IoT Services Orchestration Layer
– help you create IoT apps in minutes

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Problem Statement

Employing Cloud

Connecting the dots → IoT Solutions

Complexity expected ... ...

So, possible to make it easier & faster to

Make, Deploy and Manage ???

Intel® IoT Services
Orchestration Layer

Enabling a “Thing”

big data storage & analytics & intelligence

Internet of Things

Services
Many
Distributed
Dynamic
Heterogeneous

sensors actuators devices
Short Term Goal → Long Term Objective

Deliver a robust, extensible, high quality Solution for creating IoT Apps in minutes

IoT App Store - apps developed on one environment but deployable for many other environments similar but not exactly the same
Demo

**IF**

Temperature @ A

**>**

Temperature @ B

**THEN**

Turn on Fan

**ELSE**

Turn off Fan
Demo – Create Workflow

**Binding**: Dynamically map to real service provider
- e.g. a fixed Device ID, or a Query, or a function

**Pattern to Trigger Operation**
Configure to various data pattern
- AND – operate when **both** ports have data
- OR – operate when **either** port has data

**Services**
- standard or customized
Demo – Add UI into Workflow

Design what End User would see

HTML5 UI widgets behave like a virtual IoT Thing
Demo – End Users would see
Demo – Create New Customized Service

CRUD thing / service

JS editor to add logic for each stage of the service lifecycle

Use that in application
Intel® IoT Services Orchestration Layer

≈≈ Distributed Middleware + Web IDE

Transparent Remote Communication

Software Defined IoT Devices
(Device/Cloud/UIWidget → API/Service/Data)

Graphical Programming
Inspirations and Differentiations

- FBP (Flow Based Programming) variants: Node-Red, Noflo, …
- Unique features we offered – for IoT:
  - Holistic View of Entire IoT System
    - Remote communication are transparent to developers
  - UI as virtual IoT Things
    - Consistent development experience for logic and UI
  - IoT Oriented Workflow Engine
    - Dynamic Binding
    - Configurable Data Pattern for Multiple inports and outports
    - Traces
  - More in development

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Architecture

Colorful Items are part of our IoT Services Orchestration Layer

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Flexible Deployment Options

Smart Home

Vendor’s Store
Solution Vendors
3rd parties
Home Gateway
Home Users
Room Gateway

Vendor’s Store
Solution Vendors
3rd parties
Building Gateway / Cloud
Building Users
Building Admins

Vendor’s Store
Solution Vendors
3rd parties
Admins
Vehicle Gateway

Smart Building

Smart Transportation
Open Source Resources

• **v0.9 open source, BSD license**
  • [https://github.com/01org/intel-iot-services-orchestration-layer](https://github.com/01org/intel-iot-services-orchestration-layer)

• **v1.0 release by end of 2015, with more**
  • Documentation & Samples
  • Built-in Services & UI Widgets
  • Protocols supported

• **Future releases**
  • Enhancement for various verticals

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