

Release Notes

This document contains information about Spectrum™ Technology Platform 9.0. You have access only to the modules you have licensed. To evaluate any other modules, contact your Pitney Bowes Software account executive for a trial license key.

Complete documentation can be found at support.pb.com.

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What's New

This release contains the following new and changed features.

API

Deprecated Web Service Endpoints

The following web service endpoints are deprecated:

```
services  
jboss-net
```

If you reference web service using these endpoints, update your references to use one of the following:

```
rest  
soap
```

For example, if you are using the following endpoint address:

```
http://myserver:8080/services/ValidateAddress
```

Change it to either:

```
http://myserver:8080/rest/ValidateAddress
```

Or:

```
http://myserver:8080/soap/ValidateAddress
```

Advanced Matching Module

New Stage: Write to Search Index

The Write to Search Index stage enables you to create a full-text index based on data coming in to the stage. You can then query the index from Candidate Finder to identify possible match candidates.

Candidate Finder Search Index Support

You can now use Candidate Finder to define matching rules and retrieve potential match candidates from a search index. This feature enables a full-text search with both simple and complex search criteria using various search types and conditions.

Candidate Finder Connection Name as Dataflow Option

You can now expose a connection name from Candidate Finder as an option in a dataflow. The Dataflow Options feature in Enterprise Designer enables the connection name for Candidate Finder to be exposed for configuration at runtime. This allows for flexibility since the dataflow can be configured to use different settings each time it runs.

Unique Collection Records

The **Assign collection number 0 to unique records** option has been added to Interflow Match and Intraflow Match options. Uncheck this option to generate collection numbers other than zero for unique records, and these collection numbers will be in sequence with any other collection numbers.

Match When Not True Option

The **Match when not true** option has been added to the Interflow Match, Intraflow Match, and Transactional Match stages. When you select this option, children that do **not** match the parents are considered matches.

Match Rule as Dataflow Option

You can now expose a match rule as an option in a dataflow. The Dataflow Options feature in Enterprise Designer enables the match rule for Interflow Match, Intraflow Match, and Transactional Match to be exposed for configuration at runtime. This allows for flexibility since the dataflow can be configured to use different settings each time it runs.

Match Rules Management

In addition to creating match rules within a matching stage, you can now also create match rules using the Match Rules Management tool in Enterprise Designer. Match rules created here, as well as those created within a matching stage and then saved, can be shared between stages, between dataflows, and even between users. browse all the shared match rules available on your Spectrum™ Technology Platform system. These match rules can be used by Interflow Match, Intraflow Match, and Transactional Match stages in a dataflow to perform matching.

Business Steward Module

Notifications

The Exception Monitor stage has added notification functionality. You can configure this stage to send a message to one or more email addresses when a condition is met a specific number of times. That email will include a link to the exception records in the Exception Editor of the Business Steward Portal, where you can manually enter the correct data.

Search Spectrum Services

You can now use Pitney Bowes Software service search tools to look up and validate exception data that you are attempting to correct. These services are available in the Search Tools section of the Exception Editor and include all the services for which you are licensed, such as ValidateAddress, GetPostalCodes, and so on.

Business Steward Portal Updates

The Business Steward Portal has added two pages to the site. The Manage page enables a user with administrative rights to review and manage exception record activity for all assignees. The Performance page provides trend information and enables you to identify key performance indicators.

Exception Record Progress

The Status section of the Manage Exceptions page shows exception record activity by assignee. It provides the number of exception records assigned to each user as well as how many of those records have been approved.

Reassign Exception Records

You can now reassign exception records using the Assignment section of the Business Steward Portal Manage page. You can reassign all records belonging to a particular user to someone else, or you can reassign just some records based on a filtering process.

Quick Edit

The Quick Edit function in the Exception Editor enables you to edit exception records more quickly by providing the information in a vertical manner with navigation buttons at the top of the pane. These buttons allow for faster editing because you are able to easily scroll through the individual records as you make changes. Edits made with the Quick Edit function are immediately synchronized with the list of records shown in the Exception Editor.

You can also use the Quick Edit function to edit multiple exception records at a time. When you select multiple records and press the Quick Edit button, you can see which fields have common values and which do not. You are able to edit both, but the fields are displayed differently so you are aware that you are editing a field with multiple values.

Delete Exception Records

The Maintenance section of the Manage Exceptions page enables you to delete exception records based on dataflow name and job ID. You must identify a specific dataflow name whose records should be deleted; after that you can filter further by job ID or delete records for all users who ran that dataflow.

Identify Trends

The Trends section of the Data Quality Performance page depicts statistical information about your dataflows, including the total number of records processed, the number of exception records found, and more. This information can be broken down by dataflow name or stage label within a dataflow.

Configure Key Performance Indicators

The KPI Configuration section of the Data Quality Performance page enables you to designate key performance indicators (KPIs) for your data and assign notifications for when those KPIs meet certain conditions.

Data Hub Module

New Stage: Import to Hub

The Import to Hub stage receives two incoming channels of data—one for entities and one for relationships. The stage is then configured to create a model that can be viewed and queried against in other Data Hub stages as well as the Relationship Analysis Client.

Reusing Queries

You can now save, reuse, and modify queries in Read from Hub, Query Hub, and the Relationship Analysis Client.

Indexing in Write to Hub

This feature in the Write to Hub stage enables you to index fields in your model, which results in a quicker response time when you later query fields from that model.

Visual Modeling

You can now manually create a model in the Relationship Analysis Client Toolbox using metadata. You can completely populate the model from within the Relationship Analysis Client, or you can create the structure of the model in the Relationship Analysis Client and then populate it from within the Write to Hub stage. You can also use the Toolbox to add metadata to an existing model.

Geocoding

This Relationship Analysis Client feature enables you to manually geocode the entities in your model by using a service that performs geocoding, such as GeocodeUSAddress.

Map Tool

The Map tool in the Relationship Analysis Client shows geographic points on a map, represented by push pins, which correspond to selected entities within a model. Using latitudes and longitudes, the map is updated dynamically as you select entities on the canvas.

Splitting and Merging Entities

You can now split one entity into two in the Relationship Analysis Client. This feature is useful when an entity performs multiple functions within a model, such as in a hierarchical layout, an organizational chart, and so on.

You can also merge two entities into one, which could be beneficial if your model contains two entities that represent the same subject. You can merge them and their respective data together into one entity.

Charts

The Charts feature in the Relationship Analysis Client enables you to visualize data in one of four formats: data bar, tree map, heat map, and timeline.

Multi-Page Layout

This Relationship Analysis Client feature displays the contents of a model in logical clusters across multiple pages, making them easier to view. You can have the contents distributed accordingly or you can designate a specific number of pages onto which the contents should be distributed.

Entity Profile Report

The new Entity Profile Report, generated in the Relationship Analysis Client, enables you to see all data associated with a particular entity in one place.

Model Metadata Report

The new Model Metadata Report, generated in the Relationship Analysis Client, provides counts for model, entity, and relationship metadata associated with a model.

Documentation

Solution-Oriented Documentation

In response to customer feedback, we have reorganized Spectrum™ Technology Platform documentation in this release. The new documentation set consists of platform documentation, which applies to all customers, and solution documentation, which is focused on particular uses of Spectrum™ Technology Platform. The new documentation set is:

Platform Documentation

- Administration Guide
- API Guide
- Dataflow Designer Guide
- Installation Guide for Unix/Linux

- Installation Guide for Windows
- Quick Start Guide
- REST Web Services Guide
- SOAP Web Services Guide

Solution Guides

- Addressing Guide
- Data Quality Guide
- Enterprise Data Integration Guide
- Enterprise Tax Guide
- Geocoding Guides (Separate guides for each country)
- Global Sentry Guide
- Master Data Management Guide
- SAP Connector Guide
- Siebel Connector Guide
- Spectrum Spatial Guides:
 - Administration Guide
 - Developer Guide
 - Stage Reference
 - Services Reference

Documentation on support.pb.com

Documentation for Spectrum™ Technology Platform will be available on support.pb.com when we release version 9.0. You will no longer need a user ID and password to access documentation.

In addition, the online help available from within Enterprise Designer, Management Console, and Interactive Driver will take you to help content hosted on support.pb.com. This web-based content will enable us to publish new and updated information on a continuous basis. If you do not have an Internet connection, you will be able to configure Enterprise Designer, Management Console, and Interactive Driver to use a local copy of the help content.

Starting with this release we will no longer include PDF documentation in the installation package. You will be able to download PDF documentation from support.pb.com.

Enterprise Data Integration

New Stage: Call Stored Procedure

Call Stored Procedure is a source stage that executes a stored procedure in a database, and returns the results of the stored procedure call as input for the dataflow. Use Call Stored Procedure when you want to get data from a database using a database's stored procedure rather than a query to a table or view.

