Industrial Time Series Sensor Data Connectivity on AWS

Connect your time series system to AWS Big Data services to drive business insights

The challenge: Moving time series data to the AWS cloud

For decades, industrial organizations have been using time series database software to harness data from their industrial devices and systems to provide real-time operational intelligence. By connecting users and devices, these systems play a critical role in helping enterprises address their most pressing business challenges. As organizations look to reduce costs, accelerate their pace of innovation, and bring together previously siloed data, connecting their time series data into their Amazon Web Services (AWS) environment is an attractive option.

There are a few challenges that hinder organizations' ability to connect their time series database systems to AWS:

- **Heterogenous data structure:** Because sensor data from edge devices is heterogenous in format and spread across several systems, it’s often difficult to integrate with AWS services.
- **Managing real-time feeds:** Establishing and managing feeds of industrial process time series data from various different systems to AWS storage targets can be a cumbersome process.

The AWS Solution

The AWS Industrial Time Series Data Connector developed for AWS by 47Lining can help you solve both of these problems. The AWS Connector integrates all your industrial process time series data with AWS to enable advanced analytics. The Industrial Time Series Data Connector Quick Start offer simplifies data ingestion through either Amazon Kinesis or the AWS Internet of Things (IoT) service. Use this connector to cost-effectively move your data to Amazon Simple Storage Service (Amazon S3). Then, you can explore and analyze your data using a wide variety of AWS services that support agile analytics, helping you optimize your business and its operations. The launch version of the connector integrates directly with OSIsoft PI and we have a roadmap for integration with other popular on-premises solutions.

Key Benefits

- **Deliver critical business insights**
  Use descriptive, predictive, and real-time analytics to drive insights from your time series data.

- **Eliminate data siloes**
  Synchronize your previously siloed time series data with your AWS data lake.

- **Keep your time series data secure**
  Choose from a variety of security-enhanced methods of connecting your sensor data to AWS.

- **Establish real-time feeds**
  Deliver your time series data to AWS storage targets and analytics services in real-time.
Solution Space

Discover scalable solutions that help you achieve your business needs through a combination of AWS services and APN Partners that have attained AWS Competency designations. Based on architectures validated by AWS to accelerate your cloud transformation, you can deploy solutions quickly from AWS Marketplace and leverage optional consulting offers provided by APN Partners. Visit here for more information.

How it works

47Lining’s solution complements AWS by helping you establish an end-to-end data flow from your time series database system to AWS for advanced analytics. By giving you access to the full breadth and depth of AWS and our Partner visualization services. Key features include:

- **Security**
  Use Windows Integrated Security (WIS), virtual private network (VPN), Microsoft Active Directory, and your user credentials to access sensor data.

- **Near real-time subscription**
  Subscribe to snapshot and archive updates to get your data to AWS through Amazon Kinesis.

- **Backfilling**
  Backfill sensor data for periods in the past and move that data to Amazon S3 for cost-effective storage.

- **Synchronization**
  Synchronize your sensor data structure based on the format specified in your on-premises server.

- **Visualization**
  Visualize your data by using Kibana dashboards and sensor data available in AWS Elasticsearch Service (Amazon ES).

- **Management**
  Use a dedicated Management Console web application to explore sensor data and access administrative functions.

- **Interpolation**
  Interpolate your sensor data at specified intervals and observe the data flow to AWS.

- **Exploration**
  Use Amazon Athena to explore your sensor data using standard SQL.

- **Publishing**
  Publish your data in an Amazon S3 bucket for sandboxed analytics.

Getting Started

To learn more about this solution, visit the solution page in Solution Space here. To connect your industrial sensor data to AWS, visit the Industrial Sensor Data Connector Quick Start here.

About AWS: For 10 years, Amazon Web Services has been the world’s most comprehensive and broadly adopted cloud platform. AWS offers over 100 services for compute, storage, databases, analytics, mobile, Internet of Things (IoT), and enterprise applications from 49 Availability Zones (AZs) across 18 geographic regions in the United States, Canada, Europe, Asia, Australia, and South America. AWS services are trusted by more than a million active customers around the world – including the fastest growing startups, largest enterprises, and leading government agencies – to power their infrastructure, make them more agile, and lower costs. To learn more about AWS, visit http://aws.amazon.com.

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