Realising the value of workplace digital data

Making use of Wi-Fi information to optimise usage of workplace

Importance of **Wi-Fi** data

As more users migrate to a wireless platform for all their daily needs, including office work, more data is available through analysis of Wi-Fi data for digital transformation and workplace improvement. Those who do not adapt will be left behind. What can office managers do to incorporate these new insights into benefits for the workplace?

- Traffic analysis
- Hotspot analysis
- Network usage analysis
- Internet-of-Things Service Integration

Objectives and Goals

Generally, a few key objectives are universally seen as beneficial for an office workplace:

- Increasing Productivity
- Increasing Quality of Life (in the workplace)
- Fostering Good Communications
- Improving Morale
- Reducing Redundancies

The analysis of Wi-Fi data in our proposal will aim to address these goals in order to fulfill business needs and create a better workplace.

Understanding Wi-Fi data to better allocate office facilities

Problem

- A booking system for meeting rooms is usually implemented in most offices to ensure a proper system is in place for imperative amenities such as meeting rooms. However, human lapses such as forgetting to book meeting rooms can lead to lost time and lost productivity.

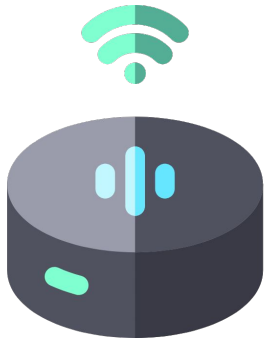
Wi-fi data as a solution

- Collect Wi-Fi data in all meeting rooms
- Rooms with heavy network traffic, indicating occupancy, will be marked as unavailable to book in the system itself

Alexa for Business

Features

- Collects information and data from users, devices, demographics and skills of the company
- Uses data to assist workers in a variety of tasks in the workplace such as conferencing, scheduling and reminders
- Versatile and potential for innovation with Alexa Skills Kit
- Scope to build on existing system to make Alexa even more flexible and multifaceted (**AWS Transcribe & AWS Personalise)**



Ease of configuration

Room profiles

Using a room profile, you can apply settings to multiple Alexa devices across similar rooms. Changing a profile updates the settings for all rooms with that profile. Learn more

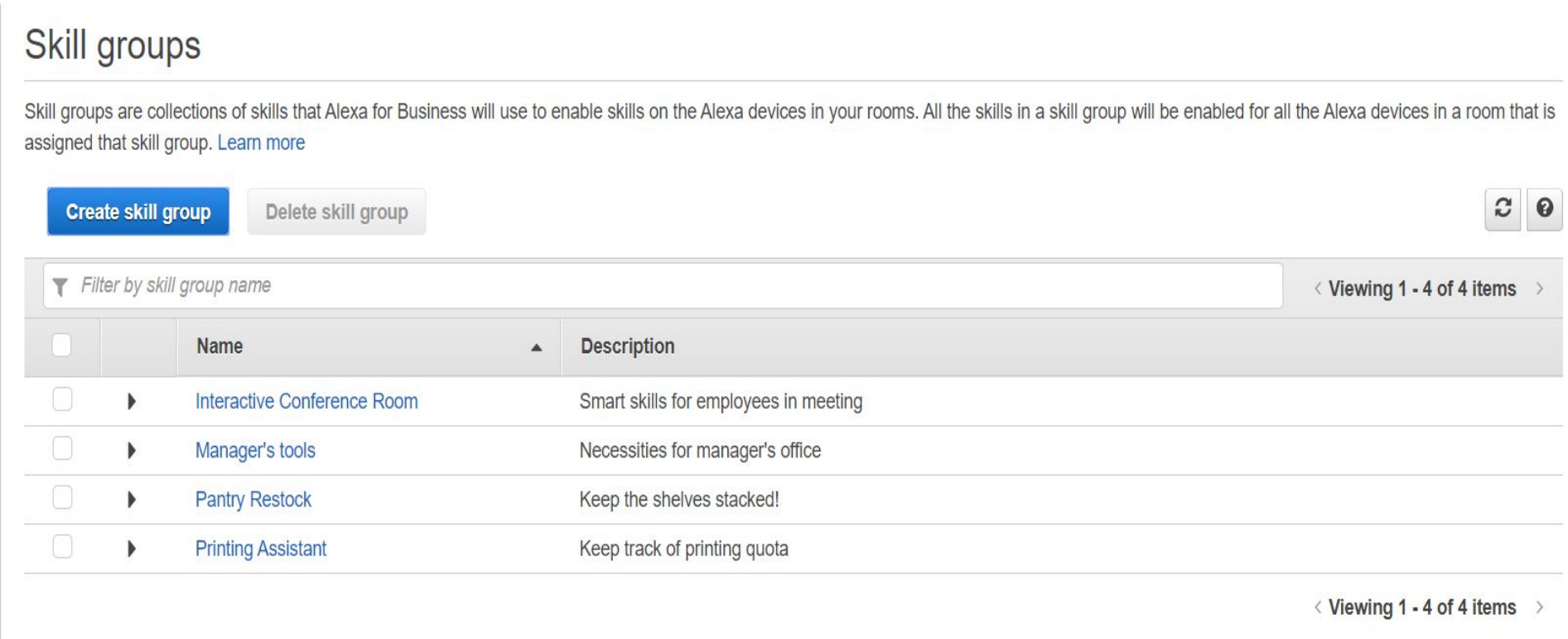
Create room profile | Remove room profile | Set as default | Remove default status

