Eclipse IoT is providing a set of re-usable open source technologies that make it possible to connect, secure and manage the devices for your IoT solutions. Based on open standards and open source, the Open IoT Stack provides the building blocks that simplify the creation of IoT solutions.

The Open IoT Stack provides support for some of the key IoT open standards, including MQTT, CoAP, Lightweight M2M, DTLS and DNSSEC/DNS-SD. These are the standards that help to connect and manage the devices at the heart of an IoT solution. The following Eclipse projects provide open source implementations of these standards:

- **MQTT**: Eclipse Paho provides the MQTT client implementation in Java, C, C++, JavaScript, Python, etc. Eclipse Mosquitto is an MQTT broker implemented in C.
- **CoAP**: Eclipse Californium implements the CoAP standard in Java, including DTLS support.
- **Lightweight M2M**: Eclipse Wakaama implements the LwM2M client support in C/C++, and Leshan provide a Java-based LwM2M server.
- **DNSSEC/DNS-SD**: Eclipse Tiaki provides implementations in Java.
- **DTLS**: Eclipse TinyDTLS provides a C implementation of the Datagram Transport Layer Security (DTLS) standard.

For IoT to be successful, we need a consistent set of open source frameworks that anyone can use.
**WHERE WE ARE HEADNG: OPEN IOT STACK**

**IOT SOLUTION FRAMEWORKS**
- Home Automation
- SCADA
- ON2M

**CONNECTIVITY**
- MQTT
- CoAP
- LoRaWAN

**SECURITY**
- DNS-SD
- DTLS

**IOT GATEWAY SERVICES**
- Remote Management
- Application Management

**CONNECT AND MANAGE WITH IOT GATEWAY SERVICES**

IoT Gateways are used to manage the connectivity between the IoT devices and provide a platform for applications to be deployed at the edge of the network. Eclipse IoT provides a set of IoT Gateway services to help developers manage the devices and applications deployed onto IoT gateways. Eclipse Kura is a Java and OSGi-based framework that implements services to

- Manage cloud connectivity
- Support different protocols to connect to different servers or devices (ex. MQTT, Serial, Modbus, CANbus)
- Configure the network, such as Wi-Fi and cellular bearers, LAN, firewalls and routing, etc
- Allow for remote application and device management and configuration

**IOT SOLUTION FRAMEWORKS**

In addition to the core Open IoT Stack, Eclipse IoT provides a set of solution-oriented frameworks for Home Automation, SCADA systems and telco service providers.

**HOME AUTOMATION**

Eclipse SmartHome is a set of Java and OSGi services for building Smart Home and assisted living solutions. It provides an extensible framework (rules engine, declarative UI, etc.) that allows developers to integrate devices that support different protocols and standards for home automation.

**SCADA SYSTEMS**

Eclipse SCADA is a set of Java and OSGi services that implements many of the services required for a SCADA system, including data acquisition, monitoring, data and event archival, visualization and value processing. Eclipse SCADA supports many of the industrial automation standards, such as Modbus, Siemens PLC, SNMP and OPC.

**TELCO SERVICE PROVIDERS**

Eclipse OM2M is an implementation of the ETSI M2M standard. It provides a horizontal Service Capability Layer (SCL) that can be deployed in an M2M network, a gateway, or a device. Each SCL provides Application Enablement, Generic Communication, Reachability, Addressing and Repository, Interworking proxy, Entity Management, etc.

**ECOSYSTEM PARTNERS**

iot.eclipse.org