IoT ANALYTICS
PLATFORM

Do you want to:

- Take control of your IoT data?
- Make informed decisions quickly and at scale?
- Predict what is likely to happen next—and influence the outcome?
- Gain real-time insights across your operations?

Business needs

Internet of Things
Separate the signal from the noise. Harness vast streams of sensor data to provide new value for your business. Visualize data in motion.

Connected Industry
Know where, how and why across the manufacturing line. Target KPIs and gain actionable information to minimize downtime, maximize production efficiency and product quality.

Connected Customer
Understand the customer's buying experience. Detect and take real-time action on customer behavior. Analyze and adapt strategies with real-time analytics to improve the customer experience.

Connected Transport
Implement a digital supply chain that provides end-to-end visibility of your operations. Enable an immediate response to potential issues and ensure maximum resilience when issues outside your control arise.

IoT Analytics: Your real competitive advantage

Software AG's IoT Analytics Platform consists of a rich set of fully integrated visualization, event processing and predictive analytics capabilities. Using the platform, you can adopt IoT strategies to make better, faster decisions on the vast amounts of data coming from IoT devices:

- Visualize what is happening now and combine this with historic data for comparative analysis
- Make automated, intelligent decisions based on current events
- Use past events to give advanced warning and act on likely events

Everything in the IoT Analytics Platform takes place in real time, so you can make automated decisions on threats and opportunities the instant they occur—while it is still possible to influence the outcome.

If IoT data isn't acted on immediately, its value disappears quickly. If a machine breaks down, it's often too late to prevent the production line from grinding to a halt. Similarly, once customers have moved to another supplier, it becomes much more difficult to win them back. That's why being able to act in real time is fast becoming an essential capability to gain real competitive advantage.

Building an analytics platform for IoT and fast-moving data typically requires these key components to work in unison, optimized for the high numbers of transactions and rapid response times typically seen in IoT environments:

- Real-time visualization capabilities that show what is happening at any instant in time—and why

- Streaming analytics to react to significant events the moment they occur
- Predictive analytics to respond intelligently to events likely to happen in the foreseeable future

At the same time, a high-speed in-memory store is used to store and give speedy access to relevant IoT data (for example, to enrich raw data coming from the sensors).

Capabilities

Visual analytics: see what's happening in real time
The IoT Analytics Platform provides self-service data visualization capabilities that connect to and mix the very latest IoT data with historic data from multiple data sources for real-time decision making. By making it easy to create rich visualizations of data, you can see exactly what is happening at any point in time and share this information in a way that is easily understood across the enterprise:

- Simply "point and click" to build dashboards and share information with others—no assistance needed from IT
- Transform raw data into useful analytics within minutes
- Mix "data-in-motion" with "data-at-rest" from multiple sources
- Rely on an intuitive user interface to identify visual patterns quickly

With Software AG's visual analytics capabilities, you can mix real-time streamed data with data-at-rest and measure the business impact continuously—not only to measure the "what is happening" but also understand "why it is happening." All this information can be shared across the enterprise in a secure way since no data is stored on any device.

Platform services for IoT
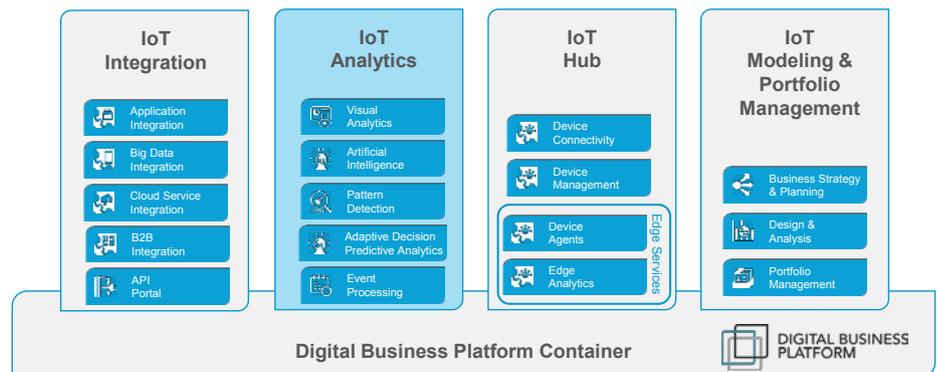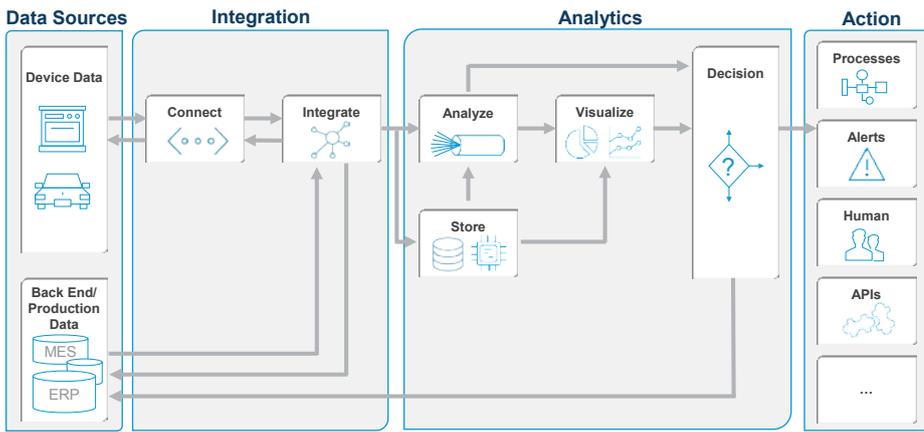
IoT high-level data flow concept

