

Spectrum™ Technology Platform

Version 12.0 S26

Release Notes

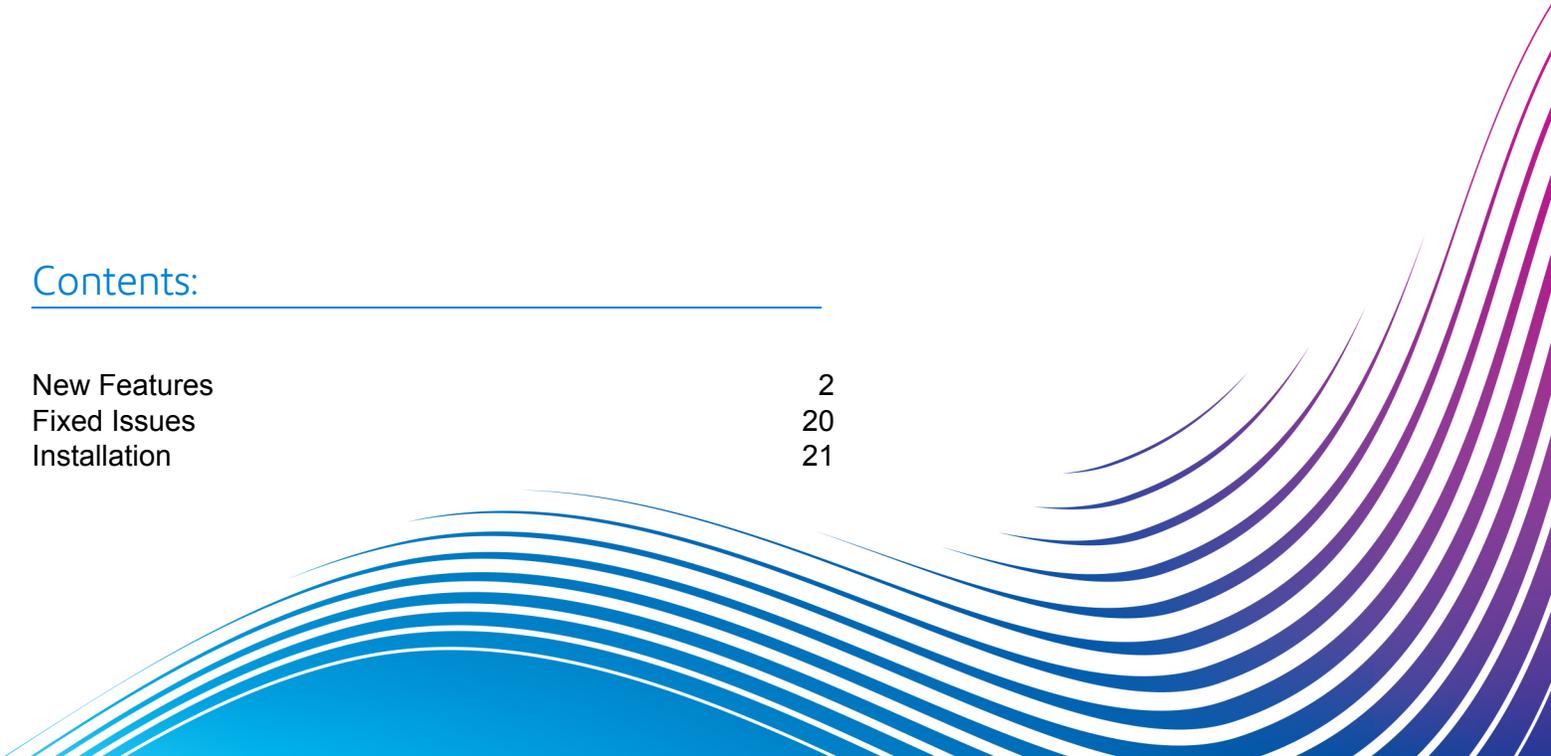
This document contains information about Spectrum™ Technology Platform 12.0 S26. You have access only to the modules you have licensed. To evaluate any other modules, contact your Pitney Bowes account executive for a trial license key.

Who should apply this update? This product update is intended for users of the Enterprise Geocoding Module for USA.

Is this update required? This product update is required for CASS processing due to the implementation of USPS® SHA-256 changes. If you perform DPV® or LACSLink® processes on your addresses, you must install this update. This update also includes enhancements, new features and bug fixes.

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New Features

Highlights and General Enhancements

Extended Match Code for House Number, Unit Number and Unit Type Matching

A new Extended Match Code option has been added that enables the return of additional information about any changes in the matched address from the input address for house number, unit number and unit type. In addition, it includes when input information in the input address line has been ignored. This is particularly useful in identifying whether or not the input unit number was specifically matched, or just the main address was matched, for a multi-unit address. When enabled, the Extended Match Code appends a 3rd hex digit to the match code.

