

WHAT'S UP, HOME?

Controlling your home with Zabbix

100% LEGIT!



YOU HAVE
30 SECONDS
TO COMPLY

SCAN ME AND BE PART OF THE PRESENTATION

WHO AM I?

- Janne Pikkarainen from Finland
- Working on IT since 1999
- Lead Site Reliability Engineer at Forcepoint
 - Forcepoint provides cyber security for the big boys
 - Healthcare, enterprises, technology, factories...
 - Fancy firewalls, ZTNA, RBI, CASB, DLP, DUP, long list of other acronyms
- Familiar face on blog.zabbix.com
- Doing weird experiments with Zabbix
- Walking, talking Zabbix commercial



Forcepoint

Forcepoint CUSTOMERS



QUICK RECAP

- Been doing my blog since March 2022
- Became a Zabbix celebrity as Zabbix the company noticed me monitoring my facial cream usage
- About ~50 blog posts
- Moved my blog from LinkedIn to <https://whatsuphome.fi/> in January 2023
- Was on this stage also on last Zabbix Summit
- Since last year, have been moving on from *monitoring* my home with Zabbix to *controlling* my home with Zabbix



NEW SINCE LAST YEAR

NEW EXPERIMENTS SINCE LAST SUMMIT

- Color of BA-NA-NA! (OpenCV)
- My iPhone & Apple Watch (Home Assistant)
- Location of our car (Siri shortcut, later Home Assistant)
- Home CO2 & noise level (Netatmo environmental sensor)
- Baby's sleep schedule (Cozify, based on light strip night light mode)
- Baby's crying frequency (Siri sound recognition)
- My blog's visitor statistics (sshfs, web server access log parsing)
- FlightGear virtual plane location, altitude, speed ... (over its HTTP API)
- ... and many more



FANCIER BLENDER INTEGRATION



Last year looked primitive and broken



Now pretty and with real-time info. The image is a clickable image map with possibility to turn lights on and off etc

**CONTROL YOUR HOME WITH
ZABBIX**

WHY TO CONTROL YOUR HOME WITH ZABBIX

- Automation with all the devices you have
- Unified interface
- Zabbix enables very complex alert rule logic possibilities
 - Instead of just “if door opens, do X” you can do “if door opens AND movement detected inside AND no recognised people at home, do X, Y and Z”
- Devices like lights or TV won’t be accidentally left on whilst you are away
- Increases safety
- Because you can

Severity	Not classified	Information	Warning	Average	High	Disaster
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* Expression

```
last (//cozify.scenes.homestatus,#1)<>1 and  
last (//home.office.movementdetected,#1)<>0 and  
last (//frontdoor.opened.status,#1)<>0
```

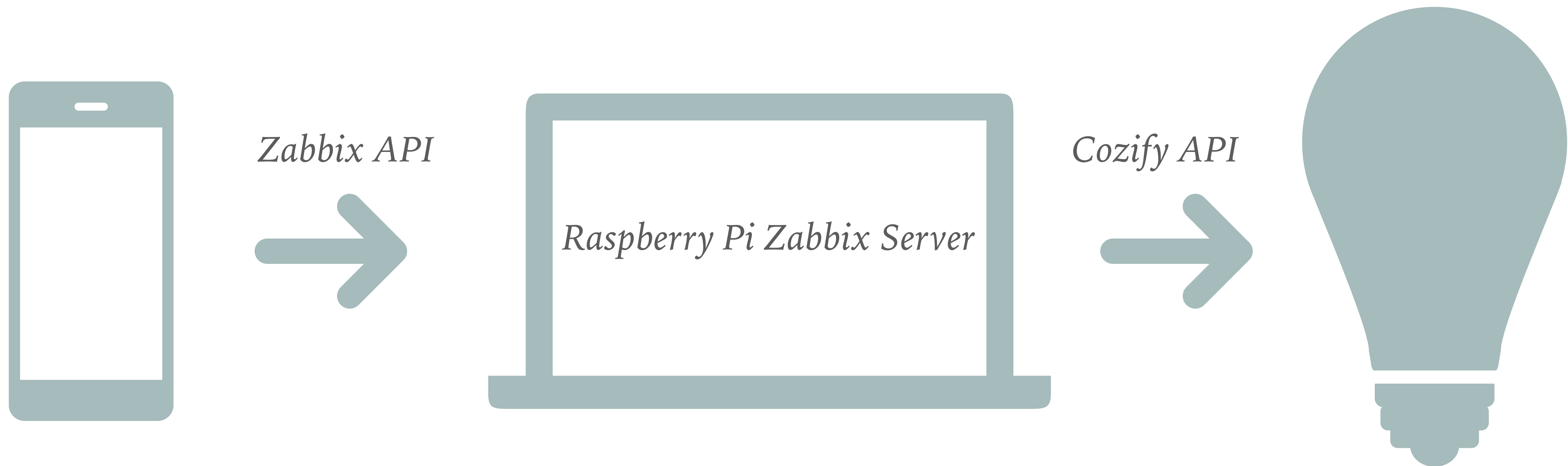
[Expression constructor](#)

