precisely

Spectrum Technology Platform

Version 2020.1.0

Release Notes

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

For instructions on installing and upgrading Spectrum Technology Platform, including system requirements and module-specific notes, see the Spectrum Technology Platform *Installation Guide* for Windows or Linux on the **2020.1.0 Documentation Index**.

Contents:

Documentation

Complete documentation for all versions can be found at **support.precisely.com**.

For documentation specific to this version, see the Spectrum Technology Platform **Documentation Portal**.

Installation and Upgrade

For instructions on installing and upgrading Spectrum Technology Platform, including system requirements and module-specific notes, see the Spectrum Technology Platform *Installation Guide* for Windows or Linux on the **2020.1.0 Documentation Index**. Spectrum Spatial Analyst installs separately. Refer to the Spectrum Spatial Analyst *Installation Guide* for details.

You will be notified when there are software and data updates available for this release. Software updates are also listed on the **Spectrum Technology Platform Updates** site. These updates include a release note with update instructions. Instructions for updating Spectrum Product Data (SPD) is available in the *Installation Guide* for Windows or Linux under *Spectrum Databases*.

> **Note:** Install all patches and updates in an earlier version of Spectrum Technology Platform before you upgrade to Spectrum Technology Platform 2020.1.0.

> **Note:** All downloadable Spectrum Technology Platform client tools and utilities should be reinstalled after you upgrade from an earlier version of Spectrum Technology Platform to version 2020.1.0. Earlier versions of tools and utilities may not function as expected after an upgrade.

Update the Spectrum Namespace during upgrade

The Spectrum namespace has changed in the 20.1 release, so users upgrading from an earlier release must update their service calls to the new endpoint. Services calls to the earlier namespace will fail after the upgrade to 20.1.

Spectrum namespace change

19.1 release namespace	`http://www.pb.com/spectrum/services/`
20.1 release namespace	`http://www.precisely.com/spectrum/services/`

If wish to keep your service calls running until you change references to the namespace at a future date, you can edit settings in the `spectrum-container.properties` file. Configure the

`spectrum.services.namespace` and `spectrum.services.package` properties in the *SpectrumDirectory*`/server/conf/spectrum-container.properties` file as follows:

```
spectrum.services.namespace=http://www.pb.com/spectrum/services/
spectrum.services.package=com.pb.spectrum.
```

This configuration should only be applied for a limited time until you update references to the Spectrum namespace in the product. After you update references to the Spectrum namespace, you can eliminate these settings to revert to the default 20.1 release namespace (`http://www.precisely.com/spectrum/services/`).

Upgrading Enterprise Designer

We have updated some of the underlying display framework for Enterprise Designer. As a result, you must install and use the latest version of Enterprise Designer, 2020.1, as provided with your installation package.

Perform the steps in this procedure upgrade Enterprise Designer.

1. Uninstall the existing client tools by going to **Start** > **Precisely** > **Setup**
2. Make sure that you have .NET 4.6 installed on the client machine. Note that Windows 10 comes with this version of .NET installed by default.
3. Download the client tools installer from the Spectrum Technology Platform welcome page, `http://`*SpectrumServer*`:`*port*.
    The default port is 8080.
4. Run the installer.

2020.1 Release Hash Values

This section provides SHA-256 checksums for the Spectrum Technology Platform 20.1 download files. You can use these values to check that your copy of a downloaded installation file is identical to the original.

installers-20.1-clientSDK.zip

```
d8e286bff8d6299043d5d43ff3668cdb898907347e2fc2b4b316964d1b1b35b9
```

installers-20.1-linux.zip

```
2f94e2794b413bf75df8888b997f5f4ecf474a1ece9d3883f416c57bae69a861
```

installers-20.1-nt.zip

```
ac5479231f6760edf71a64040ef033b941440ad1827ba4ec57a7a84c2afcaf3c
```

Related information
How to use SHA-256 Checksums to validate file downloads

What's New

This section describes new and changed features for this release.

Spectrum Technology Platform

We have a new look and feel!

We hope that you are as excited by our new look as we are. This is the first release of Spectrum Technology Platform with the Precisely brand.

Server

This section describes changes in this release. For installation requirements and details about currently supported operating systems and web browsers, see the *Spectrum Technology Platform Installation Guide*.

Unix operating system support has ended

Spectrum Technology Platform 2020.1 no longer supports Unix operating systems AIX, HPUX and Solaris. The Spectrum Technology Platform 2020.1 release only runs on supported versions of the Windows and Linux operating systems. If you are currently running Spectrum Technology Platform on a Unix platform, please contact **Precisely Support** for additional information.

Linux operating system support changes

Spectrum Technology Platform 2020.1 adds support for the following operating systems:

• CentOS 8
• Oracle Linux 8
• Red Hat Enterprise Linux 8

- SUSE Enterprise Linux 15 SP1
- Ubuntu 20.04 LTS

Spectrum Technology Platform 2020.1 ends support for the following operating systems:

- CentOS 6
- Oracle Linux 6
- Red Hat Enterprise Linux 6
- SUSE Enterprise Linux 11

Web browser changes

- Microsoft Edge web browser is supported in this release.
- Microsoft Internet Explorer is not supported in this release (except to run Relationship Analysis Client).

> **Note:** Spectrum Discovery and the Spectrum Technology Platform Command Line Interface support functionality found in Relationship Analysis Client for creating and editing Context Graph models.

Client SDK changes

Spectrum Technology Platform 2020.1 no longer supports the .NET version of Client SDK.

Spectrum Enterprise Designer

The Enterprise Designer is used to build and run dataflows on Spectrum Technology Platform.

New log files location

Starting in version 2020.1, log files for Enterprise Designer are located in this folder:
`%AppData%/Precisely/Enterprise Designer`

Flow Designer - Technical Preview Version

The Spectrum Technology Platform Team is pleased to add more stages to the preview of its web-based **Flow Designer**. You can launch **Flow Designer** from the **Spectrum** Welcome Page after you have installed Release 2020.1.0.

This preview version allows you to work with these stages:

- Read from File
- Read from XML
- Read from Spreadsheet
- Read from DB
- Write to File

- Write to XML
- Write to Spreadsheet
- Write to DB
- SQL Command
- Record Joiner
- Query DB
- Unique ID
- DB Loader
- Field Selector
- Filter
- Match Key Generator
- Write to Search Index
- Intraflow Match
- Best of Breed
- Generate Time Dimension

For more information, see the **Flow Designer** guide.

As you explore the **Flow Designer**, keep these things in mind:

- If you find yourself thinking, "It would be great if I could…," let us know what you want to do. You can **Get in touch** with us and submit an enhancement request or post your ideas.
- This version does not include all stages currently supported in **Enterprise Designer**. You will see a descriptive message if you try to open an unsupported stage in **Flow Designer**.

> **Note:** Although we encourage you to use this preview version of Flow Designer in your production environment, know that we cannot provide standard service level agreement (SLA) for preview versions of our software. Additionally, we cannot guarantee that the work you do with the preview version will migrate to future releases.

- Custom Transforms are configurable through Enterprise Designer for this release. You can save those transforms and use them in Flow Designer jobs. Note that multiple Custom Transforms are not supported in this preview version.

If you are new to **Spectrum** and have not had experience with **Enterprise Designer**, our previous workflow solution, you may need some explanation of the terms used in the product.

- **Flows** ("workflows," in previous releases) are prebuilt or custom processes that contain stages. Flows don't need to stand alone: you can integrate them into other jobs and services to perform specialized processing.
- **Stages** represent units of functionality such as data input, data output, aggregation, filtering, sampling, reporting, and geocoding. Though flows can become quite large in size, you can think of them as a series of connected stages, operations, or tasks.