New Stage: Field Selector

Field Selector allows you to choose which fields to pass to the next stage in the dataflow. You can use Field Selector to remove unwanted fields from a dataflow.

New Stage: Generate Time Dimension

Generate Time Dimension creates date records, one for each day of the date range you specify. You can then write these records to a time dimension table in a database using the Write to DB stage. The time dimension table can then be used to perform accurate calculations based on a time period. For

example, sales by quarter, budget spend by quarter, and revenue by day are all analyses that require a time dimension. Time dimension tables also enable you to account for fiscal years or non-standard quarters in the analysis.

New Stage: Read from HL7 File

Read from HL7 File reads Health Level Seven (HL7) data from a text file as input to a dataflow. HL7 is a messaging standard used in the healthcare industry to exchange data between systems. This release supports only the HL7 2.7 standard. For more information about HL7, go to www.hl7.org.

New Stage: Transposer

The new Transposer stage converts your columns to rows or changes the representation of table data. It works just opposite to the Group Statistics stage that transforms rows into columns.

New Stages: Query Cache and Write to Cache

These two new stages support the use of caches for data lookups.

Write to Cache loads output from a dataflow into a cache, making the data available for lookup from the Query Cache stage.

Query Cache looks up data in a cache based on values in one or more dataflow fields and returns data from matching records in the cache, adding the cache record's data to the record in the dataflow. Looking up data in a cache can improve performance compared to looking up data in a database. There are two kinds of caches: global caches and local caches. A global cache is system-wide, shared cache that resides in memory. A local cache is a temporary cache which is only used during the execution of Query Cache stage.

Export XML Schema

You can now create an XSD file that represents the schema of an output XML file. A new button in Write to XML allows you to do this.

Generate Multiple Files

You can now generate multiple output files from a single sink by enabling the **Generate multiple files** check box on the **Runtime** tab of these stages:

- Write to File
- Write to Variable Format File
- Write to XML

When you select this option, the sink writes records to the file specified in the record. Each record must contain a field that specifies either a file name or the full file path of the file to which you want the record written.

Support for Hadoop Distributed File System (HDFS)

Hadoop Distributed File System (HDFS) is an open source distributed file system. It provides high-performance access to large data sets and can be run on inexpensive hardware. If you have an HDFS system you can now configure Spectrum™ Technology Platform to read data from, or write data to, files on your HDFS cluster.

Note: For more information on HDFS, see the documentation available on the Apache Hadoop project website: hadoop.apache.org.

Enterprise Designer

New Stage: SQL Command

The new SQL Command stage executes SQL commands for each record in the dataflow. You can use SQL Command to:

- Execute complex INSERT/UPDATE statements, such as statements that have subqueries/joins with other tables.
- Update tables after inserting/updating data to maintain referential integrity.
- Update or delete a record in a database before a replacement record is loaded.
- Update multiple tables in a single transaction.

You can execute additional SQL commands before and after executing the main SQL commands, and you can invoke stored procedures.

Filter the List of Dataflows in Server Explorer

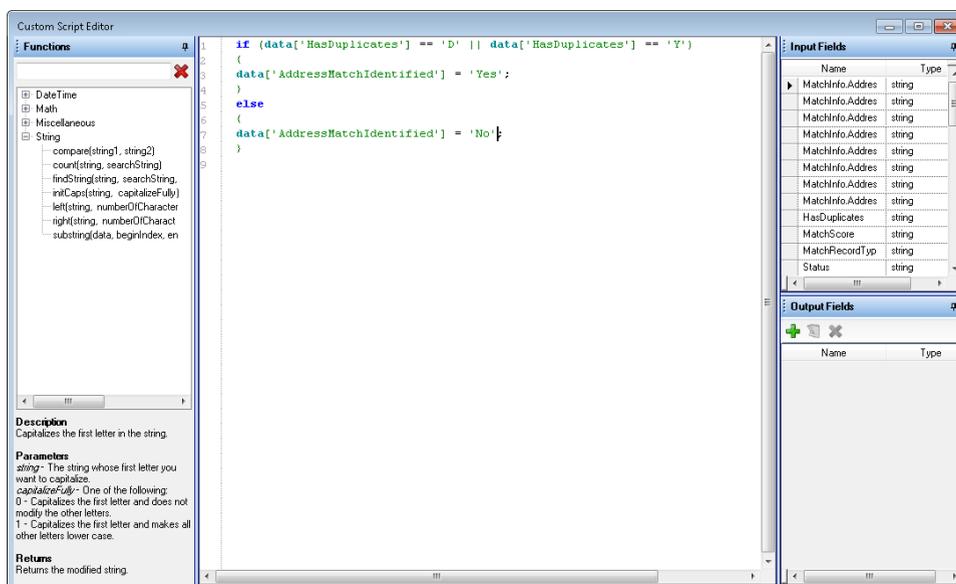
In Enterprise Designer, the Server Explorer palette now has a filter bar where you can type the name of a dataflow you want to find. This makes it easier to find a dataflow if you have many dataflows on your system.

Dataflow Versioning

You can now save versions of dataflows in Enterprise Designer, allowing you to keep a revision history of your dataflows. You can view previous versions of a dataflow, expose older versions for execution, and keep a history of your changes in case you ever need to revert to a previous version of a dataflow. To view the new Versions pane in Enterprise Designer, select **View > Versions**.

Custom Script Editor in Transformer

The Transformer stage has been enhanced to include a custom script editor. This editor provides a variety of features to make developing your transform easier, such as code completion and palettes listing functions and fields.



Rename Field

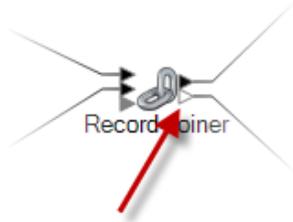
The Transformer stage now has a Rename transform which you can use to rename a field in a dataflow.

Join Records using Multiple Join Fields

The Record Joiner stage has been enhanced to support join conditions that involve more than one field. In previous releases Record Joiner only supported join conditions that involved one field.

Record Joiner Output Port for Records Not Joined

A new output port has been added to Record Joiner to capture the records that are not included in the result of the join operation. The new **not_joined** output port is the white triangle on the right side of the Record Joiner stage as shown here:



Automatically Detect Data Type

In Read from File you can now set the data type for each field automatically by clicking the **Detect Type** button on the **Fields** tab. This makes it easier to deal with files with a large number of fields where you would otherwise need to manually specify the data type of each field.

Enterprise Geocoding Module

Reverse Geocoding US Input Decimal Option

Reverse Geocoding US now supports decimal format for input latitudes and longitudes. The format is 90.000000-180.000000.

Note: This feature is supported only on the US version of Reverse Geocoding.

Enterprise Routing Module

Support for Additional Countries

The Enterprise Routing Module now includes support for::

- Indonesia
- Hong Kong
- Russia

EMEA Routing Data Bundle Split

The EMEA Enterprise Routing Module data bundle has been split into two: EMEA-Bundle Data and EMEA-Bundle Data 2. The following countries are in each bundle:

EMEA-Bundle Data

- Austria(AT)
- Belgium and Luxembourg(BE_LU)
- Switzerland and Lichtenstein(CH_LI)
- Germany(DE)
- Denmark(DK)

- Spain(ES)
- Finland(FI)
- United Kingdom(GB)
- Ireland(IE)
- Netherlands(NL)

EMEA-Bundle Data 2

- France(FR)
- Italy(IT)
- Norway(NO)
- Poland(PL)
- Portugal(PT)
- Russia(RU)
- Sweden(SE)

Documentation Additions and Changes

The documentation for the Enterprise Routing Module has been enhanced in the following ways:

- Management Console: Updated documentation for Get Route Data, Transient Updates, and Persistent Updates have been added to the Spectrum Spatial guide.
- Soap and REST Services: All Enterprise Routing Module services have updated documentation in the Spectrum platform service guides.

Location Intelligence Module

Role-Based Security

The Location Intelligence Module is now using the role-based security that is implemented in this release for the Spectrum™ Technology Platform (see [Role-Based Security](#) on page 16 for a description of the platform implementation). Because security is now handled at the platform level, the Management Console should be used to manage all security activities. This includes setting permissions for named resources in addition to user account management (that is, creating, modifying, and deleting user accounts and roles, which was available in the previous release). One benefit of this new security model is that in future upgrades, all security settings (user accounts, roles, and permissions) will be retained.

For upgrading customers: The User Management Service can still be used to set permissions if desired. Upon upgrading, your existing applications will continue to function as they did in the previous release. Permissions set with the User Management Service are now stored in the platform and not the repository, and can no longer be set at the folder or directory level. The User Management Service is deprecated and slated to be removed in the next version of Spectrum™ Technology Platform.

Note: As with previous upgrades, repository permissions set with the User Management Service are not retained.

