Avnet /IOTCONNECT Solutions Suite

Smart Fleet Management

AVNET®

/IOTCONNECT®

Manage | Secure | Deploy

Solution Accelerator & Marketplace Index

AVNET

/IOTCONNECT enabled solutions

Smart Generator Monitoring

Smart City Noise Detection

Smart Asset Monitoring

Smart Facility Solutions

Smart Factory Solutions

Smart Fleet Management
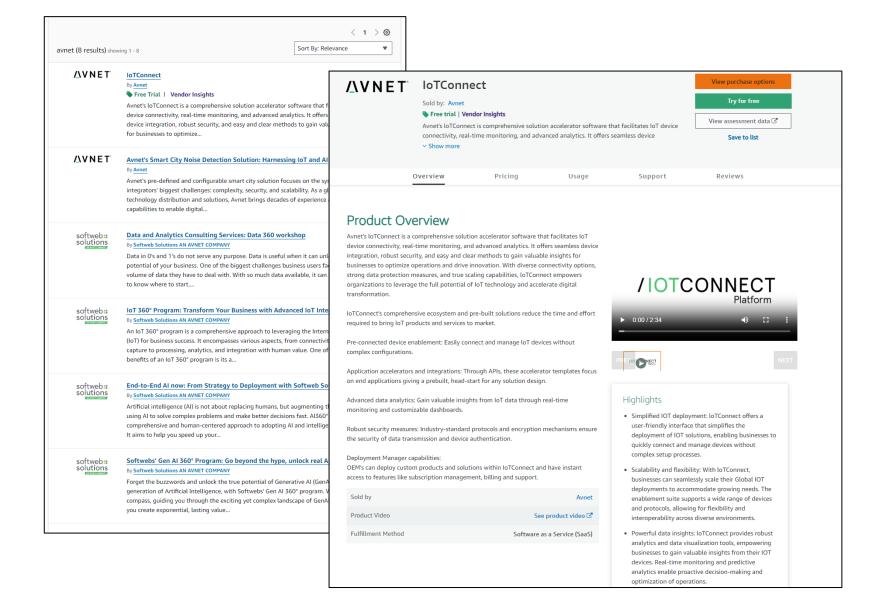
Smart Warehouse Monitoring

SaaS offering

/IOTCONNECT®

Avnet's Smart Fleet Management powered by IoT and AI

Real-time fleet monitoring capabilities Solution features Real-time fleet visibility Optimal real-time routing Engine data via on-board sensors Speed/idling real-time feedback Monitor the entire fleet Geo-fencing and tracking Real-time cargo monitoring Monitor the vehicle's idling time More accurate ETA predictions Streamlined routes Detailed location data Breakdown notifications Monitor driver activity Identify where the drivers are at all times Roadside/emergency assistance for drivers Monitoring of misuse such as hard braking, etc.

aws
Qualified
Software

Visit Our Marketplace Listings

All Avnet Listings

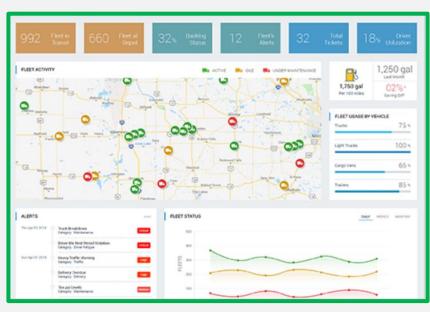# Smart Fleet Management Solution

The Smart Fleet Management Solution offers comprehensive real-time fleet monitoring and management capabilities designed to enhance efficiency, safety, and compliance for transportation and logistics companies. The solution utilizes /IOTCONNECT, powered by AWS, which integrates cloud-based analytics, IoT connectivity, and advanced sensor technologies to deliver actionable insights.

Increase driver safety: Identify where drivers are at all times and quickly dispatch roadside or emergency assistance if needed.

Longer vehicle lifespan: In-vehicle sensors provide engine data, speed/idling time and other metrics so you can proactively address any issues.

More efficient routing: Track vehicle locations in real time to get breakdown notifications, provide more accurate delivery time estimates, and streamline routes.

