPercentage>100.00</ResultPercentage>
                        <ElementInputStatus>60600050600000000060</ElementInputStatus>
                        <ElementResultStatus>F0F080E0F000800800E0</ElementResultStatus>
                        <ElementRelevance>10101010100000010010</ElementRelevance>
                        <ExtElementStatus>00000000000000100000</ExtElementStatus>
                        <AddressResolutionCode>00000000000000000000
                        </AddressResolutionCode>
                        <AddressType>S</AddressType>
                        <LanguageISO3>ENG</LanguageISO3>
                        <Address>
                           <Building>
                              <string>NATIONAL AUSTRALIA BANK HOUSE</string>
                           </Building>
                           <SubBuilding>
                              <string/>
                              <string>G</string>
                           </SubBuilding>
                           <Street>
                              <string>GEORGE ST</string>
                           </Street>
                           <HouseNumber>
                              <string>255</string>
                           </HouseNumber>
                           <Locality>
                              <string>SYDNEY</string>
                           </Locality>
                           <PostalCode>
                              <string>2000</string>
                           </PostalCode>
                           <Province>
                              <string>NSW</string>
                           </Province>
                           <Country>
                              <string>AUSTRALIA</string>
                           </Country>
                           <DeliveryAddressLines>
                              <string>NATIONAL AUSTRALIA BANK HOUSE</string>
                              <string>G 255 GEORGE ST</string>
                           </DeliveryAddressLines>
                           <CountrySpecificLocalityLine>
                              <string>SYDNEY  NSW  2000</string>
                           </CountrySpecificLocalityLine>
                           <FormattedAddress>
                              <string>NATIONAL AUSTRALIA BANK HOUSE</string>
                              <string>G 255 GEORGE ST</string>
                              <string>SYDNEY  NSW  2000</string>
                              <string>AUSTRALIA</string>
                           </FormattedAddress>
                           <AddressComplete>NATIONAL AUSTRALIA BANK HOUSE;
                            G 255 GEORGE ST;SYDNEY  NSW  2000;AUSTRALIA
                           </AddressComplete>
                        </Address>
                     </ResultData>
                     <ResultData>
                        <ResultNumber>3</ResultNumber>
                        <MailabilityScore>2</MailabilityScore>
                        <ResultPercentage>100.00</ResultPercentage>
                        <ElementInputStatus>60600050600000000060</ElementInputStatus>
                        <ElementResultStatus>F0F080E0F000800800E0</ElementResultStatus>
                        <ElementRelevance>10101010100000010010</ElementRelevance>
                        <ExtElementStatus>000000000000001C0000</ExtElementStatus>
                        <AddressResolutionCode>00000000000000000000
                        </AddressResolutionCode>
                        <AddressType>S</AddressType>
                        <LanguageISO3>ENG</LanguageISO3>
                        <Address>
                           <Building>
                              <string>NATIONAL AUSTRALIA BANK HOUSE</string>
                           </Building>
                           <SubBuilding>
                              <string/>
                              <string>L 1-30</string>
                           </SubBuilding>
                           <Street>
                              <string>GEORGE ST</string>
                           </Street>
                           <HouseNumber>
                              <string>255</string>
                           </HouseNumber>
                           <Locality>
                              <string>SYDNEY</string>
                           </Locality>
                           <PostalCode>
                              <string>2000</string>
                           </PostalCode>
                           <Province>
                              <string>NSW</string>
                           </Province>
                           <Country>
                              <string>AUSTRALIA</string>
                           </Country>
                           <DeliveryAddressLines>
                              <string>NATIONAL AUSTRALIA BANK HOUSE</string>
                              <string>L 1-30 255 GEORGE ST</string>
                           </DeliveryAddressLines>
                           <CountrySpecificLocalityLine>
                              <string>SYDNEY  NSW  2000</string>
                           </CountrySpecificLocalityLine>
                           <FormattedAddress>
                              <string>NATIONAL AUSTRALIA BANK HOUSE</string>
                              <string>L 1-30 255 GEORGE ST</string>
                              <string>SYDNEY  NSW  2000</string>
                              <string>AUSTRALIA</string>
                           </FormattedAddress>
                           <AddressComplete>NATIONAL AUSTRALIA BANK HOUSE;
                            L 1-30 255 GEORGE ST;SYDNEY  NSW  2000;
                            AUSTRALIA</AddressComplete>
                        </Address>
                     </ResultData>
                     <ResultData>
                        <ResultNumber>4</ResultNumber>
                        <MailabilityScore>2</MailabilityScore>
                        <ResultPercentage>100.00</ResultPercentage>
                        <ElementInputStatus>60600050600000000060</ElementInputStatus>
                        <ElementResultStatus>F0F080E0F000808800E0</ElementResultStatus>
                        <ElementRelevance>10101010100000110010</ElementRelevance>
                        <ExtElementStatus>00000000000000CC0000</ExtElementStatus>
                        <AddressResolutionCode>00000000000000000000
                        </AddressResolutionCode>
                        <AddressType>S</AddressType>
                        <LanguageISO3>ENG</LanguageISO3>
                        <Address>
                           <Building>
                              <string>NATIONAL AUSTRALIA BANK HOUSE</string>
                           </Building>
                           <SubBuilding>
                              <string>SE 1-2</string>
                              <string>L 7-7</string>
                           </SubBuilding>
                           <Street>
                              <string>GEORGE ST</string>
                           </Street>
                           <HouseNumber>
                              <string>255</string>
                           </HouseNumber>
                           <Locality>
                              <string>SYDNEY</string>
                           </Locality>
                           <PostalCode>
                              <string>2000</string>
                           </PostalCode>
                           <Province>
                              <string>NSW</string>
                           </Province>
                           <Country>
                              <string>AUSTRALIA</string>
                           </Country>
                           <DeliveryAddressLines>
                              <string>NATIONAL AUSTRALIA BANK HOUSE</string>
                              <string>SE 1-2 L 7-7</string>
                              <string>255 GEORGE ST</string>
                           </DeliveryAddressLines>
                           <CountrySpecificLocalityLine>
                              <string>SYDNEY  NSW  2000</string>
                           </CountrySpecificLocalityLine>
                           <FormattedAddress>
                              <string>NATIONAL AUSTRALIA BANK HOUSE</string>
                              <string>SE 1-2 L 7-7</string>
                              <string>255 GEORGE ST</string>
                              <string>SYDNEY  NSW  2000</string>
                              <string>AUSTRALIA</string>
                           </FormattedAddress>
                           <AddressComplete>NATIONAL AUSTRALIA BANK HOUSE;
                            SE 1-2 L 7-7;255 GEORGE ST;
```