Two predefined spatial roles are available in the Security section of Management Console: spatial-admin and spatial-user. The spatial-admin role provides the ability to create, view, modify, execute, and delete named resources. The spatial-user role allows only viewing of named resources. You cannot modify or delete these predefined roles.

Note: These predefined spatial roles, when assigned to a user, provide access to named resources only when using spatial services. They do not allow access to named resources in Management Console. The "admin" user in Spectrum has full access to manage all parts of the system, including named resources, via the Management Console. If you also want users who can access only spatial resources via the Management Console, you must manually create a "named resources administrator" role, using one of the predefined spatial roles as a base, that provides access to named resources in the repository then assign that role to a "named resources administrator" user account.

You can create custom roles based on the predefined spatial roles, assign them to user accounts, then fine-tune access to named resources for those roles and users by applying secured entity overrides to

individual named resources (overrides cannot be applied to folders or directories). The permission settings in the User Management Service are mapped to the Spectrum™ Technology Platform as follows: Read>View, Modify>Modify, Add>Create, and Remove>Delete.

See the "Managing Security" section in the *Spectrum Spatial Administration Guide* for detailed information about the new security model and how to implement security for the Location Intelligence Module.

Login Change for Demo and Sample Pages

The guest user has been removed for new installations of the Spectrum™ Technology Platform (this user is still available for upgrading customers). A password is required to submit requests using the admin user.

The default user for submitting requests on the SOAP service demo pages (for example, the Feature Service Demo Page) and for using sample pages is now "admin" instead of "guest."

Note: If you do not enter a password, a SOAP error message appears and no details about the error are provided in the SOAP response.

For the JavaScript sample page, the user will be prompted to enter a user name and password. Once a valid set of credentials has been entered into the Credentials tab, the page will then load all the configurations from the server.

For the RIA Controls sample page, a dialog will prompt for a user name and password when a user navigates to one of the RIA examples. Once the user name and password have been accepted, the user will not be prompted again if they select other RIA examples. If the user enters an incorrect user name or password, then the login box will remain until the user has entered valid credentials.

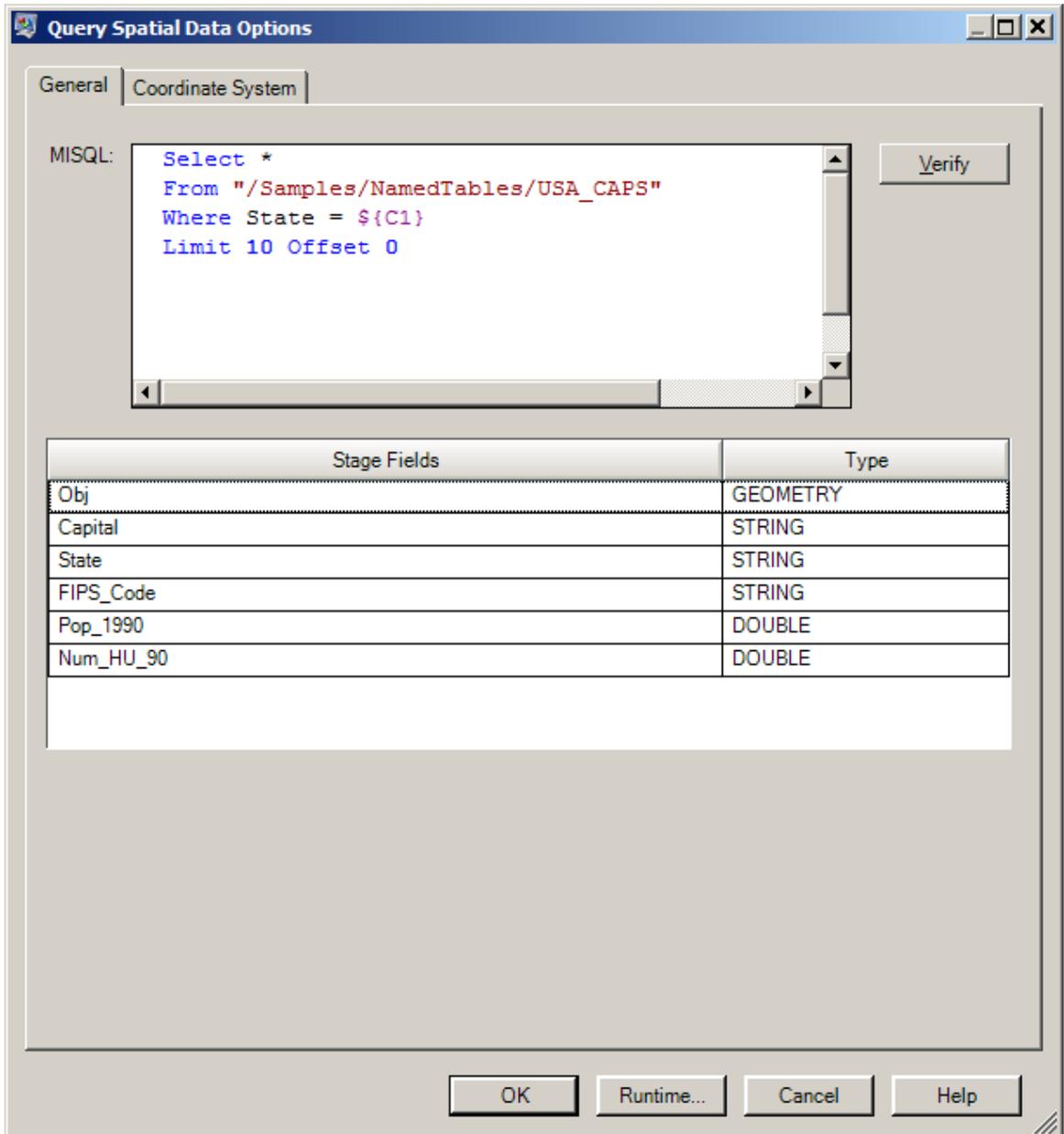
New and Updated REST Methods

Several improvements have been made to REST methods:

- A new method for rendering map legends requests, Render Legend for a Map, is now available. This allows you to render map legends for maps that are not named maps.
- All mime (image) types are supported for Render Map and Render Named Map methods: gif, png, jpg, bmp, jpeg, tiff
- Added optional parameters for the Render Map and Render Named Map REST methods that behave the same as in the SOAP API :
 - bc - background color
 - bo - background opacity
 - rd - rendering hint

Query Spatial Data Stage

The Query Spatial Data stage has a revised user interface that offers more powerful functionality. Previously this stage only allowed the user to query a Named Table and return all or some of the attributes in the Named Table, along with options to filter (WHERE clause) and use multi-attribute sorting (ORDER BY). This stage now provides full MI SQL support (SELECT, FROM with multiple tables for joins, WHERE, GROUP BY, ORDER BY, LIMIT, and OFFSET) for querying spatial data. Auto-complete is available which displays functions and operators. A verify function is also provided to give you feedback as to whether or not the query is valid. The output fields of the stage are now determined by the projection list (including aliases) in the MI SQL statement. A solid knowledge of your underlying table structure is essential to using this revised stage.



Oracle and JDBC Insert Support

Originally only available for PostgreSQL and the PostGIS spatial extender, the insert functionality for the Feature Service is now supported for Oracle and generic JDBC data sources. Records can now be inserted into a table via the SOAP and REST APIs and through a Write Spatial Data dataflow stage.

In SOAP, inserting records is supported through the `InsertFeaturesRequest` method in the Feature Service.

In REST, this is done through an HTTP POST request that takes a named table and JSON representation of a feature collection. Both .NET and RIA proxies support POST.

The new Write Spatial Data stage uses a named table from the repository. The named table must exist prior to configuring the stage.

You can optionally provide a batch size to indicate how many inserts will be done per transaction. A successful insert returns the primary keys of the features that were inserted. For the Write Spatial Data stage, the default batch size is 100 records. For SOAP and REST, the default is 50.

New and Updated Spatial Calculator Operations

Several improvements have been made to the operations in Spatial Calculator:

- The following new operations are available:
 - Difference - returns the geometry portions of the first geometry that are not common with the second geometry
 - Symmetric Difference - returns the symmetrical difference of the two supplied geometries
 - Is Valid Geometry - returns a boolean value indicating whether the supplied geometry is valid according to the geometry type
- The Geometry Coordinates operation has been renamed Get Centroid to better reflect its function and output.

Performance Improvements

The following performance improvements are included in this release:

MI_Contains

Operations using MI_Contains may see a performance improvement in some cases, particularly when using them against a large table.

Temporal Data Type Support

Support for the following temporal types has been added to the stages in the Location Intelligence module:

- Date
- Time
- DateTime
- Timespan

All Location Intelligence module stages will interact with non-Location Intelligence module stages that yield records with fields of those types.

The Read Spatial Data stage will yield fields of the corresponding types rather than converting temporal types to strings

The Query Spatial Data stage will yield fields of the corresponding types rather than converting temporal types to strings

The Write Spatial Data stage will write fields of temporal types by converting them to the corresponding type of the underlying data provider.

