Informatica

Informatica® Data Quality
10.5

Address Validator Port Reference

Informatica Data Quality Address Validator Port Reference
10.5
March 2021

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Preface

Read the *Address Validator Port Reference* to understand the range of ports that you can choose from when you configure the Address Validator transformation in a mapping in Informatica Developer. Use the Address Validator transformation to verify and enhance the quality of your address records. The *Port Reference* describes the functionality and usage of each port on the transformation and the types of information that each port can contain.

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CHAPTER 1

Introduction

This chapter includes the following topics:

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Address Validation Overview

This document describes the input and output ports that you can select on the Address Validator transformation.

Use this document to get the following information about each port:

- The type of information that the port contains.
- The location of the port in the transformation.
- The main uses of the port.
- The port input and output precision values.
- The other ports that the port can work with in an address.

Address Reference Data

An address reference data set describes the addresses that a national mail carrier recognizes in a country. Before you perform address validation with the Address Validator transformation, install the address reference data on the Informatica services machine in the domain. You buy and download the address reference data from Informatica.

Install an address reference data file for each country that the source address data identifies. A country that has a large population might require multiple files. In addition, you can install data files that supplement or enrich the address data. The mail carrier can use the data enrichments to certify the accuracy of the addresses and to accelerate mail delivery.

When you perform address validation, the Address Validator transformation compares each input record to the address reference data. If the transformation finds the input address in the address reference data, the transformation can update the record with the correct and complete address data. If you purchased additional reference data sets, the transformation can also enrich the address data.

Use the **Preferences** window in the Developer tool to view information about the address reference data files on the Informatica services machine in the domain.

Types of Address Reference Data

The validation mode that you select determines how the transformation compares the input address to the address reference data.

The Address Validator transformation can read the following types of address reference data:

Address code lookup data

Install address code lookup data to retrieve a partial address or full address from a code value on an input port. The completeness of the address depends on the level of address code support in the country to which the address belongs. To read the address code from an input address, select the country-specific ports in the Discrete port group.

You can select ports for the following countries:

- Austria. Returns an address to building level.
- Germany. Returns an address to locality, municipality, or street level.
- Japan. Returns an address to the unique mailbox level.
- South Africa. Returns an address to street level.
- South Korea. Returns an address to the unique mailbox level.
- Serbia. Returns an address to street level.
- United Kingdom. Returns an address to the unique mailbox level.

The Address Validator transformation reads address code lookup data when you configure the transformation to run in address code lookup mode.

Batch and interactive data

Install batch and interactive data to perform address validation on a set of address records. Use batch and interactive data to verify that the input addresses are fully deliverable and complete based on the current postal data from the national mail carrier.

When you configure the transformation to run in batch mode, the Address Validator transformation returns a single address for each input address. When you configure the transformation to run in interactive mode, the Address Validator transformation returns one or more addresses for each input address.

CAMEO data

Install CAMEO data to add customer segmentation data to residential address records. Customer segmentation data indicates the likely income level and lifestyle preferences of the residents at each address.

The Address Validator transformation reads CAMEO data when you configure the transformation to run in batch mode or certified mode.

Certified data

Install certified data to verify that address records meet the certification standards that a mail carrier defines. An address meets a certification standard if contains data elements that can identify a unique mailbox, such as delivery point data elements. When an address meets a certification standard, the mail carrier charges a reduced delivery rate.

The following countries define certification standards:

- Australia. Certifies mail according to the Address Matching Approval System (AMAS) standard.
- Canada. Certifies mail according to the Software Evaluation And Recognition Program (SERP) standard.
- France. Certifies mail according to the National Address Management Service (SNA) standard.
- New Zealand. Certifies mail according to the SendRight standard.
- United States. Certifies mail according to the Coding Accuracy Support System (CASS) standard.

The Address Validator transformation reads certified data when you configure the transformation to run in certified mode.

Geocode data

Install geocode data to add geocodes to address records. Geocodes are latitude and longitude coordinates.

The Address Validator transformation reads geocode data when you configure the transformation to run in batch mode or certified mode.

Suggestion list data

Install suggestion list data to find alternative valid versions of a partial address record. Use suggestion list data when you configure an address validation mapping to process address records one by one in real time. The Address Validator transformation uses the data elements in the partial address to perform a duplicate check on the suggestion list data. The transformation returns any valid address that includes the information in the partial address.

The Address Validator transformation reads suggestion list data when you configure the transformation to run in suggestion list mode.

Supplementary data

Install supplementary data to add data to an address record that can assist the mail carrier in mail delivery. Use the supplementary data to add detail about the geographical or postal area that contains the address. In some countries, supplementary data can provide a unique identifier for a mailbox within the postal system.

The Address Validator transformation reads supplementary data when you configure the transformation to run in batch mode or certified mode.

Note: The transformation does not read address reference data in country recognition mode or in parse mode.

Address Validation Modes

When you configure the Address Validator transformation, you can select the type of validation that the transformation performs. The transformation defines the validation type as the mode. Select the mode on the General Settings tab or as an advanced property of the transformation.

The following table describes the modes that you can set on the Address Validator transformation:

Mode Type	Description
Address code lookup	Returns a partial address or a complete address from the reference data when you provide an address code as an input. Several countries support address codes that represent the locality, street, building, or unique mailbox for an address.
Batch	Performs address validation on the records in a data set. Batch validation focuses on address completeness and deliverability. Batch mode does not return suggestions for poor-quality addresses. Batch is the default mode.
Certified	Performs address validation on the records in a data set to the certification standards of the specified country. The certification standards require that each address identifies a unique mailbox. You can perform certified address validation on addresses in Australia, France, New Zealand, the United Kingdom, and the United States.
Country recognition	Determines a destination country for the postal address. The transformation does not perform address validation in country recognition mode.
Interactive	Completes an incomplete valid address. When an incomplete input address matches more than one address in the reference data, the transformation returns all valid addresses up to the limit that the Max Result Count specifies.
Parse	Parses data into address fields. The transformation does not perform address validation in parse mode.
Suggestion list	Returns a list of valid addresses from the reference data when an input address contains fragmentary information. When an address fragment matches more than one address in the reference data, the transformation returns all valid addresses up to the limit that the Max Result Count specifies.

Templates and Groups

You connect the source data ports to predefined ports in the Address Validation transformation. The transformation has multiple ports for each type of information in the source data set.

You select the ports you need and save them in the transformation. Select input ports that correspond to the structure and content of the source data. Select output ports that create the address format and data structure that your organization needs.

The Address Validator transformation organizes input and output ports in groups. Browse the groups to find the ports that you want to use. You find the groups in a Basic model and an Advanced model in the transformation. You can define most addresses using ports from the groups in the Basic model. If the address structure is complex, you may need to select ports in the Advanced model.

Input Groups

You select input ports from one group in the Address Validator transformation.

The transformation has the following input groups:

Discrete

Use Discrete ports to read data columns that contain complete information on a single data element, such as a house number, street, or post code. Find the Discrete group in the Basic and Advanced models.

Hybrid

Use Hybrid ports to read data columns that contain information about one or more data elements. The Hybrid group combines ports from the Discrete and Multiline groups. Use Hybrid ports to create address records that you can submit to a mail carrier. Hybrid ports structure an address to mail carrier standards and identify the type of data on each line. Find the Hybrid group in the Basic and Advanced models.

Multiline

Use Multiline ports to read data columns that contain multiple data elements. Each input column corresponds to a line of an address. For best results, define the input data in the format that the mail carrier requires. Select the Multiline ports to create a printable set of address records.

Each Multiline port represents a line in the printable address, such as the following line of street data:

```
123 Main Street, Apartment 2
```

Multiline ports do not specify the type of data that appears on each address line. Find the Multiline group in the Basic and Advanced models.

Single-Line

Use Single-Line ports to read a single data column that contains all address elements to province level and that does not include a separator between elements. Use the Complete Address port in the port group to submit the address elements. The port group also includes a Country port that you can use to read country information for the address. Find the Single-Line group in the Basic and Advanced models.

Output Groups

You can select output ports from one or more groups in the Address Validator transformation.

The transformation has the following output groups:

Address Elements

Writes street data elements such as house number, apartment number, and street name to separate ports. Find the Address Elements group in the Basic and Advanced models.

AT Supplementary

Writes data to addresses in Austria that can help postal delivery, such as building-level post code data. Find the AT Supplementary group in the Basic model.

AU Supplementary

Writes data to addresses in Australia that identifies the geographical regions to which the Australian Bureau of Statistics assigns the addresses. Find the AU Supplementary group in the Basic model.

Australia Specific

Writes data to addresses in Australia that enables the addresses to meet the Address Matching Approval System (AMAS) standards of Australia Post. Find the Australia Specific group in the Basic and Advanced models.

BE Supplementary

Writes data to addresses in Belgium that can help postal delivery. The data includes locality and neighborhood identification codes from the statistics directorate in Belgium. Find the BE Supplementary group in the Basic model.

BR Supplementary

Writes data to addresses in Brazil that can help postal delivery, such as district identification codes from the Institute of Geography and Statistics (IBGE). Find the BR Supplementary group in the Basic model.

CAMEO

Generates demographic and income summary data that you can use in customer segmentation analysis. Find the CAMEO group in the Basic model.

Canada Specific

Writes data to addresses in Canada that enables the addresses to meet the Software Evaluation and Recognition Program (SERP) standards of Canada Post. Find the Canada Specific group in the Basic model.

CH Supplementary

Writes data to addresses in Switzerland that can help postal delivery, such as extended post code data. Find the CH Supplementary group in the Basic model.

CZ Supplementary

Writes data to addresses in the Czech Republic that can help postal delivery, such as extended post code data. Find the CZ Supplementary group in the Basic model.

Contact Elements

Writes person or contact data, such as names, salutations, and job titles. Find the Contact Elements group in the Advanced model.

Country

Writes the country name or country code defined by the International Organization for Standardization (ISO). Find the Country group in the Basic and Advanced models.

DE Supplementary

Writes data to addresses in Germany that can help postal delivery, such as municipality and district code data. Find the DE Supplementary group in the Basic model.

ES Supplementary

Writes data to addresses in Spain that can help postal delivery. Find the ES Supplementary group in the Basic model.

Formatted Address Line

Writes addresses that are formatted for printing and mailing. Find the Formatted Address Line group in the Basic and Advanced models.

FR Supplementary

Writes data to addresses in France that can help postal delivery, such as identification codes from the National Institute of Statistics and Economic Studies (INSEE). Find the FR Supplementary group in the Basic model.

France Specific

Writes data to addresses in France that enables the addresses to meet the National Address Management Service (SNA) standards of La Poste. Find the France Specific group in the Basic model.

Geocoding

Generates geocode data, such as latitude and longitude coordinates, for an address. Find the Geocoding group in the Basic model.

ID Elements

Writes Record ID and Transaction Key data. Find the ID Elements group in the Advanced model.

IT Supplementary

Writes data to addresses in Italy that can help postal delivery. Find the IT Supplementary group in the Basic model.

JP Supplementary

Writes data to addresses in Japan that can help postal delivery, such as Choumei Aza codes. Find the JP Supplementary group in the Basic model.

KR Supplementary

Writes data to addresses in South Korea that can help postal delivery, such as unique identifiers that can specify current and non-current versions of a given address. Find the KR Supplementary group in the Basic model.

Last Line Elements

Writes data that can appear on the last line of a domestic address. Find the Last Line Elements group in the Basic and Advanced models.

New Zealand Specific

Writes data to addresses in New Zealand that enables the addresses to meet the SendRight standards of New Zealand Post. Find the New Zealand Specific group in the Basic model.

PL Supplementary

Writes data to addresses in Poland that can help postal delivery, such as Territorial Division (TERYT) data. Find the PL Supplementary group in the Basic model.

Residue

Writes data elements that the transformation cannot parse to other ports. Find the Residue group in the Basic and Advanced models.

RS Supplementary

Writes data to addresses in Serbia that can help postal delivery, such as post code suffix data. Find the RS Supplementary group in the Basic model.

RU Supplementary

Writes data to addresses in Russia that can help postal delivery, such as the Federal Information Addressing System identifier for the address. Find the RU Supplementary group in the Basic model.

Status Info

Generates detailed data on the quality of each input and output address. Find the Status Info group in the Basic model.

UK Supplementary

Writes data to addresses in the United Kingdom that can help postal delivery, such as delivery point data and ordnance survey data. Find the UK Supplementary group in the Basic model.

US Specific

Writes data to addresses in the United States that enables the addresses to meet the Coding Accuracy Support System (CASS) standards of the United States Postal Service. Find the US Specific group in the Basic model.

US Supplementary

Writes geographic and demographic data such as Federal Information Processing Standard (FIPS) codes for United States addresses. Find the US Supplementary group in the Basic model.

XML

Writes address record data in an XML structure that the Address Verification software library defines. Find the XML group in the Advanced model.

ZA Supplementary

Writes data to addresses in South Africa that can help postal delivery, such as National Address Database data. Find the ZA Supplementary group in the Basic model.

Multiple-Instance Ports

Many types of address data can occur more than once in an address. You can select multiple instances of a port when the address contains multiple cases of a data element.

A multiple-instance port can contain up to six instances. Many addresses use one instance of a port for each data element that they contain. Some addresses use a second instance of a port. A small set of addresses use more than one port instance.

Often, the first instance of a port is the primary name or the largest area that the port identifies. You must verify the relationship between the port instances for any port that you select.

Street Complete Ports Example

A United Kingdom address record can contain two street names when one street is part of a larger street plan.

The following table contains an address that uses two Street Complete ports:

Port	Data
Street Number Complete 1	1A
Street Complete 1	THE PHYGTLE
Street Complete 2	SOUTH STREET
Locality Name 1	NORFOLK
Postcode 1	NR25 7QE

In the example, the street data in Street Complete 1 is dependent on the street data in Street Complete 2. The data in Street Number Complete 1 refers to the data in Street Complete 1.

Note: Although Street Complete 1 specifies the location of the mailbox, Street Complete 2 might be the larger street.

Contact Ports Example

An address record can contain multiple contacts when each contact is a member of the same household.

The following table contains an address that uses two Contact Name ports:

Port	Data
Contact Name 1	MR. JOHN DOE
Contact Name 2	MS. JANE DOE
Formatted Address Line 1	2 MCGRATH PLACE EAST
Formatted Address Line 2	ST. JOHN'S NL A1B 3V4
Formatted Address Line 3	CANADA

In the example, the organization can decide on the precedence to apply to Contact Name 1 or Contact Name 2. The Address Validator transformation does not prioritize the contact data.

If you format addresses for printed output, you might use multiple instances of the Formatted Address Line ports. You can select up to 12 Formatted Address Line ports.

Address Validation Projects

You can use the Address Validator transformation in many types of project. You create an address template with different ports for each project type.

You can define an address validation project with one or more of the following objectives:

Create formatted addresses that conform to mail carrier standards

You can prepare a large address record set for a mail campaign. If you create the addresses in the format that the mail carrier prefers, your mail costs are significantly reduced. When you prepare addresses for mailing, select output ports that write each line of the formatted address to a single port. You can select a different port for the contact name, the street address lines, and the locality and post code lines.

Organize addresses by income and lifestyle indicators

You can add customer segmentation data to residential address records. Customer segmentation data indicates the likely income level and lifestyle preferences of the residents at each address. You select ports from the CAMEO output group to add customer segmentation data to address records. You can use customer segmentation data in mail campaigns that target multiple consumer markets.

Create addresses that are certified by the mail carrier

When you prepare a record set for Australia Post, Canada Post, or the United States Postal Service (USPS), you can add data that confirms the deliverability of each address.

The Address Validator transformation can generate reports to certify that the address records are complete and accurate to the data standards of each mail carrier.

Create addresses that meet regulatory requirements

You can verify that the address records held by your organization are accurate to industry or government regulations. Select output ports that write each address data element to a separate field. Also select the address validation status ports that provide detailed information on the accuracy and completeness of the output data.

Complete partial addresses

You can enter a partial address and retrieve the valid complete addresses that match the partial address in the reference data. To complete partial addresses, configure the transformation to run in suggestion list mode or interactive mode. You can enter the input address as a single line on the Complete Address port.

Improve the data quality of addresses

In parallel with other data projects, you can to improve the structure and general data quality of the address data set. For example, the data set may contain more columns that you need, or it may contain the same type of data across multiple columns. You can reduce the number of columns in the data set, and you can simplify the columns that you use for different types of data.

Formatted Addresses and Mail Carrier Standards

When you prepare address records for a mail campaign, you create a printable address structure that matches the formatting standards of the mail carrier.

For example, the USPS maintains the following address format for domestic United States addresses:

Line 1	**Person/Contact Data**	**JOHN DOE**
Line 2	Street Number, Street, Sub-Building	123 MAIN ST NW STE 12
Line 3	Locality, State, ZIP Code	ANYTOWN NY 12345

You can define a printable address format that writes each line of the address to a single port. You can use ports that recognize the types of data on each line, or you can use ports that populate the address structure regardless of the data on each line.

The following table shows different ways you can format a United States address for printing:

For This Address	Use These Ports	Or Use These Ports
JOHN DOE	Recipient Line 1	Formatted Address Line 1
123 MAIN ST NW STE 12	Delivery Address Line 1	Formatted Address Line 2
ANYTOWN NY 12345	Country Specific Last Line 1	Formatted Address Line 3

Use Formatted Address Line ports when the data set contains different types of address, such as business and residential addresses. A business address may need three address lines for contact and organization data. The Address Validator transformation ensures that each business or residential address is correctly formatted by using Formatted Address Line ports only when they are needed. However, Formatted Address Line ports do not identify the type of data that they contain.

Use Recipient Line, Delivery Address Line, and Country Specific Last Line ports when all address follow one format. The Recipient Line, Delivery Address Line, and Country Specific Last Line ports separate the address data elements by information type and make the data set easy to understand.

Note: You can select other ports to process this address. This example focuses on ports that format the addresses for printing and delivery.

Demographic and Geographic Data

When you create a record set for a mail campaign, you can add multiple types of data that may not otherwise appear in the address. Use this data to review the demographic and geographic spread of the mail items.

For example, you can identify the Congressional District that a United States address belongs to. You can also generate latitude and longitude coordinates if the destination country includes the coordinates in its mail system reference data.

Suggestion List Example

You are a data quality specialist at an airline company. You need to ensure that the addresses in the passenger database are valid and correctly formatted. You design a mapping to verify the addresses that airline employees enter to the data system.

You configure the mapping to run in suggestion list mode, and you assign the mapping to web services that run from the data entry applications. When an airline employee enters a partial address to an application, the web service runs the mapping. The mapping returns all addresses from the address reference data that match the input data.

When an airline passenger checks in at an airport, an airline employee enters key fields from the passenger address to the data entry application. When the employee enters the data, the mapping runs.

The following table slows the address data that the employee enters:

Input Element	Data
Street Number	133
Street Name	Fayetteville Street
State	North Carolina

The address validation mapping returns all addresses that contain the input data. The employee can select an address that the mapping returns or continue to enter the passenger address.

The following table shows a valid complete address and the output ports that contain the address elements:

Port	Data
Street Number Complete 1	133
Street Complete 1	Fayetteville Street
Sub-building Complete 1	Suite 201
Locality Complete 1	Raleigh
Postcode Unformatted 1	27601

Port	Data
Postcode Unformatted 2	1356
Province Country Standard	NC
Country Name 1	USA

Customer Segmentation

Customer segmentation data helps you understand the lifestyles and purchasing habits of individuals and households. You can use customer segmentation data to better understand your current customers and to identify potential customers.

Customer segmentation is a form of demographic analysis that uses address reference data to estimate the type of residents that an address is likely to contain. Customer segmentation can provide the following social and economic indicators for the residents at an address:

- Number of residents
- Financial status, such as less affluent, comfortable, or affluent
- Life stage, such as young families or retired couples
- Household size, such as singles, couples, or families with children
- Occupation type, such as blue collar or white collar
- Property status, such as home rental or home owner

You select ports from the CAMEO output group to add customer segmentation data to address records.

Example: Using CAMEO Port Data in a Mail Campaign

Customer segmentation data applies to residential addresses. You may be able to organize the address record set by residence type before you perform address validation. For example, you may use the address records from a Customer Relationship Management (CRM) database as input data for the address validation mapping. If you cannot verify that the address record set contains residential addresses, use the Category Code or Group Code port to identify records that return customer segmentation data.

You can select the following ports to verify that an address contains customer or prospect data:

- Use the Residential Delivery Indicator port with United States data to verify that an address identifies a private residence.
- Use contact name and contact function ports to identify mail recipients at a place of business. You may decide to omit business addresses from the mail campaign. CAMEO ports can return data for a business address if there are residential addresses nearby.
- Use sub-building ports to identify apartment residences.
- Use Commercial Mail Receiving Agent (CMRA) ports to identify commercial mailboxes. You may decide to omit commercial mailboxes from the mail campaign.
- Use postal phrase ports to identify Post Office boxes. You may decide to omit Post Office boxes from the mail campaign.

Mail Certification

The Address Validator transformation has output ports that can indicate if an address contains the data required by the certification standards of national mail carriers.

The standards require that a software application validates address accuracy and prepares address records in the correct format for automated mail sorting and delivery. The mail carriers offer discounts to organizations that use certified applications to prepare address records.

The Address Validator transformation is certified for address validation by the following mail carriers:

Australia Post

Australia Post defines the Address Matching Approval System (AMAS) standard for software applications that validate Australian addresses. Select the Address Matching Approval System Status port to verify that an address was validated by an AMAS-certified application.

Canada Post

Canada Post defines the Software Evaluation and Recognition Program (SERP) standard for software applications that validate Canadian addresses. Select the Software Evaluation And Recognition Program Status port to indicate that an address was validated by a SERP-certified application.

La Poste

La Poste defines the National Address Management Service (SNA) standard for software applications that validate French addresses. Select the National Address Management Service Status port to indicate that an address was validated by an SNA-certified application.

New Zealand Post

New Zealand Post defines the SendRight standard for software applications that validate New Zealand addresses. Select the SendRight Status port to indicate that an address was validated by a SendRight-certified application.

USPS

The USPS defines the Coding Accuracy Support System (CASS) standard for software applications that validate United States addresses. Select the Coding Accuracy Support System Status port to verify that an address was validated by a CASS-certified application.

Configure the Address Validator transformation in certified mode to validate address to the mail carrier standard.

Regulatory Requirements

When you submit an address data set to an industry or government regulator, you must verify that each address correctly identifies a deliverable mailbox.

The Address Validator transformation can analyze and report on the accuracy and completeness of each address in the data set. The transformation can also verify that each address can receive mail.

Note: An address can be correct and complete but unable to receive mail. For example, the address may be vacant, or the property may be under construction. Full regulatory compliance can require that you identify the undeliverable addresses in your data set. An undeliverable address may contain errors or indicate a regulatory issue.

Element Status Ports

Use Element Status Ports to confirm the accuracy and completeness of each address. Add the following status ports to the address template:

- Element Input Status. Describes the quality of the match found between the input address data and the address reference data.
- Element Relevance. Identifies the address elements that are necessary for address delivery in the destination country.
- Element Result Status. Describes any change made to the input data during processing.

Delivery Point Ports

Use Delivery Point ports to verify that an address contains a deliverable mailbox.

A delivery point is the unique mailbox in an address. In many countries, the mail carrier can encode the data that identifies the mailbox in the address record. For example, the Royal Mail defines an eight-character string to identify every valid address in the United Kingdom. The USPS defines an 11-digit number for every valid address in the United States.

If an address is complete and correct to the level that the reference data defines, the Address Validator transformation can generate delivery point data for the address. Delivery point data verifies that the address identifies a currently deliverable mailbox.

You can select different ports to verify the delivery point accuracy of an address. For example, you can select the Delivery Point Code or Delivery Point Validation Confirmation ports to verify delivery point accuracy for a United States address. You can select the Delivery Point Suffix port to verify delivery point data for a United Kingdom address.

Partial Address Completion

When you use suggestion list mode or interactive mode, you can enter an incomplete address and retrieve valid and complete addresses from the reference data.

Select suggestion list mode when you are uncertain of an address and you want to view a list of valid address candidates. Select interactive mode when you are confident of an address and you want to validate the complete form. In each case, the Address Validator transformation searches the address reference data and returns all addresses that contain the input data.

Consider the following rules and guidelines when you configure the transformation to run in suggestion list mode or interactive mode:

- You can define an input address on multiple ports, or you can enter all address elements on the Complete Address input port.
- When you configure the transformation in suggestion list mode, select ports from the Discrete input group. Alternatively, select a Complete Address port and optionally select a Country Name port from the Multiline group.
- Suggestion list mode and interactive mode can return multiple addresses for each input address. The Max Result Count property specifies an upper limit for the number of addresses returned. If the number of matching address is greater than the Max Result Count value, the Count Overflow port returns the number of additional addresses.
- Informatica Address Verification refers to suggestion list mode as fast completion mode.

Improvements to Data Quality

You can design an address validation project as part of another data project. Your address validation objectives may be to review and enhance the quality and structure of the data as part of a data migration or data warehousing project.

In the address validation stage of a project, your objective may not include building additional data into the database. Your goal may be to ensure that the data is correct and easy to understand. To achieve this goal, select ports from the Discrete group.

The Discrete group contains a separate port for each type of information in an address. For example, the Discrete group contains ports for province name, post code, and country name. It also contains ports with names that end with the word "Complete."

Complete Ports

The Complete ports each contain all required data for an address element data type.

The following table describes the Complete ports:

Port Type	Description
Building Complete	Contains data that identifies a building in a building complex.
Geocoding Complete	Contains latitude and longitude coordinates and identifies the coordinate standard used.
Locality Complete	Contains data that identifies the city or town.
Organization Complete	Contains the full organization name.
Postal Phrase Complete	Contains Post Office Box data.
Postcode Complete	Contains postcode output data.
Street Complete	Contains data that identifies the street.
Street Number Complete	Contains data on a building or house number at street level.
Sub-building Complete	Contains apartment or suite data.

Combining Complete Ports and Other Ports

Depending on the level of detail you need in the data set, select a Complete port or select the ports that contain a subset of the complete data. For example, select Organization Complete 1 to write organization data to a single column. Select Organization Name 1 and Organization Descriptor 1 to check the organization names against a reference data set or to sort the organizations by type.

Note: Some Complete ports are incompatible with other ports of the same information type. For example, if you select the Organization Complete 1 input port and the Organization Name 1 or Organization Descriptor 1 input port in the same transformation, the transformation processes the same data twice, which causes parsing and validation errors.

Read the documentation on each Complete port for information about how you can combine the ports.

Organization Complete Example

Each Complete port can contain more than one data element. For example, an Organization Complete port is composed of two data elements, Organization Name and Organization Descriptor.

The following table shows the relationship between the organization data in the ports:

Port	Data
Organization Complete 1	DEF Inc.
Organization Name 1	DEF
Organization Descriptor 1	Inc.

Address Validation and Informatica Address Verification

Informatica Address Verification is an Informatica organization with products that include an address verification software library and a global set of address reference data files. The Address Validator transformation uses the software library to perform address parsing and validation operations on data. The software library uses the address reference data files to validate and enhance the address data.

The Address Verification software library reads and writes an address record as an XML document. The software library uses DTD (Document Type Definition) files to define the address structure and to describe the values in the input and output records. The Address Validator transformation represents each element in the DTD files as an input port or an output port.

Most of the port names on the Address Validator transformation closely resemble the address element names in the DTD files. Sometimes, the port names differ from the names in the DTD files. For example, the *Process Status* element in the Address Verification DTD files corresponds to the *Match Code* output port in the Address Validator transformation.

Note: Informatica Address Verification was previously called Informatica AddressDoctor®.

Before You Begin

Before you configure an Address Validator transformation, review the content and structure of the source data. Review the objectives of your data project, and decide on the types of address data that the project needs.

Consider the following questions:

How is the source address data structured?

When you connect data columns to an Address Validator transformation, select input ports that best represent the input address structure. Select output ports that define the address record structures you need. You can use an Address Validator transformation to create multiple types of address structure in one data set. You can then select different data columns for different uses.

What datatype can ports contain?

All ports read or write string data.

What are the precision values of the data columns?

The precision of a column is its width. Precision is measured in characters. Every Address Validator transformation port has a default precision value. Before you select a port, verify that it can accept the data from the port that you will connect to it.

Some ports have different input and output precision values. For example, the Postal Phrase Number ports have an input precision of 50 and an output precision of 12. When the Address Validator transformation writes output data to a Postal Phrase Number port, the transformation truncates the data after 12 characters.

The Address Validator transformation truncates some port data values to ensure that the data does not exceed the mail carrier limits for formatted data length.

Do you want to want to validate and enhance the deliverable status of the source addresses?

To validate and enhance the status of the addresses, you must buy and install address reference data sets from Informatica. Use Informatica Administrator to configure the address reference data properties.

If you do not want to validate addresses, you can configure the Address Validator transformation in parsing mode. Parsing mode lets you create output addresses in the standard postal format for the destination country. Parsing mode does not verify the accuracy or deliverability of the data.

What countries do the addresses refer to?

Informatica provides address reference data sets on a country basis. You buy and install data for each country you need.

CHAPTER 2

Address Validation Status Ports

This chapter includes the following topics:

- Address Resolution Code, 30
- Element Status Ports Overview, 32
- Element Input Status, 34
- Element Relevance, 35
- Element Result Status, 36
- Extended Element Result Status, 39
- Geocoding Status, 41
- Match Code, 42
- Mailability Score , 45
- Result Percentage, 46

Address Resolution Code

Output port that contains high-level information about non-valid address elements in an input address. The code describes the validation issues that affect address records with a Match Code status in the range I1 through I4.

Address Resolution Code Usage

To identify address elements that fail address validation, select the Address Resolution Code port. The port output codes can also identify the reasons why an address is not valid.

Consider the following factors when you select the Address Resolution Code port:

- An address with a Match Code status in the range I1 through I4 might contain enough information to be deliverable by the local mail carrier. The address element that defines the record as not valid might not be required for delivery.
- To read the output codes of the Address Resolution Code port, you must understand the types of address information that the characters in the code represent. For information about the type of address information that each character in the code represents, see the Element Status Ports Overview.

Port Location

The following table provides the location and default precision of the Address Resolution Code port:

Port Type	Port Group	Template Model	Precision
Output	Status Info	Basic	20

Address Resolution Code Output Codes

The Address Resolution Code value is a 20-character string in which each character represents a different type of address information. The following table describes the codes that Address Resolution Code can return in each position on the output string:

Code	Description
2	The address element is required for delivery but is not present in the input address. The address reference data contains the missing address element. An output of 2 indicates that address is not valid for delivery without the address element.
3	The address element is a house number or street number that is outside the valid range for the address. For example, the address element contains a house number that does not exist on the specified street. Suggestion list mode returns alternative addresses.
4	Address validation cannot verify or correct the address element because the input address contains more than one instance of the element.
5	The address element is ambiguous in the current address, and the address reference data contains alternatives. Address validation copies the input element to the output address. For example, the address element is a valid post code that does not match a valid locality in the address.
6	The address element contradicts another element in the address. Address validation cannot determine the correct element for the address. The output address copies the input address.
7	The address element cannot be corrected without multiple changes to the address. Address validation can correct the address, but the number of changes indicate that the address is not reliable.
8	The data does not conform to mail carrier validation rules.

Element Status Ports Overview

The Element Input Status, Element Relevance, Element Result Status, and Extended Element Result Status ports provides status information about the validity of input and output data elements. Select the element ports to review the outcomes of an address validation operation.

The codes contain the following information:

- Element Input Status codes represent the quality of the match found between the input address data and the reference data.
- Element Relevance codes identify the address elements that are necessary for address delivery in the destination country.
- Element Result Status codes describe any change made to the input data during processing.
- Extended Element Result Status codes indicate that the address reference data contains additional information about the address element.

Each port returns a 20-character code in which each character refers to a different address data element. When you read the output codes on element ports, you must know the element that each character refers to. The 20 characters consist of 10 pairs. The two codes in each pair represent a type of address information. For example, the first position in the return code represents basic postal code information.

Note: The Address Resolution Code port returns a 20-character string based on the same address elements as the Element Status ports.

The following table describes the address elements that the values at each position identify:

Position	Address Element	Description	Address Element Example
1	Postal code level 0	Basic postal code information, such as a five-digit ZIP Code.	The five-digit ZIP Code 10118
2	Postal code level 1	Additional postal code information, such as the final four digits of a ZIP+4 Code.	0110, in the ZIP+4 Code 10118-0110
3	Locality level 0	Primary location, such as city or town.	London, in England
4	Locality level 1	Dependent locality, suburb, village.	Islington, in London
5	Province level 0	Primary region within a country, such as a United States state name, Canadian province name, Swiss canton.	New York State
6	Province level 1	United States county name.	Queens County, in New York State
7	Street level 0	Primary street information.	South Great George's Street
8	Street level 1	Dependent street information.	George's Arcade, on South Great George's Street
9	Number level 0	Building or house number related to the primary street.	460, on South Great George's Street

Position	Address Element	Description	Address Element Example
10	Number level 1	Building or house number related to the dependent street.	81, on George's Arcade
11	Delivery service level 0	Case postale or post box descriptor and number.	PO Box 111
12	Delivery service level 1	Code of the post office that is responsible for delivery.	MAIN STN
13	Building level 0	Building name or number. Does not identify a house number.	Alice Tully Hall
14	Building level 1	Additional building name or number.	Starr Theater, at Alice Tully Hall
15	Sub-building level 0	Apartment, suite, or floor name or number.	80, in 350 5th Avenue, Floor 80
16	Sub-building level 1	Apartment, suite, or floor information, when paired with Sub-building level 0 information.	80-18, where 18 is the suite number and 80 is the floor number
17	Organization level 0	Company name.	AddressDoctor GmbH
18	Organization level 1	Additional corporate information, such as a parent company.	Informatica Corporation
19	Country level 0	Country name.	United States of America
20	Country level 1	Territory.	United States Virgin Islands

When a port name has a number suffix, level 0 refers to data on port number 1 and level 1 refers to data on port numbers 2 through 6.

Level 0 information can precede or follow level 1 information in a printed address. For example, Postal code level 1 follows Postal code level 0, and Locality level 1 precedes Locality level 0.

Related Topics:

- "Element Input Status" on page 34
- "Element Relevance" on page 35
- "Element Result Status" on page 36
- "Extended Element Result Status" on page 39

Element Input Status

Output port that indicates the similarities between the input address data and the address reference data.

Element Input Status Usage

To view detailed information about the validity of an input address, select Element Input Status. Review the data on the Element Input Status port to identify any address data element that does not match the reference data.

To read the output codes on the Element Input Status port, you must understand the types of address information that the code values refer to. For information about the type of address information that each character in the code represents, see the Element Status Ports Overview.

Note: Element Input Status contains status information about input address records. To review status information about output address records, use the Element Result Status port.

Port Location

The following table provides the location and default precision of the Element Input Status port:

Port Type	Port Group	Template Model	Precision
Output	Status Info	Basic	30

Element Input Status Output Codes

The Element Input Status value is a 20-character string in which each character represents a different type of address information. The meanings of the Element Input Status values depend on the operational mode of the Address Validator transformation.

The following table describes the codes that port can return on each position for address validation:

Code	Description
0	The input address contains no data at the current position.
1	The reference data does not contain the data at the current position.
2	Cannot check the data because the reference data is missing.
3	The data at the current position is incorrect. The reference database suggests that the number or delivery service value is outside the range that the reference data expects. In batch and certified modes, the transformation passes the input data at the current position uncorrected as output.
4	The data at the current position matches the reference data but contains errors.
5	The data at the current position matches the reference data, but the transformation corrected or standardized the data.
6	The data at the current position matches the reference data without any error.

The following table describes the codes that port can return on each position for address parsing:

Code	Description
0	The input address contains no data at the current position.
1	The transformation moved the element at the current position to another position in the output address.
2	The element at the current position matched the reference data value, but the transformation normalized the element in the output address.
3	The data at the current position is correct.

Related Topics:

- "Element Relevance" on page 35
- "Element Result Status" on page 36
- "Element Status Ports Overview" on page 32
- "Extended Element Result Status" on page 39

Element Relevance

Output port that indicates if an address element is required for postal delivery.

The Element Relevance value is a 20-character string in which each character can represent a different type of address data. After you run the address validation mapping, review the port output to identify the address elements that are necessary for each address. Use the results to verify that you selected the right output ports for the address data. If you do not select an output port for a relevant address data element, the output for that address will not be valid.

To read the output codes on the Element Relevance port, you must understand the types of address information that the characters in the code refer to. For information about the type of address information that each character in the code represents, see the Element Status Ports Overview.

Element Relevance Usage

Select Element Relevance to identify the address elements that are relevant to delivery for each address in the data set. You can refer to the list of element code positions and meanings to identify the address elements.

For example, position 8 in the output codes represents dependent street data. If Element Relevance indicates that some addresses must contain this information, you must select an output port for dependent street data.

Port Location

The following table provides the location and default precision of the Element Relevance port:

Port Type	Port Group	Template Model	Precision
Output	Status Info	Basic	30

Element Relevance Output Codes

The following table describes the codes that Element Relevance can return in each position on the output string:

Code	Description
0	Not relevant to delivery to the address.
1	Relevant to delivery to the address. The national postal carrier cannot deliver to the address without the data at this position in the output string.

Note: Element Relevance values are available for addresses with a Match Code value of Cx or Vx in batch mode or Cx, Vx, I3, or I4 in interactive mode. Other assessment codes such as Element Input Status, Element Result Status, Extended Element Result Status, and Address Resolution Code return values regardless of the Match Code value.

Related Topics:

- "Element Input Status" on page 34
- "Element Result Status" on page 36
- "Element Status Ports Overview" on page 32
- "Extended Element Result Status" on page 39

Element Result Status

Output port that describes the actions that the address validation process takes for each element in the input address data.

Element Result Status Usage

Select Element Result Status to identify the address data elements that changed during address validation.

To read the output codes of the Element Result Status port, you must understand the types of address information that the code values refer to. For information about the type of address information that each character in the code represents, see the Element Status Ports Overview.

Note: Element Result Status contains status information about output address records. To review status information about input address records, use the Element Input Status port.

Port Location

The following table provides the location and default precision of the Element Result Status port:

Port Type	Port Group	Template Model	Precision
Output	Status Info	Basic	30

Element Result Status Output Codes

The Element Result Status value is a 20-character string in which each character represents a different type of address information.

The following table describes the codes that Element Result Status can return in each position on the output string:

Code	Description
0	The output address contains no data at the current position.
1	The transformation cannot find the data at the current position in the reference data. The transformation copies the input data to the output data.
2	Data at the current position is not checked but is standardized.
3	Data at the current position is checked but does not match the reference data. The reference data suggests that the number data is not in the valid range. The transformation copies the input data to the output port. Applies in batch mode.
4	The transformation copies the input data to the output data because the reference data is missing.
5	Data at the current position is validated but not changed because multiple matches exist in the reference data. Applies in batch mode.
6	Data validation deleted the input value at the current position.
7	Data at the current position is validated but the input data contained a spelling error. Validation corrected the error with a value from the reference data.
8	Data at the current position is validated and updated with a value from the reference data. A value of 8 can also mean that the reference database contains additional data for the input element. For example, validation can add a building number or sub-building number if it finds a perfect match for the street name or building name.
9	Data at the current position is validated but not changed, and the delivery status is not clear. For example, the DPV value is wrong.
C	Data at the current position is validated and verified, but the name data is out of date. Validation changed the name data.
D	Data at the current position is validated and verified but changed from an exonym to an official name.
E	Data at the current position is validated and verified. However, address 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 the current position is validated, verified, and not changed, due to a perfect match with the reference data.

Positions 19 and 20 in the output string relate to country data.

The following table describes the values that validation can return for positions 19 and 20:

Code	Description
0	The output address contains no data at the current position.
1	Address validation does not recognize the country data.
4	Address validation identifies the country from the Default Country value in the Address Validator transformation.
5	Address validation cannot determine the country because the reference data contains multiple matches.
6	Address validation identifies the country from a script.
7	Address validation identifies the country from the address format.
8	Address validation identifies the country from major town data.
9	Address validation identifies the country from province data.
C	Address validation identifies the country from territory data.
D	Address validation identifies the country from the country name, but the name contains errors.
E	Address validation identifies the country from the address data, for example from an ISO code or a country name.
F	Address validation identifies the country from the Force Country value set in the Address Validator transformation.

Related Topics:

- "Element Input Status" on page 34
- "Element Relevance" on page 35
- "Element Status Ports Overview" on page 32
- "Extended Element Result Status" on page 39

Extended Element Result Status

Output port that supplements the status data on the Element Input Status port and Element Result Status port. The port can also indicate the presence of additional information about an address element in the reference data.

Extended Element Result Status Usage

To verify that an address record is complete, select Extended Element Result Status. The Extended Element Result Status codes indicate the following general conditions for an address:

- An address is complete, but the address reference data contains additional information.
- An address is incomplete because it requires additional address elements.
- An address is incomplete because the address elements identify more than one mailbox.

To find out if the mail carrier requires the missing information, use the Extended Element Result Status port with other status ports. For example, the following address does not identify a single building:

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

The following table describes the status that address validation returns for the Building element:

Element Level	Element Input Status	Element Result Status	Extended Element Result Status	Element Relevance
Building level 1	0	0	1	0

The return code of 1 indicates that Hong Kong address reference data includes additional building data for the address. However, Hongkong Post accepts mail for delivery to the address without the additional data.

Note: To read the output codes on the Extended Element Result Status port, you must understand the types of address information that the characters in the code refer to. For information about the type of address information that each character in the code represents, see the Element Status Ports Overview.

Port Location

The following table provides the location and default precision of the Extended Element Result Status port:

Port Type	Port Group	Template Model	Precision
Output	Status Info	Basic	20

Extended Element Result Status Output Codes

The Extended Element Result Status value is a 20-character string in which each character represents a different type of address information.

The following table describes the codes that Extended Element Result Status can return in each position on the output string:

Code	Description
1	Address reference data contains additional information about the address element. Address validation does not require the additional information.
2	Address validation updated the address element to resolve a data error or format error. Address validation did not verify the address element.
3	Address validation updated the address element to resolve a data error or format error. Address validation verified the number data in the address element.
4	Address validation moved the address element to another field to resolve a format error.
5	Address reference data contains an alternative version of the address element, such as a preferred locality name.
6	Address validation did not verify all parts of the address element. The element includes data that address validation cannot validate.
7	Address validation found a valid address element in the wrong position in an address. Address validation moved the address element to the correct position.
8	Address validation found a valid address element in the wrong data field. Address validation moved the address element to the correct field.
9	Address validation generated the output element according to mail carrier validation rules.
A	Address validation found address elements from different address types that are eligible for the current position. Address validation selected the output address element that conforms the mail carrier rules in the destination country.
B	Address validation cannot determine the element relevance. Address validation returns the default value for the country that the address specifies.
C	Suggestion list mode. Address validation can return additional address suggestions for the address element. To return the additional suggestions, update the Max Result Count property for the Address Validator transformation.
D	Address validation interpolated the numeric data in the address element.
E	Address validation cannot return the address element in the preferred language. Address validation returns the element in the default language.
F	Address code lookup mode. The input address is out of date.

Related Topics:

- "Element Input Status" on page 34
- "Element Relevance" on page 35
- "Element Result Status" on page 36
- "Element Status Ports Overview" on page 32

Geocoding Status

Output port that indicates the result of an operation to generate geocodes for an address. Geocodes are latitude and longitude coordinates.

Address validation can generate geocodes for different locations in the building or the parcel of land that contains the mailbox. When you configure the Address Validator transformation, select the type of geocode data to return for the address set. To return the geocodes for an address, install the database that contains the geocode data.

Select one of the following geocode options:

Arrival point

Returns the latitude and longitude coordinates of the entrance to a building or parcel of land. Default option.

You can select the arrival point option for addresses in the following countries:

Australia, Austria, Canada, Croatia, Denmark, Estonia, Finland, France, Germany, Hungary, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Mexico, Monaco, Netherlands, Norway, Poland, Slovakia, Slovenia, Sweden, Switzerland, and the United States.

If you specify arrival point geocodes and the Address Validator transformation cannot return the geocodes for an address, the transformation returns interpolated geocodes.

Standard

Returns the estimated latitude and longitude coordinates of the entrance to the building or parcel of land. An estimated geocode is also called an interpolated geocode.

The Address Validator transformation uses the nearest available geocodes in the reference data to estimate the geocodes for the address.

Note: Informatica no longer issues reference data for parcel centroid or rooftop geocoding.

Geocoding Status Usage

Select Geocoding Status to view a four-character code that describes the results of the geocode operation for each address.

The geocode coordinates conform to the World Geodetic Coordinate System of 1984 (WGS84). Coordinates are in decimal degrees.

Port Location

The following table provides the location and default precision of the Geocoding Status port:

Port Type	Port Group	Template Model	Precision
Output	Geocoding	Basic	10

Geocoding Status Output Codes

The following table describes Geocoding Status output codes:

Value	Description
EGC0	Cannot append geocodes to the input address because geocodes are not available for the address.
EGC1-3	Reserved for future use.
EGC4	Geocodes are partially accurate to the postal code level.
EGC5	Geocodes are accurate to the postal code level.
EGC6	Geocodes are accurate to the locality level.
EGC7	Geocodes are accurate to the street level.
EGC8	Geocodes are accurate to the house number level. The geocodes estimate the house number location and include an offset to the side of the street that contains the mailbox.
EGC9	Geocodes are accurate to the arrival point or rooftop.
EGCA	Geocodes are accurate to the center of the parcel of land.
EGCC	The geocode database is corrupted.
EGCN	Cannot find the geocode database.
EGCU	The geocode database is not unlocked.

Match Code

Output port that summarizes the result of the address validation process for each input record. The address validation process compares each input record with the address reference data that you install.

The Match Code value can summarize the address validation process in the following ways:

- If an address in the reference data matches the input address, the Match Code value indicates the type of match that the validation process defines.
- If an address in the reference data is more accurate or complete than the input address, the validation process updates the address. The Match Code value indicates the type of update that the validation process performs.
- If the input address matches multiple addresses in the reference data, the validation process can return multiple address suggestions. The Match Code value indicates the types of suggestions that the validation process can generate.
- If the validation process cannot match the input address to the reference data, the Match Code value indicates the reason for the validation failure.

Note: The Match Code value does not necessarily indicate the quality or deliverability of the address after validation. If the address validation process validates or updates the address, you can use the Match Code value as a general indicator of the address quality. Often, the Match Code value describes the result of the data comparison and does not directly indicate the level of validity of the address.

The Address Verification software library displays the Match Code values on the Process Status field.

Match Code Usage

Select Match Code to view a code that represents the result of the address validation process for each address record.

Use Match Code with the Element Result Status port. Element Result Status provides detailed information about the validity of the data on each output port.

Port Location

The following table provides the location and default precision of the Match Code port:

Port Type	Port Group	Template Model	Precision
Output	Status Info	Basic	4

Match Code Output Codes

The following table describes the Match Code output values and identifies the process modes that return the values:

Code	Description
A1	Address code lookup found a partial address or a complete address for the input code.
A0	Address code lookup found no address for the input code.
C4	Corrected. All postally relevant elements are checked.
C3	Corrected. Some elements cannot be checked.
C2	Corrected, but the delivery status is unclear due to absent reference data.
C1	Corrected, but the delivery status is unclear because user standardization introduced errors.
I4	Data cannot be corrected completely, but there is a single match with an address in the reference data.
I3	Data cannot be corrected completely, and there are multiple matches with addresses in the reference data.
I2	Data cannot be corrected. Batch mode returns partial suggested addresses.
I1	Data cannot be corrected. Batch mode cannot suggest an address.
N7	Validation error. Validation did not take place because single-line validation is not unlocked.

Code	Description
N6	Validation error. Validation did not take place because single-line validation is not supported for the destination country.
N5	Validation error. Validation did not take place because the reference database is out of date.
N4	Validation error. Validation did not take place because the reference data is corrupt or badly formatted.
N3	Validation error. Validation did not take place because the country data cannot be unlocked.
N2	Validation error. Validation did not take place because the required reference database is not available.
N1	Validation error. Validation did not take place because the country is not recognized or not supported.
Q3	Suggestion List mode. Address validation can retrieve one or more complete addresses from the address reference data that correspond to the input address.
Q2	Suggestion List mode. Address validation can combine the input address elements and elements from the address reference data to create a complete address.
Q1	Suggestion List mode. Address validation cannot suggest a complete address. To generate a complete address suggestion, add data to the input address.
Q0	Suggestion List mode. There is insufficient input data to generate a suggestion.
RB	Country recognized from abbreviation. Recognizes ISO two-character and ISO three-character country codes. Can also recognize common abbreviations such as "GER" for Germany.
RA	Country recognized from the Force Country setting in the transformation.
R9	Country recognized from the Default Country setting in the transformation.
R8	Country recognized from the country name.
R7	Country recognized from the country name, but the transformation identified errors in the country data.
R6	Country recognized from territory data.
R5	Country recognized from province data.
R4	Country recognized from major town data.
R3	Country recognized from the address format.
R2	Country recognized from a script.
R1	Country not recognized because multiple matches are available.
R0	Country not recognized.

Code	Description
S4	Parse mode. The address was parsed perfectly.
S3	Parse mode. The address was parsed with multiple results.
S1	Parse mode. There was a parsing error due to an input format mismatch.
V4	Verified. The input data is correct. Address validation checked all postally relevant elements, and inputs matched perfectly.
V3	Verified. The input data is correct, but some or all elements were standardized, or the input contains outdated names or exonyms.
V2	Verified. The input data is correct, but some elements cannot be verified because of incomplete reference data.
V1	Verified. The input data is correct, but user standardization has negatively impacted deliverability. For example, the post code length is too short.

Mailability Score

Output port that contains a single digit that summarizes the deliverability of the output address.

The Address Validator transformation considers multiple factors when it calculates the mailability score. The transformation bases the calculations principally on the Match Code value and the Element Result Status value for the address. Other factors that influence the mailability score include the postal relevance of the address values and the granularity of the reference data for the country.

