

SMART DOOR

컴퓨터공학과 신은섭 이규태

OVER VIEW



Goal

- NO Password, Just Open, Only Approved



Requirement

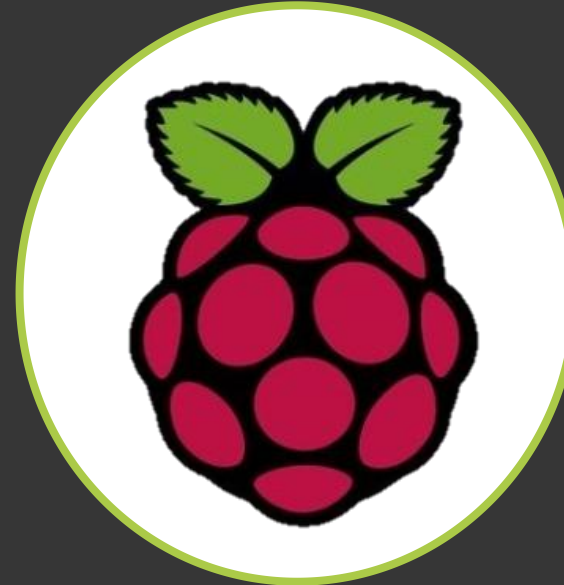
User Controller



Communication