Note: There is currently no support for dates/times with time zones due to the lack of platform support. Such values will be converted to strings upon reading - just as they were before.

Backwards Compatibility

The behavior of a stage with regard to the new temporal types is determined by when the stage was created. If it was created in a version of the product that didn't have support for temporal types, it will continue to work as it did before. That means that even if it communicates with a table that contains temporal columns, values will be converted to and from strings as before. In order to make use of the new behavior, delete the old stage and recreate it. At this time the data flow author must ensure that data received by a previous stage, or sent to a subsequent stage, conforms to the data types of the underlying data source the stage communicates with, wherever applicable.

MI_Difference Function

A new MI_Difference function has been added to the MySQL language geometry predicate functions (boolean). MI_Difference determines if there is a difference between two geometries, and returning a boolean (true or false). For example, the following select statement will return if there is a difference between a box and a state geometry.

```
select State Name,  
MI_Difference(Obj,MI_Box(-106.709575,42.84867,-108.709575,44.416358558786,'EPSG:4326'))  
from usa where state='WY'
```

WMS GetFeatureResponse Improvements

The WMS GetFeatureResponse has been updated. The changes are reflected in the WMSConfiguration file:

- `ReturnGeometry` has been added to control the whether the geometry and style attributes should be returned. When true, all the geometry and style attributes will be returned. If the element is not present in the WMSConfiguration, then true will be taken as the default value. When false, the geometry and style attributes will not be returned in the GetFeatureInfo response.
- `DistanceBuffer` has been deprecated in favor of `DefaultPixelSearchRadius`. If `DistanceBuffer` is specified in the WMSConfiguration, it will be ignored.
- `DefaultPixelSearchRadius` has been added to control the pixel search radius. The pixel search radius can be specified in the request URL by using the parameter `PIXELSEARCHRADIUS`. If the request parameter is not present then the default value for pixel search radius is taken from the WMSConfiguration. Following are the ways to specify `DefaultPixelSearchRadius` in the WMSConfiguration:
 - At the WMSLayer level: Each layer can have its own `DefaultPixelSearchRadius`.
 - At the Service level: If the `DefaultPixelSearchRadius` is not specified at the WMSLayer level, it can be specified at the service level.
 - Default value: If `DefaultPixelSearchRadius` is not specified at either the WMSLayer or Service level, then a value of 3 will be taken as the default value.

Reference Scale for Graduated Symbol Layers

The Mapping Service now allows you to specify a reference scale for drawing symbols when rendering a Graduated Symbol layer. The default behavior draws the symbol at the same size regardless of the zoom or scale of the view. Now you may specify the scale of the view at which a symbol is drawn. This means the symbol will be scaled up or down depending on the scale of the view relative to the reference scale on the Graduated Symbol layer.

Pool Sizing Tool in Management Console

A new Remote Components tool is available under the Location Intelligence Module in Management Console. This tool allows you to adjust the pool size for the spatial components (`spatial.feature` and `spatial.mapping`) to achieve optimal performance. In previous releases the pool size was adjusted on the JMX Console using the `MaxActive` setting. The `MaxActive` setting now no longer appears in the JMX Console.

continueOnException Deprecated

The parameter `continueOnException` has been deprecated from the Mapping Service. This affects the SOAP methods `RenderMap` and `RenderNamedMap`. The equivalent parameter `cx` has been deprecated for REST as well.

Spatial Utilities and Javascript Samples

The MWSUploader, Tile Generator and Geometry Validator utilities are now installed with the Location Intelligence Module. They are also available from the Spectrum landing page

The Javascript samples are also installed with the Location Intelligence Module.

The 8.0 Silverlight and Flex samples have been removed from the product.

Documentation Additions and Changes

The documentation for the Location Intelligence Module has been enhanced in the following ways:

- Spectrum Spatial Guide: the Location Intelligence Module documentation and Enterprise Routing Module have been consolidated into a single documentation deliverable, including all information on administration, development, service, stages, and resources.
- Developer Guide: new best practices for managing named resources and designing maps
- Developer Guide: clarified that two REST methods, Search Feature Metadata by ID and Search Feature Metadata using SQL Queries, are returning features, not metadata.
- Administration Guide: updated Security chapter. See also [Role-Based Security](#) on page 10

Spectrum Spatial Landing Page

All Spectrum Spatial links and documentation are easily accessible as part of the new Spectrum™ Technology Platform landing page. On the landing page, click on **Spectrum Spatial**. The new Spectrum Spatial landing page contains the following resource links:

- Downloads and help links for the Location Intelligence Module utilities (MapInfo Workspace Uploaded, Tile Generator, and Geometry Validator).
- Links to all the Location Intelligence Module and Enterprise Routing Module services. This includes links to SOAP API demos, WSDL, WADL, and help.
- Downloads for sample applications
- Links to RIA Control samples, javascript, proxies, and documentation.

The Spectrum™ Technology Platform landing page (including the Spectrum Spatial portion of this site, is available on any machine hosting the Spectrum™ Technology Platform at:

`http://hostname:portnumber/`

New Fill Patterns

New fill patterns PAT176.png through PAT193.png have been added to this release. This aligns with the fill patterns provided in MapInfo Professional v 12.0.

New Logging Framework

Logback has replaced the log4j framework for logging in the Location Intelligence Module.

Enhance MutliTableFeatureService

The MultiTableFeatureService for RIA Controls has been enhanced to allow users to specify attributes to return versus all attributes.

Management Console

Export Execution History

You can now export the execution history displayed in Management Console in **Execution > History** to an Excel file. You can export the execution history for jobs and process flows.

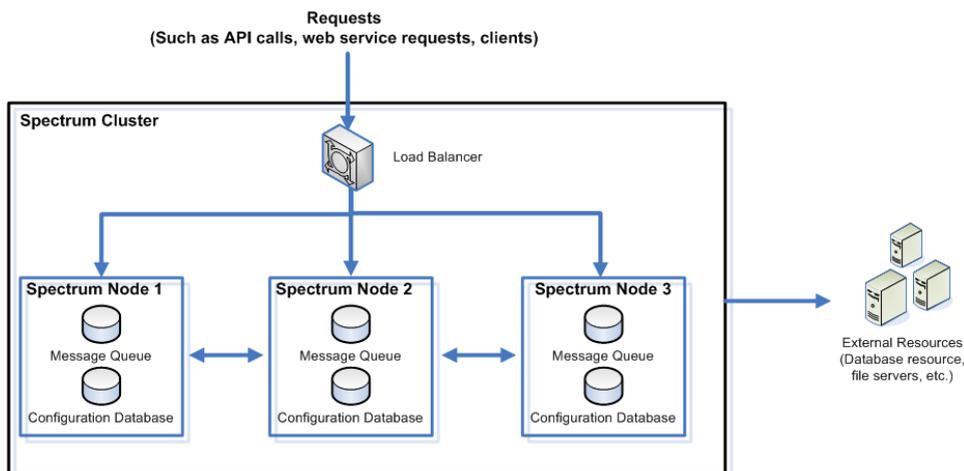
Performance Setting for Database Resources

Database resources contain reference data used by certain stages, such as postal data used to validate addresses, or geocoding data used to geocode addresses. These database resources can now be configured to accept multiple concurrent requests from the dataflow stages or services that use them, thereby improving the performance of the dataflows or service requests. The new option, **Pool size**, can be found in Management Console in each database resource.

Platform

Improved Clustering Architecture

Clustering has been enhanced in this release through the introduction of new technologies for the message queue and configuration database. In the new architecture you do not need to install a separate configuration database and message queue. Instead, the server can automatically synchronize its message queue and configuration database with other servers in the cluster, provided the server has been configured to run in clustered mode. The following diagram illustrates this architecture:



