IoT Stream Processing

https://sinetstream.net/

The "big data" generated by numerous indoor and outdoor IoT devices must be securely analyzed in real time to create various innovative services. SINET allows the construction of an end-to-end isolated HPC and IoT environment using VPN over mobile and wired networks. **SINETStream** is a software library that enables the easy development of secure and efficient IoT applications over the environment.

Mobile Network for IoT Applications by SINET

- **SINET** provides a VPN service that enables an isolated application environment among universities and/or clouds.
- **Mobile SINET** extends the VPN service to mobile networks including 5G and private 5G, allowing users to construct a secure IoT environment.
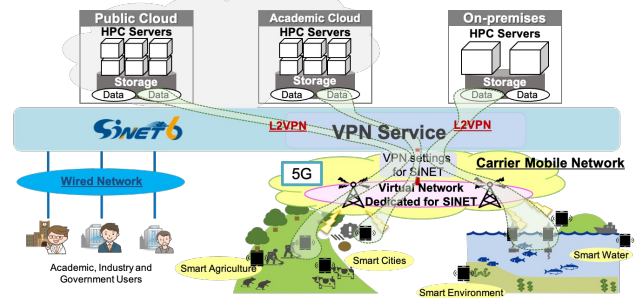
SINETStream: Software Library for IoT Applications

- **SINETStream** enables easy development of secure and efficient IoT applications, supporting Java, Python, and Android.
- It provides the following capabilities:
  - User-friendly APIs and CLI for stream data
  - AuthN, AuthZ, TLS, and data encryption
  - Metrics collection (total # and amt of msgs, comm rate, min/max/avg msg size, error rate, etc.)
  - Cooperation with stream processing
  - Data compression and decompression
  - Support for various brokers such as MQTT and Apache Kafka
  - Demo program packages that allow users to build their own IoT application systems
  - SINETStream Bridge program that relays messages between message brokers, such as edge and cloud brokers

SINETStream Overview

SINETStream Architecture
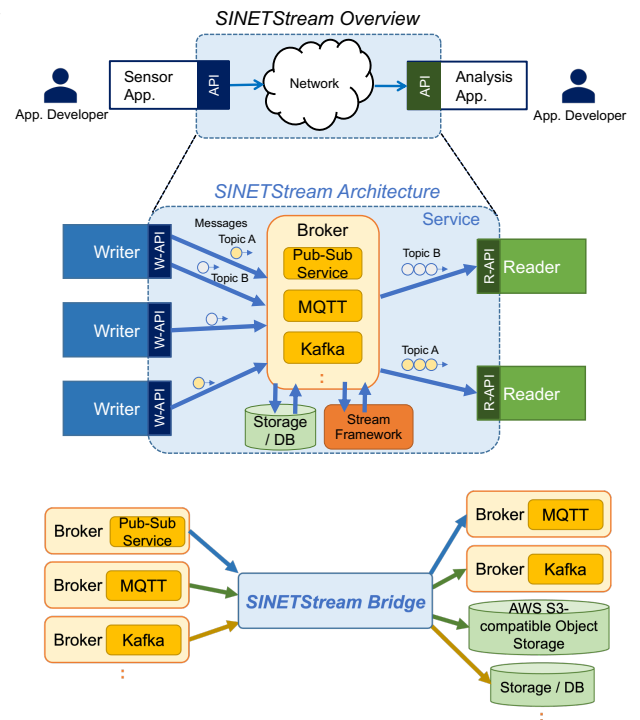
• Use Case: Mobile Animal Laboratory (Tokushima University)

Monitoring Results:
(a) Images of pigs in the cage.
(b) Temperature, humidity, and light.
(c) Temperature.

YouTube:

For more information, visit: