

Effortlessly & Securely Connect Energy Assets at Scale to AWS



Challenges

Retrofit and Continuous Monitoring of Global Distributed Energy Assets

Power producers and energy infrastructure operators are constantly challenged to improve operational excellence, service availability and quality. Historical and real-time data from solar, wind and biogas assets, sensors, field buses, PLC's and log files are required for applying analytics in the cloud. Enhanced situational awareness allows swift reaction to remote threats and challenges. Seamless integration with AWS services is required to store and process data efficiently in the cloud, to gain real-time insights on remote asset status, diagnostics & data collection for condition monitoring, fault diagnosis and predictive maintenance. And with many geographically distributed installations, it is of great importance to reduce the efforts and costs associated with connecting assets and cloud on-boarding securely at scale. Billing preferably should be friendly and simply part of the AWS billing infrastructure. With Cybersecurity and compliance becoming an increasing challenge, demanding security framework requirements (e.g. ISA/IEC 62443) have to be factored into the product designs.



The Eurotech Solution

Cybersecure, Programmable and Manageable Edge with AWS IoT

IoT-based edge systems, ISA/IEC 62443-4-2 certified, collect, compute and communicate constantly vital data from assets in the field to the cloud. Eurotech's ReliaGATE 10-14 GreenEdge IoT Gateways ingest and aggregate data from many different sources such as, energy field buses (i.e. Modbus, OPC-UA, IEC 60870, IEC 61850, DNP3, M-Bus, etc.), sensors & actuators. The established communication channels are bi-directional, also control information can be sent to the assets in the field. Digital twins of the field assets, APIs and no-code programming of the IoT Gateway, as well as integration with AWS IoT Greengrass, ensure efficient application development. Eurotech's Everyware Software Framework (ESF) and Everyware Cloud (EC) facilitate and speed up deployment and configuration at the edge. Full device management, powerful health monitoring and advanced logging, enabled by EC, installed in the customers AWS account, contribute significantly to device operation and compliance monitoring. Zero-Touch-Provisioning (ZTP) ensures secure and effective on-boarding with AWS IoT & Cloud Services at scale. Seamless integration with the AWS services makes it possible to store and process data efficiently in the cloud.



Benefits

Efficient and Fast Development & Asset Integration

A large number pre-integrated field protocols together with an ability to extend these protocols to custom and proprietary connectors, reduce the effort for connecting heterogeneous assets in the field. Flexible asset definitions allow the pre-integration of assets to be leveraged comfortably using the no-code edge development environment

Optimized Asset & Grid Management

Optimize asset service schedules based on actual real-world data. Predict and ensure that services are available when and where needed. React in real-time to asset and infrastructure status and performance values.

Security that Scales

Eurotech's edge devices are designed to meet requirements of security frameworks like ISA/IEC 62443. And secure Zero-Touch device onboarding and provisioning ensure remote deployment at scale.

Eurotech on AWS

Eurotech is a multinational company that designs, develops and supplies ruggedized Edge Computers and Internet of Things (IoT) solutions to system integrators and enterprises. The portfolio ranges from IoT software stacks to Edge Gateways and Edge Servers to High Performance Edge Computers and Edge AI Systems. Eurotech complements the AWS offerings by enabling customers with application optimized Edge / IoT building blocks for demanding verticals like manufacturing, transportation, agriculture, energy, utilities and medical. Eurotech is part of a global AWS partner network that allows customers to create and leverage "best in class" solutions for Industrial IoT, including increasing customers operational technology (OT) security, without compromising requirements.



Features



Effective Development and Reduced Time-to-Market

The Eurotech Everyware GreenEdge (EGE) offering marries certified hardware with a full software stack, including a managed Linux OS and a powerful IoT device middleware ESF (Everyware Software Framework). ESF comes with a low-code/no-code development solution, a wide range of supported field protocols and ready to use AWS IoT Greengrass integration.



Clear Focus on Low TCO and Risk Mitigation

The offering addresses major aspects that add to the total ownership costs of an IoT solution. Product designs to meet demanding security framework requirements as defined in ISA/IEC 62443 or PSA Level 1 mitigate cybersecurity and compliance risks. The IoT Management Platform EC (Everyware Cloud), enables remote and full lifecycle management, advanced logging and health monitoring features. ZTP (Zero-Touch-Provisioning) reduces deployment times and effort.



Integrated AWS Billing

The offering is available through the AWS Marketplace and ensures for Eurotech's edge software and cloud services, a simple single billing process.

Case Study

Effortlessly Connect Renewable Power Generation Assets at Scale to AWS



Challenges

The customer, a global Independent Power Producer (solar, wind, biomass), had internal and regulatory requirements to increase operational efficiency and remotely monitor its globally deployed assets and facilities. This required support for an extended number of energy field protocols to normalize existing data, zero touch provisioning at scale to simplify retrofitting operations, highest levels of cybersecurity, monitoring and logging.

Solution

The ReliaGATE 10-14 GreenEdge, security pre-certified with ISA/IEC 62443-4-2, is the perfect solution to upgrade and enhance existing and new renewable energy assets. It seamlessly integrates the assets with the ESF supported field protocols and AWS IoT Greengrass logic, providing a comprehensive view of the ingested field data. With this advanced technology, users can confidently perform remote monitoring, control, maintenance, and provisioning on a large scale. Additionally, EC installed in the customer's AWS account does ensure full lifecycle management.

Results

With this solution, the customer can now confidently gain a comprehensive understanding of renewables power production and detailed view into each site to monitor performance, identify issues or inefficiencies. With this project the customer established a process for integrating new power assets, which resulted in improved situational awareness and reduced onboarding cost (effort & time) for assets to be integrated..

Get started with Eurotech solutions on AWS

Visit eurotech.com to learn more about Eurotech and Eurotech's [Everyware GreenEdge](#) offering. Visit [AWS Certified Device Catalog](#) for information on [ReliaGATE 10.14](#) IoT Gateways.