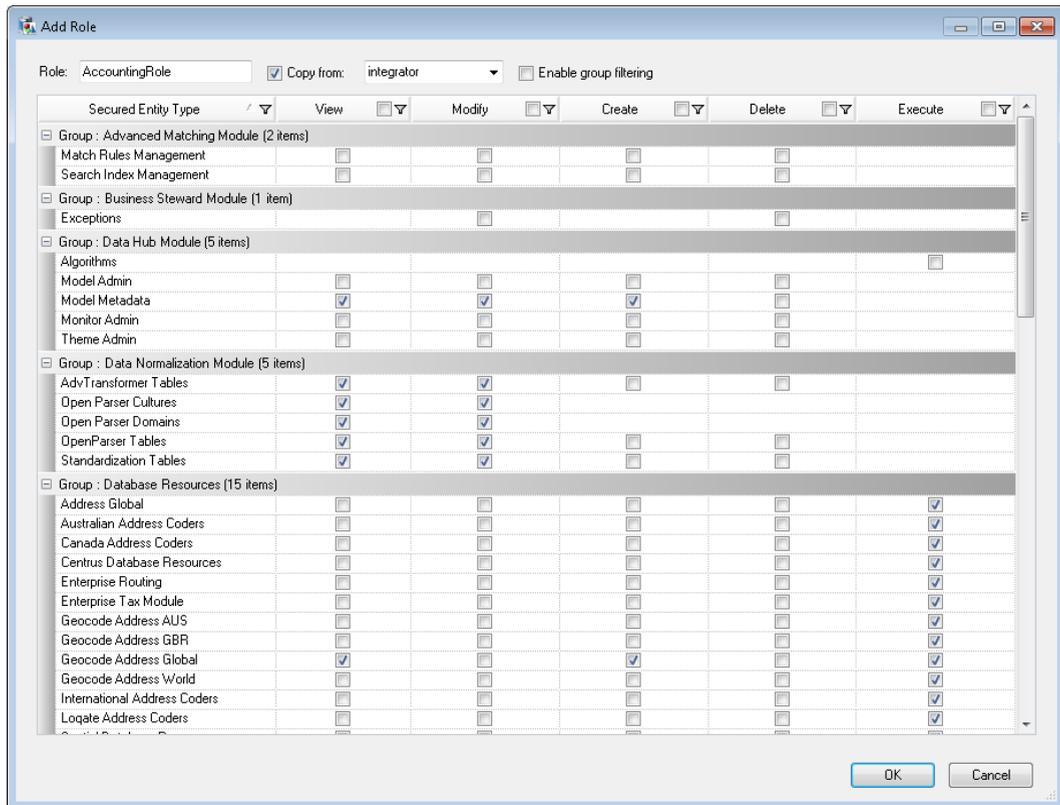
The new clustering architecture provides these advantages compared to previous releases:

- No need to have additional hardware to host a shared configuration database and message queue
- No need to have a database administrator to manage the shared configuration database
- Easier to add new nodes

Using Spectrum™ Technology Platform in a cluster requires a Professional Services engagement to install and configure the cluster. Contact Pitney Bowes Software Professional Services or your Sales Executive for more information.

Role-Based Security

This release greatly expands the level of control you have over your system by adding role-based security. Role-based security allows you to create roles for your users that grant or deny access to different parts of the system. For example, you may have one role for dataflow designers which grants access to create and modify dataflows, and another role for people who only need to process data through existing dataflows.



Restrict Directory Browsing on the Server

You can now prevent Enterprise Designer and Management console users from browsing all the directories on the Spectrum™ Technology Platform. Enterprise Designer and Management Console users can browse the server's folders and files when selecting an input or output file for a dataflow, when defining a database resources, and so on. You can prevent all browsing or you can specify the folders that you want users to be able to browse. To restrict file browsing, open Management Console and go to **Resources**, then **Server Directory Access**.

Authentication with LDAP

Spectrum™ Technology Platform now supports the use of an existing LDAP or Active Directory server for authentication. This enables you to use existing credentials to log in rather than having to use separate Spectrum-specific credentials. If you are interested in using an LDAP server for authentication, contact Professional Services.

BigDecimal Data Type

Support for the BigDecimal data type has been added. BigDecimal is a numeric data type that supports 38 decimal points of precision. Use this data type for data that will be used in mathematical calculations requiring a high degree of precision, especially those involving financial or geospatial data. The BigDecimal data type supports more precise calculations than the double data type.

Number Formatting

The type conversion options in Management Console and Enterprise Designer now contain options that allow you to specify how to format numbers. You can specify such formatting options as the character to use for the decimal, the thousands separator character, and other numeric formatting options.

In addition, you can specify number formatting options at the dataflow level and at the stage level within stages such as Read from File, Read from XML, Read from Variable Format File, Write to File, and Write to XML.

Date and Time Data Types

Spectrum™ Technology Platform now supports date and time data types. Specifically:

date	A data type that contains a month, day, and year. For example, 2012-01-30 or January 30, 2012.
datetime	A data type that contain a month, day, year, and hours, minutes, and seconds. For example, 2012/01/30 6:15 PM.
time	A data type that contains the time of day. For example, 21:15:59 or 9:15:59 PM.

You can specify how to handle these new data types in the type conversion options in Management Console and Enterprise Designer. In addition, you can specify date formatting options at the dataflow level and at the stage level within stages such as Read from File, Read from XML, Read from Variable Format File, Write to File, and Write to XML.

Support for SOAP Request Headers

You can now specify request header parameters when defining an external web service in Management Console. When you enter a WSDL URL for an external web service that supports request headers, a new tab **Request Header** will appear listing the parameters accepted by the web service.

Verbose Output from Process Flow Executor

Process flow executor can now return verbose output. To enable verbose output, specify the `-v` argument.

Landing Page Enhancements

The server landing page has been redesigned and expanded in this release. The landing page now provides access to the client tools installer, resources for developers, links to web-based clients such as the Business Steward Portal (if licensed) and the Relationship Analysis Client (if licensed), Spectrum Spatial resources, and complete documentation.

You can view the landing page by pointing a browser to your Spectrum™ Technology Platform server (`http://hostname:port`, for example `http://myserver:8080`).

SAP Module

Support for Customer and Vendor Records

The SAP Module now supports customer records and vendor records in SAP Web DynPro. Using the SAP Module, you can validate addresses and identify duplicate records for customer records and vendor records.

Postal Information for Business Partner Addresses

When you validate a business partner address and the address is in the U.S., you now get additional information about the address validation process.

Note: This feature is supported in SAP ECC 6.0 EHP6 and Web DynPro. It is not supported in SAP CRM 6.0 and SAP CRM 7.0 EHP2.

DPV

Delivery Point Validation (DPV[®]) is a United States Postal Service[®] (USPS[®]) technology that validates the accuracy of address information down to the individual mailing address. By using DPV[®] to validate addresses, you can reduce undeliverable-as-addressed (UAA) mail, thereby reducing postage costs and other business costs associated with inaccurate address information.

RDI

For U.S. addresses only, Residential Delivery Indicator (RDI[™]) processing can help you determine the best cost for shipping your packages. RDI[™] processing identifies whether an address is a business or a residential address. This difference is important because some delivery services charge a higher price for delivery to a residential address than they do to a business address.

CMRA

A Commercial Mail Receiving Agency (CMRA) is a private company that rents out mailboxes. A CMRA, also known as a mail drop, typically operates as a Private Mail Box Operator. Addresses at a CMRA are therefore given the designation "PMB" (private mail box) instead of "POB" (Post Office box).

EWS

The Early Warning System (EWS) provides up-to-date address information for new and recently changed addresses that have not yet been updated in the monthly USPS database. EWS prevents address records from miscoding due to a delay in postal data reaching the USPS[®] databases.

Geocoding for Canada

When validating a Canadian address in a business partner record, you now get the latitude and longitude coordinates for the address.

Note: This feature is supported in SAP ECC 6.0 EHP6 and Web DynPro. It is not supported in SAP CRM 6.0 and SAP CRM 7.0 EHP2.

Siebel Module**Geocoding for Canada**

When validating a Canadian address in Siebel, you now get the latitude and longitude coordinates for the address.

Universal Addressing Module**Pool Size Option in Global Database Resources**

The **Pool Size** option is now available when you add a global database resource to the Universal Addressing Module in Management Console. This option determines the maximum number of concurrent requests you want the database to handle.

Format Delimiter Option in Validate Global Address

The **Format Delimiter** option has been added to Input Options and Output Options for Validate Global Address. This option enables you to use non-standard formatting for multi-line addresses in input and output files.

CASS Detail Report

The new CASS Detail Report provides extensive details about DPV, LACS, and SuiteLink statistics in your Validate Address job.

CASS Cycle N Extension

Validate Address will now run in CASS-certified mode for Cycle N until June 25, 2014.

Loqate Script/Alphabet Option

The Script/Alphabet option for all Loqate stages now supports just three values:

- Input Script—Do not perform transliteration and provide output in the same script as the input (default).
- Native—Output in the native script for the selected country wherever possible.
- Latin (English)—Use English values.

Auto Complete Loqate Script/Alphabet Option

Auto Complete Loqate now supports transliteration via the Script/Alphabet option, which specifies the alphabet or script in which the output should be returned.

Auto Complete Loqate Casing Option

Auto Complete Loqate now includes the Casing option, which enables you to determine if your output should be formatted in all upper case or in mixed uppercase and lowercase letters.

Auto Complete Loqate Secondary Address Support

Auto Complete Loqate now supports secondary address data, such as apartment number, building number, and so on. This information should be entered in the input address fields, and Auto Complete Loqate will consider this data while performing address matching. It will then output the list of matching results along with the secondary address data if matches are found.

Auto Complete Loqate Performance

Auto Complete Loqate has been enhanced to return a higher quality of matching results for full or partial input addresses.