```
                            SYDNEY NSW 2000;AUSTRALIA</AddressComplete>
                        </Address>
                     </ResultData>
                     <ResultData>
                        <ResultNumber>5</ResultNumber>
                        <MailabilityScore>2</MailabilityScore>
                        <ResultPercentage>100.00</ResultPercentage>
                        <ElementInputStatus>60600050600000000060</ElementInputStatus>
                        <ElementResultStatus>F0F080E0F000808800E0</ElementResultStatus>
                        <ElementRelevance>10101010100000110010</ElementRelevance>
                        <ExtElementStatus>00000000000000CC0000</ExtElementStatus>
                        <AddressResolutionCode>00000000000000000000
                        </AddressResolutionCode>
                        <AddressType>S</AddressType>
                        <LanguageISO3>ENG</LanguageISO3>
                        <Address>
                           <Building>
                              <string>NATIONAL AUSTRALIA BANK HOUSE</string>
                           </Building>
                           <SubBuilding>
                              <string>SE 1-2</string>
                              <string>L 1-6</string>
                           </SubBuilding>
                           <Street>
                              <string>GEORGE ST</string>
                           </Street>
                           <HouseNumber>
                              <string>255</string>
                           </HouseNumber>
                           <Locality>
                              <string>SYDNEY</string>
                           </Locality>
                           <PostalCode>
                              <string>2000</string>
                           </PostalCode>
                           <Province>
                              <string>NSW</string>
                           </Province>
                           <Country>
                              <string>AUSTRALIA</string>
                           </Country>
                           <DeliveryAddressLines>
                              <string>NATIONAL AUSTRALIA BANK HOUSE</string>
                              <string>SE 1-2 L 1-6</string>
                              <string>255 GEORGE ST</string>
                           </DeliveryAddressLines>
                           <CountrySpecificLocalityLine>
                              <string>SYDNEY  NSW  2000</string>
                           </CountrySpecificLocalityLine>
                           <FormattedAddress>
                              <string>NATIONAL AUSTRALIA BANK HOUSE</string>
                              <string>SE 1-2 L 1-6</string>
                              <string>255 GEORGE ST</string>
                              <string>SYDNEY  NSW  2000</string>
                              <string>AUSTRALIA</string>
                           </FormattedAddress>
                           <AddressComplete>NATIONAL AUSTRALIA BANK HOUSE;
                            SE 1-2 L 1-6;255 GEORGE ST;
                            SYDNEY NSW 2000;AUSTRALIA</AddressComplete>
                        </Address>
                     </ResultData>
                  </ResultDataSet>
               </Result>
            </Results>
         </ProcessResult>
      </ProcessResponse>
   </soap:Body>
</soap:Envelope>
```

### Related Topics:

- “Single-Line Address Validation” on page 12

# Example: AddressCodeLookup

The following example shows how you can retrieve a Japan address by using the Choumei Aza code as the AddressCodeLookup input.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:v1="http://validator5.AddressDoctor.com/Webservice5/v2">
    <soapenv:Header/>
    <soapenv:Body>
        <Process xmlns="http://validator5.AddressDoctor.com/Webservice5/v2">
            <login>******</login>
            <password>******</password>
            <parameters>
                <ProcessMode>ADDRESSCODELOOKUP</ProcessMode>
                <ValidationParameters>
                    <PreferredScript>LATIN</PreferredScript>
                </ValidationParameters>
            </parameters>
            <addresses>
                <Address>
                    <Country>
                        <string>JPN</string>
                    </Country>
                    <AddressCode>
                        <CodeType>JPN_CHOUMEI_AZA_CODE</CodeType>
                        <Value>28201160001</Value>
                    </AddressCode>
                </Address>
            </addresses
        </Process>
    </soapenv:Body>
</soapenv:Envelope>
```