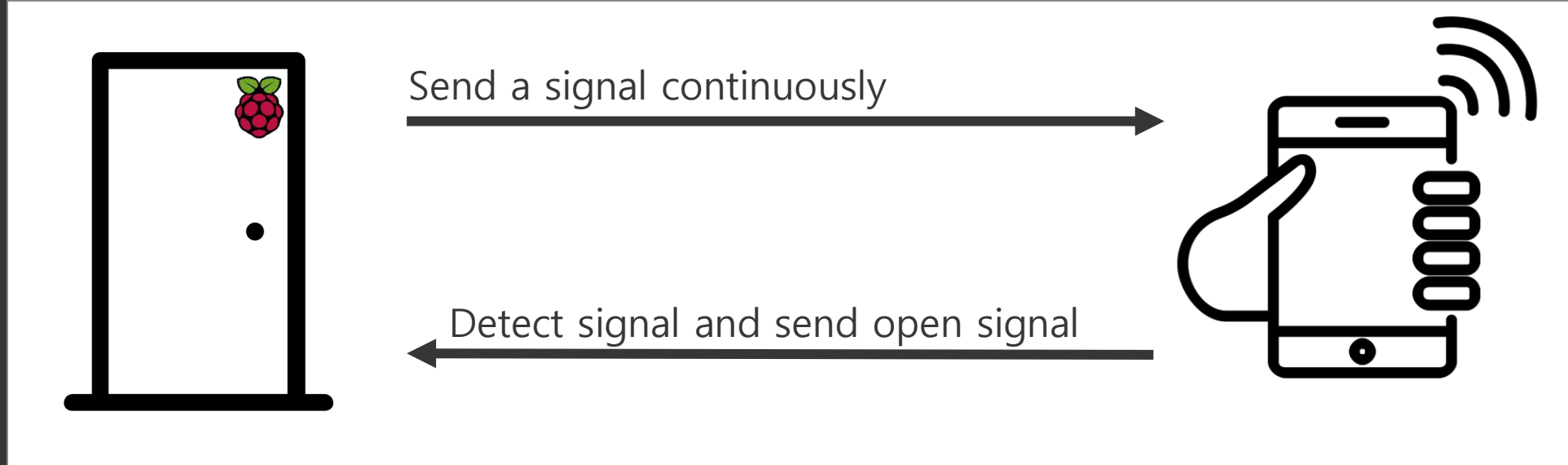
IOT Controller



AWS



Approach

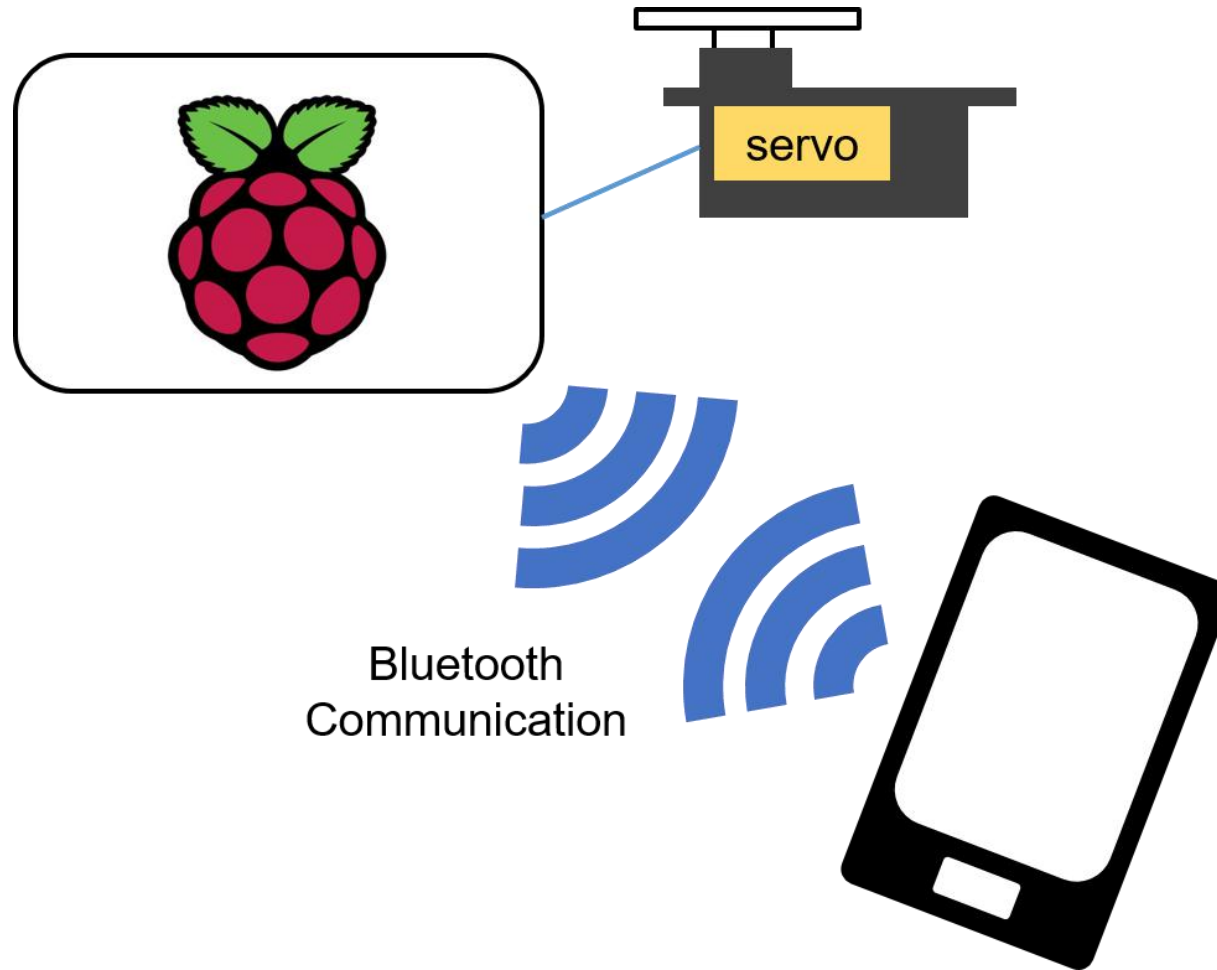


- 문에 부착된 장치가 블루투스 신호를 지속적으로 보냄
- 어플리케이션이 블루투스와 페어링 후 열림 신호를 전송함
- 장치가 등록된 사용자인지 확인 후 문이 열림