Filter by room profile attributes

Viewing 1 - 4 of 4 items

Name	Address	Default	Outbound calling
Briefing Room	22 Block Blvd Massapequa Park, NY 11762, US		Enabled
Interactive Conference room	22 Block Blvd Massapequa Park, NY 11762, US	Default	Enabled
Printing/Copying	22 Block Blvd Massapequa Park, NY 11762, US		Enabled
Private Offices	22 Block Blvd Massapequa Park, NY 11762, US		Enabled

Ease of configuration



Integrated solution with AWS Lambda

```
            .reprompt(speakOutput)
            .getResponse();
    }
};
const traffic = {
    canHandle(networkData) {
        return Alexa.getRequestType(handlerInput.requestEnvelope) === 'IntentRequest'
            && Alexa.getIntentName(handlerInput.requestEnvelope) === 'WiFi data collected';
    },
    handlerOutput (WiFi) {
        respond(data && manager);
        send;
    }
    handle(handlerInput) {
        const speakOutput = 'Data received';
        return handlerInput.responseBuilder
        Function processData {
            full;
            available;
        }
            .speak(speakOutput)

            avail(data) {
                if(true) {
                    return response1;
                }
                else {
                    return response2;
                }
            }
    }
            .getResponse();
    }
```

Further integration with Machine Learning

- Further improvements include Voice Recognition system ***[AWS Transcribe]***
- Analyse data for insights and relationships in scenarios where Alexa is used(time of day, frequency of usage by departments) ***[AWS Comprehend]***
- Collect data from ***Transcribe*** and ***Comprehend*** for Alexa to provide recommendations and personalised private skills for every individual ***[AWS Personalise]***

Improving quality of life through Smart IoT Integrations

Problem

- A conducive environment at work improves productivity and quality of work experience. Poor air quality and ventilation can increase stress among workers, causing headaches and other physical problems, a phenomenon known as “sick building syndrome”. It is thus important to ensure that air quality and ventilation in an office is consistently comfortable for the workers.