I HAVE COZIFY, WHY NOT JUST TO USE THAT?

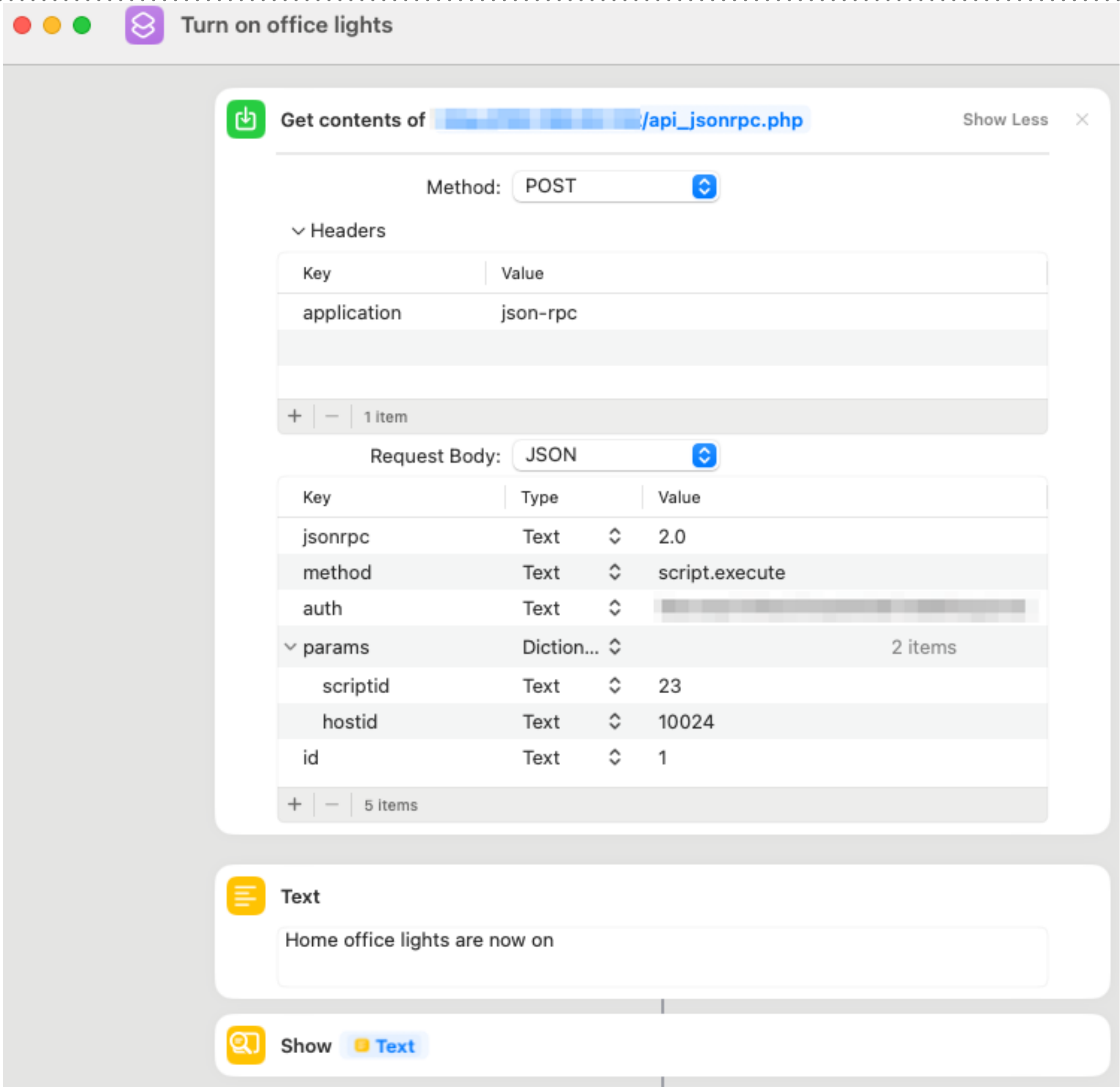
- Cozify app on iOS lacks Siri and iOS Shortcuts, so no speech control. I want to live in the future!
- Control using Zabbix gives me a handy log of events I have run
- Automations made by Cozify will be monitored, too, so I get to learn about their accuracy