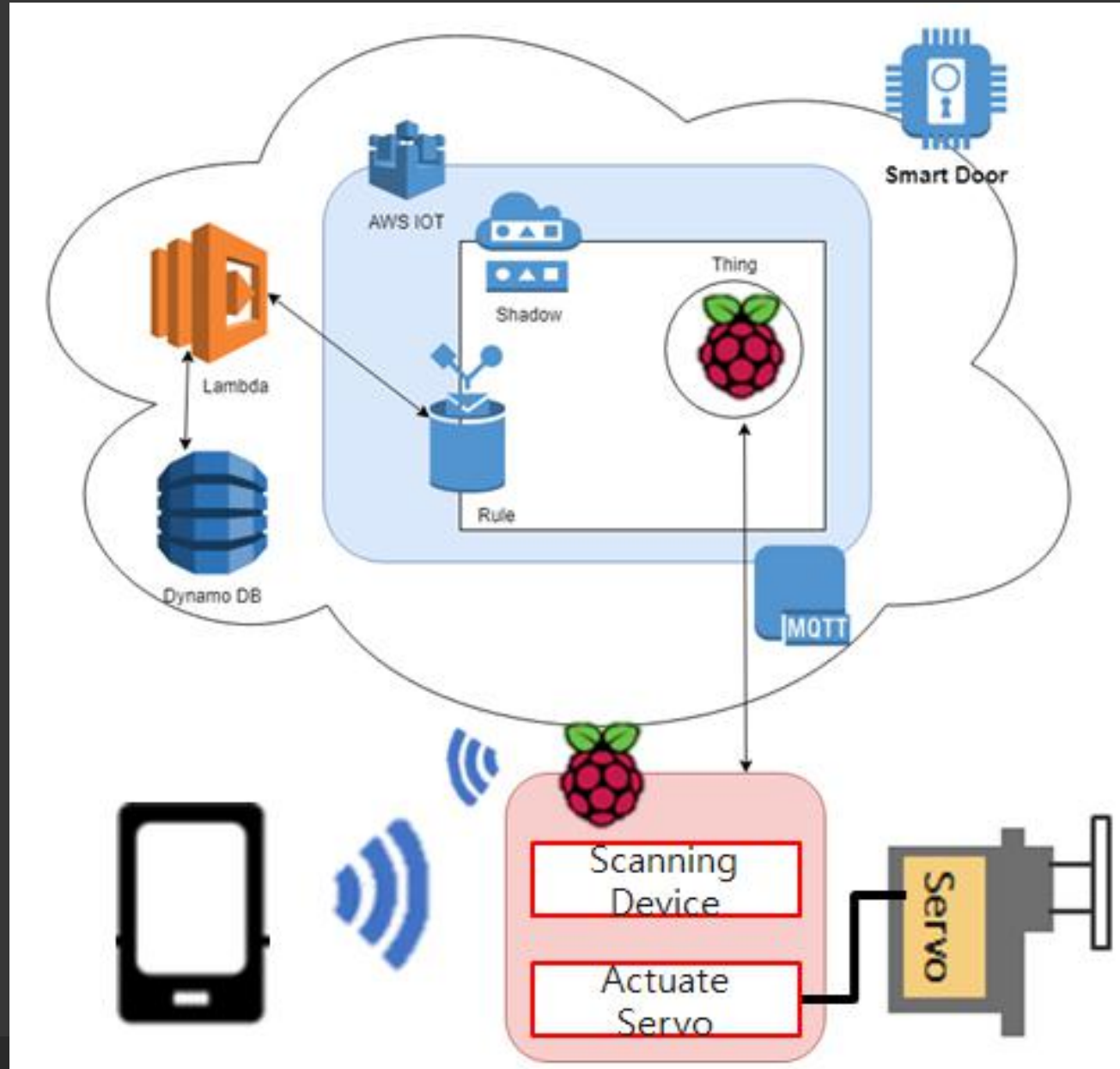
Development Environment

Content	Detail
IOT Board	Raspberry pi 3 b
IOT OS	Raspbian Stretch
Android OS	Android 8.0.0
Development Language	Python
IDE	VS code

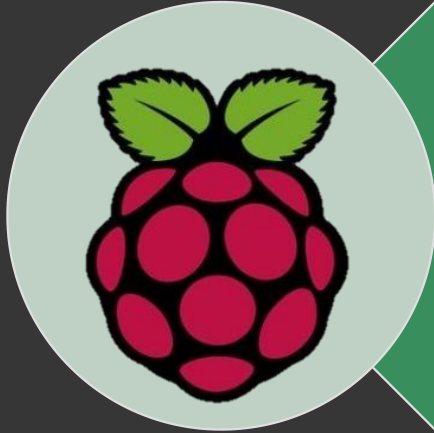
Architecture



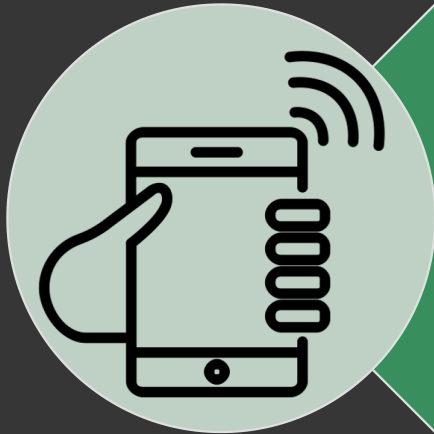
Architecture



Basic Spec



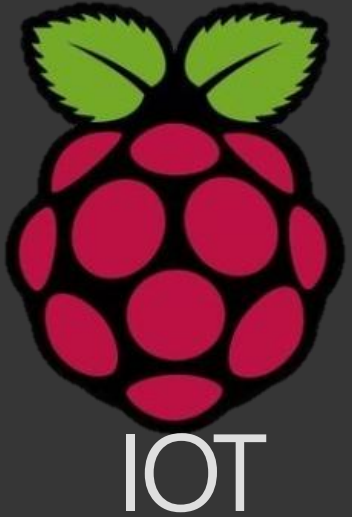
1. Bluetooth
2. Control Servo Motor
3. Receive 'Open' message and open door



