Spotfire® self-service analytics

Analyze data, share insights, and take action with Spotfire

Spotfire® self-service analytics empowers knowledge workers across all industries to make data-driven decisions that reduce costs, improve quality, mitigate risks, and increase revenue for any industry. Manufacturing engineers use Spotfire predictive analytics to find new ways to improve manufacturing yields or find root causes of quality problems. Financial analysts use Spotfire to evaluate investments and risks and detect fraud. Biopharma scientists use Spotfire to find the next cure to diseases and make sure vaccines are safe. Logistics planners use Spotfire to optimize transportation. Brand managers in retail use Spotfire to find new opportunities to increase revenue. No matter the industry, Spotfire analytics can transform your enterprise.

What is Spotfire?

Spotfire is an enterprise-grade analytics platform that incorporates everything you need for effective, self-service analytics: from data access and preparation via visual data exploration and data science, to application distribution and governance of analytics assets.

Spotfire covers the full spectrum of analytics capabilities:

- Data connectivity, profiling, cleaning, and preparation
- Visual analytics and data science
- Dashboards, mobile BI, and report generation
- Analytics applications
- Taking action on insights

Spotfire does this for all types of data: in-databases, in-memory, big or small data, static data, and even real-time data—in any combination. It is highly extendable and customizable to specific business needs. And it can be deployed wherever needed: in any cloud platform, on-premises, or in combination.

(*as of version 14.0 Long-term Supported release, October 2023)

Benefits

Spotfire allows you to analyze data quickly and more thoroughly. By making it fast and easy to answer questions about your business data, Spotfire allows you to take action on business insights. You can ask more questions and get better answers.

Immersive

Spotfire analytics enables knowledge workers across industries to reach insights faster than other analytics tools. Countless development hours have been dedicated to aligning the experience with how people naturally interact with the world. Users grab the data they want, look at it from different perspectives, and speed through views to discover relationships and gain insight. If they spot data quality problems, Spotfire helps fix the issues while automatically capturing all the transformations without breaking the flow. This agile, automated experience is the foundation, allowing people to answer questions even faster than they occur to them. Concrete examples of how this works are the AI-powered recommendations engine that reveals outliers, relationships, and structures— annotated with simple text explanations based on the user's interest. Or, using drag-and-drop and point-and-click features, you can group, filter, mark, drill into, drill across, brush, pan, and zoom your data to finetune your findings and share insights with your team.

Combine real-time data with historical data

Spotfire enables visual analytics on real-time data and historical data combined, in the same visualization if desired. By viewing historical conditions, it's easier for users to understand what's happening at the moment and take appropriate action.

## Direct manipulation with instant feedback

With consistent interaction and a tight action-response loop, pliable Spotfire visualizations give users a sense of shaping the data with their hands. Users focus on the analytical problems and interact directly with the visual representation of the data, molding it in ways that help spark insights. Integrated experience visual analytics depends on a whole range of workflows: accessing and wrangling data to make it all consistent and ready for analysis, using ad-hoc analysis and analysis design, applying predictive models, and sharing the results with others. Spotfire software responds to the iterative nature of visual analytics and allows users to perform all the key tasks without losing their flow.

Fearless exploration

Spotfire software beautifully supports ad hoc experimentation through visual feedback. Actions are reversible and can easily be reviewed, enabling users to ask any question and still feel in control. Fearless exploration means users can immerse themselves in insight discovery. Both visualization settings and data wrangling steps can be reapplied to new data.

Smart suggestions

Spotfire software simplifies tasks by providing good defaults, applying heuristics, and recommending actions based on context and available data. Beginners get started faster, and experienced users can discover new ways to explore data. AI-infused recommendations are never intrusive and always keep Spotfire users in control, letting them focus on the goal rather than the software.
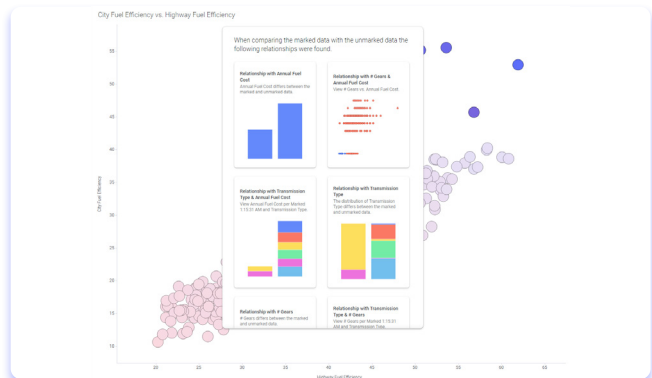
Powerful location analytics with multi-layer maps

