THE CONNECTED SMART HOME FROM IOT TO CLOUD

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INTRODUCTION

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AGENDA

Introduce an architecture that enables an IoT Smart Home solution

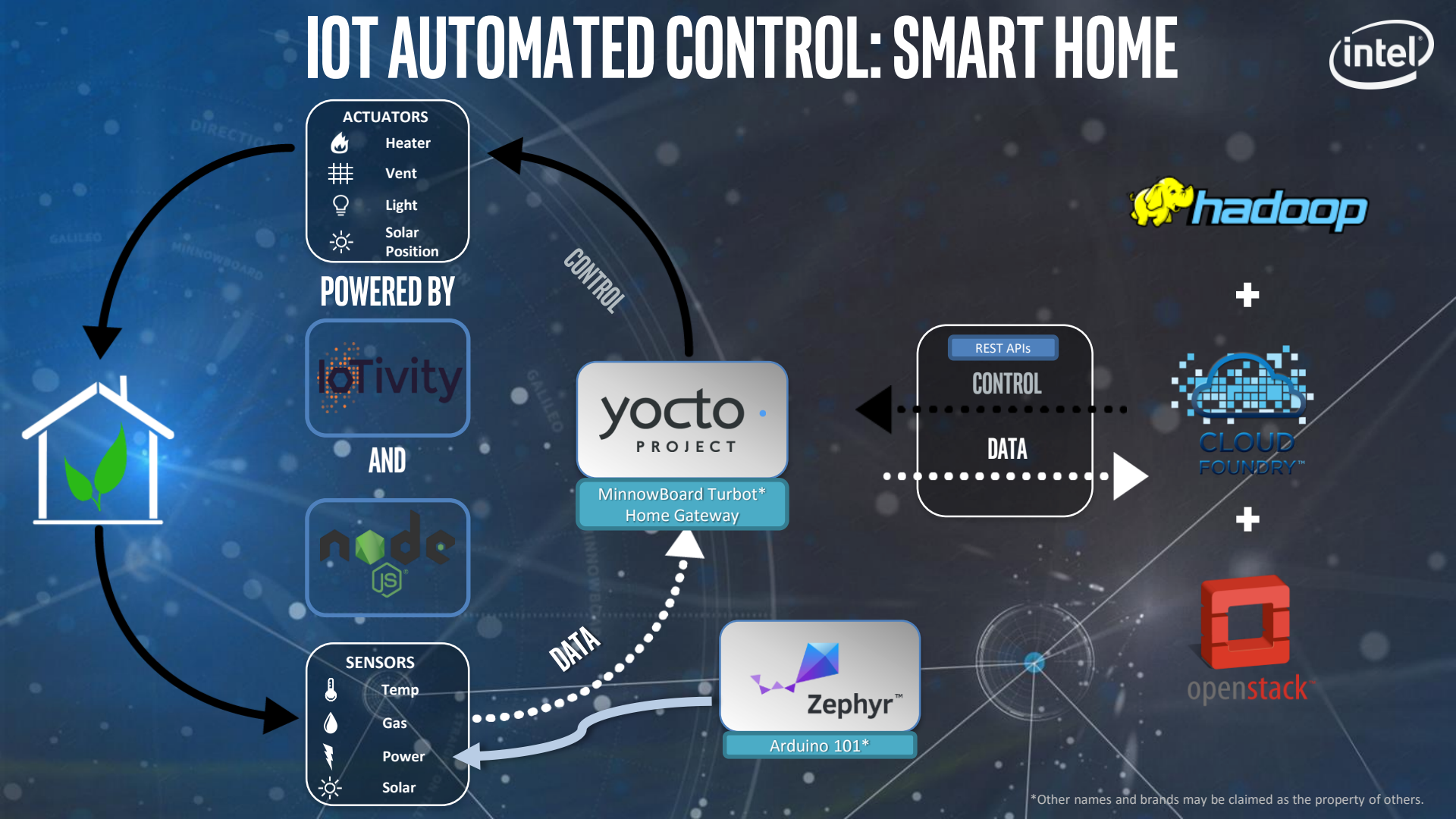
- Considerations for an IoT to Cloud solution
- The Building Blocks
- IoTivity* and the Open Connectivity Foundation*
- Web platform
- Application profile
- Cloud solution options

CONSIDERING AN IOT TO CLOUD SOLUTION

IoT solution architecture is a change
from the traditional application profile

- Based on open industry standards
- Freedom to change solutions
- Deployment and scalability
- Security

IOT AUTOMATED CONTROL: SMART HOME



*Other names and brands may be claimed as the property of others.