Auto Complete Loqate Sample Web Application

The Auto Complete Loqate Sample Web Application has been enhanced to show all possible addresses in the Suggestions window.

Universal Name Module

Deprecated Stage: Name Parser

The Name Parser stage has been deprecated. You should remove it from your dataflows, replacing it with Open Name Parser. Name Parser may not be supported in future releases.

New Stage: Open Name Parser

The Open Name Parser stage breaks down personal and business names and other terms in the name data field into their component parts. These parsed name elements are then subsequently available to

other automated operations such as name matching, name standardization, or multi-record name consolidation. This stage replaces the Name Parser stage.

Fixed Issues

Enterprise Designer

- (CDQE-19429) Duplicate process flows appear in Enterprise Designer.
- (CDQE-19353) Removed Latin to Han and Any to Han from the Transliterator stage since these transliterations are not supported.
- (CDQE-3864) In a transformer, if a custom output field is deleted, an error occurs when trying to re-add the field.
- (CDQE-391) In the Server Explorer pane, cannot move items into folders.

Enterprise Geocoding Module

- (CDQE-19243) Geocode US Address returns a single house number instead of the range.
- (CDQE-17210) Geocode US Address returns an S3 match code for an address in Mableton, GA.
- (CDQE-16767) When using a user dictionary with Geocode US Address, the following error occurs: "Service problem. java.lang.NullPointerException".
- (CDQE-7121) Output field NZL.KEY_UFI missing from the documentation.
- (EGMI-293) For the Malaysia (MYS) database, the Management Console custom constraints Locality and District check boxes are disabled. This has been fixed, and these check boxes are now enabled when district data is available.
- (EGMI-596) For the The Australia (AUS) database, the Default match mode is incorrectly matching on street name only. This has been fixed, and the AUS Default match mode now correctly matches on district, street, city, and house number.
- (EGMI-634) The Management Console Keep multiple matches selection does not allow you to return all possible candidates. This text box now accepts the "-1" (minus one) value to return all possible candidates.
- (EGMI-690) For the India geocoder, the "Prefer POI Over Street" matching preference has been removed from the Management Console user interface. Previously, this non-functioning preference had been deprecated, but still appeared in the user interface.

Enterprise Routing Module

- (ROUT-624) The issue of the coordinate format in GetRouteData has been resolved. GetRouteData can return coordinates for route segments in Decimal, DecimalAssumed, PreZero, PreZeroDecimal, and DegMinSec.

Server

- (CDQE-23333) End user license agreement shows up in French when installing on a Spanish locale.
- (CDQE-22984) On RedHat, cannot restart the server after applying a temporary key.
- (CDQE-18753) Server stops responding when loading a Jasper report.
- (CDQE-18549) Error when running a job: "JmsStremClosedException: Stream already closed".
- (CDQE-17873) Error when trying to apply a new key to a Windows 2008 server: "Unrecognized value for Java OS".

Universal Addressing Module

- (CDQE-23384) The DPVVacant and DPVNoStat output fields are missing from output.
- (CDQE-22816) Chinese addresses are malformed after standardization.
- (CDQE-20543) New access keys for Validate Address Global are not being applied successfully.
- (CDQE-19874) Validate Address Global indicates that an address in Port Melbourne, Australia is not valid even though it is a valid address.
- (CDQE-16953) Validate Address drops apartment information for address in Laval, QC, Canada.
- (CDQE-16285) Error when validating an address with Validate Address Global: "A XML string is invalid".
- (CDQE-16277) Error when validating an Indian address: "Status Code: 1503: Error: A database file has a not supported version".
- (CDQE-16269) Candidate addresses are not being returned for an address in Toronto, ON, Canada.
- (CDQE-1479) Validate Address not properly returning fractional addresses for Canadian addresses.

System Requirements

Changes to Supported Operating Systems

The Spectrum™ Technology Platform server is now supported on:

- CentOS 5
- CentOS 6
- Solaris 11 (SPARC only)
- Windows Server 2012

Beginning with this release, the server is no longer supported on Solaris 9.

Beginning with this release, 32-bit systems are no longer supported. Only 64-bit systems are supported.

Changes to Display Requirements

The minimum supported screen resolution for Enterprise Designer, Management Console, and Interactive Driver is now 1024x768. The maximum DPI setting is now 150%.

Location Intelligence Module Support

Database

The Location Intelligence Module supports the following spatial databases for use with the spatial services, data, and resources:

- Oracle 10 and 11
- SQL Server Spatial 2008
- PostGRES 8+ (PostGIS 2.x)
- SQLite (via FDO's v3.8.0_3601(rc1) SQLiteProvider) on Windows

Data Format

The Location Intelligence Module supports the following data formats for use with the spatial services:

- Generic JDBC (w/XY)
- TAB (native, raster, grid, seamless, DBF)

- ESRI ShapeFile
- TextTable (Oracle and FDO)

Raster Format

The Location Intelligence Module supports the following raster formats for use with the spatial services:

- GIF
- TIFF
- GEOTIFF
- JPG
- PNG
- ECW
- MRSID
- MI Grid (*.MIG)
- Northwood Grid (GRD, GRC (view only))
- ADRG
- CADRG
- CIB
- DTED
- NITF
- RPF

Note: Solaris or AIX machines, whether installed with 32- or 64- bit JVM, do not support ECW and MrSid raster formats.

Browser

The Location Intelligence Module spatial client development and samples support the following browsers:

- Microsoft Internet Explorer 8 and 9
- Mozilla Firefox 10 and higher
- Safari (Mac OS X)
- Google Chrome 17 and higher

OGC Compliance

The Location Intelligence Module is OGC compliant for the following services:

- CSW version number 2.0.2
- WFS version number 1.0.0
- WMS version number 1.1.1 and 1.3.0

MapInfo Professional Compatibility

The Location Intelligence Module is compatible with all versions of MapInfo Professional up to version 12.0.

Server Requirements

Operating Systems

- AIX 6.1 ¹

¹ The Universal Address Module component Validate Address AUS is not supported on this operating system.

- AIX 7.1 ^{1,2}
- CentOS 5 ¹
- CentOS 6 with the following required packages:¹
 - Linux Standard Base
 - glibc.i686 glibc-devel.i686
 - zlib.i686 zlib.x86_64 zlib-devel.i686 zlib-devel.x86_64
 - libstdc++.i686 libstdc++-devel.i686 libstdc++-devel.x86_64
 - compat-libstdc++-33.i686 compat-libstdc++-33.x86_64
- HP-UX 11.31 (Itanium) ^{1,3}

Important: HP-UX requires several patches in order to support Java 7, which is required to run Spectrum™ Technology Platform. For a list of Java 7 patches for HP-UX, see <http://ftp.hp.com/pub/softlib/hpuxjava-patchinfo/index.html>.

Important: If you use the Data Normalization Module database load utility on HP-UX, you must apply the update HP-UX 11.31: PHSS_37202.

- Solaris 10 (SPARC only) ¹
- Solaris 11 (SPARC only) ^{4, 5}
- Red Hat 5 ¹
- Red Hat 6 with the following required packages: ¹
 - Linux Standard Base
 - glibc.i686 glibc-devel.i686
 - zlib.i686 zlib.x86_64 zlib-devel.i686 zlib-devel.x86_64
 - libstdc++.i686 libstdc++-devel.i686 libstdc++-devel.x86_64
 - compat-libstdc++-33.i686 compat-libstdc++-33.x86_64
- SUSE 10.0 ¹ (requires glibc-2.4-31.2 which is approximated by the standard SUSE 10.1 distribution)
- SUSE 11.1 ¹ (requires glibc-2.9 or glibc-2.11)
- Windows Server 2003
- Windows Server 2008 R2
- Windows Server 2012 ⁶

64-bit Required

The server requires a 64-bit system. 32-bit systems are not supported.

Disk Space

New Installation	Upgrade
<ul style="list-style-type: none">• 3 GB to install all modules, less if installing fewer modules.• 2 GB to 3 GB of temp space for the installation to extract the files it needs, but you may need more depending on the options you are installing. If necessary, modify your TEMP environment	<ul style="list-style-type: none">• Free disk space equal to three times the size of your current installation. To determine the size of your current installation, look at the size of the folder where you installed Spectrum™ Technology Platform.

² To use the Address Now Module on this operating system you must install the gcc332 libraries.

³ The Address Now Module, GeoConfidence Module, and Location Intelligence Module are not supported on this operating system. .

⁴ The Universal Addressing Module is not supported on this operating system.

⁵ The Enterprise Tax Module is not supported on this operating system.

⁶ The Enterprise Tax Module is not supported on this operating system.