IN A DIAGRAM

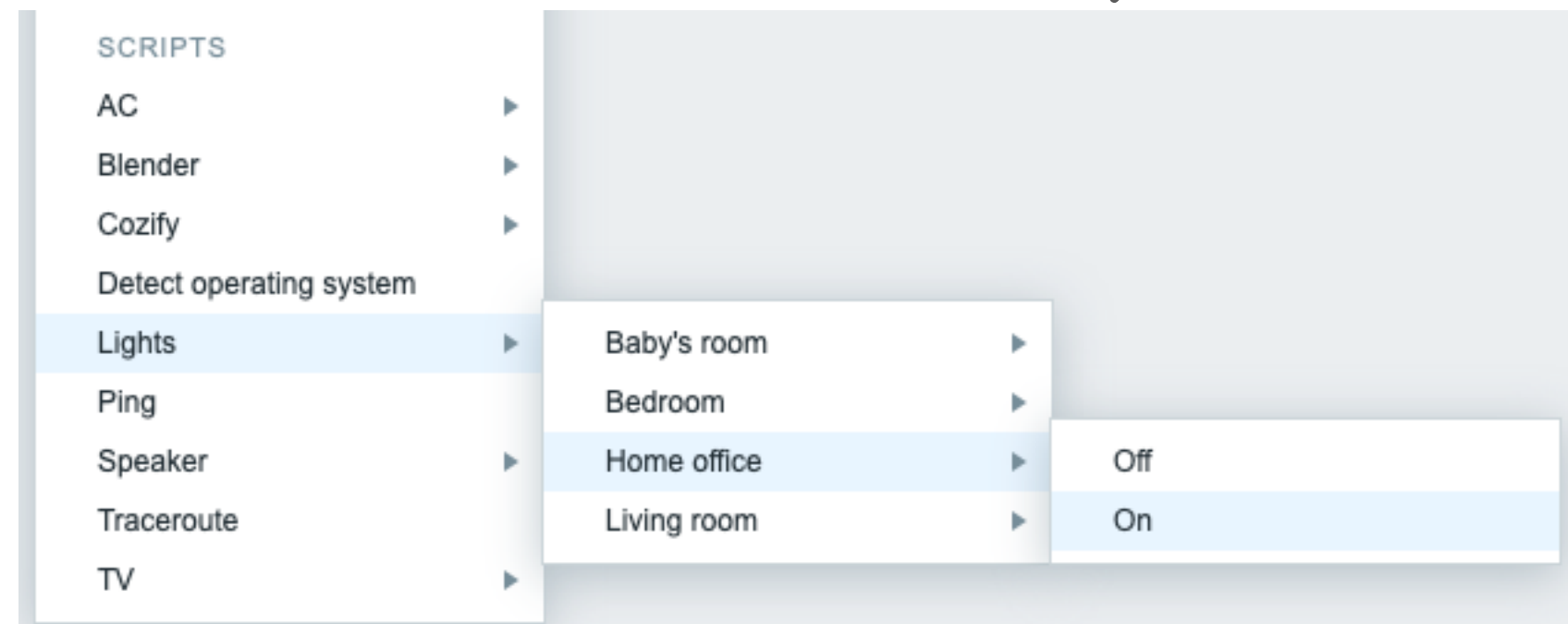


SIRI SHORTCUT TO TURN ON OFFICE LIGHTS USING ZABBIX



HOW DID I DO IT

- Both automatic and manual Zabbix action scripts
- Context menu is handy for manually controlling AC, lights, and so on