Note: The Mailability Score port value provides an estimate of the deliverability of the address. The score is not a precise or definitive indicator of the deliverability of the address.

Mailability Score Usage

Select Mailability Score to return a code value that summarizes the deliverability of the output address. Use the code as a general indicator of the deliverability of the address.

The return codes are in a range from 0 through 5. A return code of 0 represents an undeliverable address, and 5 represents an address that is certain of delivery.

Port Location

The following table provides the location and default precision of the Mailability Score port:

Port Type	Port Group	Template Model	Precision
Output	Status Info	Basic	2

Mailability Score Output Codes

The following table describes the Mailability Score output codes:

Value	Summary	Description
5	Completely Confident	Indicates that address validation checked and verified all relevant elements of the input address.
4	Almost Certain	Indicates either of the following scenarios: - One or more relevant address elements cannot be checked due to absent reference data. Other address elements are verified. - Address validation corrected one or more relevant elements with a very high degree of confidence. This occurs when address validation finds a single match between the input address and the reference data and the degree of variation is very low.
3	Should Be Fine	Indicates that address validation corrected one or more relevant elements in the input address. Address validation found a single match between the input address and the reference data, and the degree of variation is acceptable.
2	Fair Chance	Indicates that address validation cannot correct or verify the address for one of the following reasons: - Address validation cannot identify a candidate match in the reference data with sufficient confidence. - Address validation found multiple candidate matches with similar confidence levels. The mail carrier might be able to deliver to the address.
1	Risky	Indicates that address validation can find partial reference data matches only for the input address.
0	Undeliverable	Indicates that address validation cannot find a match for the address in the reference data. The input address is missing too many elements, or address validation cannot verify a majority of the elements in the address.

Result Percentage

Output port that indicates the degree of similarity between an input address and the data written as output for the address. The port represents the similarity as a percentage value.

Result Percentage Usage

To review the levels of similarity between the input and output forms of an address, select Result Percentage. A value of 100 percent indicates that the input and output addresses match perfectly.

Use Result Percentage to identify addresses that have undergone significant address correction. If the input and output address records differs significantly, the input record may contain data quality problems that are relevant to other data management activities. For example, if the organization runs a master data management program, notify the data stewards that the record is likely to contain poor-quality data. Consider reviewing the result percentage values for records that return a C match code in batch or certified address validation.

Port Location

The following table provides the location and default precision of the Result Percentage port:

Port Type	Port Group	Template Model	Precision
Output	Status Info	Basic	6

Result Percentage Output Values

The Result Percentage output values range from 0 through 100.

CHAPTER 3

Building and Residence Data Ports

This chapter includes the following topics:

- Building Complete Ports, 48
- Building Complete with Sub-building Ports, 50
- Building Descriptor Ports, 52
- Building Name Ports, 53
- Building Number Ports, 55
- House Number, 57
- House Number Alpha, 58
- Sub-building Complete Ports, 59
- Sub-building Descriptor Ports, 61
- Sub-building Name Ports, 63
- Sub-building Number Ports, 65

Building Complete Ports

Input and output ports that contain all building data in an address record. A single Building Complete port contains all building-level address data. The port does not contain sub-building-level data.

The Building Complete ports contain all the data from the Building Descriptor, Building Name, and Building Number ports in the address.

The building data ports are related by number. For example, Building Complete 1 contains the data in Building Descriptor 1 and either Building Name 1 or Building Number 1.

Building Complete Usage

To read all building-level data from a single port, select a Building Complete input port. To write all building-level data to a single port, select a Building Complete output port.

Consider the following guidelines when you use Building Complete ports:

- There are six Building Complete ports. If an address record contains more than one building, select additional Building Complete ports.

- Most countries use Building Complete 1 or Building Complete 2 ports. You may need to select a port in the Building Complete 3 through Building Complete 6 range if the building identification data is highly complex.
- For each building in an address, select the Building Complete input port or select one or more of the Building Descriptor, Building Name or Building Number input ports.
- You can select all building data output ports.
- The Address Validator transformation can recognize either building name or building number data in an address. If an address contains name and number data for a building, the transformation treats the data as a building name.
- To write all building-level and sub-building-level data to a single port, select a Building Complete with Sub-building port.

Port Locations

The following table provides the location and default precision of the Building Complete 1 and Building Complete 2 ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Basic	128
Output	Address Elements	Basic	128

The following table provides the location and default precision of ports Building Complete 3 through Building Complete 6:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Advanced	128

Building Complete Example

The following example address contains data that can populate the Building Complete 1 and Building Complete 2 ports:

```
Mr. J. Tsang
Floor 12, Apt 231
Fung Wah Estate, Hiu Fung Tower
No. 11 North St.
Kennedy Town
Hong Kong Island
HKG
```

The following table shows the Address Validator transformation ports that relate to the building data in the address:

Port Name	Data
Contact Complete 1	Mr. J. Tsang
Building Complete 1	**Fung Wah Estate**

Port Name	Data
Building Name 1	Fung Wah Estate
Building Complete 2	**Hiu Fung Tower**
Building Name 2	Hiu Fung
Building Descriptor 2	Tower
Sub-building Complete 1	Floor 12
Sub-building Complete 2	Apt 231
Street Complete 1	North St.
Street Number Complete 1	No. 11
Locality Complete 1	Kennedy Town
Province Country Standard 1	Hong Kong Island
Country ISO3 Char	HKG

Building Complete with Sub-building Ports

Output ports that contain all building data in an address record. A single Building Complete with Sub-building port contains all building-level and sub-building-level data.

The Building Complete with Sub-building ports contain all the data from the Building Complete ports and Sub-building Complete ports in the address.

The building data ports are related by number. For example, Building Complete with Sub-building 1 contains the data in Building Descriptor 1 and either Building Name 1 or Building Number 1.

Building Complete with Sub-building Usage

To write all building-level data and sub-building-level data to a single port, select a Building Complete with Sub-building port.

Consider the following guidelines when you use Building Complete with Sub-building ports:

- There are six Building Complete with Sub-building ports. If an address record contains more than one building or sub-building, select additional Building Complete with Sub-building ports.
- Most countries use Building Complete with Sub-building 1 or Building Complete with Sub-building 2 ports. You might need to select port numbers 3 through 6 if the building identification data is highly complex.
- You can select Building Complete with Sub-building output ports with other building data output ports.

Port Locations

The following table provides the location and default precision of the Building Complete with Sub-building 1 and Building Complete with Sub-building 2 ports:

Port Type	Port Group	Template Model	Precision
Output	Address Elements	Basic	128

The following table provides the location and default precision of ports Building Complete with Sub-building 3 through Building Complete with Sub-building 6:

Port Type	Port Group	Template Model	Precision
Output	Address Elements	Advanced	128

Building Complete with Sub-building Example

The following example address contains data that can populate the Building Complete with Sub-building 1 and Building Complete with Sub-building 2 ports:

```
Mr. J. Tsang
Floor 12, Apt 231
Fung Wah Estate, Hiu Fung Tower
No. 11 North St.
Kennedy Town
Hong Kong Island
HKG
```

The following table shows the Address Validator transformation ports that relate to the building data in the address:

Port Name	Data
Contact Complete 1	Mr. J. Tsang
Building Complete 1	Fung Wah Estate
Building Complete 2	Hiu Fung Tower
Sub-building Complete 1	Floor 12
Sub-building Complete 2	Apt 231
Building Complete with Sub-building 1	Apt 231; Floor 12; Hiu Fung Tower; Fung Wah Estate
Street Number Complete 1	No. 11
Street Complete 1	North St.
Locality Complete 1	Kennedy Town
Province Country Standard 1	Hong Kong Island
Country ISO3 Char	HKG

Building Descriptor Ports

Input and output ports that contain all building descriptor data in an address record.

In address validation, Building Descriptor data identifies the building type. For example, "Tower" is the building descriptor in "Sears Tower."

The data in a Building Descriptor port is a subset of the data in the corresponding Building Complete port. For example, Building Complete 1 includes all data in Building Descriptor 1.

Building Descriptor Usage

Select a Building Descriptor input port when an input address contains a building type in a single port.

Select a Building Descriptor output port to write a building type in a single port.

Consider the following guidelines when you use Building Descriptor ports:

- There are six Building Descriptor ports. If an address record contains more than one building descriptor, select additional Building Descriptor ports.
- Most countries use Building Descriptor 1 or Building Descriptor 2 ports. You may need to select a port in the Building Descriptor 3 through Building Descriptor 6 range if the building data is highly complex.
- For each building in an address, select the Building Complete input port or select one or more of the Building Descriptor, Building Number, or Building Name input ports.
- You can select all building data output ports.

Port Locations

The following table provides the location and default precision of the Building Descriptor 1 and Building Descriptor 2 ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Basic	20

The following table provides the location and default precision of ports Building Descriptor 3 through Building Descriptor 6:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Advanced	20

Building Descriptor Example

The following example address contains data that can populate the Building Descriptor 2 port:

```
Mr. J. Tsang
Floor 12, Apt 231
Fung Wah Estate, Hiu Fung Tower
No. 11 North St.
Kennedy Town
Hong Kong Island
HKG
```

The following table shows the Address Validator transformation ports that relate to the building descriptor data in the address:

Port Name	Data
Contact Complete 1	Mr. J. Tsang
Building Complete 1	Fung Wah Estate
Building Name 1	Fung Wah Estate
Building Complete 2	Hiu Fung Tower
Building Name 2	Hiu Fung
Building Descriptor 2	**Tower**
Sub-building Complete 1	Floor 12
Sub-building Complete 2	Apt 231
Street Complete 1	North St.
Street Number Complete 1	No. 11
Locality Complete 1	Kennedy Town
Province Country Standard 1	Hong Kong Island
Country ISO3 Char	HKG

Building Name Ports

Input and output ports that contain all building name data in an address record.

The data in a Building Name port is a subset of the data in the corresponding Building Complete port. For example, Building Complete 1 includes all data in Building Name 1.

Building Name Usage

Select a Building Name input port when an input address contains a building name in a single port.

Select a Building Name output port to write the name of a building in the address in a single port.

Consider the following guidelines when you use Building Name ports:

- There are six Building Name ports. If an address record contains more than one building name, select additional Building Name ports.
- Most countries use Building Name 1 or Building Name 2 ports. You may need to select a port in the Building Name 3 through Building Name 6 range if the building data is highly complex.
- For each building in an address, select the Building Complete input port or select one or more of the Building Name, Building Number, or Building Descriptor input ports.
- You can select all building data output ports.

- The Address Validator transformation can recognize either building name or building number data in an address. If an address contains name and number data for a building, the transformation treats the data as a building name.

Port Locations

The following table provides the location and default precision of the Building Name 1 and Building Name 2 ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Basic	50

The following table provides the location and default precision of ports Building Name 3 through Building Name 6:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Advanced	50

Building Name Example

The following example address contains data that can populate the Building Name 1 and Building Name 2 ports:

```
Mr. J. Tsang
Floor 12, Apt 231
Fung Wah Estate, Hiu Fung Tower
No. 11 North St.
Kennedy Town
Hong Kong Island
HKG
```

The following table shows the Address Validator transformation ports that relate to the building name data in the address:

Port Name	Data
Contact Complete 1	Mr. J. Tsang
Building Complete 1	Fung Wah Estate
Building Name 1	**Fung Wah Estate**
Building Complete 2	Hiu Fung Tower
Building Name 2	**Hiu Fung**
Building Descriptor 2	Tower
Sub-building Complete 1	Floor 12

Port Name	Data
Sub-building Complete 2	Apt 231
Street Complete 1	North St.
Street Number Complete 1	No. 11
Locality Complete 1	Kennedy Town
Province Country Standard 1	Hong Kong Island
Country ISO3 Char	HKG

Building Number Ports

Input and output ports that contain all building number data in an address record.

In address validation, Building Number data identifies a building within a set of buildings. For example, the digit "2" is the building number in "Terminal 2." Building numbers do not identify houses or other buildings at street level. Use the Street Number ports to identify houses or other buildings on a street.

The data in a Building Number port is a subset of the data in the corresponding Building Complete port. For example, Building Complete 1 includes all data in Building Number 1.

Building Number Usage

To read the building number from a single port in an input address, select a Building Number input port.

To write the building number to a single port in an output address, select a Building Number output port.

Consider the following guidelines when you use Building Number ports

- There are six Building Number ports. If an address record contains more than one building number, select additional Building Number ports.
- Most countries use Building Number 1 or Building Number 2 ports. Select a port in the Building Number 3 through Building Number 6 range if the building data is highly complex.
- For each building in an address, select the Building Complete input port or select one or more of the Building Name, Building Number, or Building Descriptor input ports.
- You can select all building data output ports.
- The Address Validator transformation can recognize either building name or building number data in an address. If an address contains name and number data for a building, the transformation treats the data as a building name.

Port Locations

The following table provides the location and default precision of the Building Number 1 and Building Number 2 ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Basic	20

The following table provides the location and default precision of ports Building Number 3 through Building Number 6:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Advanced	20

Building Number Example

The following address contains data that can populate the Building Number 1 and Building Number 2 ports:

```
Ms. S. Chen
Kin Liong Mansion 5
No. 16 North St.
Kennedy Town
Hong Kong Island
HKG
```

The following table shows the Address Validator transformation port that relates to the building number data in the address:

Port Name	Data
Contact Complete 1	Ms. S. Chen
Building Complete 1	Kin Liong Mansion 5
Building Name 1	Kin Liong Mansion
Building Number 1	**5**
Street Complete 1	North St.
Street Number Complete 1	No. 16
Locality Complete 1	Kennedy Town
Province Country Standard 1	Hong Kong Island
Country ISO3 Char	HKG

House Number

Output port that contains the building number in a New Zealand residential address.

The house number identifies a building at street level. If the building contains multiple residences, such as an apartment building, use sub-building ports to identify the apartments.

To view street number data for a New Zealand address, configure the Address Validator transformation in certified mode.

House Number Usage

To write the number of a residential building to a single port, select the House Number port.

Use the House Number port for New Zealand addresses. Use the Street Number ports for addresses from other countries.

Port Location

The following table provides the location and default precision of the port:

Port Type	Port Group	Template Model	Precision
Output	New Zealand Specific	Basic	10

House Number Example

The following address contains data that can populate the House Number port:

```
JOHN SMITH
1153 GREAT SOUTH ROAD
EPSOM
AUCKLAND 1050
```

The following table shows the ports that relate to house number data in the address:

Port Name	Data
Recipient Line 1	JOHN SMITH
House Number	**1153**
Street Name 1	GREAT SOUTH ROAD
Locality Name 2	EPSOM
Locality Name 1	AUCKLAND
Postcode 1	1050

Note: New Zealand Post includes the suburb and city name in an urban address.

Related Topics:

- "House Number Alpha" on page 58

House Number Alpha

Output port that contains the building identifier in a New Zealand residential address when the identifier includes alphabetic characters.

The house number identifies a building at street level. If the building contains multiple residences, such as an apartment building, use sub-building ports to identify the apartments.

To view street number data for a New Zealand address, configure the Address Validator transformation in certified mode.

House Number Alpha Usage

To write an alphabetic or alphanumeric building identifier to a single port, select House Number Alpha.

The House Number Alpha port applies to New Zealand addresses. To write building identifier data for other countries to a single port, use the Street Number and Street Number Suffix ports.

Port Location

The following table provides the location and default precision of the port:

Port Type	Port Group	Template Model	Precision
Output	New Zealand Specific	Basic	1

House Number Alpha Example

The following address contains data that can populate the House Number port:

```
ANNE BROOKS
224B CLARENCE STREET
VOGELTOWN
WELLINGTON 6023
```

The following table shows the ports that relate to house number data in the address:

Port Name	Data
Recipient Line 1	ANNE BROOKS
House Number Alpha	**224B**
Street Name 1	CLARENCE STREET
Locality Name 2	VOGELTOWN
Locality Name 1	WELLINGTON
Postcode 1	6023

Note: New Zealand Post includes the suburb and city name in an urban address.

Related Topics:

- "House Number" on page 57

Sub-building Complete Ports

Input and output ports that contain the sub-building data in an address record.

Sub-building data identifies a mailbox location inside a building, such as an apartment, suite, or floor.

The Sub-building Complete ports contain all data in the following ports:

- Sub-building Descriptor
- Sub-building Name
- Sub-building Number

Sub-building ports are related by port number. For example, Sub-building Complete 1 contains all data in Sub-building Descriptor 1, Sub-building Name 1, and Sub-building Number 1 ports.

Sub-building Complete Usage

Select a Sub-building Complete input port when an input address contains all data related to one sub-building level in a single port.

Select a Sub-building Complete output port to write all data related to one sub-building level to a single port.

Consider the following guidelines when you use Sub-building Complete ports:

- There are six Sub-building Complete ports. If an address record contains more than one sub-building level, select additional Sub-building Complete ports.
- The Address Validator transformation does not parse the sub-building data by type. One address may have apartment data at sub-building 1 level, while another address may have floor data at sub-building 1 level and apartment data at sub-building 2 level.
- Most countries use Sub-building Complete 1 or Sub-building Complete 2 ports. You may need to select a port in the Sub-building Complete 3 through Sub-building Complete 6 range if the building data is highly complex.
- For each sub-building level in an address, select the Sub-building Complete input port or select one or more of the Sub-building Descriptor, Sub-building Name, or Sub-building Number input ports.
- You can select all sub-building data output ports.

Port Locations

The following table provides the location and default precision of the Sub-building Complete 1 and Sub-building Complete 2 ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Basic	50
Output	Address Elements	Basic	128

The following table provides the location and default precision of ports Sub-building Complete 3 through Sub-building Complete 6:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Advanced	128

Sub-building Complete Example

The following example address contains data that can populate the Sub-building Complete 1 port:

```
Mr. J. Tsang
Floor 12, Apt 231
Hiu Fung Tower, Fung Wah Estate
No. 11 North St.
Kennedy Town
Hong Kong Island
HKG
```

The following table shows the Address Validator transformation ports that relate to sub-building data in the address:

Port Name	Data
Contact Complete 1	Mr. J. Tsang
Building Complete 1	Fung Wah Estate
Building Name 1	Fung Wah Estate
Building Complete 2	Hiu Fung Tower
Building Name 2	Hiu Fung
Building Descriptor 2	Tower
Sub-building Complete 1	**Floor 12**
Sub-building Complete 2	**Apt 231**
Sub-building Descriptor 1	**Floor**
Sub-building Descriptor 2	**Apt**
Sub-building Number 1	**12**
Sub-building Number 2	**231**
Street Complete 1	North St.
Street Number Complete 1	No. 11
Locality Complete 1	Kennedy Town

Port Name	Data
Province Country Standard 1	Hong Kong Island
Country ISO3 Char	HKG

Sub-building Descriptor Ports

Input and output ports that describe the type of sub-building data in an address record.

Sub-building data identifies a mailbox location inside a building, such as an apartment, suite, or floor. For example, the Address Validator transformation parses "Suite" in "Honeymoon Suite" to a Sub-building Descriptor port.

Sub-building ports are related by port number. For example, Sub-building Complete 1 contains all data in Sub-building Descriptor 1, Sub-building Name 1, and Sub-building Number 1 ports.

Sub-building Descriptor Usage

Select a Sub-building Descriptor input port when an input address contains terms such as apartment, floor, or suite at a sub-building level in a single port.

Select a Sub-building Descriptor output port to write terms such as apartment, floor, or suite to a single port.

Consider the following guidelines when you use Sub-building Descriptor ports:

- There are six Sub-building Descriptor ports. If an address record contains more than one sub-building level, select additional Sub-building Descriptor ports.
- The Address Validator transformation does not parse the sub-building data by type. One address may have apartment data at sub-building 1 level, while another address may have floor data at sub-building 1 level and apartment data at sub-building 2 level.
- Most countries use Sub-building Descriptor 1 or Sub-building Descriptor 2 ports. You may need to select a port in the Sub-building Descriptor 3 through Sub-building Descriptor 6 range if the sub-building data is highly complex.
- For each sub-building level in an address, select a Sub-building Complete input port or select one or more of the Sub-building Descriptor, Sub-building Name, or Sub-building Number input ports.
- You can select all sub-building ports as outputs.

Port Locations

The following table provides the location and default precision of the Sub-building Descriptor 1 and Sub-building Descriptor 2 ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Basic	20

The following table provides the location and default precision of ports Sub-building Descriptor 3 through Sub-building Descriptor 6:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Advanced	20

Sub-building Descriptor Example

The following example address contains data that can populate Sub-building Descriptor ports:

```
Mr. J. Tsang
Floor 12, Apt A
Hiu Fung Tower, Fung Wah Estate
No. 11 North St.
Kennedy Town
Hong Kong Island
HKG
```

The following table shows the Address Validator transformation ports that relate to sub-building descriptor data in the address:

Port Name	Data
Contact Complete 1	Mr. J. Tsang
Building Complete 1	Fung Wah Estate
Building Name 1	Fung Wah Estate
Building Complete 2	Hiu Fung Tower
Building Name 2	Hiu Fung
Building Descriptor 2	Tower
Sub-building Complete 1	Floor 12
Sub-building Complete 2	Apt A
Sub-building Descriptor 1	**Floor**
Sub-building Descriptor 2	**Apt**
Sub-building Number 1	12
Sub-building Name 2	A
Street Complete 1	North St.
Street Number Complete 1	No. 11
Locality Complete 1	Kennedy Town

Port Name	Data
Province Country Standard 1	Hong Kong Island
Country ISO3 Char	HKG

Sub-building Name Ports

Input and output ports that contain the sub-building name data in an address record.

Sub-building data identifies a mailbox location inside a building, such as an apartment, suite, or floor. For example, the Address Validator transformation parses "Honeymoon" in "Honeymoon Suite" to a Sub-building Name port.

Sub-building ports are related by port number. For example, Sub-building Complete 1 contains all data in Sub-building Descriptor 1, Sub-building Name 1, and Sub-building Number 1 ports.

Sub-building Name Usage

Select a Sub-building Name input port when an input address contains the name of an apartment, floor, or suite in a single port.

Select a Sub-building Name output port to write the apartment, floor, or suite name to a single port.

Consider the following guidelines when you use Sub-building Name ports:

- There are six Sub-building Name ports. If an address record contains more than one sub-building level, select additional Sub-building Name ports.
- The Address Validator transformation does not parse the sub-building data by type. One address may have apartment data at sub-building 1 level, while another address may have floor data at sub-building 1 level and apartment data at sub-building 2 level.
- Most countries use Sub-building Name 1 or Sub-building Name 2 ports. You may need to select a port in the Sub-building Name 3 through Sub-building Name 6 range if the sub-building data is highly complex.
- For each sub-building level in an address, select a Sub-building Complete input port or select one or more of the Sub-building Descriptor, Sub-building Name, or Sub-building Number input ports.
- You can select all sub-building data output ports.
- The Address Validator transformation parses alphanumeric sub-building data as numeric data. For example, "33C" in "Apartment 33C" is an apartment number.

Port Locations

The following table provides the location and default precision of the Sub-building Name 1 and Sub-building Name 2 ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Basic	50

The following table provides the location and default precision of ports Sub-building Name 3 through Sub-building Name 6:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Advanced	50

Sub-building Name Example

The following example address contains data that can populate the Sub-building Name 2 port:

```
Mr. J. Tsang
Floor 12, Apt A
Fung Wah Estate, Hiu Fung Tower
No. 11 North St.
Kennedy Town
Hong Kong Island
HKG
```

The following table shows the Address Validator transformation ports that relate to sub-building name data in the address:

Port Name	Data
Contact Complete 1	Mr. J. Tsang
Building Complete 1	Fung Wah Estate
Building Complete 2	Hiu Fung Tower
Building Descriptor 2	Tower
Sub-building Complete 1	Floor 12
Sub-building Complete 2	Apt A
Sub-building Descriptor 1	Floor
Sub-building Descriptor 2	Apt
Sub-building Number 1	12
Sub-building Name 2	**A**
Street Complete 1	North St.
Street Number Complete 1	No. 11
Locality Complete 1	Kennedy Town
Province Country Standard 1	Hong Kong Island
Country ISO3 Char	HKG

Sub-building Number Ports

Input and output ports that contain the sub-building number data in an address record.

Sub-building data identifies a mailbox location inside a building, such as an apartment, suite, or floor. The Address Validator transformation parses the number "200" in "79 Park Avenue, Apartment 200" to a Sub-building Number port.

The Sub-building Number ports contain a subset of the data in the Sub-building Complete ports.

Sub-building Number Usage

Select a Sub-building Number input port when an input address contains apartment, floor, or suite number data in a single port.

Select a Sub-building Number output port to write the apartment, floor, or suite number to a single port.

Consider the following guidelines when you use Sub-building Number ports:

- There are six Sub-building Number ports. If an address record contains more than one sub-building level, select additional Sub-building Number ports.
- The Address Validator transformation does not parse the sub-building data by type. One address may have apartment data at Sub-building Number 1 level, while another address may have floor data at Sub-building Number 1 and apartment data at Sub-building Number 2.
- Most countries use Sub-building Number 1 or Sub-building Number 2 ports. You may need to select a port in the Sub-building Number 3 through Sub-building Number 6 range if the sub-building data is highly complex.
- For each sub-building level in an address, select a Sub-building Complete input port or select one or more of the Sub-building Descriptor, Sub-building Name, and Sub-building Number input ports.
- You can select all sub-building data output ports.
- The Address Validator transformation parses alphanumeric sub-building data as numeric data. For example, "33C" in "Apartment 33C" is an apartment number

Port Locations

The following table provides the location and default precision of the Sub-building Number 1 and Sub-building Number 2 ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Basic	50

The following table provides the location and default precision of ports Sub-building Number 3 through Sub-building Number 6:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Advanced	20

Sub-building Number Example

The following example address contains data that can populate the Sub-building Number ports:

```
Mr. J. Tsang
Floor 12, Apt 231
Fung Wah Estate, Hiu Fung Tower
No. 11 North St.
Kennedy Town
Hong Kong Island
HKG
```

The following table shows the Address Validator transformation ports that relate to sub-building number data in the address:

Port Name	Data
Contact Complete 1	Mr. J. Tsang
Building Complete 1	Fung Wah Estate
Building Complete 2	Hiu Fung Tower
Sub-building Complete 1	Floor 12
Sub-building Complete 2	Apt 231
Sub-building Number 1	**12**
Sub-building Number 2	**231**
Street Complete 1	North St.
Street Number Complete 1	No. 11
Locality Complete 1	Kennedy Town
Province Country Standard 1	Hong Kong Island
Country ISO3 Char	HKG

CHAPTER 4

Business and Organization Data Ports

This chapter includes the following topics:

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- Postal Phrase Complete Ports, 87
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Contact Complete Ports

Input and output ports that contain all data related to contact or person names in the address record.

The Contact Complete ports contain all the data in the following ports:

- Contact First Name
- Contact Last Name
- Contact Middle Name
- Contact Name

- Contact Salutation
- Contact Title

Note: The Contact Name port contains the data in the Contact First Name, Contact Last Name, and Contact Middle Name ports.

The contact data ports are related by port number. For example, Contact Complete 1 contains all data in the Contact First Name 1, Contact Last Name 1, Contact Middle Name 1, Contact Name 1, Contact Salutation 1, and Contact Title ports.

Contact Complete Usage

Select a Contact Complete input port when an input address contains all data related to a contact or person in a single port.

Select a Contact Complete output port to write all data related to a contact or person in a single port.

Consider the following guidelines when you use Contact Complete ports:

- There are three Contact Complete ports. If an address record contains more than one contact, select additional Contact Complete ports.
- For each contact in an address, if you select a Contact Complete input port, do not select a Contact First Name, Contact Last Name, Contact Middle Name, Contact Name, Contact Salutation, or Contact Title port. You can select a Contact Complete input port with the corresponding Contact Function and Contact Gender input ports.
- You can select all contact ports as outputs.

Port Locations

The following table provides the location and default precision of the Contact Complete 1, Contact Complete 2, and Contact Complete 3 ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Contact Elements	Advanced	50

Contact Complete Example

The following table shows the Address Validator transformation ports that can contain contact data:

Port Name	Data
Contact Complete 1	**Mr. John Edward Smith**
Contact Title 1	[Blank]
Contact Salutation 1	Mr.
Contact First Name 1	John
Contact Middle Name 1	Edward
Contact Last Name 1	Smith

Port Name	Data
Contact Name 1	John Edward Smith
Contact Gender 1	M
Contact Function 1	Software Technician

Contact First Name Ports

Input and output ports that contain the first name of any contact in the address record.

Use a Contact First Name port with a Contact Last Name port. Optionally, use a Contact Middle Name port.

The contact data ports are related by port number. For example, Contact Name 1 contains all data in the Contact First Name 1, Contact Last Name 1, and Contact Middle Name 1 ports.

Note: The Contact Complete port also contains contact first name data.

Contact First Name Usage

Select a Contact First Name input port when an input address contains the first name of a contact.

Select a Contact First Name output port to write the first name of a contact in a single port.

Consider the following guidelines when you use Contact First Name ports:

- There are three Contact First Name ports. If an address record contains more than one contact, select additional Contact First Name ports.
- For each contact in an address, select the Contact Name input port or select one or more of the Contact First Name, Contact Last Name, and Contact Middle Name input ports. If you select a Contact First Name port, do not select the corresponding Contact Complete port.
- You can select all contact data ports as outputs.

Port Locations

The following table provides the location and default precision of the Contact First Name 1 port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Contact Elements	Advanced	50

The following table provides the location and default precision of the Contact First Name 2 and Contact First Name 3 ports:

Port Type	Port Group	Template Model	Precision
Output	Contact Elements	Advanced	50

Contact First Name Example

The following table shows the Address Validator transformation ports that contain contact data:

Port Name	Data
Contact Complete 1	Mr. John Edward Smith
Contact Title 1	[Blank]
Contact Salutation 1	Mr.
Contact First Name 1	**John**
Contact Middle Name 1	Edward
Contact Last Name 1	Smith
Contact Name 1	John Edward Smith
Contact Gender 1	M
Contact Function 1	Software Technician

Contact Function Ports

Input and output ports that contain the job title of any contact in the address record.

The contact data ports are related by port number. For example, Contact Function 1 identifies the function of the person named in the Contact Complete 1 port.

Contact Function Usage

Select a Contact Function input port when an input address contains the job title of a contact.

Select a Contact Function output port to write the contact job title as output.

Consider the following guidelines when you use Contact Function ports:

- There are three Contact Function ports. If an address record contains function data for more than one contact, select additional Contact Function ports.
- You can select a Contact Complete input port with the corresponding Contact Function port. A Contact Complete port does not contain function or gender data.
- You can select all contact data ports as outputs.

Port Locations

The following table provides the location and default precision of the Contact Function 1 port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Contact Elements	Advanced	50

The following table provides the location and default precision of the Contact Function 2 and Contact Function 3 ports:

Port Type	Port Group	Template Model	Precision
Output	Contact Elements	Advanced	50

Contact Function Example

The following table shows the Address Validator transformation ports that contain contact data:

Port Name	Data
Contact Complete 1	Mr. John Edward Smith
Contact Title 1	[Blank]
Contact Salutation 1	Mr.
Contact First Name 1	John
Contact Middle Name 1	Edward
Contact Last Name 1	Smith
Contact Name 1	John Edward Smith
Contact Gender 1	M
Contact Function 1	**Software Technician**

Contact Gender Ports

Input and output ports that contain the gender of any contact in the address record.

The contact data ports are related by port number. For example, Contact Gender 1 identifies the gender of the person named in the Contact Complete 1 port.

Contact Gender Usage

Select a Contact Gender input port when an input address identifies the gender of a contact.

Select a Contact Gender output port to write the gender of the contact in a single port.

Consider the following guidelines when you use Contact Gender ports:

- There are three Contact Gender ports. If an address record contains gender data for more than one contact, select additional Contact Gender ports.
- You can select a Contact Complete input port with the corresponding Contact Gender input port. A Contact Complete port does not contain function or gender data.
- You can select all contact data ports as outputs.

Port Locations

The following table provides the location and default precision of the Contact Gender 1 port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Contact Elements	Advanced	50

The following table provides the location and default precision of the Contact Gender 2 and Contact Gender 3 ports:

Port Type	Port Group	Template Model	Precision
Output	Contact Elements	Advanced	50

Contact Gender Example

The following table shows the Address Validator transformation ports that contain contact data:

Port Name	Data
Contact Complete 1	Mr. John Edward Smith
Contact Title 1	[Blank]
Contact Salutation 1	Mr.
Contact First Name 1	John
Contact Middle Name 1	Edward
Contact Last Name 1	Smith
Contact Name 1	John Edward Smith
Contact Gender 1	**M**
Contact Function 1	Software Technician

Contact Last Name Ports

Input and output ports that contain the surname of any contact in the address record.

Use a Contact Last Name port with a Contact First Name port. Optionally, use a Contact Middle Name port.

The contact data ports are related by number. Contact Name 1 contains the data in the Contact First Name 1, Contact Last Name 1, and Contact Middle Name 1 ports.

Note: The Contact Complete port also contains contact last name data.

Contact Last Name Usage

Select a Contact Last Name input port when an input address contains the surname of a contact.

Select a Contact Last Name output port to write the surname of a contact in a single port.

Consider the following guidelines when you use Contact Last Name ports:

- There are three Contact Last Name ports. If an address record contains more than one name, select additional Contact Last Name ports.
- For each contact in an address, select the Contact Name input port or select one or more of the Contact First Name, Contact Last Name, and Contact Middle Name input ports. If you select a Contact Last Name port, do not select the corresponding Contact Complete port.
- You can select all contact data ports as outputs.

Port Locations

The following table provides the location and default precision of the Contact Last Name 1 port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Contact Elements	Advanced	50

The following table provides the location and default precision of the Contact Last Name 2 and Contact Last Name 3 port:s

Port Type	Port Group	Template Model	Precision
Output	Contact Elements	Advanced	50

Contact Last Name Example

The following table shows the Address Validator transformation ports that contain contact data:

Port Name	Data
Contact Complete 1	Mr. John Edward Smith
Contact Title 1	[Blank]
Contact Salutation 1	Mr.
Contact First Name 1	John

Port Name	Data
Contact Middle Name 1	Edward
Contact Last Name 1	**Smith**
Contact Name 1	John Edward Smith
Contact Gender 1	M
Contact Function 1	Software Technician

Contact Middle Name Ports

Input and output ports that contain the middle name of any contact in the address record.

Use a Contact Middle Name port with Contact First Name and Contact Last Name ports.

The contact data ports are related by port number. For example, Contact Name 1 contains all data in the Contact First Name 1, Contact Last Name 1, and Contact Middle Name 1 ports.

Note: The Contact Complete port also contains contact middle name data.

Contact Middle Name Usage

Select a Contact Middle Name input port when an input address contains the middle name or middle initial of a contact.

Select a Contact Middle Name output port to write the middle name or middle initial of a contact in a single port.

Consider the following guidelines when you use Contact Middle Name ports:

- There are three Contact Middle Name ports. If an address record contains more than one name, select additional Contact Middle Name ports.
- For each contact in an address, select the Contact Name input port or select one or more of the Contact First Name, Contact Last Name, and Contact Middle Name input ports. If you select a Contact Middle Name port, do not select the corresponding Contact Complete port.
- You can select all contact data ports as outputs.

Port Locations

The following table provides the location and default precision of the Contact Middle Name 1 port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Contact Elements	Advanced	50

The following table provides the location and default precision of the Contact Middle Name 2 and Contact Middle Name 3 ports:

Port Type	Port Group	Template Model	Precision
Output	Contact Elements	Advanced	50

Contact Middle Name Example

The following table shows the Address Validator transformation ports that contain contact data:

Port Name	Data
Contact Complete 1	Mr. John Edward Smith
Contact Title 1	[Blank]
Contact Salutation 1	Mr.
Contact First Name 1	John
Contact Middle Name 1	**Edward**
Contact Last Name 1	Smith
Contact Name 1	John Edward Smith
Contact Gender 1	M
Contact Function 1	Software Technician

Contact Name Ports

Input and output ports that contain the full name of any contact in the address record.

The Contact Name ports contain all data in the following ports:

- Contact First Name
- Contact Middle Name
- Contact Last Name

Note: The Contact Complete port also contains contact name data.

The contact data ports are related by port number. For example, Contact Name 1 contains all data in the Contact First Name 1, Contact Last Name 1, and Contact Middle Name 1 ports.

Contact Name Usage

Select a Contact Name input port when an input address contains the full name of a contact in a single port.

Select a Contact Name output port to write the full name of a contact in a single port.

Consider the following guidelines when you use Contact Name ports:

- There are three Contact Name ports. If an address record contains more than one contact name, select additional Contact Name ports.
- For each contact name in an address, select the Contact Name input port or select one or more of the Contact First Name, Contact Last Name, and Contact Middle Name ports. If you select a Contact Name port, do not select the corresponding Contact Complete port.
- You can select all contact data output ports.

Port Locations

The following table provides the location and default precision of the ports Contact Name 1 through Contact Name 3:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Contact Elements	Advanced	50

Contact Name Example

The following table shows the Address Validator transformation ports that contain contact data:

Port Name	Data
Contact Complete 1	Mr. John Edward Smith
Contact Title 1	[Blank]
Contact Salutation 1	Mr.
Contact First Name 1	John
Contact Middle Name 1	Edward
Contact Last Name 1	Smith
Contact Name 1	**John Edward Smith**
Contact Gender 1	M
Contact Function 1	Software Technician

Contact Salutation Ports

Input and output ports that contain contact salutation data.

The contact salutation is a formal introduction to a contact name. Each name in an address may have a contact salutation, such as Mister or Mrs.

The contact data ports are related by port number. For example, the data on the Contact Salutation 1 port relates to the person identified in the Contact Name 1 port.

The data in the Contact Salutation port is a subset of the data in the corresponding Contact Complete port.

Contact Salutation Usage

Select a Contact Salutation input port when an input address contains salutation data in a single port.

Select a Contact Salutation output port to write salutation data in a single port.

Consider the following guidelines when you use Contact Salutation ports:

- There are three Contact Salutation ports. If an address record contains more than one salutation, select additional Contact Salutation ports.
- If you select a Contact Salutation port, do not select the corresponding Contact Complete port.
- You can select all contact data ports as outputs.

Port Locations

The following table provides the location and default precision of the Contact Salutation 1 port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Contact Elements	Advanced	50

The following table provides the location and default precision of the Contact Salutation 2 and Contact Salutation 3 ports:

Port Type	Port Group	Template Model	Precision
Output	Contact Elements	Advanced	50

Contact Salutation Example

The following table shows the Address Validator transformation ports that contain contact data:

Port Name	Data
Contact Complete 1	Mr. John Edward Smith
Contact Title 1	[Blank]
Contact Salutation 1	**Mr.**
Contact First Name 1	John
Contact Middle Name 1	Edward
Contact Last Name 1	Smith
Contact Name 1	John Edward Smith
Contact Gender 1	M
Contact Function 1	Software Technician

Contact Title Ports

Input and output ports that contain contact title data.

The contact title is a professional title or qualification, such as Doctor or Professor.

The contact data ports are related by port number. For example, the data on the Contact Title 1 port relates to the person identified in the Contact Name 1 port.

The data in the Contact Title port is a subset of the data in the corresponding Contact Complete port.

Contact Title Usage

Select a Contact Title input port when an input address contains a title in a single port.

Select a Contact Salutation output port to write title data in a single port.

Consider the following guidelines when you use Contact Title ports:

- There are three Contact Title ports. If an address record contains more than one title, select additional Contact Title ports.
- If you select a Contact Title port, do not select the corresponding Contact Complete port.
- You can select all contact data ports as outputs.

Port Locations

The following table provides the location and default precision of the Contact Title 1 port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Contact Elements	Advanced	50

The following table provides the location and default precision of the Contact Title 2 and Contact Title 3 ports:

Port Type	Port Group	Template Model	Precision
Output	Contact Elements	Advanced	50

Contact Title Example

The following table shows the Address Validator transformation ports that contain contact data:

Port Name	Data
Contact Complete 1	Dr. Evelyn Michelle Jones
Contact Title 1	**Dr.**
Contact Salutation 1	[Blank]
Contact First Name 1	Evelyn
Contact Middle Name 1	Michelle

Port Name	Data
Contact Last Name 1	Jones
Contact Name 1	Evelyn Michelle Jones
Contact Gender 1	F
Contact Function 1	Chief Information Officer

Organization Complete Ports

Input and output ports that contain all information that identifies a company or other organization in an address.

The organization data ports are related by port number. For example, the Organization Complete 1 port contains all data in the Organization Name 1 and Organization Descriptor 1 ports.

Note: An Organization Complete port data does not include Organization Department data.

Organization Complete Usage

Select an Organization Complete input port when an input address contains all data that identifies an organization in a single port.

Select an Organization Complete output port to write all organization data to a single port.

Consider the following guidelines when you use Organization Complete ports:

- There are three Organization Complete ports. If an address contains data on more than one organization, review the input data structure and verify that you need to select all organization data for address validation. An address can only deliver to one organization. You may need to select additional organization ports if the data is highly complex.
- For each organization in an address, select an Organization Complete input port or select one or more of the Organization Name or Organization Descriptor ports. You can select Organization Complete and Organization Department ports for the same organization.
- You can select all organization data output ports.

Port Locations

The following table provides the location and default precision of the Organization Complete 1 port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Basic	128
Input	Hybrid	Basic	128
Output	Address Elements	Basic	128

The following table provides the location and default precision of the Organization Complete 2 and Organization Complete 3 ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Input	Hybrid	Advanced	50
Output	Address Elements	Advanced	128

Organization Complete Example

The following example address contains data that can populate the Organization Complete port:

```
DEF INC
RND GROUP
MR. JOHN DOE
38A ST. JAMES'S STREET
LONDON
E17 7PE
UNITED KINGDOM
```

The following table shows the Address Validator transformation ports that relate to organization data in the address:

Port Name	Data
Contact Complete 1	MR. JOHN DOE
Organization Complete 1	**DEF INC.**
Organization Name 1	DEF
Organization Descriptor 1	INC.
Organization Department 1	RND GROUP
Street Complete 1	ST. JAMES'S STREET
Street Number Complete 1	38A
Postcode 1	E17 7PE
Locality Complete 1	LONDON
Country ISO3 Char	GBR

Organization Department Ports

Input and output ports that identify a department in the address data.

The destination may be a department or a contact in the department.

The organization data ports are related by port number. For example, the Organization Complete 1 port contains all data in the Organization Name 1 and Organization Descriptor 1 ports.

Note: Organization Complete port data does not include Organization Department data.

Organization Department Usage

Select an Organization Department input port when an input address contains data that identifies an organization department in a single port.

Select an Organization Department output port to write the department name to a single port.

Consider the following guidelines when you use Organization Department ports:

- There are three Organization Department ports. If an address contains data on more than one organization, review the input data structure and verify that you need to select all organization data for address validation. An address can only deliver to one organization. You may need to select additional organization ports if the data is highly complex.
- For each organization in an address, select an Organization Complete input port or select one or more of the Organization Name or Organization Descriptor ports. You can select Organization Complete and Organization Department ports for the same organization.
- You can select all organization data output ports.

Port Locations

The following table provides the location and default precision of the Organization Department 1 port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Input	Hybrid	Advanced	50
Output	Address Elements	Basic	50

The following table provides the location and default precision of the Organization Department 2 and Organization Department 3 ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Input	Hybrid	Advanced	50
Output	Address Elements	Advanced	50

Organization Department Example

The following example address contains data that can populate the Organization Department port:

```
DEF INC
RND GROUP
MR. JOHN DOE
38A ST. JAMES'S STREET
LONDON
E17 7PE
UNITED KINGDOM
```

The following table shows the Address Validator transformation ports that relate to organization data in the address:

Port Name	Data
Contact Complete 1	MR. JOHN DOE
Organization Complete 1	DEF INC.
Organization Name 1	DEF
Organization Descriptor 1	INC.
Organization Department 1	**RND GROUP**
Street Complete 1	ST. JAMES'S STREET
Street Number Complete 1	38A
Postcode 1	E17 7PE
Locality Complete 1	LONDON
Country ISO3 Char	GBR

Organization Descriptor Ports

Input and output ports that contain information that describes the type of organization identified in the address data.

Organization descriptor data can tell you about the type of organization that receives the mail and where the organization is located. For example, the descriptor "plc" identifies a public limited company based in the United Kingdom.

The organization data ports are related by port number. For example, the Organization Complete 1 port contains all data in the Organization Name 1 and Organization Descriptor 1 ports.

Note: Organization Complete port data does not include Organization Department data.

Organization Descriptor Usage

Select an Organization Descriptor input port when an input address contains the descriptive term for an organization in a single port.

Select an Organization Descriptor output port to write the organization descriptor to a single port.

Consider the following guidelines when you use Organization Descriptor ports:

- There are three Organization Descriptor ports. If an address contains data on more than one organization, review the input data structure and verify that you need to select all organization data for address validation. An address can only deliver to one organization. You may need to select additional organization ports if the data is highly complex.

- For eachorganization in an address, select an Organization Complete input port or select one or more of the Organization Name or Organization Descriptor ports. You can select Organization Complete and Organization Department ports for the same organization.
- You can select all organization data output ports.

Port Locations

The following table provides the location and default precision of the Organization Descriptor 1 port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Input	Hybrid	Advanced	50
Output	Address Elements	Basic	50

The following table provides the location and default precision of the Organization Descriptor 2 and Organization Descriptor 3 ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Input	Hybrid	Advanced	50
Output	Address Elements	Advanced	50

Organization Descriptor Example

The following example address contains data that can populate the Organization Descriptor port:

```
DEF INC
RND GROUP
MR. JOHN DOE
38A ST. JAMES'S STREET
LONDON
E17 7PE
UNITED KINGDOM
```

The following table shows the Address Validator transformation ports that relate to organization data in the address:

Port Name	Data
Contact Complete 1	MR. JOHN DOE
Organization Complete 1	DEF INC.
Organization Name 1	DEF
Organization Descriptor 1	**INC.**
Organization Department 1	RND GROUP
Street Complete 1	ST. JAMES'S STREET

Port Name	Data
Street Number Complete 1	38A
Postcode 1	E17 7PE
Locality Complete 1	LONDON
Country ISO3 Char	GBR

Organization Name Ports

Input and output ports that contain organization name information in the address data.

The Address Validation transformation treats the organization name and descriptor as different ports. For example, in the organization "Barker Shedwell plc," "Barker Shedwell" is the organization name and "plc" is the organization descriptor.

The organization data ports are related by port number. For example, the Organization Complete 1 port contains all data in the Organization Name 1 and Organization Descriptor 1 ports.

Note: Organization Complete port data does not include Organization Department data.

Organization Name Usage

Select an Organization Name input port when an input address contains the name of an organization in a single port.

Select an Organization Name output port to write the organization name to a single port.

Consider the following guidelines when you use Organization Name ports:

- There are three Organization Name ports. If an address contains data on more than one organization, review the input data structure and verify that you need to select all organization data for address validation. An address can only deliver to one organization. You may need to select additional organization ports if the data is highly complex.
- For each organization in an address, select an Organization Complete input port or select one or more of the Organization Name or Organization Descriptor ports. You can select Organization Complete and Organization Department ports for the same organization.
- You can select all organization data output ports.

Port Locations

The following table provides the location and default precision of the Organization Name 1 port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Input	Hybrid	Advanced	50
Output	Address Elements	Basic	50

The following table provides the location and default precision of the Organization Name 2 and Organization Name 3 ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Input	Hybrid	Advanced	50
Output	Address Elements	Advanced	50

Organization Name Example

The following example address contains data that can populate the Organization Name port:

```
DEF INC
RND GROUP
MR. JOHN DOE
38A ST. JAMES'S STREET
LONDON
E17 7PE
UNITED KINGDOM
```

The following table shows the Address Validator transformation ports that relate to organization data in the address:

Port Name	Data
Contact Complete 1	MR. JOHN DOE
Organization Complete 1	DEF INC.
Organization Name 1	**DEF**
Organization Descriptor 1	INC.
Organization Department 1	RND GROUP
Street Complete 1	ST. JAMES'S STREET
Street Number Complete 1	38A
Postcode 1	E17 7PE
Locality Complete 1	LONDON
Country ISO3 Char	GBR

Postal Phrase Additional Info Ports

Input and output ports that contain additional information about a postal agency mailbox in an address.

Postal Phrase Additional Info ports can contain background information about the owner of the Post Office Box (PO Box). For example, additional information can identify if the PO Box relates to a television station or newspaper promotion. Address validation does not parse or validate this information.

The postal phrase ports are related by number. For example, Postal Phrase Additional Info 1 provides information about the data in the Postal Phrase Number 1 port. You can select a Postal Phrase Additional Info port and other postal phrase ports concurrently.

Postal Phrase Additional Info Usage

Select a Postal Phrase Additional Info input port if the input address contains additional information about the PO Box in a single port.

Select a Postal Phrase Additional Info output port to write additional information about the PO Box to a single port.

Consider the following guidelines when you use Postal Phrase Additional Info ports:

- There are three Postal Phrase Additional Info ports. If an address record contains information about more than one PO Box, select additional Postal Phrase Additional Info ports.
- For each PO Box in an address, you can select a Postal Phrase Additional Info port in addition to other postal phrase ports. You cannot select a Postal Phrase Complete input port and also select a Postal Phrase Descriptor or Postal Phrase Number input port.
- You can select all postal phrase data output ports.

Port Locations

The following table provides the location and default precision of the Postal Phrase Additional Info 1 port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Basic	30

The following table provides the location and default precision of the Postal Phrase Additional Info 2 and Postal Phrase Additional Info 3 ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Advanced	30

Postal Phrase Additional Info Example

The following table shows the Address Validator transformation ports that relate to postal phrase data in the address:

Port	Data
Contact Complete 1	Mr. John Doe
Organization Complete 1	DEF Inc.
Postal Phrase Complete 1	PO Box 2038
Postal Phrase Descriptor 1	PO Box

Port	Data
Postal Phrase Number 1	2038
Postal Phrase Additional Info 1	**"Sales Promotion"**
Locality Complete 1	Montrose
Province Country Standard 1	CO
Postcode 1	81402-2038

Postal Phrase Complete Ports

Input and output ports that contain all address data that describes a postal agency mailbox.