- Faster time-to-insight – deployment of a predictive analytics model can be done in minutes not weeks
- More informed, accurate and timely business decisions
- A stronger, more sustainable competitive advantage

As an integral component of the IoT Analytics Platform, the predictive analytics execution engine enables data science operations to become more efficient. Organizations can accelerate and automate the deployment of predictive analytics models from the laboratory into an operational environment, greatly increasing the return of investment of their IoT strategy.

Streaming analytics: analyze complex patterns and take appropriate action

Our streaming analytics capabilities enable you to make automated, intelligent decisions by analyzing fast-moving, big data the moment an event takes place. You can design, develop and deploy sophisticated applications that can monitor event streams, detect and analyze patterns from multiple sources simultaneously, and take actions based on those patterns.

Our world-leading streaming analytics platform, Apama, uses a real-time event pattern detection model that operates on inbound event stream data as events occur. Its event-based architecture ensures real-time operations can respond quickly and automatically to high-velocity event data of any kind:

- Monitor large volumes of information in real time
- Spot significant and complex patterns of events
- Respond to those events automatically, intelligently and immediately

You can act on complex events the instant they happen, like a change in spending pattern on a credit card that might be indicative of fraud.

Apama Streaming Analytics is built on an in-memory architecture that enables real-time processing of extremely fast, large data volumes—orders of magnitude larger than traditional database-based IT architectures. You can run it on edge devices, in the cloud or on on-premises servers to analyze and filter data at a local level before passing it to the back-end for further processing.

Predictive analytics: respond to threats and opportunities

Predictive analytics enables you to look for patterns in data and spot threats and opportunities, before they occur, so you can do something about them before impact.

The IoT Analytics Platform includes powerful predictive analytics deployment and execution capabilities that complement and enhance the streaming analytics capabilities of the platform so you can leverage predictive analytics models.

Our preeminent predictive analytics execution engine is tightly integrated with the IoT Analytics Platform to maximize throughput and minimize latency. This is not only critical for ensuring high levels of technical performance but also for driving business performance and competitive advantage.

If you're looking to maximize the value of your IoT infrastructure, you'll realize:

In-memory capabilities: lightning-speed storage and access to data

Underpinning the IoT Analytics Platform is the world's leading in-memory store. The data you need is no longer buried deep in a database; it's stored in-memory, where it is quickly retrievable by multiple users with multiple apps.

Our in-memory store is the first-choice platform for large enterprises that require distributed in-memory data management with extremely low, predictable latency at any scale:

- Enjoy real-time data flows of any type of data, to and from any device
- Accelerate time to insight—gather, sort and analyze data faster than your competition
- Hundreds of terabytes of heterogeneous data can be maintained in-memory, with guaranteed latency of low milliseconds
- Data can be distributed across multiple servers for redundancy

Components of Software AG's IoT Analytics Platform

The applications are endless

Software AG's IoT Analytics Platform makes it possible for you to take IoT and fast-moving, big data and harness it to make better decisions in real time. The applications you build are limited only by your desire to better understand, predict and act on insights revealed in those relentless data streams.

IoT analytics in the real world

Robert Bosch | Leading global supplier of technology and services

"As technology partners, we will be able to offer our customers innovative solutions with the Bosch IoT Cloud even faster and more efficiently than before."

— **Dr. Volkmar Denner** | Chairman of the Board of Management, Robert Bosch GmbH

Royal Dirkzwager | One of the world's leading maritime service providers

"The ability to respond quickly to client requests and roll out completely new service offerings in two months gives us a huge strategic advantage. Our team's skill with Apama makes it happen."

— **Ton de Jong** | CIO, Royal Dirkzwager

Schwering & Hasse | Leading manufacturer of magnetized copper wire

"Apama helps us stay on top of thousands of quality related events per second, enabling rapid responses to potential problems."

— **Dirk Jäger** | CIO, Schwering & Hasse

ABOUT SOFTWARE AG

The digital transformation is changing enterprise IT landscapes from inflexible application silos to modern software platform-driven IT architectures which deliver the openness, speed and agility needed to enable the digital real-time enterprise. Software AG offers the first end-to-end Digital Business Platform, based on open standards, with integration, process management, in-memory data, adaptive application development, real-time analytics and enterprise architecture management as core building blocks. The modular platform allows users to develop the next generation of application systems to build their digital future, today. With over 45 years of customer-centric innovation, Software AG is ranked as a leader in many innovative and digital technology categories. Learn more at www.SoftwareAG.com.

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