



Universidad Politécnica de Madrid

Uso del IoT para construir tú mismo un hogar digital

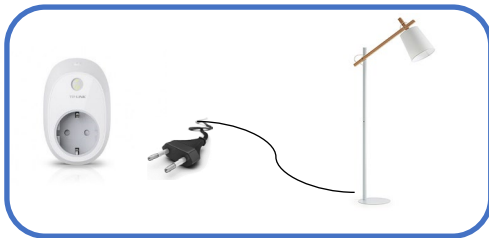
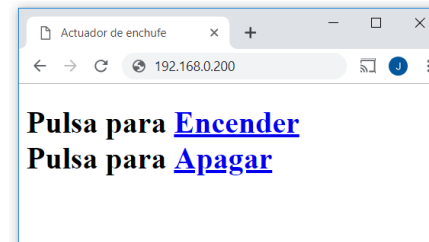
Centro de control openHAB

Javier Malagón

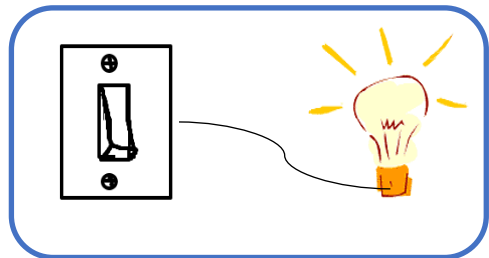
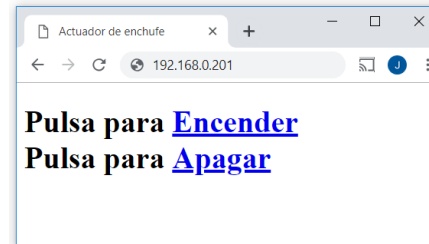
Manejar actuadores por http



http



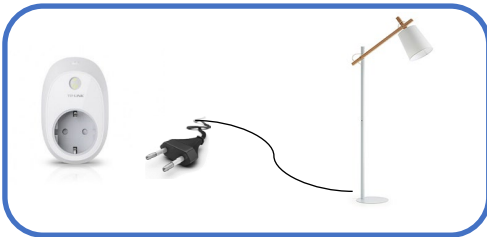
http



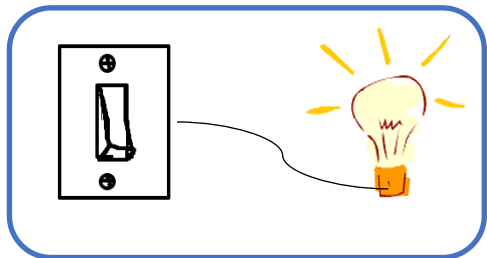
Manejar actuadores por http



http



http



http



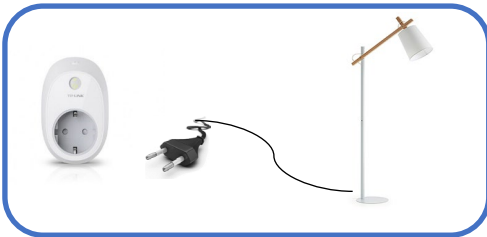
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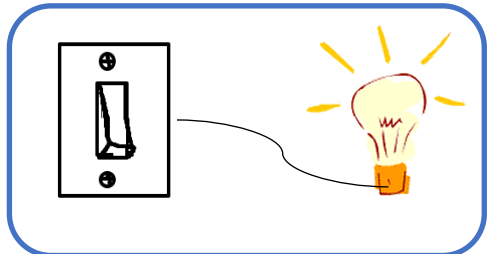
Manejar actuadores por http



http



http



http

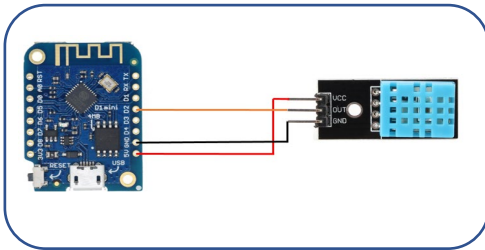


http



Manejar sensores por mqtt

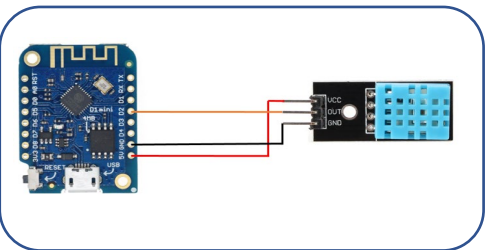
Sensor de temperatura



mqtt

```
> mosquitto_sub -h localhost -t casa/salon/temperatura  
22  
22
```

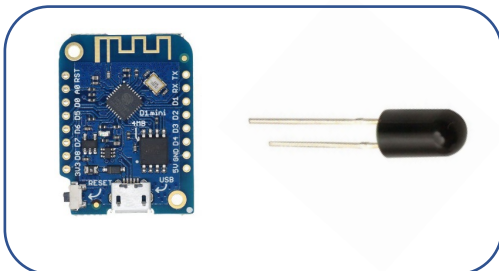
Sensor de humedad



mqtt

```
> mosquitto_sub -h localhost -t casa/salon/humedad  
60  
60
```

Sensor de luminosidad

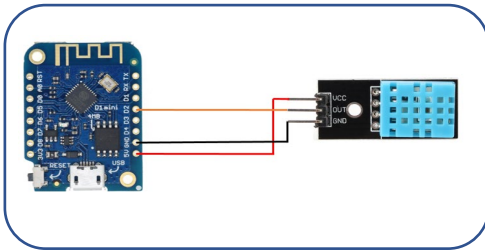


mqtt

```
> mosquitto_sub -h localhost -t casa/salon/luminosidad  
90  
91
```

Manejar sensores por mqtt

Sensor de temperatura

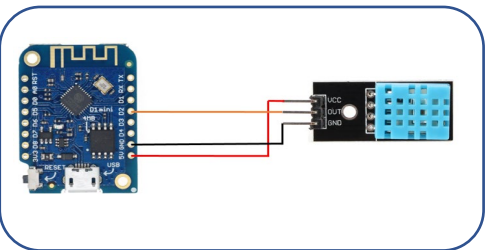


mqtt

```
C:\> ssh usuario@IP-ordenador
```

```
> mosquitto_sub -h localhost -t casa/salon/temperatura  
22  
22
```