- Manual runs triggered via iOS Shortcuts and Zabbix API `script.execute()`
- Automatic trigger scripts are handy for alerting
- Automatic trigger scripts help adjusting things when we are away

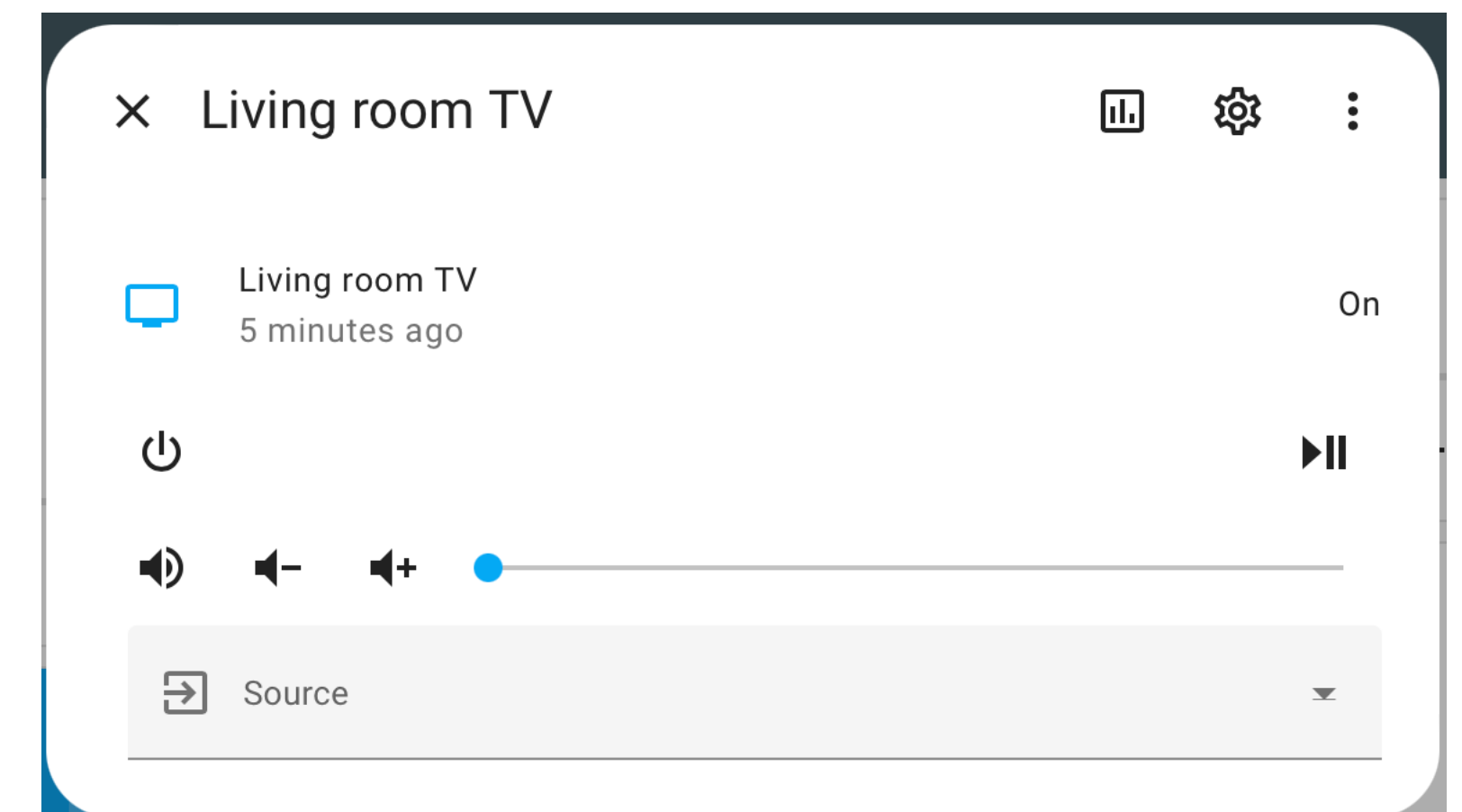
USEFUL EXAMPLES

USEFUL EXAMPLES

- Controlling TV
- Controlling smart speaker
- Controlling smart power sockets
- Controlling lights
- React to temperature
- React to emergencies