The following example shows the response:

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/
XMLSchema">
   <soap:Body>
      <ProcessResponse xmlns="http://validator5.AddressDoctor.com/Webservice5/v2">
         <ProcessResult>
            <StatusCode>100</StatusCode>
            <StatusMessage>OK</StatusMessage>
            <Results>
               <Result>
                  <ProcessStatus>A1</ProcessStatus>
                  <CountryISO3>JPN</CountryISO3>
                  <ResultDataSet>
                     <ResultData>
                        <ResultNumber>1</ResultNumber>
                        <MailabilityScore>0</MailabilityScore>
                        <ResultPercentage>100.00</ResultPercentage>
                        <ElementInputStatus>00000000000000000000</ElementInputStatus>
                        <ElementResultStatus>F0FFF0F00000000000E0</ElementResultStatus>
                        <ElementRelevance>10111010000000000010</ElementRelevance>
                        <ExtElementStatus>00000000000000000000</ExtElementStatus>
                        <AddressResolutionCode>00000000000000000000
                        </AddressResolutionCode>
                        <AddressType/>
                        <LanguageISO3/>
                        <Address>
                           <Street>
```

```
                              <string>1 CHŌME</string>
                           </Street>
                           <Locality>
                              <string>HIMEJI-SHI</string>
                              <string/>
                              <string>TADERAHIGA-SHI</string>
                           </Locality>
                           <PostalCode>
                              <string>670-0081</string>
                           </PostalCode>
                           <Province>
                              <string>HYŌGO-KEN</string>
                           </Province>
                           <Country>
                              <string>JAPAN</string>
                           </Country>
                           <DeliveryAddressLines>
                              <string>1 CHŌME</string>
                           </DeliveryAddressLines>
                           <CountrySpecificLocalityLine>
                              <string>HIMEJI-SHI HYŌGO-KEN 670-0081</string>
                           </CountrySpecificLocalityLine>
                           <FormattedAddress>
                              <string>1 CHŌME</string>
                              <string>TADERAHIGA-SHI</string>
                              <string>HIMEJI-SHI HYŌGO-KEN 670-0081</string>
                              <string>JAPAN</string>
                           </FormattedAddress>
                           <AddressComplete>1 CHŌME;TADERAHIGA-SHI;HIMEJI-SHI HYŌGO-KEN
                           670-0081;JAPAN</AddressComplete>
                        </Address>
                     </ResultData>
                  </ResultDataSet>
               </Result>
            </Results>
         </ProcessResult>
      </ProcessResponse>
   </soap:Body>
</soap:Envelope>
```

### Related Topics:

- “AddressCodeLookup” on page 13

# Example: An India Address with Multiple Levels of Locality Information

The following example shows an India address that has multiple levels of locality information. Because the parameters elements are not included in the request, Informatica AddressDoctor Cloud uses the default settings to validate this address.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:v1="http://validator5.AddressDoctor.com/Webservice5/v2">
    <soapenv:Header/>
    <soapenv:Body>
        <Process xmlns="http://validator5.AddressDoctor.com/Webservice5/v2">
            <login>*****</login>
            <password>*****</password>
            <parameters>
                <ProcessMode>INTERACTIVE</ProcessMode>
            </parameters>
            <addresses>
                <Address>
```

```
                    <FormattedAddress>
                        <string>ABC Ltd</string>
                        <string>66 Akurli Road Near Big Bazar </string>
                        <string>Akurli Industrial Premises</string>
                        <string>Kandivali East</string>
                        <string>Mumbai 400101</string>
                        <string>India</string>
                    </FormattedAddress>
                </Address>
            </addresses>
        </Process>
    </soapenv:Body>
</soapenv:Envelope>
```

In the following response you can see that the validated output contains three levels of Locality. The additional information provided along with the street information, Near Big Bazar, is returned in the street element but separated from the street information by a comma.