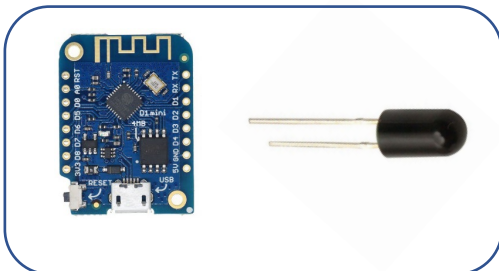
Sensor de humedad



mqtt

```
> mosquitto_sub -h localhost -t casa/salon/humedad  
60  
60
```

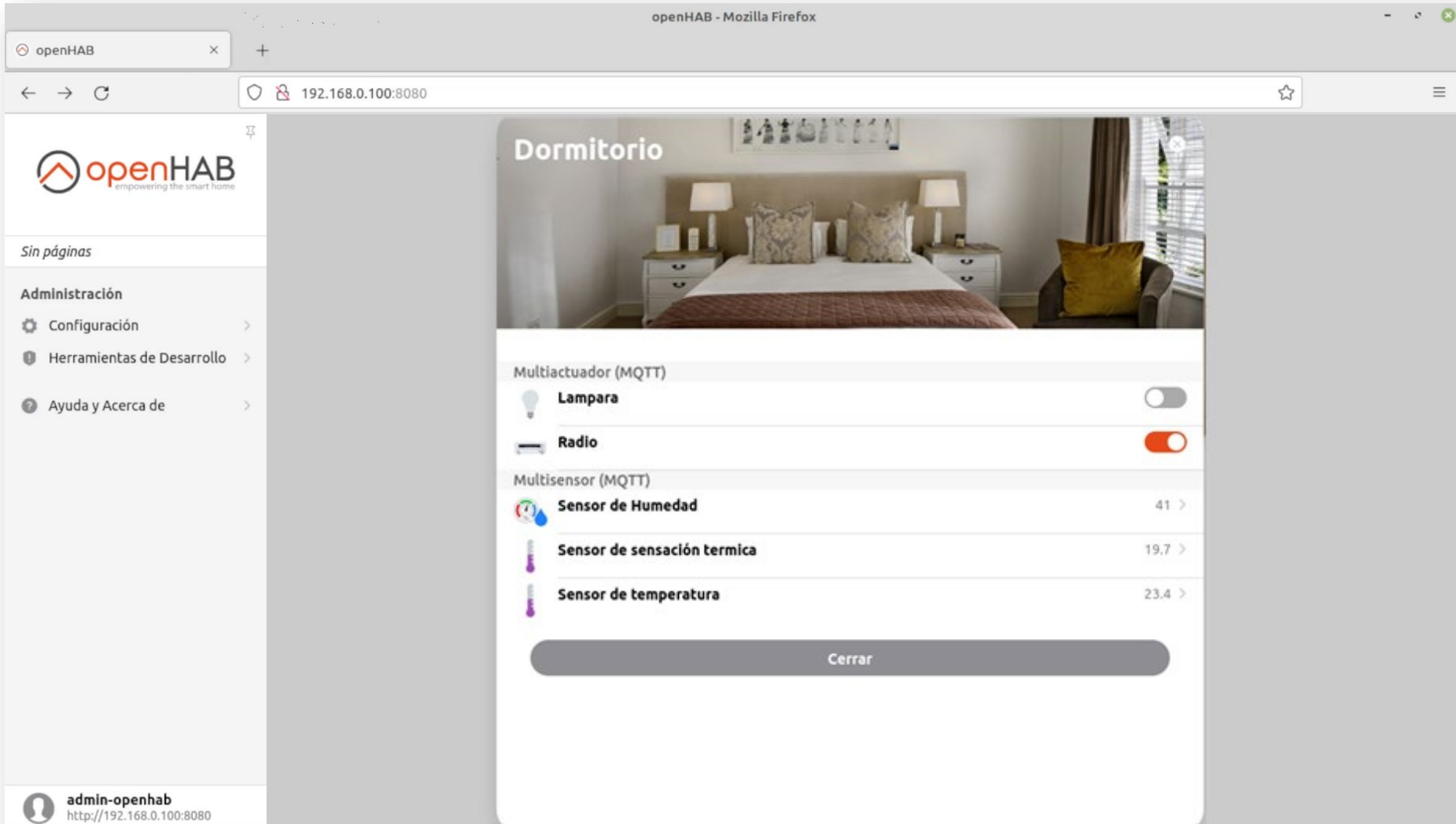
Sensor de luminosidad



mqtt

```
> mosquitto_sub -h localhost -t casa/salon/luminosidad  
90  
91
```

Integración en openHAB



openHAB - Mozilla Firefox

openHAB

192.168.0.100:8080

openHAB
empowering the smart home

Sin páginas

Administración

- Configuración
- Herramientas de Desarrollo
- Ayuda y Acerca de

Dormitorio

Multiactuador (MQTT)

- Lampara
- Radio

Multisensor (MQTT)

- Sensor de Humedad 41 >
- Sensor de sensación termica 19.7 >
- Sensor de temperatura 23.4 >

