Jasper, turn on the fan.

Jasper, what's on my calendar today?

Speech to RIOT

Jasper, how is the temperature?

Jasper, re-order paper towels.

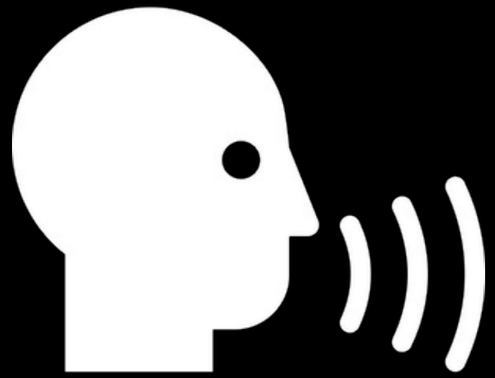
Jasper, set a timer for 20 minutes.

Jasper, play music.

Speech to RIOT

github.com/smartuni/Speech-to-RIOT

Based in Hamburg



Control anything

Use your voice to control your home.

Always listening

Jasper always listening for commands

100% Open source

Build it yourself with off-the-shelf hardware

Responsibility assignment

Jasper

Architecture

Discovery

Use case

Live demo

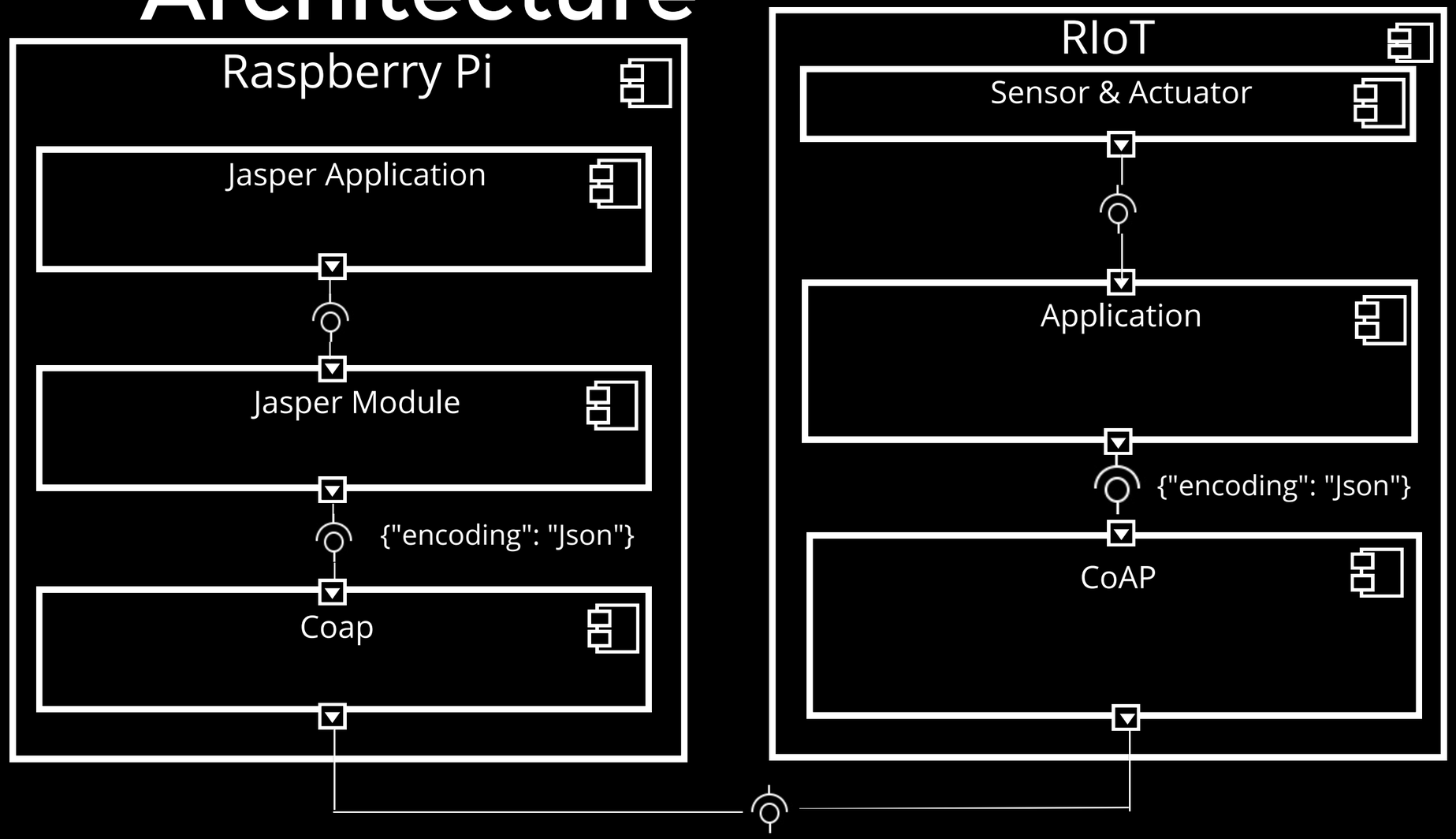
Responsibility assignment

Alberto Pickering: CoAP on Jasper Controller
Arne Thiele: Jasper/ CoAP/ Discovery
Julian Magierski: Service with actuator
Marvin Butkereit: CoAP, IoT / Temperature sensor
Lukas Hettwer: CoAP on Raspberry Pi side/ presentation

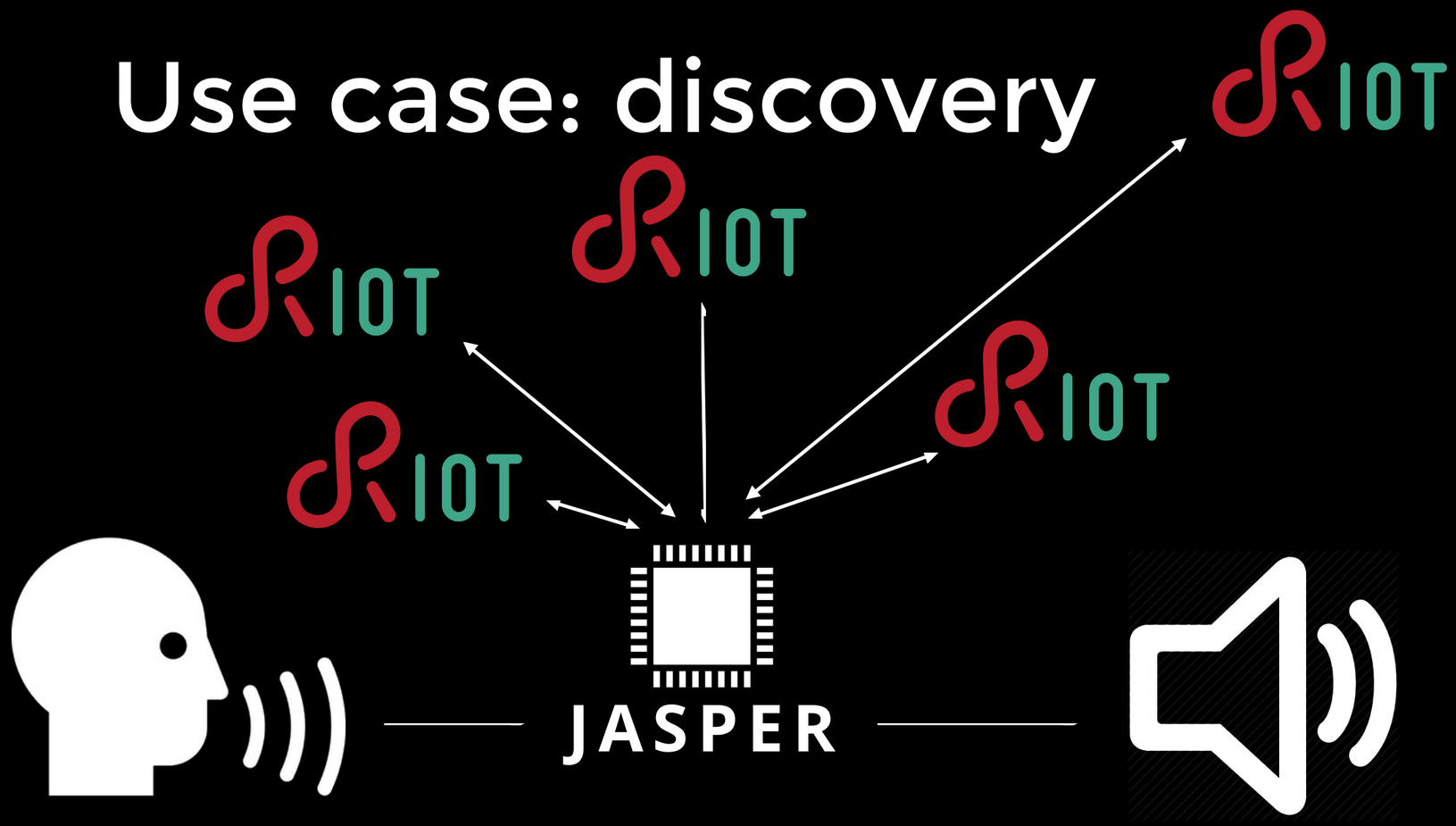
Jasper

- The "talking computer"
- TTS-Engine (text-to-speech)
- STT-Enging (speech-to-text)
- Modules are easy to add
- Conflict: python 2 vs. python 3

Architecture



Use case: discovery



Speak to Jasper:

Jasper, scan for devices!