New Reverse PBKey Lookup Stage

Reverse PBKey Lookup is a new stage and an optional licensed matching feature. This feature uses a pbKey™ unique identifier as input and returns all standard returns that are provided as part of address matching. Reverse PBKey Lookup supports multiple use cases, for example, improved efficiency in managing and maintaining consistent and accurate data for customer address lists, as well as providing the capability to generate an address list of customers targeted for products and services based on specific attributes associated with their address by using pbKey™ unique identifiers retrieved from GeoEnrichment products.

ZIP Centroid Returns Added for Master Location Data

ZIP Centroid returns are now optionally available when matching to Master Location Data in the Geocode US Address stage. For addresses that don't have a high-quality location, this provides access to the pbKey™ unique identifier, which can be used to unlock additional information about an address using GeoEnrichment data, as well as to realize operational processing efficiencies. This allows us to ensure maximum address coverage and integrity in geocoding. The inclusion of these addresses enables us to provide a higher match rate, lower false-positive match rate, and access to the pbKey™ unique identifier for all known addresses in the US.

New Expanded Search Matching

New Expanded Search matching options have been added to the Geocode US Address stage. These options set the search constraints to use when matching, such as to a city, finance area, or within a specified search radius distance that can be limited to the input state. The Expanded Search options can assist in finding a match when the input address contains limited or inaccurate city or ZIP Code information.

Improved Matching of Alphanumeric House Numbers

Improvements have been made in cases where the input address has an alphanumeric house number.

Enhancements to Intersection Matching

Enhancements have been made to provide a single, best match when either multiple intersection candidates are returned or when there is an interpolated intersection match.

Improvements when Matching to User Dictionaries

Additional refinements have been made to improve matching to User Dictionaries.

Significant Performance Improvement for User Dictionaries

User Dictionary matching performance improvement. While highly dependent on specific User Dictionary and operating system, the general range of performance improvement is 40% – 80%.

Enhanced Matching to Auxiliary files

Various enhancements have been made when matching to Auxiliary files.

Extreme Performance Improvement for Auxiliary Files

Improved performance when matching to Auxiliary files. Using a 300,000 record Auxiliary file, the startup time improved by 99% and the runtime performance improved by 98%.

Product Updates

Extended Match Codes

The Extended Match Codes option enables the return of additional information about any changes in the house number, unit number and unit type fields. In addition, it can indicate whether there was address information that was ignored. The Extended Match Code is only returned for address-level matches (match codes that begin with A, G, H, J, Q, R, S, T or U), in which case a 3rd hex digit is appended to the match code.

Note: A typical match code contains up to 4 characters: a beginning alpha character followed by 2 or 3 hex digits. The third hex digit is only populated for intersection matches or as part of the Extended Match Code.

"Address information ignored" is specified when any of these conditions apply:

- The output address has content in the `AdditionalInputData` field.
- The output address has a second address line (`AddressLine2`).
- The input address is a dual address (two complete addresses in the input address). For example, "4750 Walnut St. P.O Box 50".
- The input last line has extra information that is not a city, state or ZIP Code, and is ignored. For example, "Boulder, CO 80301 USA", where "USA" is ignored when matching.

The table below provides descriptions of the Extended Match Code 3rd hex digit return values.

Input Addressline	Output Addressline	Extended Code	Description
4750 WALNUT ST STE 200	4750 WALNUT ST STE 200	0	Matched on all address information on line, including Unit Number and Unit Type if included.
4750 WALNUT ST C/O JOE SMITH	4750 WALNUT ST	1	Matched on Unit Number and Unit Type if included. Extra information on address line ignored. Extra information not considered for matching moved to <code>AddressLine2</code> or <code>AdditionalInputData</code> field.
4750 WALNUT ST UNIT 200	4750 WALNUT ST STE 200	2	Matched on Unit Number. Unit Type changed.
4750 WALNUT ST UNIT 200 C/O JOE SMITH	4750 WALNUT ST STE 200	3	Matched on Unit Number. Unit Type changed. Extra information on address line ignored. Extra information not considered for matching moved to <code>AddressLine2</code> or <code>AdditionalInputData</code> field.