Cerrar

admin-openhab
http://192.168.0.100:8080



Sin páginas

Administración

⚙️ Configuración >

💡 Things

☰ Model

📁 Items

📄 Pages

⚡ Rules >

📄 Scripts

📅 Schedule

🛠️ Herramientas de Desarrollo >

🔍 Ayuda y Acerca de >



admin-openhab

http://192.168.0.100:8080

< Back

Edit Script

application/vnd.openhab.dsl.rule

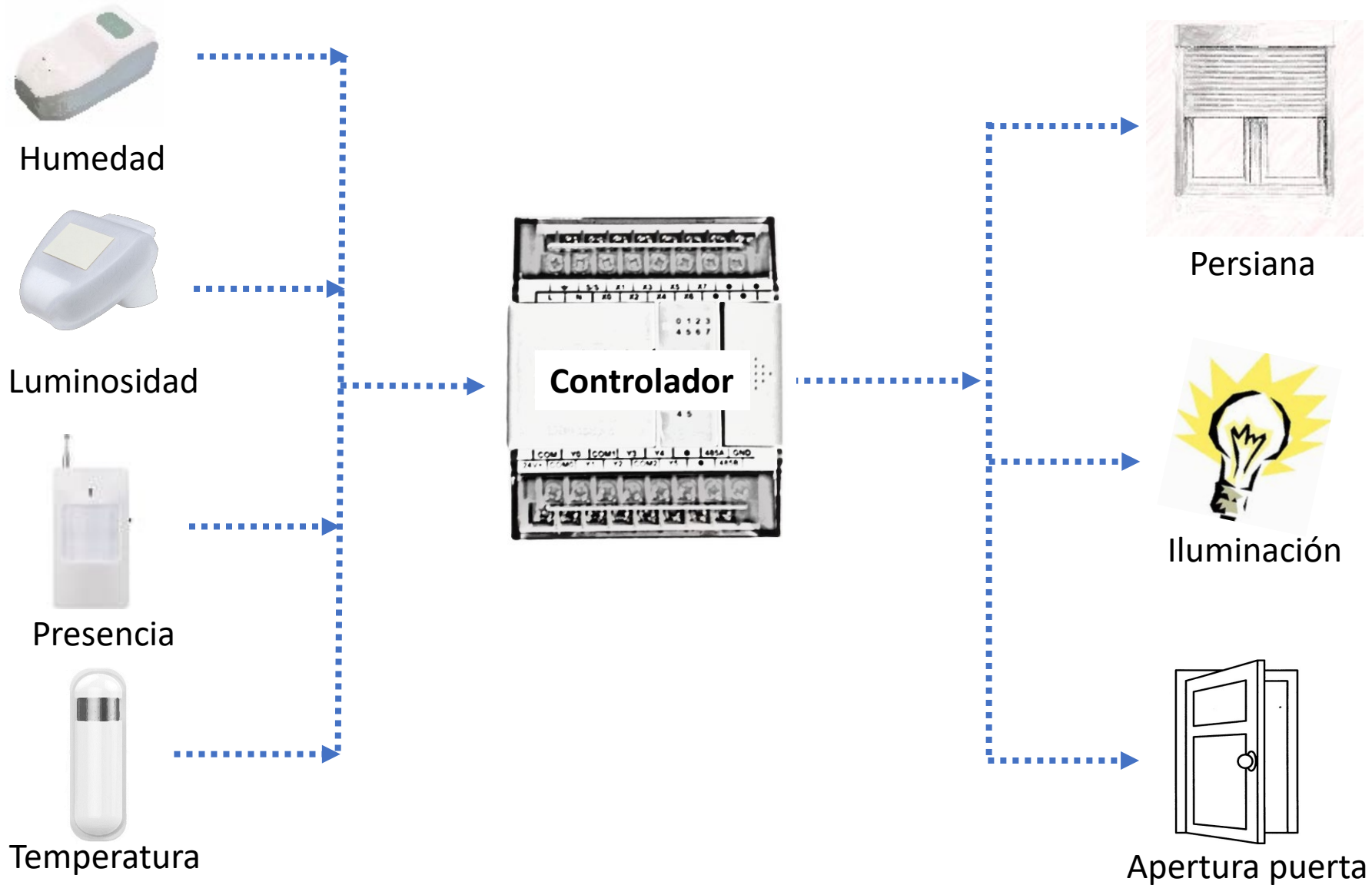
Save (Ctrl-S)

```
1 logInfo("Sensor temperatura","Empezar la regla estufa")
2
3 val Temperatura = SensorTemperaturaSalon.state
4
5 if (Temperatura<=20|°C){
6     logInfo("Sensor temperatura","Se ha bajado de 20º. Encender la estufa")
7     sendCommand(MultiActuadorHTTP_Enchufe, "ON")
8 } else if (Temperatura>=22|°C){
9     logInfo("Sensor temperatura","Se ha subido de 22º. Apagar la estufa")
10    sendCommand(MultiActuadorHTTP_Enchufe, "OFF")
11 }
12 logInfo ("Sensor temperatura","Terminar la regla estufa")
13
14 |
```

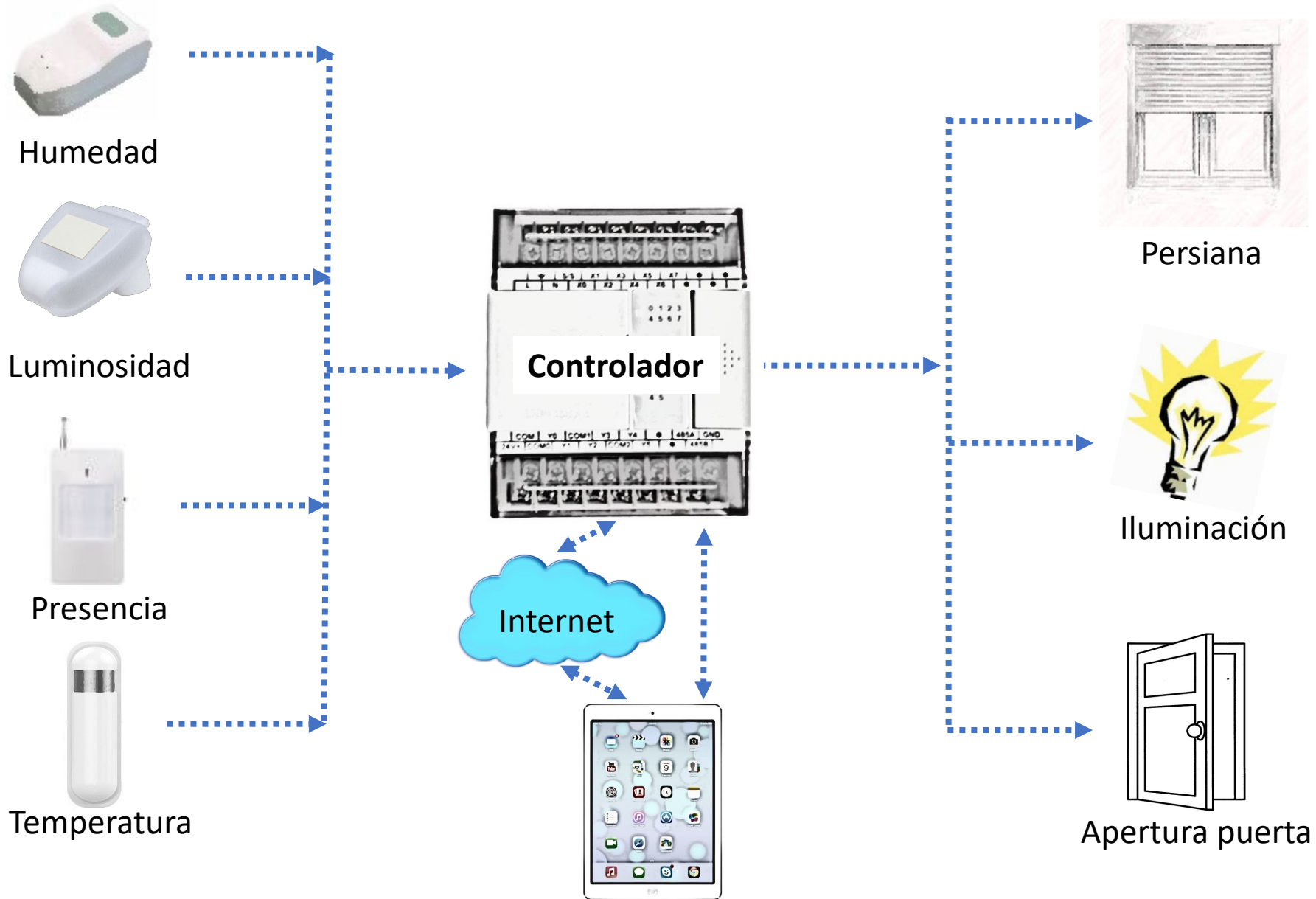
⏸️ ▶ Run Now (Ctrl-R)