Post Office Box (PO Box) data is the most common type of postal phrase data.

The postal phrase ports are related by number. For example, Postal Phrase Complete 1 contains the data in Postal Phrase Descriptor 1 and Postal Phrase Number 1.

The data in a Postal Phrase Complete port does not include the data in a corresponding Postal Phrase Additional Info port.

Postal Phrase Complete Usage

Select a Postal Phrase Complete input port if the input address contains PO Box data in a single port.

Select a Postal Phrase Complete output port to write PO Box data to a single port.

Consider the following guidelines when you use Postal Phrase Complete ports:

- There are three Postal Phrase Complete ports. If an address record contains more than one PO Box, select additional Postal Phrase Complete ports.
- Most countries use Postal Phrase Complete 1. You may need to select Postal Phrase Complete 2 or Postal Phrase Complete 3 if the postal phrase data is highly complex.
- For each PO Box in an address, select a Postal Phrase Complete input port or select one or more of the Postal Phrase Descriptor or Postal Phrase Number input ports.
- You can select all postal phrase data output ports.

Port Locations

The following table provides the location and default precision of the Postal Phrase Complete 1 and Postal Phrase Complete 2 ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Basic	50
Output	Address Elements	Basic	50

The following table provides the location and default precision of the Postal Phrase Complete 3 port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Advanced	50

Postal Phrase Complete Example

The following table shows the Address Validator transformation ports that relate to postal phrase data in the address:

Port	Data
Contact Complete 1	Mr. John Doe
Organization Complete 1	DEF Inc.
Postal Phrase Complete 1	**PO Box 2038**
Postal Phrase Descriptor 1	PO Box
Postal Phrase Number 1	2038
Postal Phrase Additional Info 1	"Sales Promotion"
Locality Complete 1	Montrose
Province Country Standard 1	CO
Postcode 1	81402-2038

Postal Phrase Descriptor Ports

Input and output ports that describe a type of mailbox at a postal agency.

The postal phrase descriptor precedes the postal phrase number. Post Office Box (PO Box) number data is the most common type of postal phrase data. For example, the postal phrase in "PO Box 12345" is "PO Box."

The data in a Postal Phrase Descriptor port is a subset of the data in the corresponding Postal Phrase Complete port.

The postal phrase ports are related by number. For example, Postal Phrase Complete 1 contains the data in Postal Phrase Descriptor 1 and Postal Phrase Number 1.

The data in a Postal Phrase Complete port does not include the data in a corresponding Postal Phrase Additional Info port.

Postal Phrase Descriptor Usage

Select a Postal Phrase Descriptor input port if the input address contains "PO Box" and the postal phrase number in separate ports.

Select a Postal Phrase Descriptor output port to write the "PO Box" string to a separate port in the output data.

Consider the following guidelines when you use Postal Phrase Descriptor ports:

- There are three Postal Phrase Descriptor ports. If an address record contains more than one PO Box, select additional Postal Phrase Descriptor ports.
- Most countries use Postal Phrase Descriptor 1. You may need to select Postal Phrase Descriptor 2 or Postal Phrase Descriptor 3 if the postal phrase data is highly complex.
- For each PO Box in an address, select a Postal Phrase Complete input port or select one or more of the Postal Phrase Descriptor or Postal Phrase Number input ports.
- You can select all postal phrase data output ports.

Port Locations

The following table provides the location and default precision of the Postal Phrase Descriptor 1 port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Basic	30

The following table provides the location and default precision of the Postal Phrase Descriptor 2 and Postal Phrase Descriptor 3 ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Advanced	30

Postal Phrase Descriptor Example

The following table shows the Address Validator transformation ports that relate to postal phrase data in the address:

Port	Data
Contact Complete 1	Mr. John Doe
Organization Complete 1	DEF Inc.
Postal Phrase Complete 1	PO Box 2038
Postal Phrase Descriptor 1	**PO Box**
Postal Phrase Number 1	2038
Postal Phrase Additional Info 1	"Sales Promotion"
Locality Complete 1	Montrose

Port	Data
Province Country Standard 1	CO
Postcode 1	81402-2038

Postal Phrase Number Ports

Input and output ports that contain a mailbox number at a postal agency.

Post Office Box (PO Box) data is the most common type of postal phrase data.

The Address Validator transformation has four ports named Postal Phrase Number. The following table describes when to use each port:

Port Name	When To Use
Postal Phrase Number	Use with Australian address records that you submit for Address Matching Approval System (AMAS) certification.
Postal Phrase Number 1 Postal Phrase Number 2 Postal Phrase Number 3	Use with addresses from any country.

The postal phrase ports are related by number. For example, the Postal Phrase Complete 1 port contains the data in Postal Phrase Descriptor 1 and Postal Phrase Number 1. The Postal Phrase Number and Postal Phrase Number 1 ports validate the same data, and you can use both output ports in the same transformation.

Postal Phrase Number Ports and Australian Address Data

The Address Validator transformation writes five digits to the Postal Phrase Number output port. For example, the Postal Phrase Number port writes the PO Box number "2" as "00002." The five-digit format is mandated by Australia Post for AMAS certification.

You can select Postal Phrase Number and Postal Phrase Number 1 output ports for an address. The Postal Phrase Number port writes the data in the five-digit format. Postal Phrase Number writes numerical data as output. If an Australian PO Box value contains alphabetical data, select the Postal Phrase Prefix or Postal Phrase Suffix ports with Postal Phrase Number.

To view postal phrase number data for an Australian address, configure the Address Validator transformation to run in certified mode.

Postal Phrase Number Usage

Select a Postal Phrase Number input port if the input address contains the PO Box number in a single port.

Select the Postal Phrase Number output port to write the PO Box number to a single port in the format required for AMAS certification. The Postal Phrase Number output port contains number data only. If the Australian PO Box data includes alphabet characters, use the Postal Phrase Prefix or Postal Phrase Suffix ports in addition to the Postal Phrase Number port.

Select a Postal Phrase Number 1, 2, or 3 output port to write the PO Box number to a single port.

Consider the following guidelines when you use Postal Phrase Number ports:

- There are four Postal Phrase Number ports. Use Postal Phrase Number for Australian addresses that you will submit for AMAS certification. Use the other ports for other address validation projects.
- You can use Postal Phrase Number 1, Postal Phrase Number 2, or Postal Phrase Number 3 with Australian address data. However, the output from these port cannot be AMAS certified.
- Most countries use Postal Phrase Number 1. You may need to select Postal Phrase Number 2 or Postal Phrase Number 3 if the postal phrase data is highly complex.
- For each PO Box in an address, select a Postal Phrase Complete input port or select one or more of the Postal Phrase Descriptor or Postal Phrase Number input ports.
- You can select all postal phrase data output ports.

Port Locations

The following table provides the location and default precision of the Postal Phrase Number port:

Port Type	Port Group	Template Model	Precision
Output	Australia Specific	Basic	12

The following table provides the location and default precision of the Postal Phrase Number 1 port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Basic	12

The following table provides the location and default precision of the Postal Phrase Number 2 and Postal Phrase Number 3 ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Advanced	12

Postal Phrase Number Example

The following table shows the Address Validator transformation ports that relate to postal phrase data in an address:

Port	Data
Contact Complete 1	Mr. John Doe
Organization Complete 1	DEF Inc.
Postal Phrase Complete 1	PO Box 2038
Postal Phrase Descriptor 1	PO Box

Port	Data
Postal Phrase Number 1	**2038**
Postal Phrase Additional Info 1	"Sales Promotion"
Locality Complete 1	Montrose
Province Country Standard 1	CO
Postcode 1	81402-2038

CHAPTER 5

City and Locality Data Ports

This chapter includes the following topics:

- Locality Additional Info Ports, 93
- Locality Complete Ports, 94
- Locality Identifier DE, 95
- Locality Name Ports, 96
- Locality Sort Code Ports, 98
- Locality Preferred Name Ports, 99

Locality Additional Info Ports

Input and output ports that contain information that can assist delivery to the address.

Locality ports are related by number. For example, Locality Additional Info 1 provides information about the data in the Locality Name 1 port. You can select a Locality Additional Info port and other Locality ports concurrently.

Locality Additional Info Usage

Select Locality Additional Info when the input data set contains information that can assist in delivering mail to an address.

Address validation does not parse or validate data for this port. If you select a Locality Additional Info input port, connect the data to a Locality Additional Info output port. Address validation will not try to validate this data.

Port Locations

The following table provides the location and default precision of ports Locality Additional Info 1 through Locality Additional Info 6:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Input	Hybrid	Advanced	50
Output	Last Line Elements	Advanced	30

Locality Additional Info Example

The following information relates to an address in Rockingham County, Virginia, United States:

"Exit Interstate 81 at milepost 262 northbound"

Locality Complete Ports

Input and output ports that contain all locality information in the address data.

The locality ports are related by number. For example, Locality Complete 1 contains all data in the Locality Name 1 and Locality Sort Code 1 ports.

Locality Complete Usage

Select a Locality Complete input port if the address contains all data related to a locality in a single port.

Select a Locality Complete output port to write all data for a locality to a single port.

Consider the following guidelines when you use Locality Complete ports:

- If an address contains multiple locality levels, use multiple locality ports. For example, use Locality Complete 1 or Locality Name 1 for the primary or largest locality in the address. Use Locality Complete 2 or Locality Name 2 to identify a town within Locality Complete 1 or Locality Name 1.
- There are six Locality Complete ports. Most countries use Locality Complete 1 or Locality Complete 2. You may need to select additional locality ports if the locality data is highly complex.
- Select a Locality Complete 1 input port or select one or more of the Locality Name 1 or Locality Sort Code 1 input ports. If you select a port in the range Locality Complete 2 through Locality Complete 6, do not select the corresponding Locality Sort Code port. The Locality Sort Code 2 through Locality Sort Code 6 ports are reserved for future use.
- You can select all locality data output ports, except ports Locality Sort Code 2 through Locality Sort Code 6.

Port Locations

The following table provides the location and default precision of ports Locality Complete 1 through Locality Complete 3:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Basic	100
Input	Hybrid	Basic	100
Output	Last Line Elements	Basic	100

The following table provides the location and default precision of ports Locality Complete 4 through Locality Complete 6:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	100
Input	Hybrid	Advanced	100
Output	Last Line Elements	Advanced	100

Locality Complete Example

The following table shows the Address Validator transformation port that contains Locality Complete data in this address:

Port	Data
Contact Complete 1	Mr. John Doe
Organization Complete 1	DEF Inc.
Postal Phrase Complete 1	PO Box 2038
Postal Phrase Descriptor 1	PO Box
Postal Phrase Number 1	2038
Postal Phrase Additional Info 1	"Sales Promotion"
Locality Complete 1	**Montrose**
Province Country Standard 1	CO
Postcode 1	81402-2038

Locality Identifier DE

Input and output ports that contain the identification number that Deutsche Post assigns to a locality. Deutsche Post uses the number to identify the post town for the address.

Locality Identifier DE Usage

To read the locality identification number from a German address, select the Locality Identifier DE input port.

To write the locality identification number to a German address, select the Locality Identifier DE output port.

Port Location

The following table provides the location and default precision of the Locality Identifier DE port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Basic	8
Output	DE Supplementary	Basic	8

Locality Identifier DE Output Codes

The locality identifier is a code of variable length that uniquely identifies a German postal locality. For example, the locality identifier for the town of Maxdorf is 68015519.

Locality Name Ports

Input and output ports that contain locality data.

Locality Name 1 identifies the primary locality in the address. A county is the primary locality within a state of the United States.

The locality ports are related by number. For example, Locality Complete 1 contains the information in the Locality Name 1 and Locality Sort Code 1 ports.

Locality Name Usage

Select a Locality Name input port to read the primary locality from the input address.

Select a Locality Name output port to write the primary locality to the validated address.

Consider the following guidelines when you use Locality Name ports:

- If an address contains multiple locality levels, use multiple locality ports. For example, use Locality Complete 1 or Locality Name 1 for the primary or largest locality in the address. Use Locality Complete 2 or Locality Name 2 to identify a town within Locality Complete 1 or Locality Name 1.
- There are six Locality Name ports. Most countries use Locality Name 1 or Locality Name 2. You may need to select additional locality ports if the locality data is highly complex.
- Select a Locality Complete 1 input port or select one or more of the Locality Name 1 or Locality Sort Code 1 input ports.
- You can select all locality data output ports, except ports Locality Sort Code 2 through Locality Sort Code 6. The Locality Sort Code 2 through Locality Sort Code 6 ports are reserved for future use.

Port Locations

The following table provides the location and default precision of ports Locality Name 1 through Locality Name 3:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	100
Input	Hybrid	Advanced	100
Output	Last Line Elements	Basic	100

The following table provides the location and default precision of ports Locality Name 4 through Locality Name 6:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	100
Input	Hybrid	Advanced	100
Output	Last Line Elements	Advanced	100

Locality Name Example

The following table shows the Address Validator transformation port that contains Locality Name data in this address:

Port	Data
Contact Complete 1	Mr. John Doe
Organization Complete 1	DEF Inc.
Postal Phrase Complete 1	PO Box 2038
Postal Phrase Descriptor 1	PO Box
Postal Phrase Number 1	2038
Postal Phrase Additional Info 1	"Sales Promotion"
Locality Name 1	**Montrose**
Province Country Standard 1	CO
Postcode 1	81402-2038

Locality Sort Code Ports

Input and output ports that identify the mail facility that handles mail for the address. In a country that does not use post codes for all addresses, the Locality Sort Code port can also identify the post code that applies to the address.

Sort codes speed up the mail distribution process. A mail carrier can use sort codes to assign mail items to a facility when a locality contains multiple mail facilities. If you add sort code information to an address, you can qualify for postal discounts. For example, the Royal Mail Walksort system offers discounts on the cost of delivery for large quantities of presorted mail.

If a country uses post codes for some addresses but not others, address validation writes the post code to the Locality Sort Code port. For example, Ireland defines post codes for the cities of Dublin and Cork but not for other Irish addresses.

Locality Sort Code Usage

Select a Locality Sort Code input port to read the sort code for the mail facility that organizes items for delivery to the address.

Select a Locality Sort Code output port to write the sort code for the mail facility to the output address.

When a country does not define post codes for all addresses, use Locality Sort Code to read or write the post code for the address.

Consider the following guidelines when you use Locality Sort Code ports:

- There are six Locality Sort Code ports. Locality Sort Code 1 port can identify a sorting facility in the area identified in Locality Name 1. Do not use Locality Sort Code ports with other locality levels.
- The ports Locality Sort Code 2 through Locality Sort Code 6 are reserved for future use.
- The Locality Complete 1 input port contains the data that address validation reads on the Locality Name 1 and Locality Sort Code 1 input ports.
- The Locality Complete 1 output port contains the data that address validation writes to the Locality Name 1 and Locality Sort Code 1 output ports.

Port Locations

The following table provides the location and default precision of the Locality Sort Code 1 port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Input	Hybrid	Advanced	50
Output	Last Line Elements	Basic	10

The following table provides the location and default precision of ports Locality Sort Code 2 through Locality Sort Code 6:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Input	Hybrid	Advanced	50
Output	Last Line Elements	Advanced	10

Locality Sort Code Examples

France uses sort codes to identify mail sorting facilities. The following table shows sort code data for an address in Paris:

Postcode 1	Locality Name 1	Locality Sort Code
75291	Paris	CEDEX 06

CEDEX stands for Courrier d'Entreprise à Distribution Exceptionnelle. CEDEX indicates that the address receives mail in large quantities and has a dedicated post code. The CEDEX number identifies the facility that sorts mail items for the address, as the locality has more than one mail facility.

Note: You can validate CEDEX and CEDEXA data in a French address. A CEDEXA code identifies a mailbox that receives a large volume of mail.

Locality Preferred Name Ports

Output port that returns the official or formally correct name of a locality in Canada or in the United States.

In almost all addresses, the Locality Preferred Name port returns the same name as the Locality Name port. In a small number of cases, the formal or official locality name is not used by the general public. For example, "North York" is a locality within the area covered by the city of Toronto. If the Address Validator transformation finds an address in the North York locality, it writes "Toronto" to the Locality Name port and writes "North York" to the Locality Preferred Name port.

Locality Preferred Name Usage

Select Locality Preferred Name to write the formally correct version of a locality name to the address record. Use the port to find the locality name when the address uses an alternative name for the locality.

Consider the following guidelines when you use the Locality Preferred Name ports:

- If an address contains multiple locality levels, use multiple locality ports. For example, use Locality Preferred Name 1 for the primary or largest locality in the address. Use Locality Preferred Name 2 to identify a town within the locality that Locality Preferred Name 1 identifies.
- There are six Locality Preferred Name ports. Most countries use Locality Preferred Name 1 or Locality Preferred Name 2. You may need to select additional locality ports if the locality data is highly complex.
- You can use the Locality Preferred Name ports with any other locality data output port.

Port Location

The following table provides the location and default precision of ports Locality Preferred Name 1 through Locality Preferred Name 3:

Port Type	Port Group	Template Model	Precision
Output	Last Line Elements	Basic	100

The following table provides the location and default precision of ports Locality Preferred Name 4 through Locality Preferred Name 6:

Port Type	Port Group	Template Model	Precision
Output	Last Line Elements	Advanced	100

Locality Preferred Name Output Codes

The following example address contains data that the Address Validator transformation can parse to the Locality Preferred Name port:

```
Ms. Susan Smith
DEF Inc.
1850 Wilson Ave.
Toronto ON M9M 1A1
CAN
```

The following table shows the Address Validator transformation port that contains the Locality Preferred Name data in this address:

Port	Data
Contact Complete 1	MS. SUSAN SMITH
Organization Complete 1	DEF INC.
Street Number Complete 1	1850
Street Complete 1	WILSON AVE
Locality Name 1	TORONTO
Locality Preferred Name 1	**NORTH YORK**
Province Abbreviation 1	ON
Postcode Complete 1	M9M 1A1
Country ISO3 Char	CAN

CHAPTER 6

Country Data Ports

This chapter includes the following topics:

- Country Abbreviation Ports, 101
- Country ISO2 Char Ports, 102
- Country ISO3 Char Ports, 103
- Country ISO3 Digit Ports, 105
- Country Name , 107
- Country Name Abbreviation Ports, 108
- Language ISO3, 109

Country Abbreviation Ports

Input port that contains a country abbreviation value.

Address validation is not currently implemented for Country Abbreviation output ports. If you connect data to a Country Abbreviation port, the Address Validator transformation parses the data to an appropriate output port for the address and validates the data on output.

Country Abbreviation Usage

Use one of the following ports to validate country abbreviation data:

- Country ISO2 Char
- Country ISO3 Char
- Country ISO3 Digit

Port Locations

The following table provides the location and default precision of ports Country Abbreviation 1 through Country Abbreviation 3:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50

Country ISO2 Char Ports

Input and output ports that identify the country in an address by its two-letter ISO Code.

The International Organization for Standardization (ISO) maintains the sets of country name abbreviations that mail carriers use. The ISO 3166-1 alpha-2 standard provides a two-letter address code for every country.

Country ISO2 Char Usage

Select an Country ISO2 Char input port when an address contains an ISO 3166-1 alpha-2 code.

Select an Country ISO2 Char output port to write the ISO 3166-1 alpha-2 code for the address as output.

Consider the following guidelines when you use Country ISO2 Char ports:

- There are three Country ISO2 Char ports. Select one Country ISO2 Char port for each address.
- The Address Validator transformation contains Country ISO2 Char ports, Country ISO3 Char ports, and Country ISO3 Digit ports. If the ports contain conflicting data, the Address Validator transformation prioritizes the data in the Country ISO3 Char port.
- The Address Validator transformation uses country code data to select the address reference data set to apply to the address record. If country code data is absent, the Address Validator transformation selects the default country reference data that is configured in the transformation.

Port Locations

The following table provides the location and default precision of the Country ISO2 Char ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Input	Hybrid	Advanced	50
Input	Multiline	Advanced	50
Output	Country	Basic	2

The following table provides the location and default precision of the Country ISO2 Char 2 and Country ISO2 Char 3 ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Input	Hybrid	Advanced	50
Input	Multiline	Advanced	50
Output	Country	Advanced	2

Country ISO2 Char Example

The following example address contains data that can populate the Country ISO2 Char port:

```
Mr. J. Tsang
Floor 12, Apt 231
Fung Wah Estate, Hiu Fung Tower
No. 11 North St.
```

```
Kennedy Town
Hong Kong Island
HKG
```

The following table shows the Address Validator transformation port that relate to ISO data in the address:

Port Name	Data
Contact Complete 1	Mr. J. Tsang
Building Complete 1	Fung Wah Estate
Building Complete 2	Hiu Fung Tower
Sub-building Complete 1	Floor 12
Sub-building Complete 2	Apt 231
Street Complete 1	North St.
Street Number Complete 1	No. 11
Locality Complete 1	Kennedy Town
Province Country Standard 1	Hong Kong Island
Country ISO2 Char	**HK**
Country ISO3 Char	HKG

You can view a list of ISO 3166-1 alpha-2 codes on the following site:

http://www.iso.org/iso/home/standards/country_codes.htm

Country ISO3 Char Ports

Input and output ports that identify the country in an address by its three-letter ISO Code.

The International Organization for Standardization (ISO) maintains the sets of country name abbreviations that mail carriers use. The ISO 3166-1 alpha-3 standard provides a three-letter address code for every country.

Country ISO3 Char Usage

Select an Country ISO3 Char input port when an address contains an ISO 3166-1 alpha-3 code.

Select an Country ISO3 Char output port to write the ISO 3166-1 alpha-3 code for the address as output.

Consider the following guidelines when you use Country ISO3 Char ports:

- There are three Country ISO3 Char ports. Select one Country ISO3 Char port for each address.
- The Address Validator transformation contains Country ISO2 Char ports, Country ISO3 Char ports, and Country ISO3 Digit ports. If the ports contain conflicting data, the Address Validator transformation prioritizes the data in the Country ISO3 Char port.

- The Address Validator transformation uses country code data, if it is present, to select the address reference data set to apply to the address record. If country code data is absent, the Address Validator transformation selects the default country reference data that is configured in the transformation.

Port Locations

The following table provides the location and default precision of the Country ISO3 Char ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Input	Hybrid	Advanced	50
Input	Multiline	Advanced	50
Output	Country	Basic	3

The following table provides the location and default precision of the Country ISO3 Char 2 and Country ISO3 Char 3 ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Input	Hybrid	Advanced	50
Input	Multiline	Advanced	50
Output	Country	Advanced	3

Country ISO3 Char Example

The following example address contains data that can populate the Country ISO3 Char port:

```
Mr. J. Tsang
Floor 12, Apt 231
Fung Wah Estate, Hiu Fung Tower
No. 11 North St.
Kennedy Town
Hong Kong Island
HKG
```

The following table shows the Address Validator transformation port that relate to ISO data in the address:

Port Name	Data
Contact Complete 1	Mr. J. Tsang
Building Complete 1	Fung Wah Estate
Building Complete 2	Hiu Fung Tower
Sub-building Complete 1	Floor 12
Sub-building Complete 2	Apt 231

Port Name	Data
Street Complete 1	North St.
Street Number Complete 1	No. 11
Locality Complete 1	Kennedy Town
Province Country Standard 1	Hong Kong Island
Country ISO2 Char	HK
Country ISO3 Char	**HKG**

You can view a list of ISO 3166-1 alpha-3 codes on the following site:

http://unstats.un.org/unsd/methods/m49/m49alpha.htm

Country ISO3 Digit Ports

Input and output ports that identify the country in an address by its three-digit ISO Code.

The International Organization for Standardization (ISO) maintains the sets of country name abbreviations that mail carriers use. The ISO 3166-1 numeric standard provides a three-digit address code for every country. The ISO 3166-1 numeric codes are identical to the three-digit country codes developed and maintained by the United Nations Statistics Division.

Country ISO3 Digit Usage

Select an Country ISO3 Digit input port when an address contains an ISO 3166-1 numeric code.

Select an Country ISO3 Digit output port to write the ISO 3166-1 numeric code for the address as output.

Use Country ISO3 Digit ports to identify countries in data sets that may be read in multiple language locales. Country ISO3 Digit port data is not affected by the writing system or code page used to store the data.

Consider the following guidelines when you use Country ISO3 Digit ports:

- There are three Country ISO3 Char ports. Select one Country ISO3 Char port for each address.
- The Address Validator transformation contains Country ISO2 Char ports, Country ISO3 Char ports, and Country ISO3 Digit ports. If the ports contain conflicting data, the Address Validator transformation prioritizes the data in the Country ISO3 Char port.
- The Address Validator transformation uses country code data, if it is present, to select the address reference data set to apply to the address record. If country code data is absent, the Address Validator transformation selects the default country reference data that is configured in the transformation.

Port Locations

The following table provides the location and default precision of the Country ISO3 Digit ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Input	Hybrid	Advanced	50
Input	Multiline	Advanced	50
Output	Country	Basic	3

The following table provides the location and default precision of the Country ISO3 Digit 2 and Country ISO3 Digit 3 ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Input	Hybrid	Advanced	50
Input	Multiline	Advanced	50
Output	Country	Advanced	3

Country ISO3 Digit Example

The following example address contains data that can populate the Country ISO3 Digit port:

```
Mr. J. Tsang
Floor 12, Apt 231
Fung Wah Estate, Hiu Fung Tower
No. 11 North St.
Kennedy Town
Hong Kong Island
HKG
```

The following table shows the Address Validator transformation port that relate to ISO data in the address:

Port Name	Data
Contact Complete 1	Mr. J. Tsang
Building Complete 1	Fung Wah Estate
Building Complete 2	Hiu Fung Tower
Sub-building Complete 1	Floor 12
Sub-building Complete 2	Apt 231
Street Complete 1	North St.
Street Number Complete 1	No. 11

Port Name	Data
Locality Complete 1	Kennedy Town
Province Country Standard 1	Hong Kong Island
Country ISO3 Char	HKG
Country ISO3 Digit	**344**

You can view a list of ISO 3166-1 numeric codes on the following site:

http://unstats.un.org/unsd/methods/m49/m49alpha.htm

Country Name

Input and output ports that contain the name of the country that the address specifies.

The Country Name ports contain the English-language version of the name.

Country Name Usage

Select a Country Name input port when the input address contains the country name in a single field.

Select a Country Name output port to add the country name to the output address record.

Consider the following guidelines when you use Country Name ports:

- If you use the Country Name input port with a Complete Address input port, select the ports from the same input group. Select the Country Name port and the Complete Address port from the Multiline group. Or, select the Country Name port and the Complete Address port from the Single-Line group.
- An address can deliver to a single country. If an input address specifies multiple country names, the address might identify a province or a territory as a country. For example, address validation treats Puerto Rico as a state-equivalent territory in the United States and not as a country. Use a Province port to read or write the name "Puerto Rico."
- Mail carriers prefer ISO country abbreviation data to country name data. Use an ISO abbreviation output port instead of a Country Name output port.
- The Address Validator transformation writes all words in a country name to a single port.
- If the address contains country name and country abbreviation data, the country abbreviation data takes precedence. The Address Validator transformation gives priority to Country ISO3 Char port data.

Port Locations

The following table provides the location and default precision of the Country Name port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Basic	50
Input	Hybrid	Basic	50

Port Type	Port Group	Template Model	Precision
Input	Multiline	Basic	50
Input	Single-Line	Basic	50

The following table provides the location and default precision of the Country Name 1 port:

Port Type	Port Group	Template Model	Precision
Output	Country	Basic	50

The following table provides the location and default precision of the Country Name 2 port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Input	Hybrid	Advanced	50
Input	Multiline	Advanced	50
Output	Country	Basic	50

The following table provides the location and default precision of the Country Name 3 port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Input	Hybrid	Advanced	50
Input	Multiline	Advanced	50
Output	Country	Advanced	50

Country Name Abbreviation Ports

Input and output ports that contain a country abbreviation value.

Address validation is not currently implemented for Country Name Abbreviation ports. If you connect data to a Country Name Abbreviation port, the Address Validator transformation parses the data to an appropriate output port for the address and validates the data on output.

Country Name Abbreviation Usage

Use one of the following ports to validate country abbreviation data:

- Country ISO2 Char

- Country ISO3 Char
- Country ISO3 Digit

Port Locations

The following table provides the location and default precision of ports Country Name Abbreviation 1 through Country Name Abbreviation 3:

Port Type	Port Group	Template Model	Precision
Input	Hybrid	Advanced	50
Input	Multiline	Advanced	50
Output	Country	Advanced	50

Language ISO3

Output port that identifies the language used in the address. The port writes the three-character language code that the International Organization for Standardization (ISO) defines in the ISO 639-3 standard.

The Language ISO3 port identifies the language in which the database originally stored the address. If the address is transliterated from another language, the port identifies the original language. For example, if the address validation process reads a romanized Japanese address, the port returns JPN as the language code.

Language ISO3 Usage

To add the language code to an address record, select the Language ISO3 port.

Port Location

The following table provides the location and default precision of the port:

Port Type	Port Group	Template Model	Precision
Output	Status Info	Basic	3

Language ISO3 Output Codes

You can view the list of ISO 639-3 codes on the following site:

http://www.sil.org/iso639-3/codes.asp

CHAPTER 7

Customer Segmentation Data Ports

This chapter includes the following topics:

- CAMEO Status, 110
- Category Code, 111
- Category Description, 113
- Group Code, 115
- Group Description, 116
- International Code, 117
- International Description, 119
- MVID, 121

CAMEO Status

Output port that indicates whether an address record contains the data required for customer segmentation analysis.

CAMEO Status Usage

Select CAMEO Status to verify that an address record contains the required data. Customer segmentation analysis requires address data that identifies an individual household or business contact. When you select CAMEO Status, configure the Address Validator transformation to run in batch or interactive mode.

The CAMEO Status value indicates whether address validation can add customer segmentation data to an address. It does not indicate the quality or deliverability of the address. However, if address validation cannot provide customer segmentation data for an address, the address is likely to be inaccurate or incomplete. For example, the Address Validator transformation does not write customer segmentation data if the address has a Match Code value in the range I1 through I4.

Port Location

The following table provides the location and default precision of the CAMEO Status port:

Port Type	Port Group	Template Model	Precision
Output	CAMEO	Basic	4

CAMEO Status Output Codes

The following table describes the CAMEO Status output codes:

Code	Description
ECON	The CAMEO reference data is not installed. Address validation did not add customer segmentation data to the address.
ECOI	The address is inaccurate or incomplete. For example, the address has a Match Code value in the range I1 through I4. Address validation did not add customer segmentation data to the address.
ECO0	The CAMEO reference data does not include the address. Address validation did not add customer segmentation to the address.
ECO1	Address validation added customer segmentation data to the address.

Category Code

Output port that writes a code value that represents the social and economic status of a household.

The Category Code port uses reference data to return customer segmentation data for the address. Customer segmentation is a form of demographic analysis that infers social and economic status information about the residents at an address. For example, customer segmentation can estimate financial wealth, age, and family size for the address residents. The Category Code value combines customer segmentation data about several status indicators into a single value.

Category Code Usage

Select Category Code to write a code value that estimates the social and economic status of the residents at an address.

Consider the following guidelines when you use the Category Code port:

- Category definitions vary from country to country. If you perform customer segmentation analysis on addresses from more than one country, add a country code output port to the address record.
- Select the Category Description port with the Category Code port to return a text description of the category code.
- The category code represents several social and economic factors that may apply to residents at an address. Select the Group Code or Group Description port to add higher-level demographic data to the address record.

Port Location

The following table provides the location and default precision of the Category Code port:

Port Type	Port Group	Template Model	Precision
Output	CAMEO	Basic	3

Category Code Output Codes

The Category Code port writes a two-character or three-character code that identifies the customer segmentation category for the address. The port can return code values for multiple countries. The code value range can be different for each country.

For example, the following table describes the output codes generated on the Category Code port for Belgian addresses:

Code	Description
1A	Mature couples and families in wealthy suburban areas
1B	Wealthy households in pleasant outer suburbs
1C	Wealthy families in executive areas
1D	Wealthy families with school-age children
2A	Couples and families in affluent rural areas
2B	Couples in affluent family communities
2C	Older families in outer suburbs
3A	Older couples in rural and suburban districts
3B	Single people in densely populated city areas
3C	Mature couples and single people in urban areas
4A	Families and single people in outer suburbs
4B	Mixed-age families and couples in rural areas
4C	Older and retired couples in rural communities
5A	Young households in multi-cultural urban areas
5B	Less affluent families in rural dwellings
5C	Young couples and families in less affluent rural areas
6A	Young couples and families in retired areas
6B	Retired couples in suburban neighbourhoods
6C	Retired couples and single people in poorer communities

Code	Description
7A	Couples and single people in poorer suburbs
7B	Families and single people in poorer communities
7C	Young single people and couples in poorer multi-cultural areas
7D	Young households in poorer communities

Category Description

Output port that writes a text description of the likely social and economic status of a household.

The Category Description port uses reference data to return customer segmentation data for the address. Customer segmentation is a form of demographic analysis that infers social and economic status information about the residents at an address. For example, customer segmentation can estimate financial wealth, age, and family size for the address residents. The Category Description port describes the social and economic indicators that customer segmentation infers about an address.

Category Description Usage

Select Category Description to write a description of the customer segmentation category to which the address residents belong. The category represents the likely social and economic status of the residents.

Consider the following guidelines when you use the Category Description port:

- Category definitions vary from country to country. If you perform customer segmentation analysis on addresses from more than one country, add a country code output port to the address record.
- You can select the Category Code port when you select Category Description. The Category Code port writes a code value that represents the category.
- The category description identifies several social and economic factors that may apply to residents at an address. Select the Group Code or Group Description port to add higher-level demographic data to the address record.

Port Location

The following table provides the location and default precision of the Category Description port:

Port Type	Port Group	Template Model	Precision
Output	CAMEO	Basic	200

Category Description Output Values

The Category Description port writes a text description of the customer segmentation category for the address. The port can return descriptions for multiple countries.

For example, the following table describes the output generated on the Category Description port for Swedish addresses:

Code	Description
1A	Educated couples and families in exclusive areas
1B	Mature and retired home owners in rural dwellings
1C	Older and mature couples in executive family neighborhoods
1D	Affluent couples and families in rural and suburban areas
1E	Older and mature households in wealthy family neighborhoods
2A	Wealthy school-age families in retired communities
2B	Retired executives in affluent areas
2C	Older couples and single people in retired neighborhoods
3A	Couples in comfortable family neighborhoods
3B	Couples and families in rural and suburban areas
3C	Comfortable couples and families with school-age children
3D	Couples and families with pre-school and school-age children
4A	Retired couples and single people in older rural communities
4B	Comfortable couples and families in rural neighborhoods
4C	Comfortable older couples and single people in retired areas
5A	Couples and families in retired outer suburban areas
5B	Less affluent mature families and retired couples
5C	Young couples and single people in retired neighborhoods
6A	Educated couples and single people in less affluent neighborhoods
6B	Couples and families in less affluent outer suburbs
6C	Less affluent couples and single people in student areas
6D	Young and older couples and families in mixed areas
7A	Poorer couples and single people in student areas
7B	Poorer mature households in retired areas
7C	Students in young single person neighborhoods

Group Code

Output port that writes a code value to indicate the demographic group to which a household is likely to belong. The Group Code port identifies a demographic group within a country.

The Group Code port uses reference data to return customer segmentation data for an address. Customer segmentation is a form of demographic analysis that infers social and economic status information about the residents at an address. For example, customer segmentation can estimate financial wealth, age, and family size for the address residents. The Group Code value summarizes the results of the customer segmentation analysis for the address.

Group Code Usage

Select Group Code to write a code value that represents the demographic group identified for the address residents.

Consider the following guidelines when you use the Group Code port:

- Group codes vary from country to country. If you perform customer segmentation analysis on addresses from more than one country, add a country code output port to the address record.
- Select the Group Description port with the Group Code port to return a text description of the category code.
- The group code summarizes the results of the customer segmentation analysis for an address. Select the Category Code port to add a numeric code to the address record that provides lower-level customer segmentation data.

Port Location

The following table provides the location and default precision of the Group Code port:

Port Type	Port Group	Template Model	Precision
Output	CAMEO	Basic	2

Group Code Output Codes

The Group Code port writes a one-character or two-character code that identifies the demographic group that the address belongs to. The port can return code values for multiple countries.

For example, the following table describes the output codes generated on the Group Code port for United States addresses:

Code	Description
1	Affluent, single
2	Wealthy, nearing retirement
3	Affluent family
4	Well-off family
5	Comfortable, mixed family size
6	Less affluent, retired

Code	Description
7	Less affluent, young
8	Poor families and single parents
9	Poorer, single

Group Description

Output port that writes a text description of the demographic group to which a household is likely to belong. The Group Description port identifies a demographic group within a country.

The Group Description port uses reference data to return customer segmentation data for the address. Customer segmentation is a form of demographic analysis that infers social and economic status information about the residents at an address. For example, customer segmentation can estimate financial wealth, age, and family size for the address residents. The Group Description port summarizes the customer segmentation analysis. It writes a text description of the demographic group that the address is likely to belongs to.

Group Description Usage

Select Group Description to write the demographic group identified for the address residents.

Consider the following guidelines when you use the Group Description port:

- Group descriptions vary from country to country. If you perform customer segmentation analysis on addresses from more than one country, add a country code output port to the address record.
- You can select the Group Code port when you select Group Description. The Group Code port returns a code value of one or two characters that identifies the demographic group.
- The group description provides a high-level summary of the customer segmentation analysis for the address. Select the Category Code or Category Description port to add lower-level customer segmentation data to the address.

Port Location

The following table provides the location and default precision of the Group Description port:

Port Type	Port Group	Template Model	Precision
Output	CAMEO	Basic	200

Group Description Output Values

The Group Description port writes a text description of the demographic group that customer segmentation analysis identifies for the address. The port can return descriptions for multiple countries.

For example, the following table describes the output generated on the Group Description port for German addresses:

Code	Description
1	Upper class
2	Upper middle class
3	Middle class
4	Middle class couples
5	Middle class single people
6	Middle class families
7	Lower middle class
8	Working class
9	Urban working class

International Code

Output port that writes a code value to indicate the global demographic group to which a household is likely to belong.

The International Code port uses reference data to return customer segmentation data for the address. Customer segmentation is a form of demographic analysis that infers social and economic status information about the residents at an address. The International Code port provides high-level customer segmentation analysis that identifies addresses with common demographic indicators in multiple countries. For example, customer segmentation can estimate financial wealth, age, and family size for the address residents. The International Code value summarizes the results of the customer segmentation analysis for the address.

International Code Usage

Select International Code to write the global demographic group identified for the address residents.

Consider the following guidelines when you use the International Code port:

- The International Code port identifies addresses in different countries that share demographic status indicators. To write customer segmentation codes for addresses in a single country, select the Group Code or Category Code port.
- Select the International Description port with the International Code port to return a text description of the international code.

Port Location

The following table provides the location and default precision of the International Description port:

Port Type	Port Group	Template Model	Precision
Output	CAMEO	Basic	2

International Description Output Codes

The International Description port writes a text description of the demographic group that customer segmentation analysis identifies for the address.

The following table describes the output generated on the International Code port:

Code	Description
11	Wealthy pre-family couples and single people
12	Wealthy young couples with children
13	Wealthy families with school-age children
14	Wealthy older families and mature couples
15	Wealthy elders in retirement
21	Prosperous pre-family couples and single people
22	Prosperous young couples with children
23	Prosperous families with school-age children
24	Prosperous older families and mature couples
25	Prosperous elders in retirement
31	Comfortable pre-family couples and single people
32	Comfortable young couples with children
33	Comfortable families with school-age children
34	Comfortable older families and mature couples
35	Comfortable elders in retirement
41	Less affluent pre-family couples and single people
42	Less affluent young couples with children
43	Less affluent families with school-age children
44	Less affluent older families and mature couples
45	Less affluent elders in retirement

Code	Description
51	Poorer pre-family couples and single people
52	Poorer young couples with children
53	Poorer families with school-age children
54	Poorer older families and mature couples
55	Poorer elders in retirement
XX	Communal establishments

International Description

Output port that writes a text description of the global demographic group to which a household is likely to belong.

The International Description port uses reference data to return customer segmentation data for the address. Customer segmentation is a form of demographic analysis that infers social and economic status information about the residents at an address. The International Description port provides high-level customer segmentation analysis that identifies addresses with common demographic indicators in multiple countries. For example, customer segmentation can estimate financial wealth, age, and family size for the address residents. The International Description port writes a text description of the demographic group that the address is likely to belongs to.

International Description Usage

Select International Description to write the global demographic group identified for the address residents.

Consider the following guidelines when you use the International Description port:

- The International Description port identifies addresses in different countries that share demographic status indicators. To write a summary of the customer segmentation analysis for addresses in a single country, select the Group Description or Category Description port.
- You can select the International Code port when you select International Description. The International Code port returns a two-character code that identifies the demographic group.

Port Location

The following table provides the location and default precision of the International Description port:

Port Type	Port Group	Template Model	Precision
Output	CAMEO	Basic	200

International Description Output Values

The International Description port writes a text description of the demographic group that customer segmentation analysis identifies for the address.

The following table describes the output generated on the International Description port:

Code	Description
11	Wealthy pre-family couples and single people
12	Wealthy young couples with children
13	Wealthy families with school-age children
14	Wealthy older families and mature couples
15	Wealthy elders in retirement
21	Prosperous pre-family couples and single people
22	Prosperous young couples with children
23	Prosperous families with school-age children
24	Prosperous older families and mature couples
25	Prosperous elders in retirement
31	Comfortable pre-family couples and single people
32	Comfortable young couples with children
33	Comfortable families with school-age children
34	Comfortable older families and mature couples
35	Comfortable elders in retirement
41	Less affluent pre-family couples and single people
42	Less affluent young couples with children
43	Less affluent families with school-age children
44	Less affluent older families and mature couples
45	Less affluent elders in retirement
51	Poorer pre-family couples and single people
52	Poorer young couples with children
53	Poorer families with school-age children
54	Poorer older families and mature couples
55	Poorer elders in retirement
XX	Communal establishments

MVID

Output port that writes a code value to link CAMEO port outputs to customer segmentation analyses from other applications.

When you use the Address Validator transformation to add customer segmentation data to address records, you can use the records in other applications that read customer segmentation data.

MVID Usage

Select MVID when you want to use CAMEO port output with customer segmentation data from a non-Informatica application.

Port Location

The following table provides the location and default precision of the MVID port:

Port Type	Port Group	Template Model	Precision
Output	CAMEO	Basic	30

MVID Example

The following example address contains data that can populate the CAMEO ports:

```
MS. JANE SMITH
100 5TH AVE, #1
NEW YORK NY 10011
```

The following table shows the outputs on the MVID port and other ports that you can select for the address:

Port Name	Data
Formatted Address Line 1	MS. JANE SMITH
Formatted Address Line 2	100 5TH AVE, #1
Formatted Address Line 3	NEW YORK NY 10011
Category Code	1A
Category Description	Affluent young single people in exclusive rented housing
Group Code	1
Group Description	Affluent, single
International Code	11
International Description	Wealthy pre-family couples and single people
MVID	**360610054002**

CHAPTER 8

Enrichment Data Ports

This chapter includes the following topics:

- Address Identifier KR, 123
- Address Type, 125
- Choumei Aza Code JP, 127
- Choumei Aza Code Ports, 127
- Choumei Aza and Gaiku Code JP, 129
- Count, 130
- Count Number, 131
- Count Overflow, 132
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- INE Municipality Code, 136
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- RUIAN Building Entrance Identifier, 150
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- RUIAN Delivery Point Identifier, 151
- TERYT Locality Identifier PL, 151
- TERYT Street Identifier PL, 152
- Time Zone Code, 153
- Time Zone Name, 154
- Transaction Key Ports, 155

Address Identifier KR

Input and output ports that contain a unique identifier for a valid South Korea address. You can retrieve the identifier for an address, or you can enter an address and retrieve the corresponding identifier.

A current South Korea address uses street-based information to identify a mailbox. An older South Korea address uses land lot-based information to identify a mailbox. Additionally, current post codes in South Korea contain five digits. Older post codes in South Korea contain six digits. The address formats and the post code formats are interchangeable. For example, you can use a street address with a six-digit post code, and you can use a lot-based address with a five-digit post code.

You can configure the Address Validator transformation to read and write any combination of street address, lot-based address, and post code data. The Address Validator transformation can verify and enrich South Korea addresses in the current format, the older format, or a combination of current and older formats.

Address Identifier KR Usage

To retrieve the South Korea address that an address identifier represents, use the Address Identifier KR input port.

To retrieve the address identifier for a South Korea address, use the Address Identifier KR output port.

Consider the following guidelines when you use an Address Identifier KR port:

- When you configure the Address Validator transformation to read an address identifier for a South Korea address, set the transformation mode to address code lookup.
- When you configure the Address Validator transformation to write an address identifier for a South Korea address, set the transformation mode to batch or interactive.
- To read or write a lot-based address or a six-digit post code, set the Match Extended Archive property on the transformation to On.
- Address validation does not verify building data or sub-building data in a South Korea address. If you enter an address that contains building data or sub-building data, address validation copies the data to the output address.
- Address Verification does not return building or sub-building data for a South Korea address in address code lookup mode. If you enter an address identifier for an address that contains building data or sub-building data, add the relevant information to the output address. The data that you add must match the output address format.

Port Location

The following table provides the location and default precision of the Address Identifier KR port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Basic	26
Output	KR Supplementary	Basic	26

Address Identifier KR Example

The address identifier is an alphanumeric value that contains 26 characters. The final character identifies the types of information that the address contains.

The address identifier can end in the following characters:

- A. Identifies a five-digit post code and a street-based address
- B. Identifies a five-digit post code and a lot-based address
- C. Identifies a six-digit post code and a street-based address
- D. Identifies a six-digit post code and a lot-based address

The following address contains lot-based information and a non-current, six-digit post code:

```
247 Dangjeong-dong
Gunpo-si, Gyeonggi-do 435-713
Korea
```

Address validation returns the following address identifier for the address in batch mode or interactive mode:

9899900BE6A56708D9D663275D

To return the current address, change the D in the address ID value to A and enter the identifier in address code lookup mode.

The following table shows the output address in the Hangul and Latin scripts when you change the address ID character to D:

Output Address in the Hangul Script	Output Address in the Latin Script
경기도 군포시 농심로 35 15842	35 Nongsim-ro Gunpo-si, Gyeonggi-do 15842

Note: By default, the Address Validator returns the address in the Hangul script. The Preferred Script property determines the script for the output address. To return the address in the Latin script, select an ASCII option or Latin option on the Preferred Script property.

Updating the Information in a South Korea Address

To update the information in a South Korea address, first verify the address in batch mode or interactive mode. Then enter the address identifier value in address code lookup mode. To return the address in a different format, update the final character in the address identifier value.

1. Enter a South Korea address in batch or interactive mode. You can enter a street address or a lot-based address with a five-digit post code or a six-digit post code.

   Address validation returns the valid address data and an address identifier value.

2. Review the address identifier value.

   The final character of the value identifies the type of information that the address contains.
3. Update the final character in the address identifier.
4. Configure the address identifier value that you modified as the input to the Address Identifier KR input port.
5. Configure the Address Validator transformation to run in address code lookup mode.

   Address validation returns the address information that corresponds to the address identifier value.
6. If the address that you entered in step 1 contains building or sub-building information, add the information to the output address from step 5.

Address Type

Output port that describes the type of mailbox that an address record specifies. The Address Validator transformation is optimized to return the address type values for addresses in Australia, Canada, France, New Zealand, and the United States. The transformation can also return an address type for addresses in other countries.

Address Type Usage

To return the address type for a New Zealand address, select the Address Type port from the New Zealand Specific port group.

To return the address type for other countries, select the Address Type port from the Status Info port group.

The Address Type port returns a descriptive string for New Zealand addresses and a single-character value for other countries.

Note: The Address Type port and the Record Type port provide similar information. If you submit address records for Address Matching Approval System certification or for Coding Accuracy Support System certification, include the Record Type port data in the address records.

Port Locations

The following table provides the location and default precision of the Address Type ports:

Port Type	Port Group	Template Model	Precision
Output	Status Info	Basic	2
Output	New Zealand Specific	Basic	9

Address Type Output Codes for Global Addresses

When you select the Address Type port from the Status Info port group, the Address Validator transformation returns the address type as a single character. Different countries recognize different subsets of the address type values.

The following table describes the complete set of address type values that the port can return:

Value	Description
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. In France, a type F address does not include a CEDEX post code.
G	The address is a general delivery address.
H	The address identifies a high-rise building. The address contains sub-building elements such as apartment or suite.
L	The address post code identifies the organization as a large volume receiver. The reference data adds or validates the organization name. The transformation can use a CEDEX postal code to add or validate the organization name in a France address.
M	Military address. Reserved for future use.
P	The address identifies a Post Office Box or a delivery service.
R	The address is a rural route or a highway contract address.
S	The address identifies a street address. S is the default address type. The transformation returns S as the default value if address validation 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 a Canada address meets the criteria for more than one address type, address validation assigns the first applicable address type from the following list:

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

For all other countries, address validation assigns the first applicable address type from the following list:

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

Address Type Output Codes for New Zealand Addresses

The following table describes the address type values that the port can return for New Zealand addresses:

Value	Description
BAG	The address is a private bag address.
BOX	The address is a Post Office Box address.
CMB_RURAL	The address is a community mailbox in the rural address format.
CMB_URBAN	The address is a community mailbox in the urban address format.

Value	Description
COUNTER	The address is a counter delivery address.
RURAL	The address is a rural delivery address.
URBAN	The address is an urban delivery address.

Choumei Aza Code JP

See "Choumei Aza Code Ports" on page 127.

Choumei Aza Code Ports

The Choumei Aza Code ports are input and output ports that you can use to verify current and non-current versions of an address in Japan. A Choumei Aza code is an 11-digit value that identifies an address in Japan.

Japan Post can recognize multiple historical versions of an address for a single mailbox. When an address changes, Japan Post recognizes the older address and the newer address. Japan Post might update an address multiple times, and therefore Japan Post can recognize multiple versions of an address for a single mailbox.

