



Use Case 1 - Asset Tracking

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Use Case 1: Asset Tracking

If you have an asset to be tracked using a BLE tag, you need to:

- Onboard the BLE device.
- Register topics for receiving the onboarded device advertisements over MQTT.

Consider a large factory with many moving carts, each equipped with a BLE tag.

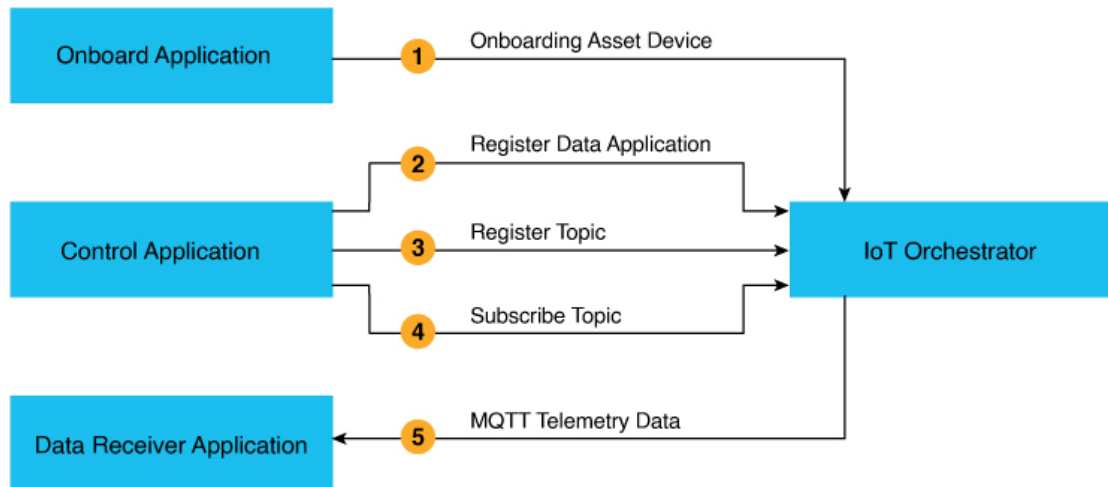
To track the location of a cart, you need to:

- Onboard the BLE device.
- Register topics for receiving the onboarded device advertisements over MQTT.

In this use case, the device to be tracked has the following details:

- Display Name: `Asset Tag`
- MAC Address Type: `Public`
- MAC Address: `EF:00:00:00:00:00`

For information on the BLE device tracking, refer to the following workflow:



The following workflow covers the sequence of operations:

1. [Onboarding a Device.](#)
2. [Registering the Data Receiver Application.](#)
3. [Registering a Topic.](#)
4. [Onboarded Advertisements Subscription.](#)

Onboarding a Device

Request Format:

```

curl -k --location 'https://10.195.78.33:8081/scim/v2/Devices' \
--header 'x-api-key: 5a9095d0457f24518bba93c50d69efe5' \
--header 'Content-Type: application/json' \
--data '
{
  "schemas": [
    "urn:ietf:params:scim:schemas:core:2.0:Device",
    "urn:ietf:params:scim:schemas:extension:ble:2.0:Device",
    "urn:ietf:params:scim:schemas:extension:endpointapps:2.0:Device"
  ],
  "deviceDisplayName": "BLE Heart Monitor",
  "adminState": true,
  "urn:ietf:params:scim:schemas:extension:ble:2.0:Device": {
    "versionSupport": [
      "5.3"
    ],
    "deviceMacAddress": "CA:2B:5C:EC:95:46",
    "isRandom": false,
    "mobility": false,
    "pairingMethods": [
      "urn:ietf:params:scim:schemas:extension:pairingNull:2.0:Device",
      "urn:ietf:params:scim:schemas:extension:pairingJustWorks:2.0:Device"
    ],
  },
}
'

```

```

    "urn:ietf:params:scim:schemas:extension:pairingNull:2.0:Device": null,
    "urn:ietf:params:scim:schemas:extension:pairingJustWorks:2.0:Device": {
      "key": null
    }
  },
  "urn:ietf:params:scim:schemas:extension:endpointAppsExt:2.0:Device": {
    "onboardingUrl": "onboardApplication",
    "deviceControlUrl": [
      "controlApplication"
    ],
    "dataReceiverUrl": []
  }
}

```

Response Format:

```

{
  "schemas": [
    "urn:ietf:params:scim:schemas:core:2.0:Device",
    "urn:ietf:params:scim:schemas:extension:ble:2.0:Device",
    "urn:ietf:params:scim:schemas:extension:endpointapps:2.0:Device"
  ],
  "id": "8ba69997-9062-4fc4-9d4e-6956c019c44b",
  "deviceDisplayName": "Asset Tag",
  "adminState": true,
  "urn:ietf:params:scim:schemas:extension:ble:2.0:Device": {
    "versionSupport": [
      "5.3"
    ],
  },
  "deviceMacAddress": "EF:00:00:00:00:00",
  "isRandom": false,
  "pairingMethods": [
    "urn:ietf:params:scim:schemas:extension:pairingNull:2.0:Device"
  ],
  "mobility": false,
  "urn:ietf:params:scim:schemas:extension:pairingNull:2.0:Device": null
},
  "urn:ietf:params:scim:schemas:extension:endpointAppsExt:2.0:Device": {
    "onboardingUrl": "onboardApplication",
    "deviceControlUrl": [
      "controlApplication"
    ],
    "dataReceiverUrl": []
  }
}

```

Registering the Data Receiver Application

You need to register a data receiver application with the app ID "dataApplication" to subscribe to the topic "enterprise/hospital/advertisements".

Request Format:

```

curl -k --location
'https://10.195.78.33:8081/control/registration/registerDataApp' \
--header 'Content-Type: application/json' \
--header 'x-api-key: 6aab774c4d474e387ffab9638c3f917f' \

```

```
--data '
{
  "controlApp": "controlApplication",
  "topic": "enterprise/hospital/advertisements",
  "dataApps": [
    {
      "dataAppID": "dataApplication"
    }
  ]
}'
```

Response Format:

```
{
  "status": "SUCCESS",
  "reason": "Data apps are registered",
  "topic": "enterprise/hospital/advertisements",
  "isOnboarded": true
}
```

Registering a Topic

You will need to register the topic "enterprise/hospital/advertisements" with the gateway to be able to subscribe to advertisements from the device with ID "8ba69997-9062-4fc4-9d4e-6956c019c44b".

Request Format:

```
curl -k --location
'https://10.195.78.33:8081/control/registration/registerTopic' \
--header 'x-api-key: 2215dec3718288ad9028d39864f87d4c' \
--header 'Content-Type: application/json' \
--data '
{
  "technology": "ble",
  "topic": "enterprise/hospital/advertisements",
  "ids": [
    "8ba69997-9062-4fc4-9d4e-6956c019c44b"
  ],
  "controlApp": "controlApplication",
  "ble": {
    "type": "advertisements"
  }
}'
```

Response Format:

```
{
  "status": "SUCCESS",
  "topic": "enterprise/hospital/advertisements"
}
```

Onboarded Advertisements Subscription

```
mosquitto_sub -h localhost -p 41883 -t enterprise/hospital/advertisements -u  
https://dataApplication --pw c4e80e0483af0a4394dfb6e3ec5e820b
```

```
$97cfed0b-6729-49a6-9285-92913a4b1e4a dnaspaces.io/iot"  
FF:00:00:00:00:01  
$97cfed0b-6729-49a6-9285-92913a4b1e4a dnaspaces.io/iot"  
FF:00:00:00:00:01  
$97cfed0b-6729-49a6-9285-92913a4b1e4a dnaspaces.io/iot"  
FF:00:00:00:00:01  
$97cfed0b-6729-49a6-9285-92913a4b1e4a dnaspaces.io/iot"  
FF:00:00:00:00:01  
$97cfed0b-6729-49a6-9285-92913a4b1e4a dnaspaces.io/iot"  
FF:00:00:00:00:01
```