IDLE

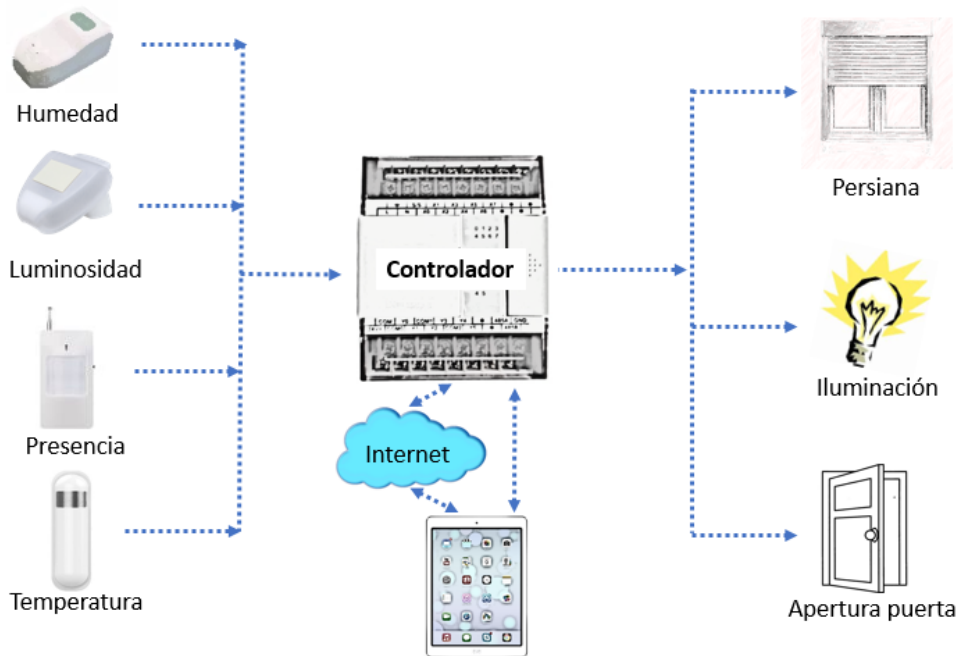
Solución comercial



Solución comercial

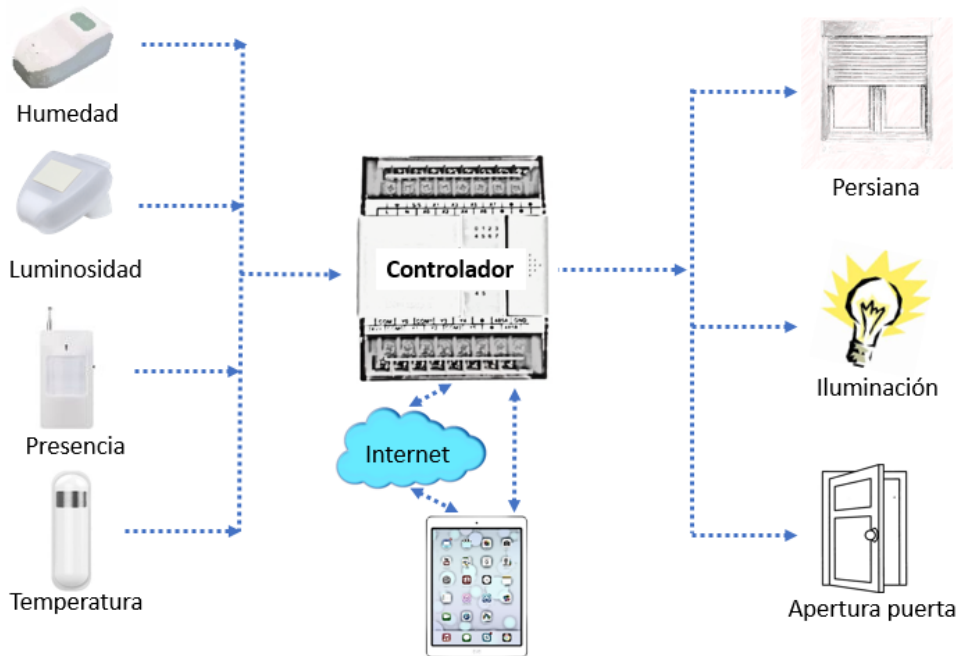


Ventajas



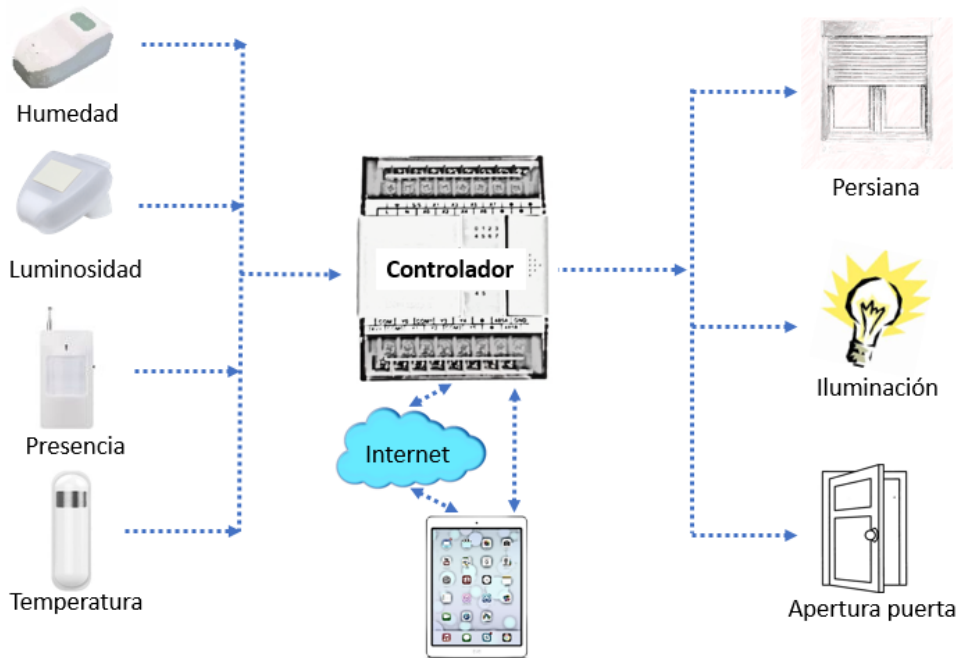
○ Fiabilidad

Ventajas



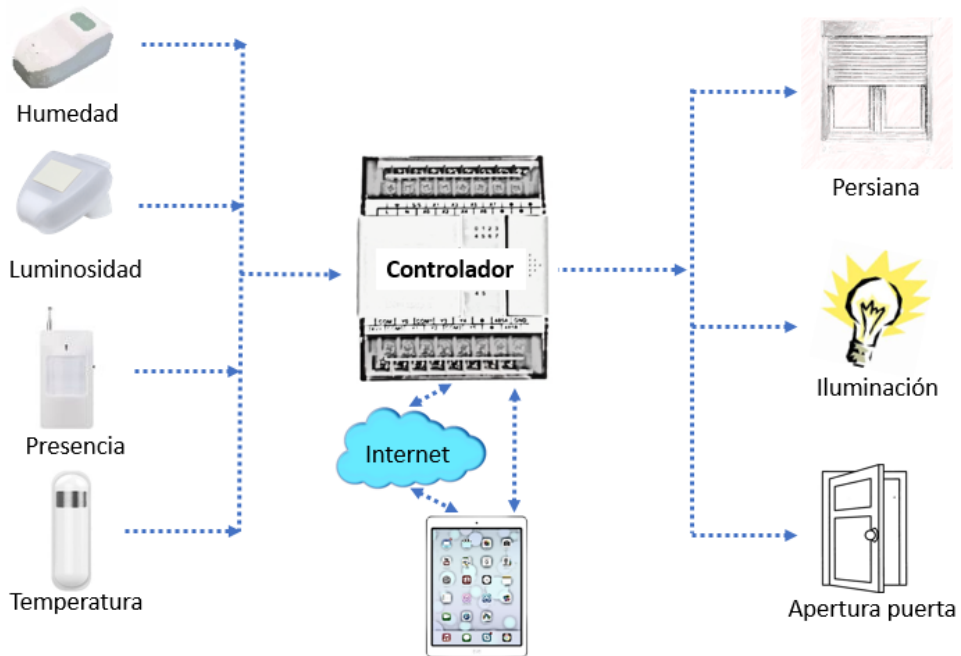
- Fiabilidad
- Mantenimiento
- Instalación