New Spectrum Namespace

The Spectrum namespace has changed in the 2020.1.0 release.

| **19.1 release namespace** | `http://www.pb.com/spectrum/services/` |
| **20.1 release namespace** | `http://www.precisely.com/spectrum/services/` |

If you are upgrading Spectrum Technology Platform from an earlier version, all references to the namespace must be updated after you complete the upgrade to 2020.1.0. For more information, see **Update the Spectrum Namespace during upgrade** on page 2 in **Installation and Upgrade** on page 2.

Big Data Integration

Hadoop 3x support with Spectrum

With this release, these stages will support read and write from *HDFS 3.x* and *Hive 2.1.1*.

• Read from Hive File
• Read from Hadoop Sequence
• Write to Hive File
• Write to Hadoop Sequence
• Read from DB
• Write to DB
• Load to Hive

The support includes:

• Connectivity to *HDFS* and *Hive* from Spectrum on Windows
• Support and connectivity to *Hadoop 3.x* from Spectrum with high availability
• Kerberos-enabled *HDFS* connectivity through Windows
• Support and connectivity to *Hive version 2.1.1* from Spectrum with high availability
• Support of *Datetime* data type in the *Parquet* file format
• Support to *Read* and *Write* from *Hive DB (JDBC)* via Model Store connection

For best practices and configuration information, see the documentation of the respective stage in the Spectrum Enterprise Designer Guide.

Spectrum Context Graph

Data Hub Module renamed Context Graph

Spectrum Data Hub Module is now Spectrum Context Graph. The Data Hub Browser and Data Hub Visualization applications are now Context Graph Browser and Context Graph Visualization, respectively.

Context Graph stages renamed

Context Graph stage names that referred to "Hub" in the 2020.1 release of Spectrum Technology Platform now refer to "Model", as listed in the following table.

Stage name 2019.1 and earlier	Stage name (2020.1)
Delete from Hub	Delete from Model
Import to Hub	Import to Model
Merge Entities	Merge Entities
Read from Hub	Read from Model
Query Hub	Query Model
Split Entity	Split Entity
Write to Hub	Write to Model

Context Graph stages added to Flow Designer

The following three Context Graph stages are now available in the Flow Designer Technology Preview.

- Delete from Model
- Write to Model
- Query Model

Themes added in Context Graph Visualization

Themes define entity and relationship decorations and filters. Themes enable you to styles relationships and entities based on conditions you set. You can predetermine aesthetic values for entities and relationships that meet the criteria set in your conditions, and you can use filters to automatically hide relationships or entities from your model. Themes can assist interpretation of data.

retrieveHistory added to REST Read Entity operation

The `retrieveHistory` parameter was added to the read entity operation. This parameter returns property values for an entity in a Context Graph model. The history includes values for each iteration in the history along with changes. Set the `retrieveHistory` parameter to true to retrieve the entity history. The `includeRelationshipHistory` may be included to add the history for connected relationships.

Spectrum Data Stewardship

Business Steward renamed Data Stewardship

Spectrum Business Steward is now Spectrum Data Stewardship.

Integration with approval flows

Data Stewardship records can now be integrated with the Spectrum Approval Flow process. Approval Flow can be configured by one or more conditions that store records in the repository. Once a plan is configured, the records move sequentially through the various approval levels defined in the Approval Flow. If a record is accepted, it is assigned to the next approver in the approval flow. If a record is rejected, it is assigned back to the data steward. This is repeated at subsequent levels until the final approver accepts and resolves the record. Resolved records can then be processed and purged from the repository by using the **Read Exceptions** stage.

Improved dashboard

The **Chart** and **Table** in the **Dashboard** now shows the numbers of records accepted and rejected on *daily/weekly/monthly* basis.

Managing records made easier

While reassigning records, you can now filter records by one or more status values: `Accepted, Edited, Failed, New, Pending, Rejected, or Resolved`.

You can use the **Additional Content Filter Expression** Editor to enter values with appropriate field type editor, such as `Date`, `Date/Time`, `Time`, and `Boolean`.

You can enter multiple values for strings in the **Expression Editor**.

Additional parameters for purging records

You now have these additional parameters to purge records from Spectrum Data Stewardship repository:

- **Stage label**: Use this to purge records created through a specific stage when a dataflow contains more than one **Exception Monitor** stage.
- **Record status**: `Accepted`, `Edited`, `Failed`, `New`, `Pending`, `Rejected`, and `Resolved`.
- Expression builder can be used to purge records based on a specific value in the data content.

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Updates in the Editor page

The Editor page gives you these additional features:

- The **Configure View** option now allows you to group records in the **Tabular** editor as Multiple fields grouping and Sort by group fields. It can also be configured to display **Condition** column to see the condition name by which the record was stored in the repository.
- For the saved conditions, you can view **Condition** expressions as a tool tip by clicking on the **Condition** name for each record.
- You can enter one or more values in the string fields filter option.
- You can set the status of the record to **Accept** or **Reject** using the respective button in the **Action** column. You can now also set the status to **Pending**.
- The status of the record is now set by the server on the basis of your action. **Resolved** records are same as **Approved**. A record can now have one of these values as status:
  - `New`: New records added to the repository.
  - `Accepted`: Status set by data steward or an approver when the record is associated with an Approval Flow.
  - `Rejected`: Status set by an approver rejecting a record. Such records are automatically assigned back to the original data steward.
  - `Edited`: When a user edits a record without selecting an action.
  - `Failed`: When a record is validated through either internal validation or re-validation service defined in the **Exception Monitor**.
  - `Pending`: The record is in review but is neither accepted or rejected as yet.
  - `Resolved`: When the record is accepted and no further processing is needed based on the Approval Flow.
- You can filter records to be loaded to the editor based on their **Status**.

- **Name** option is added to **Condition** filter to limit the number of generated records that may be loaded based on the condition defined in the **Exception Monitor**.
- **History** tab highlights the fields that changed when the record was saved.
- The detail view of the records has a new tab to show the status of the Approval Flow for the record. It is shown for the records marked to be reviewed in a Spectrum Approval Flow.
- **Resolve Duplicates** records editor now highlights the **Group Exception** record in bold text. Non-Exception records within the Match Key group are highlighted when values are different from the Group Exception record.

Spectrum Discovery

Metadata Insights renamed Discovery

Spectrum Metadata Insights is now Spectrum Discovery.

New module to query data

Query and export the data from your business entities using the *Spectrum Discovery* Query module. For more information, see the *Query* section of the *Discovery User Guide*.

New module to prepare data quality rules

You can now prepare and manage the data quality rules to fix data anomalies and add more context to your enterprise data assets using the *Spectrum Discovery* prepare module. The prepare module gives you these features:

- Smart Data Quality is now integrated within the Prepare module to allow you to use an existing connection to any source system, such as a CRM, ERP, Cloud DB, or a physical model to begin the machine-learning driven matching process to propose the best set of match keys and match rules.
- Machine Learning powered Best of Breed rules recommendations to automate the overall entity resolution process.

For more information, see the *Preparing Quality Rules* section of the *Discovery User Guide*.

Entity Wiki

Spectrum Discovery now has **Glossary Entity Wiki** as the central location of every detail around entities. You can see the entity definitions, specify the business rules to be attached to the entity and its properties, see the data quality score of the entity, look at the collaborations in the approval flow, and also add links to the data quality rules.

Lineage and impact analysis at the attribute level

View and understand your data journey from source to consumption at the attribute level now with Spectrum Discovery. You can access this information from the **Lineage and Impact Analysis** tab as well as from **Column** cards on the **Catalog** page. You see a pictorial representation of the source of the table as well as the models, flows, and files using it.