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/
XMLSchema">
   <soap:Body>
      <ProcessResponse xmlns="http://validator5.AddressDoctor.com/Webservice5/v2">
         <ProcessResult>
            <StatusCode>100</StatusCode>
            <StatusMessage>OK</StatusMessage>
            <Results>
               <Result>
                  <ProcessStatus>V2</ProcessStatus>
                  <CountryISO3>IND</CountryISO3>
                  <ResultDataSet>
                     <ResultData>
                        <ResultNumber>1</ResultNumber>
                        <MailabilityScore>4</MailabilityScore>
                        <ResultPercentage>100.0</ResultPercentage>
                        <ElementInputStatus>60660060200000002060</ElementInputStatus>
                        <ElementResultStatus>F0FF88F04000000040E0</ElementResultStatus>
                        <ElementRelevance>10110010100000001010</ElementRelevance>
                        <ExtElementStatus>00000060000000000000</ExtElementStatus>
                        <AddressResolutionCode>00000000000000000000
                        </AddressResolutionCode>
                        <AddressType>S</AddressType>
                        <LanguageISO3/>
                        <Address>
                           <Organization>
                              <string>ABC Ltd</string>
                           </Organization>
                           <Street>
                              <string>Akurli Road, Near Big Bazar</string>
                           </Street>
                           <HouseNumber>
                              <string>66</string>
                           </HouseNumber>
                           <Locality>
                              <string>Mumbai</string>
                              <string>Kandivali East</string>
                              <string>Akurli Industrial Premises</string>
                           </Locality>
                           <PostalCode>
                              <string>400101</string>
                           </PostalCode>
                           <Province>
                              <string>Maharashtra</string>
                              <string>Mumbai</string>
                           </Province>
                           <Country>
                              <string>INDIA</string>
                           </Country>
                           <RecipientLines>
                              <string>ABC Ltd</string>
                           </RecipientLines>
                           <DeliveryAddressLines>
                              <string>66 Akurli Road, Near Big Bazar</string>
                           </DeliveryAddressLines>
                           <CountrySpecificLocalityLine>
                              <string>Mumbai - 400101</string>
                           </CountrySpecificLocalityLine>
                           <FormattedAddress>
                              <string>ABC Ltd</string>
                              <string>66 Akurli Road, Near Big Bazar</string>
                              <string>Akurli Industrial Premises</string>
                              <string>Kandivali East</string>
                              <string>Mumbai - 400101</string>
                              <string>INDIA</string>
                           </FormattedAddress>
                           <AddressComplete>ABC Ltd;66 Akurli Road, Near Big Bazar;
                            Akurli Industrial Premises;Kandivali East;
                            Mumbai - 400101;INDIA</AddressComplete>
                        </Address>
                     </ResultData>
                  </ResultDataSet>
               </Result>
            </Results>
         </ProcessResult>
      </ProcessResponse>
   </soap:Body>
</soap:Envelope>
```

# Example: Address with Residue Information

The following example shows an input address that contains superfluous information that Informatica AddressDoctor Cloud returns in the Residue element of the response. The following request contains two main localities, Maxdorf and Mannheim. Because the street information and the postal code belong to the locality Maxdorf, Informatica AddressDoctor Cloud moves the other locality in the input address, Mannheim, to the Residue field in the response.

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:v1="http://validator5.AddressDoctor.com/Webservice5/v2">
    <soapenv:Header/>
    <soapenv:Body>
        <Process xmlns="http://validator5.AddressDoctor.com/Webservice5/v2">
            <login>*****</login>
            <password>*****</password>
            <parameters>
                <ProcessMode>INTERACTIVE</ProcessMode>
             </parameters>
            <addresses>
                <Address>
                    <FormattedAddress>
                        <string>Röntgenstr. 9</string>
                        <string>67133 Maxdorf</string>
                        <string>Mannheim</string>
                        <string>DEU</string>
                    </FormattedAddress>
                </Address>
            </addresses>
        </Process>
    </soapenv:Body>
</soapenv:Envelope>
```

In the response, Informatica AddressDoctor Cloud moves Mannheim, which is not required for mail delivery, to the `Residue` field. Note that the information in the `Residue` field is not part of the `FormattedAddress` or `AddressComplete` elements.

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/
XMLSchema">
   <soap:Body>
      <ProcessResponse xmlns="http://validator5.AddressDoctor.com/Webservice5/v2">
         <ProcessResult>
            <StatusCode>100</StatusCode>
            <StatusMessage>OK</StatusMessage>
            <Results>
               <Result>
                  <ProcessStatus>C4</ProcessStatus>
                  <CountryISO3>DEU</CountryISO3>
                  <ResultDataSet>
                     <ResultData>
                        <ResultNumber>1</ResultNumber>
                        <MailabilityScore>4</MailabilityScore>
                        <ResultPercentage>100.00</ResultPercentage>
                        <ElementInputStatus>60600060600000000060</ElementInputStatus>
                        <ElementResultStatus>F0F080F0F000000000E0</ElementResultStatus>
                        <ElementRelevance>10100010100000000010</ElementRelevance>
                        <ExtElementStatus>00005000000000000000</ExtElementStatus>
                        <AddressResolutionCode>00000000000000000000
                        </AddressResolutionCode>
                        <AddressType>S</AddressType>
                        <LanguageISO3>DEU</LanguageISO3>
                        <Address>
                           <Street>
                              <string>Röntgenstr.</string>
                           </Street>
                           <HouseNumber>
                              <string>9</string>
                           </HouseNumber>
                           <Locality>
                              <string>Maxdorf</string>
                           </Locality>
                           <PostalCode>
                              <string>67133</string>
                           </PostalCode>
                           <Province>
                              <string>Rheinland-Pfalz</string>
                           </Province>
                           <Country>
                              <string>GERMANY</string>
                           </Country>
                           <Residue>
                              <string>Mannheim</string>
                           </Residue>
                           <DeliveryAddressLines>
                              <string>Röntgenstr. 9</string>
                           </DeliveryAddressLines>
                           <CountrySpecificLocalityLine>
                              <string>67133 Maxdorf</string>
                           </CountrySpecificLocalityLine>
                           <FormattedAddress>
                              <string>Röntgenstr. 9</string>
                              <string>67133 Maxdorf</string>
                              <string>GERMANY</string>
                           </FormattedAddress>
                           <AddressComplete>Röntgenstr. 9;67133 Maxdorf;GERMANY
                           </AddressComplete>
                        </Address>
                     </ResultData>
                  </ResultDataSet>
               </Result>
            </Results>
         </ProcessResult>
      </ProcessResponse>
   </soap:Body>
</soap:Envelope>
```

# Example: A United Kingdom Address with Building-Level Rooftop GeoCoding

The following example shows a United Kingdom address for which Informatica AddressDoctor returns the rooftop geocoordinates even though the address does not contain a house number.

The request specifies the `GeoCodingType` as ARRIVAL_POINT. For United Kingdom addresses, you receive rooftop geocoordinates if you set the geocoding type to arrival point. The request also specifies the `Enrichment Type` as GEOCODING.

