

# Tie Die: IoT Onboarding and Control

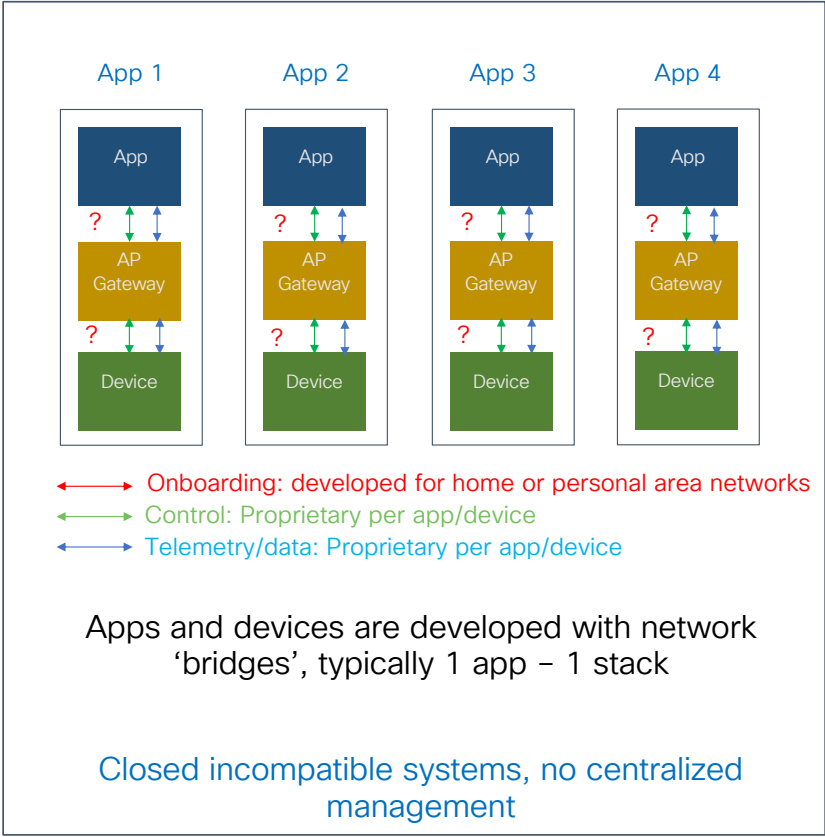
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IRTF T2TRG

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# What doesn't scale for the enterprise?

## Proprietary stovepipes

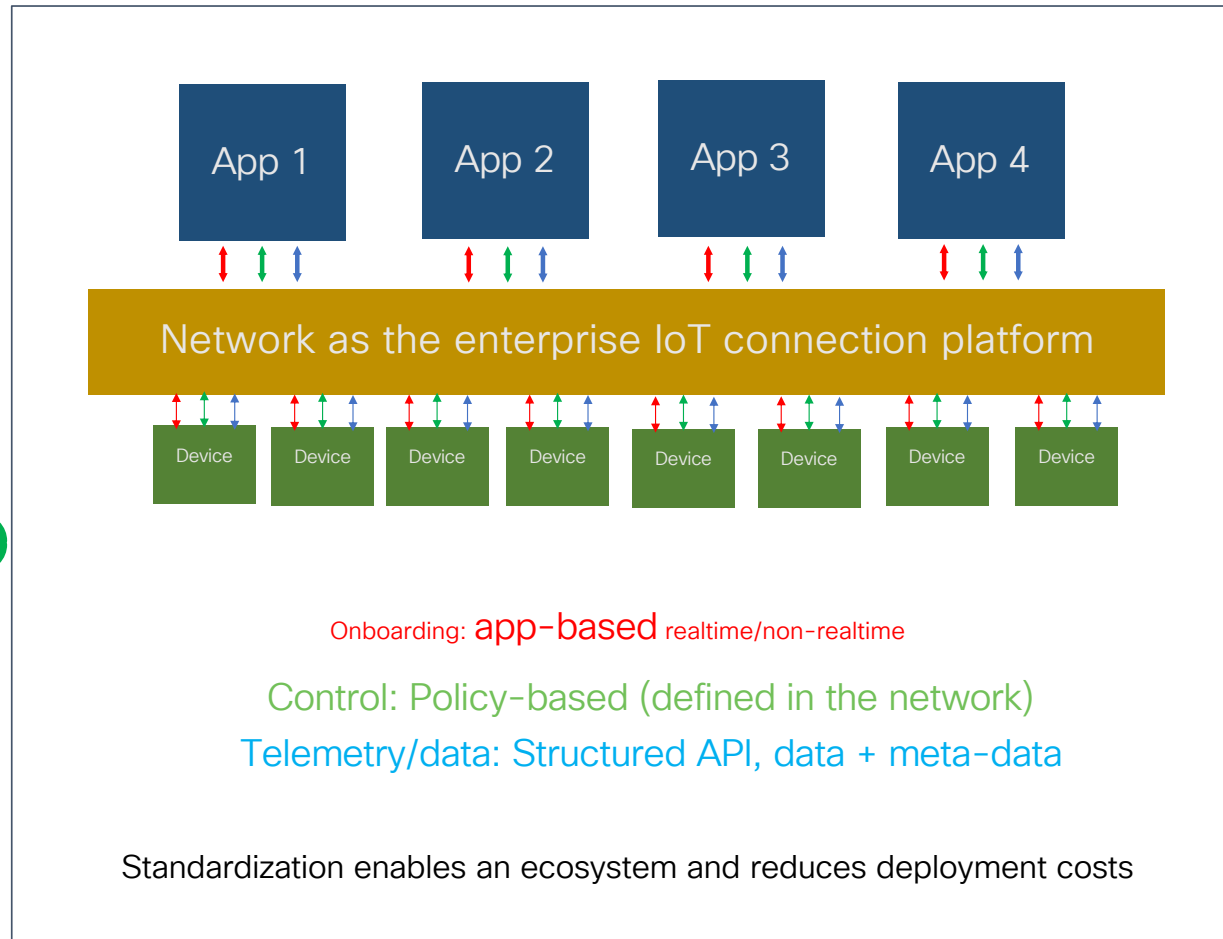


## Dongle Dash!



# Solving Silofication

## Standards-based approach

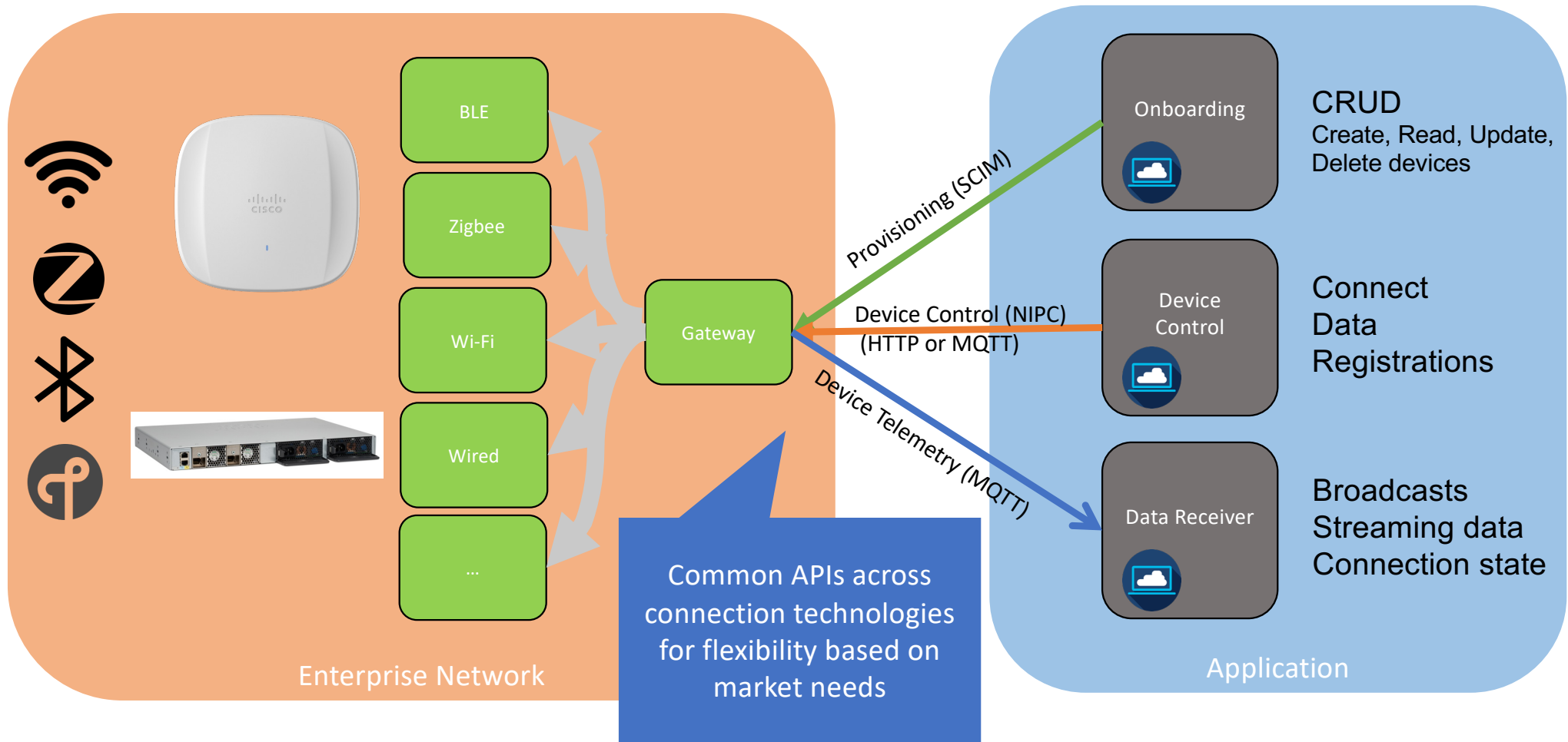


Dongle Dash and Stove Pipes



# Standardizing APIs:

## Accelerating use case deployment

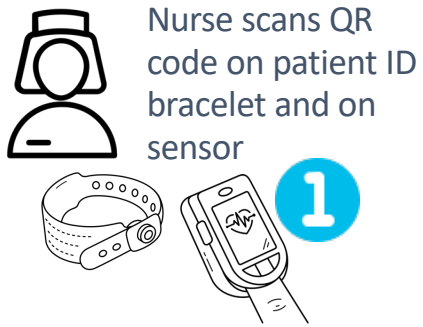


## Provisioning the device: System for Cross Identity Management (SCIM)

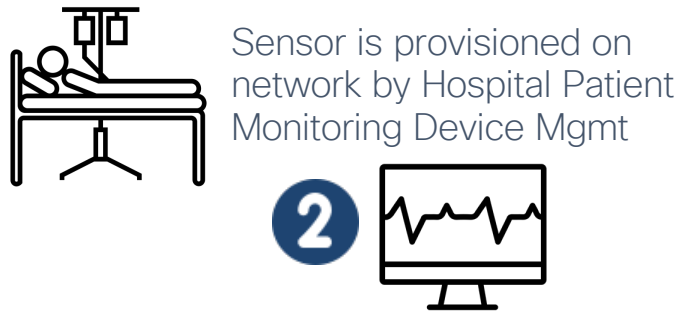
- (Mostly) RESTful interface to provision device access.
- Schema defined for each access / onboarding technology
- May be used as a dispatch interface for various types of connectivity
  - BLE, Zigbee, onboarding with DPP/Matter/Fido Device Onboarding/other
- Underlying technology in the device governs what needs to be communicated
- Also:
  - Don't take a position on L2/onboarding/ALG tech. Just dispatch to the next step.
  - Connectivity works in reverse from normal SCIM: enterprise deployment is the server, partner is the client.

## Application Layer Gateway Functionality for non-IP devices

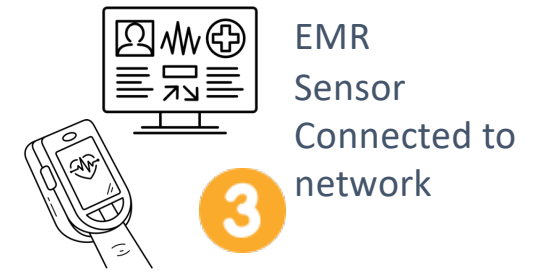
- Yeah, yeah, IP on everything, but...
- Provide **slightly** abstracted interface for common non-IP technologies like BLE and Zigbee (maybe also LoRaWAN).
- Works well with provisioned scim model since application endpoint can be provisioned in that model
  - Devices provisioned by an entity can only be controlled by that entity
- Support for:
  - reads, writes, indications & notifications, and bulk operations
  - Transmitting to groups of devices.
- Works with MQTT, might be made MQTT-native



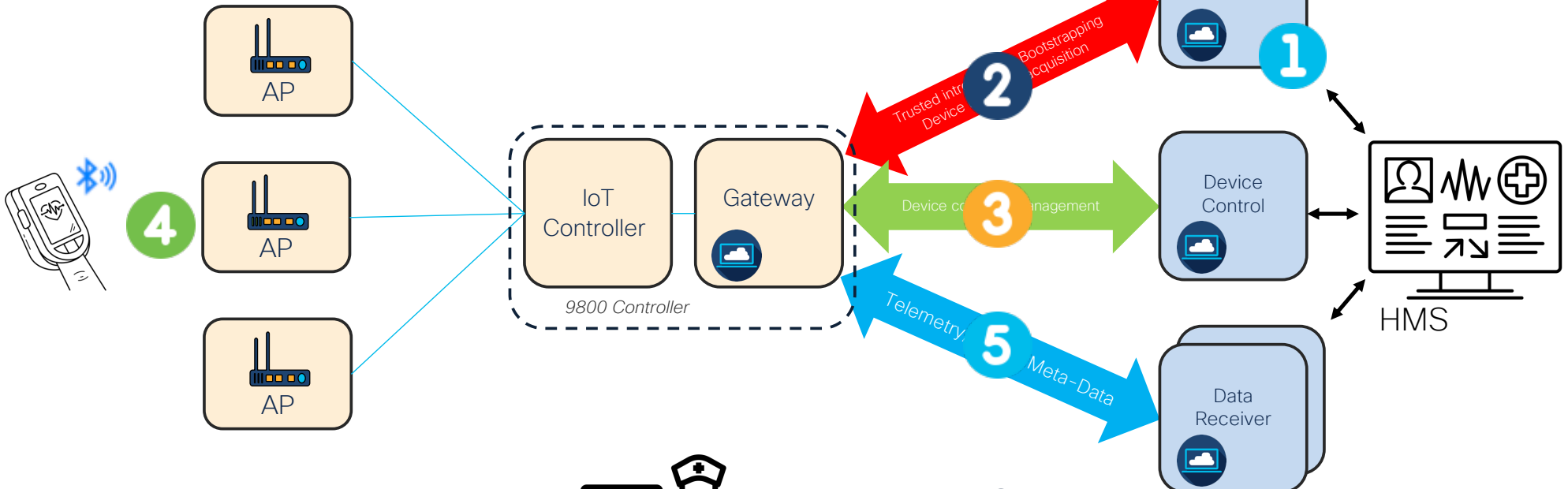
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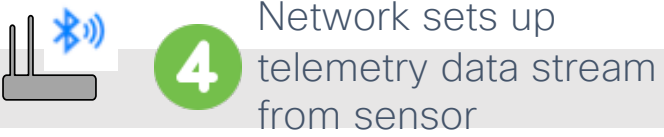
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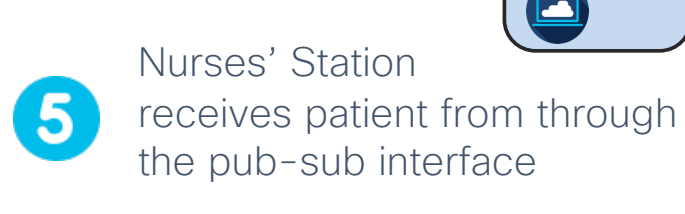
3



4



4



5

Trusted Intrusion Detection

2

Device Configuration Management

3

Telemetry

5

Meta-Data

Onboarding

1

Device Control

HMS

Data Receiver

IoT Controller Gateway  
9800 Controller

## What's out of scope

- These are application-to-network interfaces
- Application has very small number of points of contact
- Topology discovery is not necessary or supported
- Interpretation of application data by network is strictly out of scope
  - But might be possible anyway, depending on whether encryption occurs at higher levels.



## More info

- `draft-ietf-scim-device-model-01`
- `draft-brinckman-nipc-00`
- <https://github.com/iot-onboarding/tiedie>



Thank you.