Inconvenientes



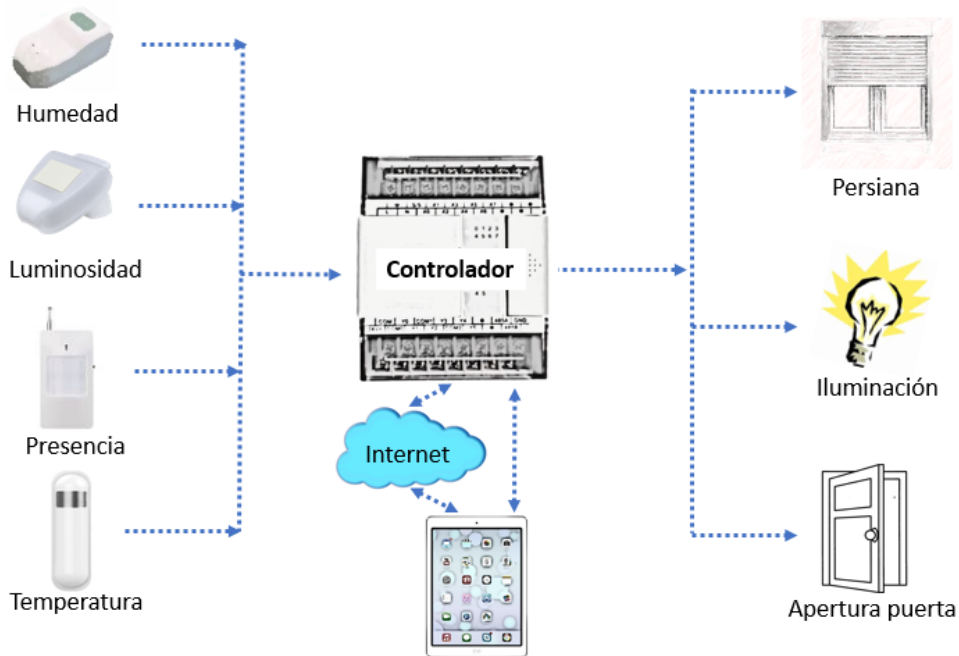
○ Coste

Inconvenientes



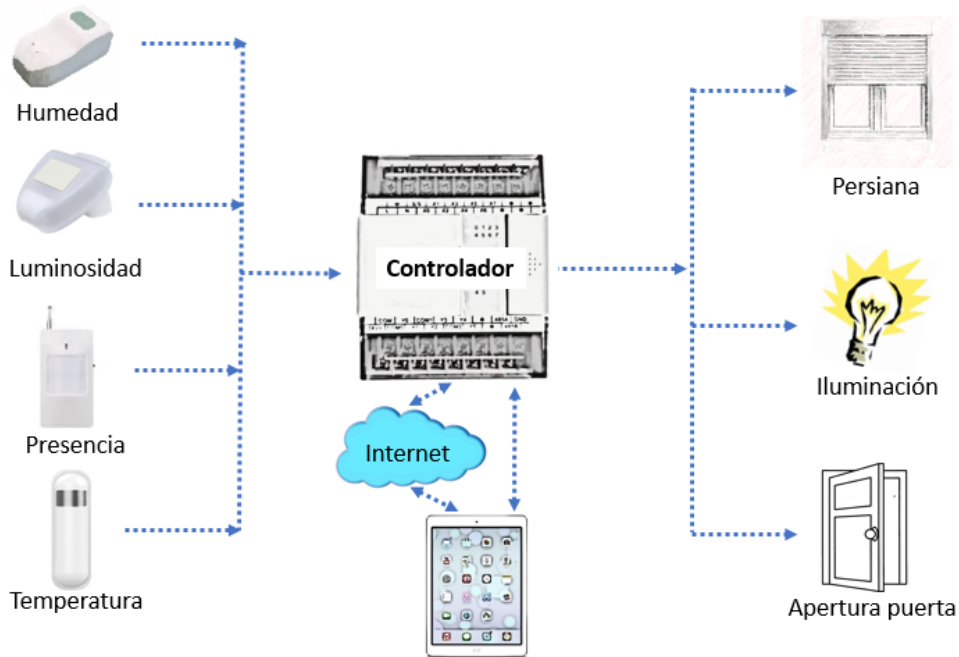
- Coste
- Dependencia

Inconvenientes



- Coste
- Dependencia
- Seguridad

Inconvenientes



- Coste
- Dependencia
- Seguridad
- Confidencialidad
- Automatización
- Futuro

Sonoff



Sonoff



Xiaomi

Xiaomi Smart Home Outlet (ZigBee Version)

Real-time monitoring when you are not at home

Used with Xiaomi multifunctional smart home gateway, you can check the electrical equipment state even you are not at home
Set timing for each outlet in the APP
Set special icon for each electric appliance



Timing Control Remote Control Power Statistic Connect with Other Smart Devices

The image shows a hand holding a smartphone displaying the Xiaomi Smart Home Outlet app interface. The app screen shows a green background with a large play/pause button in the center. Below the button, there are three data points: "1.4s", "20.0s", and "0.66s". At the bottom of the screen, there are three circular icons labeled "开关", "定时", and "统计".

Sonoff



Xiaomi



Xiaomi Smart Home Outlet (ZigBee Version)

Real-time monitoring when you are not at home

Used with Xiaomi multifunctional smart home gateway, you can check the electrical equipment state even you are not at home. Set timing for each outlet in the APP. Set special icon for each electric appliance.

Timing Control Remote Control Power Statistic Connect with Other Smart Devices

The advertisement features a hand holding a smartphone displaying the 'Xiaomi Smart Home' app interface. The app screen shows a large green play button icon, a status indicator '插座电源已开启', and three data points: '1.4kWh', '20.0kWh', and '0.66kWh'. Below the screen are icons for 'Timing Control', 'Remote Control', 'Power Statistic', and 'Connect with Other Smart Devices'. The background shows a white wall with a power outlet and a white bench.

