



Location Intelligence
Location Analytics

Unleash the power of location for big data

Superior data quality, address management and location analysis for high-volume, high-velocity data



Give your big data the location advantage

Location analytics are critical to your organisation's success. Today, that means extracting value from the high volume and variety of data collected through mobile devices, smart sensors, social media and traditional address entry.

When you run big data processes in silos, efficiencies are lost. You can create a centralised data lake to store and process big data. However, transformative outcomes and data democratisation can only be achieved when geospatial processing and analytics become part of your big data environment.

Fortunately, your organisation can now take advantage of proven data quality, geocoding and location analysis capabilities directly within your Hadoop architecture while benefitting from Hadoop technologies such as Spark and Hive. Pitney Bowes Spectrum™ Software for Big Data integrates these capabilities with big data environments so you can achieve outcomes that previously would not have been possible.



Power up performance

Run data quality, address management and location analytics within your big data environment to:

- Optimise network assets.
 - Create a holistic view of risk.
 - Offer more competitive pricing.
 - Target high-value customers.
 - Select profitable retail locations.
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Spectrum™ for Big Data

Transforming big data into big insight

Aggregate and analyse information in new ways by adding geospatial capabilities to your data lake. The result? Gain deeper insights, increase the returns on your big data investment and achieve results that otherwise would be not be possible.

Capitalise on your big data framework

Spectrum for Big Data runs natively in Hadoop or Spark. Data is analysed where it resides, so you can realise the full benefit of a distributed processing environment, including speed, resiliency and low-cost hardware. In addition to geospatial batch processing, you can run interactive queries and iterative geospatial calculations.

Proven, comprehensive capabilities

Trusted by the world's largest organisations, our capabilities make it easy to run the operations needed to derive more meaningful, accurate results:

- Data quality
- Geospatial processing
- Location analytics
- Geoenrichment

You can spatially organise your data using a common ID to link disparate datasets. Our data fabrics are full-coverage, ready-to-use datasets that can dramatically speed up query time. You can also link in-house and third-party datasets (e.g. Ordnance Survey MasterMap or Environment Agency flood data) using our big data geoenrichment environment.

Gain flexibility via robust technical alliances

Our certified technology partnerships support on-premises, cloud-based SaaS and IaaS delivery, giving you more ways to deploy and access these insights.

- Hortonworks
- Cloudera
- Amazon Web Services

Step up to evolving business needs

Our modular approach makes it easy to increase capabilities over time. Add data-quality, point-in-polygon or isochrones calculations within your native big data processes. With this flexibility, you're not restricted to simple one-off solutions for geocoding or address validation.

Everything you need to see the big picture in greater detail

One solution for data quality and location analytics

Our Big Data SDKs help you to rapidly reveal the relationships between locations, geographic features and properties to quantify inherent risks and market potential. A modular approach makes it easy to add capabilities as needed, so you can **identify** and **locate** opportunity.



Identify

Our complete set of data-quality tools makes it easy to cleanse, standardise and consolidate your customer and prospect data.

Advanced Matching	A match-key generator and best-of-breed matching to resolve identities and eliminate duplicate content.
Universal Addressing	Confirm that addresses exist, add missing data and format to proper standards across 240 countries and territories.
Data Normalisation	Organise, parse and structure data to reduce redundancy and improve integrity.
Universal Name	A global name parser cross-checks against an international name, nickname and alias directory.

Locate

Geocoding and location analytics transform your data into compelling map visualisations that reveal complex relationships and actionable insights.

Global Geocoding	Assign precise latitude and longitude coordinates to physical addresses. Access forward and reverse geocoding for 240 countries and territories, with 145 at street-level or better accuracy.
Location Intelligence	Visualise and filter your data to illustrate relationships, spot trends and benchmark various scenarios. <ul style="list-style-type: none">• Find the nearest• Point-in-polygon• Spatial join• Distance to point, shape, line• Vector tile generation
Enterprise Routing	Calculate routes, distances, boundaries and travel times more accurately, with walk-time and drive-time options.
Geoenrichment	Link proprietary and third-party geospatial data, adding attributes that provide greater context and understanding. A unique identifier attached to every address record facilitates data enrichment.