When location matters, Spotfire analytics offers a powerful, immersive experience. The software supports multiple map layers with completely customizable visibility to fit the use case, such as progressively showing more detail when zooming in or leaving it to the user to select. Spotfire lets you connect seamlessly to spatial data, GIS, and map services, map coordinates to geographic entities like
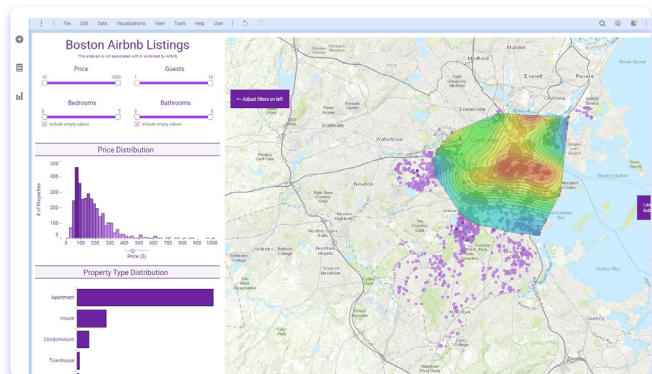
countries, cities, or your custom regions, and also allow non-geographical location analytics through process diagrams, schematics, and high-precision mapping down to the micron.

From epidemiology to natural resource management, from real estate to retail, from defect detection on silicon wafers to production line monitoring, location analytics helps generate insights and make predictions that would not be possible using traditional tables and charts.

Inline data wrangling

As users ingest and interact with data, Spotfire data wrangling helps fix data quality problems, inconsistencies, and deficiencies right from the visualizations. Users don't need to go outside the environment to prepare data before visualizing it.

They can combine, shape, clean, enrich, and transform data, all while doing data exploration.

Predictive analytics

Spotfire analytics has many built-in, one-click predictive methods that are available to use for classification, clustering, and forecasting—making it very easy for anyone to get started with predictive analytics. Data and results can be visualized in Spotfire interactive dashboards, while the data science and underlying calculations can be done using the R and Python bundled engines.

AI-powered insights

The robust and scalable Spotfire AI engine automatically identifies potential relationships to explore, offering guidance by suggesting best practice visualizations for illustrating the relationships for insight discovery. Relationships are presented in the context of what the user is doing. Users can discover trends, outliers, and patterns in any data without having to know its structure!

Real-time

Spotfire brings real-time situational awareness about any operational system to users' fingertips with first-class visual

support of real-time data. With Spotfire, you can combine streaming and historical data to understand the reasons for what's happening in the moment and take action to change the future.
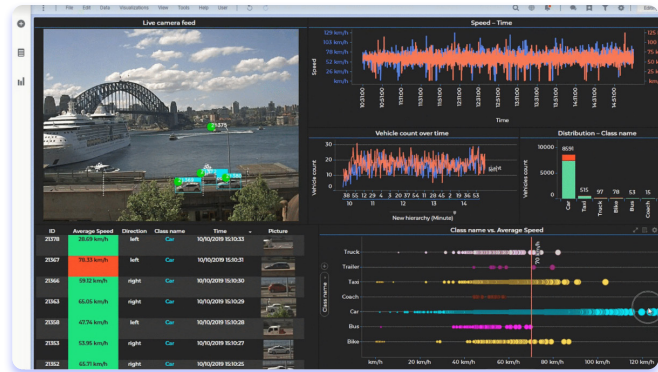

Business intelligence can now address mainstream operational intelligence and IoT situations in logistics and transportation, manufacturing, natural resources, and finance where the costs and risks are severe if data is not analyzed and acted upon as soon as it's generated.

Analytics applications

Spotfire software is a fantastic analytics platform for analysts and data scientists, and it can also easily be configured to give anyone access to analytics applications tailored to meet a specific need, distribute knowledge, and make end-users jobs faster.