Z-wave



Sonoff



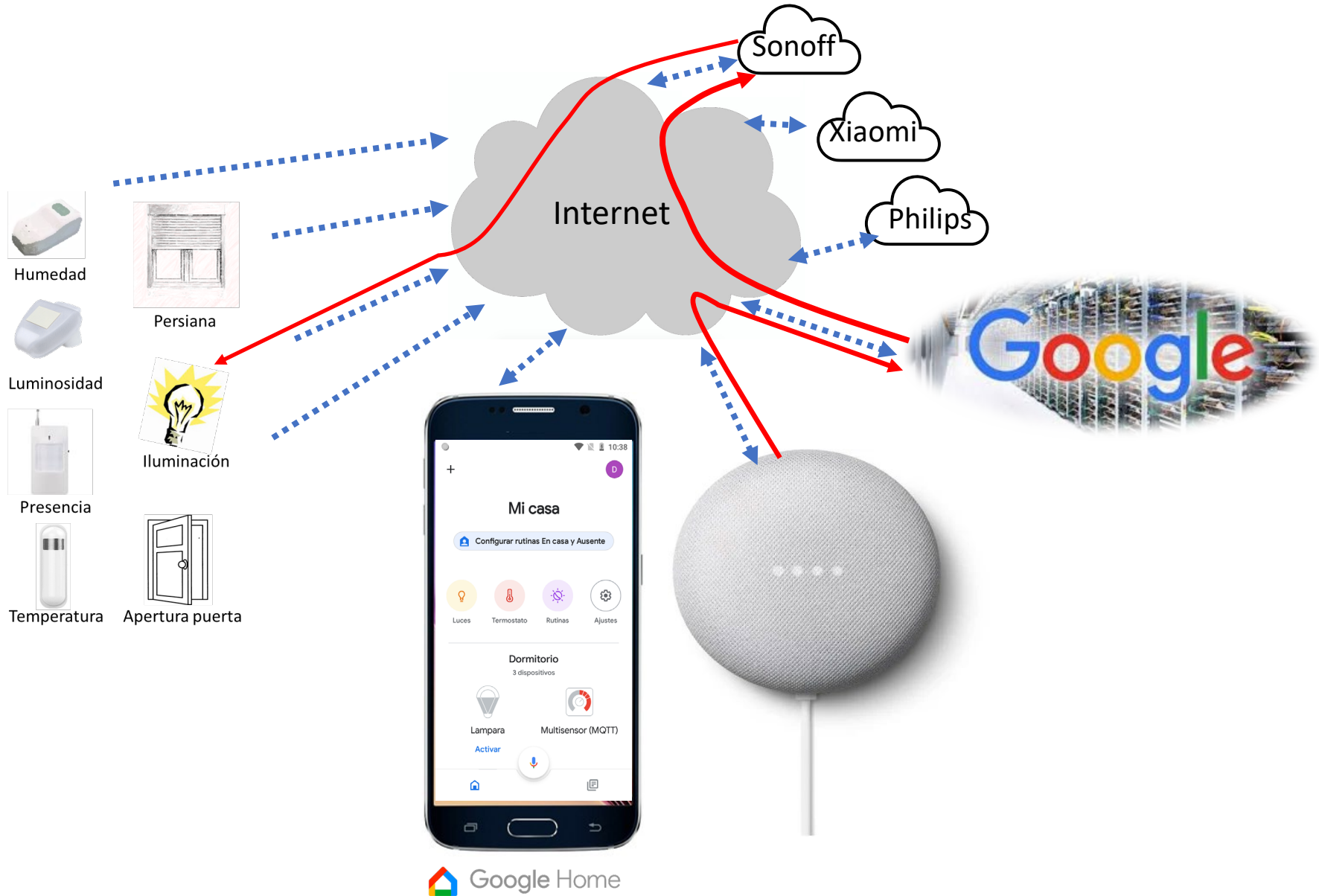
Xiaomi



Z-wave

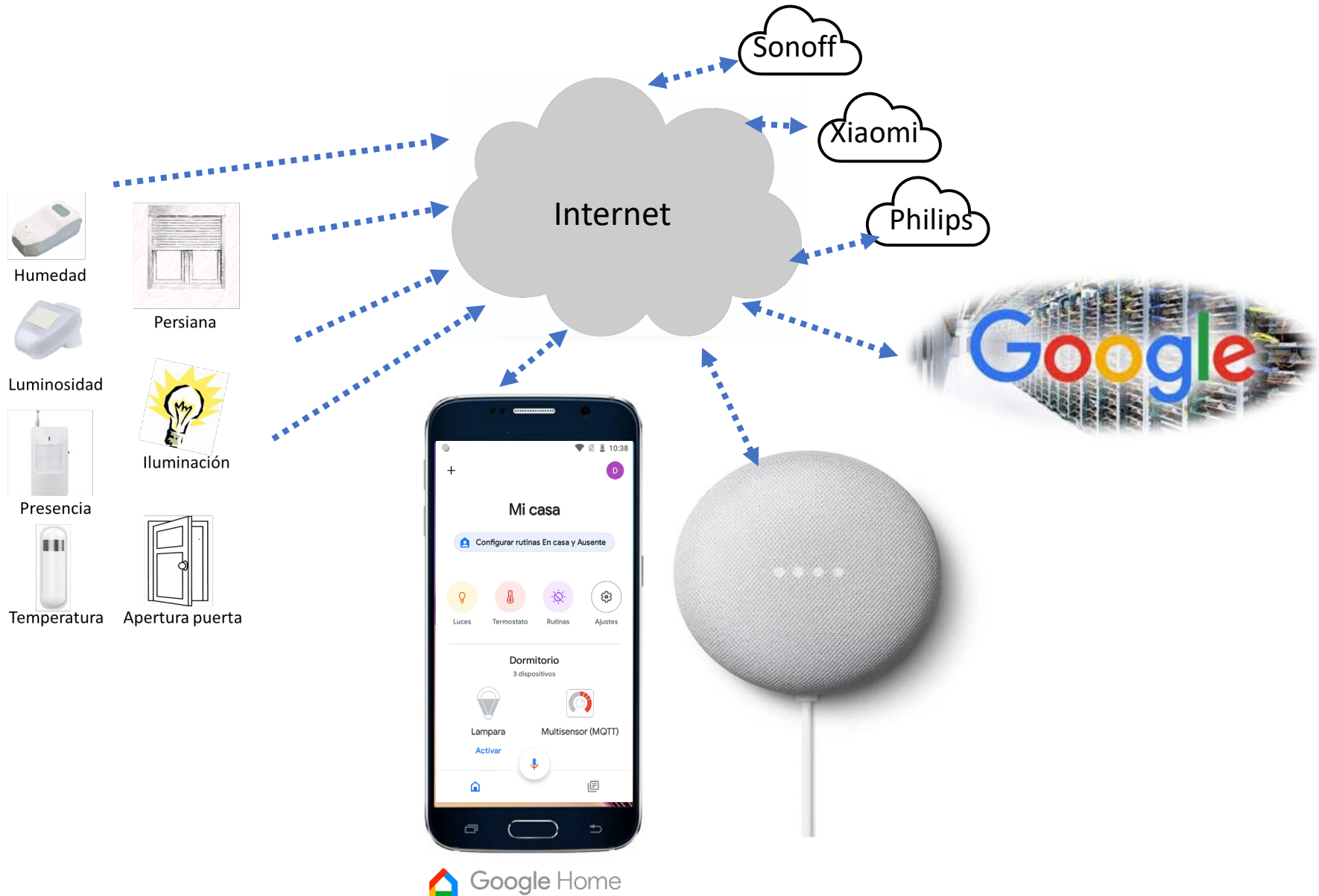


Altavoces inteligentes

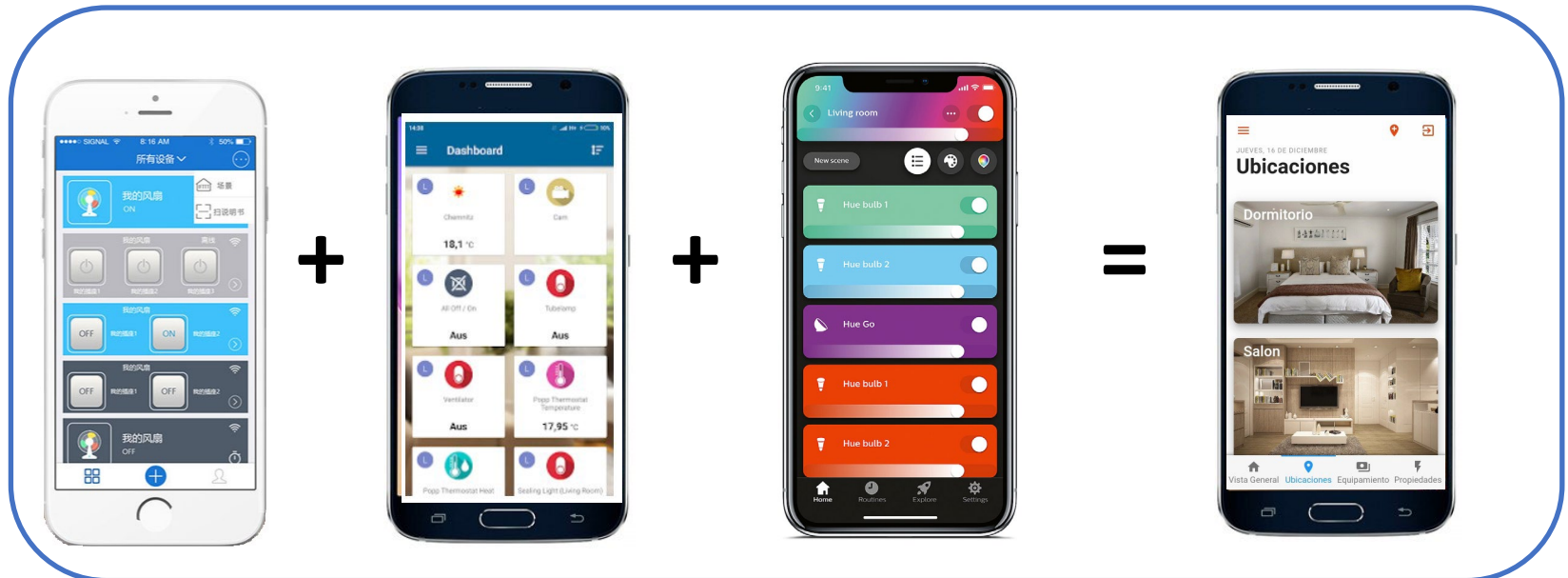