For more information, see the *Cataloging Metadata* and *Lineage and Impact Analysis* sections of **Spectrum Discovery**guide.

Business Glossary and Profiling as APIs

The **Business Glossary** and **Profiling** modules of **Spectrum Discovery** are also available as APIs now, enabling you to use these features independent of Spectrum license. Use this URL to access the APIs:

```
http://server:port/discoveryapi
```

Where *server* is the server name or IP address of your Spectrum Technology Platform server and *port* is the HTTP port. By default, the HTTP port is 8080.

1. Business Glossary

   - addGlossaryEntity
   - deleteGlossaryEntity
   - getGlossaryEntity
   - listGlossaryEntities
   - updateGlossaryEntity

2. Profiling

   - getColumnStatisticsPreview
   - getProfileColumnStatistics
   - getProfileConfiguration
   - getProfileModelStatistics
   - getProfileTableStatistics
   - getProfiles
   - getScorecardConfiguration
   - getScorecardPreview
   - getScorecardStatistics
   - getScorecards
   - getTableStatisticsPreview

Reuse Spectrum stages in Scorecard and Profiling rules

The transformations you have designed using the various **Spectrum** stages can now be reused for building scorecard and profiling rules. You can use both the default **Spectrum** services and the services you have configured using the different **Spectrum** stages you are licensed for.

Create scorecard over a profile

You can now create a scorecard on your profiled data and monitor its performance on KPIs you define. While creating scorecard, the column-level statistics of the selected profile is displayed, enabling you to view data anomalies or strength and create KPIs and rules accordingly.

Ease of use in editing KPI parameters, rule configurations

In the scorecard configuration, you can now edit KPI parameters and rule configurations directly from the **Score** page. KPIs and rule names are now hyper linked, saving you the effort and time of opening the scorecard in the edit mode for these modifications.

View and compare scorecard trends for recent runs

You can now compare how your data set is performing during the various scorecard runs. The scorecard **Trend** can now be viewed for **Recent runs** and you can specify the number of runs you want to compare.

Each node of the line chart in **Trends** gives the date on which the score card was run and the score of your data on the defined KPI (for example, consistency).

Notification when data jumps categories in scorecard

Automated notifications are now sent when your data jumps across any of the defined threshold values and enters a different category in scorecard. For example, from **Needs Attention** to **Marginal** or **Acceptable**

More comprehensive rules in scorecard

The **Rule Builder** for scorecard now has three new operators added: *Does not contain*, *Does not end with*, and *Does not start with*.

Specify rule types while defining semantic types

You can now specify rule types in semantic types. The rule can be entered in the text box or can be imported using a `.txt` or `.csv` file.

Use Semantic types as profiling rule

The semantic types defined by you can now be reused during rule creation in profiling.

When you specify rule types while defining a semantic type, they become visible in the **Semantic** section of the **Profiling rules**page. Once selected, it profiles data based on the rules defined.

> **Note:** During semantic type definition, you can either enter the rule in the text box or import it using a `.txt` or `.csv` file. You can also describe these rules in the **Business Rule(s)** filed for clarity and comprehension.

For more information see *Maintaining Semantic Type* section in the **Spectrum Discovery** guide.

Add, edit, delete semantic types in discovered columns

You can add a semantic type to the columns in discovered **Catalog** or edit or remove an existing semantic type from any of the columns.

Easy navigation to data source from profiling results page

The data series and legends in the doughnut charts are now hyper linked. You can easily navigation to the respective profiled data sources from the profiling results page.

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Classify semantic types based on Advanced Transformer and Open Parser tables

You can now classify the semantic types based on the Advanced Transformer and Open Parser tables.

For more information, see the *Profiling Rules* section of the *Discovery User Guide*.

Spectrum Enterprise Tax

Supported Platforms

Spectrum Enterprise Tax is supported on all new platforms added in this release. For more about system support changes, see **Server** on page 4 in these Release Notes.

Spectrum Geocoding

Spectrum Enterprise Geocoding

Updated USA Geocoder

Added the latest USA geocoder v33.00.01 to both Spectrum Global Geocoding and Spectrum Enterprise Geocoding.

Added new CLI command to modify Enterprise Geocoding Global database resource

Use the `egmglobaldb modify` command to modify an existing Enterprise Geocoding Global database resource.

1. Export the database resource.
2. Update the new path in "egmGlobalDbResource.txt"
3. Modify or update the database using the following command (specifying the full path to "egmGlobalDbResource.txt").

```
egmglobaldb modify .\egmGlobalDbResource.txt
```

"PBKey" renamed "PreciselyID" in the user interface

As part of the Precisely rebranding, we've made these changes:

• Enterprise Geocoding - US: the "ReversePBKeyLookup" function was renamed "Key Lookup". Functionality remains the same.
• All other instances of "PBKey" labels in the Spectrum user interface or the technical documentation have been updated to "PreciselyID". For example, the Geocoding option in Global Geocode "Allow PBKey fallback" now displays "Allow PreciselyID fallback". To support backwards compatibility, no change was made to the existing input or output PB_KEY field.

Spectrum Global Geocoding

Added ability to remove accents and other diacritical marks from output

New preference: Remove Accent Marks

Diacritical marks are accents or other symbols written above or below a letter to indicate a difference in pronunciation. By default, these marks display in the output. To set this option, go to the **Return Values** tab within Global Geocode and select **Remove Accent Marks**.

Example:

```
Fairmont Le Château Frontenac
1 Rue des Carrières, Québec, QC G1R 4P5, Canada
```

When the marks are suppressed, the output displays as:

```
Fairmont Le Chateau Frontenac
1 Rue des Carrieres, Quebec, QC G1R 4P5, Canada
```

Removing accent marks (Sample Application)

Custom Preference (case-sensitive):

• Set `REMOVE_ACCENT_MARKS=true`

Added ability to return a geohash in output

While latitude and longitude describe a single point on a map, a geohash encodes this information into an alphanumeric string to describe a fixed area. Geohash, a public domain geocode system, divides the world into parts on a grid and each part/cell is defined by the string of length. Every decimal place in a geohash represents a level of resolution so that more characters provide more precision. (Think of zooming into or out of a fixed area as you lengthen or shorten the geohash.)

To enable the GeoHash in output, go to the **Return Values** tab within Global Geocode and select these options:

• Enable **Return GeoHash**.
• Set **GeoHash Level** as needed. By default, it is set to 12 (the highest precision).

Example:

42.678225, -73.700022 , location @ 350 Jordan Rd, Troy NY

Geohash Level 8 = dredfcm6

Geohash Level 12 = dredfcm69jb8

Table 1: Geohash examples: Geohash level and the corresponding size of the coverage area as precision decreases

Geohash level	Geohash	Metric	Standard	Coverage area
12	te7u6g4yz02w	≤ 37.2 mm x 18.6 mm	1.46 in x 0.73 in	Smart watch
11	te7u6g4yz02	≤ 149 mm x 149 mm	6 in x 6 in	Paper Napkin
10	te7u6g4yz0	≤ 119 m x 0.596 mm	4 ft x 2 ft	Dresser

Geohash level	Geohash	Metric	Standard	Coverage area
8	te7u6g4y	≤ 38.2 m x 19.1 m	125 ft x 62 ft	House lot
6	te7u6g	≤ 1.22 km x 0.61 km	3/4 mi x 1/3 mi	1/2 city block
4	te7u	≤ 39.1 km x 19.5 km	24 mi x12 mi	City
2	te	≤ 1,250 km x 625 km	776 mi x 388 mi	Countries

Returning a Geohash in the output (Sample Application)

Custom Preference Keys (case-sensitive):

• RETURN_GEOHASH "true/false"
• GEOHASH_LEVEL "1-12"

To return a GeoHash as part of the output, pass the custom preference `"RETURN_GEOHASH":"true"` along with one of the options below. By default, `returnAllCustomFields` is set as false.

```
"returnFieldsDescriptor":{
"returnAllCustomFields":"true"
},
```

```
"returnFieldsDescriptor":{
"returnedCustomFieldKeys":["GEOHASH"]
},
```

```
"returnAllCandidateInfo":"true"
```

Sample Return `GEOHASH` as an additional field while suppressing other additional fields (the default).

```
{
"type": "ADDRESS",
"preferences": {
"returnFieldsDescriptor":{
"returnedCustomFieldKeys":["GEOHASH"]
},
"customPreferences":{
"RETURN_GEOHASH":"true",
"GEOHASH_LEVEL":"2"
}
},
"addresses": [
{
"mainAddressLine":"1 global view troy ny",
```

```
"country": "USA"
}
]}
```

Updated Interactive "type ahead" Geocoding Features

Updated Custom Dataset Builder tool

Using the Custom Dataset Builder tool, you can now create custom datasets for interactive geocoding and use them with other Precisely country datasets or by itself when licensed.

- Applies to Master Location Data (MLD) datasets: USA, CAN, AUS
- Use your custom datasets (SPD format) with Spectrum Global Geocoding or Global Geocoding SDK

For more information about data requirements, commands, and creating configuration files, see the **Custom Dataset Builder** section of the Spectrum Global Geocoding Guide.

Added Interactive preference to search by Address Number

When you input just a number in the MainAddressLine, candidates with street names that match the input number are returned. If the new **SEARCH_ADDRESS_NUMBER** preference is enabled, the system now returns candidates whose Address Number matches the input.

Requirements

- Use with these datasets: USA MLD (8US), Canada MLD (8CA), Australia GNAF (7AU), and Great Britain (GB8)
- Set the preference using the Global Geocoding SDK (GGS). By default, it is set to false.

Example - an input of 350 could return the following candidates:

- 225 S 350 E, # 350E, PIMA, AZ 85543
- 1244 W 350 N, PIMA, AZ 85543
- 112 E 350 N, BLACKFOOT, ID 83221

Once you set `SEARCH_ADDRESS_NUMBER=true`, the same input would return these candidates:

- 350 EDNA RD, HOOVER, AL 35244
- 350 OAK LEAF CIR, HOOVER, AL 35244
- 350 SUMMIT PL, BIRMINGHAM, AL 35243

Added ability to return a geohash in output

While latitude and longitude describe a single point on a map, a geohash encodes this information into an alphanumeric string to describe a fixed area. Geohash, a public domain geocode system, divides the world into parts on a grid and each part/cell is defined by the string of length. Every

decimal place in a geohash represents a level of resolution so that more characters provide more precision. (Think of zooming into or out of a fixed area as you lengthen or shorten the geohash.)

To enable the GeoHash in output, go to the **Return Values** tab within Global Geocode and select these options:

- Enable **Return GeoHash**.
- Set **GeoHash Level** as needed. By default, it is set to 12 (the highest precision).

Example:

42.678225, -73.700022 , location @ 350 Jordan Rd, Troy NY

Geohash Level 8 = dredfcm6

Geohash Level 12 = dredfcm69jb8

Table 2: Geohash examples: Geohash level and the corresponding size of the coverage area as precision decreases

Geohash level	Geohash	Metric	Standard	Coverage area
12	te7u6g4yz02w	≤ 37.2 mm x 18.6 mm	1.46 in x 0.73 in	Smart watch
11	te7u6g4yz02	≤ 149 mm x 149 mm	6 in x 6 in	Paper Napkin
10	te7u6g4yz0	≤ 119 m x 0.596 mm	4 ft x 2 ft	Dresser
8	te7u6g4y	≤ 38.2 m x 19.1 m	125 ft x 62 ft	House lot
6	te7u6g	≤ 1.22 km x 0.61 km	3/4 mi x 1/3 mi	1/2 city block
4	te7u	≤ 39.1 km x 19.5 km	24 mi x12 mi	City
2	te	≤ 1,250 km x 625 km	776 mi x 388 mi	Countries

Returning a Geohash in the output (Sample Application)

Custom Preference Keys (case-sensitive):

- RETURN_GEOHASH "true/false"
- GEOHASH_LEVEL "1-12"

To return a GeoHash as part of the output, pass the custom preference `"RETURN_GEOHASH":"true"` along with one of the options below. By default, `returnAllCustomFields` is set as false.

```
"returnFieldsDescriptor":{
"returnAllCustomFields":"true"
},
```

```
"returnFieldsDescriptor":{
"returnedCustomFieldKeys":["GEOHASH"]
},
```

```
"returnAllCandidateInfo":"true"
```

Sample Return `GEOHASH` as an additional field while suppressing other additional fields (the default).

```
{
"type": "ADDRESS",
"preferences": {
"returnFieldsDescriptor":{
"returnedCustomFieldKeys":["GEOHASH"]
},
"customPreferences":{
"RETURN_GEOHASH":"true",
"GEOHASH_LEVEL":"2"
}
},
"addresses": [
{
"mainAddressLine":"1 global view troy ny",
"country": "USA"
}
]}
```

Updated Geocoders

- Added latest USA geocoder v33.00 to both Spectrum Global Geocoding and Spectrum Enterprise Geocoding.

Postal and geographic candidates return additional fields

Enhanced postal and geographic geocoding to include more region, city, and postcode hierarchical information.

Postal candidates (2 additional fields):

- MULTIPLE_AREAS_FOR_POSTCODE, true if more than one town is contained within the postcode

- PRIMARY_AREA_FOR_POSTCODE, true if the current town is the primary town for the postcode. The area name fields (city/town, state/region, etc.) will be populated when available.

Geographic candidates (1 additional field):

- POSTCODE_COUNT_IN_AREA, containing the number of postcodes found in the specified town. (This would only apply to G3-level candidates, except in Brazil where it only applies to G4-level candidates.) The postcode field will be populated when available.

    Note: To include these fields in output, use the field names as shown below in the Enterprise Designer Write to File stage:

    - MultipleAreasForPostCode

    - PostCodeCountInArea
    - PrimaryAreaForPostCode

"PBKey" renamed "PreciselyID" in the user interface

As part of the Precisely rebranding, we've made these changes:

- Enterprise Geocoding - US: the "ReversePBKeyLookup" function was renamed "Key Lookup". Functionality remains the same.
- All other instances of "PBKey" labels in the Spectrum user interface or the technical documentation have been updated to "PreciselyID". For example, the Geocoding option in Global Geocode "Allow PBKey fallback" now displays "Allow PreciselyID fallback". To support backwards compatibility, no change was made to the existing input or output PB_KEY field..

(CAN) New fields Synthetic LDU and Building Type Indicator

Synthetic Local Deliver Units (LDU) available in Canadian Master Location Data (CAN MLD CA8/ 8CA)

The "Local Delivery Unit" or "LDU" is assigned to postal addresses by Canada Post. If an address has not been assigned an LDU, Precisely has assigned a "Synthetic LDU". Synthetic LDUs are not recognized by Canada Post. However, our methodology for assigning them is geographically congruent with LDUs assigned by Canada Post.

For Geocode and Reverse Geocode candidates, the SYNTHETIC_LDU is only returned for cases when it is true. The Interactive candidates will return a "t" or an "f" depending on whether the candidate has a SYNTHETIC_LDU or not.

Building Type Indicator available in Canadian datasets (CA1, CA2, CA3, CA8, 8CA and 1CA)

A new building type indicator is for candidates with an **A1** CPC_RECORD_TYPE.

- Geocode or Reverse Geocode candidates: the new field is CPC_BUILDING_TYPE
- Interactive candidates: BUILDING_TYPE
- Values: '1' for a residential building, '2' for a commercial building, and not returned if it is unknown.

Available as REST Responses

The new fields SYNTHETIC_LDU and CPC_BUILDING_TYPE will only be seen in REST responses when Return All Information is set to true. Please note that CPC fields are not present when SYNTHETIC_LDU = true or t.

Other Enhancements

Spectrum 20.1 includes these smaller enhancements:

Added country input support for two letter or numeric ISO country characters

Global Geocoding now supports two letter or numeric ISO codes for an input country. For example, an input address with country FRA, FR, or 250 will return the same candidate.

Management Console: Limit who can change default preference behavior

If a user does not have permission to modify, they cannot modify default preferences.

Updated Global Geocoding Sample Application

The Sample Application now supports multiple field input. It also provides the ability to pass in a post request.

Spectrum Global Addressing

Global Addressing Data Version Alignment

With this update, the **Precisely Data Experience** will display two downloadable versions of all datasets associated with Spectrum Global Addressing (SPD format). Please download the version designed for the Spectrum version you are using.

- Version 2.0.0 SPD: for use with Spectrum version 2020.1 or higher
- Version 1.0.0 SPD: for use with Spectrum 18.2 with S04 patch or Spectrum 19.1

Canadian addressing updates

SERP-certified processing now available for Canadian addresses

Within Global Address Validation's Default Options, the Canadian Addressing Options section now provides an **Enable SERP** option. When enabled, the CANPOST data will be used exclusively and SERP processing and formatting rules will be applied to the address. No geo tagging or other additional information, such as PreciselyID, will be returned.

New output field CAN.BuildingType

Field Name	Format	Description
CAN.BuildingType	String	Indicates whether a building is a commercial building or an apartment building. **1** Residential (apartment) **2** Commercial <blank> indicates not a building

Assigning a PreciselyID

For each addressable location, PreciselyID processing provides a unique and persistent identifier to reference the address without storing the whole address string. The PreciselyID is further verification an address exists, regardless of DPV matching.

Additionally, to link the PreciselyID to other data (for example, geoenrichment), Precisely has done the complex matching for you. Use the PreciselyID as the gateway to the rest of the Precisely data portfolio. Contact your Sales Representative for more information, based on your specific needs.

To support PreciselyID processing within Global Address Validation, the following changes were made:

• **Assign PreciselyID** added to the Global Options panel to enable this feature.
• **PreciselyID** is now a return field for all countries in Global Addressing.
• **PreciselyIDFound** is a USA-only return field that gives more detail about the returned PreciselyID:

Value	Description
Y	PreciselyID was found for the full address
D	PreciselyID was found for the primary address (secondary information was dropped to find a match).
N	PreciselyID was not found.

Countries with PreciselyID:

AUS (AU7), **CAN** (CA8) – not PoCAD/SERP data, MLD only, **FRA** (FRA8), **GBR** (GB7), and **USA**

Enable Global Addressing Engine

Within Global Address Validation, users now have two options for processing international addresses. The default option is automatically set for processing addresses through our standard engine. The new **Enable Global Addressing Engine** option has been added to leverage additional postal reference data to increase the address match rate.

Spectrum Machine Learning

Machine Learning stages added to Flow Designer

The following three Machine Learning stages are now available in the Flow Designer Technology Preview.

- Binning
- Logistic Regression
- PCA

H2O Library upgrade

An internal build 3.30.0.7.2 of the H2O Library is included with this release. This build adds features and fixes security vulnerabilities.

Spectrum Machine Learning uses the underlying H2O.ai library for modeling algorithms in K-Means Clustering, Linear Regression, Logistic Regression, Principal Component Analysis, Random Forest Classification, and Random Forest Regression.

XGBoost Technology Preview removed (Linux Platform)

The XGBoost Technology Preview that was included with Machine Learning in the Spectrum Technology Platform 19.1 release has been removed in this release.

Spectrum Screener

Manage reports for secured entities

You can now view the secured entities' reports in a graphical form to help improve decision-making and identify potential deviations right on time for corrective actions. For more information, see the *Managing Reports* section of the *Screener User Guide*.

Use preshipped sanction lists

You can now use the preshipped sanction lists, which get auto-populated with data upon selection and are managed through the list management module.

Spectrum Smart Data Quality

Average group count for match key

You can now view the group's average size while using a given match key, where the number is based on the complete data set.

Spectrum Spatial and Routing

Security

Case-insensitive user names: Spectrum now supports case-insensitive user names, which is set by default for new 2020.1 installations and higher. In previous versions user names were always case-sensitive without any option to configure the setting. When upgrading to 2020.1, the case-insensitive behavior is retained. For details, see **Managing Case Sensitivity for User Names** in the *Spectrum User Guide*.

Spectrum Spatial Routing

Matrix response list points for which route was not calculated: In previous releases points for which a route could not be calculated were removed from the response (with no warning or indication given to the client). Now clients are informed when there is a failure to calculate points. A new warning section of the REST response lists points for which a route could not be calculated. The Java SDK and SOAP service and the Matrix stage also generate a warning with a list of points.

Routing demo page enhancements: The routing page in Spectrum Spatial Manager includes new functionality. The REST request settings now include server and port number to make it easier to access this information to copy and paste it for use outside of Spectrum Spatial Manager. The routing page also has a check box to avoid tolls when generating a route boundary and the routing demo page now includes a starting point marker on the map for a route.

New CLI commands: The following are new CLI options for adding a routing database:

1. `replyTimeout` - Sets the reply time out value to `true` or `false`.
2. `override` - Overrides the settings that are by default set in the Spectrum Management console.

3. `vmargs` - Sets the JAVA `vmargs` value to add a database.

Routing engine enhancement: Points falling on a restricted segment of a route will not calculate an error.

Data enhancement: Backroads are now calculated in a road network.

Spatial and Routing Services

RIA Proxy: Added support for PUT and DELETE methods for RIA Proxy Java and .NET.

Coordinate Reference Systems

This release adds the following coordinate reference systems.

• UTM Zones for NAD27 Mexico datum category and members
• New Lambert Projection entry for Statistics Canada. Added to North American Coordinate Systems: "Statistics Canada Lambert (NAD83)\p3347", 3, 74, 7, -91.8666666667, 63.390675, 49, 77, 6200000, 3000000
• MIPRO-114379: Need specific EPSG codes for Canadian NAD27 UTM projections. There are five renamed entries in the Universal Transverse Mercator (NAD 27 for Canada) category to use updated name and EPSG codes.

The PRJ file had an UTF-8 BOM in it, which is now converted to ASCII - nojira.

For details about these or any other EPSG coordinate systems, see **http://epsg.io**.

Deprecating Features and Products

Retirement of the Legacy Point in Polygon and Closest Site stages

From this release we have removed the following from the Spectrum Spatial Module.

• **Centrus**: The ability to configure a database resource for Centrus in the Spectrum Management Console is no longer available as of this release.
• **Closest Site stage**: This stage is retired. Running a flow that includes the Closest Site stage displays the message "Stage 'Closest Site' does not exist."
• **Legacy Point in Polygon stage**: This stage is retired. Running a flow that includes the Legacy Point in Polygon stage displays the message "Stage 'Legacy Point in Polygon' does not exist."

We recommend all customers who were using these stages move to the standard capabilities of the Spectrum Location Intelligence Module, such as the Find Nearest, Point in Polygon, Query and Read Spatial data, and other Spatial stages. These newer stages are all available with the Spectrum Spatial with no additional license needed. They are explained in the topic **Spatial Stages** in the *Spatial Guide*.