Easier compliance: Better visibility into operations through built-in analytics and reporting make it easier to comply with industry and government standards.
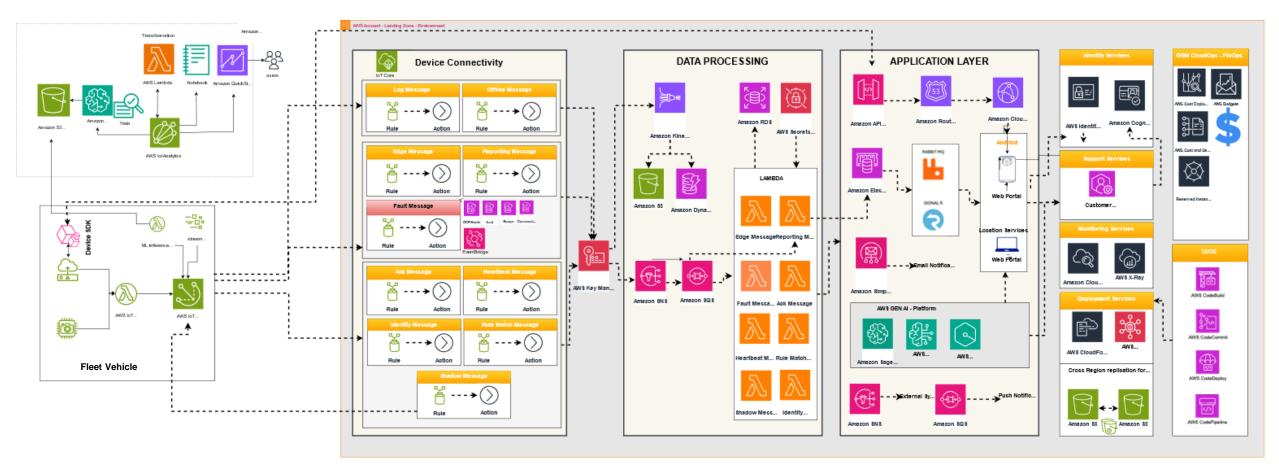

Sample Dashboard

Features

Our Fleet Management solution helps you to organize and manage your fleet operations, improve efficiency and reduce costs; developing a better understanding of the condition and usage of your fleet in real-time.

- On-demand operations
- Easy to learn and use
- IFTA reporting
- Seamless deployment and integration
- Driving behavior analysis
- Fuel level monitoring
- Water level monitoring
- Tire pressure monitoring
- Engine temperature monitoring

Learn more

Marketplace Listing

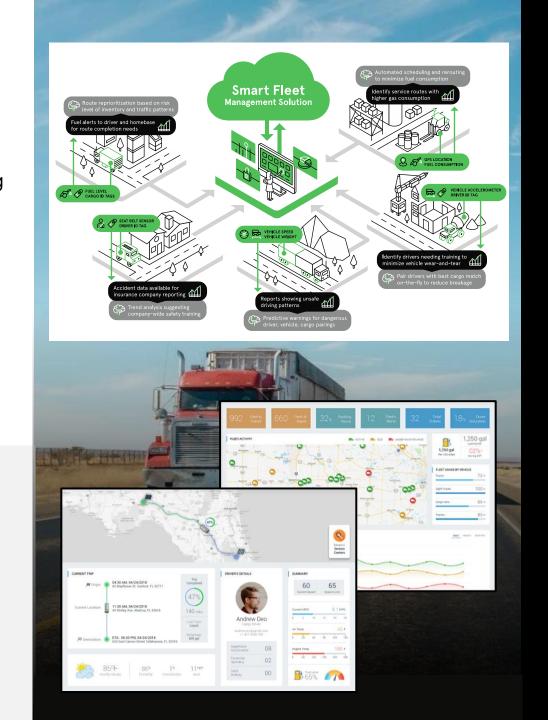AVNET

Solution Architecture - Smart Fleet Management

World-class decoking company

SITUATION:

- Customer stated they needed help optimizing their fleet operations, their goals were:
    - Reduce truck downtime
    - Improved control and visibility of fleet activity
- Accessibility to dashboards and analytics to gain new insights such as:
    - Fuel level
    - Battery charging
    - Vehicle speed
    - Engine RPM

VALUE PROPOSTION:

- A complete and proven prebuilt solution

- Removing the complexity of IoT based fleet management systems

- Real time GPS asset tracking

- Deeper insights leading to predictive maintenance

- Optimize fleet operations for more profit

DEPLOYING IOT WITH AVNET HAS ENABLED:

Reduced downtime and maintenance costs – repair before breakdown occurs, for example

Increased miles per vehicle in fleet resulting in more profitable operations

Accelerated design and deployment of solution by utilizing /IOTCONNECT's prebuilt smart fleet solution

Better control and visibility of the fleet using a centralized monitoring system

Safeguarding the integrity of global commerce

SITUATION:

Our Customer helps organizations to thrive in supply and distribution chain complexity. They provide advanced authentication solutions for governments, central banks and commercial products, ensuring local economies grow, banknote security remains intact and commercial products have robust market opportunities.