```
<soapenv:Envelope   xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:v1="http://validator5.AddressDoctor.com/Webservice5/v2">
<soapenv:Header/>
<soapenv:Body>
<Process   xmlns="http://validator5.AddressDoctor.com/Webservice5/v2">
    <login>*****</login>
    <password>*****</password>
    <parameters>
        <ProcessMode>BATCH</ProcessMode>
        <ValidationParameters>
            <PreferredLangauge>ENGLISH</PreferredLangauge>
            <PreferredScript>ASCII_SIMPLIFIED</PreferredScript>
            <GeoCodingType>ARRIVAL_POINT</GeoCodingType>
    </ValidationParameters>
    </parameters>
    <addresses>
        <Address>
            <FormattedAddress>
                <string>REDBOURNE HOUSE</string>
                <string>REDBOURNE AVENUE </string>
                <string>LONDON</string>
                <string>N3 2BT GBR  </string>
            </FormattedAddress>
        </Address>
    </addresses>
    <enrichments>
        <Enrichment>
            <Type>GEOCODING</Type>
        </Enrichment>
    </enrichments>
</Process>
</soapenv:Body></soapenv:Envelope>
```

In the result, Informatica AddressDoctor Cloud returns the rooftop geocoordinates along with the validated output.

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/
XMLSchema">
   <soap:Body>
      <ProcessResponse xmlns="http://validator5.AddressDoctor.com/Webservice5/v2">
         <ProcessResult>
            <StatusCode>100</StatusCode>
            <StatusMessage>OK</StatusMessage>
            <Results>
               <Result>
                  <ProcessStatus>V4</ProcessStatus>
                  <CountryISO3>GBR</CountryISO3>
                  <ResultDataSet>
                     <ResultData>
```

```
                        <ResultNumber>1</ResultNumber>
                        <MailabilityScore>5</MailabilityScore>
                        <ResultPercentage>100.00</ResultPercentage>
                        <ElementInputStatus>60600060000060000060</ElementInputStatus>
                        <ElementResultStatus>F0F000F00000F00000E0</ElementResultStatus>
                        <ElementRelevance>10100010000010000010</ElementRelevance>
                        <ExtElementStatus>00000000000000100000</ExtElementStatus>
                        <AddressResolutionCode>00000000000000000000</
AddressResolutionCode>
                        <AddressType>B</AddressType>
                        <LanguageISO3>ENG</LanguageISO3>
                        <Address>
                           <Building>
                              <string>REDBOURNE HOUSE</string>
                           </Building>
                           <Street>
                              <string>REDBOURNE AVENUE</string>
                           </Street>
                           <Locality>
                              <string>LONDON</string>
                           </Locality>
                           <PostalCode>
                              <string>N3 2BT</string>
                           </PostalCode>
                           <Country>
                              <string>UNITED KINGDOM</string>
                           </Country>
                           <DeliveryAddressLines>
                              <string>REDBOURNE HOUSE</string>
                              <string>REDBOURNE AVENUE</string>
                           </DeliveryAddressLines>
                           <CountrySpecificLocalityLine>
                              <string>LONDON</string>
                           </CountrySpecificLocalityLine>
                           <FormattedAddress>
                              <string>REDBOURNE HOUSE</string>
                              <string>REDBOURNE AVENUE</string>
                              <string>LONDON</string>
                              <string>N3 2BT</string>
                              <string>UNITED KINGDOM</string>
                           </FormattedAddress>
                           <AddressComplete>REDBOURNE HOUSE;REDBOURNE AVENUE;LONDON;N3
2BT;UNITED KINGDOM</AddressComplete>
                        </Address>
                     </ResultData>
                  </ResultDataSet>
                  <Enrichments>
                     <Enrichment>
                        <Type>GEOCODING</Type>
                        <PayloadXml><![CDATA[<GEOCODING><Status>EGC9</
Status><COMPLETE>51.6019848373084, -0.189663122839373 WGS84</
COMPLETE><LATITUDE>51.6019848373084</LATITUDE><LONGITUDE>-0.189663122839373</
LONGITUDE><LAT_LONG_UNIT>WGS84</LAT_LONG_UNIT></GEOCODING>]]></PayloadXml>
                     </Enrichment>
                  </Enrichments>
               </Result>
            </Results>
         </ProcessResult>
      </ProcessResponse>
   </soap:Body>
</soap:Envelope>
```

### RELATED TOPICS:

- “Point Address Geocoding” on page 14
- “GeoCodingType” on page 35
- “Enrichments Parameter” on page 46
- “Example: A V4 Address with GeoCoding” on page 68

# Example: Bulgaria Address Validation Results in Cyrillic and Latin Scripts

The following examples show the result outputs when you validate a Bulgaria address with and without the `PreferredScript` setting.

**Bulgaria Address Validation Without Specifying the Preferred Script**

The following request does not contain the `PreferredScript` parameter. The input address is in English and uses the Latin script.

```
<soapenv:Envelope   xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:v1="http://validator5.AddressDoctor.com/Webservice5/v2">
<soapenv:Header/>
<soapenv:Body>
<Process   xmlns="http://validator5.AddressDoctor.com/Webservice5/v2">
    <login>*****</login>
    <password>*****</password>
    <parameters>
        <ProcessMode>BATCH</ProcessMode>
    </parameters>
    <addresses>
        <Address>
            <FormattedAddress>
                <string>Suite 8</string>
                <string>32 Parchevich Str.</string>
                <string>1000 Sofia</string>
                <string>Bulgaria</string>
            </FormattedAddress>
        </Address>
    </addresses>
</Process>
</soapenv:Body></soapenv:Envelope>
```

Because the request does not specify the preferred script, Informatica AddressDoctor Cloud returns the validated address in the Cyrillic script:

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/
XMLSchema">
   <soap:Body>
      <ProcessResponse xmlns="http://validator5.AddressDoctor.com/Webservice5/v2">
         <ProcessResult>
            <StatusCode>100</StatusCode>
            <StatusMessage>OK</StatusMessage>
            <Results>
               <Result>
                  <ProcessStatus>C4</ProcessStatus>
                  <CountryISO3>BGR</CountryISO3>
                  <ResultDataSet>
                     <ResultData>
                        <ResultNumber>1</ResultNumber>
                        <MailabilityScore>4</MailabilityScore>
                        <ResultPercentage>84.35</ResultPercentage>
                        <ElementInputStatus>60500040600000200060</ElementInputStatus>
                        <ElementResultStatus>F0E08070F000004000E0</ElementResultStatus>
                        <ElementRelevance>10101000000000000010</ElementRelevance>
                        <ExtElementStatus>00000000000000B00000</ExtElementStatus>
                        <AddressResolutionCode>00000000000000000000</
AddressResolutionCode>
                        <AddressType>S</AddressType>
                        <LanguageISO3>ENG</LanguageISO3>
                        <Address>
                           <SubBuilding>
                              <string>Suite 8</string>
                           </SubBuilding>
                           <Street>
                              <string>ул.Петър Парчевич</string>
                           </Street>
                           <HouseNumber>
                              <string>32</string>
                           </HouseNumber>
                           <Locality>
                              <string>София</string>
                           </Locality>
                           <PostalCode>
                              <string>1000</string>
                           </PostalCode>
                           <Province>
                              <string>София</string>
                           </Province>
                           <Country>
                              <string>BULGARIA</string>
                           </Country>
                           <DeliveryAddressLines>
                              <string>Ул.Петър Парчевич 32, Suite 8</string>
                           </DeliveryAddressLines>
                           <CountrySpecificLocalityLine>
                              <string>1000 София</string>
                           </CountrySpecificLocalityLine>
                           <FormattedAddress>
                              <string>Ул.Петър Парчевич 32, Suite 8</string>
                              <string>1000 София</string>
                              <string>BULGARIA</string>
                           </FormattedAddress>
                           <AddressComplete>Ул.Петър Парчевич 32, Suite 8;1000
София;BULGARIA</AddressComplete>
                        </Address>
                     </ResultData>
                  </ResultDataSet>
               </Result>
            </Results>
         </ProcessResult>
      </ProcessResponse>
   </soap:Body>
</soap:Envelope>
```

### Bulgaria Address Validation with the PreferredScript Parameter in the Request

In the following request, the `PreferredScript` parameter is set to LATIN. The input address is in English and uses the LATIN script.