Without coding, analysts can build fit-for-purpose, data-driven applications to share with their colleagues. Developers who build analytic applications for specific industries and business functions can use the Spotfire platform to save time and get to market faster, instead of building analytics applications from scratch. With rich native Spotfire data access, calculation and visualization capabilities, and specialized data functions and mods from the Spotfire community, building powerful analytic applications has never been easier.
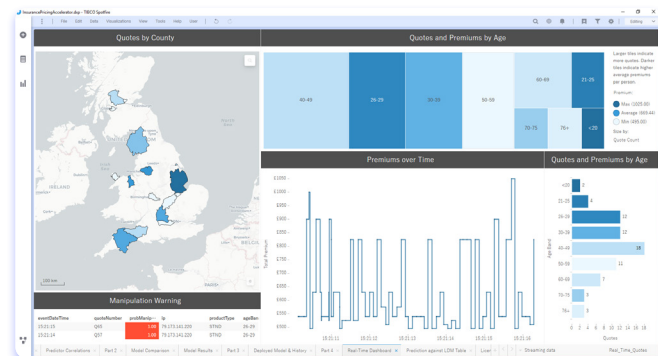
Data functions

A Spotfire data function is a no-code, reusable add-in to the software that provides additional data access, calculations, predictions, and data transformation capabilities. Without having to write a line of code or use complex statistics, business users and analysts get access to deep and specialized data science capabilities through a point-and-click user experience. A range of data functions supporting exploratory analysis, data preparation, modeling and prediction model evaluation and explainability, and not the least geospatial analysis is available for free download on the Spotfire Data Function library. Statisticians and data scientists can easily package R and Python functions as data functions, and share them with their team, organization, or the larger Spotfire user community.

Actions

Spotfire Actions bridge the gap between business insight and business decision by triggering the seamless writing of transactions directly from a data visualization to any database, application, or IoT system. Whether on-premises or in the cloud, even non-developers are enabled to build no-code business applications without the complexity. You can take action directly from your data visualizations with more than 200 commercially supported connectors and more than 1800 Community connectors. This expands traditional business intelligence into operational use cases, with Spotfire acting as a decision and control hub.

Features and capabilities

Analytics

- Ad-hoc data exploration with drag and drop interface
- Hierarchical and drill-down analysis
- Geographical and non-geographical location analysis
- Descriptive statistics analysis
- Predictive analytics, classification, and clustering
- Time-based data analysis
- Forecasting and trend analysis
- Hypothesis testing and regression analysis
- Collaborative analytics
- Data-driven stories with guided analysis
- Advanced statistical modeling with R and Python integrations
- Integration with machine learning libraries and algorithms
- Lists
- Model training and evaluation

- Dynamic queries
- Maximize/minimize visualization
- Search
- Line similarity
- K-means clustering
- Hierarchical clustering
- Data relationships
- Regression modeling
- Classification modeling tags
- R data functions
- Python data functions
- Statistica workflow data functions
- Natural language query
- Visualization recommendations
- Data action recommendations
- AI-driven insights
- Custom tools

Sharing and collaboration

- Share interactive dashboards and reports
- Scheduled report generation and automated distribution
- Bookmarks
- Conversations
- Export to PowerPoint
- Export to Excel
- Export to image
- Custom export

Data access file formats

- Comma-separated variable (.csv)
- ESRI Shapefile (.shp)
- GeoJSON files (.geojson)
- Microsoft Excel workbooks (.xls, .xlsx, .xlsb, .xlsm)
- Log files (.log)
- Spotfire text data format (.stdf)
- Spotfire binary data format (.sbdf)
- Text (.txt)
- Import data from data function
- Spotfire DecisionSite files (.sfs)
- SAS data files (.sas7bdat, .sd2)
- Microsoft Access databases (.mdb, .mde)
- Universal data link (.udl)
- Clipboard
- Custom file data source

Relational DBMS

- Amazon Aurora MySQL
- Amazon Aurora PostgreSQL
- Amazon EMR Hive
- Amazon EMR Spark SQL
- Amazon RDS MySQL
- Amazon RDS Oracle
- Amazon RDS PostgreSQL
- Amazon RDS SQL Server
- Amazon Redshift
- Apache Drill
- Apache HAWQ
- Apache Hive
- Apache Spark SQL
- Brytlyt
- Cloudera Hive
- Cloudera Impala
- Cloudera Spark SQL
- Databricks on AWS
- Dremio
- Google BigQuery
- Google Cloud SQL for MySQL
- Google Cloud SQL for PostgreSQL
- Google Cloud SQL for SQL Server
- Greenplum
- Hortonworks Hive
- Hortonworks Spark SQL
- IBM BigInsights Hive
- IBM BigInsights Spark SQL
- IBM Big SQL
- IBM DB2
- IBM Netezza
- MapR Hive
- MapR SparkSQL
- MariaDB
- Microsoft Azure Database for MariaDB
- Microsoft Azure Database for MySQL
- Microsoft Azure Database for PostgreSQL
- Microsoft Azure Databricks
- Microsoft Azure HDInsights Hive