IOTIVITY* AND OPEN CONNECTIVITY FOUNDATION* (OCF)

Specification

Defines OCF framework including standard model for IoT devices, apps & services to interact

Stop fragmentation and increase device orchestration by creating a common **standard for IoT** device **connectivity**

IoTivity Open Source

Delivers reference implementation of OCF framework & translation layers for non-OCF devices

Ease developer burden through **open source code** availability and **royalty-free license**

Certification

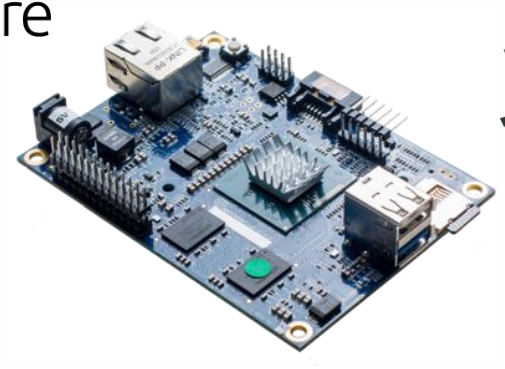
Ensures interoperability via compliance and interop testing

Ensure interoperability through a formal **testing and certification** program

THE IOT BUILDING BLOCKS

IoT REFERENCE OS KIT
for Intel® Architecture

Core

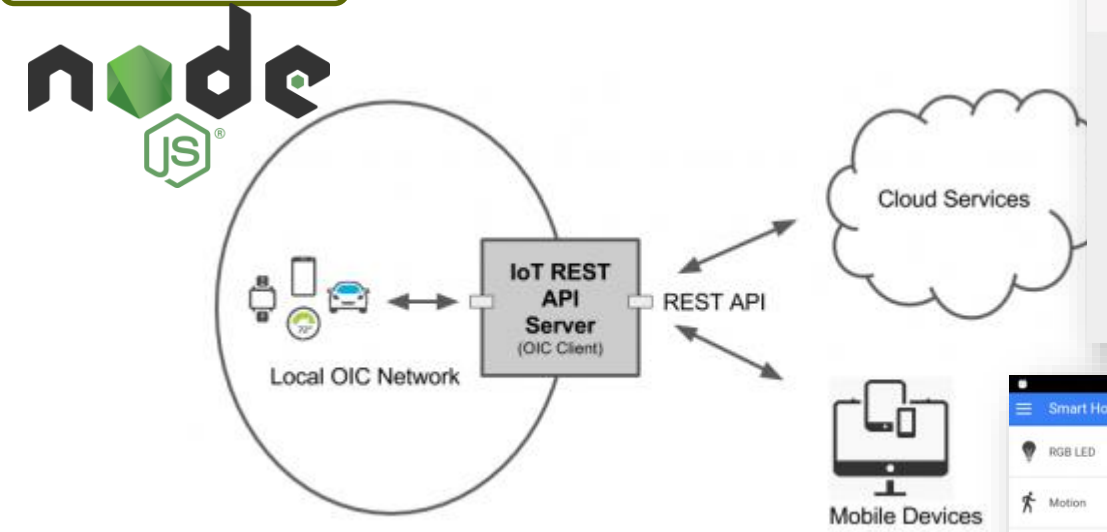


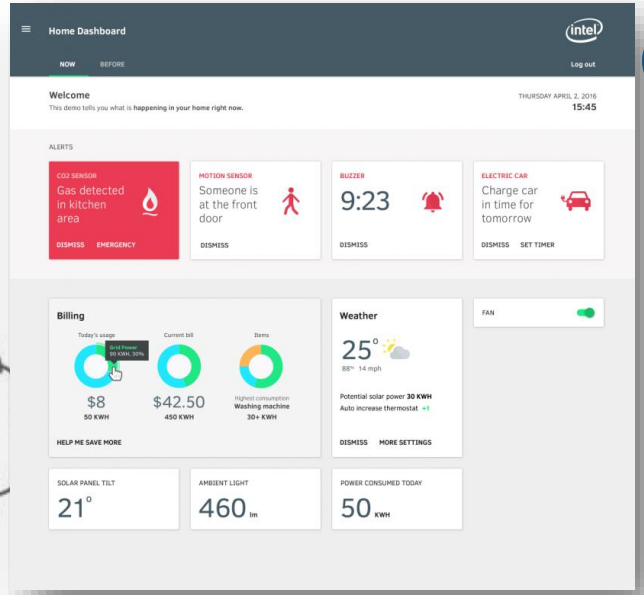
yocto PROJECT

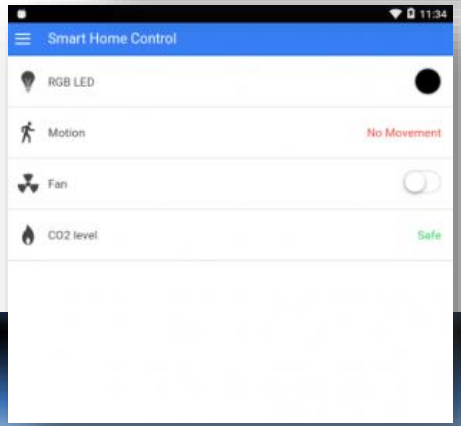
Zephyr™

WEB PLATFORM

IoTivity-node







JavaScript* Runtime for Zephyr™ OS

APPLICATION PROFILE

Behavior

- Steady and predictable
- High growth
- On-off
- Random or periodic bursting

Micro-services

- Application service
- Collection orchestration
- Growth and scalability

Lifecycle

- Upgrades and API compatibility
- CI/CD

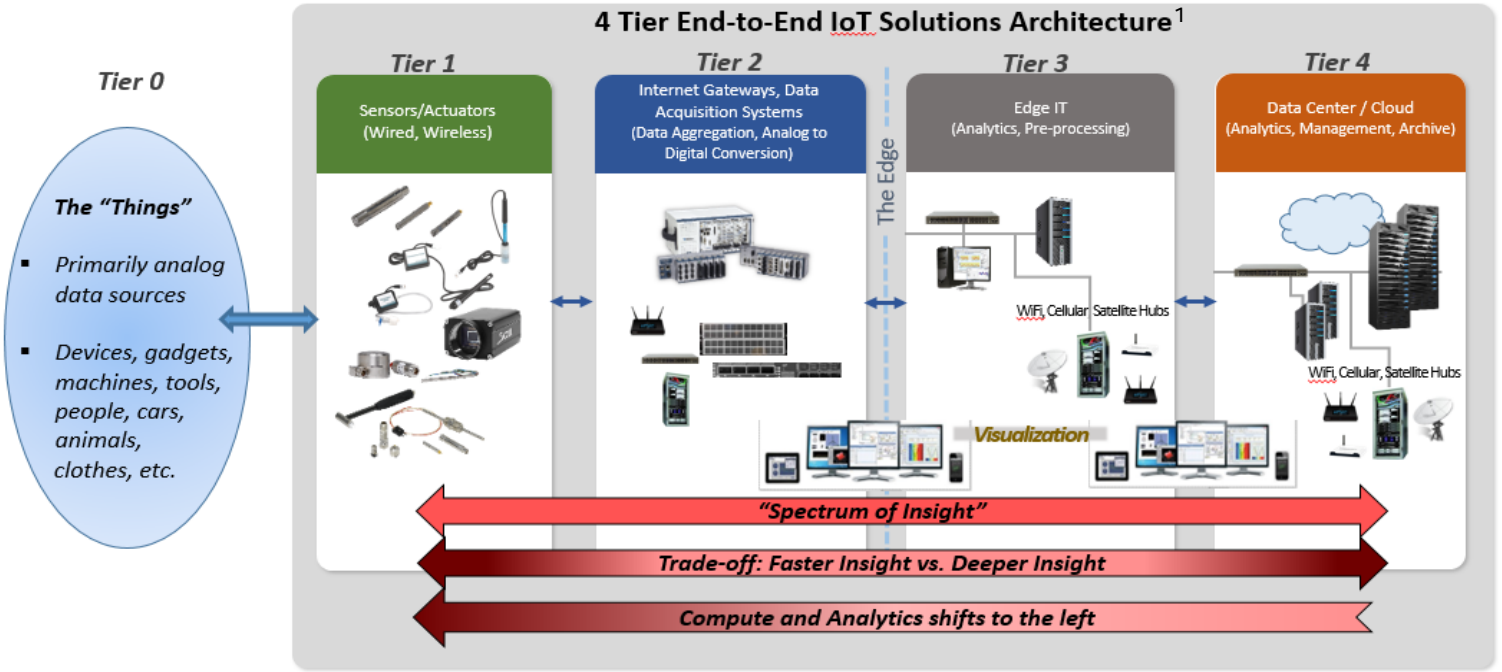
Security

- User authentication
- Network encryption
- Data encryption
- Patching
- Intrusion detection