Input Addressline	Output Addressline	Extended Code	Description
4750 WALNUT ST STE 2-00	4750 WALNUT ST STE 200	4	Unit Number changed or ignored.
4750 WALNUT ST STE 2-00 C/O JOE SMITH	4750 WALNUT ST STE 200	5	Unit Number changed or ignored. Extra information on address line ignored. Extra information not considered for matching moved to <code>AddressLine2</code> or <code>AdditionalInputData</code> field.
4750 WALNUT ST STE 400	4750 WALNUT ST STE 400	6	Unit Number changed or ignored. Unit Type changed or ignored. In this example, Suite 400 is not valid for the input address, but the address match is not prevented because of an invalid unit number.
4750 WALNUT ST UNIT 2-00 C/O JOE SMITH	4750 WALNUT ST STE 200	7	Unit Number changed or ignored. Unit Type changed or ignored. Extra information on address line ignored. Extra information not considered for matching moved to <code>AddressLine2</code> or <code>AdditionalInputData</code> field.
47-50 WALNUT ST STE 200	4750 WALNUT ST STE 200	8	Matched on Unit Number and Unit Type if included. House number changed or ignored.
47-50 WALNUT ST STE 200 C/O JOE SMITH	4750 WALNUT ST STE 200	9	Matched on Unit Number and Unit Type if included. House number changed or ignored. Extra information not considered for matching moved to <code>AddressLine2</code> or <code>AdditionalInputData</code> field.
47-50 WALNUT ST UNIT 200	4750 WALNUT ST STE 200	A	Matched on Unit Number. Unit Type changed. House Number changed or ignored.
47-50 WALNUT ST UNIT 200 C/O JOE SMITH	4750 WALNUT ST STE 200	B	Matched on Unit Number. Unit Type changed. House Number changed or ignored. Extra information on address line ignored. Extra information not considered for matching moved to <code>AddressLine2</code> or <code>AdditionalInputData</code> field.
47-50 WALNUT ST STE 20-0	4750 WALNUT ST STE 200	C	House Number changed or ignored. Unit Number changed or ignored.
47-50 WALNUT ST STE 20-0 C/O JOE SMITH	4750 WALNUT ST STE 200	D	House Number changed or ignored. Unit Number changed or ignored. Extra information on address line ignored. Extra information not considered for matching moved to <code>AddressLine2</code> or <code>AdditionalInputData</code> field.

Input Addressline	Output Addressline	Extended Code	Description
47-50 WALNUT ST UNIT 20-0	4750 WALNUT ST STE 200	E	House Number changed or ignored. Unit Number changed or ignored. Unit Type changed or ignored.
47-50 WALNUT ST UNIT 2-00 C/O JOE SMITH	4750 WALNUT ST STE 200	F	House Number changed or ignored. Unit Number changed or ignored. Unit Type changed or ignored. Extra information on address line ignored. Extra information not considered for matching moved to AddressLine2 or AdditionalInputData field.

Implementing Extended Match Codes in Management Console and Enterprise Designer

User Interface	Description
Return extended match code	Specifies whether to return the Extended Match Code. Default = disabled

Implementing Extended Match Codes in the API, REST and SOAP Interfaces

Parameter	Description
API and SOAP:	Specifies whether to return the Extended Match Code.
ExtendedMatchCode	Y Yes, return the Extended Match Code.
REST:	N No, do not return the Extended Match Code. Default.
Option.ExtendedMatchCode	

New 3rd hex digit Extended Match Code return values

The following table provides the descriptions of the 3rd hex digit Extended Match Code return values.

Note: For Auxiliary file matches, the 3rd hex digit is always "0".

Code	In 3rd hex position means:
0	Matched on all address information on line, including Unit Number and Unit Type if included.

Code	In 3rd hex position means:
1	Matched on Unit Number and Unit Type if included. Extra information on address line ignored. Extra information on address line ignored. Extra information not considered for matching moved to <code>AddressLine2</code> or <code>AdditionalInputData</code> field.
2	Matched on Unit Number. Unit Type changed.
3	Matched on Unit Number. Unit Type changed. Extra information on address line ignored. Extra information on address line ignored. Extra information not considered for matching moved to <code>AddressLine2</code> or <code>AdditionalInputData</code> field.
4	Unit Number changed or ignored.
5	Unit Number changed or ignored. Extra information on address line ignored. Extra information on address line ignored. Extra information not considered for matching moved to <code>AddressLine2</code> or <code>AdditionalInputData</code> field.
6	Unit Number changed or ignored. Unit Type changed or ignored.
7	Unit Number changed or ignored. Unit Type changed or ignored. Extra information on address line ignored. Extra information on address line ignored. Extra information not considered for matching moved to <code>AddressLine2</code> or <code>AdditionalInputData</code> field.
8	Matched on Unit Number and Unit Type if included. House Number changed or ignored.
9	Matched on Unit Number and Unit Type if included. House Number changed or ignored. Extra information on address line ignored. Extra information not considered for matching moved to <code>AddressLine2</code> or <code>AdditionalInputData</code> field.
A	Matched on Unit Number. Unit Type changed. House Number changed or ignored.
B	Matched on Unit Number. Unit Type changed. House Number changed or ignored. Extra information on address line ignored. Extra information not considered for matching moved to <code>AddressLine2</code> or <code>AdditionalInputData</code> field.
C	House Number changed or ignored. Unit Number changed or ignored.
D	House Number changed or ignored. Unit Number changed or ignored. Extra information on address line ignored. Extra information on address line ignored. Extra information not considered for matching moved to <code>AddressLine2</code> or <code>AdditionalInputData</code> field.