- Microsoft Azure HDInsights Spark SQL
- Microsoft Azure SQL Database
- Microsoft Azure Synapse Analytics
- Microsoft SQL Server
- MongoDB (Connector for BI)
- OData
- Oracle
- Oracle MySQL
- PostgreSQL
- SAP HANA
- Singlestore
- Snowflake
- Teradata
- Teradata Aster
- TIBCO Cloud Live Apps
- TIBCO ComputeDB
- TIBCO Data Virtualization
- TIBCO Spotfire Advanced Data Services
- Vertica

Multidimensional DBMS

- Microsoft SQL Server Analysis Services
- Microsoft Azure Analysis Services
- Oracle Essbase
- SAP BW (Netweaver Business Warehouse)
- SAP BW/4HANA

Streaming data

- Apache Kafka
- JMS
- WITS, WITSML
- OSI PI
- IBM MQ
- MQTT
- RabbitMQ
- TIBCO eFTL
- TIBCO ActiveSpaces
- TIBCO Rendezvous
- TIBCO Enterprise Message Service
- Apache Hadoop

- Apache HBase
- Apache Cassandra
- Apache Kudu
- Salesforce Streaming
- Change Data Capture
- OPC UA
- Diameter
- FIX
- Bloomberg
- Thomson Reuters

Applications

- Google Analytics
- Salesforce
- Microsoft SharePoint Online Lists

APIs

- ODBC
- JDBC
- OData
- Custom Data Source

For a comprehensive list of systems where Spotfire can trigger Actions, see this documentation resource.

Data preparation

- Data profiling
- Data transformation and cleansing
- Data filtering, sorting, and wrangling
- Define calculated columns and measures
- Data lineage tracking and preparation workflow
- Audit and author data table workflow
- Add calculated column
- Join tables/add columns
- Union tables/add rows
- Replace data table
- Split column
- Replace empty values
- Change data type
- Replace value
- Unpivot
- Insert data function
- Add hierarchy
- Normalization
- Pivot

- Filter rows
- Set data table properties
- Set column properties
- Custom data transformation

Visualizations

- Rich interactive visualizations
- Advanced spatial mapping
- Real-time data visualization and dashboards
- Table
- Bar/column chart
- Histogram
- Line chart
- Combination chart
- Map chart
- Pie chart
- Scatter plot
- Bubble chart
- Treemap
- Parallel coordinate plot
- KPI chart
- Waterfall chart
- Trellis
- Image map
- Heatmap
- Graphical table
- Bullet graph
- Calculated values and icons
- Sparklines
- Summary table
- Box plot
- 3D scatter plot
- Reference lines
- Curve fits
- Custom visualizations
- Visualization mods**
- Dashboard layout
- Mobile layout

**In addition to all of Spotfire native visualizations available out of the box, numerous Community Visualization Mods are also available for download on the Community Exchange. These include a word cloud, Sankey diagram, animated bubble chart, pareto chart, area chart, spider plot, sunburst chart, and gauge chart with more being added continuously.

Analytic applications

- Automation of repetitive tasks
- Custom scripts for data manipulation, calculations, and visualization
- Input controls
- Action buttons and links
- Page navigation controls
- Output controls
- Scripting
- Document properties
- Actions

Administration

- User administration
- Configure SSO
- Manage feature access and preferences
- Group administration
- Monitoring and diagnostics
- Automation services job scheduling
- Scheduled updates
- Manage upgrades and extensions
- Analyze user action logs
- Analyze system logs
- Registering an API client
- Manage resources

- Easy deployment through K8s in Azure, GCP, or on-premises
- Self-healing
- Easier upgrades
- Elastic services
- Easier clustering and load balancing