Pairing and Sent 'Open' message

Current Status

Connection with Smart Phone



- Continuous device discovery using Bluetooth
- Pairing Device

Current Status

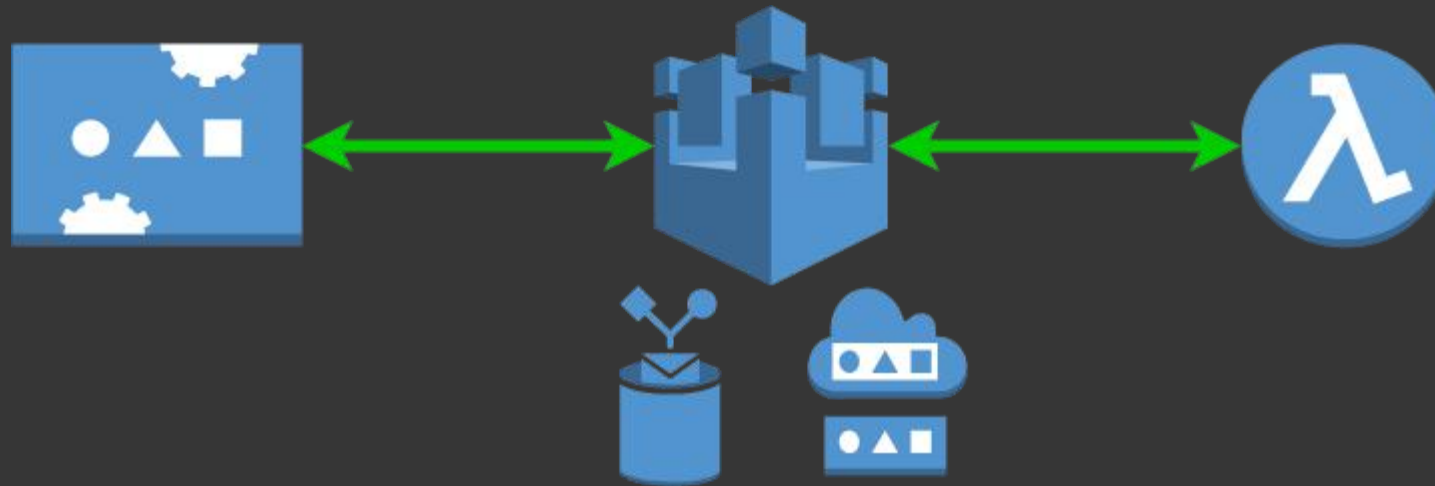
1. Door ID Update



저희 Smart Door은 보안을 위해 일정 주기로 Door ID를 Update 합니다.