Code	In 3rd hex position means:
E	House Number changed or ignored. Unit Number changed or ignored. Unit Type changed or ignored.
F	House Number changed or ignored. Unit Number changed or ignored. Unit Type changed or ignored. Extra information on address line ignored. Extra information on address line ignored. Extra information not considered for matching moved to <code>AddressLine2</code> or <code>AdditionalInputData</code> field.

New Reverse PBKey Lookup stage

Reverse PBKey Lookup is an optional licensed matching feature. The Reverse PBKey Lookup stage allows you to look up an address using a pbKey™ unique identifier as input and receive all standard returns that are provided as part of address matching.

A pbKey™ unique identifier (PBKey) is returned when a match is made to the Master Location Dataset (MLD). It is a 12-character (+1 null) field, which is a persistent identifier for an address. The PBKey serves as a lookup key with Pitney Bowes GeoEnrichment databases to add attribute data for an address. Depending on the GeoEnrichment database, the attribute data can include property ownership, real estate, census, consumer expenditure, demographic, geographic, fire and flood protection, telecommunication and wireless systems information and more.

Use Cases

This section presents two example use cases for Reverse PBKey Lookup:

- the first one demonstrates improved efficiency in managing and maintaining consistent and accurate data for customer address lists;
- the second one shows how to use pbKey™ unique identifiers retrieved from GeoEnrichment data products to generate an address list of customers targeted for products and services based on specific attributes associated with their address.

Address Master Data Management To ensure the latest address information and most accurate locations are being used, businesses may regularly geocode their customer address list. There is a cost in terms of computing power to this intensive process, as well as a small chance of changes to the address match. Some businesses monitor these changes since it's integral to their business. Additionally, many businesses have multiple address databases across different business functions, and have the need for consistent representation of a single address across multiple systems and databases. The Reverse PBKey Lookup feature removes the need to re-geocode the address by using the pbKey™ unique identifier rather than the address as input. The address together with latitude/longitude coordinates are returned. The Reverse PBKey Lookup process is substantially faster and therefore less costly than using the address to retrieve this information. In addition, since a pbKey™ unique identifier is persistent, there is no chance of matching to a different address.

Identifying Addresses from GeoEnrichment Data The GeoEnrichment data products are a variety of text-based data files that contain different attributes for each address in the Master Location Dataset. You can use the attributes in one or more of these GeoEnrichment datasets to identify customers for products or services based on those specific attributes. The lookup key for these products is the pbKey™ unique identifier rather than the address. This allows you to easily link customers across multiple datasets if you need to consider attributes included in more than one GeoEnrichment dataset. For example, using Ground View Family Demographics Fabric, in conjunction with Property Attribute Fabric, you would be able to generate a list of pbKey™ unique identifiers for records that represent young families, with 4 or more persons, in large houses, to target for specific products and services. Once records with the

desired attributes have been identified, the pbKey™ unique identifiers from those records can be used to return the address and location information for those customers using PBKey Reverse Lookup.

Licensing

Reverse PBKey Lookup requires a special license. There are two levels of licensing for Reverse PBKey Lookup:

- Standard - This license allows Reverse PBKey Lookup of all of the standard MLD addresses.
- Enhanced - This license allows Reverse PBKey Lookup of a portion of MLD addresses that require an additional royalty due to address sourcing constraints.

Requirements

Reverse PBKey Lookup includes these requirements:

- You have licensed and installed the Master Location Dataset (MLD).
- You have licensed and installed the DVDMLDR dataset.
- The MLD and DVDMLDR datasets must be the same vintage.