These standard stages can use MapInfo TAB files, shape files, or RDBMS sources (such as Oracle, SQL Server and PostGIS) for data access rather than the GSB files used by these stages. With TAB

files further performance improvements can be obtained if an optional PGD index is created as explained in the topic **PGD Builder** in the *Spatial Guide*.

How do I know if I am using the stages that are no longer supported?

Prior to upgrading you can check if you are using Centrus as follows:

1. Check if you have a Centrus database configured.

   Log into the Spectrum Management Console and on the top-level menu go to Resources and the choose Spectrum Databases. If a Centrus database is in the list, then you have configured a Centrus database.

2. Check if you are using either of the two spatial stages that use these files. Log into Spectrum Enterprise Designer, and check if your data flows include the **Legacy Point in Polygon** or the **Closest Site** stages.

If you have a Centrus database configured but you are not using either of these two stages, then you are not using the Centrus stages.

If you have any further questions please do not hesitate to reach out to our Technical Support Team at (see **support.precisely.com**) and we will work with you to advise on your particular circumstances.

Spectrum Spatial Analyst

Uploading Data

Spectrum Spatial Analyst allows users with admin and sub-admin roles to upload data tables from their computers and save them to the Spectrum Spatial repository. They can add the data to a new table or replace an existing table on the repository.

The data being uploaded is converted to a TAB file or SQL server table, depending on the named connection chosen. Once the data is uploaded, it can be added as a layer to any map.

> **Note:** The users who do not have one of the admin roles can not upload files. An administrator can control which users can upload data by granting sub-admin roles and repository folder permissions.

Customize the Label text

Spectrum Spatial Analyst now allows you to customize the label style for non-raster spatial layers. You can now choose the desired label column and modify label properties.

- You can apply your style to the map label and save it with your map project.
- This feature enables you to define a style that fits with the theme of your map. You can choose the appropriate font, color, pattern, etc., for your labels.

- Changes made by the users are persisted with the map project if the user saves the project. The initially named layer label settings are not changed.

You can edit the following label properties.

Table 3: Label Properties

Properties	Description
Label Source	Displays the column name from the table which is the source of label. You can change the label source by clicking another column from the drop-down list.
Font Family	Select a font family.
Font Style	Select a font style.
Font Color	Select a font color.
Font Size	Select a font size.
Font background	Select a background from the drop-down list. You can choose from Halo, Box, and None. • Click **None** to have no background. • Choose **Halo** to create a halo effect around the text. • Click **Box** to create a background box behind the text.
Box Color	If you have selected Box as background, select this to set a color for the box.
Halo Color	If you have selected Halo as background, select this to set a color for the Halo.
Horizontal alignment	Select this to set Horizontal alignment. If left is selected, then the label will be shown to the left of the feature.
Vertical alignment	Select this to set Vertical alignment.
X offset (px)	Select this to set distance between the map object and the label by entering a value in pixel. You can select a numeric values from 0 to 266 are allowed.
Y offset (px)	Select this to set distance between the map object and the label by entering a value in pixel. You can select a numeric values from 0 to 266 are allowed.
Allow overlapping text	Select to allow labels to be drawn on top of each other. By default, it is unchecked. If you have overlapping labels, only those labels will be shown which have higher priority.

Properties	Description
Allow duplicate text	Check to allow duplicate labels for different objects to display. This option can also be used with street maps to label street segments individually.

Ability to Save Annotations to a Map Project

After you draw an annotation and apply various styles to the annotation like color, size, and pattern, etc., and then save the map project, the annotations will also be saved. The project preserves all annotations in the current state, along with the queries created on the annotations.

On reload, the saved annotations are reloaded along with all customized properties and styles.

- You can query on annotations and save the result.
- Create annotations from extensible components and save them in a named project.
- Imported annotations from a KML file can also be customized and saved in a named project for further analysis.
- You can also save opacity for the annotation.

Enhancement to Address Seach

Support for Typeahead API and Interactive Geocoder

Administrators can now specify interactive geocoder (on-premise) or Precisely Typeahead API (previously called Geoserch) URLs when creating geocoder configurations. As a result, the Spectrum Spatial Analyst users benefit from typeahead suggestions and more accurate geocoding when searching for an address on the map.

Ability to search within specified limit

Now you can limit your search on the map.

Spectrum Spatial Analyst users can now select one of the following options:

1. **Search in the Visible Map Region** - The search is performed only within the visible map area on your screen. You can pan and zoom on your map before applying search for a better result.
2. **Search in entire map** - Search is performed in the entire map region.

   Note: These option are available only when **Precisely Typeahead API** and **Interactive Geocoder** services are configured as the Geocoder by the administrator.

Fixed Issues

This release includes the following fixes.

Spectrum Technology Platform

- (CDQE-73131) Job under Job Folder moved root folder unexpectedly in Enterprise Designer.
- (CDQE-73431) Spectrum service did not show user-specified time zone for Output date.
- (CDQE-76394) User in `adminCopy` role was unable to create new roles.
- (CDQE-80073) Imported JDBC drivers did not show in Management Console.
- (CDQE-80504) CLI `job history list` command only returned the first 10 results.
- (CDQE-80506) CLI `job history list` command did not filter results by date.
- (CDQE-80507) `weekOfYear` function returned year instead of week in Transformer stage.
- (CDQE-80626) `Random` function error in Transformer stage.
- (CDQE-81114) Driver setting changes did not take affect until after restart.
- (CDQE-81499) Job executed from CLI failed with multiple overwrites.
- (CDQE-82511) CLI failed to set `ValidateAddress OutputRecordType` option with multiple values.
- (CDQE-85945) `Spectrum-server.log` grew very quickly to 80 GB or more.

Spectrum Context Graph

- (CDQE-66247) Allow user to override relationship display label in metadata (enhancement).

Spectrum Discovery

- (CDQE-80828) Not able to select multiple values in any of the filter fields within **Discovery** (previously Metadata Insights).
- (CDQE-80404) In Spectrum **Discovery** the layout is not adapting to the screen resolution.
- (CDQE-80273) Spelling of *Title* in **Semantic type** needs to be corrected.
- (CDQE-80089) Business Glossary Entity Edit | On reordering the properties by drag and drop, the property gets deleted.
- (CDQE-79657) Getting null exception with write to Data Federation model.

- (CDQE-77496) Business Glossary Entity | Save button is not enabled until user adds any description or a field.
- (CDQE-72490) Modeling | Unable to read data if the model store is deployed after un-deploying it once.

Spectrum Enterprise Tax

- (CENTRUS-11515) The application no longer stops when data in the street name has non-digits followed by 32 or more digits.
- (CENTRUS-11661) System now compares house numbers correctly when one house number is a fraction (11/2) and the other is a number and a fraction (13 ½).
- (CENTRUS-11633) No change in functionality. However, the application no longer stops if the customer loaded mixed vintages.

Spectrum Geocoding

Spectrum Enterprise Geocoding

- (CENTRUS-11777) Street addresses containing a 0 as address number no longer cause the application to stop in a multithreaded environment.
- (CENTRUS-11515) The application no longer stops when data in the street name has non-digits followed by 32 or more digits.
- (CENTRUS-11661) System now compares house numbers correctly when one house number is a fraction (11/2) and the other is a number and a fraction (13 ½).
- (EGMI-4369) Can now expose the HouseNumber2 field from the Geocode US Address stage in Enterprise Designer.