VALUE PROPOSTION:

- Complete visibility on demand and supply pattern
- Identify the access points of the illegal product
- Advanced analytics and detailed reports with time stamps
- Actionable safety information and intelligence on demand
- Accelerate decision making process with complete visibility into supply chain performance
- Gain competitive advantage

PRODUCTION IMPROVEMENTS:

- 21 assets made connected and smart
- 17% increase in productivity
- 20% decrease in downtime
- Overall profitability increased to 10% in just 6 months of implementation.

DEPLOYING IOT WITH AVNET HAS ENABLED:

Data science and IoT-enabled solution that provides information of all distribution points

Monitor all major supply chain functions with sophisticated time-stamps ledger

Anomaly detection to improve your supply chain

Ability to find improvement opportunities in the supply chain with the facility to generate the report for sampling status to meet governance and compliance

Summary & Next Steps

AVNET

Benefits

1. **Easy implementation:** Our Smart Fleet solutions are powered by a modern networking infrastructure platform that works with the current system with minimal disruption.

2. **Accelerate ROI:** Our solutions feature state-of-art technologies such as advanced analytics, deep learning and artificial intelligence that provide real-time visibility and simplify the implementation of higher ROI solutions.

3. **Comprehensive security:** We follow best practices to ensure that all data are properly secured by following the highest standards in compliance with various industry and federal regulations.

Outcomes

1. **Comprehensive Fleet Monitoring:** Provides real-time visibility and tracking of the entire fleet, including engine data, driver activity, cargo, and idling time, ensuring constant monitoring.

2. **Enhanced Route and Driver Efficiency:** Offers optimal real-time routing, more accurate ETA predictions, and detailed location data, improving route planning and overall driver performance.

3. **Improved Safety and Compliance:** Enables geo-fencing, breakdown notifications, emergency assistance, and identifies misuse (e.g., hard braking), enhancing driver safety and operational compliance.

Next Steps

Let's team up to monitor your fleet from beginning till end

Contact us: IoT@Avnet.com

More about Avnet /IOTCONNECT and Softweb solutions (an Avnet company)

About Avnet

Quick facts

- Founded in 1921
- Headquartered in Phoenix, Arizona
- $26.5B in revenue (FY23)
- AVT listed on the NYSE since 1960
- AVT listed on NASDAQ since 2018
- #163 on FORTUNE 500 (US) in 2022

15,300 Employees worldwide

1,925 Engineers around the world

2.8M+ Engineering community members

1M+ Customers in 140 countries

250+ Locations globally

283B+ Units shipped annually

Avnet Investments

AVNET

CORE SEMI

softweb solutions — AN AVNET COMPANY

CLOUD APPLICATION DEVELOPMENT

Witekio — AN AVNET COMPANY

EMBEDDED SOFTWARE
DESIGN SERVICES

TRIA — AN AVNET COMPANY

EMBEDDED MODULES
& BOARDS

DESIGNED BY AVNET

SOLUTIONS DEVELOPMENT:
ADVANCED APPLICATIONS GROUP

IoT Sales Team
A global specialized IoT team focused on providing unique hardware, software and cloud expertise to OEMs

Extensive line card
Semiconductors, IP&E, embedded systems, software and cloud

Hardware Edge Design
Technology selection and support provided by 800+ Field Application Engineers

Embedded Software Design
Design, develop, and integrate embedded OS, firmware, and application software

Cloud and Digital Design
Complete IoT solutions (cloud, apps, data insights) built on /IOTCONNECT