Reverse PBKey Lookup Search Results

When using Reverse PBKey Lookup, the search results can return zero to many MLD point address variations that match the input PBKey. There will be no matches returned if the given PBKey is not found. While many PBKeys map to a single point-level address, some PBKeys map to multiple point address variations. Getting multiple point address variations from one PBKey can occur in two circumstances:

1. Alias matches. Some streets are known by their common name and one to many aliases. In this case, MLD may contain all variations of street names. An example of multiple alias match returns for an input PBKey (P00008BCG8WM) is shown below:

- AP02. Normal match (non-alias). 1206 W 600 S, FOUNTAINTOWN, IN 46130-9409
- AP02. Alias match. 1206 W 1200 N, FOUNTAINTOWN, IN 46130-9409
- AP02. Alias match. 1206 W COUNTY ROAD 1200 N, FOUNTAINTOWN, IN 46130-9409
- AP02. Alias match. 1206 W COUNTY ROAD 600 S, FOUNTAINTOWN, IN 46130-9409

2. Multi-unit buildings with/without units. In some cases, there are multi-unit addresses without individual unit address records. In this case, you may see multiple address records returned for the same input PBKey, some without unit designations and others with ranged unit designations. In the case of multi-unit addresses that have individual suite/unit number address designations, each will have their own distinct PBKey. The following example shows address results for a PBKey that maps to a building with and without units, which share the same PBKey/location (P00003PZZOIE):

- AP02. Normal match (non-alias). 4750 WALNUT ST, BOULDER, CO 80301-2532

- AP02. Normal match (non-alias). 4750 WALNUT ST STE 100-103, BOULDER, CO 80301-2532
- AP02. Normal match (non-alias). 4750 WALNUT ST STE 205-205, BOULDER, CO 80301-2532
- AP02. Normal match (non-alias). 4750 WALNUT ST, BOULDER, CO 80301-2538

New PBKey Input Field

Field Name	Format	Description
Management Console, SOAP and API: PBKey REST: Data.PBKey	String [13]	12-character plus 1 null character alphanumeric pbKey™ unique identifier.

New Reverse PBKey Return Codes and Match Codes

The table below lists the Return Codes and Match Codes returned when using Reverse PBKey Lookup.

License	Input pbKey	Point Results	Match Code
Enhanced	Found	One Enhanced	V000
Enhanced	Found	Multiple Standard and/or Enhanced	V001
Enhanced	Not Found	None	E040
Standard	Found	One Standard	V000
Standard	Found	Multiple Standard	V001
Standard	Found	One Standard, some Enhanced	V002
Standard	Found	Multiple Standard, some Enhanced	V003
Standard	Found	All Enhanced	E041

License	Input pbKey	Point Results	Match Code
Standard	Not Found	None	E040
No license	Not applicable	Not applicable	E000

New Reverse PBKey Lookup "Vhhh" Match Codes

Match Code	Definition
V000	Match made using input pbKey. One Standard or Enhanced point address result returned depending on license.
V001	Match made using input pbKey. Multiple Standard and/or Enhanced point address variations results returned depending on license.
V002	Match made using input pbKey. One Standard, some Enhanced point address variations results returned depending on license.
V003	Match made using input pbKey. Multiple Standard, some Enhanced point address variations results returned depending on license.

New "Ennn" Return Code Values for Reverse PBKey Lookup

New "Ennn" return codes have been added that are returned when either a match was not found for Reverse PBKey Lookup or a missing license was detected.

"Ennn" Value	Description
nnn = 040	No match found using input PBKey with Reverse PBKey Lookup.
nnn = 041	Not licensed to return Enhanced point address(es) found for input pbKey. Additional Reverse PBKey Lookup license option required to return results.

ZIP Centroid Returns Added for Master Location Data

ZIP Centroid returns are now optionally available when matching to Master Location Data (MLD) in the Geocode US Address stage. For addresses that don't have a high-quality location, this provides access to the pbKey™ unique identifier, which can be used to unlock additional information about an address using GeoEnrichment data, as well as to realize operational processing efficiencies. This allows us to ensure maximum address coverage and integrity in geocoding. The inclusion of these addresses enables us to provide a higher match rate, lower false-positive match rate, and access to the pbKey™ unique identifier for all known addresses in the US.

Requirements

In order to return ZIP centroids, you must add these files as database resources:

- Master Location Data
- `zipsmld.gsd` - this is a new file that contains the ZIP centroids.

Implementing ZIP Centroid Returns with Master Location Data

To enable returning ZIP centroids, follow this procedure:

1. Go to the directory listed below. The *SpectrumDirectory* refers to the directory where you have installed the Spectrum™ Technology Platform server.
 - On Windows: `\SpectrumDirectory\server\modules\geostan\`
 - On Unix/Linux: `/SpectrumDirectory/server/modules/geostan/`
2. Using a text editor, open the `java.properties` file.
3. Go to the `Return pbKey Zip Centroids` property.
4. Set `egm.us.return.pbkey.zip.centroids=true`. By default, this property is disabled (false).
5. Restart the Spectrum server.
6. Set the centroid preference to enable ZIP centroid returns as described in the table below.