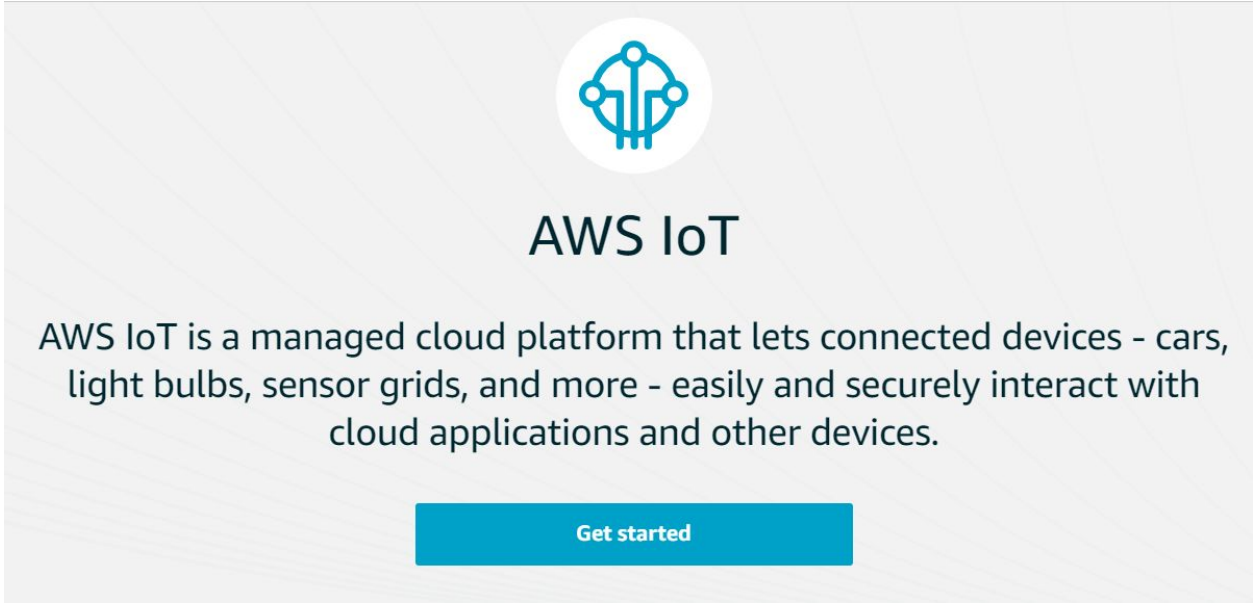
Wi-Fi data as a solution

- Wi-Fi data tracks usage of network in different areas and corresponds to human traffic in the area
- Power of ventilators and air filters can be increased according to Wi-Fi data collected real-time

How AWS provides solution: IoT Device Management

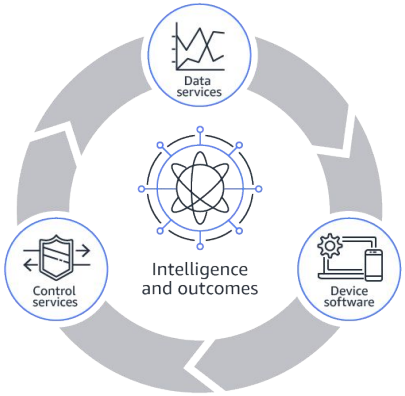
- Organize ventilators and air filters into groups for ease of access during days they are needed. This makes it easy to make real time decisions as to which devices to activate at any time
- Allows for activated devices to be found easily so that status of devices can be easily tracked. This makes it easier to detect faults in the devices, as well as switch them on or off depending on the situation

Improving quality of life through Smart IoT Integrations



- *Enables you to collect telemetry data from multiple devices, and store and analyze the data.*
- ***AWS IoT** integrates with services such as **AWS Lambda**, **Amazon S3**, and **Amazon SageMaker**, so you can build complete solutions, such as an application that uses **AWS IoT** to manage cameras and **Amazon Kinesis** for machine learning.*