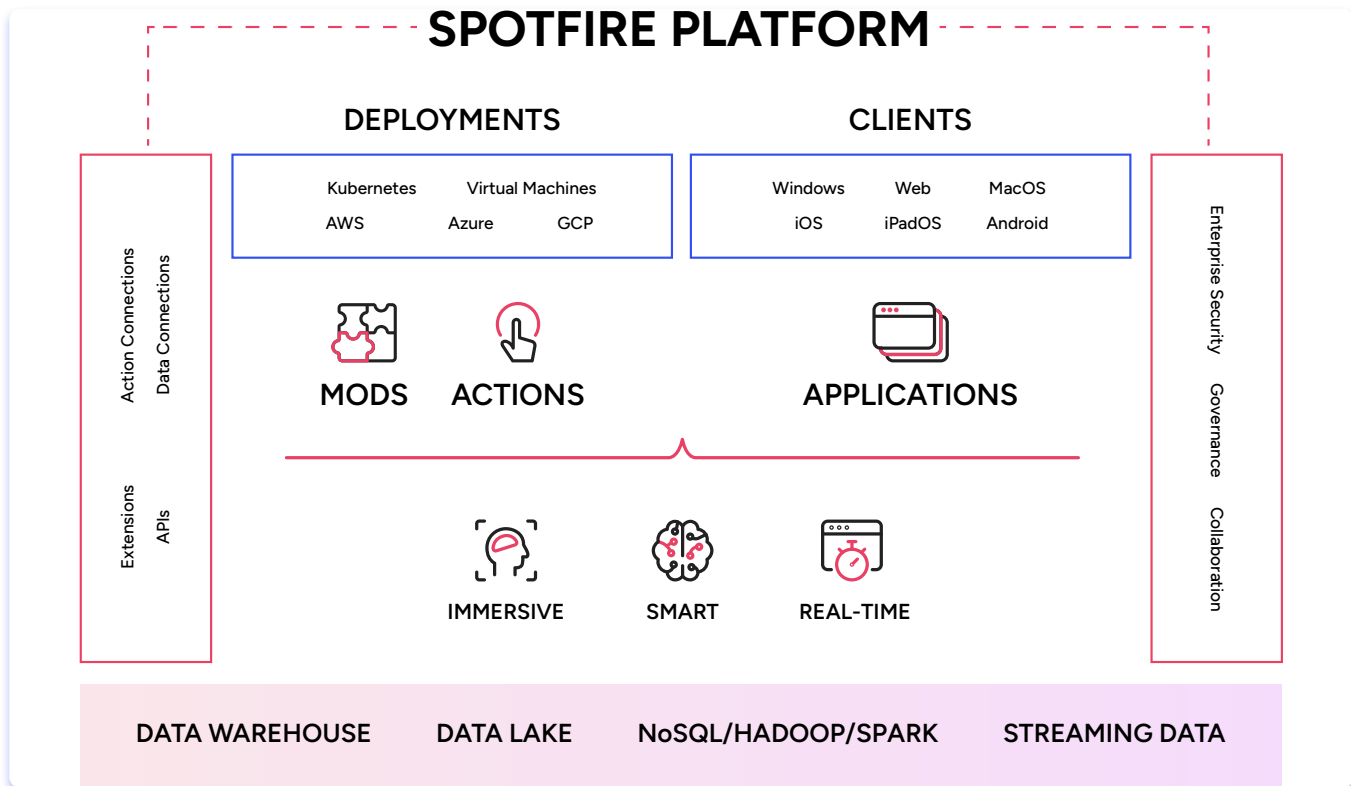All Spotfire services in Linux. Kubernetes managed.

Customization

- Embedding/JavaScript API
- Menu add-ins
- Customizable toolbar
- Custom panels
- Custom export
- Custom sharing
- Custom visualizations
- Custom value rendering
- Custom data sources
- Custom data functions
- Custom data transformations
- Custom expressions
- Custom curve fitting
- Custom references
- Custom log-in screen
- Custom start page

Scalable architecture

Spotfire analytics supports the smallest implementations to the largest, most demanding global deployments with hundred thousands users with unparalleled performance, scalability, and security. Spotfire software is deployed in the world's largest companies in Consumer Packaged Goods, Energy, Financial Services, Life Sciences, Manufacturing, Transportation and other industries. Spotfire can be deployed on physical machines or VMs in any cloud in a traditional manner, or using the Spotfire Cloud Deployment Kit for a complete Kubernetes based deployment enabling

auto-scaling of all Spotfire services, integration and monitoring using standard interfaces such as Prometheus. Administrators can be confident that business-critical analytical applications perform as needed using capabilities such as redistribution of resources for multiple workloads and SLAs, addition and deletion of nodes and service instances, and smart routing and resource pools. Spotfire works within existing enterprise IT systems and security models and is backed by global domain expertise and 24×7 customer service.

SPOTFIRE PLATFORM

DEPLOYMENTS

Kubernetes   Virtual Machines

AWS   Azure   GCP

CLIENTS

Windows   Web   MacOS

iOS   iPadOS   Android

Action Connections   Data Connections

Extensions   APIs

MODS   ACTIONS

APPLICATIONS

IMMERSIVE   SMART   REAL-TIME

Enterprise Security   Governance   Collaboration

DATA WAREHOUSE   DATA LAKE   NoSQL/HADOOP/SPARK   STREAMING DATA

Spotfire™

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Spotfire® goes beyond basic rearview dashboards to offer a single visual analytics platform for data exploration and real-time decisions. Backed by point-and-click, no-code data science, Spotfire allows even the non-developer to analyze both data-at-rest and data-in-motion, together, for faster time-to-insight and better business outcomes.