You can select the following Choumei Aza Code ports:

Choumei Aza Code JP

The Choumei Aza Code JP input port reads a Choumei Aza code. You can enter a Choumei Aza code for any valid version of an address.

The Choumei Aza Code JP output port returns the Choumei Aza code that corresponds directly to the input address.

Current Choumei Aza Code JP

The Current Choumei Aza Code JP port returns the Choumei Aza code for the latest version of the address that the input code identifies.

New Choumei Aza Code JP

The New Choumei Aza Code JP port returns the Choumei Aza code for any incremental update to the address that the input code identifies.

Choumei Aza Code Port Usage

Use the Choumei Aza Code JP input port to submit a code to address validation. Submit the code in address code lookup mode. When you submit the code, address validation can return the version of the address that the code represents.

Use a Choumei Aza Code output port to return a Choumei Aza code for an input address or for a newer version of the address. Submit the address in batch or interactive mode.

Port Locations

The following table provides the locations and default precisions of the Choumei Aza Code JP ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Basic	11
Output	JP Supplementary	Basic	11

The following table provides the location and default precision of the Current Choumei Aza Code JP port:

Port Type	Port Group	Template Model	Precision
Output	JP Supplementary	Basic	11

The following table provides the location and default precision of the New Choumei Aza Code JP port:

Port Type	Port Group	Template Model	Precision
Output	JP Supplementary	Basic	11

Choumei Aza Code Example

The following table shows multiple versions of a Japan address and the corresponding Choumei Aza code outputs for each version:

Address Version	Address	Choumei Aza Code
Oldest	〒 587-0002 大阪府南河内郡美原町黒山	27385006000
Intermediate	〒 5870002 大阪府堺市美原町黒山	27201334000
Current	〒 587-0002 大阪府堺市美原区黒山	27147007000

You can select any or all Choumei Aza Code output ports when you validate an address. The port outputs can return the historical and current versions of the address.

The following table shows the oldest input address in the example and the codes that address validation returns on the Choumei Aza Code ports:

Address	Choumei Aza JP Output	New Choumei Aza JP Output	Current Choumei Aza JP Output
〒 587-0002 大阪府南河内郡美原町黒山	27385006000	27201334000	27147007000

Related Topics:

- "Using the Choumei Aza Code to Update a Japan Address" on page 129
- "Choumei Aza and Gaiku Code JP" on page 129
- "Gaiku Code" on page 134

Using the Choumei Aza Code to Update a Japan Address

To update a non-current Japan address, first validate the address in batch or interactive mode. When you validate the address, select one or more Choumei Aza Code output ports. The Address Validator transformation returns a valid address and any Choumei Aza code that you specified. Then, enter the Choumei Aza code in address code lookup to retrieve the address that matches the code.

When you enter a non-current address or a non-current Choumei Aza code, set the Matching Extended Archive property on the transformation to On.

1. Configure the Address Validator transformation to run in batch mode or interactive mode.
2. Connect the input data ports to the Japan address data elements.
3. Select the output ports for the address data, and select one or more Choumei Aza Code output ports.

   Consider the following options:

   - If you select the Choumei Aza Code JP output port, the transformation returns the Choumei Aza code that corresponds to the version of the address that you entered.
   - If you select the New Choumei Aza Code JP output port, the transformation returns the Choumei Aza code for any incremental update to the address that you entered.
   - If you select the Current Choumei Aza Code JP output port, the transformation returns the Choumei Aza code for the current version address that you entered.
4. Verify the address.

   The Address Validator transformation returns a valid address. The transformation also returns any Choumei Aza code that you specified.
5. Configure the Address Validator transformation to run in address code lookup mode.
6. Connect the Choumei Aza Code JP input port to a code output that you received in step 4.

   Select the output ports for the address data elements.
7. Verify the Choumei Aza code.

   The transformation returns the address that matches the input code.

Note: If you select the New Choumei Aza Code JP port, you can repeat the steps to find each incremental version of the address.

Related Topics:

- "Choumei Aza Code Ports" on page 127
- "Choumei Aza and Gaiku Code JP" on page 129
- "Gaiku Code" on page 134

Choumei Aza and Gaiku Code JP

Input port that contains the Choumei Aza code and the Gaiku code for a Japanese address in a single string. The Address Validator transformation reads the codes and returns the address that they represent.

The Choumei Aza code uniquely identifies a mailbox in Japan. The Gaiku code identifies the city block or *ban* to which an address belongs.

Choumei Aza and Gaiku Code JP Usage

Select the Choumei Aza and Gaiku Code JP port to return the address that the codes identify. When you select the port, configure the Address Validator transformation to run in address code lookup mode.

Consider the following guidelines when you use the Choumei Aza and Gaiku Code JP port:

- The port reads a 15-digit string. The first 11 digits specify the current Choumei Aza code. The final four digits specify the Gaiku code.
- To return the four-digit Gaiku Code for an address, use batch mode or interactive mode and select the Gaiku Code output port.

Port Locations

The following table provides the location and default precision of the Choumei Aza and Gaiku Code JP port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Basic	15

Choumei Aza and Gaiku Code JP Example

The following table identifies the Choumei Aza code and the Gaiku code in the string 131040040000020:

Choumei Aza Code	Gaiku Code
13104004000	0020

Related Topics:

- "Choumei Aza Code Ports" on page 127
- "Using the Choumei Aza Code to Update a Japan Address" on page 129
- "Gaiku Code" on page 134

Count

Output port that indicates the number of addresses in the address reference data sets that match the data in the input address. Select the Count port when you configure the Address Validator transformation to run in suggestion list mode.

Use suggestion list mode when you have a partial address and you want to see the valid addresses that contain the values in the partial address. When address validation runs in suggestion list mode, it returns all addresses that contain the data values in the input address.

Count Usage

To view the number of addresses in the address reference data that match the input address, select the Count port.

Port Location

The following table provides the location and default precision of the Count port:

Port Type	Port Group	Template Model	Precision
Output	Basic	Status Info	3

Count Output Codes

The Count value is the number of matching addresses that address validation finds in the address reference data. Address validation returns all matching addresses until it reaches the value that you specify in the **Max Result Count** property in the Address Validator transformation.

If the number of matching addresses is greater than the Max Result Count value, perform one of the following steps:

- Increase then Max Result Count value.
- Add data to the input address.

Note: The default value on the Max Result Count property is 20, You can increase the value to 100.

Related Topics:

- "Count Number" on page 131
- "Count Overflow" on page 132

Count Number

Output port that returns a sequence identifier for each address in a series of addresses that address validation returns in interactive mode or suggestion list mode.

Count Number Usage

When you submit an address in interactive mode or suggestion list mode, address validation can return multiple address suggestions for the address. To add a sequence identifier to each address in the set of address suggestions, select the Count Number port.

Port Location

The following table provides the location and default precision of the Count Number port:

Port Type	Port Group	Template Model	Precision
Output	Status Info	Basic	3

Count Number Output Values

The Count Number port value indicates the position of each address in a set of suggestions that address validation returns in interactive mode or suggestion list mode.

For example, the Count Number port returns the number 1 for the first address in the set. The port returns the number 2 for the second address in the set. The number increments by 1 for each address that address validation returns.

You can specify the maximum number of addresses that address validation returns on the Max Result Count property on the Address Validator transformation. To find the total number of addresses that address validation returns for an input address, select the Count port.

The address reference data might contain more address suggestions than the Address Validator transformation can return. To determine if there are additional addresses in the reference data, add the Count Overflow port to the output ports on the transformation.

Related Topics:

- "Count" on page 130
- "Count Overflow" on page 132

Count Overflow

Output port that indicates whether the address reference data contains addresses that address validation does not return to the Address Validator transformation output ports. Select the Count Overflow port when you configure the transformation to run in suggestion list mode.

When address validation runs in suggestion list mode, it returns all addresses that match the input address up to a maximum number that you specify. You specify the maximum number of addresses in the **Max Result Count** property on the Address Validator transformation. If the address reference data contains additional addresses, the Address Validator transformation writes a value to the Count Overflow port.

Count Overflow Usage

Select Count Overflow to determine whether the address reference data sets contain addresses that the validation process did not return to the Address Validator transformation.

Port Location

The following table provides the location and default precision of the Count Overflow port:

Port Type	Port Group	Template Model	Precision
Output	Basic	Status Info	3

Count Overflow Output Codes

The following table describes the Count Overflow output codes:

Code	Description
No	Address validation returned all matching addresses from the address reference data sets. The address reference data sets do not contain additional addresses.
Yes	Address validation did not return all matching addresses from the address reference data sets. The address reference data sets contain additional addresses.

Related Topics:

- "Count" on page 130
- "Count Number" on page 131

FIAS ID

Output port that returns the Federal Information Addressing System identifier for a valid address in the Russian Federation. The Federal State Statistics Service of the Russian Federation maintains the FIAS ID data. The FIAS ID value contains up to 36 characters. The value identifies the building that contains the address.

FIAS ID Usage

To find the Federal Information Addressing System identifier for a valid address in the Russian Federation, select the FIAS ID port.

Port Location

The following table provides the location and default precision of the FIAS ID port:

Port Type	Port Group	Template Model	Precision
Output	RU Supplementary	Basic	36

FIAS ID Output Codes

The following table shows the 36-character string that the FIAS ID port returns for an address in the Russian Federation:

Address	FIAS ID
ul. Mičurina 32 Beloreck 453501	49ffe393-5efd-49e1-8299-7e65f31281fb

Note: To view a Russian address in Latin characters, set the Preferred Script property on the Address Validator transformation to Latin.

The following table shows the Address Validator transformation ports that you might select for the address:

Port Name	Data
Street Complete 1	ul. Mičurina
Street Number Complete 1	32
Locality Complete 1	Beloreck
Postcode Complete 1	453501
FIAS ID	**49ffe393-5efd-49e1-8299-7e65f31281fb**

Finance Number

Output port that contains the code assigned to United States post offices and other postal facilities to enable collection of cost and statistical data.

A finance number has six digits. The first two digits of the finance number identify the state. The final four digits identify the United States Postal Service (USPS) post office or postal facility.

Finance Number Usage

Select Finance Number when you need to identify the post office or postal facility that processes an address. You can use a finance number to identify a Business Mail Entry Unit (BMEU), as each BMEU has a unique finance number.

Port Location

The following table provides the location and default precision of the Finance Number port:

Port Type	Port Group	Template Model	Precision
Output	US Supplementary	Basic	6

Gaiku Code

Output port that contains the identification code for the city block or *ban* in a Japanese address. The Address Validator transformation writes the Gaiku code for any address that includes block data. The Gaiku code contains four digits.

Gaiku Code Usage

Select the Gaiku Code output port to add the Gaiku code to a Japanese address.

Port Locations

The following table provides the location and default precision of the Gaiku Code port:

Port Type	Port Group	Template Model	Precision
Output	Discrete	JP Supplementary	4

Gaiku Code Example

In the following address, the Gaiku Code is 0065:

```
2 CHOME
HAMADAYAMA
SUGINAMI-KU TOKYO-TO 168-0065
```

Related Topics:

- "Choumei Aza Code Ports" on page 127
- "Using the Choumei Aza Code to Update a Japan Address" on page 129
- "Choumei Aza and Gaiku Code JP" on page 129

Geocoding Complete

Output port that contains the Geocoding coordinates for the address.

Geocoding Complete Usage

Select Geocoding Complete to generate complete geocode coordinates for the output address. The port contains the latitude and longitude coordinates and the standard used to calculate the coordinates.

The geocode coordinates conform to the World Geodetic Coordinate System of 1984 (WGS84). Coordinates are in decimal degrees.

You can also select Geocoding Status to view a four-character code that describes the results of the geocode operation for each address.

Port Location

The following table provides the location and default precision of the Geocoding Complete port:

Port Type	Port Group	Template Model	Precision
Output	Geocoding	Basic	60

Geocoding Complete Example

The following table shows the Geocoding Complete output for an address:

Address	Latitude	Longitude	Coordinate Standard
300 Rector Place, New York, NY 10280	40.709060	-74.016970	WGS84

The following string shows the appearance of the latitude, longitude, and coordinate standard data in the output port:

```
40.709060 -74.016970 WGS84
```

Gmina Code PL

Output port that contains the identification code for the municipality or commune to which a Polish address belongs. A gmina is the smallest unit of government administration in Poland. The National Official Register of the Territorial Division of the Country (TERYT) maintains the list of gminas and gmina codes.

TERYT defines the following types of gmina:

- Urban. A single city or town.
- Urban-rural. A city or town and the adjacent villages or countryside.
- Rural. One or more villages and the adjacent countryside.

Gmina Code PL Usage

To add a code that identifies the municipality or commune to which a Polish address belongs, select the Gmina Code PL port.

Port Locations

The following table provides the location and default precision of the Gmina Code PL port:

Port Type	Port Group	Template Model	Precision
Output	PL Supplementary	Basic	4

Gmina Code PL Example

The following example address contains data that can populate the Gmina Code PL port:

```
Adrian Kieślowski
ul. Laskowa 1
50510 Wrocław
Poland
```

The following table shows Address Validator transformation ports that you might select for the address:

Port Name	Data
Contact Complete 1	Adrian Kieślowski
Street Complete 1	ul. Laskowa
Street Number Complete 1	1
Province Country Standard 1	dolnośląskie
Gmina Code PL	**2183**
Locality Complete 1	Wrocław
Postcode 1	50510
Country Name 1	Poland

INE Municipality Code

Output port that identifies the municipality for an address in Spain. The port returns part of the INE Code that the National Statistics Institute of Spain (INE) maintains for the address. The complete INE code contains a series of values that identify the province, municipality, and street for the address.

INE Municipality Code Usage

To identify the municipality for an address in Spain, select the INE Municipality Code port. The port returns a numeric code that represents the municipality .

Note: The INE Municipality Code port data does not uniquely identify the municipality. To uniquely identify the municipality, combine the port data with the data from the INE Province Code port.

Port Locations

The following table provides the location and default precision of the INE Municipality Code port:

Port Type	Port Group	Template Model	Precision
Output	ES Supplementary	Basic	5

INE Municipality Code Example

The INE municipality code contains three digits. For example, the code for the municipality of Prado del Rey in Cádiz is 026.

To learn more about the INE codes, visit the INE website:

http://www.ine.es/en/inebmenu/indice_en.htm

Related Topics:

- "INE Province Code" on page 137
- "INE Street Code" on page 138

INE Province Code

Output port that uniquely identifies the province to which an address in Spain belongs. The port returns part of the INE Code that the National Statistics Institute of Spain (INE) maintains for the address. The complete INE code contains a series of values that identify the province, municipality, and street for the address.

INE Province Code Usage

To identify the province for an address in Spain, select the INE Province Code port. The port returns a numeric code that represents the province.

Port Location

The following table provides the location and default precision of the INE Province Code port:

Port Type	Port Group	Template Model	Precision
Output	ES Supplementary	Basic	2

INE Province Code Example

The INE province code is a two-digit code. For example, the code for Cádiz is 11.

To learn more about the INE codes, visit the INE website:

http://www.ine.es/en/inebmenu/indice_en.htm

Related Topics:

- "INE Municipality Code" on page 136
- "INE Street Code" on page 138

INE Street Code

Output port that identifies the street for an address in Spain. The port returns part of the INE Code that the National Statistics Institute of Spain (INE) maintains for the address. The complete INE code contains a series of values that identify the province, municipality, and street for the address.

INE Street Code Usage

To find the street identifier within the INE code for an address in Spain, select the INE Province Code port.

Note: The INE Street Code port data does not uniquely identify the street. To uniquely identify the street, combine the port data with the data from the INE Province Code port and the INE Municipality Code port.

INE Street Code Location

The following table provides the location and default precision of the INE Street Code port:

Port Type	Port Group	Template Model	Precision
Output	ES Supplementary	Basic	5

INE Street Code Example

To learn more about the INE codes, visit the INE website:

http://www.ine.es/en/inebmenu/indice_en.htm

Related Topics:

- "INE Municipality Code" on page 136
- "INE Province Code" on page 137

INSEE 5-Digit

Output port that identifies the administrative regions to which an address in France belongs. The port contains a five-digit code that identifies the department and the commune for the address. The first two digits identify the department. The final three digits identify the commune. The National Institute of Statistics and Economic Studies (INSEE) maintains the codes.

INSEE 5-Digit Usage

To identify the department and commune for an address in France, select the INSEE 5-Digit port.

Commune names are not unique across the departments in France. Use the INSEE 5-Digit port to uniquely identify a commune.

Port Locations

The following table provides the location and default precision of the INSEE 9-Digit port:

Port Type	Port Group	Template Model	Precision
Output	FR Supplementary	Basic	5

INSEE 5-Digit Example

The following example address contains data that can populate the INSEE 5-Digit port:

```
3 Lieu Dit Chante Alouette
3330 St Emilion
France
```

The following table shows the Address Validator transformation ports that relate to the street name data in the address:

Port Name	Data
Street Complete 1	Lieu Dit Chante Alouette
Street Number Complete 1	3
Locality Complete 1	St Emilion
INSEE 5-Digit	**33394**
Postcode 1	33330
Country Name 1	France

INSEE 9-Digit

Output port that identifies the statistical unit to which a French address belongs. A statistical unit is a subdivision of a commune. The National Institute of Statistics and Economic Studies (INSEE) defines the statistical units to assist in the analysis of census data. INSEE refers to the code as the IRIS code.

The first five digits of the code identify the department and the commune to which the address belongs. The final four digits are a unique code for the statistical unit within the commune. INSEE maintains the code data.

Note: The INSEE 5-Digit Code port returns the department and commune data.

INSEE 9-Digit Usage

To identify the statistical unit for a French address, select the INSEE 9-Digit port. Use the INSEE 9-Digit port to match the address to the area that INSEE defines for census data collection.

Port Locations

The following table provides the location and default precision of the INSEE 9-Digit port:

Port Type	Port Group	Template Model	Precision
Output	FR Supplementary	Basic	9

INSEE 9-Digit Example

The following table lists the codes that identify statistical units in the commune of Bourg-en-Bresse in the department of Ain:

INSEE 9-Digit	IRIS Label	INSEE 5-Digit Code	Commune Name
010530101	Centre-Ville	01053	Bourg-en-Bresse
010530102	Champ-de-Foire	01053	Bourg-en-Bresse
010530103	Prefecture	01053	Bourg-en-Bresse
010530201	Citadelle	01053	Bourg-en-Bresse
010530202	Mail	01053	Bourg-en-Bresse
010530203	Peloux	01053	Bourg-en-Bresse
010530301	Gare	01053	Bourg-en-Bresse
010530302	Brou	01053	Bourg-en-Bresse
010530401	Vennes-Ouest	01053	Bourg-en-Bresse
010530402	Vennes-Est	01053	Bourg-en-Bresse
010530501	Baudieres	01053	Bourg-en-Bresse
010530502	Sardieres	01053	Bourg-en-Bresse
010530503	Croix-Blanche	01053	Bourg-en-Bresse
010530601	Pont-des-Chevres	01053	Bourg-en-Bresse
010530602	Reyssouze-Ouest	01053	Bourg-en-Bresse
010530603	Reyssouze-Est	01053	Bourg-en-Bresse
010530604	Cenord-Grand-Challes	01053	Bourg-en-Bresse
010530701	Granges-Bardes-Alagnier	01053	Bourg-en-Bresse

To learn more about the INSEE codes, visit the INSEE website:

http://www.insee.fr/en/methodes/default.asp?page=definitions/iris.htm

Institute of Geography and Statistics Code

Output port that contains a seven-digit identification code for the city or state to which a Brazilian address belongs. The Brazilian Institute of Geography and Statistics (IGBE) maintains the identification codes.

Institute of Geography and Statistics Code Usage

To add an administrative code that identifies the city or state to a Brazilian address, select the Institute of Geography and Statistics Code port.

The Brazilian government uses the Institute of Geography and Statistics codes to organize the address records that it maintains for tax-gathering and other purposes.

Port Location

The following table provides the location and default precision of the Institute of Geography and Statistics Code port:

Port Type	Port Group	Template Model	Precision
Output	BR Supplementary	Basic	7

Institute of Geography and Statistics Code Example

The following address has an Institute of Geography and Statistics Code value of 2606101:

```
Rua da Matriz 9
Centro
Glória do Goitá - PE
55620-000
Brazil
```

The following table shows Address Validator transformation ports that you might select for the address:

Port Name	Data
Street Complete 1	Rua da Matriz
Street Number Complete 1	9
Institute of Geography and Statistics Code	**2606101**
Locality Complete 1	Glória do Goitá
Province 1	Pernambuco
Postcode Complete 1	55620-000
Country Name 1	Brazil

ISTAT Code

Output port that identifies the administrative regions to which an address in Italy belongs. The port returns a six-digit code that identifies the province and the municipality, or commune, for the address. The first three

digits identify the province. The final three digits identify the municipality. The Italian National Institute of Statistics (ISTAT) maintains the codes.

ISTAT Code Usage

To identify the province and the municipality for an address in Italy, select the ISTAT Code port.

Port Locations

The following table provides the location and default precision of the ISTAT Code port:

Port Type	Port Group	Template Model	Precision
Output	IT Supplementary	Basic	6

ISTAT Code Example

The following table lists the codes that identify the municipalities in the province of Brindisi in the region of Apulia:

ISTAT Code	Municipality	ISTAT Code	Municipality
074001	Brindisi	074011	Oria
074002	Carovigno	074012	Ostuni
074003	Ceglie Messapica	074013	San Donaci
074004	Cellino San Marco	074014	San Michele Salentino
074005	Cisternino	074015	San Pancrazio Salentino
074006	Erchie	074016	San Pietro Vernotico
074007	Fasano	074017	San Vito dei Normanni
074008	Francavilla Fontana	074018	Torchiarolo
074009	Latiano	074019	Torre Santa Susanna
074010	Mesagne	074020	Villa Castelli

Locality Identifier DE

See "Locality Identifier DE" on page 95.

Latitude

Output port that contains the latitude coordinate for the address.

Address validation presents latitude and longitude data according to the current World Geodetic System (WGS) standard. The current standard is WGS84.

Latitude Usage

Select Latitude to add the latitude coordinate of an address to the output data.

Port Location

The following table provides the location and default precision of the Latitude port:

Port Type	Port Group	Template Model	Precision
Output	Geocoding	Basic	30

Latitude Example

Johnstown Post Office in Johnstown, Pennsylvania has the following latitude:

```
40.32606
```

Latitude Longitude Unit

Output port that contains the measurement system used by geocoding in address validation.

Geocoding provides latitude and longitude coordinates for an address.

Address validation presents latitude and longitude data according to the current World Geodetic System (WGS) standard. The current standard is WGS84.

Latitude Longitude Unit Usage

Select Latitude Longitude Unit to include the geocoding system in the address data.

Port Location

The following table provides the location and default precision of the Latitude Longitude Unit port:

Port Type	Port Group	Template Model	Precision
Output	Geocoding	Basic	10

Latitude Longitude Unit Output Codes

The Latitude Longitude Unit writes the following string as output:

```
WGS84
```

Longitude

Output port that contains the longitude coordinate for the address.

Address validation presents latitude and longitude data according to the current World Geodetic System (WGS) standard. The current standard is WGS84.

Longitude Usage

Select Longitude to add the longitude coordinate of an address to the output data.

Port Location

The following table provides the location and default precision of the Longitude port:

Port Type	Port Group	Template Model	Precision
Output	Geocoding	Basic	30

Longitude Example

Johnstown Post Office in Johnstown, Pennsylvania has the following longitude:

```
-78.91712
```

Note: Longitudes west of the prime meridian have negative values.

National Address Database Identifier ZA

Output port that contains a seven-digit identification code for the street in a South African address.

The South African government uses a National Address Database to uniquely identify each street in South Africa. If an input address contains street-level information, address validation can generate the National Address Database code for the street. If an input address includes a National Address Database code, address validation can generate the street address that corresponds to the code.

National Address Database Identifier ZA Usage

To read a National Address Database code from an input address, select the National Address Database Identifier ZA input port.

To generate a National Address Database code from an input address, select the National Address Database Identifier ZA output port.

Port Location

The following table provides the location and default precision of the National Address Database Identifier ZA port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Basic	7
Output	ZA Supplementary	Basic	7

National Address Database Identifier ZA Example

The following address has a National Address Database code value of 2153781:

```
4 Balfour Road
Vincent
East London
5247
South Africa
```

The following table shows Address Validator transformation ports that you might select for the address:

Port Name	Data
Street Complete 1	Balfour Road
Street Number Complete 1	4
National Address Database Identifier ZA	**2153781**
Locality Complete 1	East London
Province 1	Eastern Cape
Postcode 1	5247
Country Name 1	South Africa

New Choumei Aza Code JP

See "Choumei Aza Code Ports" on page 127.

NIS Code

Output port that uniquely identifies the neighborhood to which a Belgian address belongs.

The national statistics directorate in Belgium defines a set of five-digit NIS codes that identify the towns and localities in each province in Belgium. The national statistics directorate also defines a set of four-character codes that identify the neighborhoods in each town or locality. The Address Validator returns the codes on the NIS Code port as a nine-character string. The first five digits of the port data identify the town or locality to which the valid address belongs. The final four characters identify the neighborhood within the town or locality.

NIS Code Usage

To identify the neighborhood for a Belgian address and the town or locality that includes the neighborhood, select the NIS Code port.

Port Location

The following table provides the location and default precision of the NIS Code port:

Port Type	Port Group	Template Model	Precision
Output	BE Supplementary	Basic	9

NIS Code Output Codes

The NIS Code port returns a value of 21004A001 for the following address:

```
Rue au Beurre 1
1000 Bruxelles
BEL
```

The following table shows the Address Validator transformation ports that you might select for the address:

Port Name	Data
Street Complete 1	Rue au Beurre
Street Number Complete 1	1
Postcode 1	1000
Locality Complete 1	Bruxelles
NIS Code	**21004A001**
Country Name 1	BEL

Official Municipality Key DE

Input and output ports that contain the identification number for a German municipality. A municipality is administrative area in the German federal system. The German government assigns an eight-digit number to each municipality.

Official Municipality Key DE Usage

To read the municipality key from a German address, select the Official Municipality Key DE input port.

To write the municipality key to a German address, select the Official Municipality Key DE output port.

Port Location

The following table provides the location and default precision of the Official Municipality Key DE port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Basic	8
Output	DE Supplementary	Basic	8

Official Municipality Key DE Example

The municipality key is an eight-digit number. The first two digits identify the federal state. The next three digits identify the district within the state. The final three digits identify the municipality. For example, the municipality key for the town of Maxdorf is 07338018.

The following table shows the elements of the municipality key for Maxdorf:

Type of Administrative Area	Name of Administrative Area	Area Code
State	Rhineland-Pfalz	07
District	Rhein-Pfalz-Kreis	338
Municipality	Maxdorf	018

Record ID Ports

Input and output ports that contain an identification string for each address in the data set.

Use this port to pass an identification string for each record. The Address Validator transformation does not process this data.

Record ID Usage

Select a Record ID input port to pass a unique ID with each address record.

There are three Record ID ports. If an address contains more than one record, select additional Record ID ports.

Port Locations

The following table provides the location and default precision of ports Record ID 1 through Record ID 3:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	ID Elements	Advanced	20

Record ID Example

You can pass any string as a record ID. The following string is a 15-digit identifier for an address:

```
637894066003681
```

Street Code DE

Output port that returns a three-digit street code that represents the street name in a Germany address. The street code is part of the *Frachtleitcode* or freight code. Positions 6, 7, and 8 of the freight code represent the street name in the address.

Street Code DE Usage

To return the three-digit street code element within the freight code for a German address, select the Street Code DE port.

Port Location

The following table provides the location and default precision of the Street Code DE port:

Port Type	Port Group	Template Model	Precision
Output	DE Supplementary	Basic	3

Street Code DE Example

The Street Code DE output port returns a value of 057 for the following address:

```
Röntgenstr. 9
67133 Maxdorf
Germany
```

The street code represents the street name of *Röntgenstrasse*.

The following table shows the Address Validator transformation ports that you might select for the address:

Port Name	Data
Street Complete 1	Röntgenstr. 9
Postcode Unformatted 1	67133
Locality Complete 1	Maxdorf
Country Name 1	Germany
Official Municipality Key DE	07338018
Locality Identifier DE	68015519
Street Code DE	**057**
Street Identifier DE	100560690

Street Identifier DE

Input and output ports that contain a street-level identification code for a German address. The street identifier is a number of variable length.

Street Identifier DE Usage

The Street Identifier DE port value identifies the street that contains the address mailbox. The Address Validator transformation can generate the street, city, state, and post code from a street identifier. The street identifier does not identify a building number.

To read the street identifier from a German address, select the Street Identifier DE input port. To write the street identifier to a German address, select the Street Identifier DE output port.

Port Location

The following table provides the location and default precision of the Street Identifier DE port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Basic	9
Output	DE Supplementary	Basic	9

Street Identifier DE Example

The street identifier 100560690 corresponds to the following address:

```
Röntgenstr.
67133 Maxdorf
Rheinland-Pfalz
Germany
```

The following table shows Address Validator transformation ports that you might select for the address:

Port Name	Data
Street Complete 1	Röntgenstr.
Street Identifier DE	**100560690**
Locality Complete 1	Maxdorf
Province Country Standard 1	Rehinland-Pfalz
Postcode Unformatted 1	67133
Country Name 1	Germany

RUIAN Building Entrance Identifier

Output port that contains a code that identifies the entrance to the building in a Czech Republic address.

The Czech Office for Surveying, Mapping, and Cadastre maintains the RUIAN code data. The data includes building entrance identifiers for a small percentage of Czech Republic addresses.

RUIAN Building Entrance Identifier Usage

To add a code that identifies the entrance to the building in a Czech Republic address, select the RUIAN Building Entrance Identifier port.

If the enrichment data for the Czech Republic does not contain a building entrance identifier for the address, the transformation returns no data on the port.

Port Locations

The following table provides the location and default precision of the RUIAN Building Entrance Identifier port:

Port Type	Port Group	Template Model	Precision
Output	CZ Supplementary	Basic	5

RUIAN Building Entrance Identifier Example

The following example address can return a value on the RUIAN Building Entrance Identifier port:

```
Musorgského 320/2
Kohoutovice
623 00 Brno 23
CZE
```

The RUIAN Building Entrance Identifier is 19204035.

RUIAN Building Identifier

Output port that contains a code that represents for a Czech Republic address to building level.

The Czech Office for Surveying, Mapping, and Cadastre maintains the RUIAN code data.

RUIAN Building Identifier Usage

To add a code that can identify the building in a Czech Republic address, select the RUIAN Building Identifier port.

Port Locations

The following table provides the location and default precision of the RUIAN Building Identifier port:

Port Type	Port Group	Template Model	Precision
Output	CZ Supplementary	Basic	8

RUIAN Building Identifier Example

The following example address can return a value on the RUIAN Building Identifier port:

```
Musorgského 320/2
Kohoutovice
623 00 Brno 23
CZE
```

The RUIAN Building Identifier is 76838.

RUIAN Delivery Point Identifier

Output port that contains the delivery point code for a Czech Republic address. The delivery point code is a unique identifier for the address.

The Czech Office for Surveying, Mapping, and Cadastre maintains the RUIAN code data.

RUIAN Delivery Point Identifier Usage

To add a delivery point identifier to a Czech Republic address, select the RUIAN Delivery Point Identifier port.

Port Locations

The following table provides the location and default precision of the RUIAN Delivery Point Identifier port:

Port Type	Port Group	Template Model	Precision
Output	CZ Supplementary	Basic	8

RUIAN Delivery Point Identifier Example

The following example address can return a value on the RUIAN Delivery Point Identifier port:

```
Musorgského 320/2
Kohoutovice
623 00 Brno 23
CZE
```

The RUIAN Delivery Point Identifier is 19382481.

TERYT Locality Identifier PL

Output port that contains the identification code for the locality to which a Polish address belongs. The code represents the locality that the National Official Register of the Territorial Division of the Country (TERYT) defines.

TERYT Locality Identifier PL Usage

To add a code that identifies the locality to which a Polish address belongs, select the TERYT Locality Identifier PL port.

Port Locations

The following table provides the location and default precision of the TERYT Locality Identifier PL ports:

Port Type	Port Group	Template Model	Precision
Output	PL Supplementary	Basic	7

TERYT Locality Identifier PL Example

The following example address contains data that can populate the TERYT Locality Identifier PL port:

```
Adrian Kieślowski
ul. Laskowa 1
50510 Wrocław
Poland
```

The following table shows Address Validator transformation ports that you might select for the address:

Port Name	Data
Contact Complete 1	Adrian Kieślowski
Street Complete 1	ul. Laskowa
Street Number Complete 1	1
Province Country Standard 1	dolnośląskie
TERYT Locality Identifier PL	**0986544**
Locality Complete 1	Wrocław
Postcode Unformatted 1	50510
Country Name 1	Poland

TERYT Street Identifier PL

Output port that contains the identification code for the street in a Polish address. The National Official Register of the Territorial Division of the Country (TERYT) maintains the list of street codes.

TERYT Street Identifier PL Usage

To add a code that identifies the street in a Polish address belongs, select the TERYT Street Identifier PL port.

Port Locations

The following table provides the location and default precision of the TERYT Street Identifier PL port:

Port Type	Port Group	Template Model	Precision
Output	PL Supplementary	Basic	5

TERYT Street Identifier PL Example

The following example address contains data that can populate the TERYT Street Identifier PL port:

```
Adrian Kieślowski
ul. Laskowa 1
50510 Wrocław
Poland
```

The following table shows Address Validator transformation ports that you might select for the address:

Port Name	Data
Contact Complete 1	Adrian Kieślowski
Street Complete 1	ul. Laskowa
Street Number Complete 1	1
Province Country Standard 1	dolnośląskie
TERYT Street Identifier PL	**10666**
Locality Complete 1	Wrocław
Postcode Unformatted 1	50510
Country Name 1	Poland

Time Zone Code

Output port that indicates the time difference between the local time zone at the address and Greenwich Mean Time (GMT).

Time Zone Code Usage

Select Time Zone Code to write the time zone difference to the address record. Sort records on this port to organize the addresses according to the offset from GMT.

Use Time Zone Code with United States addresses.

Note: The Time Zone Code port does not recognize Daylight Savings Time.

Port Location

The following table provides the location and default precision of the Time Zone Code port:

Port Type	Port Group	Template Model	Precision
Output	US Supplementary	Basic	3

Time Zone Code Output Codes

The time zone code is an two- or three-character string that states the time difference as a negative value. Because the port does not recognize Daylight Savings Time, the output codes remain constant throughout the year.

The following table describes the Time Zone Code output codes:

Time Zone	Output Code
Alaska standard time	-9
Atlantic standard time	-4
Central Standard Time	-6
Eastern Standard Time	-5
Hawaii-Aleutian standard time	-10
Mountain Standard Time	-7
Pacific Standard Time	-8

Time Zone Name

Output port that identifies the local time zone at the address.

Time Zone Name Usage

Select Time Zone Name to write the three- or four-letter abbreviation of the time zone to the address record. Sort records on this port to organize the addresses by time zone.

Use Time Zone Name with United States addresses.

Port Location

The following table provides the location and default precision of the Time Zone Name port:

Port Type	Port Group	Template Model	Precision
Output	US Supplementary	Basic	4

The time zone code is three-letter or four-letter string.

The following table describes the Time Zone Name output codes:

Code	Description
AKST	Alaska standard time
AST	Atlantic standard time
CST	Central standard time
EST	Eastern standard time
HAST or HST	Hawaii-Aleutian standard time
MST	Mountain standard time
PST	Pacific standard time

Transaction Key Ports

Input and output ports that contain transaction record data related to the address.

A transaction key is a string that an organization adds to an address record to identify a transaction performed for that address. For example, a business may create a customer record with the customer name and address and a unique transaction number related to a customer purchase. An online business may use transaction keys to track customer orders that are completed by mail.

Transaction Key Usage

Select a Transaction Key input port to read transaction number or code data as part of an input address.

Select a Transaction Key output port to write transaction number or code data to the output address.

The Address Validator transformation does not parse or validate transaction data. If you select a Transaction Key input port, select a Transaction Key output port and pass the data from the input to the output.

The Transaction Key output port has a lower precision than the input port. The Address Validator transformation truncates the port data if the data length exceeds the precision.

Port Locations

The following table provides the location and default precision of the ports Transaction Key 1 through Transaction Key 3:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	ID Elements	Advanced	20

CHAPTER 9

Formatted Data Ports

This chapter includes the following topics:

- Complete Address Ports, 156
- Country Specific Last Line Ports, 159
- Delivery Address Line Ports, 161
- Formatted Address Line Ports, 162
- Recipient Line Ports, 164

Complete Address Ports

Input and output ports that can read or write a complete postal address in the format that the local mail carrier recognizes. A Complete Address port reads or writes the address data in a single data field. An address that uses a single data field is also known as a single-line address.

You can perform single-line address verification on addresses from any country for which Informatica provides address reference data. You can configure the Address Validator transformation to validate single-line addresses in batch, interactive, and suggestion list modes.

When you submit addresses on the Complete Address port in batch mode, the Address Validator transformation returns a single address for each input address. When you submit an address on the Complete Address port in interactive or suggestion list mode, the transformation can return multiple address suggestions from the reference data for the address.

Complete Address data does not include data that enhances deliverability, such as barcode data.

Complete Address Usage

Select a Complete Address input port to read a complete postal address from a single field.

Select the Complete Address output port to write a complete postal address to a single field.

Consider the following guidelines when you use Complete Address ports:

- Select a Complete Address input port from the Multiline group when the input address contains delimiters. Select a Complete Address input port from the Single-Line group when the input address does not contain delimiters.
- When you select the Complete Address port from the Single-Line group, you can run the transformation in batch, interactive, and suggestion list modes. When you select the Complete Address port from the Multiline group, you can run the transformation in all modes.

- Single-line validation requires fast completion reference data in all validation modes. Install the fast completion reference data for the country that the address specifies in addition to any batch or interactive data that you require.
- The Complete Address output port may combine or reorder data elements and may change the case of one or more data elements.
- Do not select a Complete Address input port if you also select a Formatted Address Line input port. A Complete Address port contains the same data as the set of Formatted Address Line ports.
- Address validation can return results for a partial input address in suggestion list mode. To provide full address responses in batch or interactive mode, address validation requires a complete or almost-complete input address. For example, address validation can add a post code to an otherwise complete address in batch or interactive mode.
- When you select a Complete Address input port in suggestion list mode, you can optionally select the Country Name port. Select the Complete Address input port and the Country name input port from the same port group. Otherwise, do not select any other port when you select the Complete Address input port in suggestion list mode.

Input Port Considerations

If you select the Complete Address port from the Multiline group, address validation uses the delimiter that you select to parse the values in the input string.

If you select the Complete Address port from the Single-Line group, address validation reads the input string values in the order that the local mail carrier expects.

Single-Line Address Structure

Address validation identifies the address elements in a single-line address based on their position in the address structure. When you select the Complete Address port from the Single-Line group, you must enter the elements in the correct sequence. For optimum results, enter as many elements as possible in the input address.

The following table shows examples of the address element order from around the world:

Country	Order of Address Elements
Argentina	[Street] [House Number] [Dependent Locality] [Post Code] [Locality]
Australia	[Sub-building] [House Number] [Street] [Locality] [Province] [Post Code]
Austria	[Street] [House Number] [Sub-building] [Post Code] [Locality]
Belgium	[Street] [House Number] [Post Code] [Locality]
Brazil	[Street] [House Number] [Locality] [State Code] [Post Code]
Canada	[Sub-building] [House Number] [Street] [Delivery Service] [Locality] [Province] [Post Code]
China	[Post Code] [Province] [Locality] [Street] [House Number]
Denmark	[Street] [House Number] [Post Code] [Locality]
Finland	[Street] [House Number] [Post Code] [Locality]
France	[House Number] [Street] [Post Code] [Locality]

Country	Order of Address Elements
Germany	[Street] [House Number] [Post Code] [Locality]
Hong Kong	[Province] [Locality] [Street] [House Number] [Building 1] [Building 2] [Sub-building]
India	[House Number] [Street] [Dependent Locality] [Double Dependent Locality] [Locality] [Post Code]
Ireland	[Sub-building] [House Number] [Street] [Dependent Locality] [Locality] [Province] [Post Code]
Italy	[Street] [House Number] [Post Code] [Locality] [Province]
Japan	[Post Code] [Province] [Main Locality] [Sub-locality] [Chome] [Ban] [Go]
Luxembourg	[House Number] [Street] [Post Code] [Locality]
Macau	[Locality] [Street] [House Number] [Building]
Mexico	[Street] [House Number] [Sub-locality] [Post Code] [Locality] [Province]
Netherlands	[Street] [House Number] [Post Code] [Locality]
New Zealand	[Sub-building] [House Number] [Street] [Delivery Service] [Locality] [Post Code]
Norway	[Street] [House Number] [Post Code] [Locality]
Spain	[Street] [House Number] [Sub-building] [Post Code] [Locality]
Sweden	[Street] [House Number] [Post Code] [Locality]
Switzerland	[Street] [House Number] [Post Code] [Locality]
United Kingdom	[Sub-building] [House Number] [Street] [Main Locality] [Sub-locality] [Post Code]
United States	[Sub-building] [House Number] [Street] [Locality] [Province] [Post Code] or [House Number] [Street] [Sub-building] [Locality] [Province] [Post Code]

Port Locations

The following table provides the location and default precision of the Complete Address port:

Port Type	Port Group	Template Model	Precision
Input	Multiline	Basic	250
Input	Single-Line	Basic	250
Output	Formatted Address Line	Basic	250

Complete Address Example

The following example address contains data that the Address Validator transformation can parse to a Complete Address output port:

```
Mr. John Doe
21823 100TH Avenue South East
Suite 291
98031-2566
Kent
WA
```

The Complete Address output port contains the following delimited string:

MR. JOHN DOE, 21823 100TH AVE SE STE 291, KENT WA 98031-2566

Country Specific Last Line Ports

Input and output ports that contain the final line of locality data in a formatted address.

The national mail carrier defines the standard address format for mail items in a country. If you provide addresses that conform to the standard format, the mail carrier can offer you a discount on the cost of delivery.

A Country Specific Last Line port contains a locality name and may contain other data elements. For example, a Country Specific Last Line port contains city, state, and ZIP Code data in a United States address.

The USPS recommends the following structure for domestic residential addresses:

```
Line 1     Person/Contact Data                    JOHN DOE
Line 2     Street Number, Street, Sub-Building    123 MAIN ST NW STE 12
Line 3     Locality, State, ZIP Code              ANYTOWN NY 12345
```

Note: Domestic address data identifies a mailbox within a country. The Country Specific Last Line port does not contain country data.

Country Specific Last Line Usage

Select a Country Specific Last Line input port when the input address is formatted for postal delivery. Connect the port that contains the last or principal locality data element to the Country Specific Last Line port.

Select a Country Specific Last Line output port to create a formatted address that writes the last line of locality data to a single port.

When you select a Country Specific Last Line port to define a formatted address, you must also select the ports that contain the other lines in the address. Select the following ports with Country Specific Last Line:

- Recipient Line ports. Contain person or contact data.
- Delivery Address Line ports. Contain building, street, and sub-building data.
- Province ports. Required if province data is not part of the locality line.
- Postcode ports. Required if the mail format places post code data below the locality data.
- Country ISO3 Char port. Contains the ISO three-letter code. Required if the address contains country information.

Consider the following guidelines when you use Country Specific Last Line ports:

- There are six Country Specific Last Line ports. Use Country Specific Last Line 1 for the last line of the locality data.
- The Country Specific Last Line output port may combine or reorder data elements and may change the case of the data.

Port Locations

The following table provides the location and default precision of ports Country Specific Last Line 1 through Country Specific Last Line 3:

Port Type	Port Group	Template Model	Precision
Input	Hybrid	Basic	128
Output	Last Line Elements	Basic	128

The following table provides the location and default precision of ports Country Specific Last Line 4 through Country Specific Last Line 6:

Port Type	Port Group	Template Model	Precision
Input	Hybrid	Advanced	50
Output	Last Line Elements	Advanced	128

Country Specific Last Line Example

The following example address contains data that the Address Validator transformation can parse to a Country Specific Last Line port:

```
Mr. John Doe
21823 100th Avenue South East
Suite 291
98031-2566
Kent
Washington
```

The following table shows the Address Validator transformation ports that create the formatted address for the example:

Port	Data
Recipient Line 1	MR. JOHN DOE
Delivery Address Line 1	21823 100TH AVE SE STE 291
Country Specific Last Line 1	**KENT WA 98031-2566**

Delivery Address Line Ports

Input and output ports that contain building and street data that is formatted to mail delivery standards.

The national mail carrier defines the standard address format for mail items in a country. If you provide addresses that conform to the standard format, the mail carrier can offer you a discount on the cost of delivery. Delivery Address Line ports enable you to read and write building and street data in the format expected by the national mail carrier.

For example, the USPS recommends the following structure for domestic residential addresses:

```
Line 1        Person or contact                          JOHN DOE
Line 2        Street Number, Street, Sub-building        123 MAIN ST NW STE 12
Line 3        City, State, ZIP Code                      ANYTOWN NY 12345
```

Delivery Address Line ports contain the street number, street, and sub-building data in this address. Delivery Address Line ports can also contain building data.

Delivery Address Line Usage

Select Delivery Address Line input ports when the input address contains the building and street level data in formatted lines.

Select Delivery Address Line output ports to create a formatted address that writes building and street level data to a common set of ports.

When you select Delivery Address Line ports to define a formatted address, you must also select the ports that contain the other lines in the address. Select the following ports with Delivery Address Line ports:

- Recipient Line ports. Contain person or contact data.
- Country Specific Last Line port. Contains the address line that includes the primary locality name.
- Province ports. Required if province data is not part of the locality line.
- Postcode ports. Required if the mail format places post code data below the locality data
- Country ISO3 Char port. Contains the ISO three-letter code. Required for international addresses.

Consider the following guidelines when you use Delivery Address Line ports:

- Formatted Address Line ports can also create addresses in the structure expected by the domestic mail carrier. However, a Formatted Address Line port can contain any type of address data. Select Delivery Address Line output ports to ensure that the same ports contain all building and street level data for the addresses in the data set.
- There are six Delivery Address Line ports. The number of Delivery Address Line ports you need can differ from country to country. Select the number of Delivery Address Line ports you need for each country in the address data set.
- The Delivery Address Line output ports may combine or reorder data elements and may change the case of the data. Delivery Address Line output may also omit data elements that are not required by the mail carrier.

Port Locations

The following table provides the location and default precision of ports Delivery Address Line 1 through Delivery Address Line 6:

Port Type	Port Group	Template Model	Precision
Input	Hybrid	Basic	128
Output	Address Elements	Basic	128

Delivery Address Line Example

The following example address contains data that the Address Validator transformation can parse to Delivery Address Line ports:

```
MR JOHN SMITH
36 PECKETT SQUARE
HIGHBURY GRANGE
LONDON
N5 2PB
```

The following table shows the Address Validator transformation ports that can create a formatted address for the example:

Port	Data
Recipient Line 1	MR. JOHN SMITH
Delivery Address Line 1	**36 PECKETT SQUARE**
Delivery Address Line 2	**HIGHBURY GRANGE**
Country Specific Last Line 1	LONDON
Postcode 1	N5 2PB

Formatted Address Line Ports

Input and output ports that contain data that is formatted on multiple lines to mail delivery standards.

The national mail carrier defines the standard address format for mail items in a country. If you provide addresses that conform to the standard format, the mail carrier can offer you a discount on the cost of delivery. Formatted Address Line ports create address lines that are structured to the postal standards of the mail carrier. Formatted Address Line ports read and write the address data to multiple lines.

You can use Formatted Address Line ports with addresses of different types and from different countries. Formatted Address Line ports can contain any type of address data. For example, if the input data set contains both residential and business addresses, the Address Validator transformation parses the lines of each address according to the expected postal format. The output data creates a printable address regardless of the address structure required.

Formatted address data can include the following elements:

- Contact data
- Building and sub-building data
- Street and dependent street data
- Post Office Box data
- Locality data
- Province data
- Post code data
- Country data

Formatted Address Line ports do not include data that enhances deliverability, such as barcode data.

Formatted Address Line Usage

Select Formatted Address Line input ports when the input data is composed of address line instead of fields for specific information types.

Select Formatted Address Line output ports to write addresses that are formatted for envelope printing and mail delivery.

Consider the following guidelines when you use Formatted Address Line ports:

- The Formatted Address Line output ports may combine or reorder data elements and may change the case of the data.
- If you select Formatted Address Line input ports, do not select a Complete Address input port. A Complete Address port contains the same data as the set of Formatted Address Line ports.
- The input address data must contain the complete postal address. The Address Validator transformation cannot format an address if any data is missing.
- There are 19 Formatted Address Line input and output ports. Use ports Formatted Address Line 1 through Formatted Address Line 12.

Port Locations

The following table provides the location and default precision of ports Formatted Address Line 1 through Formatted Address Line 12:

Port Type	Port Group	Template Model	Precision
Input	Multiline	Basic	128
Output	Formatted Address Line	Basic	128

The following table provides the location and default precision of ports Formatted Address Line 13 through Formatted Address Line 19:

Port Type	Port Group	Template Model	Precision
Input	Multiline	Advanced	50
Output	Formatted Address Line	Advanced	128

Note: Formatted Address Line ports 13 through 19 are reserved for future use.

Formatted Address Line Example

The following example address contains data that the Address Validator transformation can parse to Formatted Address Line ports:

```
Mr. John Doe
1000 Fifth Avenue
# 12
New York
NY
10028-0198
```

The following table shows the address in the United States Postal Service (USPS) standard format:

Port	Data
Formatted Address Line 1	MR. JOHN DOE
Formatted Address Line 2	1000 5TH AVE # 12
Formatted Address Line 3	NEW YORK NY 10028-0198

The USPS postal standard writes a residential United States address on three address lines.

Recipient Line Ports

Input and output ports that contain the first line of data that relates to the intended recipient of the mail. Recipient Line data can form part of a formatted address.

The national mail carrier defines the standard address format for mail items in a country. If you provide addresses that conform to the standard format, the mail carrier can offer you a discount on the cost of delivery.

Recipient Line Usage

Select a Recipient Line input port to identify the person or organization to whom the mail is addressed in the input record.

Select a Recipient Line output port to add the person or organization to whom the mail is addressed to the output record.

When you select a Recipient Line port to define a formatted address, you must also select the ports that contain the other lines in the address. Select the following ports with Recipient Line:

- Delivery Address Line ports. Contain building, street, and sub-building data.
- Country Specific Last Line port. Contains the last line of domestic data in the formatted address.
- Postcode ports. Required if the mail format places the post code data below the locality data.
- Country ISO3 Char port. Contains the ISO three-letter code. Required if the address contains country information.

Consider the following guidelines when you use Recipient Line ports:

- There are six Recipient Line ports. The number of Recipient Line ports that you need depends on the number of recipients present in the input address data set.

- Formatted Address Line ports can also create addresses in the structure expected by the domestic mail carrier. Select Recipient Line output ports when you know that one or more ports contain recipient data only and you want to recognize the ports in the output data set.
- Contact data ports can contain the same data as Recipient Line ports. Select contact data ports when you want to parse different details about the mail recipient to different ports. The Recipient Line ports write all data on the recipient line to a single port.
- Recipient Line ports and contact ports can contain the same data. Use contact data ports if the address contains multiple types of recipient data and you want to write each type to a separate port. Use Recipient Line ports to write the formatted line of contact data to a single port.

Port Locations

The following table provides the location and default precision of ports Recipient Line 1 through Recipient Line 6:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Contact Elements	Advanced	50

Recipient Line Example

The following example address contains data that the Address Validator transformation can parse to a Recipient Line port:

```
MR. JOHN DOE
38A ST. JAMES'S STREET
LONDON
E17 7PE
UNITED KINGDOM
```

The following table shows the Address Validator transformation ports that create the formatted address for the example:

Port	Data
Recipient Line 1	**MR. JOHN DOE**
Delivery Address Line 1	38A ST. JAMES'S STREET
Country Specific Last Line	LONDON
Postcode 1	E17 7PE
Country ISO3 Char 1	GBR

CHAPTER 10

Postal Carrier Certification Data Ports

This chapter includes the following topics:

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Address Matching Approval System Status

Output port that indicates whether an output address record contains the types of data required by the Address Matching Approval System (AMAS) of Australia Post.

To confirm the AMAS status of an address, configure the Address Validator transformation to run in certified mode.

Address Matching Approval System Usage

Select Address Matching Approval System Status to verify that output address records contain all data required for address validation to the AMAS standard. If the addresses you submit to Australia Post meet the AMAS standard, you can qualify for mail discount.

To comply with the AMAS standard, an address must contain a Delivery Point Identifier (DPID) value. Australia Post assigns a DPID value to every mailbox listed in its Postal Address File (PAF). The Address Validator transformation can add a DPID value to a validated Australian address. Select the Delivery Point Identification port to add the DPID value to the address record.

Note: The Address Matching Approval System Status value indicates whether an address can be validated to the AMAS standard. It does not indicate the quality or deliverability of the address. However, if address validation cannot provide all AMAS elements for an address, the address is not correct to DPID level.

Port Location

The following table provides the location and default precision of the Address Matching Approval System Status port:

Port Type	Port Group	Template Model	Precision
Output	Australia Specific	Basic	4

Address Matching Approval System Status Output Codes

The following table describes the Address Matching Approval System Status output codes:

Code	Description
EAM0	The Address Validator transformation did not perform an AMAS check on the address. The address did not contain DPID data or the AMAS certification check was not activated.
EAM1	The Address Validator transformation corrected or validated the address to the AMAS standard. The address contains DPID data.
EAM2	The Address Validator transformation cannot perform an AMAS check on the address. The transformation did not return DPID data.

AMAS Error Code

Output port that indicates whether the ports in the Australia Specific port group contain data for the address.

AMAS Error Code Usage

The Australia Specific port group includes data that Australia Post can use to certify the deliverability of the address. Australia Post uses the Address Matching Approval System (AMAS) to certify address records. Use the AMAS Error Code to verify that an address record contains the data required by the AMAS standard.

When an address does not meet the standard, the error code can indicate the reason why. The code can indicate that one or more address values are not valid to the AMAS standard. In some cases, you can delete the address values and submit the updated address record for certification. standard. When

Port Location

The following table provides the location and default precision of the AMAS Error Code port:

Port Type	Port Group	Template Model	Precision
Output	Australia Specific	Advanced	2

AMAS Error Code Output Codes

The following table describes AMAS Error Code output codes:

Code	Description
E0	The address is valid to the AMAS standard. No changes are necessary.
E1	The address is not valid to the AMAS standard. To use the address record in the record set you submit for AMAS certification, delete all address data.
E2	The address is not valid to the AMAS standard. To use the address record in the record set you submit for AMAS certification, delete all street data and house number data.
E3	The address is not valid to the AMAS standard. To use the address record in the record set you submit for AMAS certification, delete all delivery service or Post Office Box data.
E4	The address is not valid to the AMAS standard. To use the address record in the record set you submit for AMAS certification, delete the street name.
E5	The address is not valid to the AMAS standard. To use the address record in the record set you submit for AMAS certification, delete the house number.
E6	The address is not valid to the AMAS standard. To use the address record in the record set you submit for AMAS certification, delete the delivery service or Post Office Box number.
EX	Address validation cannot process the address to the AMAS standard. The address format is not valid.

Barcode

Output port that contains the United States Postal Service (USPS) barcode number for an address.

The 11 digits of the barcode number contain all the information that the USPS needs to deliver a mail item to its destination mailbox. The barcode digits enable an automated mailing system to generate the barcode for a mail item.

The address record must contain a ZIP+4 Code and a Delivery Point Code (DPC) to generate the barcode data. A DPC is a two-digit number that allows the USPS to uniquely identify the destination mailbox within the area covered by the ZIP+4 Code.

Note: A printed barcode has 62 bars. The USPS uses Postal Numeric Encoding Technique (POSTNET) technology to read the 11 barcode digits and generate the bars for each address.

Barcode Usage

Select the Barcode port if you send address data to an automated mailing system for barcode printing. The USPS sorts barcoded mail using high-speed scanners. The USPS discounts the cost of mail delivery for barcoded mail items.

Correct barcode data also demonstrates that the address contains all required delivery information. This information can certify to mail carriers that an address is fully complete.

To generate Barcode output, configure the Address Validator transformation to run in certified mode.

Port Location

The following table provides the location and default precision of the Barcode port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	11

Barcode Output Codes

The following table shows the structure of the Barcode output:

Positions 1-5	Positions 6-9	Positions 10-11
Five-digit ZIP Code	Four-digit ZIP+4 extension	Delivery Point Code

CASS Error Code

Output port that indicates whether the ports in the US Specific port group contain data for the address.

Address validation does not currently generate output on the CASS Error Code port.

CASS Error Code Usage

Use the following port to verify that an address meets the Coding Accuracy Support System (CASS) standard of the United States Postal Service (USPS):

- Coding Accuracy Support System Status

Port Location

The following table provides the location and default precision of the CASS Error Code port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	2

Carrier Route

Output port that identifies the United States Postal Service (USPS) carrier route for a United States address. A carrier route can identify the area that is covered by a mail delivery person.

Carrier Route Usage

Select Carrier Route to identify the delivery route that an address belongs to. You can also use Carrier Route to identify the carrier route type, such as city, rural route, or general delivery.

Note: An address is considered "general delivery" if the addressee cannot receive mail at a physical mailbox. General delivery addressees can collect mail at a USPS post office.

Port Location

The following table provides the location and default precision of the Carrier Route port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	4

Carrier Route Output Codes

A complete postal carrier route has nine characters. The first five characters are the five-digit ZIP Code. The last four characters specify the carrier route within the ZIP Code. The Carrier Route port returns the last four characters.

The following table shows the structure of a carrier route:

Positions 1-5	Position 6	Positions 7-9
Five-digit ZIP Code	Letter	Route

The letter in position 6 identifies the route type. The following table lists the types of route that position 6 identifies:

Letter	Carrier Route Type
B	Post Office Box
C	City delivery
G	General delivery
H	Highway contract
R	Rural route

Category

Output ports that describe the result of an address validation process on an address in Canada or in France.

The Address Validator transformation contains a Category port in the Canada Specific port group and the Canada Specific port group. Select the correct port for addresses in France and in Canada.

If you submit address records to Canada Post for Software Evaluation And Recognition Program (SERP) certification, you must provide the category code for each address. If you submit address records to La Poste for National Address Management Service (SNA) certification, you must provide the category code for each address. When you select the Category port, configure the Address Validator transformation to run in Certified mode.

Category Usage

Select a Category port to review the results of address validation on address data from Canada or from France.

The Category port provides summary indicators of the success of a validation operation. Use the Category port output with the Match Code port output to evaluate the status of the addresses.

Port Location

The following table provides the location and default precision of the Category ports:

Port Type	Port Group	Template Model	Precision
Output	Canada Specific	Basic	2
Output	France Specific	Basic	3

Category Output Codes

The Category port writes a single-letter output code for a Canadian address.

The following table describes the codes:

Code	Description
V	Address validation validated the address as deliverable.
C	Address validation corrected the address with the reference data. The address might be deliverable.
N	Address validation did not validate the address as deliverable.

The Category port writes a three-letter output code for a French address.

The following table describes the codes:

Code	Description
AVE	The output address is not valid.
NOK	The output address is not valid.

Code	Description
ORI	The output address is valid. The input address and the output address are identical.
RES	The output address is valid. The input address and the output address are not identical.

Commercial Mail Receiving Agent

Output port that identifies addresses that are managed by a Commercial Mail Receiving Agent (CMRA).

A CMRA maintains Post Office Boxes (PO Boxes).

The USPS maintains a table of addresses that are deliverable to a CMRA mailbox and not to the physical location of a business or place of residence. USPS address reference data includes this table. Address validation validates an address against the CMRA reference table if the address contains a valid Delivery Point Code number.

Note: A CMRA may also be known as an Office Business Center (OBC) or a Corporate Executive Center (CEC).

Commercial Mail Receiving Agent Usage

Select Commercial Mail Receiving Agent to identify addresses that are managed by a CMRA.

CMRA data has the following uses:

- Direct marketing. You can tell if an address delivers directly to business or householder or if the address delivers to a PO Box.
- Mail sorting. Automated mailing systems can tell if an address has a street mailbox or a mailbox at a CMRA.

Port Location

The following table provides the location and default precision of the Commercial Mail Receiving Agent port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	1

Commercial Mail Receiving Agent Output Codes

The following table describes the Commercial Mail Receiving Agent output codes:

Code	Description
Y	The validated address matches an address in the CMRA table.
N	The validated address does not match an address in the CMRA table.
[Blank]	Address validation did not check the address against the CMRA table.

Coding Accuracy Support System Status

Output port that indicates whether an output address record contains the types of data required by the United States Postal Service (USPS) Coding Accuracy Support System (CASS).

A United States address may not contain all data required for CASS certification, even if the address is correct. When you validate United States addresses with the Address Validator transformation, the validation process adds data elements to the address records so that they meet the CASS standard.

To confirm the CASS status of the address data, configure the Address Validator transformation in certified mode.

Coding Accuracy Support System Status Usage

Select Coding Accuracy Support System Status to verify that output address records contain all data required for address validation to the CASS standard. If the addresses you submit to the USPS meet the CASS standard, you can qualify for mail discount.

Note: The Coding Accuracy Support System Status value indicates whether an address can be validated to the CASS standard. It does not indicate the quality or deliverability of the address. However, if address validation cannot provide all CASS elements for an address, the address is not correct to ZIP+4 Code level.

Port Location

The following table provides the location and default precision of the Coding Accuracy Support System Status port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	4

Coding Accuracy Support System Status Output Codes

The following table describes the Coding Accuracy Support System Status output codes:

Code	Description
ECA0	The address does not contain enough data for CASS certification. Coding Accuracy Support System Status also returns ECA0 if you do not configure the Address Validator transformation in certified mode.
ECA1	The address contains some of the data necessary for CASS certification. Address validation cannot provide additional CASS data because some CASS database files are missing.
ECA2 - ECA4	Reserved for future use.
ECA5	The address contains all relevant CASS data.

Congressional District

Output port that identifies the congressional district that an address belongs to.

Each congressional district contains approximately 600,000 people. Address validation uses the ZIP+4 Code to generate the congressional district number for an address.

Congressional District Usage

Select Congressional District to add the congressional district number to an address record.

Use congressional district numbers to understand the geographical distribution of a large record set. Some five-digit ZIP Codes lie within congressional districts, while some cross district boundaries. All ZIP+4 Codes lie within congressional districts.

Direct mail and government agencies can use congressional district numbers to verify that mail items reach addressees in particular districts.

Port Location

The following table provides the location and default precision of the Congressional District port:

Port Type	Port Group	Template Model	Precision
US Specific	Output	Basic	3

Congressional District Output Codes

The congressional district number is a two-digit number that identifies a congressional district within a state. You can view a list of congressional districts on the following site:

http://www.house.gov/representatives/

Default Flag

Output port that indicates if a United States address matches a high-rise default or rural route default address in the reference data.

Default Flag Usage

Select Default Flag to determine if the address record matches one of the following address types in the reference data:

- High-rise default
- Rural route default

Port Location

The following table provides the location and default precision of the Default Flag port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	1

Default Flag Output Codes

The following table describes the Default Flag output codes:

Code	Description
Y	The address matches a high-rise default or rural route default address.
[Blank]	The address does not match a high-rise default or rural route default address.

Related Topics:

- "High Rise Default " on page 197
- "Rural Route Default " on page 227

Delivery Point Check Digit

Output port that validates the ZIP+4 Code and Delivery Point Code (DPC) information in a United States address.

A check digit is single digit that is calculated using other digits in the same string. Address validation generates a delivery point check digit for all addresses with valid ZIP+4 Code and DPC information. When you add the digits in a ZIP+4 Code and DPC to the correct check digit, the sum is evenly divisible by ten. An automated mail system can use the delivery point check digit to verify that the ZIP+4 Code and DPC identify a valid United States address.

A delivery point is a unique mailbox recognized by the postal system. The United States Postal Service (USPS) assigns a two-digit DPC to every mailbox in a ZIP+4 Code area.

Note: The USPS uses the combined digits of the ZIP+4 Code and the DPC to form barcode numbers.

Delivery Point Check Digit Usage

Select Delivery Point Check Digit to enable an automated mail system to validate the ZIP+4, DPC, and barcode information in an address.

Port Location

The following table provides the location and default precision of the Delivery Point Check Digit port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	1

Delivery Point Check Digit Output Codes

The following table shows a sample ZIP+4 Code, delivery point code, and check digit:

ZIP+4 Code	Delivery Point Code	Check Digit
12345-6789	01	4

The following calculation verifies that the ZIP+4 code and delivery point information identify a valid address:

```
ZIP+4 Code = 123456789
Delivery Point Code = 01
Sum of digits 1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 0 + 1 = 46
Add check digit +4
Equals 50
Divide 50 by 10 = 5 with no remainder
```

Delivery Point Code

Output port that identifies a mailbox in an area covered by a ZIP+4 Code.

The USPS assigns a two-digit Delivery Point Code (DPC) to every mailbox in a ZIP+4 Code area. The DPC is a pair of digits between 00 and 99.

Delivery Point Code Usage

Select Delivery Point Code to add the DPC to the output address record. The DPC and the ZIP+4 Code uniquely identify the address.

Address validation can generate a USPS barcode from the combined ZIP+4 Code and DPC information.

Port Location

The following table provides the location and default precision of the Delivery Point Code port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	2

Delivery Point Identification

Output port that contains the Delivery Point Identifier (DPID) value for an Australian or New Zealand address. An address record must include a DPID to meet the Address Matching Approval System (AMAS) or SendRight standard.

The DPID is an 8-digit number that identifies a mailbox in the Postal Address Files (PAF) of Australia Post and New Zealand Post. The DPID contains all the information that Australia Post and New Zealand Post need to deliver a mail item. The postal services can use the eight digits to generate barcodes for mail items.

Note: Multiple address records can share a DPID. For example, a DPID can identify a building that contains more than one mailbox.

Delivery Point Identification Usage

To add DPID data to an Australian or New Zealand address, select the Delivery Point Identification port.

Consider the following factors when you select the Delivery Point Identification port:

- When you generate address records for AMAS or SendRight certification, select the Delivery Point Identification port.

- When you select the Delivery Point Identification port for Australian addresses, select the Address Matching Approval System Status port also. Address Matching Approval System Status indicates if the address record data meets the AMAS standard.
- When you select the Delivery Point Identification port for New Zealand addresses, select the SendRight Status port. The SendRight Status port indicates if the address record data meets the SendRight standard.
- To view Delivery Point Identification data, configure the Address Validator transformation to run in certified mode.

Port Location

The following table provides the location and default precision of the Delivery Point Identification port:

Port Type	Port Group	Template Model	Precision
Output	Australia Specific	Basic	8
Output	New Zealand Specific	Basic	7

Delivery Point Identification Output Codes

In a New Zealand address, the DPID is a 7-digit number in the range from 1 through 9,999,999.

In an Australian address, the DPID is an 8-digit number in the range from 30,000,000 through 99,999,999.

Delivery Point Validation Confirmation

Output port that confirms the validity of the Delivery Point Code (DPC) value for a United States address.

Delivery Point Validation (DPV) is a form of address validation designed by the USPS to ensure that an address can receive mail. USPS address reference data set includes DPV data.

A delivery point is a unique mailbox recognized by the postal system. The USPS assigns a two-digit DPC to every mailbox in a ZIP+4 Code area. If an address has a valid DPC for its ZIP+4 Code, then the USPS can confirm that the address identifies a deliverable mailbox.

Note: A ZIP+4 Code defines a range of addresses, such as from 1 Main Street through 99 Main Street. However, the presence of a valid ZIP+4 Code in an address does not confirm that a mailbox exists for the address. The address "99 Main Street" may have a deliverable mailbox, but the address "98 Main Street" may not. DPV reference data identifies physical mailboxes in the ZIP+4 Code area.

An address with a valid ZIP+4 Code but without a valid DPC may identify a building that is unused, a building that does not exist, or a vacant lot.

Delivery Point Validation Confirmation Usage

Select Delivery Point Validation Confirmation to confirm that an address has a valid DPC and is therefore a deliverable to a mailbox. The USPS considers an address without a confirmed DPC to be undeliverable.

Note: You can get additional information about the deliverable status of non-DPC addresses by selecting the Record Type output port.

Port Location

The following table provides the location and default precision of the Delivery Point Validation Confirmation port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	1

Delivery Point Validation Confirmation Output Codes

The following table describes the Delivery Point Validation Confirmation output codes:

Code	Description
Y	Confirms the DPC value for the address. The address is confirmed deliverable.
D	Partial confirmation of the DPC value. Some address information is missing.
S	Partial confirmation of the delivery point values. Some address information cannot be confirmed.
N	The DPC value is not valid for the address.
[Blank]	The address did not contain a DPC value and was not presented for DPV confirmation.

Delivery Point Validation Door Not Available

Output port that identifies an address that does not provide a physical entry point for the mail carrier. A mail carrier might be unable to deliver a large item to the address.

The United States Postal Service maintains a list of addresses for which a mailbox is accessible but for which a physical entrance is inaccessible. For example, a residence might locate a mailbox outside a locked gate or on a rural route. The address reference data includes the list of inaccessible addresses that the USPS recognizes. Address validation can return the accessible status of an address when you verify the address in certified mode.

Delivery Point Validation Door Not Available Usage

Select the Delivery Point Validation Door Not Available port to identify an address with an entrance that the mail carrier cannot reach.

Port Location

The following table provides the location and default precision of the Delivery Point Validation Door Not Available port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	1

Delivery Point Validation Door Not Available Output Codes

Address Verification can update the Delivery Point Validation Door Not Available port when the address returns Y, S, or D on the Delivery Point Validation Confirmation port.

The following table describes the Delivery Point Validation Door Not Available output codes:

Code	Description
Y	The address does not provide a door or entry point that the mail carrier can reach.
N	The mail carrier can find a door or entry point at which to deliver mail.
[Blank]	Address validation did not verify the accessibility of the mailbox. The address did not return a valid value on the Delivery Point Validation Confirmation port. Or, you did not validate the address in certified mode.

Related Topics:

- "Delivery Point Validation No Secure Location" on page 185
- "Delivery Point Validation Confirmation " on page 178

Delivery Point Validation False Positive

Output port that indicates whether the address validation detected a falsified address.

Delivery Point Validation (DPV) is the USPS system of ensuring that the delivery point identified by an address can receive mail. The USPS address reference data contains DPV data.

The USPS adds false addresses to the DPV reference data to detect mailers who attempt to generate mailing lists from the reference data. The USPS encrypts its reference data. If an address record set contains a false positive address, the mailer has used decryption software to read the reference data and create a mailing list.

Delivery Point Validation False Positive Usage

Use Delivery Point Validation False Positive to verify that the address validation process conforms to USPS rules concerning mailing lists.

Port Location

The following table provides the location and default precision of the Delivery Point Validation False Positive port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	1

Delivery Point Validation False Positive Output Codes

The following table describes the Delivery Point Validation False Positive output codes:

Code	Description
Y	The address appears in the false positive table in the DPV reference data.
N	The address does not appear in the false positive table in the DPV reference data.
[Blank]	The address was not passed to the false positive table in the DPV reference data.

Delivery Point Validation Footnote 1

Output port that indicates if the address validation process can match the input address with an address in the USPS Delivery Point Validation (DPV) reference data set.

The DPV reference data set verifies that a physical mailbox exists for an address. The types of mailbox include houses, apartments, offices, rural mailboxes, and commercial mail receiving agencies.

DPV processing requires a valid ZIP+4 Code.

Delivery Point Validation Footnote 1 Usage

Select Delivery Point Validation Footnote 1 to verify that the input address contains enough data to pass delivery point validation. Delivery Point Validation Footnote 1 is a two-character code.

The USPS groups DPV footnote information in a single string. To generate a complete DPV result string, select the following ports:

- Delivery Point Validation Confirmation
- Delivery Point Validation Footnote 1
- Delivery Point Validation Footnote 2
- Delivery Point Validation Footnote 3

Port Location

The following table provides the location and default precision of the Delivery Point Validation Footnote 1 port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	2

Delivery Point Validation Footnote 1 Output Codes

The following table describes the output codes for Delivery Point Validation Footnote 1:

Code	Description
AA	The address matches the USPS ZIP + 4 Code data.
A1	The address does not match the USPS ZIP + 4 Code data.

Delivery Point Validation Footnote 2

Output port that describes the result of the Delivery Point Validation (DPV) check performed on an address.

Delivery Point Validation Footnote 2 Usage

Select Delivery Point Validation Footnote 2 to view a coded description of the DPV status of the address. Delivery Point Validation Footnote 2 is a two-letter code.

Note: The USPS groups DPV footnote information in a single string. To generate a complete DPV result string, select the following ports:

- Delivery Point Validation Confirmation
- Delivery Point Validation Footnote 1
- Delivery Point Validation Footnote 2
- Delivery Point Validation Footnote 3

Port Location

The following table provides the location and default precision of the Delivery Point Validation Footnote 2 port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	2

Delivery Point Validation Footnote 2 Output Codes

The following table describes the output codes for Delivery Point Validation Footnote 1:

Code	Description
BB	The input address matches an address in the USPS DPV data set in all respects.
CC	The primary number in the input address matches an address in the USPS DPV data set, but the secondary number does not match.
N1	The primary number in the input address matches an address in the USPS DPV data set, but the secondary number is missing.

Code	Description
M1	The primary number in the input address is absent.
M3	The primary number in the input address is not valid.
P1	The rural route or highway contract number in the input address is absent.
P3	The post office, rural route, or highway contract number in the input address is absent.
F1	The input address matches a military address.
G1	The input address matches a general delivery address. An address is considered "general delivery" if the addressee cannot receive mail at a physical mailbox. General delivery addressees can collect mail at a USPS post office.
U1	The input address matches a unique ZIP Code.

Delivery Point Validation Footnote 3

Output port that indicates if the Delivery Point Validation (DPV) check identified the address as a Commercial Mail Receiving Agent (CMRA).

Delivery Point Validation Footnote 3 can also indicate if DPV processing changed the Private Mailbox (PMB) indicator in a CMRA address. For example, the CMRA address may identify the mailbox number with the number symbol (#). DPV processing may change the number symbol if it finds more accurate information in the USPS DPV reference data set.

Delivery Point Validation Footnote 3 Usage

Select Delivery Point Validation Footnote 3 to determine if an address belongs to a CMRA and to verify if DPV processing altered the PMB information. Delivery Point Validation Footnote 3 is a two-character code.

Note: The USPS groups DPV footnote information in a single string. To generate a complete DPV result string, select the following ports:

- Delivery Point Validation Confirmation
- Delivery Point Validation Footnote 1
- Delivery Point Validation Footnote 2
- Delivery Point Validation Footnote 3

Port Location

The following table provides the location and default precision of the Delivery Point Validation Footnote 3 port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	2

Delivery Point Validation Footnote 3 Output Codes

The following table describes the output codes for Delivery Point Validation Footnote 3:

Code	Description
RR	The input address is a CMRA, and the PMB indicator matches the reference data.
R1	The input address is a CMRA, and DPV processing changed the PMB indicator.
No data	The input address does not identify a CMRA.

Delivery Point Validation Footnote Complete

Output port that writes data from other Delivery Point Validation Footnote ports as a single string.

Delivery Point Validation Footnote Complete Usage

Select Delivery Point Validation Footnote Complete to write output data from the following ports as a single string:

- Delivery Point Validation Footnote 1
- Delivery Point Validation Footnote 2
- Delivery Point Validation Footnote 3

Port Location

The following table provides the location and default precision of the Delivery Point Validation Footnote Complete port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	6

Delivery Point Validation Footnote Complete Output Codes

The Delivery Point Validation Footnote Complete output code is a six-character string that comprises the aggregate output from Delivery Point Validation Footnote ports 1 through 3.

The following table describes the output code "AAUIRR."

Code	Port Name	Description
AA	Delivery Point Validation Footnote 1	The address matches the USPS ZIP + 4 Code data.
UI	Delivery Point Validation Footnote 2	The input address matches a unique ZIP Code.
RR	Delivery Point Validation Footnote 3	The input address is a Commercial Mail Receiving Agent, and the Private Mailbox indicator matches the reference data.

Delivery Point Validation No Secure Location

Output port that identifies an address that does not provide a secure mailbox or reception point for mail.

The United States Postal Service maintains a list of addresses at which the mailbox is not secure. For example, a retail store is not a secure location if the mail carrier can enter the store but cannot find a mailbox or an employee to receive the mail. The address reference data includes the list of non-secure addresses that the USPS recognizes. Address validation can return the non-secure status of an address when you verify the address in certified mode.

Delivery Point Validation No Secure Location Usage

Select Delivery Point Validation No Secure Location to identify an address that does not have a secure mailbox or reception point for mail.

Port Location

The following table provides the location and default precision of the Delivery Point Validation No Secure Location port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	1

Delivery Point Validation No Secure Location Output Codes

Address Verification can update the Delivery Point Validation No Secure Location port when the address returns Y, S, or D on the Delivery Point Validation Confirmation port.

The following table describes the Delivery Point Validation No Secure Location output codes:

Code	Description
Y	The address does not provide a secure mailbox or reception point for mail.
N	The mail carrier can find a secure mailbox or reception point.
[Blank]	Address validation did not verify the accessibility of the mailbox. The address did not return a valid value on the Delivery Point Validation Confirmation port. Or, you did not validate the address in certified mode.

Related Topics:

- "Delivery Point Validation Door Not Available" on page 179
- "Delivery Point Validation Confirmation " on page 178

Delivery Point Validation Throwback

Output port that identifies a street address for which the USPS redirects mail to a Post Office Box. Select the port when you configure the transformation to run in certified mode.

Delivery Point Validation Throwback Usage

Select the Delivery Point Validation Throwback port to identify a street address for which the USPS delivers mail to a Post Office Box. The mail recipient at the street address identifies the Post Office Box to the USPS.

Port Location

The following table provides the location and default precision of the Delivery Point Validation Throwback port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	1

Delivery Point Validation Throwback Output Codes

The following table describes the Delivery Point Validation Throwback output codes:

Code	Description
Y	The address is present in the DPV Throwback table in the reference data.
N	The address is not present in the DPV Throwback table in the reference data.
[Blank]	The address was not passed to the DPV Throwback table in the reference data.

Delivery Service Locality

Output port that identifies the mail town associated with a delivery service address. Use the Delivery Service Locality port with New Zealand address data.

When you create a New Zealand address that identifies a delivery service mailbox, you must include locality or mail town data. New Zealand Post does not recognize province, region, district, or territory elements in a delivery service elements.

To view Delivery Service Locality data, configure the Address Validator transformation to run in certified mode.

Delivery Service Locality Usage

To add the locality or mail town to a New Zealand address, select the Delivery Service Locality port.

Port Location

The following table provides the location and default precision of the Delivery Service Locality port:

Port Type	Port Group	Template Model	Precision
Output	New Zealand Specific	Basic	35

Delivery Service Locality Example

The following address contains data that the Address Validator transformation can parse to a Delivery Service Locality port:

```
JOHN SMITH
PO BOX 17999
GREENLANE
AUCKLAND 1546
```

The following table shows the Address Validator transformation ports that can create a formatted address for the example:

Port	Data
Recipient Line 1	JOHN SMITH
Delivery Service Type	PO BOX
Delivery Service Number	17999
Building Name 1	GREENLANE
Delivery Service Locality	**AUCKLAND**
Postcode 1	1546

Note: The building name identifies the mail center that stores the Post Office Box mail.

Delivery Service Number

Output port that contains the delivery service number in a New Zealand address.

The delivery service number identifies the mailbox that receives mail items for the address. The mailbox might be one of several delivery service mailboxes at the same location. For example, a postal center stores several Post Office Box (PO Box) mailboxes.

Use Delivery Service ports to define an address in the format preferred by New Zealand Post. When you create an address that identifies a delivery service mailbox, you must include locality or mail town data. New Zealand Post does not recognize province, region, district, or territory elements in a delivery service elements. Use the Delivery Service Type, Delivery Service Number, and Delivery Service Locality ports to create the address in the correct format.

To view Delivery Service Number data, configure the Address Validator transformation to run in certified mode.

Delivery Service Number Usage

To write the number of the delivery service mailbox to a separate port, Select Delivery Service Number.

Port Location

The following table provides the location and default precision of the Delivery Service Number port:

Port Type	Port Group	Template Model	Precision
Output	New Zealand Specific	Basic	7

Delivery Service Number Example

The following address contains data that the Address Validator transformation can parse to a Delivery Service Number port:

```
JOHN SMITH
PRIVATE BAG 93899
NORTH SHORE CITY 0753
```

The following table shows the Address Validator transformation ports that can create a formatted address for the example:

Port	Data
Recipient Line 1	JOHN SMITH
Delivery Service Type	PRIVATE BAG
Delivery Service Number	**93899**
Delivery Service Locality	NORTH SHORE CITY
Postcode 1	1546

Delivery Service Type

Output port that describes the type of mailbox in an address record that does not identify a street or rural address. Use the Delivery Service Type port with New Zealand address data.

The types of delivery service mailbox include Post Office Box (PO Box), Community Mail Box (CMB), and private bag. To view Delivery Service Type data, configure the Address Validator transformation to run in certified mode.

Delivery Service Type Usage

To identify the type of delivery service mailbox in a New Zealand address, select the Delivery Service Type port.

Port Location

The following table provides the location and default precision of the Delivery Service Type port:

Port Type	Port Group	Template Model	Precision
Output	New Zealand Specific	Basic	15

Delivery Service Type Output Codes

The following table describes the Delivery Service Type output codes:

Code	Description
Bag	Private bag. A private bag stores mail in the same way as a PO Box but can hold a larger number of mail items.
Box	PO Box.
CMB	Community Mail Box. A community mail box is a type of PO Box available at rural postal centers.
Counter	Counter delivery. In counter delivery, customers collect mail over the counter at a postal center. Poste restante is a form of counter delivery.

Delivery Sequence File Second Generation No Statistics Indicator

Output port that indicates whether the USPS does not recognize the address as valid for mail delivery.

The USPS maintains a Delivery Sequence File that lists all United States addresses with a valid delivery point code. Address validation validates an address against the Delivery Sequence File if the address contains a valid Delivery Point Code.

The USPS also maintains a table of addresses that are formally correct but that do not qualify for inclusion in the Delivery Sequence File. The table is called the No-Statistics table. The USPS does not deliver mail to any address on the table. Because the address does not qualify for a carrier route, the USPS does not collect statistics about the address. The Delivery Sequence File Second Generation No Statistics Indicator port returns a status value that indicates whether an address is present on the table.

The USPS might add an address to the No-Statistics table for one of the following reasons:

- The USPS has not yet established delivery to the address.
- The customer receives mail as a part of mail forwarding service.
- The postal carrier returns the mail undelivered.

Note: The Delivery Sequence File also omits general delivery addresses. An address is considered "general delivery" if the addressee cannot receive mail at a physical mailbox. General delivery addressees can collect mail at a USPS post office.

Delivery Sequence File Second Generation No Statistics Indicator Usage

Select the Delivery Sequence File Second Generation No Statistics Indicator port to verify that an address is present or absent from the No Statistics table.

Use the Delivery Sequence File Second Generation No Statistics Reason port to identify the reason why the address is present on the table.

Port Location

The following table provides the location and default precision of the Delivery Sequence File Second Generation No Statistics Indicator port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	1

Delivery Sequence File Second Generation No Statistics Indicator Output Codes

The following table describes the Delivery Sequence File Second Generation No Statistics Indicator output codes:

Code	Description
Y	The address is present on the DSF No-Statistics table.
N	The address is not present on the DSF No-Statistics table.
[Blank]	The address was not passed to the DSF reference data.

Delivery Sequence File Second Generation No Statistics Reason

Output port that identifies the reason why the USPS adds an address to the No-Statistics table.

The USPS maintains a Delivery Sequence File that lists all United States addresses with a valid delivery point code. Address validation validates an address against the Delivery Sequence File if the address contains a valid Delivery Point Code.

The USPS also maintains a table of addresses that are formally correct but that do not qualify for inclusion in the Delivery Sequence File. The table is called the No-Statistics table. The USPS does not deliver mail to any address on the table. Because the address does not qualify for a carrier route, the USPS does not collect statistics about the address. The Delivery Sequence File Second Generation No Statistics Indicator port returns a status value that indicates whether an address is present on the table.

The USPS might add an address to the No-Statistics table for one of the following reasons:

- The USPS has not yet established delivery to the address.
- The customer receives mail as a part of mail forwarding service.
- The postal carrier returns the mail undelivered.

Note: The Delivery Sequence File also omits general delivery addresses. An address is considered "general delivery" if the addressee cannot receive mail at a physical mailbox. General delivery addressees can collect mail at a USPS post office.

Delivery Sequence File Second Generation No Statistics Reason Usage

Select the Delivery Sequence File Second Generation No Statistics Reason port to return a code that indicates why the USPS adds the address to the No-Statistics table.

Port Location

The following table provides the location and default precision of the Delivery Sequence File Second Generation No Statistics Reason port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	2

Delivery Sequence File Second Generation No Statistics Reason Output Codes

The following table describes the Delivery Sequence File Second Generation No Statistics Reason output codes:

Code	Description
01	Internal drop address. The input address does not receive mail directly from the USPS. Instead, the USPS delivers to a drop-off address that serves the input address.
02	The address is a new construction, and the USPS has not yet established delivery to the address. Or, the address lies on a rural route, contract delivery service route, or highway contract route, and the delivery point is unoccupied for more than 90 days.
03	The address does not have a valid delivery point.
04	The address is located at a college, military zone, or similar site.
05	The USPS declares that the address is no longer deliverable. The address might reside on an R777 route, or it might identify a Post Office Box that is not available to rent.

Delivery Sequence File Second Generation Vacant Indicator

Output port that indicates whether an address is inactive. The USPS may consider an address inactive if it is unoccupied for 90 days.

The USPS maintains a Delivery Sequence File that lists all United States addresses with a valid delivery point code. Address validation validates an address against the Delivery Sequence File if the address contains a valid Delivery Point Code.

The USPS also maintains a table of addresses that are formally correct but that do not qualify for inclusion in the Delivery Sequence File. The table is called the No-Statistics table. The USPS does not deliver mail to any address on the table. Because the address does not qualify for a carrier route, the USPS does not collect statistics about the address. The Delivery Sequence File Second Generation No Statistics Indicator port returns a status value that indicates whether an address is present on the table.

The USPS might add an address to the No-Statistics table for one of the following reasons:

- The USPS has not yet established delivery to the address.
- The customer receives mail as a part of mail forwarding service.
- The postal carrier returns the mail undelivered.

Note: The Delivery Sequence File also omits general delivery addresses. An address is considered "general delivery" if the addressee cannot receive mail at a physical mailbox. General delivery addressees can collect mail at a USPS post office.

Delivery Sequence File Second Generation Vacant Indicator Usage

Select Delivery Sequence File Second Generation Vacant Indicator to identify addresses that the USPS considers undeliverable because the DSF2 file indicates that the address is unoccupied.

Port Location

The following table provides the location and default precision of the Delivery Sequence File Second Generation Vacant Indicator port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	1

Delivery Sequence File Second Generation Vacant Indicator Output Codes

The following table describes the Delivery Sequence File Second Generation Vacant Indicator output codes:

Code	Description
Y	The USPS considers this address vacant.
N	The USPS does not consider this address vacant.
[Blank]	The address was not passed to the DSF reference data file.

DPV PBSA Indicator

Output port that indicates whether a post office box address in the United States includes street information. If you create an address list for CASS certification, you must identify any post office box street address (PBSA) in the list.

DPV PBSA Indicator Usage

To determine whether an address in the United States is a PBSA address, select the DPV PBSA Indicator port.

Note: By default, the USPS uses the descriptor "UNIT" as the postal phrase descriptor in a PBSA. If the input address uses another descriptor or does not use a descriptor, address validation returns UNIT as the descriptor. If the input address uses the pound sign (#) as a descriptor, address validation keeps the pound sign as the descriptor.

The following table shows PBSA addresses with different postal phrase descriptors:

Input Address	Output Address
555 S THIRD ST UNIT 1 MEMPHIS TN 38103-0387	555 S THIRD ST UNIT 1 MEMPHIS TN 38103-0387
555 S THIRD ST Ste 1 MEMPHIS TN 38103-0387	555 S THIRD ST UNIT 1 MEMPHIS TN 38103-0387
555 S THIRD ST # 1 MEMPHIS TN 38103-0387	555 S THIRD ST # 1 MEMPHIS TN 38103-0387

Port Location

The following table provides the location and default precision of the DPV PBSA Indicator port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	1

DPV PBSA Output Codes

The DPV PBSA Indicator port returns the single character Y when an address is a PBSA address.

DPV ZIP Code Validation

Output port that verifies that the CASS certification standards of the United States Postal Service recognize a ZIP+4 Code for the address.

Sometimes, the United States Postal Service determines that a valid address is undeliverable. For example, the USPS might learn that no-one receives mail at the address. Although the address information is formally correct, the CASS certification standards do not recognize a ZIP+4 Code for the address. You cannot include the address in an address set that you submit for CASS-certified delivery.

When you submit a CASS-certified address set to the USPS, you complete USPS Form 3553. The form describes the address list and includes the total number of records that you submit. If an address identifies a delivery point but does not contain a valid ZIP+4 Code, you cannot include the address in the total number of addresses.

DPV ZIP Code Validation Usage

To determine whether you can include an address in the total number of records that you enter on Form 3553, select the DPV ZIP Code Validation port. If an address is valid to the CASS standard, the port returns the value Y.

For example, you might use a formula to calculate the total number of records in an address set that you submit to the USPS. You can define the formula to count the number of addresses that return Y on the DPV ZIP Code Validation port. If the port value is not Y, do not include the address in the CASS address list.

Port Location

The following table provides the location and default precision of the DPV ZIP Code Validation port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	1

DPV ZIP Code Validation Output Codes

The following table describes the DPV ZIP Code Validation output codes:

Code	Description
Y	You can include the address in the CASS address list and in the total number of records that you enter on Form 3553.
N	You cannot include the address in the CASS address list. Do not include the address in the total number of records that you enter on Form 3553.

Early Warning System Return Code

Output port that indicates whether an address contains a street name that is part of a new development that the address reference data does not yet recognize.

The United States Postal Service (USPS) Early Warning System (EWS) is a list of streets that are not yet included in the reference data to ZIP+4 Code level. The list is incorporated in United States address reference data to ensure that address validation does not dismiss newly completed streets or code them inaccurately.

Early Warning System Return Code Usage

Select Early Warning System Return Code if you are concerned that an input address refers to a new street that the primary United States address reference data does not recognize. If address validation does not validate an address to ZIP+4 Code level, you can check the Early Warning System Return Code value and determine whether the address may be too new for complete validation.

Port Location

The following table provides the location and default precision of the Early Warning System Return Code port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	1

Early Warning System Return Code Output Codes

The following table describes the Early Warning System Return Code output codes:

Code	Description
Y	The address appears in the USPS EWS list.
N	The address does not appear in the USPS EWS list.
[Blank]	The address was not passed to the USPS EWS list.

ELOT Flag

Output port that indicates the order in which the mail delivery agent reads ELOT Sequence numbers.

ELOT sequence numbers run in ascending or descending order. The order depends on the direction in which the delivery agent travels on the mail route. For example, a delivery agent can travel east or west from a mail center. The first item in the mail bag when the agent travels east become the final item in the mail bag when the agent travels west.

ELOT Flag Usage

Use the ELOT Flag data to prepare mail items for delivery after you add ELOT Sequence data to the mail items. If the ELOT Flag data indicates that mail items are sequenced in ascending order, the agent who delivers the mail starts with lowest-numbered mail item in the mail bag.

Port Location

The following table provides the location and default precision of the ELOT Flag port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	1

ELOT Flag Output Codes

The following table describes ELOT Flag output codes:

Code	Description
A	The ELOT Sequence numbers run in ascending order.
D	The ELOT Sequence numbers run in descending order.

ELOT Sequence

Output port that indicates the location of the mail item in the delivery sequence on the mail route.

The ELOT sequence indicates the order in which the mail carrier can deliver the items. The sequence corresponds to the physical route that the carrier takes at street level. Mail carriers in the United States use Enhanced Line of Travel (ELOT) data to organize mail items for delivery,

The ELOT Sequence port returns a four-digit number. When you add ELOT sequence numbers to a set of mail items, the mail carrier can sort the mail items in numerical order. The code numbers indicate the order in which the carrier will reach each address on the route.

ELOT Sequence Usage

Use ELOT Sequence to sort mail items in the order in which the mail carrier will deliver them on the mail route.

Select the ELOT Flag port when you select the ELOT Sequence port. The ELOT Flag determines whether the ELOT Sequence numbers run in ascending or descending order.

Port Location

The following table provides the location and default precision of the ELOT Sequence port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	4

ELOT Sequence Output Codes

The ELOT Sequence port writes a four-digit number as output.

An address does not have static ELOT Sequence number. The number depends on the list of addresses that the mail carrier must deliver on a given day.

Exclude Flag

Output port that indicates if an address meets the accuracy standards of the Point of Call address accuracy program of Canada Post.

Canada Post uses the Point of Call address accuracy program to certify that an address accurately identifies a physical mailbox. Address validation software programs can use Point of Call address reference data to identify addresses that Canada Post recognizes as deliverable to Point of Call standards.

The Point of Call address reference data does not cover all Canadian addresses. The Exclude Flag status of an address does not indicate the SERP certification status.

Exclude Flag Usage

Select Exclude Flag to determine if an address is present in the Point of Call address accuracy reference data. You provide the total number of excluded addresses on the Statement of Accuracy report you provide to Canada Post.

Port Location

The following table provides the location and default precision of the Exclude Flag port:

Port Type	Port Group	Template Model	Precision
Output	Canada Specific	Basic	8

Exclude Flag Output Codes

The following table describes the Exclude Flag output codes:

Code	Description
EXCLUDED	The address is not present in the reference data that is used by the Point of Call address reference data.
[Blank]	The address is present in the reference data that is used by the Point of Call address reference data.

High Rise Default

Output port that indicates whether an address matches a high-rise record in the address reference data and does not contain a unit identifier.

A high-rise address is located in a high-rise building, such as an apartment building. The United States Postal Service (USPS) maintains tables of high-rise addresses that do not contain a unit identifier. The USPS assigns a default unit value to these addresses.

High Rise Default provides the same information as the Suite Link Return Code port.

High Rise Default Usage

Select High Rise Default when you need to know if an address has all the data needed for delivery in a high-rise building. An address without a unit number may still be deliverable, particularly if it has a ZIP+4 Code.

Review the output address records and calculate the number of High Rise Default or Rural Route Default addresses they contain. A high number of High Rise Default or Rural Route Default addresses increases mail delivery costs and slows down mail delivery.

Note: The High Rise Exact output port identifies high-rise addresses that contain unit identifiers.

Port Location

The following table provides the location and default precision of the High Rise Default port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	1

High Rise Default Output Codes

The following table describes the High Rise Default output codes:

Code	Description
Y	The address is present in the USPS High-Rise Default table.
N	The address is not present in the USPS High-Rise Default table.

Related Topics:

- "Default Flag" on page 175
- "Rural Route Default " on page 227

High Rise Exact

Output port that indicates whether an address matches a high-rise record in the address reference data and also contains a unit identifier.

A high-rise address is located in a high-rise building, such as an apartment building. The USPS maintains tables of high-rise addresses that contain a unit identifier.

High Rise Exact Usage

Select High Rise Exact to identify an address that has all the data needed for delivery in a high-rise building. An address without a unit number may still be deliverable, particularly if it has a ZIP+4 Code.

Note: The High Rise Default output port identifies high-rise addresses that do not contain unit identifiers.

Port Location

The following table provides the location and default precision of the High Rise Exact port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	1

High Rise Exact Output Codes

The following table describes the High Rise Exact output codes:

Code	Description
Y	The address is present in the USPS High-Rise Exact table.
N	The address is not present in the USPS High-Rise Exact table.

Hygiene

Output port that indicates if the SendRight standards permit data cleansing operations on the address record.

Hygiene Usage

To identify addresses that you can cleanse without risk to SendRight certification, select the Hygiene port.

Note: Address validation returns no data to the Hygiene port. The SendRight standards defined by New Zealand Post state that you cannot modify an address record that you submit for SendRight certification.

Port Location

The following table provides the location and default precision of the port:

Port Type	Port Group	Template Model	Precision
Output	New Zealand Specific	Basic	1

Hygiene Output Codes

The Hygiene port does not return data. You cannot perform data cleansing operations on a certified address.

Locatable Address Conversion System

Output port that indicates whether a United States address has been converted from a rural address format to an urban format. The United States Postal Service (USPS) converts rural addresses so that emergency services can find the addresses more easily.

The Address Validator transformation compares the address with the Locatable Address Conversion Service (LACS) reference data. LACS data is part of the United States reference data set. If an address is in the LACS database table, the USPS has created a new version of the address in the urban format.

An urban United States address has the following format:

```
Person or organization data
Building, sub-building, and street data
City, state, and ZIP Code data
```

Locatable Address Conversion System Usage

Select Locatable Address Conversion System to identify a rural address for which the USPS has created an urban version.

If you select the Locatable Address Conversion System port, select the Locatable Address Conversion System Link Return Code port.

Port Location

The following table provides the location and default precision of the Locatable Address Conversion System port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	1

Locatable Address Conversion System Output Codes

The following table shows the Locatable Address Conversion System output codes:

Code	Description
L	The address is present in the USPS LACS table.
[Blank]	The address is not present in the USPS LACS table.

Locatable Address Conversion System Link Indicator

Output port that indicates if the Address Validator transformation checks the address against the Locatable Address Conversion System (LACS) reference database.

The LACS reference data lists United States addresses that the United States Postal Service (USPS) has converted from a rural format to the standard urban format. The USPS converts rural addresses so that emergency services can find the addresses more easily.

Locatable Address Conversion System Link Indicator Usage

Select Locatable Address Conversion System Link Indicator to write an output value to an address that indicates whether the address was checked against LACS reference data.

Port Location

The following table provides the location and default precision of the Locatable Address Conversion System Link Indicator port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	1

Locatable Address Conversion System Link Indicator Output Codes

The following table describes the Locatable Address Conversion System Link Indicator output codes:

Code	Description
Y	The address is checked against LACS reference data.
[Blank]	The address is not checked against LACS reference data.

Locatable Address Conversion System Link Return Code

Output port that indicates the degree to which the input address matches Locatable Address Conversion System (LACS) data and whether the address validation process updated the address.

Locatable Address Conversion System Link Return Code Usage

Select Locatable Address Conversion System Link Return Code to find more information about addresses that match address records in the LACS reference database. If an address is in the LACS database, the USPS has created a new version of the address.

If you select the Locatable Address Conversion System port, select the Locatable Address Conversion System Link Return Code port. Review the Locatable Address Conversion System port output to identify addresses that are contained in the LACS database.

Port Location

The following table provides the location and default precision of the Locatable Address Conversion System Link Return Code port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	2

Locatable Address Conversion System Link Return Code Output Codes

The following table shows the Locatable Address Conversion System Link Return Code output codes:

Code	Description
A	The United States address reference data provides an urban form of the address.
00	The United States address reference data does not provide an urban form of the address.
14	The United States address reference recognizes the address as convertible to an urban form, but it cannot provide the urban form of the address.
92	The input address matches an address in the address reference data, but the input address contains a secondary number and the reference address does not.
[Blank]	The input address was not passed to the LACS reference database.

Lot Number

Output port that contains the lot number in an Australian address.

A lot is a unit of property. Australia Post assigns a lot number to a property when it cannot assign a street number. For example, it may be impractical to apply street numbers to properties on a rural road. Lot numbers and street numbers perform the same function in Australian addresses.