Current Status

1. Door ID Update



Current Status

1. Door ID Update

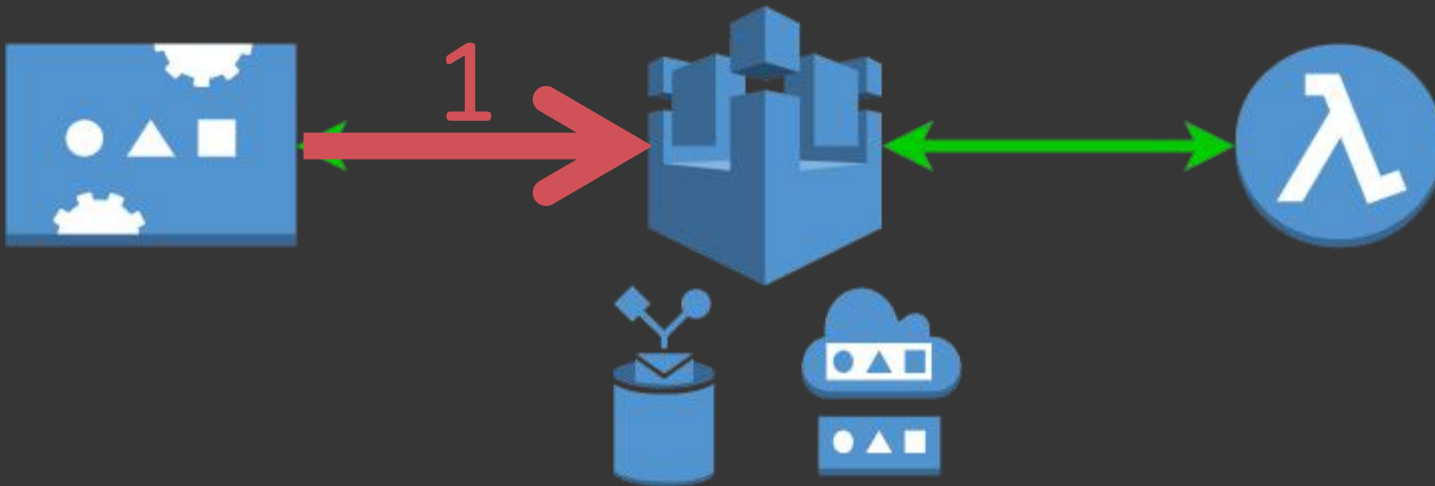
0. Initial State

```
{  
  "reported": {  
    "state": "Active",  
    "doorid": "P789G8GP"  
  }  
}
```



Current Status

1. Door ID Update

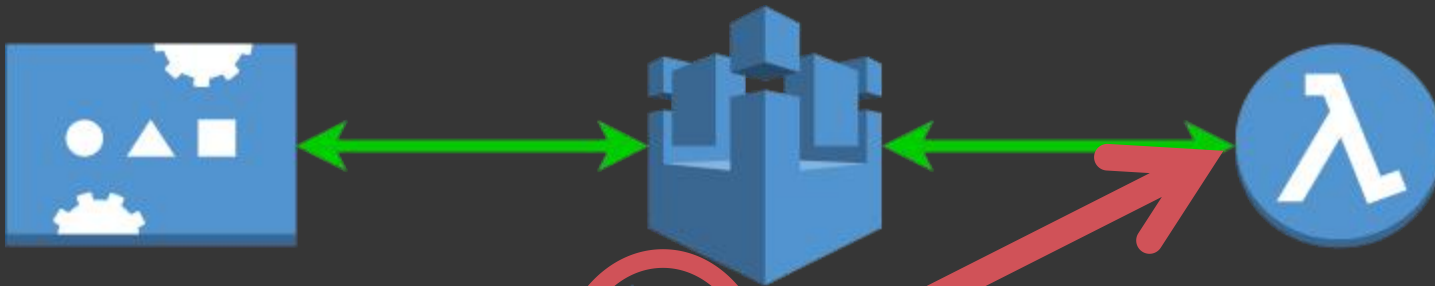


1. ID Request

```
{
  "desired": {
    "state": "RequireNewID",
  },
  "reported": {
    "state": "RequireNewID",
    "doorid": "P789G8GP"
  }
}
```