Jasper listen, handled command and talks to IoT devices

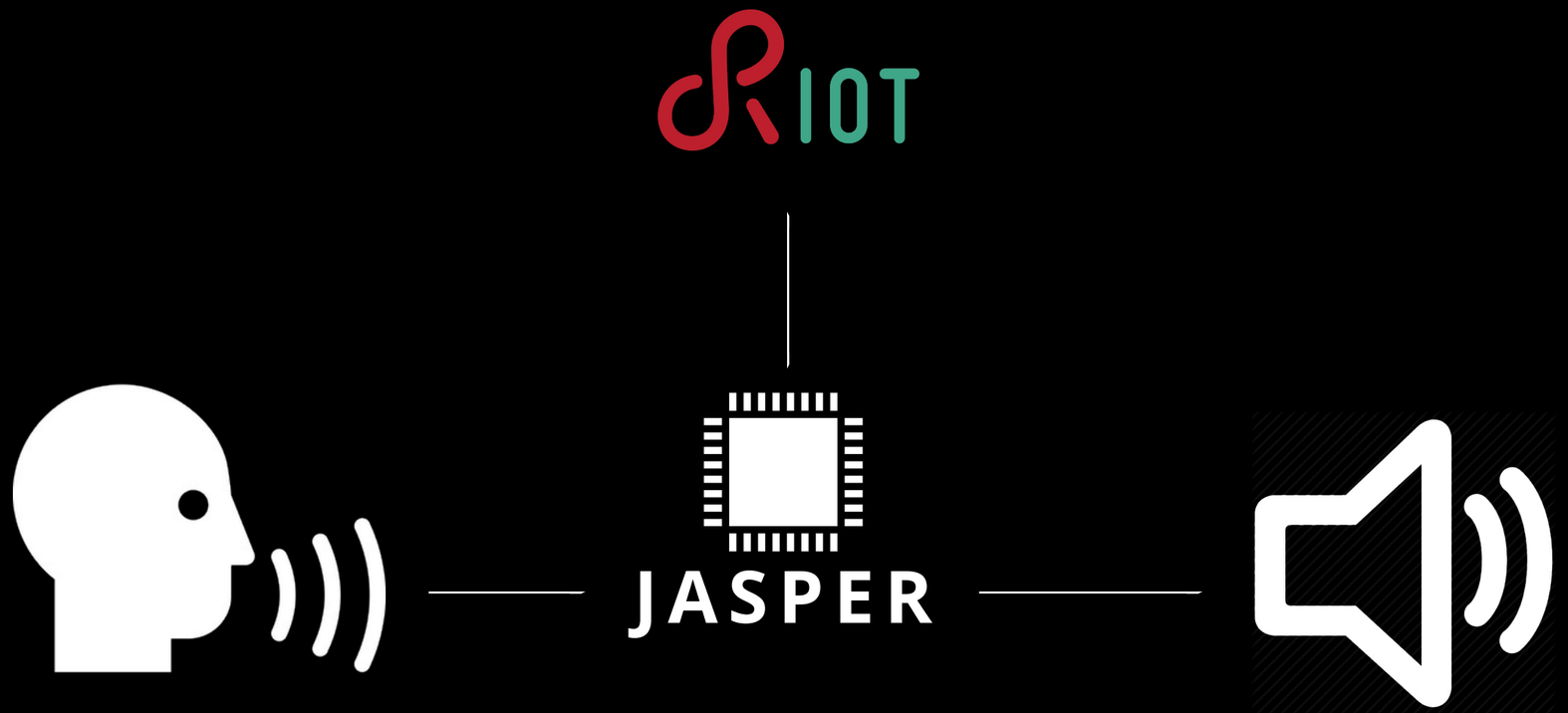
Jasper tells result.

Ok, updated the hostlists.

Discovery

1. ping6 mulitcast lowpan0
2. result regex ip
3. coap ip get /.well-known/core
4. result scan for function
5. add ip to hostlist

Use case: temperature



Speak to Jasper:

Jasper, how is the temperature today?