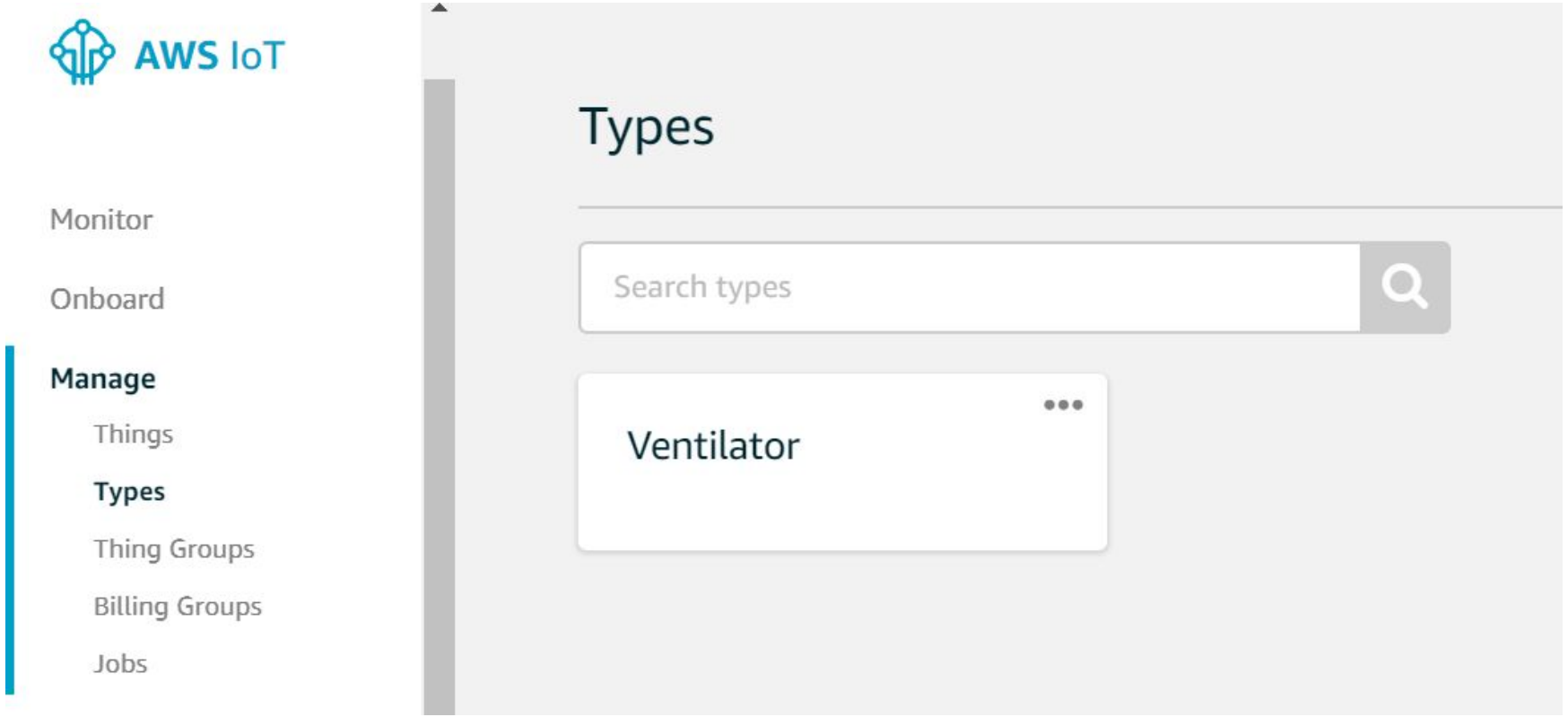
AWS Internet of Things (IoT) Services



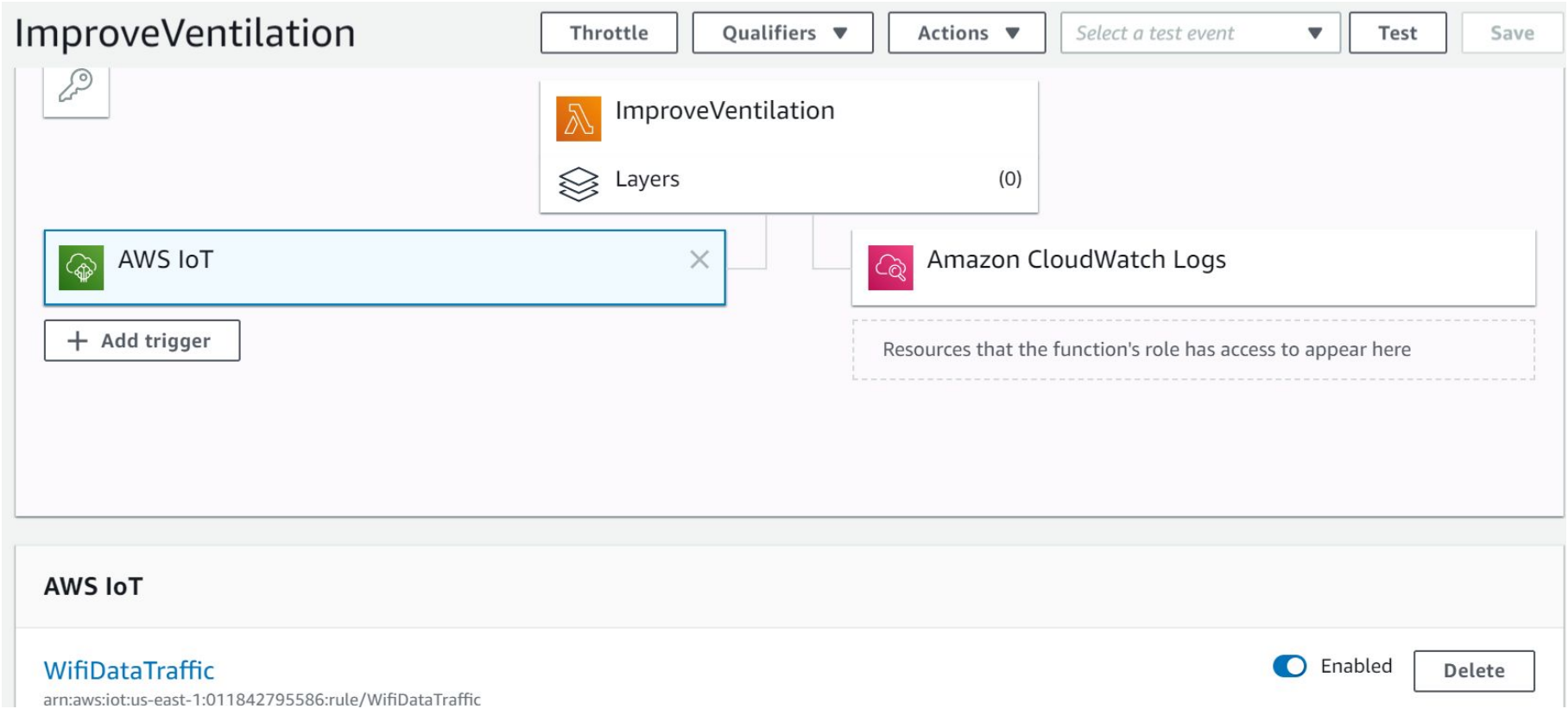
Features

- Safe and secure ***[Protected by X.509 certificates]***
- Easy Inventory and Management ***[AWS IoT Device Management]***
- Easy to collect & analyze data ***[AWS IoT Analytics & AWS Kinesis]***
- Machine-Learning integration ***[Amazon Sagemaker]***
- Can process data locally - without internet connection ***[AWS Greengrass]***
- Easy event detection and response ***[AWS IoT Events]***
- Simply execute actions at the push of a button ***[AWS IoT 1-Click]***
- Custom programmable functions ***[AWS Lambda]***