There's no need to move data between applications, and no reason to build custom APIs or wait for connectors that slow performance. All the functionalities you need are embedded directly within your big data environment, so you can get fast answers while spending less time on data preparation.



Decide with confidence

Base your business decisions on insights gleaned from the most reliable data and analytics tools.

More precise geocoding

Assign precise latitude and longitude coordinates to physical addresses with greater speed using the processing power available in Big Data environments. Access global forward and reverse geocoding for 245 countries and territories, with 145 of those at street-level or better precision.

More accurate data

Go above and beyond the simple questions of who, what and where. Append datasets, including purchasing preferences and lifestyle data, to enable smarter decision-making. Categories include:

- Streets
- Points of interest
- Boundaries
- Demographics

More ways to share

With Spectrum™ Spatial Analyst, you can visualise your aggregated data and display vector tiles in a web-based application. View and share spatial insights via any device to achieve self-service efficiencies and added cost savings.

With Spectrum for Big Data, you can cleanse, consolidate, geocode, enrich and visualise massive data volumes in a fraction of the time, all within your existing Hadoop frameworks.



Accelerate success



Insurance:

Profit from a single view of risk

Combine high-performing big data spatial processing with data from location-enriched libraries to develop a consolidated view of potential insured risks.

- Access complete, consistent, current data on every property.
- Fine-tune loss reserves and policy pricing models.
- Validate policy applications faster.
- Make more informed decisions.



Communications:

Map current network performance

We make it easy to aggregate billions of network events, organising them around a grid composed of millions of polygons. Now you can build coverage maps that depict the network experience in near real time.

- Visualise network performance.
- Build trust with more accurate, detailed and current coverage maps.
- Make network investments based on complete information.
- Win new subscribers and retain existing customers.



Financial Services:

Know your customers

Combine Location Intelligence and demographics to gain a more comprehensive view of customers, opportunities and risk.

- Deliver the right services at the right locations.
- Quickly compare performance and set realistic goals.
- Improve anti-money laundering, KYC (know your customer) and fraud detection activities.



Retail:

Capture customers on the go

Use customer purchase behaviour and real-time location data to reach customers with compelling offers when and where they are most likely to respond.

- Create geofences to send targeted messages to shoppers around your shops.
- Use analytics to predict customer behaviour and make offers or product recommendations.



Government:

Make cities run smarter

Deploy Smart City initiatives to lower costs, improve services and enhance quality of life for city residents. When you collect, analyse and apply data from networks of smart sensors attached to infrastructure such as streetlights, traffic signals and bins, you can:

- Perform fault detection and maintain street lighting within SLAs.
- Combine weather with traffic sensor data to predict storm-related congestion.
- Monitor storm drain sensor data to provide early warnings on localised flooding.
- Analyse large volumes of historical sensor data to optimise asset lifecycle.



Realise the promise of your big data

Now you can finally take full advantage of the speed and processing power of your big data technologies. With Pitney Bowes Spectrum™ for Big Data, you can cleanse, consolidate, geocode, enrich and visualise massive data volumes in a fraction of the time, all within your existing Hadoop or Spark frameworks.

- Open architecture
- Seamless integration with core business applications
- Flexible deployment: on premises or cloud
- Global address and geocoding coverage across 240 geographies

Power up with proven performance
Pitney Bowes is an industry standout, with accolades including:



A Leader in The Forrester Wave: Geospatial Analytics Tools And Platforms, Q3 2016



A Leader in The Forrester Wave™: Master Data Management, Q1 2016



A Leader in The Forrester Wave: Customer Analytics Solutions, Q1 2016

Capitalise on your big data investments with Pitney Bowes

Join the ranks of leading companies that put their trust in Pitney Bowes. With our 100-year legacy of quality and reliability, over 30 years of expertise in global address management and industry-leading Location Intelligence capabilities, we serve more than 90 percent of the Fortune 500 and power billions of transactions worldwide.

Contact us today to unleash the power of location in your big data framework.

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