Accelerating IoT value with SAS® and Teradata

Get the end-to-end architecture you need to turn IoT data into real-time decisions

While analysts expect the IoT to soar to tens of billions of devices by 2020, no one knows how many or what new types of intelligent devices will emerge. Organizations need the ability to analyze a high volume and variety of data sources and make the right decisions with precision, accuracy and speed.

Can your organization:

- Capture data from various sources in real time?
- Effectively gather and prepare all of your data for real-time analytics?
- Enable data-driven analysis for effective outcomes?
- Deliver advanced analytics at your fingertips to analyze events?
- Monitor and update analytical models for continuous model learning?
- Obtain insights in real time to capture fleeting opportunities?

Overview

SAS and Teradata are partnering to create an end-to-end IoT architecture that allows you to ingest streams of data and analyze events in real time.

With this solution, data-driven decisions can be made more rapidly than ever, improving bottom-line profitability. Along with the traditional and proven "stream, score and store" process, now you can immediately analyze data as it's received and make decisions based on situational intelligence. This is especially useful in scenarios where latency is a factor, such as performance degradation and equipment failures.

This solution integrates real-time enterprise data management and analytic capabilities from the industry's best – Teradata and SAS. With this architecture, organizations can:

- Continuously and proactively monitor incoming data streams.
- Apply analytics anywhere at any time – at the edge, in stream and at rest.
- Deliver timely, fact-based insights enterprisewide.

What does this architecture provide?

SAS and Teradata offer an entire suite of technologies for IoT analytics, including data capture, data analytics and reporting, integrated in one platform. The key products that support this architecture are:

- **SAS Event Stream Processing**: Analyze real-time, event-driven information to identify meaningful patterns and correlations on the edge and in the cloud.
- **SAS Quality Analytic Suite**: Asset, field and production analytics for the enterprise.
- **SAS Visual Analytics**: Self-service analytics for identifying new patterns and relationships.
- **SAS Visual Statistics**: Interactively build and refine descriptive and predictive models.
- **SAS Model Manager**: Automatically monitor performance and update analytical models for optimized analytical insight.
- **Teradata Listener**: Receives and collects data from multiple, high-volume, real-time streams.
- **Teradata Platform**: Captures and stores data for analytics and other downstream applications.
- **Teradata Appliance for SAS**: Provides high-speed performance for SAS Analytics.

Why SAS and Teradata for IoT?

SAS and Teradata have been strategic partners for more than 10 years. We've delivered joint solutions to more than 200 customers, helping them create integrated, optimized and agile analytics environments. Our solution combines the strengths of SAS industry-leading analytics and data management with the power of the Teradata platform. It's backed by well-defined services for quick implementation and rapid return on investment with help from experienced SAS and Teradata personnel.

SAS and Teradata were the first in the industry to deliver end-to-end data management and analytics capabilities.

This solution empowers your organization to make more accurate, consistent, data-driven decisions from all data sources – structured and semistructured.

Benefits:

- Continuous monitoring and measuring of streaming events.
- Efficient and well-managed processes for data-driven intelligence.
- Proactively respond to your most complex issues.

SAS and Teradata offer innovative approaches to analytic data preparation with in-database and in-memory processing. Compared to the traditional method, this approach eliminates the burden of copying or moving data. It also uses the resources and power of the database management system to process large volumes of data. And Teradata's massively parallel processing capabilities deliver results faster.

Specifically built for IoT analytics, this solution distributes the analysis of your data at the edge, in stream or at rest, a crucial capability for organizations needing to make real-time decisions.

This solution accelerates real-time data capture and analytics for all of your data sources (structured and semistructured) to obtain strategic insights about your customers, products and services (see Figure 1).
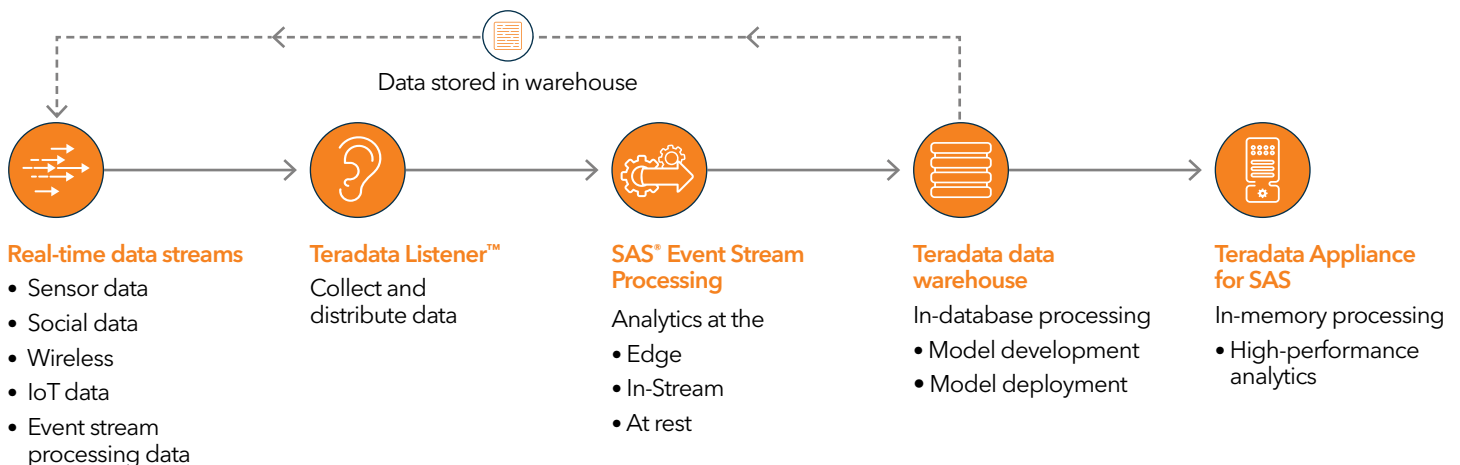
This end-to-end IoT architecture from SAS and Teradata is valuable in many fields:

Transportation: Provide service and revenue assurance for connected vehicles or fleets, including preventive maintenance, equipment performance, real-time offers and user-based insurance.

Retail and Hospitality: Use intelligence for connected customers for personalized and relevant real-time interactions, including targeted marketing offers and optimized merchandising decisions.

Health Care: Deliver optimal, effective health services with remote patient monitoring and connected clinical trials.

Figure 1: Listening for real-time data to enable real-time analytics.

Data stored in warehouse

Real-time data streams
- Sensor data
- Social data
- Wireless
- IoT data
- Event stream processing data

Teradata Listener™
Collect and distribute data

SAS® Event Stream Processing
Analytics at the
- Edge
- In-Stream
- At rest

Teradata data warehouse
In-database processing
- Model development
- Model deployment

Teradata Appliance for SAS
In-memory processing
- High-performance analytics