Spectrum Global Geocoding

- (CENTRUS-11777) Street addresses containing a 0 as address number no longer cause the application to stop in a multithreaded environment
- (CENTRUS-11515) The application no longer stops when data in the street name has non-digits followed by 32 or more digits.
- (CENTRUS-11661) System now compares house numbers correctly when one house number is a fraction (11/2) and the other is a number and a fraction (13 ½).
- (EGMI-4423) System returns the correct Precision code for USA candidates instead of a "-1".
- (EGMI-4243) USA MLD now returns expected candidates in Management Console when street types are abbreviated. For example, 1 Global View, Troy NY or 1 Global Vw, Troy NY both return an address point (S8).

Spectrum Integration

- (CDQE-84413) Multiple jobs with **SQL Command** stage fail when run through the JobExecutor.
- (CDQE-83692) You get an error when connecting to a database with more than 2000 tables using the **Read from DB** stage: The error reads: *Unable to Load MetaData DataSourceRuntimeException: Item count exceeds maximum [2000]*.
- (CDQE-82777) The data types *boolean*, *date*, *datetime* and *bigdecimal* are not supported in the **Read from Hadoop Sequence File** and **Write to Hadoop Sequence File** stages.
- (CDQE-81794) **Query Cache** removes decimal value from the **Lookup** column when the value is *bigdecimal*.
- (CDQE-80782) If regional settings are different than *English* the **SQL Command** stage adds extra two hours in the **DataTime** column.
- (CDQE-80364) **MongoDB** and **Couchbase** connections should not be displayed in Discovery and Profiling connections.
- (CDQE-80102) Spectrum 2019.1 showing all records (instead of 50) when inspecting an XML file.
- (CDQE-62048) The information for log file path disappears when you click the **Log file folder** option in a job that has **DB Loader** stage.
- (CDQE-70457) GUI bug in the **Query Cache** stage.

Spectrum Spatial and Routing

This section lists fixes for Spectrum Spatial, routing, and Spectrum Spatial Analyst.

- (SSS-8404) MI_GridValueAt was not returning the result for some field and band combinations. This was happening for a Multi-Resolution Raster (MRR) with multiple fields and bands where each field had different extents.
- (SSS-8581) The describe Named layer response would not honor list elements like showBackground, applyColor, and displayAtActualSize when used in Mapping requests.
- (SSS-9558) When the Named Project contained a databind and Access Control List (ACL) permissions were assigned to the Named Project, the permissions did not propagate to tables referenced in the Named Databinds.
- (SSS-9709) When a Named Project included a circular reference and permission was assigned to a resource, it would fail when fetching the reference. A circular reference is when a project has a reference to another project as parent and that project has a reference to the first project as parent.
- (SSS-10302) The message, "WARN [SpatialSecurityManager] No roles found for system" was repeating in the `spectrum-server.log` file.

Spectrum Spatial Manager

- (SSS-530) WMTS tiles did not generate when there is a Minimum Bounding Rectangle (MBR) defined within the Tile Bounds.
- (SSS-5321) On the **Create Tile** page, the bounds values did not update for the Custom Tile Bounds radio option after changing the Coordinate system.
- (SSS-5849) Spectrum Spatial Manager did not re-order reference Layers on the **WMS Layers** page.
- (SSS-6673) After moving a TAB file to a new location in Windows Explorer, Spatial Manager would display a server error when updating the new TAB file path in the Named Table where it was used .

Spectrum Spatial Routing

- When there were multiple threads simultaneously creating persistent updates, the routing engine would return exceptions. Now exceptions are not returned when creating updates.
- When anyone besides an administrator would access the routing examples on the **Routing Services** tab of the Spectrum Spatial home page (http://<server>:<port>/dcg/#spatial), an error would display. With this release of Spectrum Spatial, users who are not an administrator (admin) can now use their credentials to view the routing examples on the **Routing Services** tab.
- The Japanese Spectrum Management Console did not list datasets when switching between driving and pedestrian filters.
- The Travel Boundary stage would return an exception when opening this stage because the decimal operator was as comma (",") for numeric values for locales such as French, Spanish, German, and Japanese.

Map Display

- (SSS-5631) Point symbols were not round when the display size was less than 7 pixels and border is enabled.
- (SSS-6675) Rendering the label source using an in-line label layer did not honor translucency.
- (SSS-6677) Map failed to render when it had labels and the label expression used new line characters like Char 13 or Char 10.
- (SSS-9041) The bottom portion of point symbols were not rendered when the display size was less than 7 and border was enabled.

Map Uploader

- (SSS-8700) Map Uploader would only accept a lower case user name when logging in.

  You can now log into Map Uploader using a mixed case user name.

Performance

- (MID-48396) Using seamless TAB files with Point in Grid on Linux now has better performance.

    Using an uppercase .TAB file extension affects performance on Linux. Spectrum Spatial now checks for upper or lower case file extensions.

- (MID-47439 | SSS-1137) A SQL pagination query now has better performance.

Services

- (SSS-6378) A `Unable to parse Json, may be invalid or incorrect structure` error message would display when using the GridStyle in a REST request.
- (SSS-6579) The border was missing for polygons with border pen pattern 0 (zero) in the legend.

Spectrum Spatial Documentation fixes

- (SSS-5206) Spectrum Spatial documentation: "The default setting for volatility is true for all named tables." This statement is not true for named tables created via MapUploader.

Spectrum Spatial Analyst

The following issues have been fixed in this release.

Bug ID	Description
CONN-45072	Issue with switching the map project. While switching a map project having Bing as the base map, to another map project having Google as the base map, the application failed to display the Google base map. **Resolution** - Fixed.
CONN-45620	WMS feature info used to fail when there was a mismatch between the projections of base and WMS business map. **Resolution** - Fixed.
CONN-46410	In Spectrum Spatial Analyst version 2019.1, the version of the Command Line Utility was incorrect. **Resolution** - Fixed.

Bug ID	Description
CONN-46554	Earlier, the zoom level labels could be seen even when the setting 'Display zoom labels' in the functionality profile was unchecked. **Resolution** - Fixed.
CONN-46599	Issue with HTTPS configuration in Spectrum Spatial Analyst 2019.1. **Resolution** - Fixed. We have updated the instructions for the SSL connector configuration in the installation guide according to the Tomcat 9 documentation.
CONN-46652	Incorrect translation of the word 'password' in the French locale. **Resolution** - Fixed. Corrected the translation.
CONN-46709	Spectrum Spatial Analyst version 2019.1 - Map information would fail with the following error, if the name of the info template started with a numeric value. "Failed to determine the template to display information. Contact your system administrator". **Resolution** - Fixed.
CONN-46710	Legend icon failed to load for WMS layers containing spaces in their names. **Resolution** - Fixed.
SSS-4089	Removed caching for services except Mapping service renderMap. **Resolution** - Fixed. We have removed caching of the REST requests for services like FeatureService, GeometryService, NamedResourceService and ProjectService. As a result, Spectrum Spatial Analyst gets updated data from the server.
SSS-5778	We have increased Batch Geocoding limit from 1000 records to 10,000, for OnPremise Global Geocoding Module in case of vector rendering and vector data upload. **Resolution** - Fixed.
SSS-9031	Business layer failed to be in sync with the base map on touch devices. This occured on fractional zooms using pinch for zooming in and out. **Resolution** - Fixed.

Bug ID	Description
SSS-9389	Vector data with address that renders on Spectrum Spatial Analyst should show X and Y coordinates in callout and query. **Resolution** - Fixed.

Known Issues

This release has the following known issues.

Spectrum Technology Platform Issues

- (CDQE-86384) When upgrading from 18.2 or older versions, the driver files are found missing in the **Drivers** folder.

  Workaround: Add the custom driver using the **Management Console**. Click, **System** > **Drivers**. On the **Drivers** page, click the **Add Driver** icon and enter required details. For more information, see the **Administration Guide**.

