

# What is LinkSmart

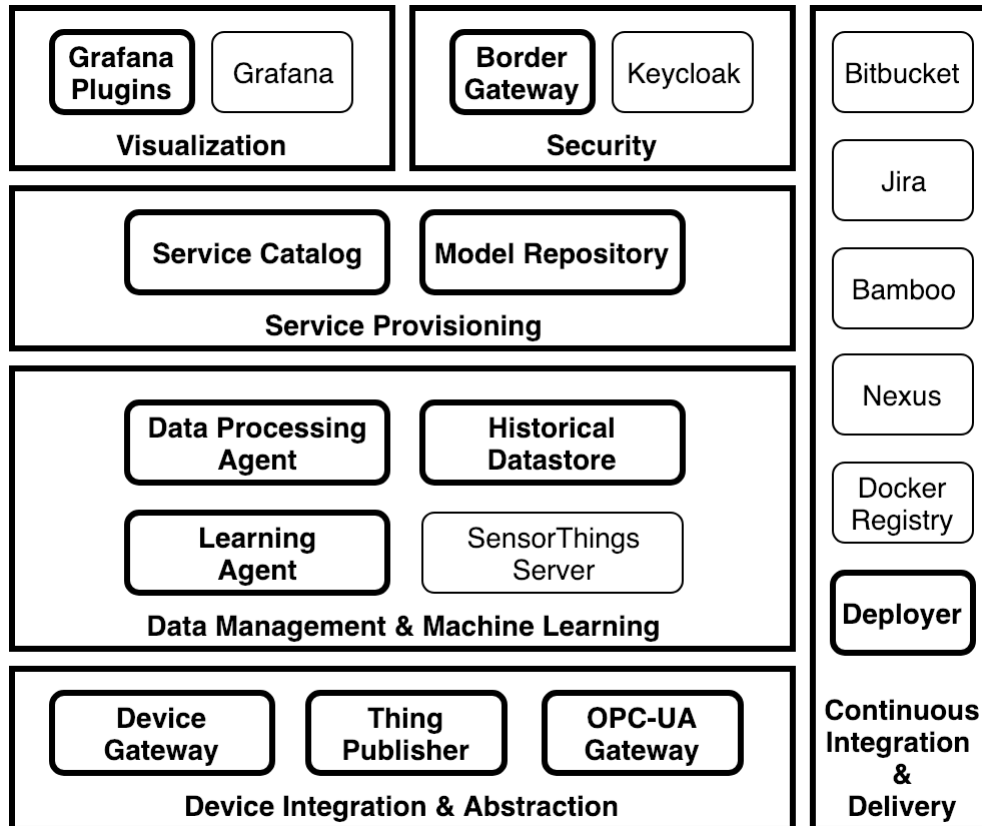


Figure 1. LinkSmart Platform components and DevOps infrastructure.

LinkSmart® is an open source platform for developing IoT applications in various domains, such as smart cities, Industry 4.0, smart grid, and much more. The platform provides building blocks as generic and domain-specific components to efficiently implement applications in the Internet of Things. These include components for device abstraction, data management, and online data mining. Following the [microservices](#) pattern, LinkSmart services can be arranged together depending on concrete use cases. The components are grouped into the following categories:

## Visualisation

The LinkSmart Platform provides out-of-the-box visualization for rapid prototyping based on [Grafana](#).

LinkSmart offers the following Grafana Data Source plug-ins:

- [Historical Datastore](#)
- [SensorThings](#)

## Security

Like any other environment, security in IoT is of utmost importance. LinkSmart offers services for uniform authorization, authentication, and accounting in common IoT protocols.

Related components:

- [Border Gateway](#)

## Service Provisioning

In an IoT infrastructure, the number of devices and services can grow quickly and their status' and connectivity can change dynamically. LinkSmart Service Provisioning helps to manage such infrastructure, i.e. keeping track of the running devices, services, systems, and sub-systems.

Related components:

- [Service Catalog](#)
- [Model Repository](#)

## Data Management & Machine Learning

Many IoT applications are dealing with large amounts of data that is generated by sensors and other devices. Depending on the use case, such data needs to be simply stored or processed in a more or less complex way. LinkSmart Data Management & Processing services account for this flexibility and allow for:

1. Efficiently storing, querying, aggregating (time-series) sensor data
2. Stream mining and on-demand data analysis
3. Stream learning and complex analysis processes

Related components:

- [Historical Datastore](#)
- [Data Processing and Learning Agents](#)

## Device Integration & Abstraction

The LinkSmart Device Integration & Abstraction services are responsible for two basic IoT requirements:

1. Connecting devices or subsystems to the world of IP networking.
2. Abstracting devices or subsystems into a unified API and data format.

As a result, LinkSmart provides endpoints (REST/MQTT) to access these devices/subsystems and allow interaction with other LinkSmart services.

LinkSmart provides the following connectors:

- [Device Gateway](#)
- [Thing Publisher](#)
- NiFi UPC-UA Bundle