Lot Number Usage

Select Lot Number when an Australian address identifies a mailbox by lot number instead of street number. To view lot number data, configure the Address Validator transformation to run in certified mode.

Port Location

The following table provides the location and default precision of the Lot Number port:

Port Type	Port Group	Template Model	Precision
Output	Australia Specific	Basic	12

Lot Number Example

The following example address identifies a property in Queensland, Australia:

```
MS. JANE BURKE
LOT 3 BEACH RD
SARINA QLD 4737
AUS
```

The following table shows the Address Validator transformation port that relates to lot number data in the address:

Port Name	Data
Contact Complete 1	MS. JANE BURKE
Lot Number	**LOT 3**
Street Complete 1	BEACH RD
Locality Complete 1	SARINA
Province Abbreviation 1	QLD
Postcode 1	4737
Country ISO3 Char	AUS

Non-Delivery Days

Output port that identifies any day of the week on which a United States address does not or cannot receive mail.

The United States Postal Service maintains a list of the addresses to which it does not deliver mail on one or more days of the week. For example, the mailbox might reside on a rural delivery route that the United States Postal Service does not serve every weekday. Or, a business might inform the United States Postal Service that it does not operate a mailbox on one or more days of the week. The certified reference data files include the address list and the days of the week on which each address does not receive mail.

Non-Delivery Days Usage

Select Non-Delivery Days to identify any day of the week on which address will not receive mail.

To receive data on the Non-Delivery Days port, run the Address Validator transformation in certified mode.

Port Location

The following table provides the location and default precision of the Non-Delivery Days port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	7

Non-Delivery Days Output Codes

The Address Validator transformation returns a seven-character string that represents each day of the week. If the address does not receive mail on a given day, the transformation returns the first letter of the day in the corresponding position in the string. The transformation returns a dash symbol in the corresponding position for other days of the week.

For example, a value of S----FS on the Non-Delivery Days port indicates that an address does not receive mail on Sunday, Friday, and Saturday.

National Address Management Service Status

Output port that indicates whether an output address meets the certification standard of the National Address Management Service (SNA) of La Poste.

National Address Management Service Status Usage

Select National Address Management Service Status to verify that address records are valid to the SNA standard. If the addresses you submit to La Poste meet the standard, you can qualify for mail discounts.

To comply with the SNA standard, the output address must follow a format that La Poste defines. Use the Formatted Address Line ports to write the output address. The following table describes the format:

Output Port	Address Element Types
Formatted Address Line 1	Contact name
Formatted Address Line 2	Organization name or sub-building identifier
Formatted Address Line 3	Building name
Formatted Address Line 4	Street name with house number, or plot and thoroughfare identifier
Formatted Address Line 5	Dependent locality name or delivery service identifier
Formatted Address Line 6	Post code and primary locality name and optional CEDEX code

Use the following rules and guidelines when you validate an address to the SNA standard:

- The Formatted Address Line 4 port and Formatted Address Line 6 port must contain data.
- If the address does not contain a data element for a port, let the port remain empty. Do not move an address element from one line to another line.

- The address must not contain data on any line outside the formatted address structure.
- Configure the Address Validator transformation to run in certified mode.
- Set the Preferred Script property on the Address Validator transformation to *Database* or *ASCII Simplified*.

Port Location

The following table provides the location and default precision of the National Address Management Service Status port:

Port Type	Port Group	Template Model	Precision
Output	France Specific	Basic	4

National Address Management Service Status Output Codes

The following table describes the National Address Management Service Status output codes:

Code	Description
ESN0	Address validation did not perform an SNA check on the address.
ESN1	Address validation corrected or validated the address to the SNA standard.

Post Office Box Delivery Zone Indicator

Output port that indicates whether a ZIP Code contains post office box addresses only. When all addresses in a ZIP Code are post office box addresses, the ZIP Code represents a Post Office Box Only Delivery Zone.

The Address Validator transformation adds the value Y to an address to indicate that it contains a ZIP Code in a Post Office Box Only Delivery Zone. The value enables the postal carrier to sort mail more easily for delivery to the Post Office Box Only Delivery Zone. For example, the mailboxes in a Post Office Box Only Delivery Zone might reside in a single post office building. The postal carrier can deliver all mail to the Post Office Box Only Delivery Zone in a single trip.

Additionally, an address validation application might use the indicator value to prompt a user for a post office box address.

Post Office Box Delivery Zone Indicator Usage

Select the Post Office Box Delivery Zone Indicator port to determine if the address specifies a post office box at an address that handles post office boxes exclusively.

Port Location

The following table provides the location and default precision of the Post Office Box Delivery Zone Indicator port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	1

Post Office Box Delivery Zone Indicator Output Codes

The following table describes the Post Office Box Delivery Zone Indicator output codes:

Code	Description
Y	The address ZIP Code identifies a Post Office Box Delivery Zone.
[Blank]	The address ZIP Code does not identify a Post Office Box Delivery Zone.

Postal Phrase Number Ports (AMAS)

See "Postal Phrase Number Ports" on page 90.

Postal Phrase Prefix

Output port that contains one or more characters that precede the mailbox number at a postal agency. Use Postal Phrase Prefix with Australian address data.

Post Office Box (PO Box) data is the most common type of postal phrase data.

Postal Phrase Prefix Usage

Select the Postal Phrase Prefix port when an address meets the following conditions:

- The address identifies an Australian mailbox.
- The address contains a postal phrase number, and you have selected the Postal Phrase Number port from the Australia Specific group.
- The address is part of a data set that you will submit for AMAS certification.

You can select the Postal Phrase Prefix port with postal phrase ports in the Discrete or Address Elements groups.

To view postal phrase prefix data, configure the Address Validator transformation to run in certified mode.

Port Location

The following table provides the location and default precision of the Postal Phrase Prefix port:

Port Type	Port Group	Template Model	Precision
Output	Australia Specific	Basic	3

Postal Phrase Prefix Example

The following example address identifies a mailbox property in the Australian Capital Territory (ACT):

```
MR. JAMES RYAN
PO BOX N2A
KINGSTON ACT 2604
AUS
```

The following table shows the Address Validator transformation ports that relate to postal phrase data in the address:

Port	Data
Contact Complete 1	Mr. James Ryan
Postal Phrase Complete 1	PO BOX N2A
Postal Phrase Descriptor 1	PO BOX
Postal Phrase Prefix	**N**
Postal Phrase Number	00002
Postal Phrase Number 1	N2A
Postal Phrase Suffix	A
Locality Complete 1	KINGSTON
Province Abbreviation 1	ACT
Postcode 1	2604
Country ISO3 Char	AUS

Postal Phrase Suffix

Output port that contains one or more characters that follow the mailbox number at a postal agency. Use Postal Phrase Suffix with Australian address data.

Post Office Box (PO Box) data is the most common type of postal phrase data.

Postal Phrase Suffix Usage

Select the Postal Phrase Suffix port when an address meets the following conditions:

- The address identifies an Australian mailbox.
- The address contains a postal phrase number, and you have selected the Postal Phrase Number port from the Australia Specific group.
- The address is part of a data set that you will submit for AMAS certification.

You can select the Postal Phrase Suffix port with postal phrase ports in the Discrete or Address Elements groups.

To view postal phrase suffix data, configure the Address Validator transformation to run in certified mode.

Port Location

The following table provides the location and default precision of the Postal Phrase Suffix port:

Port Type	Port Group	Template Model	Precision
Output	Australia Specific	Basic	3

Postal Phrase Suffix Example

The following example address identifies a mailbox property in the Australian Capital Territory (ACT):

```
MR. JAMES RYAN
PO BOX N2A
KINGSTON ACT 2604
AUS
```

The following table shows the Address Validator transformation ports that relate to postal phrase data in the address:

Port	Data
Contact Complete 1	MR. JAMES RYAN
Postal Phrase Complete 1	PO BOX N2A
Postal Phrase Descriptor 1	PO BOX
Postal Phrase Prefix	N
Postal Phrase Number	00002
Postal Phrase Number 1	N2A
Postal Phrase Suffix	**A**
Locality Complete 1	KINGSTON
Province Abbreviation 1	ACT
Postcode 1	2604
Country ISO3 Char	AUS

RD Number

Output port that identifies the delivery route for a rural address in New Zealand.

New Zealand Post defines urban and rural address formats. A rural address identifies a mailbox that is not located in a city, town, or suburb. New Zealand Post uses Rural Delivery (RD) routes to organize mail to rural mailboxes. Each route has a unique RD number within a postal district.

RD Number Usage

To identify the rural delivery route for a New Zealand address, select RD Number.

Port Location

The following table provides the location and default precision of the port:

Port Type	Port Group	Template Model	Precision
Output	New Zealand Specific	Basic	6

RD Number Alpha Example

The following address contains data that can populate the RD Number port:

```
BRIAN HILLS
220A LYNWOOD AVENUE
RD 1
OTAKI 5581
```

The following table shows the ports that relate to rural delivery number data in the address:

Port Name	Data
Recipient Line 1	BRIAN HILLS
House Number Alpha	220A
Street Name 1	LYNWOOD AVENUE
RD Number	RD 1
Locality Name 1	OTAKI
Postcode 1	5581

Residential Delivery Indicator

Output port that indicates if a United States address identifies a residence or a business.

The Address Validator transformation uses a subset of the Coding Accuracy Support System (CASS) reference data files to identify residential addresses. If the reference data files contain ZIP+4 code data for an address, the transformation recognizes the address as a residence. You do not need to identify a mail item as residential or business to qualify for CASS discounts.

Residential Delivery Indicator Usage

Select Residential Delivery Indicator to identify residential or business addresses. The port writes the result to the address record.

Most mail carriers charge less to deliver business mail. If you separate residential mail from business mail, you can send the business mail by a different method and reduce mail costs.

Port Location

The following table provides the location and default precision of the port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	1

Residential Delivery Indicator Output Codes

The following table describes the Residential Delivery Indicator output codes:

Code	Description
Y	The residential data files contain the ZIP+4 code for the address. Address validation recognizes the address as a residence.
N	The residential data files do not contain the ZIP+4 code for the address. Address validation recognizes the address as a business.

SendRight Status

Output port that indicates whether a New Zealand address contains the necessary data for validation to the SendRight standard.

SendRight is the address certification program maintained by New Zealand Post. If an address identifies a mailbox to delivery point level, it meets the SendRight standard.

To confirm the SendRight status of an address, configure the Address Validator transformation to run in certified mode.

SendRight Status Usage

To verify that address records meets the SendRight standard, select SendRight Status.

When an address meets the standard, the address validation process can add data to the address that improves deliverability. New Zealand Post offers reduced postal rates to organizations that validate address records to the SendRight standard.

Note: New Zealand Post does not permit the validation process to correct input address data during SendRight certification. Use the Match Code port to verify that the validation process does not correct the data. If the Match Code returns values in the range C1 through C4, you must run the validation process again. First, run the process in Batch mode to correct the records. Then run the process in certified mode to verify that the addresses meet the SendRight standard without correction.

Port Location

The following table provides the location and default precision of the SendRight Status port:

Port Type	Port Group	Template Model	Precision
Output	New Zealand Specific	Basic	4

SendRight Status Output Codes

The following table describes the SendRight Status output codes:

Code	Description
ESR0	SendRight data is not available for the address.
ESR1	SendRight data is available for the address.

A code of ESR1 indicates that the address meets the SendRight standard and the address validation process can add SendRight data to the address record.

SOA Record Ignored

Output port that indicates if the address is eligible for inclusion in Statement of Accuracy (SOA) calculations for New Zealand Post.

When you submit an address record set to New Zealand Post, you indicate the number of records that meet the SendRight validation standard. To qualify for SendRight mail charges, 85 percent of the address records must meet the standard. Use the SOA Record Ignored port to identify records that you cannot count among the records that meet the SendRight standard.

Note: Some valid addresses do not qualify for SendRight certification. The SendRight standard requires an address to uniquely identify a physical mailbox at which an addressee can receive mail. The address must conform to the data stored by New Zealand Post in its Postal Address File (PAF).

SOA Record Ignored Usage

To count the records in a record set that meet the SendRight standard, select SOA Record Ignored

The SOA Record Ignored port identifies the following address types as ineligible for SendRight certification:

- Poste restante
- Mail addressed to a private bag

Port Locations

The following table provides the location and default precision of the SOA Record Ignored port:

Port Type	Port Group	Template Model	Precision
Output	New Zealand Specific	Basic	1

SOA Record Ignored Output Codes

The following table describes SOA Record Ignored output codes:

Code	Description
[blank]	The address record can be included in the Statement of Accuracy calculations.
Y	The address record cannot be included in the Statement of Accuracy calculations.

Address validation returns Y when it finds an address that you cannot include in the Statement of Accuracy. Otherwise, Address validation does not return a value on the port.

Software Evaluation And Recognition Program Status

Output port that indicates whether an output address record contains the data required for address validation to SERP standards.

The Software Evaluation and Recognition Program (SERP) is a Canada Post standards mechanism that certifies the completeness and accuracy of an address. When you validate addresses with the Address Validator transformation, the validation process uses Canadian reference data to enhance or complete an address, so that a SERP-certified address is both complete and accurate to Canada Post standards.

The Software Evaluation And Recognition Program Status value indicates if the address is eligible for validation to the SERP standard. It does not indicate the quality or deliverability of the address.

Software Evaluation And Recognition Program Status Usage

Select Software Evaluation And Recognition Program Status to verify that output address records contain all data required for address validation to the SERP standard.. If the addresses are valid to the level set by the Canada Post, your organization can qualify for bulk mailing discounts.

Prerequisites

Verify that you have set the following prerequisites for Software Evaluation And Recognition Program Status:

- Configure the Address Validator transformation to run in certified mode.
- Enable SERPEnrichment for the Content Management Service.

Port Locations

The following table provides the location and default precision of the Software Evaluation And Recognition Program Status port:

Port Type	Port Group	Template Model	Precision
Output	Canada Specific	Basic	4

Software Evaluation And Recognition Program Status Output Codes

The following table describes the SERP output codes:

Code	Description
ESE0	The address does not contain enough data for SERP certification. Software Evaluation And Recognition Program Status also returns ESE0 if you do not configure the Address Validator transformation in certified mode.
ESE1	The address contains enough data for SERP certification.

Street Number Ports (AMAS)

See "Street Number Ports" on page 248.

Suite Link Return Code

Output port that identifies high-rise business addresses in the United States that lack suite identification information.

Suitelink is a United States Postal Service (USPS) database of business addresses that are located in high-rise buildings and that lack suite information. The USPS requires this information in CASS-certified addresses.

Suite Link Return Code Usage

Select Suite Link Return Code to identify addresses that do not contain the suite information that the USPS requires for Coding Accuracy Support System (CASS) certification.

Note: Suite Link Return Code provides the same information as the High Rise Default port.

Port Location

The following table provides the location and default precision of the Suite Link Return Code port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	2

Suite Link Return Code Output Codes

The following table describes the Suite Link Return Code output codes:

Code	Description
00	The address does not match an address in the Suitelink reference data.
A	The address matches an address in the Suitelink reference data.
[Blank]	The address was not passed to the Suitelink reference data.

Validity Code

Output port that summarizes the result of an address validation process on a New Zealand address.

The Validity Code output indicates the level of similarity between an address record and the addresses defined in the New Zealand address reference data. Use the output as a high-level measure of the validity of the address. For example, if the input address is a unique match with an address defined in the reference data, the address is a candidate for SendRight certification.

Validity Code Usage

Select Validity Code to add a summary indicator of address validity to the address record.

Port Location

The following table provides the location and default precision of the port:

Port Type	Port Group	Template Model	Precision
Output	New Zealand Specific	Basic	7

Validity Code Output Codes

The following table describes the output codes for the Validity Code port:

Code	Description
VALID-U	The address reference data can provide an identical address to delivery point level.
VALID-B	The address reference data contains an address that matches the address record but cannot verify delivery point data for the address. **Note:** For urban addresses, verify that the address contains street number data. For rural addresses, verify that the address contains a rural delivery identifier.
INVALID	The address reference data does not contain a match for the address record.

Zip Move Return Code

Output port that indicates if the United States Postal Service (USPS) has recently changed the ZIP+4 Code assigned to the address.

The USPS maintains a database of addresses with changed ZIP Codes. Address validation passes an address as deliverable to a prior ZIP Code if the address data is present in the USPS ZIPMOVE database.

Zip Move Return Code Usage

Select Zip Move Return Code to identify addresses with ZIP+4 Codes that the USPS changed recently. Use this data to verify that an address is deliverable even if its ZIP Code is out-of-date.

Port Location

The following table provides the location and default precision of the Zip Move Return Code port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	1

Zip Move Return Code Output Codes

The following table describes the Zip Move Return Code output codes:

Code	Description
Y	The address matches an address in the USPS ZIPMOVE reference data.
N	The address does not match an address in the USPS ZIPMOVE reference data.
[Blank]	The address was not passed to the USPS ZIPMOVE reference data.

CHAPTER 11

Postcode Data Ports

This chapter includes the following topics:

- Postcode Ports Overview, 215
- Postal Address Code AT, 216
- Postal Address Code Identifier AT, 217
- Postal Address Code RS, 218
- Postal Code Extension, 219
- Postcode Ports, 220
- Postcode Add On , 222
- Postcode Base, 223
- Postcode Complete , 224
- Postcode Formatted Ports, 225
- Postcode Unformatted Ports, 226
- Rural Route Default , 227
- Rural Route Exact , 228

Postcode Ports Overview

The Address Validator transformation provides multiple ports that can contain post code ports. Select the post code ports that suit the input data structure and your output data requirements.

Consider the following factors when you select a post code port:

- The Postcode, Postcode Complete, and Postcode Formatted ports contain all post code data. The Postcode, Postcode Complete, and Postcode Formatted output ports format the data according to the punctuation standards of the national mail carrier.
- The Postcode Base and Postcode Add On ports are designed for ZIP+4 Code data. The Postcode Base port contains the five-digit ZIP Code. The Postcode Add On port contains the four-digit suffix.
- The Postcode Unformatted ports contain post code data with character spaces and dashes removed.

When you select post code input ports, verify that the ports do not contain duplicate data for an address. For example, if the data set contains formatted data and unformatted post code data in different fields, do not select both as inputs.

Postal Address Code AT

Output port that uniquely identifies a street address to the building level.

Post codes and postal address code are separate code systems. Austria Post uses a four-digit post code to identify the territory that a post office serves. All addresses in the territory use the post code. The postal address code is a nine-digit value that identifies a building on a street.

Note: The postal address code does not include sub-building information.

Postal Address Code AT Usage

The postal address code represents an address to building level. To write the postal address code to an Austrian address, select the Postal Address Code AT output port.

Port Locations

The following table provides the location and default precision of the Postal Address Code AT port:

Port Type	Port Group	Template Model	Precision
Output	AT Supplementary	Basic	9

Postal Address Code AT Example

The following address has a Postal Address Code AT value of 105176447:

```
Thomas Schüssel
Plättenstraße 7
2380 Perchtoldsdorf
Niederösterreich
```

The following table shows the Address Validator transformation ports that relate to the post code data in the address:

Port Name	Data
Contact Complete 1	Thomas Schüssel
Street Number Complete 1	7
Street Complete 1	Plättenstraße
Postcode 1	2380
Locality Complete 1	Perchtoldsdorf
Province Country Standard 1	Niederösterreich
Postal Address Code AT	**105176447**
Country ISO3 Char	AUT

Related Topics:

- "Postal Address Code Identifier AT" on page 217

Postal Address Code Identifier AT

Input and output ports that identify the preferred street address for a building that has entrances on more than one street.

Austria Post assigns a postal address code identifier to an address record when the building that the address identifies formally receives mail at another address. The postal address code identifier is the same value as the postal address code for the preferred address.

Understanding Postal Address Codes and Postal Address Code identifiers

Each street address in Austria has a single postal address code that represents a street address to the building level. When a building can receive mail at multiple addresses, Austria Post recognizes multiple postal address codes for the building.

For example, a building at an intersection of two streets might have an address on both streets. The building might specify one of the addresses as the delivery address. The other address remains a valid address, but the postal carrier does not use it to deliver mail.

Austria Post applies the following rules and guidelines to postal address codes when a building can receive mail at multiple addresses:

- The address record for the preferred address can include a postal address code.

  The preferred address record does not include a postal address code identifier, because the postal carrier does not need information about an alternative address.
- The address record for any alternative address can include a postal address code and a postal address code identifier.

  The postal address code is a valid unique code for the building on the street that the address specifies. The postal address code identifier is the postal address code of the preferred address.

Note: Austria Post refers to the preferred address as an Ident address.

Postal Address Code Identifier AT Usage

You can use the Postal Address Code Identifier AT ports in the following cases:

You want to search an address set for records that do not represent the preferred address for a building

Select the Postal Address Code Identifier AT output port in addition to the other ports that you select for the address records.

When the Address Validator transformation returns the addresses, you can sort the output for records that include a postal address code identifier value. if a record includes a postal address code identifier value, use the value as an input to find the preferred address.

You have one or more postal address code identifiers, and you want to find the preferred addresses that they represent

Select the Postal Address Code Identifier AT input port, and select the output ports that can write the preferred address. The Address Validator transformation returns the addresses.

You can also add the Postal Address Code AT output port to the output address. The Postal Address Code AT output port returns the postal address code for the preferred address.

Port Locations

The following table provides the location and default precision of the Postal Address Code Identifier AT port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Basic	9
Output	AT Supplementary	Basic	9

Postal Address Code Identifier AT Example

When a building has a preferred address and one or more alternative addresses, each alternative address can specify a postal address code and a postal address code identifier. In each case, the postal address code identifier is the postal address code of the preferred address.

The following table lists street addresses that identify a single building:

Address	Postal Address Code	Postal Address Code Identifier

`Hauptplatz 4`
`8010 Graz`
`AUT`
	`100001915`	`100004254`

`Neue-Welt-Gasse 2`
`8010 Graz`
`AUT`
	`100004254`	Not applicable

Although "Hautplatz 4" is a valid street address, "Neue-Welt-Gasse 2" is the preferred address for the building. The mail carrier accesses the building mailboxes at "Neue-Welt-Gasse 2."

Related Topics:

- "Postal Address Code AT" on page 216

Postal Address Code RS

Output port that contains street-level post code data for a Serbian address. The postal address code supplements the locality post code data that Post Serbia recognizes for a Serbian address.

The postal address code for a Serbian address contains six digits. Post Serbia places the prefix PAK before the postal address code. The Address Validator transformation omits the prefix from the Postal Address Code RS port.

Postal Address Code RS Usage

The postal address code identifies the street that contains the address mailbox. To write the postal address code to a Serbian address, select the Postal Address Code RS output port.

When you select Postal Address Code RS, also select a port that can contain general post code data from Post Serbia. For example, select the Postcode Base port when you select the Postal Address Code RS port.

Port Location

The following table provides the location and default precision of the Postal Address Code RS port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Basic	6
Output	RS Supplementary	Basic	6

Postal Address Code RS Example

The following address has a Postal Address Code RS value of 456769:

```
Petar Petrovic
Beogradska 3
Bajmok
24210
Serbia
```

The following table shows the Address Validator transformation ports that relate to postal address code data:

Port Name	Data
Contact Complete 1	Petar Petrovic
Street Number Complete 1	3
Street Complete 1	Beogradska
Postcode 1	24210
Locality Complete 1	Bajmok
Postal Address Code RS	**456769**
Country ISO3 Char	SRB

Postal Code Extension

Output port that contains a two-digit suffix for the post code of a Swiss address.

Swiss Post uses a four-digit post code to identify the territory that a post office serves. All addresses in a territory have a common post code. The postal code extension identifies subdivisions in each post office territory.

Postal Code Extension Usage

To write the postal code extension to a Swiss address, select the Postal Code Extension output port.

Port Locations

The following table provides the location and default precision of the Postal Code Extension port:

Port Type	Port Group	Template Model	Precision
Output	CH Supplementary	Basic	2

Postal Code Extension Example

The following example address contains data that can populate the Postal Code Extension port:

```
Joseph Maurer
Hohlen 1
3800 Sundlauenen
Switzerland
```

The following table shows the Address Validator transformation ports that relate to the post code data in the address:

Port Name	Data
Contact Complete 1	Joseph Maurer
Street Number Complete 1	1
Street Complete 1	Hohlen
Postcode 1	3800
Locality Complete 1	Sundlauenen
Province Extended 1	Bern
Postal Code Extension	**05**
Country ISO3 Char	CHE

Postcode Ports

Input and output ports that contain the complete post code for an address.

Postcode, Postcode Complete, and Postcode Formatted contain the same data.

Postcode Usage

Select a Postcode input port when the input address data set has a single post code port.

Select a Postcode output port to write the post code to an output port in a data set that uses one port for all post code data.

Port Locations

The following table provides the location and default precision of the Postcode 1 port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Basic	15
Input	Hybrid	Basic	15
Output	Last Line Elements	Basic	10

The following table provides the location and default precision of the Postcode 2 port:

Port Type	Port Group	Template Model	Precision
Output	Last Line Elements	Basic	5

Note: The default precision values on a post code port can change between input and output. Verify that the input and output port precision can contain the post code data in the data set when you select post code ports.

Postcode Example

The following example address contains data that the Address Validator transformation can parse to post code ports:

```
Mr. John Doe
1000 Fifth Avenue
# 12
New York
NY
10028-0198
```

The following table shows the Address Validator transformation ports that relate to post code data in the address:

Port	Data
Contact Complete 1	Mr. John Doe
Street Number Complete 1	1000
Street Complete 1	Fifth Avenue
Sub-building Complete 1	#12
Locality Complete 1	New York
Province Country Standard 1	NY
Postcode 1	**10028-0198**

Postcode Add On

Output port that contains the final four digits of a United States ZIP+4 Code.

Postcode Add On Usage

Select Postcode Add On when you select Postcode Base.

Select a Postcode Base input port when the input data set contains the five-digit ZIP Code and the four-digit ZIP+4 Code suffix in different ports.

Select a Postcode Base output port to write the five-digit ZIP Code and the four-digit ZIP+4 Code suffix to different ports.

Port Locations

The following table provides the location and default precision of the Postcode Add On 2 and Postcode Add On 3 ports:

Port Type	Port Group	Template Model	Precision
Output	Last Line Elements	Advanced	10

Postcode Add On Example

The following example address contains data that the Address Validator transformation can parse to post code ports:

```
Mr. John Doe
1000 Fifth Avenue
# 12
New York
NY
10028-0198
```

The following table shows the Address Validator transformation ports that relate to post code data:

Port	Data
Contact Complete 1	Mr. John Doe
Street Number Complete 1	1000
Street Complete 1	Fifth Avenue
Sub-building Complete 1	#12
Locality Complete 1	New York
Province Country Standard 1	NY
Postcode Complete 1	**10028-0198**
Postcode Base 2	**10028**
Postcode Add On 2	**0198**

Postcode Base

Output port that contains the base post code data for an address. In the United States, the Postcode Base port contains the five-digit ZIP Code.

Postcode Base Usage

Select a Postcode Base output port to write the base post code to a single port. For example, select the Postcode Base output port to write the five-digit ZIP Code for a United States address. When you select Postcode Base, select the Postcode Add On port to add the four-digit ZIP Code suffix to the address.

Port Locations

The following table provides the location and default precision of the Postcode Base 1 port:

Port Type	Port Group	Template Model	Precision
Output	Last Line Elements	Basic	10

The following table provides the location and default precision of the Postcode Base 2 and Postcode Base 3 ports:

Port Type	Port Group	Template Model	Precision
Output	Last Line Elements	Advanced	10

Postcode Base Example

The following example address contains data that the Address Validator transformation can parse to post code ports:

```
Mr. John Doe
1000 Fifth Avenue
# 12
New York
NY
10028-0198
```

The following table shows the Address Validator transformation ports that relate to post code data:

Port	Data
Contact Complete 1	Mr. John Doe
Street Number Complete 1	1000
Street Complete 1	Fifth Avenue
Sub-building Complete 1	#12
Locality Complete 1	New York
Province Country Standard 1	NY
Postcode Complete 1	10028-0198

Port	Data
Postcode Base 2	**10028**
Postcode Add On 2	**0198**

Postcode Complete

Output port that contains the complete post code for an address.

Postcode, Postcode Complete, and Postcode Formatted contain the same data.

Postcode Complete Usage

Select Postcode Complete to write the complete post code as an output in cases where you also write post code data to Postcode Base and Postcode Add On ports.

Port Location

The following table provides the location and default precision of the Postcode Complete port:

Port Type	Port Group	Template Model	Precision
Output	Last Line Elements	Basic	15

Postcode Complete Example

The following sample address contains data that the Address Validator transformation can parse to post code ports:

```
Mr. John Doe
1000 Fifth Avenue
# 12
New York
NY
10028-0198
```

The following table describes the Address Validator transformation ports that relate to post code data:

Port	Data
Contact Complete 1	Mr. John Doe
Street Number Complete 1	1000
Street Complete 1	Fifth Avenue
Sub-building Complete 1	#12
Locality Complete 1	New York

Port	Data
Province Country Standard 1	NY
Postcode Complete 1	**10028-0198**

Postcode Formatted Ports

Input and output ports that contain the complete post code formatted to national mail carrier standards.

Postcode, Postcode Complete, and Postcode Formatted contain the same data.

Postcode Formatted Usage

Select a Postcode Formatted input port when the input data set contains a post code that is complete and formatted to mail carrier standards.

Select a Postcode Formatted output port to write a correctly formatted complete post code to the output address.

Port Locations

The following table provides the location and default precision of the Postcode Formatted 2 and Postcode Formatted 3 ports:

Port Type	Port Group	Template Model	Precision
Input	Hybrid	Advanced	50
Output	Last Line Elements	Advanced	15

Postcode Formatted Example

The following example address contains data that the Address Validator transformation can parse to post code ports:

```
Mr. John Doe
1000 Fifth Avenue
# 12
New York
NY
10028-0198
```

The following table shows the Address Validator transformation ports that relate to post code data:

Port	Data
Contact Complete 1	Mr. John Doe
Street Number Complete 1	1000
Street Complete 1	Fifth Avenue
Sub-building Complete 1	#12

Port	Data
Locality Complete 1	New York
Province Country Standard 1	NY
Postcode Formatted 2	**10028-0198**
Postcode Unformatted 1	100280198

Postcode Unformatted Ports

Input and output ports that contain the complete post code as a single string with no punctuation or character spaces.

Postcode Unformatted Usage

Select a Postcode Unformatted input port when the input data set contains a complete and unformatted post code that is formatted to mail carrier standards.

Select a Postcode Unformatted output port to write a complete post code to the output address as a single string.

Port Locations

The following table provides the location and default precision of ports Postcode Unformatted 1 through Postcode Unformatted 3 ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Input	Hybrid	Advanced	50
Output	Last Line Elements	Advanced	15

Postcode Unformatted Example

The following example address contains data that the Address Validator transformation can parse to post code ports:

```
Mr. John Doe
1000 Fifth Avenue
# 12
New York
NY
10028-0198
```

The following table shows the Address Validator transformation ports that relate to post code data:

Port	Data
Contact Complete 1	Mr. John Doe
Street Number Complete 1	1000
Street Complete 1	Fifth Avenue
Sub-building Complete 1	#12
Locality Complete 1	New York
Province Country Standard 1	NY
Postcode Complete 1	10028-0198
Postcode Unformatted 1	**100280198**

Rural Route Default

Output port that indicates if the address is a valid rural route but exact data is unavailable.

Rural Route Default Usage

Select Rural Route Default when you need to know if an address has all the data needed for delivery on a rural route.

You can use Rural Route Exact port data with Rural Route Default port data. The Rural Route Default port indicates if rural route data is complete.

Review the output data and calculate the number of High Rise Default or Rural Route Default addresses it contains. A high number of High Rise Default or Rural Route Default addresses increases mail delivery costs and slows down mail delivery.

Port Locations

The following table provides the location and default precision of the Rural Route Default port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	1

Rural Route Default Output Codes

The following table describes the Rural Route Default output codes:

Code	Description
Y	The address matches a rural route address in the address reference data but does not contain a box number.
N	All other options. The address may match a rural route address and contain a box number, or the address may not match a rural route address, or the address was not checked against the rural route reference data.

Related Topics:

- "Default Flag" on page 175
- "High Rise Default " on page 197

Rural Route Exact

Output port that indicates if the address matches a rural route address in the USPS address reference data set.

Rural Route Exact Usage

Select Rural Route Default to determine if an address has all the data required for delivery on a rural route.

You can use Rural Route Exact port data with Rural Route Default port data. The Rural Route Default port indicates if rural route data is complete.

Review the output data and calculate the number of High Rise Default and Rural Route Default addresses it contains. A high number of High Rise Default or Rural Route Default addresses increases mail delivery costs and slows down mail delivery.

Port Locations

The following table provides the location and default precision of the Rural Route Exact port:

Port Type	Port Group	Template Model	Precision
Output	US Specific	Basic	1

Rural Route Exact Output Codes

The following table describes the Rural Route Exact output codes:

Code	Description
Y	The address matches a rural route address in the address reference data.
N	The address does not match a rural route address in the address reference data, or the address was not checked against the rural route reference data.

CHAPTER 12

Province and State Data Ports

This chapter includes the following topics:

- Province Ports, 229
- Province Abbreviation Ports, 231
- Province Extended Ports, 232
- Province Country Standard Ports, 234
- Province ISO Ports, 235

Province Ports

Input ports that read province data from an address record set.

In address validation, a province is the largest political or administrative division in a country. For example, address validation identfies a state in the United States, a province in Canada, and a canton in Switzerland as provinces.

A Province port can read the full province name or the abbreviated name.

Province Usage

Select a Province port to read data that identifies the highest level of territory or region in a country, such as a state of the United States, from the input address data set.

Consider the following guidelines when you use Province ports:

- There are six Province ports. Use Province 1 to identify the province. Use Province 2 to identify the primary subdivision in the province. For example, use Province 2 for county data in the United States. You may need to select a port in the Province 3 through Province 6 range if the province data is highly complex.
- The mail carrier may not require the sub-province data. Or, you may configure sub-province level data on a locality port.

Port Locations

The following table provides the location and default precision of the Province 1 through Province 3 ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Basic	50
Input	Hybrid	Basic	50

The following table provides the location and default precision of the Province 4 through Province 6 ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Input	Hybrid	Advanced	50

Province Example

The following example address contains data that the Address Validator transformation can parse to province data ports:

```
Mr. John Doe
1000 Fifth Avenue
# 12
New York
NY
10028-0198
```

The following table shows an address that uses province data:

Port	Data
Contact Complete 1	Mr. John Doe
Street Number Complete 1	1000
Street Complete 1	Fifth Avenue
Sub-building Complete 1	#12
Locality Complete 1	New York
Province 1	**NY**
Postcode Complete 1	10028-0198
Country ISO3 Char	USA

Province Abbreviation Ports

Input and output ports that contain the abbreviated province name.

In address validation, a province is the largest political or administrative division in a country. For example, address validation identifies a state in the United States, a province in Canada, and a canton in Switzerland as provinces.

Province Abbreviation Usage

Select a Province Abbreviation input port to read the province abbreviation from the input address data.

Select a Province Abbreviation output port to write the province abbreviation to the output address.

Consider the following guidelines when you use Province Abbreviation ports:

- There are six Province Abbreviation ports. Use Province Abbreviation 1 to identify the province. Use Province Abbreviation 2 to identify the primary subdivision in the province. For example, use Province Abbreviation 2 for county data in the United States. You may need to select a port in the Province Abbreviation 3 throughProvince Abbreviation 6 range if the province data is highly complex.
- The Province Abbreviation 1 output port contains the same data as the Province Country Standard 1 output port for a United States address. Both ports return the two-letter state code.
- The mail carrier may not require the sub-province data. Or, you may configure sub-province level data on a locality port.

  Note: The Province Abbreviation 2 output port does not abbreviate United States county data.

Port Locations

The following table provides the location and default precision of ports Province Abbreviation 1 through Province Abbreviation 3:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Input	Hybrid	Advanced	50
Output	Last Line Elements	Basic	25

The following table provides the location and default precision of ports Province Abbreviation 4 through Province Abbreviation 6:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Input	Hybrid	Advanced	50
Output	Last Line Elements	Advanced	15

Province Abbreviation Example

The following example address contains data that the Address Validator transformation can parse to province data ports:

```
Mr. John Doe
1000 Fifth Avenue
# 12
New York
NY
10028-0198
```

The following table shows an address that uses province data:

Port	Data
Contact Complete 1	Mr. John Doe
Street Number Complete 1	1000
Street Complete 1	Fifth Avenue
Sub-building Complete 1	#12
Locality Complete 1	New York
Province Abbreviation 1	**NY**
Postcode Complete 1	10028-0198
Country ISO3 Char	USA

Province Extended Ports

Input and output ports that contain the full name of the province.

In address validation, a province is the largest political or administrative division in a country. For example, address validation identfies a state in the United States, a province in Canada, and a canton in Switzerland as provinces.

Province Extended Usage

Select Province Extended to write the complete province name to the output address record.

Consider the following guidelines when you use Province Extended ports:

- There are six Province Extended ports. Use Province Extended 1 for the full province name. Use Province Extended 2 for the full name of the primary subdivision in the province. For example, use Province Extended 2 for county data in the United States. You may need to select a port in the Province Extended 3 through Province Extended 6 range if the province data is highly complex.
- The complete province name may not be required in the address. For example, in United States addresses, the USPS requires addresses to use the two-letter abbreviation for the state name. Use the Province Country Standard port to write the required province abbreviation.

- The mail carrier may not require the sub-province data. Or, you may configure sub-province level data on a locality port.

Port Locations

The following table provides the location and default precision of ports Province Extended 1 through Province Extended 3:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Input	Hybrid	Advanced	50
Output	Last Line Elements	Basic	50

The following table provides the location and default precision of ports Province Extended 4 through Province Extended 6:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Input	Hybrid	Advanced	50
Output	Last Line Elements	Advanced	50

Province Extended Example

The following example address contains data that the Address Validator transformation can parse to province data ports:

```
Mr. John Doe
1000 Fifth Avenue
# 12
New York
NY
10028-0198
```

The following table shows an address that uses province data:

Port	Data
Contact Complete 1	Mr. John Doe
Street Number Complete 1	1000
Street Complete 1	Fifth Avenue
Sub-building Complete 1	#12
Locality Complete 1	New York
Province Extended 1	**New York**

Port	Data
Postcode Complete 1	10028-0198
Country ISO3 Char	USA

Province Country Standard Ports

Output ports that contain the province name in the form that the national mail carrier prefers.

In address validation, a province is the largest political or administrative division in a country. For example, address validation identfies a state in the United States, a province in Canada, and a canton in Switzerland as provinces.

The Province Country Standard port follows the standard of the national mail carrier in the destination country. For example, the United States Postal Service (USPS) standard requires a two-letter state name abbreviation. The Deutsche Post standard requires the full province name.

Province Country Standard Usage

Select a Province Country Standard output port to write province data to the output address in the form that the mail carrier prefers.

Consider the following guidelines when you use Province Country Standard ports:

- There are six Province Country Standard ports. Use Province Country Standard 1 to identify the province. Use Province Country Standard 2 to identify the primary subdivision in the province. For example, use Province Country Standard 2 for county data in the United States. You may need to select a port in the Province Country Standard 3 through Province Country Standard 6 range if the province data is highly complex.
- The mail carrier may not require the sub-province data. Or, you may configure sub-province level data on a locality port.

Port Locations

The following table provides the location and default precision of the Province Country Standard 1 to Province Country Standard 3 ports:

Port Type	Port Group	Template Model	Precision
Output	Last Line Elements	Basic	50

The following table provides the location and default precision of the Province Country Standard 4 to Province Country Standard 6 ports:

Port Type	Port Group	Template Model	Precision
Output	Last Line Elements	Advanced	50

Province Country Standard Example

The following example address contains data that the Address Validator transformation can parse to province data ports:

```
Mr. John Doe
1000 Fifth Avenue
# 12
New York
NY
10028-0198
```

The following table shows an address that uses province data:

Port	Data
Contact Complete 1	Mr. John Doe
Street Number Complete 1	1000
Street Complete 1	Fifth Avenue
Sub-building Complete 1	#12
Locality Complete 1	New York
Province Country Standard 1	**NY**
Postcode Complete 1	10028-0198
Country ISO3 Char	USA

Province ISO Ports

Input and output ports that identify the province in which an address is located. The ports read or write the province identifier that the International Organization for Standardization (ISO) defines in the ISO 3166-2 standard.

In address validation, a province is the largest political or administrative division in a country. For example, address validation identifies a state in the United States, a province in Canada, and a canton in Switzerland as provinces.

Province ISO Usage

To read or write the province ISO 3166-2 code for the province, select a Province ISO port.

Consider the following guidelines when you use Province ports:

- There are three Province ISO input ports and six Province ISO output ports. Use Province ISO 1 to identify the province or region defined at the highest level in the country, such as a state in the United States of America. Use Province ISO 2 to identify a subdivision of the province if the ISO 3166-2 standard records the subdivision.

- The ISO 3166-2 standard defines provinces at multiple levels in some countries. Use Province ISO 1 to identify the largest political region. For example, the standard defines code values at regional and provincial level in the Philippines. In this case, use Province ISO 1 to identify the regions and Province ISO 2 to identify the provinces. In the Philippines, a region contains multiple provinces.

  Note: The ISO 3166-2 standard does not identify state subdivisions in the United States. Use the Province Abbreviation 2 port to identify United States county names.

Port Locations

The following table provides the location and default precision of the Province 1 through Province 3 ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	3
Output	Last Line Elements	Basic	50

The following table provides the location and default precision of the Province 4 through Province 6 ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	3
Input	Last Line Elements	Advanced	50

Province ISO Example

The ISO 3166-2 standard uses two coded values to uniquely identify a province. The first value identifies the country and the second value identifies the province. The province values can use letters or numbers and can have up to three characters.

For example. the following values identify New York state in the United States:

```
US-NY
```

The Province ISO ports contain the province values only. The ISO also tracks the country identification codes in the 3166-1 specification.

You can view a list of ISO 3166-2 codes on the following site:

http://www.iso.org/iso/country_codes

CHAPTER 13

Residual Data Ports

This chapter includes the following topics:

- Residue Ports, 237
- Residue Superfluous Ports, 238
- Residue Unrecognized Ports, 240

Residue Ports

Input and output ports that contain data that an address parsing operation determines to be duplicate or redundant data.

The Address Validator transformation attempts to parse all input data to an output ports that are relevant to the address. The transformation takes into account the position of the data in the input address and whether any element is missing from the address.

If the Address Validator transformation finds duplicate or redundant data elements, it writes them to one of the residue data ports. The port that the transformation uses for residue data depends on the mode that you set for the transformation:

- Parsing mode. The Address Validator transformation writes duplicate or redundant data to the Residue output port.
- Batch, certified, suggestion list, or interactive mode. The Address Validator transformation writes duplicate or redundant data to the Residue Superfluous output port.

Residue Usage

Select a Residue input port if you identify a data column that contains duplicate or redundant data before you run an address parsing process.

Select a Residue output port to write as output any duplicate or redundant data that the parsing process identified.

Consider the following guideline when you use Residue ports:

- There are six Residue ports. You may need to select more than one Residue port if your data is highly complex.

Port Locations

The following table provides the location and default precision of ports Residue 1 through Residue 6:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Residue	Basic	128

Residue Example

The following address contains data that the Address Validator transformation may write to a residue data port:

```
36 Peckett Square
Highbury Grange
London
London
N5 2PB
GBR
```

The following table shows the Address Validator transformation ports that contain residue data following a parsing operation:

Data	Port
Building Number Complete2	36
Street Complete 1	Highbury Grange
Street Complete 2	Peckett Square
Locality Name 1	London
Postcode 1	N5 2PB
Country ISO3 Char	GBR
Residue 1	**London**

Residue Superfluous Ports

Input and output ports that contain data that an address validation operation determines to be duplicate or redundant data.

The Address Validator transformation attempts to parse all input data to an output ports that are relevant to the address. The transformation takes into account the position of the data in the input address and whether any element is missing from the address.

If the Address Validator transformation finds duplicate or redundant data elements, it writes them to one of the residue data ports. The port that the transformation uses for residue data depends on the mode that you set for the transformation:

- Parsing mode. The Address Validator transformation writes duplicate or redundant data to the Residue port.
- Batch, certified, suggestion list, or interactive mode. The Address Validator transformation writes duplicate or redundant data to the Residue Superfluous output port.

Residue Superfluous Usage

Select a Residue Superfluous input port if you identify a data column that contains duplicate or redundant data before you run an address validation process.

Select a Residue Superfluous output port to write as output any duplicate or redundant data that the validation process identified.

Consider the following guideline when you use Residue Superfluous ports:

- There are six Residue Superfluous ports. You may need to select more than one Residue Superfluous port if your data is highly complex.

Port Locations

The following table provides the location and default precision of ports Residue Superfluous 1 through Residue Superfluous 6:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Residue	Advanced	128

Residue Superfluous Example

The following address contains data that the Address Validator transformation may write to a residue data port:

```
36 Peckett Square
Highbury Grange
London
London
N5 2PB
GBR
```

The following table shows the Address Validator transformation ports that contain residue data following a validation operation:

Data	Port
Building Number Complete2	36
Street Complete 1	Highbury Grange
Street Complete 2	Peckett Square
Locality Name 1	London
Postcode 1	N5 2PB

Data	Port
Country ISO3 Char	GBR
Residue Superfluous 1	**London**

Residue Unrecognized Ports

Output port that contains data that the Address Validator transformation cannot parse to an address data port.

The Address Validator transformation does not populate the Residue Unrecognized port under normal circumstances.

The transformation attempts to parse all input data to an output ports that are relevant to the address. The transformation takes into account the position of the data in the input address and whether any element is missing from the address.

If the Address Validator transformation finds duplicate or redundant data elements, it writes them to one of the residue ports. The port that the transformation uses for residue data depends on the mode that you set for the transformation:

- Parsing mode. The Address Validator transformation writes duplicate or redundant data to the Residue port.
- Batch, certified, suggestion list, or interactive mode. The Address Validator transformation writes duplicate or redundant data to the Residue Superfluous port as part of the validation process.

Residue Unrecognized Usage

Select Residue Unrecognized if your output address is missing one or more data elements and you selected all address ports that are relevant to the address structure.

Before you select Residue Unrecognized, select one or more Residue or Residue Superfluous output ports. The Address Validator transformation is likely to populate a Residue or Residue Superfluous port instead of a Residue Unrecognized port.

Select Residue if you configured the Address Validation transformation in parsing mode.

Select Residue Superfluous if you configured the Address Validation transformation in batch, certified, suggestion list, or interactive mode.

Consider the following guideline when you use Residue Unrecognized ports:

- There are six Residue Unrecognized ports. You may need to select more than one Residue Unrecognized port if your data is highly complex.

Port Locations

The following table provides the location and default precision of ports Residue Unrecognized 1 through Residue Unrecognized 6:

Port Type	Port Group	Template Model	Precision
Output	Residue	Advanced	128

CHAPTER 14

Street Data Ports

This chapter includes the following topics:

- Street Additional Info Ports, 241
- Street Complete Ports, 242
- Street Complete with Number Ports, 244
- Street Name Ports, 246
- Street Number Ports, 248
- Street Number Additional Info Ports, 250
- Street Number Complete Ports, 251
- Street Number Descriptor Ports, 253
- Street Number Suffix, 255
- Street Post-Descriptor Ports, 256
- Street Post-Directional Ports, 257
- Street Pre-Descriptor Ports, 259
- Street Pre-Directional Ports, 260

Street Additional Info Ports

Input and output ports that contain information about the street that can assist delivery to the address. This data takes the form of notes added to the data record.

Street number ports are related by number. For example, Street Additional Info 1 provides information about the data in the Street Complete 1 port. You can select a Street Additional Info port and other Street ports concurrently.

Street Additional Info Usage

Select Street Additional Info when the input address contains information about the street that can assist in delivering mail to an address.

Address validation does not parse or validate data for this port. If you select a Street Additional Info input port, connect the data to a Street Additional Info output port.

Port Locations

The following table provides the location and default precision of ports Street Additional Info 1 through Street Additional Info 6:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Advanced	20

Street Additional Info Example

The following example address contains data that can populate the Street Additional Info 1 port:

```
K-3/80
M.H Road Behind Central Arcade
Gurgaon - 122 002
INDIA
```

The following table shows the Address Validator transformation port that contains additional street data:

Port	Data
Street Number Complete 1	K-3/80
Street Complete 1	M.H. Road
Street Additional Info 1	**Behind Central Arcade**
Locality Complete 1	Gurgaon
Postcode 1	122 002
Country ISO3 Char	IND

Street Complete Ports

Input and output ports that contain all data related to a street name in an address record.

The Street Complete ports contain all data in the following ports:

- Street Name
- Street Post-Descriptor
- Street Post-Directional
- Street Pre-Descriptor
- Street Pre-Directional

Street Complete ports do not contain street number data.

The street data ports are related by port number. For example, Street Complete 1 contains all data in Street Name 1, Street Post-Descriptor 1, Street Post-Directional 1, Street Pre-Descriptor 1, and Street Pre-Directional 1.

Street Complete Usage

Select a Street Complete input port when an input address contains all data that identifies a street in a single port.

Select a Street Complete output port to write all identification that identifies a street in a single port.

Consider the following guidelines when you use Street Complete ports:

- There are six Street Complete ports. If an address record contains more than one street, select additional Street Complete ports.
- Most countries use Street Complete 1 or Street Complete 2 ports. You may need to select a port in the Street Complete 3 through Street Complete 6 range if the street data is highly complex.
- For each street in an address, select the Street Complete input port or select one or more of the Street Name, Street Post-Descriptor, Street Post-Directional, Street Pre-Descriptor, or Street Pre-Directional input ports.
- You can select all street data output ports.
- Street Complete ports do not contain house or building numbers. Use Building Number ports for house and building numbers.
- Use Street Name ports to identify a number in a street name, such as "10th" in "10th Street."

