LITTLE IoT AGENT (LIOTA)

The Smart Little Agent for Big IoT

AT A GLANCE

Liota is a vendor-neutral, open source SDK for building IoT gateway applications to monitor and orchestrate data from the device to the cloud. Liota simplifies interaction between any device and any data-center component, through any gateway and over any transport protocol.

KEY BENEFITS

• Simplify IoT gateway application development in an easy to use environment

• Gain new insights through collection, analysis, storage and sharing of sensor data

• Allow faster adapting and scaling of IoT with changing business needs without having to pause for interoperability

• Save time by focusing on app innovation instead of creating different versions of the same app for different gateways

• Help manage gateways and devices at large scale, to insure reliability and robustness of IoT components before deployment.

The IoT Interoperability Challenge

Enterprise IoT is here to stay. Many organizations want to gain the benefits that come from IoT but hesitate because of the complexity of the endeavor. One of the main challenges that's holding back the deployment of IoT is a lack of common standards used by edge devices- including network protocols, communications protocols and data-aggregation standards. Needless to say, unless interoperability between "things" is achieved, enterprises will struggle to realize the full potential of their IoT implementations.

For a truly seamless, end-to-end connected experience, it is important to create an IoT app framework that supports interoperability. One step in this direction is to implement a 3-tier architecture which connects your devices to the data centers via intelligent gateways.
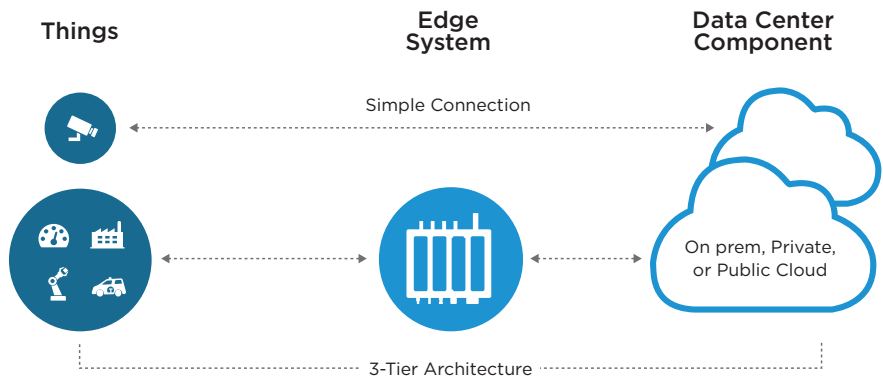
Although these gateways are excellent hubs, the problem of diverse IoT things in your organization being unable to speak the same language still persists. This is usually solved by creating different versions of an IoT application for different kinds of gateways/edge devices which can be a huge overhead. Liota was specifically created to simplify this task by providing a common model and building blocks for unified management, analytics, and security.

What is Liota?

Liota is a vendor-neutral, open source SDK for building IoT gateway applications for managing, monitoring and orchestrating data between things, gateways and the cloud/data center. Liota can help control where, when, and how to gather data from attached devices and transfer it to the cloud/data center. It does this by providing complete abstractions to accelerate the development of IoT applications and simplify connection and control flows across the 3-tier architecture.

LEARN MORE

https://octo.vmware.com/vmware-and-the-internet-of-things-liota/

https://github.com/vmware/liota

http://www.vmware.com/solutions/iot.html

Why should I use Liota?

Liota is functionally useful on any IoT edge system, and any of its attached devices, that require management. Liota (written in Python) resides primarily on IoT gateways, and provides a common way for enterprises to manage and leverage multi-vendor gateways within their IoT infrastructures. It allows interaction between any device and any data-center component, over any transport, and through any IoT gateway.

It is easy-to-use and has been successfully tested with many gateway and cloud components from both VMware and the community, such as AWS IoT, ThingWorx, IBM Bluemix and the open-source tool Graphite.

Key Features

Liota has abstractions which represent a complete data flow from a device attached to the edge system to an application in a data-center

Device
An Entity representing a device (a data-source attached to or on an IoT gateway or edge system)

DeviceComms
An abstraction of the communication mechanisms between a device and an edge system

Edge System
An Entity representing the hardware and software platforms of an IoT gateway or edge system

Metric
An Entity representing a time-series stream from a data source to a data-center application (a stream of (number, timestamp) tuples)

Data-Center Component
An abstraction of the protocol and format a DCC requires

DCCComms
An abstraction of the communication mechanisms between the edge system and data-center

Liota Dynamic Packages

Package Manager
Allows the loading and unloading of Liota packages

Device Discovery
Allows the dynamic discovery of pre-defined types of devices.

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