Current Status

1. Door ID Update



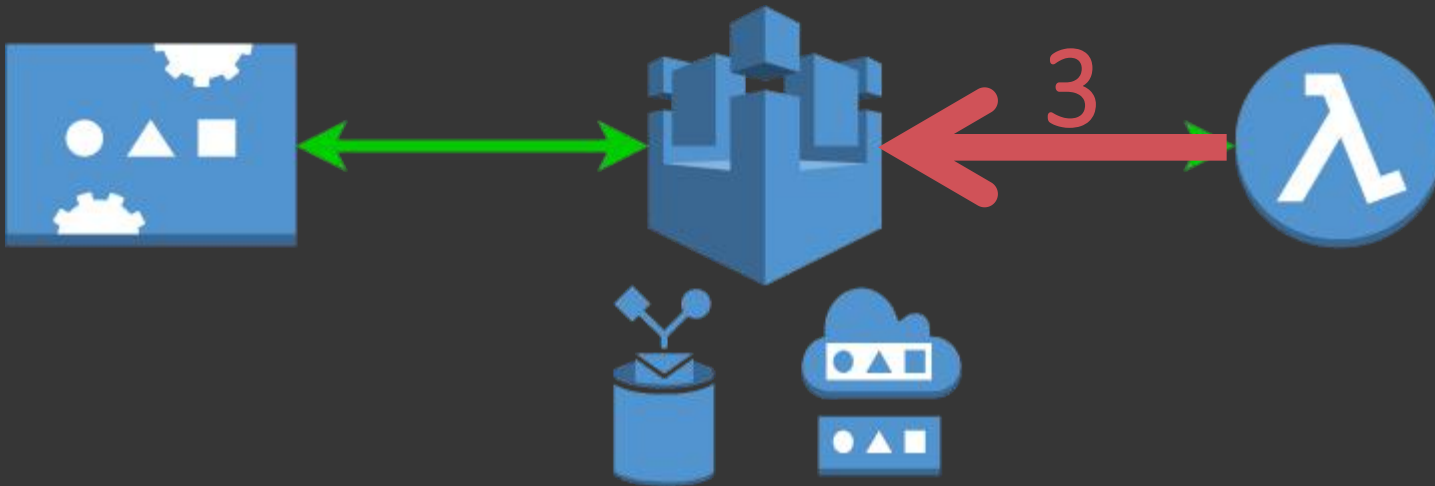
2. Capture Request

2

```
SELECT *, topic(3) as thingName  
FROM '$saws/things/+/shadow/update'  
WHERE state.desired.state = 'RequestNewID'
```

Current Status

1. Door ID Update

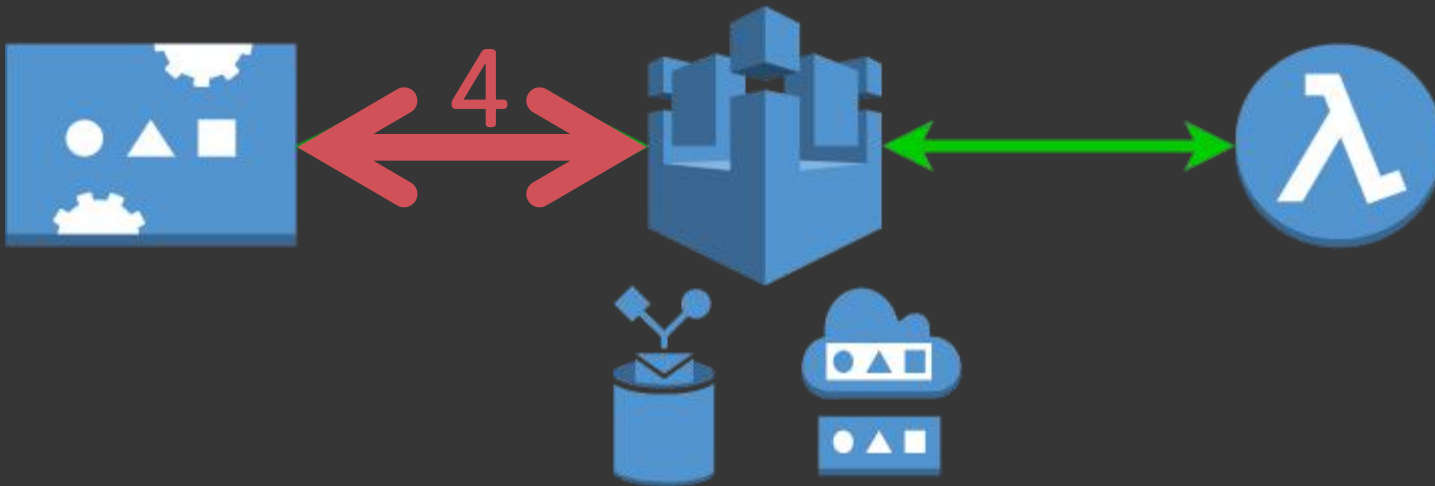


3. Generate New ID

```
{
  "desired": {
    "state": "Active",
    "doorid": "CRWI5SCT"
  },
  "reported": {
    "state": "Active",
    "doorid": "P789G8GP"
  }
}
```


Current Status

1. Door ID Update



4. Generate New ID

```
{  
  "reported": {  
    "state": "Active",  
    "doorid": "CRWI5SCT"  
  }  
}
```

Division & Assignment of Work

항목	담당자
Bluetooth Beacon	이규태
Control Servo Moter	신은섭
Receive 'Open' message and open door	신은섭
Scan Bluetooth beacon and Send Open Message	이규태

Schedule

내용	9월			10월				11월				12월	
	2	3	4	1	2	3	4	1	2	3	4	1	2
Bluetooth Beacon													
Issue New Thing ID													
Control Servo Moter													
Receive 'Open' message and open door													
Scan Bluetooth beacon and Sent Open Message													
Bug Fix and Demo test													

Q&A