New Installation	Upgrade
<p>variable to point to a location with enough space. If necessary, modify your IATEMPDIR environment variable to point to a location with enough space.</p>	<ul style="list-style-type: none"> • If you are adding modules as part of your upgrade, you will need 3 GB to install all modules, less if installing fewer modules. • 2 GB to 3 GB of temp space for the installation to extract the files it needs, but you may need more depending on the options you are installing. If necessary, modify your TEMP environment variable to point to a location with enough space. If necessary, modify your IATEMPDIR environment variable to point to a location with enough space.

Note: If you are installing a module that uses a reference database, such as a postal database, geocoding database, or data normalization tables, you will need space for this data. The total disk space varies, depending on what module(s) and what database(s) you are installing.

Memory

- Basic memory requirement: 2 GB
- The Enterprise Geocoding Module requires an additional 500 MB memory for the first non-U.S. geocoder, and 250 MB for each additional non-U.S. geocoder, with these exceptions:
 - Germany, Australia, and the U.K. each require 1 GB additional memory
 - Japan requires 2 GB additional memory

Note that you may distribute processing among multiple servers which may allow you to take advantage of existing hardware instead of adding memory to a single Spectrum™ Technology Platform server. This is referred to as remote server processing. For information on remote servers, see the *Spectrum™ Technology Platform User's Guide*.

- The Data Normalization Module and Universal Name Module require additional memory if you use the following name databases:
 - Arabic Plus Pack: 5.5 GB
 - Asian Plus Pack - Chinese: 32 MB
 - Asian Plus Pack - Japanese: 1.6 GB
 - Asian Plus Pack - Korean: 8 MB
 - Core Names: 1.1 GB

Note: The Arabic Plus Pack and Asian Plus Pack databases are only supported on 64-bit computers.

Additional Requirements

- For all Unix/Linux systems, a minimum of 8192 file descriptors is required. This can be set by running the `ulimit` command:

```
ulimit -n 8192
```

- For IBM AIX systems only, you must download and install Java 7 before installing Spectrum™ Technology Platform. If you do not have Java 7 installed, download and install it from:

www.ibm.com/developerworks/java/jdk/aix/service.html

- Administrator rights
- Root privileges

Requirements for the Address Now Module

- Redhat/SuSe Linux—512 MB RAM, gcc compiler, and library version 4.1.2
- Sun Solaris—At least an UltraSparc processor with a speed of at least 400 MHz and at least 512 MB RAM, gcc compiler, and library version 3.3

Default Network Ports

The Spectrum™ Technology Platform server uses several network ports for communication. Network port conflicts can result in module components failing to start up. One indication that a component has failed to start up is if it does not appear in the Management Console. To troubleshoot the problem, look in the Spectrum™ Technology Platform log file. This log shows which port is causing the problem. You can find the Spectrum™ Technology Platform log file in:

```
server\app\repository\logs\server.log
```

The following table lists the default network ports. You can change the ports by modifying the properties in this file:

```
server\app\conf\spectrum-container.properties
```

Note: If you want to change the networks ports used by a cluster, you must modify the `spectrum-container.properties` file on each node in the cluster.

Port	Property	Description
2424-2430	<code>spectrum.orientdb.binary.port</code>	This port is used by the Spectrum™ Technology Platform server's internal configuration database.
2434	<code>spectrum.orientdb.hazelcast.port</code>	This port is used by the Spectrum™ Technology Platform server's internal configuration database.
2480-2486	<code>spectrum.orientdb.http.port</code>	This port is used by the Spectrum™ Technology Platform server's internal configuration database.
5701	<code>spectrum.hazelcast.port</code>	This port is used by Hazelcast for managing distributed processing between Spectrum™ Technology Platform servers in a cluster.
8080	<code>spectrum.http.port</code>	The port used for communication between the server and Enterprise Designer, Management Console, and Interactive Driver. This port is also used by web services.
10119	<code>spectrum.socketgateway.port</code>	This port is used for API calls made to services.

Client Tools Requirements

Enterprise Designer, Management Console, and Interactive Driver require the following:

- Operating system requirements:
 - Windows XP
 - Windows 7

- 86 MB of disk space to install the client without any modules. Each module you install requires additional disk space.
- Microsoft .NET Framework 4.0 (available from the Spectrum™ Technology Platform Welcome Page, <http://<SpectrumServerName>:8080>)
- A monitor with at least 1024 x 768 resolution
- Maximum Windows DPI setting: 150%
- Adobe Reader 7 or later (for viewing and saving reports)
- To use the Business Steward Portal or the Data Hub Relationship Analysis Client, a browser with Microsoft Silverlight 5 installed. See www.microsoft.com/getsilverlight.

Client SDK Requirements

The Client SDK provides API access to Spectrum™ Technology Platform services. If you are a developer and you want to use the Client SDK, your computer must meet the following requirements:

- Disk space—1.25 GB
- JDK 1.7 is required to install the Client SDK. Be sure that JDK 1.7 is in the PATH environment variable. Once installed, the Client SDK supports JDK 1.4 and greater.
- iSeries platforms support the Client SDK in Java only

Supported Compilers

The Spectrum™ Technology Platform Client SDK is supported with the following compilers.

Java

Client SDK Package Directory: `clientSDK/platforms/java`

Client SDK requires the Java JDK, version 1.4 or higher. This is not installed with the Client SDK.

Windows

- JDK: 1.4
- C Compiler: MSVC 6.0 SP3, MSVC 2003, MSVC 2005
- C++ Compiler: MSVC 6.0 SP3, MSVC 2003, MSVC 2005
- C# .NET: Microsoft .NET Framework 1.1
- Visual Basic: MS Visual Basic 6.0

HP-UX RISC

- JDK: 1.4
- C Compiler: cc: HP92453-01 A.11.01.21 HP C (Bundled) Compiler
- C++ Compiler: aCC: HP aC++ B3910B A.03.30 HP aC++ B3910B A.03.27

The clientSDK 32 bit lib is linked to the following libraries:

- libpthread.1
- librt.2
- libnsl.1
- libxti.2

The clientSDK 64 bit lib is linked to the following libraries:

- libpthread.1
- libnsl.1
- librt.2
- libdl.1

- libc.2
- libxti.2
- libdl.1

HP-UX Itanium

- JDK: 1.4
- C Compiler: cc: HP aC++/ANSI C B3910B A.06.05
- C++ Compiler: aCC: HP aC++/ANSI C B3910B A.06.05

The clientSDK 32 bit lib is linked to the following libraries:

- libpthread.so.1
- libnsl.so.1
- librt.so.1
- libxti.so.1
- libdl.so.1

The clientSDK 64 bit lib is linked to the following libraries:

- libpthread.so.1
- libnsl.so.1
- librt.so.1
- libxti.so.1
- libdl.so.1

Red Hat (32 bit)

- Operating System: Red Hat Linux 2.4.9-e.65smp
- C Compiler: gcc version 2.96 (gcc 4.1 required for the Address Now Module)
- C++ Compiler: g++ version 2.96

The clientSDK lib is linked to the following libraries:

- libstdc++-libc6.2-2.so.3
- libm.so.6
- libc.so.6
- ld-linux.so.2

Red Hat (64 bit)

- Operating System: Red Hat Linux version 2.6.9-34.0.2.ELsmp
- C Compiler: gcc version 3.4.5
- C++ Compiler: g++ version 3.4.5

The clientSDK lib is linked to the following libraries:

- libstdc++.so.6
- libm.so.6
- libgcc_s.so.1
- libpthread.so.0
- libc.so.6
- ld-linux-x86-64.so.2

SuSE

- Operating System: SuSE SLES 8 (powered by UnitedLinux 1.0) (i586)\nKernel 2.4.21-295-smp (0).
- C Compiler: gcc version 3.2.2

- C++ Compiler: g++ version 3.2.2

The clientSDK lib (32 bit) is linked to the following libraries:

- libstdc++.so.5
- libm.so.6
- libgcc_s.so.1
- libc.so.6
- ld-linux.so.2

Solaris

- Operating System: Solaris 5.8
- C Compiler: cc: Forte Developer 7 C 5.4 2002/03/09
- C++ Compiler: CC: Forte Developer 7 C++ 5.4 Patch 111715-16 2005/04/28

The clientSDK 32 bit lib is linked to the following libraries:

- libpthread.so.1
- libsocket.so.1
- libnsl.so.1
- librt.so.1
- libc.so.1
- libdl.so.1
- libmp.so.2
- libaio.so.1
- libc_psr.so.1

The clientSDK 64 bit lib is linked to the following libraries:

- libpthread.so.1
- libsocket.so.1
- libnsl.so.1
- librt.so.1
- libc.so.1
- libmp.so.2
- libmd5.so.1
- libscf.so.1
- libaio.so.1
- libdoor.so.1
- libutil.so.1
- libm.so.2
- libc_psr.so.1
- libmd5_psr.so.1

AIX

- Operating System: AIX version 5.1.0.0
- C Compiler: xlc 6.0 Visual Age C 6.0
- C++ Compiler: xlc 6.0 Visual Age C++ 6.0

The clientSDK 32 bit and 64 bit lib are linked to the following libraries:

- libC.a
- libc_r.a
- libpthread.a
- librtl.a

SAP and Siebel Support

As of this release the following versions of SAP and Siebel are no longer supported:

- SAP ECC 5.0
- Siebel Enterprise 7.8
- Siebel Industry 7.8

This release of Spectrum™ Technology Platform supports the following versions of SAP and Siebel:

- SAP CRM 6.0
- SAP CRM 7.0 EHP 2
- SAP ECC 6.0 EHP 6
- SAP Web DynPro Java 7.01
- Siebel Business 8.0
- Siebel Business 8.1.1
- Siebel Industry 8.0
- Siebel Industry 8.1.1

Installation Notes

For complete instructions on installing Spectrum™ Technology Platform, including system requirements, see the *Spectrum™ Technology Platform Installation Guide* available at support.pb.com.