Supply Chain and Logistics
Supply chain models to address each customer's priorities
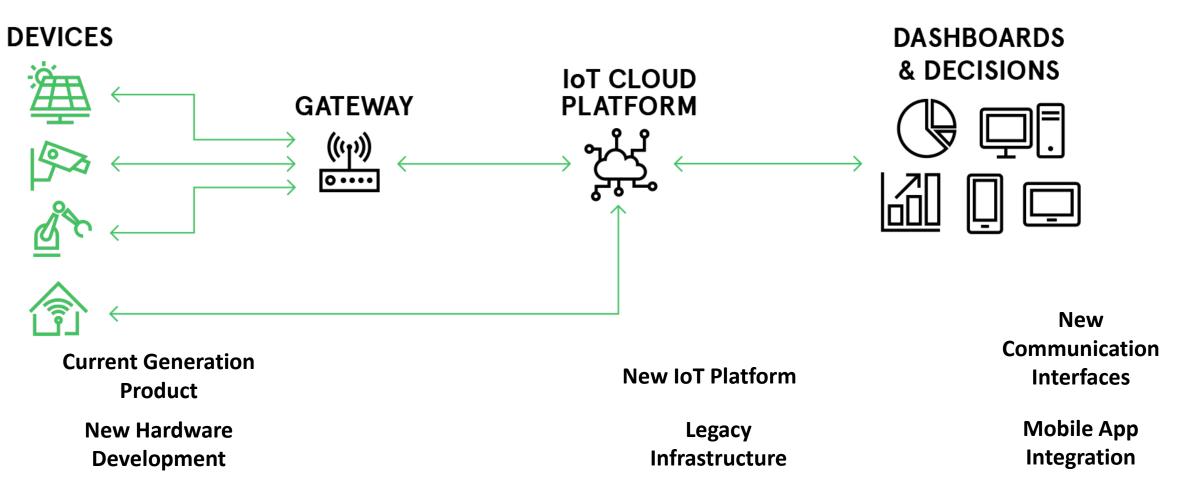
Lifecycle Management
Digital Managed Services, OTA updates, post sales support
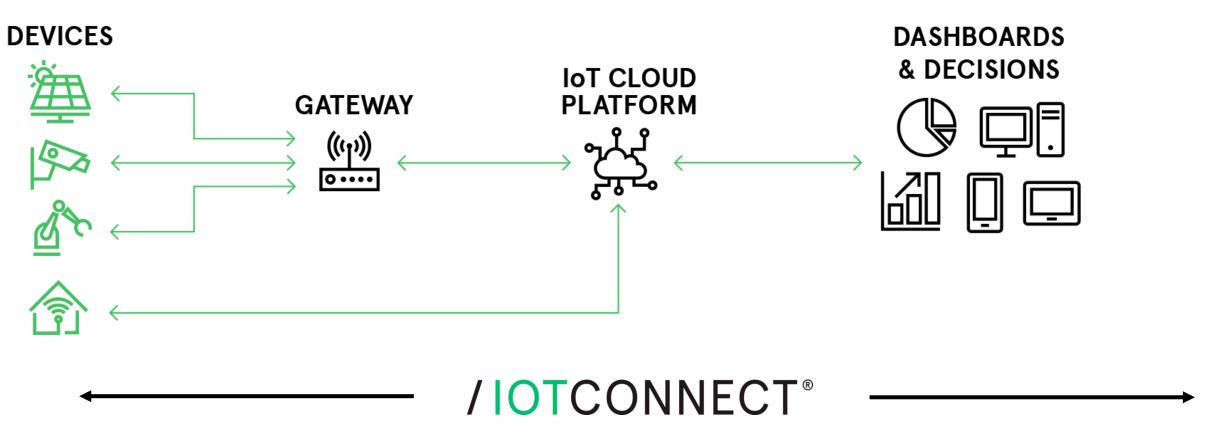
Gives us Unmatched Capabilities