- (CDQE-86642) Quad db upgrade: User not able to create/view Roles after upgrade.
- (CDQE-86821) The **Documentation** section on Precisely Spectrum product Home page links to **Go to the support site**. This section should instead link to **Go to Precisely Spectrum documentation**.

  Workaround: In your web browser, navigate to the following URL:

  ```
  https://docs.precisely.com/docs/sftw/spectrum/20.1/en/webhelp/DocumentationDirectory/index.html
  ```

  Then add a bookmark for this page on the Bookmark bar (or in another folder), and label it **Precisely Spectrum 2020.1 documentation**.

Spectrum Addressing Issues

- (EGMI-4478), (CDQE-86450) Known display issue after upgrading from 19.1 to 20.1 in the Management Console > Resources > Spectrum Databases listing. **Status** is unavailable and

Comment is "deployed artifacts do not match". This is only a display issue; features and corresponding processing continues to work as before.

The display issue can be fixed by refreshing the database. To refresh the database, edit the database and make a change (for example, uncheck and recheck a dataset) just to enable the Save button, revert any changes made, and click **Save**. This refreshes the display and the database status will become available.

- Data compatibility for Global Addressing:

  - Global Addressing version 2020.1 requires the Q3 2020 data.
  - Older versions of the Global Addressing Module are not compatible with the Q3 2020 data. A software patch will be required for Q3 2020 data to be compatible with previous versions. This patch is pending and clients will be notified when available.

Spectrum Integration Issues

- (CDQE-86096) **NoSQL** stages is not supported with Couchbase DB *4.x* and beyond it on Spectrum versions before 20.1. The current Spectrum library version 2.7.13 is tested on Couchbase DB 5.5.
- (CDQE-86558) Issue in server start after upgrade from 18.2 to 2020.1 in case custom semantic type is defined.

  Workaround: Delete the defined custom semantic types before upgrading. You will need to create it again after upgrade.

- CDQE-84842) **Write to Hadoop Sequence File | Column Names** not shown in the **Preview** grid although names are shown during **Quick Add**.
- (CDQE-84950) In the **Read from Hive** stage, details in the **Fields** tab do not populate for *ORC*, *Parquet*, and *Avro* file types after clicking **Regenerate**.

  Workaround: To view details, you need to click **Preview**.

Spectrum Enterprise Tax Issues

- (EGMI-4478), (CDQE-86450) Known display issue after upgrading from 19.1 to 20.1 in the Management Console > Resources > Spectrum Databases listing. **Status** is unavailable and **Comment** is "deployed artifacts do not match". This is only a display issue; features and corresponding processing continues to work as before.

  The display issue can be fixed by refreshing the database. To refresh the database, edit the database and make a change (for example., uncheck and recheck a dataset) just to enable the Save button, revert any changes made, and click **Save**. This refreshes the display and the database status will become available.

Spectrum Geocoding Issues

Spectrum Enterprise Geocoding

- (EGMI-4478), (CDQE-86450) Known display issue after upgrading from 19.1 to 20.1 in the Management Console > Resources > Spectrum Databases listing. **Status** is unavailable and **Comment** is "deployed artifacts do not match". This is only a display issue; features and corresponding processing continues to work as before.

  The display issue can be fixed by refreshing the database. To refresh the database, edit the database and make a change (e.g., uncheck and recheck a dataset) just to enable the Save button, revert any changes made, and click **Save**. This refreshes the display and the database status will become available.

- (EGMI-4394) Enterprise Geocoding USA The custom match criteria preference does not persist between sessions.
- (EGMI-1808) Reverse geocoding does not return longitude/latitude candidates when Override default options is selected (default) and Keep multiple matches is not selected. As a workaround, either clear the Override default options check box or check the Keep multiple matches check box.
- (EGMI-1807) The Locale feature is not honoring a non-EN setting when reverse geocoding multiple countries.
- (EGMI-1595) Reverse geocoding returns a candidate even when the max candidate = 0.
- (EGMI-1481) Whenever a new database is added from Resources menu in Management Console, its stage is not shown in the Services menu until the browser is refreshed.
- (EGMI-1462) Database list does not display properly in Firefox.
- (EGMI-4074) No validation occurs on incorrect path in CLI egmGlobaldbResource.txt. CLI creates database on Management Console without giving an error. When you geocode, a null pointer exception will occur.
- (EGMI-4130) Exceptions may occur when saving changes to preferences in EGM USA. Press **F5** to refresh the screen and the error will go away.
- In Management Console, when choosing EGM Global datasets to add as a resource, avoid clicking the check box at the top of the list of available datasets unless you know you have enough memory to consume the data.

  If the added datasets contain more than 250 options, Spectrum does not expose REST and SOAP services. You can still batch geocode with Enterprise Designer.

Spectrum Machine Learning Issues

- (CDQE-68986) In both the Linear Regression and Logistic Regression stages, the Coordinate Descent Naive solver does not work.

Spectrum Spatial and Routing Issues

This section lists known issues for Spectrum Spatial, which includes routing.

Spectrum Spatial

Post Upgrade Procedures

After upgrading to version 2020.1.0, the administrator must check the Spectrum Spatial property settings to ensure that they are up to date for new features. Spectrum Spatial maintains the settings from previous versions. As a result, some settings will not include new feature options. For details and instructions, see *Post Upgrade Procedures* under *Upgrading your installation* for *Spatial and Routing* in the *Install Guide*.

Spectrum Spatial Analyst

Limitations

The following are the limitations in this release:

- When creating custom templates in template designer, it is no longer possible to choose tables that are view tables. We are working on it, and it will be fixed in the next patch or release. As a workaround, create a template on the original table and associate the template with the layer using the view table in the project settings.
- **Rendering multiple raster layers**: If there is more than one raster layer added to a single named map and they are in different projections, then Spectrum Spatial Analyst only renders the first raster layer. All of the raster layers in a named map are projected in Spectrum Spatial Analyst in one go and must have the same existing EPSG code.
- **Using SVG icons in annotations**: In Internet Explorer 11 and Edge, the legend icons for annotations are not shown in the print preview page or the final PDF, because HTML2Canvas does not support SVG. HTML2Canvas is the library that Spectrum Spatial Analyst uses for capturing legend information onto PDF.

Known Issues

The following are the known issues in this release:

Bug ID	Description
CONN-30659	While printing, the print preview and print PDF do not honor the border defined for a map in the print template.
CONN-33841	UTF-8 characters (such as Japanese) in the copyright text are not supported in the print PDF output and display incorrectly.
CONN-34872	If a table has a percent symbol (%) in its name, the layer does not load in Spectrum Technology Platform.
CONN-40609	Raster reprojection fails to render tiles in geographic projections other than EPSG:4326, which uses degrees as a unit instead of meters. Projections that use meters as a unit should work.
CONN-40870	On hiding or unhiding layers from the legend panel, you may notice that the previous layer or label appears for few seconds.
CONN-40988	When accessing a map project in Spectrum Technology Platform via HTTPS named layers that contain a character with an accent, such as é, the map does not display.
CONN-42137	Address Search Error. The address search fails with a wild card search when there are more than two words.
CONN-43770	It is not possible to save the state of the thematic layer in map projects if it has been created on a query layer.
CONN-45157	Issue with templates and view tables in Spectrum Technology Platform 18.2. This issue is observed when a column name alias in view table contains spaces.
CONN-45213	Names layers based off view tables crash Spectrum Technology Platform when clicking 'See on map' in feature info
CONN-46591	Tile Levels Setting not honored after initial tile creation.
SSS-8744	If the name of the TAB file does not match with the layer name, then the label properties configured using Spectrum Technology Platform user interface may not work as expected.
SSS-9923	The Single Sign-on (log in) page is displayed when you access Spatial Manager after logging to Analyst.

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