Intuitive Set-up Features



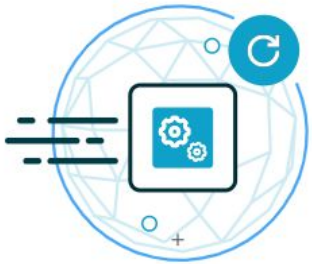
Powerful Scaling Potential



Seamless Integration with Assets

Resources

Local | Machine Learning | Secret new

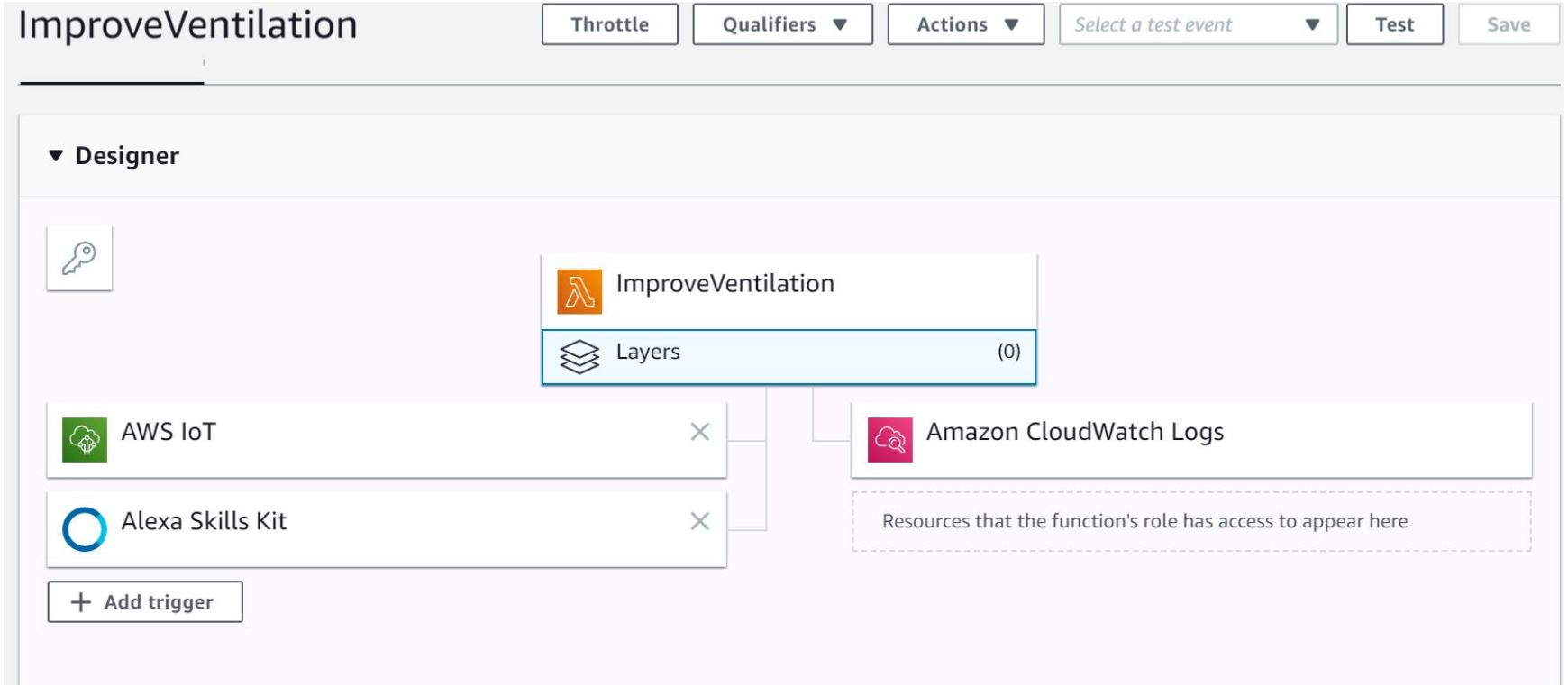


Use machine learning models without a cloud connection

Transfer your trained models onto your AWS IoT Greengrass Core device to make predictions based on local data.

Add a machine learning resource

Integrated Solution with Alexa Skills



Further: Gaining insights with Wi-Fi data for space optimization

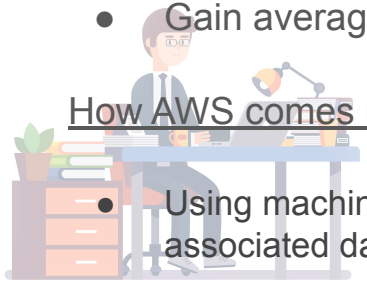
Problem

- Rooms and spaces in the office that are not used frequently or productively by the staff simply takes up space that could otherwise be used to create rooms that increase productivity. “Soft” rooms, as compared to “hard” rooms, also tend to be used more for a longer time and may lead to a drop in efficiency

Wi-fi data as a solution

- Monitor network traffic in separate rooms
- Sieve out particularly popular facilities or those with lower usage
- Replace seldomly used facilities with more popular or newer ones that increase productivity
- Gain average time spent in “soft” rooms and set a maximum time usage

How AWS comes into play: **Amazon Forecast**



- Using machine learning, Amazon Forecast can process time series data (traffic, time of day) with associated data (floor placement, facilities) to determine complex relationships & valuable insights

Image Sources

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