Port Locations

The following table provides the location and default precision of the Street Complete 1 and Street Complete 2 ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Basic	50
Output	Address Elements	Basic	50

The following table provides the location and default precision of the Street Complete 3 and Street Complete 4 ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Basic	50
Output	Address Elements	Advanced	50

The following table provides the location and default precision of the Street Complete 5 and Street Complete 6 ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Advanced	50

Street Complete Example

The following example address contains data that can populate the Street Complete 1 port:

```
Mr. J. Tsang
Floor 12, Apt 231
Fung Wah Estate, Hiu Fung Tower
No. 11 North St.
Kennedy Town
Hong Kong Island
HKG
```

The following table shows the Address Validator transformation ports that relate to the street data in the address:

Port Name	Data
Contact Complete 1	Mr. J. Tsang
Building Complete 1	Fung Wah Estate
Building Complete 2	Hiu Fung Tower
Sub-building Complete 1	Floor 12
Sub-building Complete 2	Apt 231
Street Complete 1	**North St.**
Street Name	**North**
Street Post-Descriptor	**St.**
Street Number Complete 1	No. 11
Street Number Descriptor 1	No.
Street Number 1	11
Locality Complete 1	Kennedy Town
Province Country Standard 1	Hong Kong Island
Country ISO3 Char	HKG

Street Complete with Number Ports

Output ports that contain all data that identifies a street and a building on a street in an address record.

The Street Complete with Number ports contain all the data that appears in the Street Complete ports and Street Number Complete ports in the address record.

The street data ports are related by port number. For example, Street Complete with Number 1 contains all data in Street Complete 1 and Street Number Complete 1.

Street Complete with Number Usage

To write all street-level data and all building-level data to a single port, select a Street Complete with Number port.

Consider the following guidelines when you use Street Complete ports:

- The Street Complete with Number ports do not contain sub-building data.
- There are six Street Complete with Number ports. If an address record contains data that relates to more than one street or building, select additional Street Complete with Number ports.
- Most countries use Street Complete with Number 1 or Street Complete with Number 2 ports. You might need to select port numbers 3 through 6 if the street data is highly complex.
- You can add all street data output ports to an output address, including the Street Complete with Number ports.

Port Locations

The following table provides the location and default precision of the Street Complete with Number 1 and Street Complete with Number 2 ports:

Port Type	Port Group	Template Model	Precision
Output	Address Elements	Basic	50

The following table provides the location and default precision of the ports in the range Street Complete 3 through Street Complete 6:

Port Type	Port Group	Template Model	Precision
Output	Address Elements	Advanced	50

Street Complete with Number Example

The following example address contains data that can populate the Street Complete with Number 1 port:

```
Mr. J. Tsang
Floor 12, Apt 231
Fung Wah Estate, Hiu Fung Tower
No. 11 North St.
Kennedy Town
Hong Kong Island
HKG
```

The following table shows the Address Validator transformation ports that relate to the street data in the address:

Port Name	Data
Contact Complete 1	Mr. J. Tsang
Building Complete 1	Fung Wah Estate
Building Complete 2	Hiu Fung Tower
Sub-building Complete 1	Floor 12

Port Name	Data
Sub-building Complete 2	Apt 231
Street Complete 1	North St.
Street Number Complete 1	No. 11
Street Complete with Number 1	**No. 11 North St.**
Locality Complete 1	Kennedy Town
Province Country Standard 1	Hong Kong Island
Country ISO3 Char	HKG

Street Name Ports

Input and output ports that contain the street name data in an address record.

The Street Name port contains a subset of the data in the Street Complete port. For example, "Fifth" is the street name in "Fifth Avenue." The ports are linked by number, so that for example Street Name 1 is a subset of Street Complete 1.

Street Name Usage

Select a Street Name input port when an input address contains the street name in a single port.

Select a Street Name output port to write the street name in a single port.

Consider the following guidelines when you use Street Number ports:

- There are six Street Name ports. If an address record contains more than one street name, select additional Street Name ports.
- Most countries use a single Street Name. You may also need the Street Name 2 port if an address contains a dependent street. You may need to select a port in the Street Name 3 through Street Name 6 range if the street data is highly complex.
- For each street in an address, select the Street Complete input port or select one or more of the Street Name, Street Post-Descriptor, Street Post-Directional, Street Pre-Descriptor, or Street Pre-Directional input ports.
- You can select all street data output ports.
- Street name ports can contain street numbers, such as "10th" in "10th Street."

Port Locations

The following table provides the location and default precision of the Street Name 1 and Street Name 2 ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Basic	50

The following table provides the location and default precision of ports Street Name 3 through Street Name 6:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Advanced	50

Street Name Example

The following example address contains data that can populate the Street Name 1 port:

```
Mr. J. Tsang
Floor 12, Apt 231
Fung Wah Estate, Hiu Fung Tower
No. 11 North St.
Kennedy Town
Hong Kong Island
HKG
```

The following table shows the Address Validator transformation ports that relate to the street name data in the address:

Port Name	Data
Contact Complete 1	Mr. J. Tsang
Building Complete 1	Fung Wah Estate
Building Complete 2	Hiu Fung Tower
Sub-building Complete 1	Floor 12
Sub-building Complete 2	Apt 231
Street Complete 1	North St.
Street Name 1	**North**
Street Post-Descriptor 1	**St.**
Street Number Complete 1	No. 11
Street Number Descriptor 1	No.

Port Name	Data
Street Number 1	11
Locality Complete 1	Kennedy Town
Province Country Standard 1	Hong Kong Island
Country ISO3 Char	HKG

Street Number Ports

Input and output ports that contain numerical data that identifies a building or residence with a single mailbox in an address record.

The Street Number port contains a subset of the data in the Street Number Complete port. For example, "10" is the street number in "Number 10 Downing Street." The street number ports are related by port number. For example, Street Number Complete 1 contains the data in Street Number 1 and Street Number Descriptor 1.

Street Number Ports and Australian Address Data

The Address Validator transformation writes five digits to the Street Number 1 and Street Number 2 output ports when you select these ports from the Australia Specific group. For example, the Street Number 1 port writes the number "16" as "00016." The five-digit format is mandated by Australia Post for AMAS certification.

You can select street number output ports from the Australia Specific group and from other groups for the same address. Each port reads the same data. The Australia Specific ports write the data in the five-digit format.

Note: The Street Number ports in the Australia Specific group write numerical data only. If a street number data element contains alphanumeric data, such as "16A DRYSDALE RD," the Address Validator transformation writes the letter A to the Street Number Suffix port.

Street Number Ports and New Zealand Address Data

Do not use Street Number ports with New Zealand addresses when you run an address validation process in certified mode. Use House Number and House Number Alpha ports instead.

Street Number Usage

Select a Street Number input port when an input address contains the street number for a building or residence in a single port.

Select a Street Number output port to write the street number for a building or residence in a single port.

To view street number data for an Australian address, configure the Address Validator transformation in certified mode.

Consider the following guidelines when you use Street Number ports:

- There are six Street Number ports. If an address record contains more than one street number, select additional Street Number ports.
- Most countries use Street Number 1 or Street Number 2 ports. Select a port in the Street Number 3 through Street Number 6 range if the street data is highly complex.

- For each street in an address, select the Street Number Complete input port or select one or more of the Street Number or Street Number Descriptor input ports.
- You can select all street number data output ports.
- Street number ports do not identify numbers in street names. Use a Street Name port to identify a number in a street name, for example "10th" in "10th Street."

Port Locations

The following table provides the location and default precision of the Street Number 1 port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Basic	20
Output	Australia Specific	Basic	12

The following table provides the location and default precision of the Street Number 2 port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Advanced	20
Output	Australia Specific	Basic	12

The following table provides the location and default precision of ports Street Number 3 through Street Number 6:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Advanced	20

Street Number Example

The following address contains data that can populate the Street Number 1 port:

```
Mr. J. Tsang
Floor 12, Apt 231
Fung Wah Estate, Hiu Fung Tower
No. 11 North St.
Kennedy Town
Hong Kong Island
HKG
```

The following table shows the Address Validator transformation ports that relate to the street number data in the address:

Port Name	Data
Contact Complete 1	Mr. J. Tsang
Building Complete 1	Fung Wah Estate
Building Complete 2	Hiu Fung Tower
Sub-building Complete 1	Floor 12
Sub-building Complete 2	Apt 231
Street Complete 1	North St.
Street Number Complete 1	No. 11
Street Number Descriptor 1	No.
Street Number 1	**11**
Locality Complete 1	Kennedy Town
Province Country Standard 1	Hong Kong Island
Country ISO3 Char	HKG

Street Number Additional Info Ports

Input and output ports that contain information about the street number that can assist delivery to the address. This data takes the form of notes added to the data record

Street number ports are related by number. For example, Street Number Additional Info 1 provides information about the data in the Street Number 1 port. You can select a Street Number Additional Info port and other Street Number ports concurrently.

Street Number Additional Info Usage

Select Street Number Additional Info when the input address contains information related to the building or house number that can assist in delivering mail to an address.

Address validation does not parse or validate data for this port. If you select a Street Number Additional Info input port, connect the data to a Street Number Additional Info output port.

Port Locations

The following table provides the location and default precision of the Street Number Additional Info 1 through Street Number Additional Info 6 ports:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Advanced	12

Street Number Complete Ports

Input and output ports that contain all street number data in an address record.

A street number identifies a building or residence with a single mailbox.

The street number data ports are related by port number. For example, Street Number Complete 1 might contain data from Street Number 1 and Street Number Descriptor 1. The correspondence applies when you select the Street Number and Street Number Descriptor ports from the Discrete or Address Elements group. The Street Number ports in the Australia Specific group do not share data with Street Number Complete ports.

Street Number Complete Usage

Select a Street Number Complete input port when an input address contains all street number data for a building or residence in a single port.

Select a Street Number Complete output port to write all street number data for a building or residence in the address in a single port.

Consider the following guidelines when you use Street Number Complete ports:

- There are six Street Number Complete ports. If an address record contains more than one street number, select additional Street Number Complete ports.
- Most countries use Street Number Complete 1 or Street Number Complete 2 ports. You may need to select a port in the Street Number Complete 3 through Street Number Complete 6 range if the street identification data is highly complex.
- For each street in an address, select a Street Number Complete input port or select one or more of the Street Number Descriptor and Street Number input ports.
- You can select all street number data ports as outputs.
- Street number ports do not identify numbers in street names. Use a Street Name port to identify a number in a street name, for example "10th" in "10th Street."

Port Locations

The following table provides the location and default precision of the Street Number Complete 1 port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Basic	30
Output	Address Elements	Basic	30

The following table provides the location and default precision of ports Street Number Complete 2 through Street Number Complete 6:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Advanced	30

Street Number Complete Example

The following example address contains data that can populate the Street Number Complete 1 port:

```
Mr. J. Tsang
Floor 12, Apt 231
Fung Wah Estate, Hiu Fung Tower
No. 11 North St.
Kennedy Town
Hong Kong Island
HKG
```

The following table shows the Address Validator transformation ports that relate to all street number data in the address:

Port Name	Data
Contact Complete 1	Mr. J. Tsang
Building Complete 1	Fung Wah Estate
Building Complete 2	Hiu Fung Tower
Sub-building Complete 1	Floor 12
Sub-building Complete 2	Apt 231
Street Complete 1	North St.
Street Number Complete 1	**No. 11**
Street Number Descriptor 1	**No.**
Street Number 1	**11**
Locality Complete 1	Kennedy Town

Port Name	Data
Province Country Standard 1	Hong Kong Island
Country ISO3 Char	HKG

Street Number Descriptor Ports

Input and output ports that contain descriptive terms for street numbers.

The Street Number Descriptor port formally identifies the street number. For example, "Number" is the street number descriptor in "Number 10 Downing Street."

The street number descriptor ports are related by port number. For example, Street Number Complete 1 contains the data in Street Number 1 and Street Number Descriptor 1.

Street Number Descriptor Usage

Select a Street Number Descriptor input port when an input address uses a descriptive term with the street number of a building or residence.

Select a Street Number output port to write the descriptive term for a street number to a single port.

Consider the following guidelines when you use Street Number Descriptor ports:

- There are six Street Number Descriptor ports. If an address record contains more than one descriptor, select additional Street Number Descriptor ports.
- Most countries use Street Number Descriptor 1 or Street Number Descriptor 2 ports. You may need to select a port in the Street Number Descriptor 3 through Street Number Descriptor 6 range if the street address data is highly complex.
- For each street number port in an address, select the Street Number Complete input port or select one or more of the Street Number or Street Number Descriptor input ports.
- You can select all street number data output ports.

Port Locations

The following table provides the location and default precision of the Street Number Descriptor 1 port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Basic	20

The following table provides the location and default precision of ports Street Number Descriptor 2 through Street Number Descriptor 6:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Advanced	20

Street Number Descriptor Example

The following example address contains data that can populate the Street Number Descriptor 1 port:

```
Mr. J. Tsang
Floor 12, Apt 231
Fung Wah Estate, Hiu Fung Tower
No. 11 North St.
Kennedy Town
Hong Kong Island
HKG
```

The following table shows the Address Validator transformation ports that relate to the street descriptor data in the address:

Port Name	Data
Contact Complete 1	Mr. J. Tsang
Building Complete 1	Fung Wah Estate
Building Complete 2	Hiu Fung Tower
Sub-building Complete 1	Floor 12
Sub-building Complete 2	Apt 231
Street Complete 1	North St.
Street Number Complete 1	No. 11
Street Number Descriptor 1	**No.**
Street Number 1	11
Locality Complete 1	Kennedy Town
Province Country Standard 1	Hong Kong Island
Country ISO3 Char	HKG

Street Number Suffix

Output port that contains one or more characters that follow the street number in an Australian address.

Street Number Suffix Usage

Select the Street Number Suffix port when an address meets the following conditions:

- The address identifies an Australian mailbox.
- The address contains a street number, and you have selected the Street Number 1 or Street Number 2 port from the Australia Specific group.
- The address is part of a data set that you will submit for AMAS certification.

You can select the Street Number Suffix port with street number ports in the Discrete or Address Elements groups.

To view street number suffix data, configure the Address Validator transformation in certified mode.

Port Location

The following table provides the location and default precision of the Street Number Suffix port:

Port Type	Port Group	Template Model	Precision
Output	Australia Specific	Basic	2

Street Number Suffix Example

The following example shows street number suffix data in an address in Wester Australia:

```
MS. JANE RYAN
16A DRYSDALE RD
CRAIGIE WA 6025
AUS
```

The following table shows the Address Validator transformation ports that relate to the street number suffix data in the address:

Port	Data
Contact Complete 1	MS. JANE RYAN
Street Number 1 (Address Elements)	16A
Street Number 1 (Australia Specific)	00016
Street Number Suffix	**A**
Street Complete 1	DRYSDALE RD
Locality Complete 1	CRAIGIE
Province Abbreviation 1	WA
Country ISO3 Char	AUS

Street Post-Descriptor Ports

Input and output ports that contain descriptive data that comes after the street name in an address record.

The Street Pre-Descriptor value can specify a street in an area where several streets have a common Street Name value. For example, postdescriptors separate "Fourth Avenue" and "Fourth Street." The Street Post-Descriptor port contains a subset of the data in the Street Complete port. The ports are linked by number, so that for example Street Post-Descriptor 1 is a subset of Street Complete 1.

Street Post-Descriptor Usage

Select a Street Pre-Descriptor input port when an input address contains descriptive data for a street name in a single port and the data comes after the street name.

Select a Street Post-Descriptor output port to write descriptive data that comes after a street name to a single port.

Consider the following guidelines when you use Street Post-Descriptor ports:

- There are six Street Post-Descriptor ports. If an address record contains a postdescriptor for more than one street, select additional Street Post-Descriptor ports.
- A street address may use multiple words for descriptive data. In this case, a descriptive output port contains all the words that describe the street. For example, the Address Validator transformation parses "Park Drive" to a single port for the street address "Lincoln Park Drive."
- Most countries use Street Post-Descriptor 1 or Street Post-Descriptor 2 ports. You may need to select a port in the Street Post-Descriptor 3 through Street Post-Descriptor 6 range if the street data is highly complex.
- For each street in an address, select a Street Complete input port or select one or more of the Street Name, Street Post-Descriptor, Street Post-Directional, Street Pre-Descriptor, or Street Pre-Directional ports.
  You can select all street data ports as outputs.

Port Locations

The following table provides the location and default precision of the Street Post-Descriptor 1 port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Basic	20

The following table provides the location and default precision of ports Street Post-Descriptor 2 through Street Post-Descriptor 6:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Advanced	20

Street Post-Descriptor Example

The following example address contains data that can populate the Street Post-Descriptor 1 port:

```
MR. JOHN DOE
DEF INC.
22087 100TH CT SE
STE 291
KENT WA 98031-2566
USA
```

The following table shows the Address Validator transformation port that relates to the street directional data in the address:

Port Name	Data
Contact Complete 1	MR. JOHN DOE
Organization Complete 1	DEF INC.
Street Complete 1	100TH CT SE
Street Name 1	100TH
Street Post-Descriptor 1	**CT**
Street Post-Directional 1	SE
Sub-building Complete 1	STE 291
Street Number Complete 1	22087
Postcode Complete	98031-2566
Locality Complete 1	KENT
Province Abbreviation 1	WA
Country ISO3 Char	USA

Street Post-Directional Ports

Input and output ports that contain directional data that comes after a street name in an address record.

The Street Post-Directional port identifies the direction that the street runs. For example, "South" is the directional data in "Central Park South." The Street Post-Directional port contains a subset of the data in the Street Complete port. The ports are linked by number, so that for example Street Post-Directional 1 is a subset of Street Complete 1.

Street Post-Directional Usage

Select a Street Post-Directional input port when an input address contains directional data that comes after a street name in a single port.

Select a Street Post-Directional output port to write the postdirectional data for a street name in a single port.

Consider the following guidelines when you use Street Post-Directional ports:

- There are six Street Post-Directional ports. If an address record contains postdirectional data for more than one street, select additional Street Post-Directional ports
- A street address may use multiple words for directional data. In this case, a postdirectional output port contains all the words that identify the direction of the street. For example, the Address Validator transformation parses "South West" to a single postdirectional port for the street address "Ridge Road South West."
- Most countries use Street Post-Directional 1 or Street Post-Directional 2 ports. You may need to select a port in the Street Post-Directional 3 through Street Post-Directional 6 range if the street data is highly complex.
- For each street in an address, select a Street Complete input port or select one or more of the Street Name, Street Post-Descriptor, Street Post-Directional, Street Pre-Descriptor, or Street Pre-Directional ports.
  You can select all street data ports as outputs.

Port Locations

The following table provides the location and default precision of the Street Post-Directional 1 port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Basic	20

The following table provides the location and default precision of ports Street Post-Directional 2 through Street Post-Directional 6:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Advanced	20

Street Post-Directional Example

The following example address contains data that can populate the Street Post-Directional 1 port:

```
MR. JOHN DOE
2 MCGRATH PL E
ST. JOHN'S NL A1B 3V4
CANADA
```

The following table shows the Address Validator transformation port that relates to the street directional data in the address:

Port Name	Data
Contact Complete 1	MR. JOHN DOE
Street Complete 1	2 MCGRATH PL E
Street Name 1	MCGRATH

Port Name	Data
Street Post-Descriptor 1	PL
Street Post-Directional 1	**E**
Street Number Complete 1	2
Postcode Complete	A1B 3V4
Locality Complete 1	ST. JOHN'S
Province Abbreviation 1	NL
Country ISO3 Char	CAN

Street Pre-Descriptor Ports

Input and output ports that contain descriptive data that precedes the street name in an address record.

The Street Pre-Descriptor value can specify a street in an area where several streets have a common Street Name value. For example, predescriptors separate "Rue St. Germain" and "Boulevard St. Jean." The Street Pre-Descriptor port contains a subset of the data in the Street Complete port. The ports are linked by number, so that for example Street Pre-Descriptor 1 is a subset of Street Complete 1.

Street Pre-Descriptor Usage

Select a Street Pre-Descriptor input port when an input address contains descriptive data for a street name in a single port and the data precedes the street name.

Select a Street Pre-Descriptor output port to write the predescriptive data for a street name to a single port.

Consider the following guidelines when you use Street Pre-Descriptor ports:

- There are six Street Pre-Descriptor ports. If an address record contains a predescriptor for more than one street, select additional Street Pre-Descriptor ports.
- Most countries use Street Pre-Descriptor 1 or Street Pre-Descriptor 2 ports. You may need to select a port in the Street Pre-Descriptor 3 through Street Pre-Descriptor 6 range if the street data is highly complex.
- For each street in an address, select a Street Complete input port or select one or more of the Street Name, Street Post-Descriptor, Street Post-Directional, Street Pre-Descriptor, or Street Pre-Directional input ports.
  You can select all street data ports as outputs.

Port Locations

The following table provides the location and default precision of the Street Pre-Descriptor 1 port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Basic	20

The following table provides the location and default precision of ports Street Pre-Descriptor 2 through Street Pre-Descriptor 6:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Advanced	20

Street Pre-Descriptor Example

The following example address contains data that can populate the Street Pre-Descriptor 1 port:

```
9309 RUE DE LILLE
MONTREAL QC H1Z 2P4
CANADA
```

The following table shows the Address Validator transformation port that relates to the street descriptive data in the address:

Port Name	Data
Street Complete 1	RUE DE LILLE
Street Name 1	DE LILLE
Street Pre-Descriptor 1	**RUE**
Postcode 1	H1Z 2P4
Locality Complete 1	MONTREAL
Province Abbreviation 1	QC
Country ISO3 Char	CAN

Street Pre-Directional Ports

Input and output ports that contain directional data that precedes a street name in an address record.

The Street Pre-Directional port identifies the direction that the street runs. For example, "West" is the directional data in "West 10th Street." The Street Pre-Directional port contains a subset of the data in the

Street Complete port. The Street Pre-Directional port contains a subset of the data in the Street Complete port. The ports are linked by number, so that for example Street Pre-Directional 1 is a subset of Street Complete 1.

Street Pre-Directional Usage

Select a Street Pre-Directional input port when an input address contains directional data for a street name in a single port and the data precedes the street name.

Select a Street Post-Descriptor output port to write the predirectional data for a street name to a single port.

Consider the following guidelines when you use Street Pre-Directional ports:

- There are six Street Pre-Directional ports. If an address record contains predirectional data for more than one street, select additional Street Pre-Directional ports.
- A street address may use multiple words for directional data. In this case, a predirectional output port contains all the words that identify the direction of the street. For example, the Address Validator transformation parses "North West" to a single predirectional port for the street address "North West Valley Park."
- Most countries use Street Pre-Directional 1 or Street Pre-Directional 2 ports. You may need to select a port in the Street Pre-Directional 3 through Street Pre-Directional 6 range if the street data is highly complex.
- For each street in an address, select a Street Complete input port or select one or more of the Street Name, Street Post-Descriptor, Street Post-Directional, Street Pre-Descriptor, and Street Pre-Directional ports.
  You can select all street data ports as outputs.

Port Locations

The following table provides the location and default precision of the Street Pre-Directional 1 port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Basic	20

The following table provides the location and default precision of ports Street Pre-Directional 2 through Street Pre-Directional 6:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Advanced	50
Output	Address Elements	Advanced	20

Street Pre-Directional Example

The following example address contains data that can populate the Street Pre-Directional 1 port:

```
MR. JOHN DOE
118 W AARON SQ
AARONSBURG PA 16820-9407
UNITED STATES
```

The following table shows the Address Validator transformation port that relates to the street directional data in the address:

Port Name	Data
Contact Complete 1	MR. JOHN DOE
Street Complete 1	118 W AARON SQ
Street Name 1	AARON
Street Post-Descriptor 1	SQ
Street Pre-Directional 1	**W**
Street Number Complete 1	118
Postcode Complete	16820-9407
Locality Complete 1	AARONSBURG
Province Abbreviation 1	PA
Country ISO3 Char	USA

CHAPTER 15

Supplementary Data Ports

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Address Key

Output port that writes the address key to a United Kingdom address. The address key is an eight-digit code that uniquely identifies an address location in the United Kingdom.

Address Key Usage

To find the unique identifier for a United Kingdom address, select the Address Key port.

Consider the following guidelines when you use the Address Key port:

- The address key might not uniquely identify the destination mailbox for an address record. For example, a single building might contain the residence of John Smith and the office of J. Smith Real Estate.

  To find a unique identifier for a United Kingdom mailbox, select the Unique Delivery Point Reference Number GB port.
- Address key codes can change regularly, for example if the Royal Mail updates the post code for the address.

Port Locations

The following table provides the location and default precision of the Address Key port:

Port Type	Port Group	Template Model	Precision
Output	Basic	UK Supplementary	8

Address Key Example

The following example address contains data that can populate the Address Key port:

```
Ms. Patricia Highland
12 Smith Street
Bulwell
NOTTINGHAM
NG6 8AL
```

The following table shows the Address Validator transformation ports that relate to the street name data in the address:

Port Name	Data
Contact Complete 1	MS. PATRICIA HIGHLAND
Street Number Complete 1	12
Street Complete 1	SMITH STREET
Postcode Complete 1	NG6 8AL
Locality Complete 1	NOTTINGHAM
Locality Complete 2	BULWELL
Country ISO3 Char	GBR
Address Key	**02341509**

Census Block Group

Output port that contains a United States census block group number.

The Census Bureau uses census tracts and census blocks to organize census data. A census tract is composed of census block groups. A census block group is composed of census blocks.

The Census Bureau uses demographic data to define census tracts so that the inhabitants of each tract have a common economic status and population profile. The Census Bureau does not use demographic data to define census blocks.

A census block group contains an average of 39 census block. Each census block group has a maximum of 3,000 inhabitants. A census tract can contain between one and nine census block groups.

Census Block Group Usage

Select Census Block Group to identify the census block group that an address belongs to.

Use census tract and census block data to analyze the distribution of your mail items. For example, before you run a direct mail campaign, you can use census tract and census block data to verify that mail items are distributed evenly across a city or region.

Port Location

The following table provides the location and default precision of the Census Block Group port:

Port Type	Port Group	Template Model	Precision
Output	US Supplementary	Basic	1

Census Block Group Output Codes

Census block groups use a single digit in the range from one through nine. A block group consists of all census blocks that begin with same digit.

Census Block Number

Output port that contains a United States census block number.

The Census Bureau uses census tracts and census blocks to organize census data. A census tract is composed of census block groups. A census block group is composed of census blocks.

The Census Bureau uses demographic data to define census tracts, so that the inhabitants of each tract have a common economic status and population profile. The Census Bureau does not use demographic data to define census blocks.

A census block group contains an average of 39 census block. Each census block group has a maximum of 3,000 inhabitants. A census tract can contain between one and nine census block groups.

In a city, a census block may correspond to a city block. In rural areas, the Census Bureau may use a physical feature, such as a river, to define a census block boundary.

Census block populations vary greatly. A quarter of all census blocks have no inhabitants.

Census Block Number Usage

Select Census Block Number to identify the census block that an address belongs to.

Use census tract and census block data to analyze the distribution of your mail items. For example, before you run a direct mail campaign, you can use census tract and census block data to verify that mail items are distributed evenly across a city or region.

Port Location

The following table provides the location and default precision of the Census Block Number port:

Port Type	Port Group	Template Model	Precision
Output	US Supplementary	Basic	4

Census Block Number Output Codes

Census block numbers are unique within a census tract. Most census block numbers have three digits.

A census block number may add a letter to the block number if the block area crosses another geographical boundary, such as a minor civil division boundary.

The Census Bureau maintains a Geographic Areas Reference Manual that describes census blocks and other population areas. You can read the manual on the following site:

http://www.census.gov/geo/reference/garm.html

Census Collection District Code 2006

Output port that identifies the census collection district to which an address belonged during the Australian census of 2006.

The census collection district represents the approximate area that a census data collection agent might cover in ten days. For example, a census collection district might contain 200 dwellings in an urban area. The number of dwellings in a rural area might decrease in proportion to the population density in the area.

Census Collection District Code 2006 Usage

Select the Census Collection District Code 2006 port to identify the census collection district to which the 2006 census assigned the address.

Port Location

The following table provides the location and default precision of the Census Collection District Code 2006 port:

Port Type	Port Group	Template Model	Precision
Output	AU Supplementary	Basic	7

Census Collection District Code 2006 Output Codes

A census collection district code has seven digits. The first digit identifies the state or territory to which the district belongs. The remaining digits uniquely identify the district within the state or territory.

For example, the code 1160501 identifies district number 160501 in New South Wales, as 1 identifies the state as New South Wales. The code 5051901 identifies district number 051901 in Western Australia, as 5 identifies the state as Western Australia.

Related Topics:

- "Supplementary AU Status" on page 292

Census Tract Number

Output port that contains a United States census tract number.

The Census Bureau uses census tracts and census blocks to organize census data. A census tract is composed of census block groups. A census block group is composed of census blocks.

The Census Bureau uses demographic data to define census tracts, so that the inhabitants of each tract have a common economic status and population profile. The Census Bureau does not use demographic data to define census blocks.

A census block group contains an average of 39 census block. Each census block group has a maximum of 3,000 inhabitants. A census tract can contain between one and nine census block groups.

Census tracts have between 1,500 and 8,000 inhabitants. The Census Bureau uses physical features to define the area of a census tract, such as roads, rivers, and railroads. The shape and size of a census tract can change over time as the population changes. Census tracts do not cross state or county boundaries.

Census Tract Number Usage

Select Census Tract Number to identify the census tract that an address belongs to.

Use census tract and census block data to analyze the distribution of your mail items. For example, before you run a direct mail campaign, you can use census tract and census block data to verify that mail items are distributed evenly across a city or region.

Port Location

The following table provides the location and default precision of the Census Tract Number port:

Port Type	Port Group	Template Model	Precision
Output	US Supplementary	Basic	6

Census Tract Number Output Codes

Census tract numbers are unique with a county. Most census tract numbers have three digits. A census tract number may add two digits after the decimal place.

The Census Bureau maintains a Geographic Areas Reference Manual that describes census tracts and other population areas. You can read the manual on the following site:

http://www.census.gov/geo/reference/garm.html

Consolidated Metropolitan Statistical Area Identification

Output port that contains the Consolidated Metropolitan Statistical Area (CMSA) number when an address is located in a CMSA.

A CMSA is a United States metropolitan area that is composed of other metropolitan areas and that has an overall population greater than 1,000,000. A CMSA can contain two or more Primary Metropolitan Statistical Areas (PMSAs).

Consolidated Metropolitan Statistical Area Identification Usage

Select Consolidated Metropolitan Statistical Area Identification to identify the CMSA that the address belongs to. You can use the information to sort large record sets by areas of population. Use Consolidated Metropolitan Statistical Area Identification with United States addresses.

Port Location

The following table provides the location and default precision of the Consolidated Metropolitan Statistical Area Identification port:

Port Type	Port Group	Template Model	Precision
Output	US Supplementary	Basic	4

Output Codes

The Consolidated Metropolitan Statistical Area Identification value is a four-digit number. If the address does not belong to a PMSA, the port returns no data.

You can view a list of the CMSAs that the United States government recognized in 2000 on the following site:

http://www.census.gov/population/cen2000/phc-t3/tab01.txt

Note: The United States Census Bureau supports the use of CMSA data. The United States government no longer uses the CMSA definition to describe population areas.

Core-Based Statistical Area Identification

Output port that contains a Core-Based Statistical Area (CBSA) identification number. A CBSA identifies an urban area with a population greater than 10,000.

A CBSA can be a Metropolitan Statistical Area or Micropolitan Statistical Area. A Metropolitan Statistical Area has over 50,000 inhabitants. A Micropolitan Statistical Area has between 10,000 and 50,000 inhabitants.

Core-Based Statistical Area Identification Usage

Select Core-Based Statistical Area Identification to identify the Core-Based Statistical Area that a United States address belongs to. You can use this information to sort large record sets by areas of population density.

Port Location

The following table provides the location and default precision of the Core-Based Statistical Area Identification port:

Port Type	Port Group	Template Model	Precision
Output	US Supplementary	Basic	5

Core-Based Statistical Area Identification Output Codes

The Core-Based Statistical Area Identification number contains five digits. For example, Austin, Texas has the CBSA ID of 12420.

The United States government recognizes over 900 CBSAs. You can download a list of statistical areas from the following site:

https://www.census.gov/geographies/reference-files/time-series/demo/metro-micro/delineation-files.html

County Federal Information Processing Standard Code

Output port that identifies a county or county equivalent in the United States and United States possessions. Some freely-associated states also uses this code.

The United States Federal Information Processing Standard (FIPS) maintains a set of codes that identify states, counties, and other territorial possessions. The two-digit state code identifies each state. The three-digit county code identifies a county within a state. The five digits of the state and county code can uniquely identify any county or county equivalent. The County Federal Information Processing Standard Code port contains the three digits of the county code.

County Federal Information Processing Standard Code Usage

Select County Federal Information Processing Standard Code to add the three-digit county code to a United States address.

Select County Federal Information Processing Standard Code and State Federal Information Processing Standard Code to write a FIPS code that unique identifies a county.

Port Location

The following table provides the location and default precision of the County Federal Information Processing Standard Code port:

Port Type	Port Group	Template Model	Precision
Output	US Supplementary	Basic	3

County Federal Information Processing Standard Code Output Codes

The county code is a three-digit number that identifies a county within a state. You can view the United States FIPS codes on the following site:

https://www.census.gov/geographies/reference-files/2016/demo/popest/2016-fips.html

Delivery Point Suffix

Output port that enables the Royal Mail to identify any deliverable address in a post code.

The Royal Mail assigns a two-character suffix to every mailbox in a UK post code area. It uses the post code and delivery point suffix to identify every mailbox.

The delivery point suffix format is a digit followed by a letter.

Delivery Point Suffix Usage

Select Delivery Point Suffix to add the delivery point suffix to the output address record. The combined delivery point suffix and post code can identify any deliverable address in the United Kingdom.

Port Location

The following table provides the location and default precision of the Delivery Point Suffix port:

Port Type	Port Group	Template Model	Precision
Output	UK Supplementary	Basic	2

Delivery Point Suffix Output Code

The folllowing table shows a UK post code with the corresponding delivery point suffix:

Post Code	Delivery Point Suffix
BX1 1LT	1A

Delivery Point Type GB

Output port that describes the type of mail recipient that a United Kingdom address identifies. The delivery point type value is a single character that classifies the mail recipient as a small organization, a large organization, or a residence.

Delivery Point Type GB Usage

To identify the type of mail recipient at a United Kingdom address, select the Delivery Point Type GB port.

Port Location

The following table provides the location and default precision of the Delivery Point Type GB port:

Port Type	Port Group	Template Model	Precision
Output	UK Supplementary	Basic	1

Delivery Point Type GB Output Code

The Royal Mail can assign the following delivery point type values to an address:

- L. Identifies a large organization.

- O. Identifies a small organization.
- R. Identifies a residence.

Geocoded National Address File Identifier

Output port that returns the 14-character code that uniquely identifies an Australia address in the Geocoded National Address File. The Geocoded National Address File is an address index that lists every valid physical address in Australia.

The Geocoded National Address File contains over 13 million addresses entries. The Geocoded National Address File links each entry to the latitude and longitude coordinates for the address.

Geocoded National Address File Identifier Usage

Select the Geocoded National Address File Identifier port to return the 14-character code that the Geocoded National Address File stores for an input address.

Port Location

The following table provides the location and default precision of the Geocoded National Address File Identifier port:

Port Type	Port Group	Template Model	Precision
Output	AU Supplementary	Basic	14

Geocoded National Address File Identifier Output Codes

The Geocoded National Address File Identifier output code contains 14 characters. To learn more about the Geocoded National Address File, visit https://www.psma.com.au/products/g-naf.

Related Topics:

- "Supplementary AU Status" on page 292

Greater Capital City Statistical Area 5-Char

Output port that returns a five-character code that identifies the greater capital city statistical area (GCCSA) to which an Australia address belongs.

A GCCSA defines the physical extent of a capital city in an Australian state or territory. The GCCSA includes the commuter belt for the city in addition to the urban population.

The Australian Bureau of Statistics recognizes 16 GCCSA regions in the Australian Statistical Geography Standard. New South Wales, Queensland, South Australia, Tasmania, Victoria, Western Australia, and the Northern Territory each have a GCCSA region and a corresponding region for the remainder of the state or territory. The Australian Capital Territory has a single GCCSA region and does not include a region outside the capital. The Australian Bureau of Statistics combines the territories that it recognizes as Other Territories into a single GCCSA region.

A GCCSA comprises multiple level-four statistical areas.

Greater Capital City Statistical Area 5-Char Usage

Select the Greater Capital City Statistical Area 5-Char port to write a code that represents of the greater capital city statistical area to an Australia address.

The Australian Bureau of Statistics also recognizes the name of each GCCSA. To return the name, use the Greater Capital City Statistical Area Name port.

Port Location

The following table provides the location and default precision of the Greater Capital City Statistical Area 5-Char port:

Port Type	Port Group	Template Model	Precision
Output	AU Supplementary	Basic	5

Greater Capital City Statistical Area 5-Char Output Codes

The GCCSA code contains a single digit that represents the state or territory to which the GCCSA belongs and four letters that identify the GCCSA.

The following table lists the name and the corresponding code for the capital of New South Wales:

State or Territory	Greater Capital City Statistical Area Name	Greater Capital City Statistical Area 5-Char Code
New South Wales	Greater Sydney	1GSYD

Related Topics:

- "Supplementary AU Status" on page 292

Greater Capital City Statistical Area Name

Output port that returns the name of the greater capital city statistical area (GCCSA) to which an Australia address belongs.

A GCCSA defines the physical extent of a capital city in an Australian state or territory. The GCCSA includes the commuter belt for the city in addition to the urban population.

The Australian Bureau of Statistics recognizes 16 GCCSA regions in the Australian Statistical Geography Standard main structure. New South Wales, Queensland, South Australia, Tasmania, Victoria, Western Australia, and the Northern Territory each have a GCCSA region and a corresponding region for the remainder of the state or territory. The Australian Capital Territory has a single GCCSA region and does not include a region outside the capital. The Australian Bureau of Statistics combines the territories that it recognizes as Other Territories into a single GCCSA region.

A GCCSA comprises multiple level-four statistical areas.

Greater Capital City Statistical Area Name Usage

Select the Greater Capital City Statistical Area Name port to write the name of the greater capital city statistical area to an Australia address.

The Australian Bureau of Statistics also uses a five-character code to recognize a GCCSA. To return the five-character code, use the Greater Capital City Statistical Area 5-Digit port.

Port Location

The following table provides the location and default precision of the Greater Capital City Statistical Area Name port:

Port Type	Port Group	Template Model	Precision
Output	AU Supplementary	Basic	50

Greater Capital City Statistical Area Name Output Codes

The GCCSA name is unique within the list of greater capital city statistical area names in Australia.

The following table lists the name and the corresponding five-character code for the capital of New South Wales:

State or Territory	Greater Capital City Statistical Area Name	Greater Capital City Statistical Area 5-Digit Code
New South Wales	Greater Sydney	1GSYD

Note: The GCCSA code includes a single digit that identifies the state or territory.

Related Topics:

- "Supplementary AU Status" on page 292

Level Four Statistical Area 3-Digit

Output port that returns a numerical code to identify the level-four statistical area to which an Australia address belongs.

Level-four statistical areas are the largest sub-state regions in the main structure of the Australian Statistical Geography Standard. The Australian Bureau of Statistics recognized 107 level-four statistical areas in 2016. These include 18 non-spatial special purpose areas for migratory offshore shipping and for No Usual Address codes in each state or territory.

Level-four statistical areas have a general minimum population of 100,000. Urban level-four statistical areas might have between 300,000 and 500,000 inhabitants.

Level Four Statistical Area 3-Digit Usage

Select the Level Four Statistical Area 3-Digit port to write a three-digit code to an Australia address that identifies the level-four statistical area to which the address belongs.

The Australian Bureau of Statistics also recognizes the name of the statistical area. To return the statistical area name, use the Level Four Statistical Area Name port.

Port Location

The following table provides the location and default precision of the Level Four Statistical Area 3-Digit port:

Port Type	Port Group	Template Model	Precision
Output	AU Supplementary	Basic	3

Level Four Statistical Area 3-Digit Example

The Level Four Statistical Area 3-Digit output code contains identifiers for the state or territory to which the area belongs and the level-four statistical area itself.

The following table identifies the name of a level-four statistical area with the statistical area code *102* and the name *Central Coast*:

State or Territory	Level-Four Statistical Area	Level-Four Statistical Area Name
1	02	Central Coast

Related Topics:

- "Supplementary AU Status" on page 292

Level Four Statistical Area Name

Output port that returns the name of the level-four statistical area to which an Australia address belongs.

Level-four statistical areas are the largest sub-state regions in the main structure of the Australian Statistical Geography Standard. The Australian Bureau of Statistics recognized 107 level-four statistical areas in 2016. These include 18 non-spatial special purpose areas for migratory offshore shipping and for No Usual Address codes in each state or territory.

Level-four statistical areas have a general minimum population of 100,000. Urban level-four statistical areas might have between 300,000 and 500,000 inhabitants.

Level Four Statistical Area Name Usage

Select the Level Four Statistical Area Name port to write the level-four statistical area name to an Australia address.

The Australian Bureau of Statistics also uses a three-digit code to recognize a level-four statistical area. To return the statistical area code, use the Level Four Statistical Area 3-Digit port.

Port Location

The following table provides the location and default precision of the Level Four Statistical Area Name port:

Port Type	Port Group	Template Model	Precision
Output	AU Supplementary	Basic	50

Level Four Statistical Area Name Example

The name of a level-four statistical area is unique across all level-four statistical areas in Australia.

The following table identifies the name of a level-four statistical area with the statistical area code *102* and the name *Central Coast*:

State or Territory	Level-Four Statistical Area	Level-Four Statistical Area Name
1	14	Central Coast

Related Topics:

- "Supplementary AU Status" on page 292

Level One Statistical Area 7-Digit

Output port that identifies the level-one statistical area to which an Australia address belongs. The Level One Statistical Area 7-Digit port returns the shorter version of the level-one statistical area code.

A level-one statistical area typically contains between 200 and 800 inhabitants. There were approximately 57,000 level-one statistical areas in Australia in 2016. The Australian Bureau of Statistics includes level-one statistical areas in census data.

The Australian Bureau of Statistics uses an 11-digit code and a seven-digit code to recognize a level-one statistical area. The 11-digit code contains discrete identifiers for all regions in the Australian Statistical Geography Standard main structure to which the area belongs, including the level-one statistical area itself. The seven-digit code contains identifiers for the level-one statistical area, the level-two statistical area to which the area belongs, and the state or territory in which both areas are found.

Level One Statistical Area 7-Digit Usage

Select the Level One Statistical Area 7-Digit port to write the shorter version of the level-one statistical area code to an Australia address.

Port Location

The following table provides the location and default precision of the Level One Statistical Area 7-Digit port:

Port Type	Port Group	Template Model	Precision
Output	AU Supplementary	Basic	7

Level One Statistical Area 7-Digit Output Codes

The Level One Statistical Area 7-Digit output code represents a truncated description of the area within the Australian Statistical Geography Standard main structure. The code contains identifiers for the state or territory, level-two statistical area, and the level-one statistical area itself.

The following table describes the identifiers within the level-one statistical area *5104118*:

State or Territory	Level-Two Statistical Area	Level-One Statistical Area
5	1041	18

Related Topics:

- "Supplementary AU Status" on page 292

Level One Statistical Area 11-Digit

Output port that identifies the level-one statistical area to which an Australia address belongs. The Level One Statistical Area 11-Digit port returns the full version of the level-one statistical area code.

A level-one statistical area typically contains between 200 and 800 inhabitants. There were approximately 57,000 level-one statistical areas in Australia in 2016. The Australian Bureau of Statistics includes level-one statistical areas in census data.

The Australian Bureau of Statistics uses an 11-digit code and a seven-digit code to recognize a level-one statistical area. The 11-digit code contains discrete identifiers for all regions in the Australian Statistical Geography Standard main structure to which the area belongs, including the level-one statistical area itself. The seven-digit code contains identifiers for the level-one statistical area, the level-two statistical area to which the area belongs, and the state or territory in which both areas are found.

Level One Statistical Area 11-Digit Usage

Select the Level One Statistical Area 11-Digit port to write the full version of the level-one statistical area code to an Australia address.

Port Location

The following table provides the location and default precision of the Level One Statistical Area 11-Digit port:

Port Type	Port Group	Template Model	Precision
Output	AU Supplementary	Basic	11

Level One Statistical Area 11-Digit Output Codes

The Level One Statistical Area 11-Digit output code is a fully-hierarchical description of the area within the Australian Statistical Geography Standard main structure. The code contains identifiers for the state or territory, level-four statistical area, level-three statistical area, level-two statistical area, and the level-one statistical area itself.

The following table describes the identifiers within the level-one statistical area *50302104118*:

State or Territory	Level-Four Statistical Area	Level-Three Statistical Area	Level-Two Statistical Area	Level-One Statistical Area
5	03	02	1041	18

Related Topics:

- "Supplementary AU Status" on page 292

Level Three Statistical Area 5-Digit

Output port that returns a numerical code to identify the level-three statistical area to which an Australia address belongs.

Level-three statistical areas typically contain between 30,000 and 130,000 inhabitants. In regional areas, a level-three statistical area can represent the functional area of a town or city with more than 20,000 inhabitants. A level-three statistical area comprises multiple level-two statistical areas.

The Australian Bureau of Statistics uses a five-digit code to recognize a level-three statistical area. The five-digit code contains discrete identifiers for all regions in the Australian Statistical Geography Standard main structure to which the area belongs, including the level-three statistical area itself.

Level Three Statistical Area 5-Digit Usage

Select the Level Three Statistical Area 5-Digit port to write a five-digit code to an Australia address that identifies the level-three statistical area to which the address belongs.

The Australian Bureau of Statistics also recognizes the name of the statistical area. To return the statistical area name, use the Level Three Statistical Area Name port.

Port Location

The following table provides the location and default precision of the Level Three Statistical Area 5-Digit port:

Port Type	Port Group	Template Model	Precision
Output	AU Supplementary	Basic	5

Level Three Statistical Area 5-Digit Output Codes

The Level Three Statistical Area 5-Digit output code contains identifiers for the state or territory to which the area belongs, the level-four statistical area, and the level-three statistical area itself.

The following table describes the identifiers within the level-three statistical area *11401*, which corresponds to the city of Shoalhaven in New South Wales:

State or Territory	Level-Four Statistical Area	Level-Three Statistical Area	Level-Three Statistical Area Name
1	14	01	Shoalhaven

Related Topics:

- "Supplementary AU Status" on page 292

Level Three Statistical Area Name

Output port that returns the name of the level-three statistical area to which an Australia address belongs.

Level-three statistical areas typically contain between 30,000 and 130,000 inhabitants. In regional areas, a level-three statistical area can represent the functional area of a town or city with more than 20,000 inhabitants. A level-three statistical area comprises multiple level-two statistical areas.

Level Three Statistical Area Name Usage

Select the Level Three Statistical Area Name port to write the level-three statistical area name to an Australia address.

The Australian Bureau of Statistics also uses a five-digit code to recognize a level-three statistical area. To return the statistical area code, use the Level Three Statistical Area 5-Digit port.

Port Location

The following table provides the location and default precision of the Level Three Statistical Area Name port:

Port Type	Port Group	Template Model	Precision
Output	AU Supplementary	Basic	50

Level Three Statistical Area Name Example

The name of a level-three statistical area is unique across all level-three statistical areas in Australia.

The following table identifies the name of a level-three statistical area with the statistical area code *11401*, which corresponds to the city of Shoalhaven in New South Wales:

State or Territory	Level-Four Statistical Area	Level-Three Statistical Area	Level-Three Statistical Area Name
1	14	01	Shoalhaven

Related Topics:

- "Supplementary AU Status" on page 292

Level Two Statistical Area 5-Digit

Output port that identifies the level-two statistical area to which an Australia address belongs. The Level Two Statistical Area 5-Digit port returns the shorter version of the level-two statistical area code.

Level-two statistical areas have an average of 10,000 inhabitants, and they typically contain between 3,000 and 25,000 inhabitants. A level-two statistical area comprises multiple level-one statistical areas.

The Australian Bureau of Statistics uses a nine-digit code and a five-digit code to recognize a level-two statistical area. The nine-digit code contains discrete identifiers for all regions in the Australian Statistical Geography Standard main structure to which the area belongs, including the level-two statistical area itself. The five-digit code contains identifiers for the level-two statistical area and for the state or territory to which the area belongs.

Level Two Statistical Area 5-Digit Usage

Select the Level Two Statistical Area 5-Digit port to write the shorter version of the level-two statistical area code to an Australia address.

To return the full version of the statistical area code, select the Level Two Statistical Area 9-Digit port.

Note: The Australian Bureau of Statistics also recognizes the name of the statistical area. To return the statistical area name, use the Level Two Statistical Area Name port.

Port Location

The following table provides the location and default precision of the Level Two Statistical Area 5-Digit port:

Port Type	Port Group	Template Model	Precision
Output	AU Supplementary	Basic	5

Level Two Statistical Area 5-Digit Output Codes

The Level Two Statistical Area 5-Digit output code is a truncated description of the area within the Australian Statistical Geography Standard main structure. The code contains identifiers for the state or territory and for the level-two statistical area itself.

The following table describes the identifiers within the level-two statistical area *51041*, which represents the city of Perth in Western Australia:

State or Territory	Level-Two Statistical Area
5	1041

Related Topics:

- "Supplementary AU Status" on page 292

Level Two Statistical Area 9-Digit

Output port that identifies the level-two statistical area to which an Australia address belongs. The Level Two Statistical Area 9-Digit port returns the full version of the level-two statistical area code.

Level-two statistical areas have an average of 10,000 inhabitants, and they typically contain between 3,000 and 25,000 inhabitants. A level-two statistical area comprises multiple level-one statistical areas.

The Australian Bureau of Statistics uses a nine-digit code and a five-digit code to recognize a level-two statistical area. The nine-digit code contains discrete identifiers for all regions in the Australian Statistical Geography Standard main structure to which the area belongs, including the level-two statistical area itself. The five-digit code contains identifiers for the level-two statistical area and for the state or territory to which the area belongs.