```
<soapenv:Envelope   xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:v1="http://validator5.AddressDoctor.com/Webservice5/v2">
<soapenv:Header/>
<soapenv:Body>
<Process   xmlns="http://validator5.AddressDoctor.com/Webservice5/v2">
    <login>*****</login>
    <password>*****</password>
    <parameters>
        <ProcessMode>BATCH</ProcessMode>
        <ValidationParameters>
            <PreferredScript>LATIN</PreferredScript>
        </ValidationParameters>
    </parameters>
    <addresses>
        <Address>
            <FormattedAddress>
                <string>Suite 8</string>
                <string>32 Parchevich Str.</string>
                <string>1000 Sofia</string>
                <string>Bulgaria</string>
            </FormattedAddress>
        </Address>
    </addresses>
```

```
</Process>
</soapenv:Body></soapenv:Envelope>
```

The result output is in English and uses the Latin script.

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/
XMLSchema">
   <soap:Body>
      <ProcessResponse xmlns="http://validator5.AddressDoctor.com/Webservice5/v2">
         <ProcessResult>
            <StatusCode>100</StatusCode>
            <StatusMessage>OK</StatusMessage>
            <Results>
               <Result>
                  <ProcessStatus>C4</ProcessStatus>
                  <CountryISO3>BGR</CountryISO3>
                  <ResultDataSet>
                     <ResultData>
                        <ResultNumber>1</ResultNumber>
                        <MailabilityScore>4</MailabilityScore>
                        <ResultPercentage>84.35</ResultPercentage>
                        <ElementInputStatus>60500040600000200060</ElementInputStatus>
                        <ElementResultStatus>F0E08070F000004000E0</ElementResultStatus>
                        <ElementRelevance>10101000000000000010</ElementRelevance>
                        <ExtElementStatus>00000000000000B00000</ExtElementStatus>
                        <AddressResolutionCode>0000000000000000000000</
AddressResolutionCode>
                        <AddressType>S</AddressType>
                        <LanguageISO3>ENG</LanguageISO3>
                        <Address>
                           <SubBuilding>
                              <string>Suite 8</string>
                           </SubBuilding>
                           <Street>
                              <string>ul.Petar Parchevich</string>
                           </Street>
                           <HouseNumber>
                              <string>32</string>
                           </HouseNumber>
                           <Locality>
                              <string>Sofia</string>
                           </Locality>
                           <PostalCode>
                              <string>1000</string>
                           </PostalCode>
                           <Province>
                              <string>Sofia</string>
                           </Province>
                           <Country>
                              <string>BULGARIA</string>
                           </Country>
                           <DeliveryAddressLines>
                              <string>Ul.Petar Parchevich 32, Suite 8</string>
                           </DeliveryAddressLines>
                           <CountrySpecificLocalityLine>
                              <string>1000 Sofia</string>
                           </CountrySpecificLocalityLine>
                           <FormattedAddress>
                              <string>Ul.Petar Parchevich 32, Suite 8</string>
                              <string>1000 Sofia</string>
                              <string>BULGARIA</string>
                           </FormattedAddress>
                           <AddressComplete>Ul.Petar Parchevich 32, Suite 8;1000
Sofia;BULGARIA</AddressComplete>
                        </Address>
                     </ResultData>
                  </ResultDataSet>
               </Result>
            </Results>
         </ProcessResult>
      </ProcessResponse>
   </soap:Body>
</soap:Envelope>
```

# Example: Address Output with Address Type Values

The following examples show validated result output for a high-rise address in the United States and a street address in Germany.

## A High-Rise Address in the United States

```
<soapenv:Envelope   xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:v1="http://validator5.AddressDoctor.com/Webservice5/v2">
<soapenv:Header/>
<soapenv:Body>
<Process   xmlns="http://validator5.AddressDoctor.com/Webservice5/v2">
    <login>*******</login>
    <password>*******</password>
    <parameters>
        <ProcessMode>BATCH</ProcessMode>
    </parameters>
    <addresses>
        <Address>
            <FormattedAddress>
                <string>15501 Weston Parkway</string>
                <string>Suite 150</string>
                <string>Cary, NC 27513</string>
                <string>USA</string>
            </FormattedAddress>
        </Address>
    </addresses>
</Process>
</soapenv:Body></soapenv:Envelope>
```

The following result output shows the address type as H, which denotes a high-rise building in the United States:

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/
XMLSchema">
   <soap:Body>
      <ProcessResponse xmlns="http://validator5.AddressDoctor.com/Webservice5/v2">
         <ProcessResult>
            <StatusCode>100</StatusCode>
            <StatusMessage>OK</StatusMessage>
            <Results>
               <Result>
                  <ProcessStatus>C4</ProcessStatus>
                  <CountryISO3>USA</CountryISO3>
                  <ResultDataSet>
                     <ResultData>
                        <ResultNumber>1</ResultNumber>
                        <MailabilityScore>5</MailabilityScore>
                        <ResultPercentage>90.09</ResultPercentage>
                        <ElementInputStatus>60606050600000500060</ElementInputStatus>
                        <ElementResultStatus>F8F0F8E0F00000E000E0</ElementResultStatus>
                        <ElementRelevance>11101010100000100010</ElementRelevance>
                        <ExtElementStatus>00000000000000000000</ExtElementStatus>
                        <AddressResolutionCode>00000000000000000000
                        </AddressResolutionCode>
                        <AddressType>H</AddressType>
                        <LanguageISO3>ENG</LanguageISO3>
                        <Address>
                           <SubBuilding>
                              <string>STE 150</string>
                           </SubBuilding>
                           <Street>
                              <string>WESTON PKWY</string>
                           </Street>
                           <HouseNumber>
                              <string>15501</string>
                           </HouseNumber>
                           <Locality>
                              <string>CARY</string>
                           </Locality>
                           <PostalCode>
                              <string>27513-8638</string>
                           </PostalCode>
                           <Province>
                              <string>NC</string>
                              <string>WAKE</string>
                           </Province>
                           <Country>
                              <string>UNITED STATES</string>
                           </Country>
                           <DeliveryAddressLines>
                              <string>15501 WESTON PKWY STE 150</string>
                           </DeliveryAddressLines>
                           <CountrySpecificLocalityLine>
                              <string>CARY NC 27513-8638</string>
                           </CountrySpecificLocalityLine>
                           <FormattedAddress>
                              <string>15501 WESTON PKWY STE 150</string>
                              <string>CARY NC 27513-8638</string>
                              <string>UNITED STATES</string>
                           </FormattedAddress>
                           <AddressComplete>15501 WESTON PKWY STE 150;CARY NC 
27513-8638;UNITED STATES</AddressComplete>
                        </Address>
                     </ResultData>
                  </ResultDataSet>
               </Result>
            </Results>
         </ProcessResult>
      </ProcessResponse>
   </soap:Body>
</soap:Envelope>
```

## A Street Address in Germany

```
<soapenv:Envelope   xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" 
xmlns:v1="http://validator5.AddressDoctor.com/Webservice5/v2">
<soapenv:Header/>
<soapenv:Body>
<Process   xmlns="http://validator5.AddressDoctor.com/Webservice5/v2">
    <login>*****</login>
    <password>*******</password>
    <parameters>
        <ProcessMode>BATCH</ProcessMode>
    </parameters>
      <addresses>
        <Address>
            <FormattedAddress>
                <string>Lyoner Strasse 15</string>
                <string>60528 Frankfurt</string>
                <string>Germany</string>
            </FormattedAddress>
        </Address>
    </addresses>
</Process>
</soapenv:Body></soapenv:Envelope>
```

The following output shows the address type as **S**, which denotes a street address in Germany:

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/" 
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/
XMLSchema">
```

```
   <soap:Body>
      <ProcessResponse xmlns="http://validator5.AddressDoctor.com/Webservice5/v2">
         <ProcessResult>
            <StatusCode>100</StatusCode>
            <StatusMessage>OK</StatusMessage>
            <Results>
               <Result>
                  <ProcessStatus>V3</ProcessStatus>
                  <CountryISO3>DEU</CountryISO3>
                  <ResultDataSet>
                     <ResultData>
                        <ResultNumber>1</ResultNumber>
                        <MailabilityScore>5</MailabilityScore>
                        <ResultPercentage>100.00</ResultPercentage>
                        <ElementInputStatus>60500050600000000060</ElementInputStatus>
                        <ElementResultStatus>F0D880E0F000000000E0</ElementResultStatus>
                        <ElementRelevance>10100010100000000010</ElementRelevance>
                        <ExtElementStatus>00005000000000000000</ExtElementStatus>
                        <AddressResolutionCode>00000000000000000000
                        </AddressResolutionCode>
                        <AddressType>S</AddressType>
                        <LanguageISO3>DEU</LanguageISO3>
                        <Address>
                           <Street>
                              <string>Lyoner Str.</string>
                           </Street>
                           <HouseNumber>
                              <string>15</string>
                           </HouseNumber>
                           <Locality>
                              <string>Frankfurt am Main</string>
                              <string>Niederrad</string>
                           </Locality>
                           <PostalCode>
                              <string>60528</string>
                           </PostalCode>
                           <Province>
                              <string>Hessen</string>
                           </Province>
                           <Country>
                              <string>GERMANY</string>
                           </Country>
                           <DeliveryAddressLines>
                              <string>Lyoner Str. 15</string>
                           </DeliveryAddressLines>
                           <CountrySpecificLocalityLine>
                              <string>60528 Frankfurt am Main</string>
                           </CountrySpecificLocalityLine>
                           <FormattedAddress>
                              <string>Lyoner Str. 15</string>
                              <string>60528 Frankfurt am Main</string>
                              <string>GERMANY</string>
                           </FormattedAddress>
                           <AddressComplete>Lyoner Str. 15;60528 Frankfurt am
Main;GERMANY</AddressComplete>
                        </Address>
                     </ResultData>
                  </ResultDataSet>
               </Result>
            </Results>
         </ProcessResult>
      </ProcessResponse>
   </soap:Body>
</soap:Envelope>
```