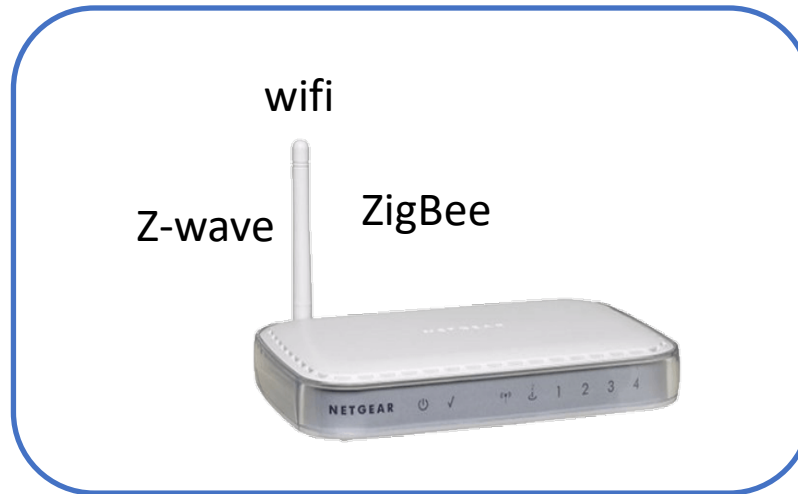




Altavoces inteligentes



Plataforma de integración





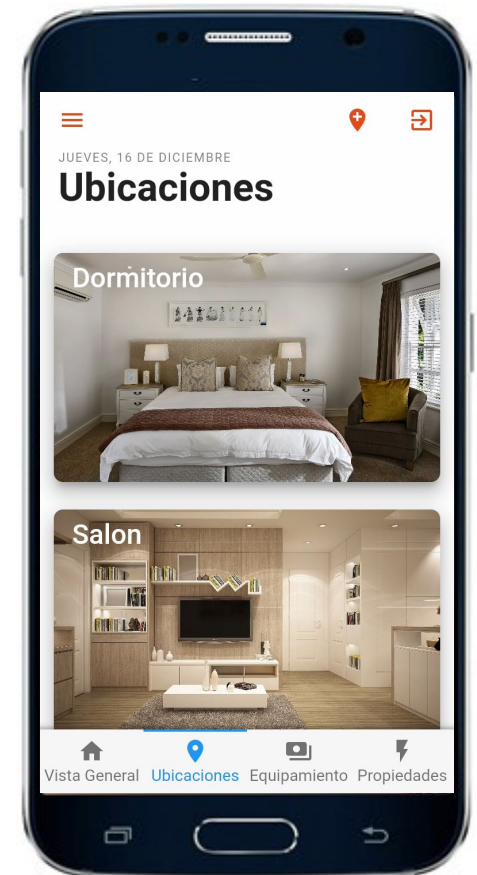
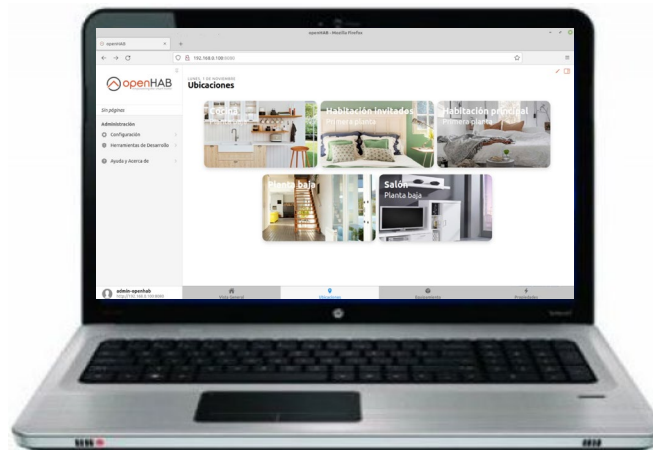
ZigBee



Z-wave



Plataforma de integración





HTTP





<https://www.openhab.org/addons/>



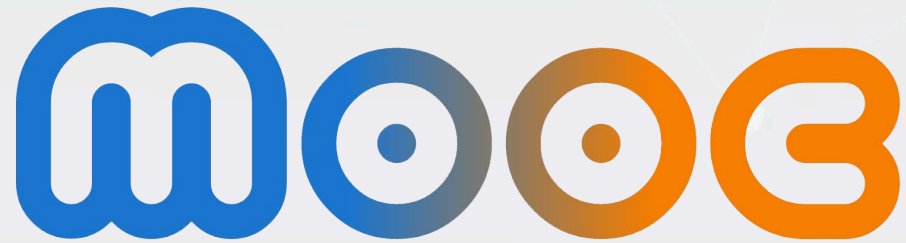
HTTP



Google Home



amazon alexa



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