/ Challenge of IoT

DEVICES

GATEWAY

IoT CLOUD PLATFORM

DASHBOARDS & DECISIONS

Current Generation Product

New Hardware Development

New IoT Platform

Legacy Infrastructure

New Communication Interfaces

Mobile App Integration
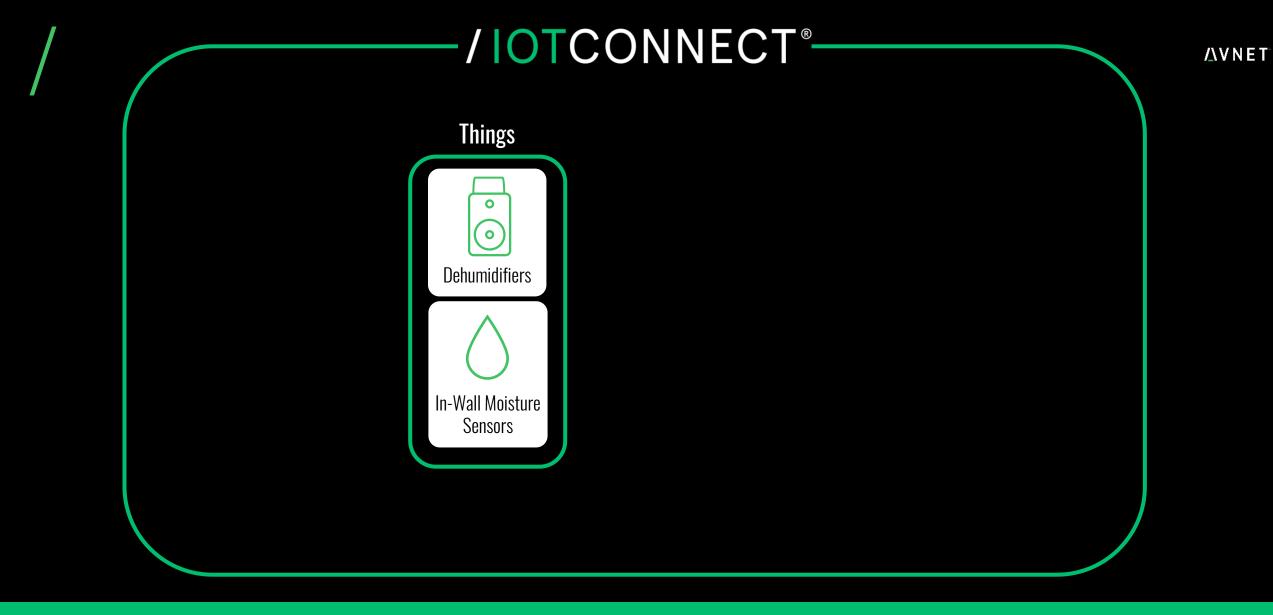
Developing an IoT product is costly, cumbersome, and time consuming.
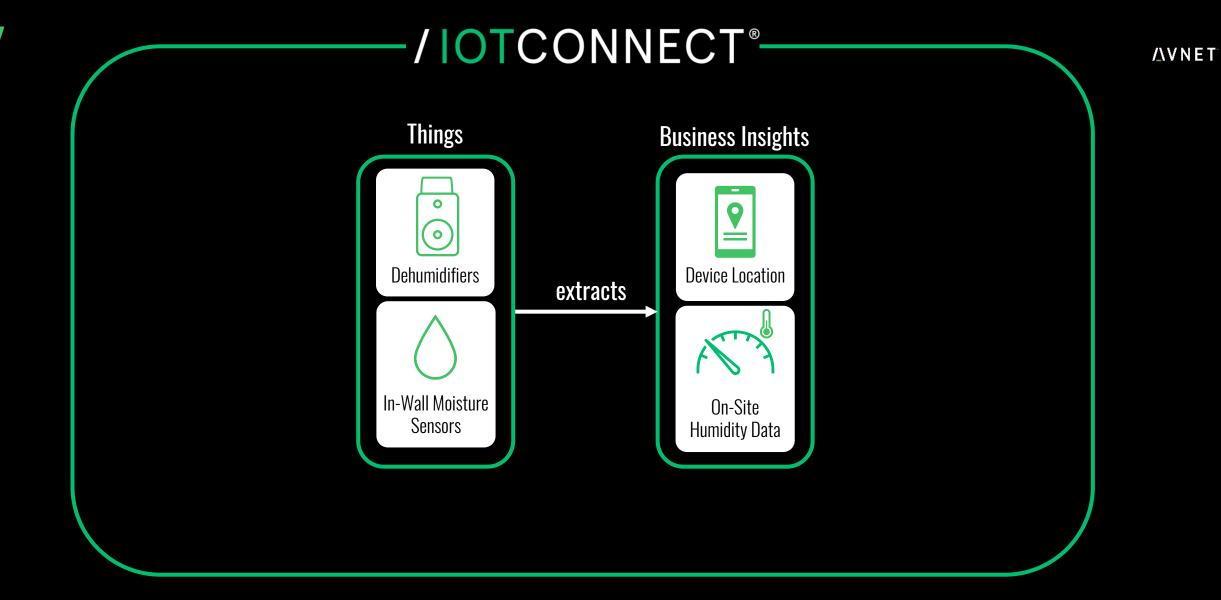
Challenge of IoT
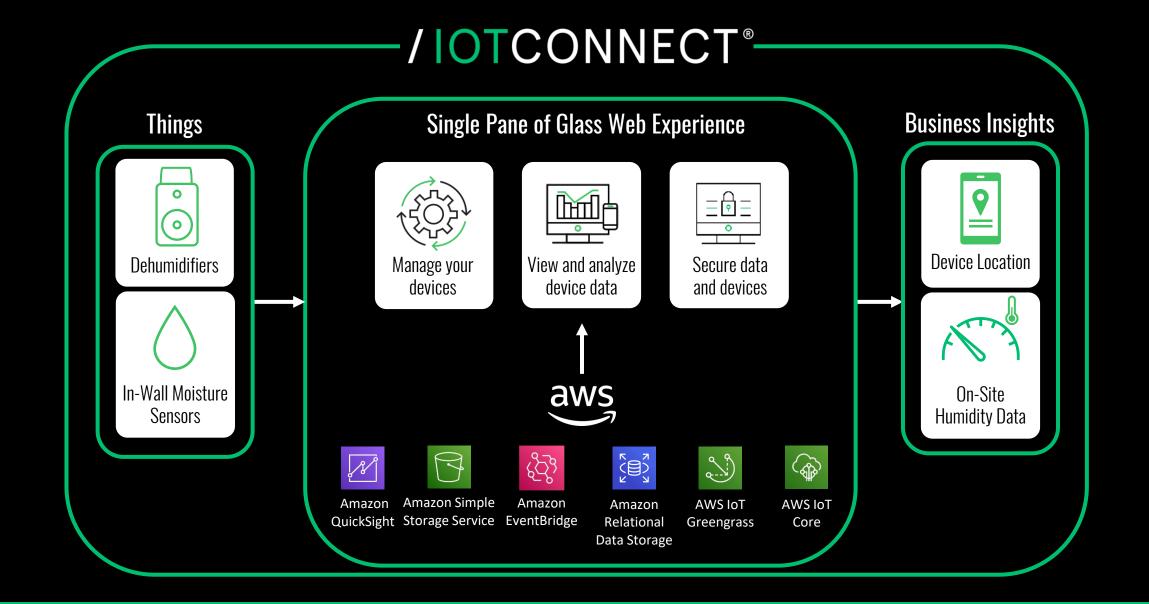
With /IOTCONNECT, IoT development becomes simple, secure, and scalable.