Data

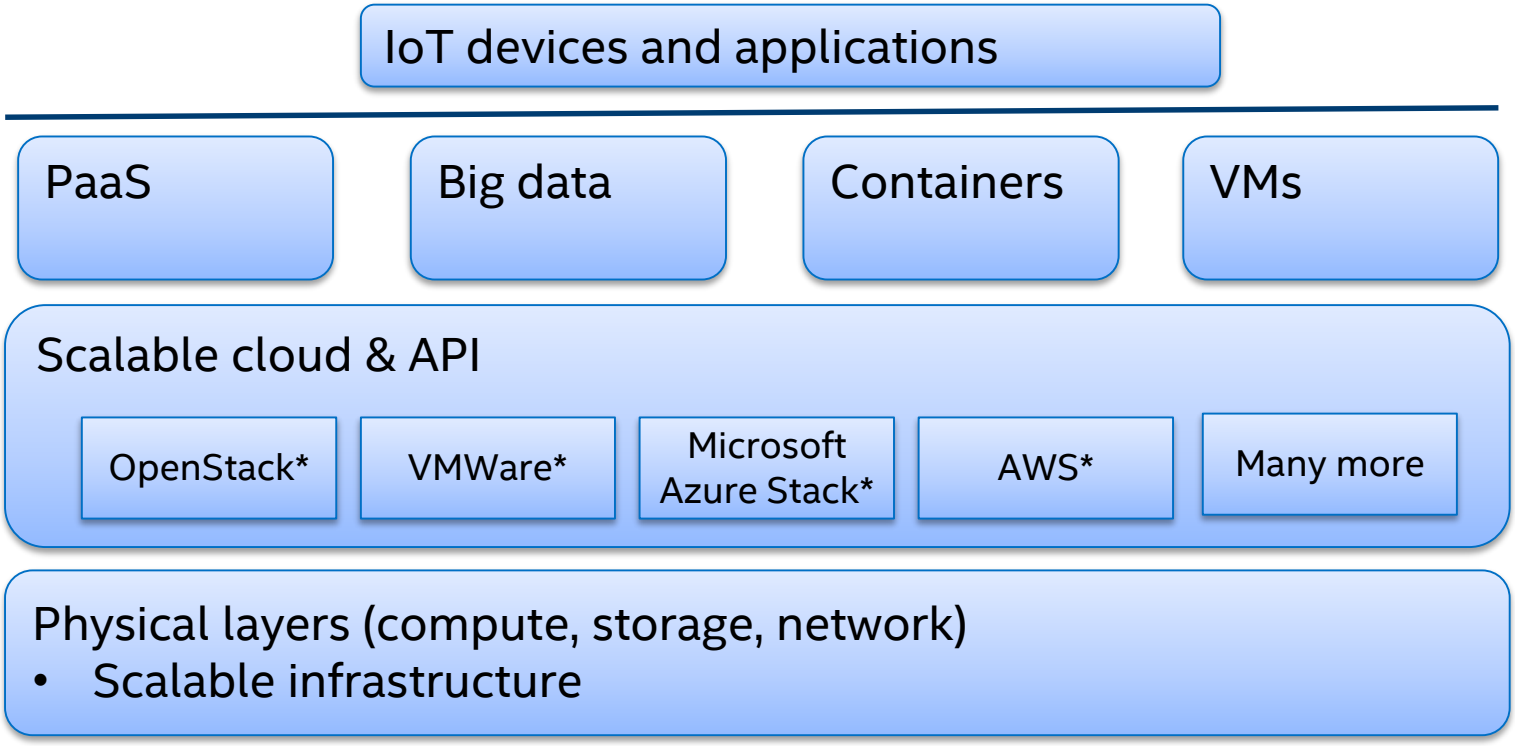
- Gathering
- Processing
  - Edge vs the cloud
- Retention
  - Edge vs the cloud

COMPUTE AND DATA: LOCATION IS EVERYTHING



1. "The 7 Principles of the Internet of Things (IoT)," Tom Bradicich, VP & GM, Servers and IoT Systems, Hewlett Packard Enterprise. Used with permission.

CLOUD REFERENCE ARCHITECTURE



IOT APPLICATION KEY POINTS

What is different about a deployment for IoT applications?

- Data management
- Balance of analytics location and control
- Scaling
- Micro services and API architecture (know your requirements)
- Loss of connectivity is not an issue, it is a feature -> design for failure

CALL TO ACTION

- Know your application requirements
- Plan for scalability, expect services to drop, devices to float on and offline
- Download the demo source and test your IoT solution
  - https://01.org/smarthome
- Check out IoTivity*
  - https://www.iotivity.org/

QUESTIONS?

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