Level Two Statistical Area 9-Digit Usage

Select the Level Two Statistical Area 9-Digit port to write the full version of the level-two statistical area code to an Australia address.

To return the shorter version of the statistical area code, select the Level Two Statistical Area 5-Digit port.

Note: The Australian Bureau of Statistics also recognizes the name of the statistical area. To return the statistical area name, use the Level Two Statistical Area Name port.

Port Location

The following table provides the location and default precision of the Level Two Statistical Area 9-Digit port:

Port Type	Port Group	Template Model	Precision
Output	AU Supplementary	Basic	9

Level Two Statistical Area 9-Digit Output Codes

The Level Two Statistical Area 9-Digit output code is a fully-hierarchical description of the area within the Australian Statistical Geography Standard main structure. The code contains identifiers for the state or territory, level-four statistical area, level-three statistical area, and the level-two statistical area itself.

The following table describes the identifiers within the level-two statistical area *503021041*, which represents the city of Perth in Western Australia:

State or Territory	Level-Four Statistical Area	Level-Three Statistical Area	Level-Two Statistical Area
5	03	02	1041

Related Topics:

- "Supplementary AU Status" on page 292

Level Two Statistical Area Name

Output port that identifies the level-two statistical area to which an Australia address belongs. The Level Two Statistical Area Name port returns the name of the level-two statistical area.

Level-two statistical areas have an average of 10,000 inhabitants, and they typically contain between 3,000 and 25,000 inhabitants. A level-two statistical area comprises multiple level-one statistical areas.

Level Two Statistical Area Name Usage

Select the Level Two Statistical Area Name port to write the level-two statistical area name to an Australia address.

Note: In addition to the statistical area name, the Australian Bureau of Statistics uses a nine-digit code and a five-digit code to recognize a level-two statistical area. The nine-digit code contains discrete identifiers for all regions in the Australian Statistical Geography Standard main structure to which the area belongs, including the level-two statistical area itself. The five-digit code contains identifiers for the level-two statistical area and for the state or territory to which the area belongs. To return a level-two statistical area code for an address, use the Level Two Statistical 9-Digit port or the Level Two Statistical Area 5-Digit port.

Port Location

The following table provides the location and default precision of the Level Two Statistical Area Name port:

Port Type	Port Group	Template Model	Precision
Output	AU Supplementary	Basic	30

Level Two Statistical Area Name Example

The name of a level-two statistical area is unique across all level-two statistical areas in Australia.

The following table identifies the name of a level-two statistical area with the statistical area code *503021041*, which represents the city of Perth in Western Australia:

State or Territory	Level-Four Statistical Area	Level-Three Statistical Area	Level-Two Statistical Area	Level-Two Statistical Area Name
5	03	02	1041	Perth City

Related Topics:

- "Supplementary AU Status" on page 292

Mesh Block 11-Digit 2011

Output port that returns the 11-digit code that identifies the mesh block to which an address belonged in the Australian census year 2011.

Mesh blocks are the smallest geographical area that the Australian Bureau of Statistics defines. Mesh blocks contain on average between 30 and 60 dwellings. In urban areas, the Australian Bureau of Statistics targets a mesh block size closer to 30 dwellings. In rural areas, the number of dwellings in a mesh block may be lower if the properties are distributed over a large area. The 2016 census recognized over 350,000 mesh blocks in Australia.

The Australian Bureau of Statistics uses multiple criteria to define mesh blocks. For example, mesh block boundaries should be consistent and continuous with each other, and mesh blocks should not cross property boundaries. Additionally, mesh blocks should be homogeneous in land use. The types of land use that the Australian Bureau of Statistics defines for mesh blocks include residential, commercial, industrial, parkland, education, and hospital or medical use.

Mesh Block 11-Digit 2011 Usage

Select the Mesh Block 11-Digit 2011 port to identify the mesh block to which an address belonged in 2011.

Note: In 2016, the Australian Bureau of Statistics redrew many mesh blocks to reflect changes in population and land use since the 2011 census. When a mesh block boundary changes significantly, the Australian Bureau of Statistics retires the current mesh block code and creates a new code for the mesh block.

To identify the mesh block to which an address belonged in 2016, use the Mesh Block 11-Digit 2016 port.

Port Location

The following table provides the location and default precision of the Mesh Block 11-Digit 2011 port:

Port Type	Port Group	Template Model	Precision
Output	AU Supplementary	Basic	11

Mesh Block 11-Digit 2011 Output Codes

A mesh block code has eleven digits. The first digit identifies the state or territory to which the district belongs. The remaining digits uniquely identify the mesh block within the state or territory.

For example, the code 60106840000 identifies district number 0106840000 in Tasmania. The initial digit 6 identifies the state or territory.

Related Topics:

- "Supplementary AU Status" on page 292

Mesh Block 11-Digit 2016

Output port that returns the 11-digit code that identifies the mesh block to which an address belonged in the Australian census year 2016.

Mesh blocks are the smallest geographical area that the Australian Bureau of Statistics defines. Mesh blocks contain on average between 30 and 60 dwellings. In urban areas, the Australian Bureau of Statistics targets a mesh block size closer to 30 dwellings. In rural areas, the number of dwellings in a mesh block may be lower if the properties are distributed over a large area. The 2016 census recognized over 350,000 mesh blocks in Australia.

The Australian Bureau of Statistics uses multiple criteria to define mesh blocks. For example, mesh block boundaries should be consistent and continuous with each other, and mesh blocks should not cross property boundaries. Additionally, mesh blocks should be homogeneous in land use. The types of land use that the Australian Bureau of Statistics defines for mesh blocks include residential, commercial, industrial, parkland, education, and hospital or medical use.

Mesh Block 11-Digit 2016 Usage

Select the Mesh Block 11-Digit 2016 port to identify the mesh block to which an address belonged in 2016.

Note: In 2016, the Australian Bureau of Statistics redrew many mesh blocks to reflect changes in population and land use since the 2011 census. When a mesh block boundary changes significantly, the Australian Bureau of Statistics retires the current mesh block code and creates a new code for the mesh block.

To identify the mesh block to which an address belonged in 2011, use the Mesh Block 11-Digit 2011 port.

Port Location

The following table provides the location and default precision of the Mesh Block 11-Digit 2016 port:

Port Type	Port Group	Template Model	Precision
Output	AU Supplementary	Basic	11

Mesh Block 11-Digit 2016 Output Codes

A mesh block code has eleven digits. The first digit identifies the state or territory to which the district belongs. The remaining digits uniquely identify the mesh block within the state or territory.

For example, the code 60106840000 identifies district number 0106840000 in Tasmania. The initial digit 6 identifies the state or territory.

Related Topics:

- "Supplementary AU Status" on page 292

Metropolitan Statistical Area Identification

Output port that contains the Metropolitan Statistical Area identification number. This number identifies an urban area with a population greater than 50,000.

Metropolitan Statistical Area Identification Usage

Select Metropolitan Statistical Area Identification to identify the Metropolitan Statistical Area that an address belongs to.

Port Location

The following table provides the location and default precision of the Metropolitan Statistical Area Identification port:

Port Type	Port Group	Template Model	Precision
Output	US Supplementary	Basic	5

Metropolitan Statistical Area Identification Output Codes

The Metropolitan Statistical Area Identification number contains five digits.

You can learn more about metropolitan statistical areas on the following web site:

https://www.census.gov/programs-surveys/metro-micro.html

Minor Civil Division Identification

Output port that contains a Minor Civil Division (MCD) identification number. An MCD is a political or administrative area within a United States county.

All United States counties comprise MCDs or Census County Divisions (CCDs). The Census Bureau recognizes MCDs in 29 states and in the District of Columbia, Puerto Rico, and the Island Areas.

Minor Civil Division Identification Usage

Select Minor Civil Division Identification to identify the MCD that an address belongs to. If the address does not belong to an MCD, the port does not return data.

Port Location

The following table provides the location and default precision of the Minor Civil Division Identification port:

Port Type	Port Group	Template Model	Precision
Output	US Supplementary	Basic	5

Minor Civil Division Identification Output Codes

The MCD code is a five-digit number.

The Census Bureau maintains a Geographic Areas Reference Manual that describes MCDs and other population areas. You can read the manual on the following site:

http://www.census.gov/geo/reference/garm.html

Organization Key GB

Output port that contains the organization key that the Royal Mail assigns to an organization at an address. The organization key is an eight-digit code that uniquely identifies the organization at the address.

Each organization at an address in the Royal Mail Postal Address File (PAF) has a unique organization key. If more than one organization shares an address, the Royal Mail assigns a unique organization key to each organization. If an organization has branches at multiple addresses, the Royal Mail assigns a unique organization key to each branch.

The organization key does not store any information about the organization or the address. To create an organization key for an address, the Royal Mail increments the most recent organization key in the PAF.

Organization Key GB Usage

To find the organization key for an organization at a United Kingdom address, select the Organization Key GB port.

Port Location

The following table provides the location and default precision of the Organization Key GB port:

Port Type	Port Group	Template Model	Precision
Output	UK Supplementary	Basic	8

Organization Key GB Example

The following address contains data that can populate the Organization Key GB port:

```
D. H. Wilson & Son
10 Smith Street
Bulwell
NOTTINGHAM
NG6 8AL
```

The following table shows the Address Validator transformation ports that relate to organization data in the address:

Port Name	Data
Organization Complete 1	D. H. WILSON & SON
Street Complete 1	10 SMITH STREET
Postcode 1	NG6 8AL
Locality Complete 1	NOTTINGHAM
Organization Key GB	**00001150**

Place Federal Information Processing Standard Code

Output port that contains the Federal Information Processing Standard (FIPS) code for a populated place.

The term "place" defines a populated residential area. The Census Bureau recognizes FIPS codes for incorporated places, census-designated places, and other geographical entities.

Place Federal Information Processing Standard Code Usage

Select Place Federal Information Processing Standard Code to find the FIPS code number for the place identified in the address record.

Port Location

The following table provides the location and default precision of the Place Federal Information Processing Standard Code port:

Port Type	Port Group	Template Model	Precision
Output	US Supplementary	Basic	5

Place Federal Information Processing Standard Code Output Codes

The place code is a five-digit number. You can download a list of state, county, minor civil division, and incorporated place codes from the following site:

https://www.census.gov/geographies/reference-files/2015/demo/popest/2015-fips.html

Primary Metropolitan Statistical Area Identification

Output port that contains the Primary Metropolitan Statistical Area (PMSA) number when an address is located in a PMSA.

A PMSA is a metropolitan area that connects with one or more metropolitan areas to create an area with a population greater than 1,000,000. For example, one PMSA may serve as a commuter belt for another contiguous area. The combined area is called a Consolidated Metropolitan Statistical Area (CMSA).

Primary Metropolitan Statistical Area Identification Usage

Select Primary Metropolitan Statistical Area Identification to identify the PMSA that an address belongs to. You can use this information to sort large record sets by areas of areas of population. Use Primary Metropolitan Statistical Area Identification with United States addresses.

Port Location

The following table provides the location and default precision of the Primary Metropolitan Statistical Area Identification port:

Port Type	Port Group	Template Model	Precision
Output	US Supplementary	Basic	4

Primary Metropolitan Statistical Area Output Codes

The Primary Metropolitan Statistical Area Identification is a four-digit number. If the address does not belong to a PMSA, the port returns no data.

You can view a list of the PMSAs that the U.S. government recognized in 2000 on the following site:

http://www.census.gov/population/cen2000/phc-t3/tab01.txt

Note: The United States Census Bureau supports the use of PMSA data. The United States government no longer uses the PMSA definition to describe population areas.

Record Type

Output ports that contain a single-character code that describes the type of mailbox. For example, the code can indicate if the address is in a high-rise building.

Include the record type value with the addresses that you submit for certification by the United States Postal Service (USPS) or Australia Post. The USPS certifies address record sets according to the Coding Accuracy Support System (CASS) standard. Australia Post certifies address record sets according to the Address Matching Approval System (AMAS) standard. The Record Type code enables the mail carrier to process addresses that are valid to post code level but not valid to Delivery Point Code (DPC) or Delivery Point ID (DPID) level.

An AMAS or CASS certified process can reject an address record data set if the data set contains one or more records without delivery point information. The Record Type output code can provide the mail carrier with additional information about non-delivery point address, so that the mail carrier can accept the data set for certification.

Record Type Usage

Select Record Type to generate a code value that represents the address type. Select this port if you are not confident of the delivery point status of one or more addresses in a data set.

To view record type data, configure the Address Validator transformation to run in certified mode.

Port Locations

The following table provides the location and default precision of the Record Type ports:

Port Type	Port Group	Template Model	Precision
Output	Australia Specific	Basic	1
Output	US Specific	Basic	1
Output	US Supplementary	Basic	1

Record Type Output Codes

The following table lists the Record Type output codes:

Code	Description
S	Street
P	Post Office Box
R	Rural route
H	High-rise
F	Firm
G	General delivery

State Federal Information Processing Standard Code

Output port that uniquely identifies states and state equivalents in the United States and United States possessions.

The Federal Information Processing Standard (FIPS) controls the numerical and alphabetical codes that identify states and other territories or possessions of the United States. The State Federal Information Processing Standard Code port writes the two-digit FIPS code.

State Federal Information Processing Standard Code Usage

Select State Federal Information Processing Standard Code to write the two-digit state identifier for a state or territory in the United States as output.

Note: Select the County Federal Information Processing Standard Code port to write the three-digit county FIPS code as output.

Port Location

The following table provides the location and default precision of the State Federal Information Processing Standard Code port:

Port Type	Port Group	Template Model	Precision
Output	US Supplementary	Basic	2

State Federal Information Processing Standard Code Output Codes

You can download the United States FIPS codes from the following web site:

https://www.census.gov/geographies/reference-files/2015/demo/popest/2015-fips.html

State or Territory Code

Output port that returns a numerical code to identify the state or territory to which an Australia address belongs.

States and territories are the largest sub-national divisions that the Australian Statistical Geography Standard defines. A state or territory comprises one or more level-four statistical areas.

State or Territory Code Usage

Select the State or Territory Code port to write a single-digit code to an Australia address that identifies the state or territory to which the address belongs.

The Australian Bureau of Statistics also recognizes the name of the state or territory. To return the state or territory name, select the State or Territory Name port.

Port Location

The following table provides the location and default precision of the State or Territory Code port:

Port Type	Port Group	Template Model	Precision
Output	AU Supplementary	Basic	1

State or Territory Code Outputs

The Australian Statistical Geography Standard recognizes 12 states and territories. However, the Australian Statistical Geography Standard combines four territories into a single unit for statistical purposes. The State or Territory Code port returns the codes that the Australian Statistical Geography Standard uses.

The following table lists the state or territory codes that the port can return:

State or Territory Code	State or Territory Name
1	New South Wales
2	Victoria

State or Territory Code	State or Territory Name
3	Queensland
4	South Australia
5	Western Australia
6	Tasmania
7	Northern Territory
8	Australian Capital Territory
9	Other Territories

The Australian Statistical Geography Standard organizes the following territories into a single unit with the code 9 and the name *Other Territories*:

- Jervis Bay Territory
- Territory of Christmas Island
- Territory of the Cocos (Keeling) Islands
- Territory of Norfolk Island

The Australian Statistical Geography Standard added Norfolk Island to the group of Other Territories in 2016.

Related Topics:

- "Supplementary AU Status" on page 292

State or Territory Name

Output port that returns the name of the state or territory to which an Australia address belongs.

States and territories are the largest sub-national divisions that the Australian Statistical Geography Standard defines. A state or territory comprises one or more level-four statistical areas.

State or Territory Name Usage

Select the State or Territory Name port to write the state or territory name to an Australia address.

The Australian Bureau of Statistics also uses a single-digit code to identify the state or territory. To return the code, select the State or Territory Code port.

Port Location

The following table provides the location and default precision of the State or Territory Name port:

Port Type	Port Group	Template Model	Precision
Output	AU Supplementary	Basic	30

State or Territory Name Outputs

The Australian Statistical Geography Standard recognizes 12 states and territories. However, the Australian Statistical Geography Standard combines four territories into a single unit for statistical purposes. The State or Territory Name port returns the names that the Australian Statistical Geography Standard uses.

The following table lists the state or territory names that the port can return:

State or Territory Code	State or Territory Name
1	New South Wales
2	Victoria
3	Queensland
4	South Australia
5	Western Australia
6	Tasmania
7	Northern Territory
8	Australian Capital Territory
9	Other Territories

The Australian Statistical Geography Standard organizes the following territories into a single unit with the code 9 and the name *Other Territories*:

- Jervis Bay Territory
- Territory of Christmas Island
- Territory of the Cocos (Keeling) Islands
- Territory of Norfolk Island

The Australian Statistical Geography Standard added Norfolk Island to the group of Other Territories in 2016.

Related Topics:

- "Supplementary AU Status" on page 292

Supplementary AT Status

Output port that indicates whether the address validation process can write supplementary data for Austrian addresses. Add supplementary data to an address to assist the mail carrier in mail delivery. Add the supplementary status port to the address configuration to verify that address validation added the supplementary data to each output address.

Find the supplementary data ports for Austria in the AT Supplementary port group. AT Supplementary port data includes postal codes that identify the street for an Austrian mailbox.

Supplementary AT Status Usage

Select Supplementary AT Status to verify that the address validation process can populate the ports in the AT Supplementary port group.

If the port indicates that the codes are not available, update the supplementary address reference data that you installed for Austrla.

Port Location

The following table provides the location and default precision of the Supplementary AT Status port:

Port Type	Port Group	Template Model	Precision
Output	AT Supplementary	Basic	4

Supplementary AT Status Output Codes

The following table describes Supplementary AT Status output codes:

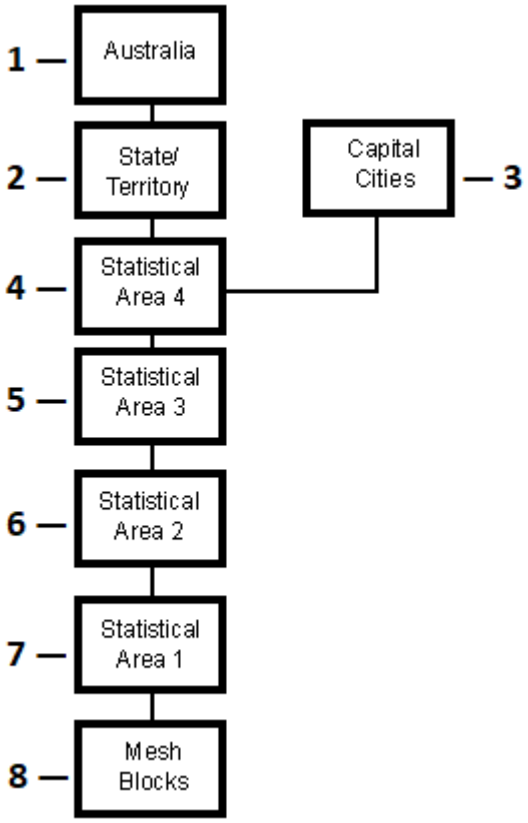
Code	Description
EAT0	Supplementary data is not available for the current address.
EAT1	Address validation can add supplementary data to the current address. **Note:** The supplementary reference data sets might not contain data for every supplementary address element. Review the data on the supplementary ports to verify that the address record contains the data that you expect.
EATC	The supplementary reference data is corrupted.
EATN	Address validation cannot find the supplementary reference data.
EATU	Address validation cannot unlock the supplementary reference data.

Supplementary AU Status

Output port that indicates whether the address validation process can write supplementary data for an Australia address. Add supplementary data to an address to assist the mail carrier in mail delivery. Add the Supplementary AU Status port to the address configuration to verify that address validation added the supplementary data to each output address.

Find the ports that contain supplementary data for Australia addresses in the AU Supplementary port group. The ports identify the regions within the main structure of the Australian Statistical Geography Standard to which the address belongs. The Australian Statistical Geography Standard is a hierarchical structure of demographic and administrative regions and sub-regions within Australia. The Australian government uses the standard as the basis for census data collection and organization. The Australian Bureau of Statistics maintains the data that supports the standard.

The following image shows the main structure of the regions in the Australian Statistical Geography Standard:



The hierarchy contains the following regions:

- Country
- State or territory
- Greater capital city statistical area
- Level-four statistical area
- Level-three statistical area
- Level-two statistical area
- Level-one statistical area
- Mesh block

Supplementary AU Status Usage

Select the Supplementary AU Status port to verify that address validation can populate the ports in the AU Supplementary port group for each address.

If the port indicates that the codes are not available, update the supplementary address reference data that you installed for Australia.

Port Location

The following table provides the location and default precision of the Supplementary AU Status port:

Port Type	Port Group	Template Model	Precision
Output	AU Supplementary	Basic	4

Supplementary AU Status Output Codes

The following table describes the Supplementary AU Status output codes:

Code	Description
EAU0	Supplementary data is not available for the current address.
EAU1	Address validation can add supplementary data to the current address. **Note:** The supplementary reference data sets might not contain data for every supplementary address element. Review the data on the supplementary ports to verify that the address record contains the data that you expect.
EAUC	The supplementary reference data is corrupted.
EAUN	Address validation cannot find the supplementary reference data.
EAUU	Address validation cannot unlock the supplementary reference data.

You can read more about the main structure of the Australian Statistical Geography Standard at the following URL:

http://www.abs.gov.au/AUSSTATS/abs@.nsf/mf/1270.0.55.001

Supplementary BE Status

Output port that indicates whether the address validation process can write supplementary data for a Belgian address. Add supplementary data to an address to assist the mail carrier in mail delivery. Add the supplementary status port to the address configuration to verify that address validation added the supplementary data to each output address.

Find the supplementary data ports for Belgium in the BE Supplementary port group. BE Supplementary port data includes data that identifies the administrative region and the neighborhood to which an address belongs.

Supplementary BE Status Usage

Select the Supplementary BE Status port to verify that address validation can populate the ports in the BE Supplementary port group.

If the port indicates that the codes are not available, update the supplementary address reference data that you installed for Belgium.

Port Location

The following table provides the location and default precision of the Supplementary BE Status port:

Port Type	Port Group	Template Model	Precision
Output	BE Supplementary	Basic	4

Supplementary BE Status Output Codes

The following table describes the Supplementary BE Status output codes:

Code	Description
EBE0	Supplementary data is not available for the current address.
EBE1	Address validation can add supplementary data to the current address. **Note:** The supplementary reference data sets might not contain data for every supplementary address element. Review the data on the supplementary ports to verify that the address record contains the data that you expect.
EBEC	The supplementary reference data is corrupted.
EBEN	Address validation cannot find the supplementary reference data.
EBEU	Address validation cannot unlock the supplementary reference data.

Supplementary BR Status

Output port that indicates whether the address validation process can write supplementary data for Brazilian addresses. Add supplementary data to an address to assist the mail carrier in mail delivery. Add the supplementary status port to the address configuration to verify that address validation added the supplementary data to each output address.

Find the supplementary data ports for Brazil in the BR Supplementary port group. BR Supplementary port data includes code values from the Brazilian Institute of Geography and Statistics (IBGE) that can identify the city or state for an street address.

Supplementary BR Status Usage

Select Supplementary BR Status to verify that the address validation process can populate the ports in the BR Supplementary port group.

If the port indicates that the codes are not available, update the supplementary address reference data that you installed for Brazil.

Port Location

The following table provides the location and default precision of the Supplementary BR Status port:

Port Type	Port Group	Template Model	Precision
Output	BR Supplementary	Basic	4

Supplementary BR Status Output Codes

The following table describes Supplementary BR Status output codes:

Code	Description
EBR0	Supplementary data is not available for the current address.
EBR1	Address validation can add supplementary data to the current address. **Note:** The supplementary reference data sets might not contain data for every supplementary address element. Review the data on the supplementary ports to verify that the address record contains the data that you expect.
EBRC	The supplementary reference data is corrupted.
EBRN	Address validation cannot find the supplementary reference data.
EBRU	Address validation cannot unlock the supplementary reference data.

Supplementary CH Status

Output port that indicates whether the address validation process can write supplementary data for Swiss addresses. Add supplementary data to an address to assist the mail carrier in mail delivery. Add the supplementary status port to the address configuration to verify that address validation added the supplementary data to each output address.

Find the supplementary data ports for Switzerland in the CH Supplementary port group. CH Supplementary port data includes postal codes that identify the street for a Swiss mailbox.

Supplementary CH Status Usage

Select Supplementary CH Status to verify that the address validation process can populate the ports in the CH Supplementary port group.

If the port indicates that the codes are not available, update the supplementary address reference data that you installed for Switzerland.

Port Location

The following table provides the location and default precision of the Supplementary CH Status port:

Port Type	Port Group	Template Model	Precision
Output	CH Supplementary	Basic	4

Supplementary CH Status Output Codes

The following table describes Supplementary CH Status output codes:

Code	Description
ECH0	Supplementary data is not available for the current address.
ECH1	Address validation can add supplementary data to the current address. **Note:** The supplementary reference data sets might not contain data for every supplementary address element. Review the data on the supplementary ports to verify that the address record contains the data that you expect.
ECHC	The supplementary reference data is corrupted.
ECHN	Address validation cannot find the supplementary reference data.
ECHU	Address validation cannot unlock the supplementary reference data.

Supplementary CZ Status

Output port that indicates whether the address validation process can write supplementary data for Czech Republic addresses. Add supplementary data to an address to assist the mail carrier in mail delivery. Add the supplementary status port to the address configuration to verify that address validation added the supplementary data to each output address.

Find the supplementary data ports for the Czech Republic in the CZ Supplementary port group. CZ Supplementary port data includes RUIAN codes that can uniquely identify a building or a delivery point.

Supplementary CZ Status Usage

Select Supplementary CZ Status to verify that the address validation process can populate the ports in the CZ Supplementary port group.

If the port indicates that the codes are not available, update the supplementary address reference data that you installed for the Czech Republic.

Port Location

The following table provides the location and default precision of the Supplementary CZ Status port:

Port Type	Port Group	Template Model	Precision
Output	CZ Supplementary	Basic	4

Supplementary CZ Status Output Codes

The following table describes Supplementary CZ Status output codes:

Code	Description
ECZ0	Supplementary data is not available for the current address.
ECZ1	Address validation can add supplementary data to the current address. **Note:** The supplementary reference data sets might not contain data for every supplementary address element. Review the data on the supplementary ports to verify that the address record contains the data that you expect.
ECZC	The supplementary reference data is corrupted.
ECZN	Address validation cannot find the supplementary reference data.
ECZU	Address validation cannot unlock the supplementary reference data.

Supplementary DE Status

Output port that indicates whether the address validation process can write supplementary data for German addresses. Add supplementary data to an address to assist the mail carrier in mail delivery. Add the supplementary status port to the address configuration to verify that address validation added the supplementary data to each output address.

Find the supplementary data ports for Germany in the DE Supplementary port group. DE Supplementary port data includes postal codes that identify the street, locality, and municipality for a German mailbox.

Supplementary DE Status Usage

Select Supplementary DE Status to verify that the address validation process can populate the ports in the DE Supplementary port group.

If the port indicates that the codes are not available, update the supplementary address reference data that you installed for Germany.

Port Location

The following table provides the location and default precision of the Supplementary DE Status port:

Port Type	Port Group	Template Model	Precision
Output	DE Supplementary	Basic	4

Supplementary DE Status Output Codes

The following table describes Supplementary DE Status output codes:

Code	Description
EDE0	Supplementary data is not available for the current address.
EDE1	Address validation can add supplementary data to the current address. **Note:** The supplementary reference data sets might not contain data for every supplementary address element. Review the data on the supplementary ports to verify that the address record contains the data that you expect.
EDEC	The supplementary reference data is corrupted.
EDEN	Address validation cannot find the supplementary reference data.
EDEU	Address validation cannot unlock the supplementary reference data.

Supplementary ES Status

Output port that indicates whether the address validation process writes supplementary data to an address in Spain. Add supplementary data to an address to assist the mail carrier in mail delivery. Add the supplementary status port to the address configuration to verify that address validation added the supplementary data to each output address.

Find the supplementary data ports for Spain in the ES Supplementary port group. ES Supplementary port data includes statistical data that can identify the province, municipality, and street for an address.

Supplementary ES Status Usage

Select the Supplementary ES Status port to verify that address validation can populate the ports in the ES Supplementary port group.

If the port indicates that the codes are not available, update the supplementary address reference data that you installed for Spain.

Port Location

The following table provides the location and default precision of the Supplementary ES Status port:

Port Type	Port Group	Template Model	Precision
Output	ES Supplementary	Basic	4

Supplementary ES Status Output Codes

The following table describes the Supplementary ES Status output codes:

Code	Description
EES0	Supplementary data is not available for the current address.
EES1	Address validation added supplementary data to the current address. **Note:** The address reference data sets might not contain data for every supplementary address element. Review the data on the supplementary ports to verify that the address record contains the data that you expect.
EESC	The supplementary reference data is corrupted.
EESN	Address validation cannot find the supplementary reference data.
EESU	Address validation cannot unlock the supplementary reference data.

Supplementary FR Status

Output port that indicates whether the address validation process can write supplementary data for French addresses. Add supplementary data to an address to assist the mail carrier in mail delivery. Add the supplementary status port to the address configuration to verify that address validation added the supplementary data to each output address.

Find the supplementary data ports for France in the FR Supplementary port group. FR Supplementary port data includes data from the National Institute for Statistics and Economic Studies (INSEE) that identifies French communes and departments.

Supplementary FR Status Usage

Select Supplementary FR Status to verify that the address validation process can populate the ports in the FR Supplementary port group.

If the port indicates that the codes are not available, update the supplementary address reference data that you installed for France.

Port Location

The following table provides the location and default precision of the Supplementary FR Status port:

Port Type	Port Group	Template Model	Precision
Output	FR Supplementary	Basic	4

Supplementary FR Status Output Codes

The following table describes Supplementary FR Status output codes:

Code	Description
EFR0	Supplementary data is not available for the current address.
EFR1	Address validation can add supplementary data to the current address. **Note:** The supplementary reference data sets might not contain data for every supplementary address element. Review the data on the supplementary ports to verify that the address record contains the data that you expect.
EFRC	The supplementary reference data is corrupted.
EFRN	Address validation cannot find the supplementary reference data.
EFRU	Address validation cannot unlock the supplementary reference data.

Supplementary GB Status

Output port that indicates whether the address validation process can write supplementary data for United Kingdom addresses. Add supplementary data to an address to assist the mail carrier in mail delivery. Add the supplementary status port to the address configuration to verify that address validation added the supplementary data to each output address.

Find the supplementary data ports for the United Kingdom in the UK Supplementary port group. UK Supplementary port data includes delivery point codes that can uniquely identify a mailbox in a United Kingdom address.

The UK Supplementary ports add delivery point data to United Kingdom addresses.

Supplementary GB Status Usage

Select Supplementary GB Status to verify that the address validation process can populate the ports in the UK Supplementary port group.

If the port indicates that the codes are not available, you need to update the supplementary address reference data that you installed for the United Kingdom.

Port Location

The following table provides the location and default precision of the Supplementary GB Status port:

Port Type	Port Group	Template Model	Precision
Output	UK Supplementary	Basic	4

Supplementary GB Status Output Codes

The following table describes Supplementary GB Status output codes:

Code	Description
EGB0	Supplementary data is not available for the current address.
EGB1	Address validation can add supplementary data to the current address. **Note:** The supplementary reference data sets might not contain data for every supplementary address element. Review the data on the supplementary ports to verify that the address record contains the data that you expect.
EGBC	The supplementary reference data is corrupted.
EGBN	Address validation cannot find the supplementary reference data.
EGBU	Address validation cannot unlock the supplementary reference data.

Supplementary IT Status

Output port that indicates whether the address validation process can write supplementary data for an address in Italy. Add supplementary data to an address to assist the mail carrier in mail delivery. Add the supplementary status port to the address configuration to verify that address validation added the supplementary data to each output address.

Find the supplementary data ports for Italy in the IT Supplementary port group. IT Supplementary port data includes data that can identify the province and the municipality, or commune, to which an address belongs.

Supplementary IT Status Usage

Select the Supplementary IT Status port to verify that address validation can populate the ports in the IT Supplementary port group.

If the port indicates that the codes are not available, update the supplementary address reference data that you installed for the Italy.

Port Location

The following table provides the location and default precision of the Supplementary IT Status port:

Port Type	Port Group	Template Model	Precision
Output	IT Supplementary	Basic	4

Supplementary IT Status Output Codes

The following table describes the Supplementary IT Status output codes:

Code	Description
EIT0	Supplementary data is not available for the current address.
EIT1	Address validation can add supplementary data to the current address. **Note:** The supplementary reference data sets might not contain data for every supplementary address element. Review the data on the supplementary ports to verify that the address record contains the data that you expect.
EITC	The supplementary reference data is corrupted.
EITN	Address validation cannot find the supplementary reference data.
EITU	Address validation cannot unlock the supplementary reference data.

Supplementary JP Status

Output port that indicates whether the address validation process can write supplementary data for Serbian addresses. Add supplementary data to an address to assist the mail carrier in mail delivery. Add the supplementary status port to the address configuration to verify that address validation added the supplementary data to each output address.

Find the supplementary data ports for Japan in the JP Supplementary port group. JP Supplementary port data includes delivery point codes that can uniquely identify a mailbox in a Japanese address.

Supplementary JP Status Usage

Select Supplementary JP Status to verify that the address validation process can populate the ports in the JP Supplementary port group.

If the port indicates that the codes are not available, you need to update the supplementary address reference data that you installed for Japan.

Port Location

The following table provides the location and default precision of the Supplementary JP Status port:

Port Type	Port Group	Template Model	Precision
Output	JP Supplementary	Basic	4

Supplementary JP Status Output Codes

The following table describes Supplementary JP Status output codes:

Code	Description
EJP0	Supplementary data is not available for the current address.
EJP1	Address validation can add supplementary data to the current address. **Note:** The supplementary reference data sets might not contain data for every supplementary address element. Review the data on the supplementary ports to verify that the address record contains the data that you expect.
EJPC	The supplementary reference data is corrupted.
EJPN	Address validation cannot find the supplementary reference data.
EJPU	Address validation cannot unlock the supplementary reference data.

Supplementary KR Status

Output port that indicates whether the address validation process can write supplementary data for South Korea addresses. Add supplementary data to an address to assist the mail carrier in mail delivery. Add the supplementary status port to the address configuration to verify that address validation added the supplementary data to each output address.

Supplementary KR Status Usage

Find the supplementary data ports for South Korea in the KR Supplementary port group. KR Supplementary port data includes a string value that uniquely identifies an address in South Korea. To return the unique identifier, use the Address Identifier KR port.

Port Location

The following table provides the location and default precision of the Supplementary KR Status port:

Port Type	Port Group	Template Model	Precision
Output	KR Supplementary	Basic	4

Supplementary KR Status Output Codes

The following table describes Supplementary KR Status output codes:

Code	Description
EKR0	Supplementary data is not available for the current address.
EKR1	Address validation can add supplementary data to the current address. **Note:** The supplementary reference data sets might not contain data for every supplementary address element. Review the data on the supplementary ports to verify that the address record contains the data that you expect.

Code	Description
EKRC	The supplementary reference data is corrupted.
EKRN	Address validation cannot find the supplementary reference data.
EKRU	Address validation cannot unlock the supplementary reference data.

Supplementary PL Status

Output port that indicates whether the address validation process can write supplementary data for Polish addresses. Add supplementary data to an address to assist the mail carrier in mail delivery. Add the supplementary status port to the address configuration to verify that address validation added the supplementary data to each output address.

Find the supplementary data ports for Poland in the PL Supplementary port group. PL Supplementary port data includes postal codes that identify the street for a Polish mailbox.

Supplementary PL Status Usage

Select Supplementary PL Status to verify that the address validation process can populate the ports in the PL Supplementary port group.

If the port indicates that the codes are not available, update the supplementary address reference data that you installed for Poland.

Port Location

The following table provides the location and default precision of the Supplementary PL Status port:

Port Type	Port Group	Template Model	Precision
Output	PL Supplementary	Basic	4

Supplementary PL Status Output Codes

The following table describes Supplementary PL Status output codes:

Code	Description
EPL0	Supplementary data is not available for the current address.
EPL1	Address validation can add supplementary data to the current address. **Note:** The supplementary reference data sets might not contain data for every supplementary address element. Review the data on the supplementary ports to verify that the address record contains the data that you expect.
EPLC	The supplementary reference data is corrupted.
EPLN	Address validation cannot find the supplementary reference data.
EPLU	Address validation cannot unlock the supplementary reference data.

Supplementary RS Status

Output port that indicates whether the address validation process can write supplementary data for Serbian addresses. Add supplementary data to an address to assist the mail carrier in mail delivery. Add the supplementary status port to the address configuration to verify that address validation added the supplementary data to each output address.

Find the supplementary data ports for Serbia in the RS Supplementary port group. RS Supplementary port data includes postal codes that identify the street for a Serbian mailbox.

Supplementary RS Status Usage

Select Supplementary RS Status to verify that the address validation process can populate the ports in the RS Supplementary port group.

If the port indicates that the codes are not available, you need to update the supplementary address reference data that you installed for Serbia.

Port Location

The following table provides the location and default precision of the Supplementary RS Status port:

Port Type	Port Group	Template Model	Precision
Output	RS Supplementary	Basic	4

Supplementary RS Status Output Codes

The following table describes Supplementary RS Status output codes:

Code	Description
ERS0	Supplementary data is not available for the current address.
ERS1	Address validation can add supplementary data to the current address. **Note:** The supplementary reference data sets might not contain data for every supplementary address element. Review the data on the supplementary ports to verify that the address record contains the data that you expect.
ERSC	The supplementary reference data is corrupted.
ERSN	Address validation cannot find the supplementary reference data.
ERSU	Address validation cannot unlock the supplementary reference data.

Supplementary RU Status

Output port that indicates whether the address validation process can write supplementary data for an address in the Russian Federation. Add supplementary data to an address to assist the mail carrier in mail

delivery. Add the supplementary status port to the address configuration to verify that address validation added the supplementary data to each output address.

Find the supplementary data ports for the Russian Federation in the RU Supplementary port group. RU Supplementary port data includes identifiers that can uniquely identify each building to which the Russian postal service delivers mail.

Supplementary RU Status Usage

Select the Supplementary RU Status port to verify that address validation can populate the ports in the RU Supplementary port group.

If the port indicates that the codes are not available, update the supplementary address reference data that you installed for the Russian Federation.

Port Location

The following table provides the location and default precision of the Supplementary RU Status port:

Port Type	Port Group	Template Model	Precision
Output	RU Supplementary	Basic	4

Supplementary RU Status Output Codes

The following table describes the Supplementary RU Status output codes:

Code	Description
ERU0	Supplementary data is not available for the current address.
ERU1	Address validation can add supplementary data to the current address. **Note:** The supplementary reference data sets might not contain data for every supplementary address element. Review the data on the supplementary ports to verify that the address record contains the data that you expect.
ERUC	The supplementary reference data is corrupted.
ERUN	Address validation cannot find the supplementary reference data.
ERUU	Address validation cannot unlock the supplementary reference data.

Supplementary US Status

Output port that indicates whether the address validation process can write supplementary data for United States addresses. Add supplementary data to an address to assist the mail carrier in mail delivery. Add the supplementary status port to the address configuration to verify that address validation added the supplementary data to each output address.

Find the supplementary data ports for the United States in the US Supplementary port group. US Supplementary port data includes census tract and census block numbers, Metropolitan Statistical Area (MSA) codes, time zone codes, and Minor Civil Division (MCD) codes.

Supplementary US Status Usage

Select Supplementary US Status to verify that the address validation process can populate the ports in the US Supplementary port group.

If the port indicates that the codes are not available, you need to update the supplementary address reference data that you installed for the United States.

Port Location

The following table provides the location and default precision of the Supplementary US Status port:

Port Type	Port Group	Template Model	Precision
Output	US Supplementary	Basic	4

Supplementary US Status Output Codes

The following table describes Supplementary US Status output codes:

Code	Description
EUS0	Supplementary data is not available for the current address.
EUS1	Address validation can add supplementary data to the current address. **Note:** The supplementary reference data sets might not contain data for every supplementary address element. Review the data on the supplementary ports to verify that the address record contains the data that you expect.
EUSC	The supplementary reference data is corrupted.
EUSN	Address validation cannot find the supplementary reference data.
EUSU	Address validation cannot unlock the supplementary reference data.

Supplementary ZA Status

Output port that indicates whether the address validation process can write supplementary data for South Africa addresses. Add supplementary data to an address to assist the mail carrier in mail delivery. Add the supplementary status port to the address configuration to verify that address validation added the supplementary data to each output address.

Find the supplementary data ports for South Africa in the ZA Supplementary port group. ZA Supplementary port data includes code values that can identify a building on a street in South Africa.

Supplementary ZA Status Usage

Select Supplementary ZA Status to verify that the address validation process can populate the ports in the ZA Supplementary port group.

If the port indicates that the codes are not available, update the supplementary address reference data that you installed for South Africa.

Port Location

The following table provides the location and default precision of the Supplementary ZA Status port:

Port Type	Port Group	Template Model	Precision
Output	ZA Supplementary	Basic	4

Supplementary ZA Status Output Codes

The following table describes Supplementary ZA Status output codes:

Code	Description
EZA0	Supplementary data is not available for the current address.
EZA1	Address validation can add supplementary data to the current address. **Note:** The supplementary reference data sets might not contain data for every supplementary address element. Review the data on the supplementary ports to verify that the address record contains the data that you expect.
EZAC	The supplementary reference data is corrupted.
EZAN	Address validation cannot find the supplementary reference data.
EZAU	Address validation cannot unlock the supplementary reference data.

Unique Delivery Point Reference Number GB

Input and output ports that uniquely identify a United Kingdom address.

The eight digits of the reference number contain all the data that the Royal Mail needs to deliver a mail item to a destination mailbox. You can use the reference number in place of the United Kingdom street address.

Unique Delivery Point Reference Number GB Usage

To read a code that uniquely identifies a United Kingdom address, select the Unique Delivery Point Reference Number GB input port.

To generate a code that uniquely identifies a United Kingdom address, select the Unique Delivery Point Reference Number GB output port.

Port Location

The following table provides the location and default precision of the Unique Delivery Point Reference Number GB port:

Port Type	Port Group	Template Model	Precision
Input	Discrete	Basic	8
Output	UK Supplementary	Basic	50

Unique Delivery Point Reference Number GB Example

The following example address contains data that can generate a unique delivery point reference number:

```
MS. ANDREA GOODE
1 LOIRSTON CLOSE
COVE
ABERDEEN
AB12 3AU
GBR
```

The following table shows the Address Validator transformation ports that relate to the reference number data in the address:

Port Name	Data
Contact Complete 1	MS. ANDREA GOODE
Street Number Complete 1	1
Street Complete 1	LOIRSTON CLOSE
Postcode Complete 1	AB12 3AU
Locality Complete 1	ABERDEEN
Locality Complete 2	COVE
Country ISO3 Char	GBR
Unique Delivery Point Reference Number GB	**00022909**

UPRN GB

Input and output ports that uniquely identify the plot of land that contains an address in Great Britain. The UPRN is the unique property reference number.

The Ordnance Survey of Great Britain maintains the UPRN data. The Ordnance Survey uses the Postal Address File (PAF) data from the Royal Mail to assign each address to the correct plot of land. A unique property reference number contains 12 digits.

Because the unique property reference number identifies a plot of land and not an address, the number does not change when an address changes.

UPRN GB Usage

To identify the plot of land that contains a valid Great Britain address, select the UPRN GB input port. Use the port to find the unique property reference number for the address.

To identify the address that a unique property reference number represents, select the UPRN GB output port. Use the port to find the current deliverable address for the mailbox on the property.

You can use the unique property reference number to track the changes to an address over time.

When you select the UPRN GB input port, configure the Address Validator transformation to run in address code lookup mode. When you select the UPRN GB output port, configure the Address Validator transformation to run in batch mode or in interactive mode.

Port Location

The following table provides the location and default precision of the UPRN GB port:

Port Type	Port Group	Template Model	Precision
Input	Basic	Discrete	12
Output	UK Supplementary	Basic	12

UPRN GB Example

The UPRN GB output port returns a value of 200008192 for the following address:

```
218 BASING WAY
LONDON
N3 3BN
GBR
```

The following table shows the Address Validator transformation output ports that you might select for the address:

Port Name	Data
Street Complete 1	Basing Way
Street Number Complete 1	218
Locality Complete 1	London
Postcode 1	N3 3BN
UPRN GB	**200008192**
Country ISO3 Char	GBR

CHAPTER 16

XML Ports

This chapter includes the following topics:

- Input Data, 312
- Result, 313

Input Data

Output port that contains the data elements in an input address record in a structured XML format.

The Input Data port identifies the address elements that the Address Verification software library associates with the input ports that you select on the transformation. When the address validation mapping runs, the Address Validator transformation passes the input port data to the Address Verification software library. The software library analyzes each data value as a tagged element in an XML structure.

Input Data Usage

To view the address elements in an input address in a structured XML format, select the Input Data port.

If address validation does not generate the results that you expect, use the Input Data port output to verify the structure of the input address. For example, the Status Info ports might indicate that an address is undeliverable because of problems in one or more address elements. Review the XML output to identify the input ports that contain the address elements and to verify that you selected the correct port for each element.

You can use the output from the Result port to troubleshoot the structure of the output address. The Result port writes the data elements in an output address in a structured XML format.

Port Locations

The following table provides the location and default precision of the Input Data port:

Port Type	Port Group	Template Model	Precision
Output	XML	Advanced	2000

Input Data Example

The following address contains data that you can assign to input ports on the Address Validator transformation:

```
MR. JOHN DOE
38A ST. JAMES'S STREET
```

```
LONDON E17 7PE
UNITED KINGDOM
```

The following table shows the Address Validator transformation input ports that you might select for the address:

Port	Data
Country Name	UNITED KINGDOM
Locality Complete 1	LONDON
Postcode 1	E17 7PE
Street Complete 1	ST. JAMES'S STREET
Street Number 1	38A

The following XML fragment shows the XML output on the Input Data port:

```
<?xml version="1.0" encoding="UTF-16"?>
<!-- EngineVersion="5.5.0.27265" -->
<InputData>
      <AddressElements>
            <Country Item="1" Type="NAME">GBR</Country>
            <Locality Item="1" Type="COMPLETE">LONDON</Locality>
            <PostalCode Item="1" Type="FORMATTED">E17 7PE</PostalCode>
            </AddressElements>
      <AddressLines>
            <DeliveryAddressLine Line="1">38A ST. JAMES'S STREET</DeliveryAddressLine>
            <DeliveryAddressLine Line="2"></DeliveryAddressLine>
      </AddressLines>
</InputData>
```

Result

Output port that contains the data elements in an output address record in a structured XML format.

The Result port identifies the address elements that the Address Verification software library associates with the output ports that you select on the transformation. When the address validation mapping runs, the Address Validator transformation passes the input port data to the Address Verification software library. The software library analyzes the data and generates an output in an XML format.

Result Usage

To view the address elements in an output address in a structured XML format, select the Result port.

If address validation does not generate the results that you expect, use the Result port output to verify the structure of the output address. For example, the CASS Status port might indicate that address validation cannot certify an address to the CASS standard because a data element is missing. Review the XML output to verify that you selected the correct output ports for CASS certification.

Port Locations

The following table provides the location and default precision of the Result port:

Port Type	Port Group	Template Model	Precision
Output	XML	Advanced	2000

Result Example

The following address contains data elements that the Result port can write as XML:

```
80 Raffles Place
#50-01 UOB Plaza 1
Singapore
SGP
```

The following table shows the Address Validator transformation input ports that you might select for the address:

Port	Data
Country ISO3 Char	SGP
Locality Name 1	Singapore
Postcode 1	048624
Street Complete 1	Raffles Place
Street Number 1	80
Building Complete 1	UOB Plaza 1
Sub-building Complete 1	50
Sub-building Complete 2	01

The following XML fragment shows the XML output on the Result port:


```
<?xml version="1.0" encoding="UTF-16"?>
<!-- EngineVersion="5.5.0.27265" -->
<Result ProcessStatus="C4"
      ModeUsed="BATCH"
      Count="1"
      CountOverflow="NO"
      CountryISO3="SGP"
      PreferredScript="DATABASE"
      PreferredLanguage="DATABASE">

<ResultData ResultNumber="1"
      MailabilityScore="4"
      ResultPercentage="100.00"
      ElementResultStatus="80F000F0F000F04400E0"
      ElementInputStatus="00600060600060220060"
      AddressResolutionCode="00000000000000000000"
      ExtElementStatus="00000000000060BB0000"
      ElementRelevance="10100010100010000010"
      AddressType="B"
      LanguageISO3="XXX">
      <AddressElements>
```

```
            <Country Type="NAME_EN" Item="1">SINGAPORE</Country>
            <Locality Item="1">SINGAPORE</Locality>
            <PostalCode Item="1">048624</PostalCode>
            <Street Item="1">RAFFLES PLACE</Street>
            <Number Item="1">80</Number>
            <Building Item="1">UOB PLAZA 1</Building>
            <SubBuilding Item="1"># 50</SubBuilding>
            <SubBuilding Item="2">01</SubBuilding>
      </AddressElements>
      <AddressLines>
            <DeliveryAddressLine Line="1">80 RAFFLES PLACE</DeliveryAddressLine>
            <DeliveryAddressLine Line="2">#50-01 UOB PLAZA 1</DeliveryAddressLine>
            <CountrySpecificLocalityLine Line="1">SINGAPORE 048624</
CountrySpecificLocalityLine>
            <FormattedAddressLine Line="1">80 RAFFLES PLACE</FormattedAddressLine>
            <FormattedAddressLine Line="2">#50-01 UOB PLAZA 1</FormattedAddressLine>
            <FormattedAddressLine Line="3">SINGAPORE 048624</FormattedAddressLine>
      </AddressLines>
      <AddressComplete>80 RAFFLES PLACE
#50-01 UOB PLAZA 1
SINGAPORE 048624</AddressComplete>
</ResultData>
</Result>
```


Note: You can configure the Address Validator transformation to write an address value to more than one output port. You can also select status ports that indicate the deliverable status of the address.