/IOTCONNECT®

Things

Dehumidifiers

In-Wall Moisture Sensors

It takes **things** like **connected dehumidifiers** and **moisture sensors**

and **extracts valuable insights** to improve business intelligence

Amazon QuickSight

Amazon SageMaker

Amazon Kinesis

Amazon EventBridge

Amazon Managed Grafana

Amazon DynamoDB

Amazon Relational Data Storage

aws

AWS IoT Core

AWS IoT Core for Sidewalk

AWS IoT Core for LoRaWAN

AWS IoT Greengrass

Amazon Simple Storage Service

FreeRTOS

AWS Lambda

We take needed **AWS services** for IoT solution development

/IOTCONNECT SaaS Application in Action

Next Steps

Contact us!

Learn more

/ Resources

**Avnet and AWS:
This is My Architecture**

**Avnet
/IOTCONNECT Webinar**

**/IOTCONNECT Quick Start
Development Kits**

/IOTCONNECT Quick Start Enablement

AVNET

1
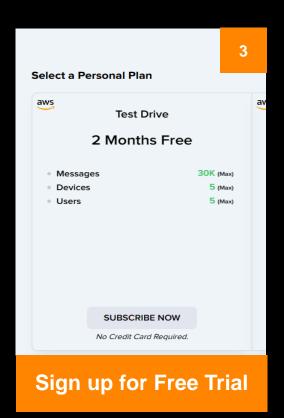
Pick a Board

Access our quick start landing page to look at the variety of developer board options that we have enabled. Select which board fits your need.