Upgrade Paths

Upgrading from Previous Versions

You can upgrade to Spectrum™ Technology Platform 9.0 from:

- 8.0 SP3
- 8.0 SP2
- 8.0 SP1
- 8.0
- 7.0

If you have a version prior to 7.0 installed, you must first upgrade to one of the above versions, and then upgrade from that version to 9.0.

Upgrading Client Tools

In order to take advantage of new security features in this release, you must upgrade Enterprise Designer, Management Console, and Interactive Driver. To upgrade these client tools, download the client tools installer from the Spectrum™ Technology Platform welcome page on your server and run the installer on any computer that has a client tool installed. The installer will upgrade the client tools to 9.0. For more information on installing client tools, see the *Spectrum™ Technology Platform Installation Guide*.

Upgrading the Business Steward Module

To upgrade to this version of the Business Steward Module, your current installation must be on version 8.0 of Spectrum™ Technology Platform. For any other version of Spectrum™ Technology Platform, you must first uninstall the existing Business Steward Module before installing the new version. For instructions on removing modules, see the *Spectrum™ Technology Platform Installation Guide*.

Upgrading the Data Hub Module

To upgrade to this version of the Data Hub Module, you must first uninstall the existing module before installing the new version. For instructions on removing modules, see the *Spectrum™ Technology Platform Installation Guide*.

Upgrading the LIM Module

The recommended upgrade path for the Location Intelligence Module is to update from the most recent service pack. For example, if you are currently on 8.0 SP2 and want to upgrade to 9.0, you should upgrade to 8.0 SP3 before upgrading to 9.0.

Upgrading the SAP and Siebel Modules

To upgrade to this version of the SAP Module or Siebel Module, you must first uninstall the existing module before installing the new version. For instructions on removing modules, see the *Spectrum™ Technology Platform Installation Guide*.

Required Operating System Updates

Before installing Spectrum™ Technology Platform, be sure to apply all the latest product updates available for your operating system, especially those that resolve issues with Java.

Java 7 Update

The Spectrum™ Technology Platform server now uses Java 7. Previous releases used Java 6. For most platforms, you do not need to take any action because of this update. Java 7 will be installed automatically when you install Spectrum™ Technology Platform. For IBM AIX systems, you must install Java 7 before installing Spectrum™ Technology Platform. You can download Java 7 for AIX here:

www.ibm.com/developerworks/java/jdk/aix/service.html

RDI Database Update

If you are upgrading from a release prior to 8.0 and use the Universal Addressing Module to perform residential delivery indicator (RDI) processing, you must re-install the RDI database using the database installer included with this release. RDI processing will not work unless you re-install the RDI database. For instructions on installing the RDI database, see the *Spectrum™ Technology Platform Installation Guide*.

Location Intelligence Module

Location Intelligence Module Upgrade Path

The recommended upgrade path for the Location Intelligence Module is to update from the most recent service pack. For example, if you are currently on 8.0 SP2 and want to upgrade to 9.0, you should upgrade to 8.0 SP3 before upgrading to 9.0.

Back Up Location Intelligence Module Named Resources and Data

When you upgrade the Location Intelligence Module to Spectrum™ Technology Platform 9.0 it is important to back up custom data sources and resources prior to upgrading using WebDAV.

Any data that was installed with the module will be deleted after upgrade. If custom data is located in these directories, back it up and copy to the same location in the Spectrum™ Technology Platform 9.0 directories once upgraded.

Back Up and Restore Location Intelligence Module Configuration Files

The upgrade process from Spectrum™ Technology Platform will overwrite the configuration files for the Location Intelligence Module. So that you do not lose custom settings, it is important that you first back up the files before proceeding with the upgrade.

Follow these instructions if you:

- Run Spectrum™ Technology Platform server on a port other than 8080.
- Have made changes to any of the Location Intelligence Module configuration files:
 - SOAP Services (Mapping, Feature)
 - CSW
 - Map Tiling
 - Named Resources
 - WMS
 - WFS
 - User Management

Configuration files are stored in the repository and cannot be simply accessed on the file system. You must use the WebDAV protocol to access and copy the files to another location. On Windows, you can use WebDav from Windows Explorer or the open-source DAV Explorer client application. On Linux/UNIX, use WebDAV from a Windows client or from the desktop file explorer. The easiest way to access Repository files via WebDAV is to use the direct Windows Explorer client and create a mapped drive connection to the repository.

Additionally, a java.properties file containing host, port, username and password information must also be backed up before the upgrade. During the upgrade a new properties file is installed containing new properties for host, port, username and password. You should also back up the java.vargs file if you have made customizations there.

To backup and restore user-modified configuration files and java.properties:

1. Create a mapped drive connection to the repository by following these steps.
 - a) Verify that you have the correct URL. In your web browser enter `http://<yourhost:port>/RepositoryService/repository/default/`. The root of the repository should display in your web browser.
 - b) Copy this URL and then via Windows Explorer right-click on the Computer icon and select Map Network Drive.
 - c) Paste the URL into the Folder text box and click Finish. Windows will match the drive letter to your repository and display the root of the repository with the same content as your web browser.
2. In Windows Explorer go to the mapped location for the repository and copy the Configuration folder to a safe location.
3. If you are using DAV Explorer, use **File > Get File** on each of the files in the Configuration folder.
4. Make a backup copy of `\modules\spatial\java.properties` and `java.vargs` to save any non-default settings.
5. Perform the Spectrum™ Technology Platform upgrade.
6. Copy the backed up Configuration folder to the repository, overwriting the folder created during the upgrade.
7. Compare your backed up java.properties with the new java.properties, and the backed up java.vargs file with the new one.

If all the services point to the same host/IP address, just update repository.host, repository.port, repository.username, repository.password with your custom values. If not, edit the new java.properties file to match the old one.

Note: If you are upgrading from version 7.0 to 9.0, do not simply copy the old java.properties and java.vargs files over the new ones. There may be required arguments that were added with a newer version. Carefully merge the contents of the two files together.

8. Stop the Spectrum server and restart it after making these changes or reset each affected service from the jmx-console.

Note: If you forgot to back up the configuration, java.properties, or java.vargs files, you can check the backup zip file that is created by the upgrade process (as long as no failures occurred). This zip file (upgrade_backup_YYYYMMDDHHmmss.zip) is located in "%install_home%\Spectrum\server\modules".

Spectrum Installation Directory for Location Intelligence Module

For Spectrum™ Technology Platform installations that include the Location Intelligence Module, the installation directory must not contain any of the special XML escaped characters. These characters are:

- & - Ampersand
- > - Greater Than
- < - Less Than
- ' - Apostrophe
- " - Quote

Location Intelligence Module Requires Oracle Driver Update

The Location Intelligence Module ships with Oracle 11.2.0.1 driver. If you are using a newer version of Oracle 11g (e.g., 11.2.0.3), you must replace the existing Oracle driver with the newer version for your installation of Oracle.

To update the Oracle driver for the Location Intelligence Module, replace the existing `ojdbc6-11.2.0.1.0.jar` file in with appropriate version (e.g., `ojdbc6-11.2.0.3.jar`), in the following location: `Spectrum_Install_Dir\server\modules\spatial\lib`. Restart Spectrum™ Technology Platform once you have replaced the jar file.

Enterprise Routing Module

Enterprise Routing Module Upgrade

The following configuration files are not preserved after upgrade.

- java.vargs
- rjs.properties

Prior to upgrading, backup all relevant routing files in which modifications have been done. The location of these files are: `%install_home%\server\modules\routing`.

To retain any existing routing databases after upgrade, you must follow these steps to upgrade your Enterprise Routing Module:

1. Backup the java.vargs and rjs.properties files located at:
`%install_home%\server\modules\routing`.
2. Perform Spectrum upgrade.
3. Upon completion of a successful upgrade, stop the server.
4. Replace the java.vargs and rjs.properties files with the backup files.
5. Start the server.

Note: After upgrading, a request must not be sent to the old databases before making this change in java.vargs.