Interface	Description
Management Console and Enterprise Designer:	On the Geocoding screen, select either: <ul style="list-style-type: none"> • Centroid preference > Return ZIP Code centroids, or • Fallback centroids > ZIP Code Centroid.
SOAP and API:	In the request to the <code>GeocodeUSAddress</code> resource, set: <code>CentroidPreference=AddressUnavailable</code>
REST:	In the request to the <code>GeocodeUSAddress</code> resource, set <code>Option.CentroidPreference=AddressUnavailable</code>

Expanded Search

New Expanded Search matching options have been added to the Geocode US Address stage. These options set the search constraints to use when matching, such as to a city, finance area, or within a specified search radius distance that can be limited to the input state. The Expanded Search options can assist in finding a match when the input address contains limited or inaccurate city or ZIP Code information.

The following example illustrates the different match results for an input address that contains an incorrect ZIP Code when setting the Search Area to City, then to Finance Area.

Input Address	Match with Search Area set to City	Match with Search Area set to Finance Area
100 Main St East Aurora, NY 14166	100 MAIN ST EAST AURORA NY 14052-1633	100 MAIN ST DUNKIRK NY 14048-1844
<i>Input address has an incorrect ZIP Code.</i>	<i>Match is made to East Aurora 14052 as there is no candidate in the 14166 input ZIP Code.</i>	<i>Same finance area as the input ZIP Code 14166.</i>

Implementing Expanded Search in Management Console and Enterprise Designer

User Interface	Description
Search Area	<p>Note: In CASS match mode, only the search area options described in Default are available.</p> <p>Default The impact of the Default option depends on the match mode you're using for matching.</p> <p>When Default is enabled and you're matching using either CASS or Relaxed match mode, the search area is determined based on the Centroid preference setting in Geocoding:</p> <ul style="list-style-type: none"> • If Return ZIP Code centroids is enabled, the City search area is used. • If either No Centroids or Fallback centroids (the latter being the default setting) is enabled, the Finance Area search area is used. <p>When Default is enabled and you're matching using any other match mode - Custom, Exact, Close or Interactive - the Finance Area search area is used.</p> <p>Finance Area Searches the entire Finance Area for possible streets.</p> <p>Note: This option has no effect when performing a ZIP centroid match or a geographic geocode.</p> <p>City Searches the specified city.</p> <p>Search Radius Enables setting the search radius distance to use when matching (see Search Radius Distance).</p> <p>Search Radius - limit to state Limits the search to the state, within the search radius distance. The default search radius is 25 miles.</p>
Search Radius Distance	<p>When the Search Radius option is selected, this field allows you to enter the search radius distance to use when matching. Valid values = 0-99 (miles). Default = 25 miles.</p> <p>Note: Ignored in CASS match mode.</p>

Implementing Expanded Search in the API, REST and SOAP Interfaces

Parameter	Description
API and SOAP: FIND_SEARCH_AREA	Note: In CASS match mode, only the search area options described in FIND_SEARCH_AREA_DEFAULT are available.
REST: Option.FIND_SEARCH_AREA	FIND_SEARCH_AREA_DEFAULT The impact of the FIND_SEARCH_AREA_DEFAULT setting depends on the match mode you're using for matching. When FIND_SEARCH_AREA_DEFAULT is set and you're matching using either CASS or Relaxed match mode, the search area is determined based on the CentroidPreference (API and SOAP)/ Option.CentroidPreference (REST) setting: <ul style="list-style-type: none"> • If CentroidPreference = AllCentroids, the FIND_SEARCH_AREA_CITY search area is used. • If CentroidPreference is set to either NoCentroids or AddressUnavailable, the FIND_SEARCH_AREA_FINANCE search area is used. When FIND_SEARCH_AREA_DEFAULT is set and you're matching using any other match mode - Custom, Exact, Close or Interactive - the FIND_SEARCH_AREA_FINANCE search area is used.
	FIND_SEARCH_AREA_FINANCE Searches the entire Finance Area for possible streets. <p>Note: This option has no effect when performing a ZIP centroid match or a geographic geocode.</p>
	FIND_SEARCH_AREA_CITY Searches the specified city.
	FIND_SEARCH_AREA_EXPANDED Enables the setting of the search radius distance to use when matching (see FIND_SEARCH_AREA_DISTANCE).
	FIND_EXPND_SRCH_LIM_TO_STATE Limits the search to the state, within the search radius distance. The default search radius is 25 miles.
API and SOAP: FIND_SEARCH_AREA_DISTANCE	When FIND_SEARCH_AREA_EXPANDED is enabled, this field allows you to enter the search radius distance to use when matching. Valid values = 0-99 (miles). Default = 25 miles.
REST: Option.FIND_SEARCH_AREA_DISTANCE	Note: Ignored in CASS match mode.

Improved Matching of Alphanumeric House Numbers

Improvements have been made in cases where the input address has an alphanumeric house number. There have also been improvements in the handling of alphanumeric house numbers input with a space between numeric and alpha characters.