2

Access GitHub

Click the GitHub link to see the sample code we have created for each of these developer kits. These include templates and dashboards.
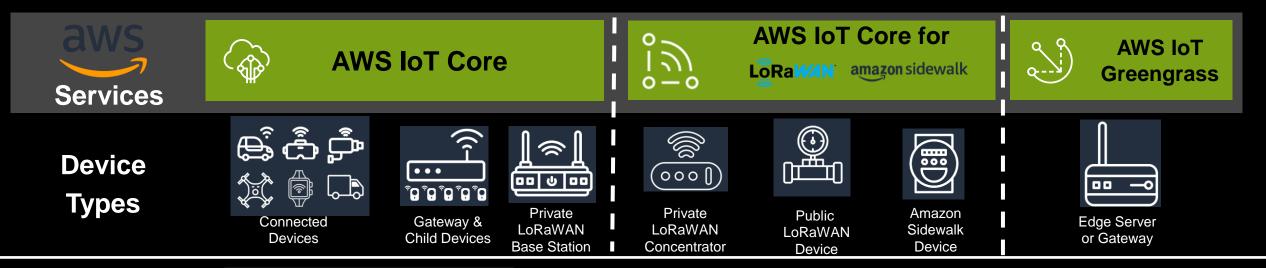

3

Sign up for Free Trial

Using the provided link from the quick start guide, sign up for a free /IOTCONNECT account and demo all of the design acceleration features.

4

Start Developing

With dynamic dashboards and easy onboarding widgets, /IOTCONNECT makes designing for your application simple, secure, and scalable.

Appendix

/IOTCONNECT Supports All Devices

AVNET

Services	AWS IoT Core	AWS IoT Core for LoRaWAN amazon sidewalk	AWS IoT Greengrass

Device Types

Connected Devices | Gateway & Child Devices | Private LoRaWAN Base Station | Private LoRaWAN Concentrator | Public LoRaWAN Device | Amazon Sidewalk Device | Edge Server or Gateway

Device Enablement

GitHub

/IOTCONNECT®

AVNET /IOTCONNECT

freeRTOS

AWS IoT Greengrass

DEB

ECLIPSE FOUNDATION ThreadX

yocto LINUX

/IOTCONNECT enables ALL devices types through a single pane of glass.

/IOTCONNECT Building Blocks w/ AWS

/IOTCONNECT Cloud

IoT Device → /IOTCONNECT SDK → Edge Application & Analytics → Control Path → Data Path → Biz Application Visualization → Advanced Analytics & AI

FreeRTOS Python Greengrass IoT Core RDS QuickSight SageMaker

C EventBridge S3 Data Lake Grafana

Transport amazon sidewalk LoRaWAN PRIVATE | PUBLIC Kinesis S3

Lambda DynamoDB
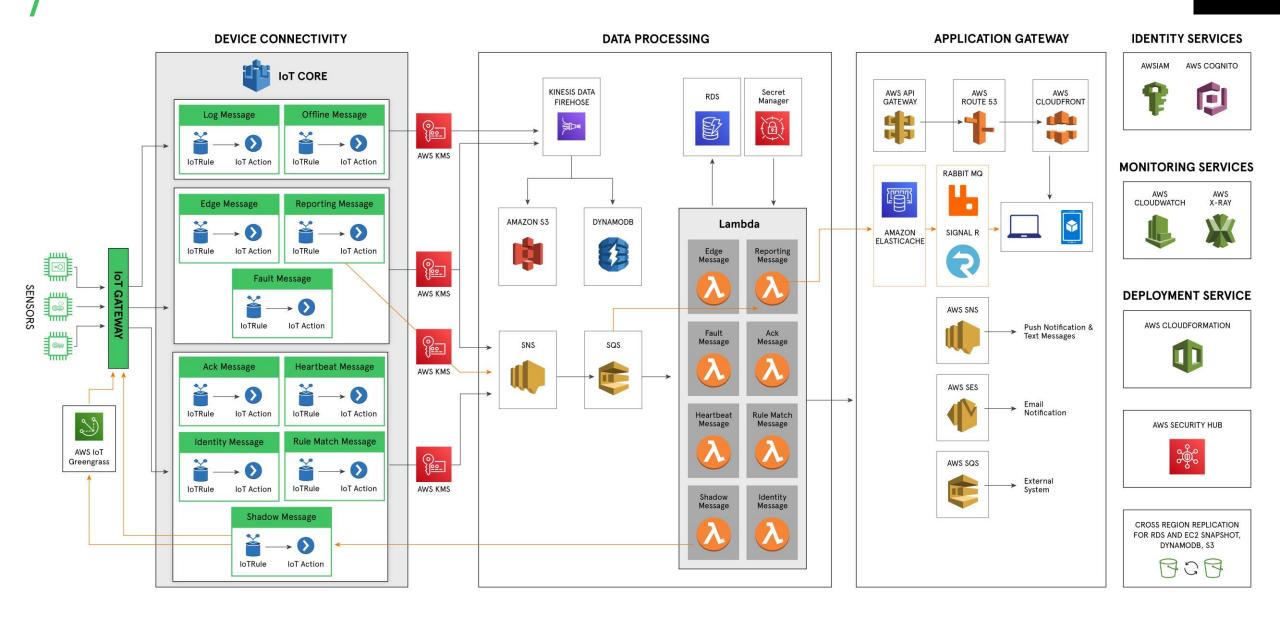
/IOTCONNECT Platform Architecture