Jasper listen, handled command and talks to IoT devices

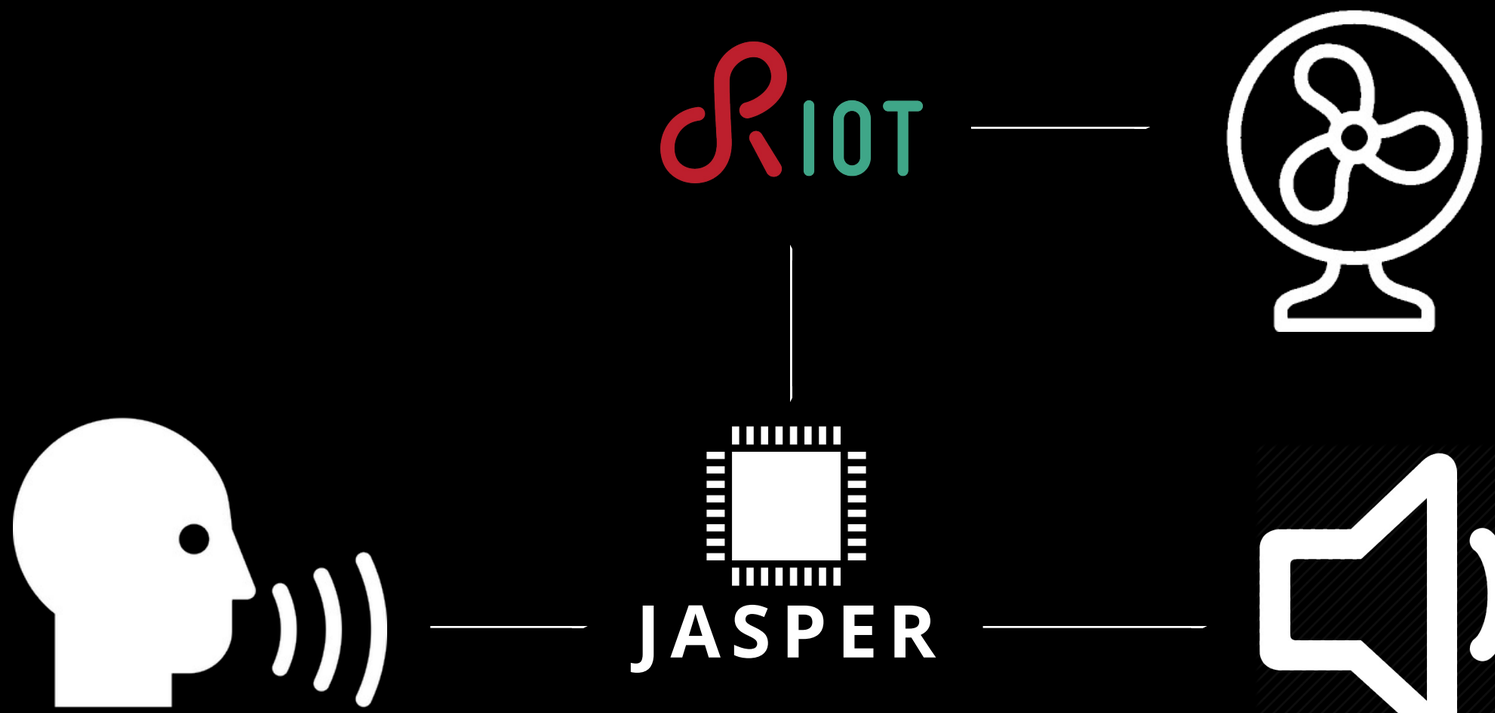
Jasper tells result.

The temperature is 42°.

Use case: temperature

1. reading host from hostlist
2. get the temperature from the host
3. tell the result

Use case: fan control



Speak to Jasper:

Jasper, turn on the fan.

Jasper listen, handled command and talks to IoT devices

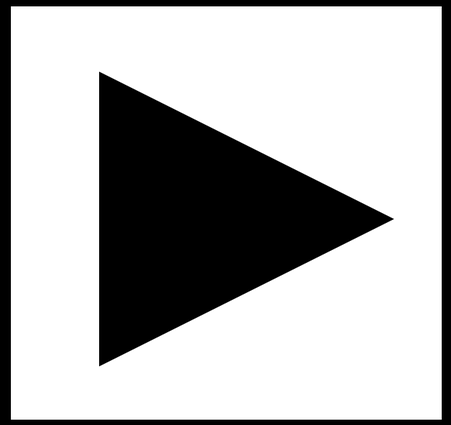
Jasper tells result.

The fan is starting.

Use case: fan control

1. receive command
2. decode with jsmn
3. call function PWM low/medium/fast/off
4. set PWM duty cycle

Live demo



Thank you