Input Address	New match results	Old match results
4111 B BAKER LN, NOTTINGHAM, MD 21236 <i>Input address with a space between 4111 and B.</i>	4111B BAKER LN, NOTTINGHAM, MD 21236 Match Code: T80 Location Code: AP02 <i>Now able to match.</i>	Match Code: E020 - street not found.
160 A W HOLLIS ST, NASHUA, NH 03060 <i>Input address with a space between 160 and A.</i>	160A W HOLLIS ST, NASHUA, NH 03060 Match Code: T80 Location Code: AP02 <i>Now able to match.</i>	Match Code: E020 - street not found.

User Dictionary Matching Improvements

Additional refinements have been made to improve matching to User Dictionaries:

- Improved handling of alphanumeric house numbers input with a space between numeric and alpha characters.

Input Address	New match results	Old match results
4111 B BAKER LN, NOTTINGHAM, MD 21236 <i>Input address with a space between 4111 and B.</i>	4111B BAKER LN, NOTTINGHAM, MD 21236 Match Code: T80 Location Code: AP02 <i>Now able to match.</i>	Match Code: E020 - street not found.
160 A W HOLLIS ST, NASHUA, NH 03060 <i>Input address with a space between 160 and A.</i>	160A W HOLLIS ST, NASHUA, NH 03060 Match Code: T80 Location Code: AP02 <i>Now able to match.</i>	Match Code: E020 - street not found.

- Improved matching on unusual street types and non-standard address elements and abbreviations.
- Improved User Dictionary matching of short street names with alphanumeric house numbers.
- Improved User Dictionary matching of street names with imbedded dashes.
- Enhanced matching to User Dictionaries to recognize multiple cities within the same ZIP Code.
- Improved returns for left and right street segments when matching to User Dictionaries.

Note: You will need to rebuild your User Dictionary datasets using the latest version of the User Dictionary Writer to obtain the above-listed improvements.

Enhanced Matching to Auxiliary files

Various enhancements have been made when matching to Auxiliary files:

- Corrected Auxiliary file matching to be consistent for all address fields, now requiring a match on city and state.
- Changed Auxiliary file matching to permit the use of abbreviated or spelled out street types without modification.
- Modified Auxiliary file matching to ignore punctuation differences.

Fixed Issues

The list below represents all of the change requests and software defects addressed in this patch release. Review this list carefully to determine whether these corrections apply to your situation.

Item Number	Change Request	Description
CENTRUS-10330		Corrected an issue where an SAC (Search Area Code) value of 0 was preventing some User Dictionary matches. This has been changed to support an SAC value of 0.
CENTRUS-10361 MMCUSTSUP-884	Case 07633466	Fixed an issue with a singleline input address without lastline information returning incorrect results.
CENTRUS-10382		Fixed an error occurring when using User Dictionaries while running with multiple instances on UNIX and Linux platforms.
CENTRUS-10407		Resolved an issue with USPS-only records tagged as MLD data causing a crash.
CENTRUS-10564	Case 10379056	Corrected errors occurring in Geocode US Address in Management Console when attempting to select Fallback, Geographic or Street centroid options without selecting the ZIP Code centroid option.
CENTRUS-10594		Improvements have been made in the handling of an input addressline that contains a single alpha character for both the unit type and street addressname(outside of a pre-directional) fields. For example, 28580 UNIT A A ACKERSON RD.
CENTRUS-10650		Corrected an issue where the multi-match function was returning malformed ZIP+4 centroid location codes on big-endian systems in some instances.
MM-2067 MMCUSTSUP-863	Case 05510168	Corrected differences in the way that the User Dictionary Writer creates address records, compared with how addresses are parsed when matching. Previously, some words, such as END and LEDGE, were being treated as street types when they should have been included as part of the street name. Also, standardized abbreviated street types; for example, changed PTH to PATH.
SGI-2302		Fixed crash caused by forward and reverse geocoding using the same handle.

Installation

To install this product update you must have Spectrum™ Technology Platform 12.0 installed.

Important: Before you install this product update, be sure that you have installed all previously-released product updates for your modules and the platform. Unexpected issues may occur if you do not install product updates in the proper order. For a listing of product updates for each module and the platform, see the [Product Update Summary](#) document posted on www.g1.com/support.

Applying This Product Update to a Cluster

To apply this product update to a cluster you must stop all the nodes in the cluster then install the product update to each node by following the instructions in these release notes. You can start up each node after you update it.

Warning: You must shut down the cluster before installing this patch. Failure to do so may result in data loss and your system may become unusable.

Installing on Unix or Linux

Note: In this procedure, *SpectrumDirectory* refers to the directory where you have installed the Spectrum™ Technology Platform server.