/IOTCONNECT Developer Personas

**Device Builders &
Deployment Managers**

- Device, User, Roles, and Entity Admin
- Security manag
- Basic dashboarding
- Internal Ops

**Application & UX
Developers**

- RESTful API
- Predictable URLs
- Intelligent error handling
- OAuth 2.0 authentication
- Access to all IoTC functions

**Cloud Developer
& Data Science**

- Dynamo DB, S3
- Signal R
- MQTT
- Grafana
- AWS SNS

/IOTCONNECT SDKs: Deliver a Positive Developer Experience

Objectives:
- Deliver device-builders a positive developer-experience
- Integrate into the Avnet Supplier's development flow and ecosystem
- Provide confidence for a successful outcome at the onset of our customer's IoT journey

Software Resources
- /IOTCONNECT Enablement, Witekio, and Softweb service teams
- Access to global and scalable Avnet software services
- Skills: C, Python, Java, OS/RTOS, Applications, AI/ML

Deliverables
- /IOTCONNECT Library
- SDK (C / C# / Python / …)
- Test Strategy

- Platform Targeted Samples
- Developer Guide
- QuickStart Experience

Device Enablement: SDKs

Generic SDKs

Multiple Languages and Environments

Platform-specific SDKs

Development Boards and Embedded Hardware

https://docs.iotconnect.io/iotconnect/sdk/
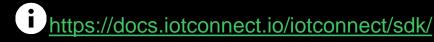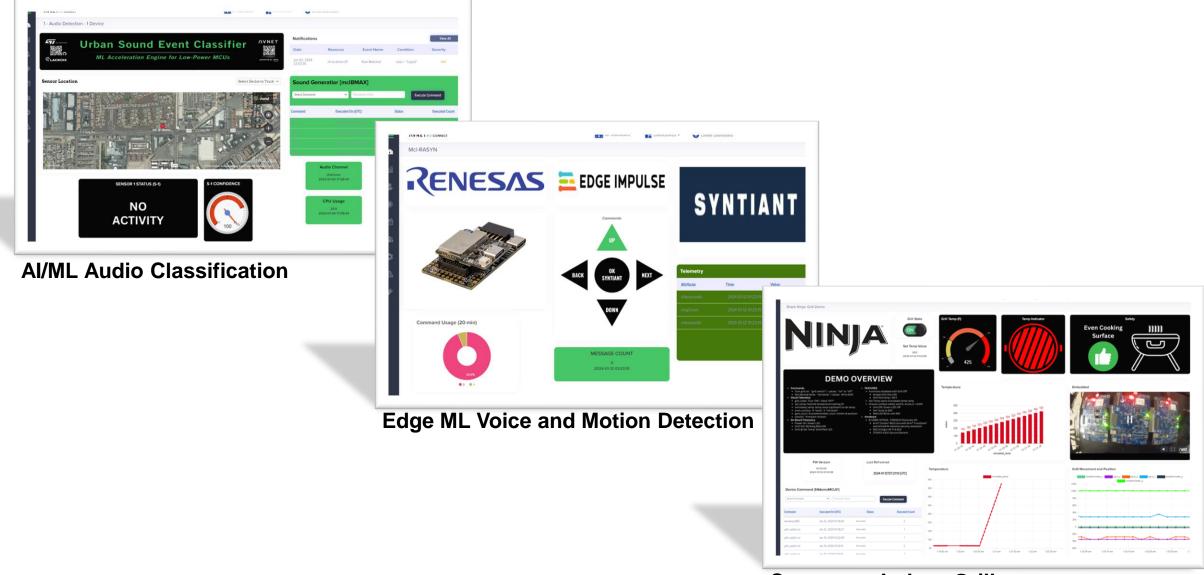
https://github.com/avnet-iotconnect/

/IOTCONNECT AWS Demo Examples

AI/ML Audio Classification

Edge ML Voice and Motion Detection

Consumer Indoor Grill