1. Source the *SpectrumDirectory/server/bin/setup* script.
2. Run the *SpectrumDirectory/server/bin/server.stop* script to stop the Spectrum™ Technology Platform server.
3. Back up this file to a different location:

```
SpectrumDirectory/server/app/deploy/geostan-12.0.car
```

4. Delete the *geostan-xx.xx.xx-api.jar* file (where *xx.xx.xx* is the .jar file version number) in:

```
SpectrumDirectory/server/modules/geostan/lib
```

5. Check for a *geostan-xx.xx.xx-api.jar* file in:

```
SpectrumDirectory/server/modules/geostan/bin/udwriter/support
```

If one exists, it should be deleted.

6. Download the zip file containing the patch from www.g1.com/support and extract the contents to a temporary location.

7. Locate the `cdq1200S26.tar` file for your operating system and, if applicable, the specific version, as follows:

For HP-UX 11.31 (Itanium), there is a single extracted `cdq1200S26.tar` file contained in the destination folder.

For Red Hat and CentOS, SUSE, Solaris and AIX, there are folders for the OS release or glibc versions as listed below. Choose the appropriate folder, then select the `cdq1200S26.tar` file.

- The `REDHAT` folder contains version-specific folders for the `glibc` support library:
 - 2.5 - Red Hat Enterprise Linux 5, CentOS 5
 - 2.12 - Red Hat Enterprise Linux 6, CentOS 6
 - 2.17 - Red Hat Enterprise Linux 7, CentOS 7
 - The `SUSE` folder contains a version-specific folder for the `glibc` support library:
 - 2.9 - SUSE Enterprise Linux Server 11
 - The `SOLARIS` folder contains OS version folders:
 - 5.10 - Solaris 10
 - 5.11 - Solaris 11
 - The `AIX` folder contains OS version folders:
 - 6.1 - AIX 6.1
 - 7.1 - AIX 7.1
8. FTP the `cdq1200S26.tar` file in binary mode to a temporary directory on the Spectrum™ Technology Platform machine.
 9. Change directory to the `$G1DCG` directory.
 10. Untar the file using this command:

```
tar -xvf TemporaryDirectory/TarFile
```
 11. Be sure you have execute permission on the updated files by typing the following command:

```
chmod -R a+x SpectrumDirectory/server
```
 12. On any machines that have Management Console, Enterprise Designer, or Interactive Driver installed, delete `WindowsTemporaryDirectory\glAssemblies`, where `WindowsTemporaryDirectory` is one of the following: `%TMP%`, `%TEMP%`, `%USERPROFILE%`, or the Windows directory. Typically the path is:

```
C:\Users\UserName\AppData\Local\Temp\glAssemblies
```
 13. Run the `SpectrumDirectory/server/bin/server.start` script to start the Spectrum™ Technology Platform server.

Installing on Windows

Note: In this procedure, *SpectrumFolder* refers to the folder where you have installed the Spectrum™ Technology Platform server.

1. Stop the Spectrum™ Technology Platform server. To stop the server, right-click the Spectrum™ Technology Platform icon in the Windows task bar and select **Stop Server**. Alternatively, you can use the Windows Services control panel and stop the Pitney Bowes Spectrum™ Technology Platform service.

2. Back up this file to a different location:

```
SpectrumFolder\server\app\deploy\geostan-12.0.car
```

3. Delete the *geostan-xx.xx.xx-api.jar* file (where *xx.xx.xx* is the .jar file version number) in:

```
SpectrumFolder\server\modules\geostan\lib
```

4. Check for a *geostan-xx.xx.xx-api.jar* file in:

```
SpectrumFolder\server\modules\geostan\bin\udwriter\support
```

If one exists, it should be deleted.

5. Download the zip file containing the patch from www.g1.com/support.

6. Extract the contents of the zip file to a temporary location.

7. Extract the resulting zip file (*cdq1200S26.zip*) to the folder where you installed Spectrum. For example, *C:\Program Files\Pitney Bowes\Spectrum*.

Choose to overwrite the existing files.

8. On any machines that have Management Console, Enterprise Designer, or Interactive Driver installed, delete *WindowsTemporaryDirectory\glAssemblies*, where *WindowsTemporaryDirectory* is one of the following: *%TMP%*, *%TEMP%*, *%USERPROFILE%*, or the Windows directory. Typically the path is:

```
C:\Users\UserName\AppData\Local\Temp\glAssemblies
```

9. Start the Spectrum™ Technology Platform server. To start the server, right-click the Spectrum™ Technology Platform icon in the Windows task bar and select **Start Server**. Alternatively, you can use the Windows Services control panel to start the Pitney Bowes Spectrum™ Technology Platform service.



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