CONTROLLING TV

- Zabbix integration done with Home Assistant and its Samsung SmartThings plugin
- See the number of hours TV has been on
- Turn TV on/off and change the input source remotely via Zabbix
- Use cases
 - Surprise a burglar with real-time CCTV material
 - Turn off TV if we are not at home
- Real-world use cases:
 - In multi-cam environment, switch to camera where something happens
 - Alert parents if the kiddos are watching TV when they are not supposed to



CONTROLLING SMART SPEAKER

- Integration done with Cozify Sonos speaker support
- See the speaker play status, volume level, currently playing song and so forth
- Control all this remotely via Zabbix
- Use cases
 - Surprise a burglar with alarm sound
 - Play music during sensible hours whilst we are away to make it appear we would be at home
 - Announce critical Zabbix alerts via the speaker
- Real-world use cases
 - Gain urgent attention

* Name	<input type="text" value="Play alert"/>
Scope	<div><div>Action operation</div><div>Manual host action</div><div>Manual event action</div></div>
Type	<div><div>Webhook</div><div>Script</div><div>SSH</div><div>Telnet</div><div>IPMI</div></div>
Execute on	<div><div>Zabbix agent</div><div>Zabbix server (proxy)</div><div>Zabbix server</div></div>
* Commands	<pre>/usr/share/zabbix/externalscripts/play_alert.py --device sonosspeaker</pre>

Sonos speaker dashboard

ZABBIX

home-Zabbix

Dashboards

Monitoring

Services

Inventory

Reports

Data collection

Alerts

Users

Administration

Sonos speaker



Edit dashboard



All dashboards / Sonos speaker

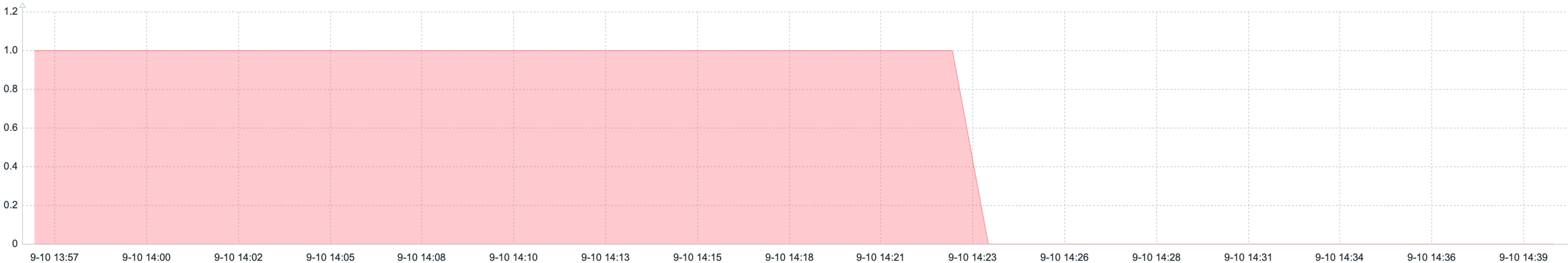


Zoom out



2023-09-10 13:56:41 – 2023-09-10 14:40:52

Play status



Latest song

2023-09-16 11:52:35

Bad Boys (From "Cops")

Sonos speaker current song

Zabbix server: Sonos speaker play status

2023-09-16 15:12:01

■ (0)

Sonos speaker play status

Zabbix server: Sonos volume

2023-09-16 15:12:33

19.00

Sonos volume

CONTROLLING SMART POWER SOCKETS

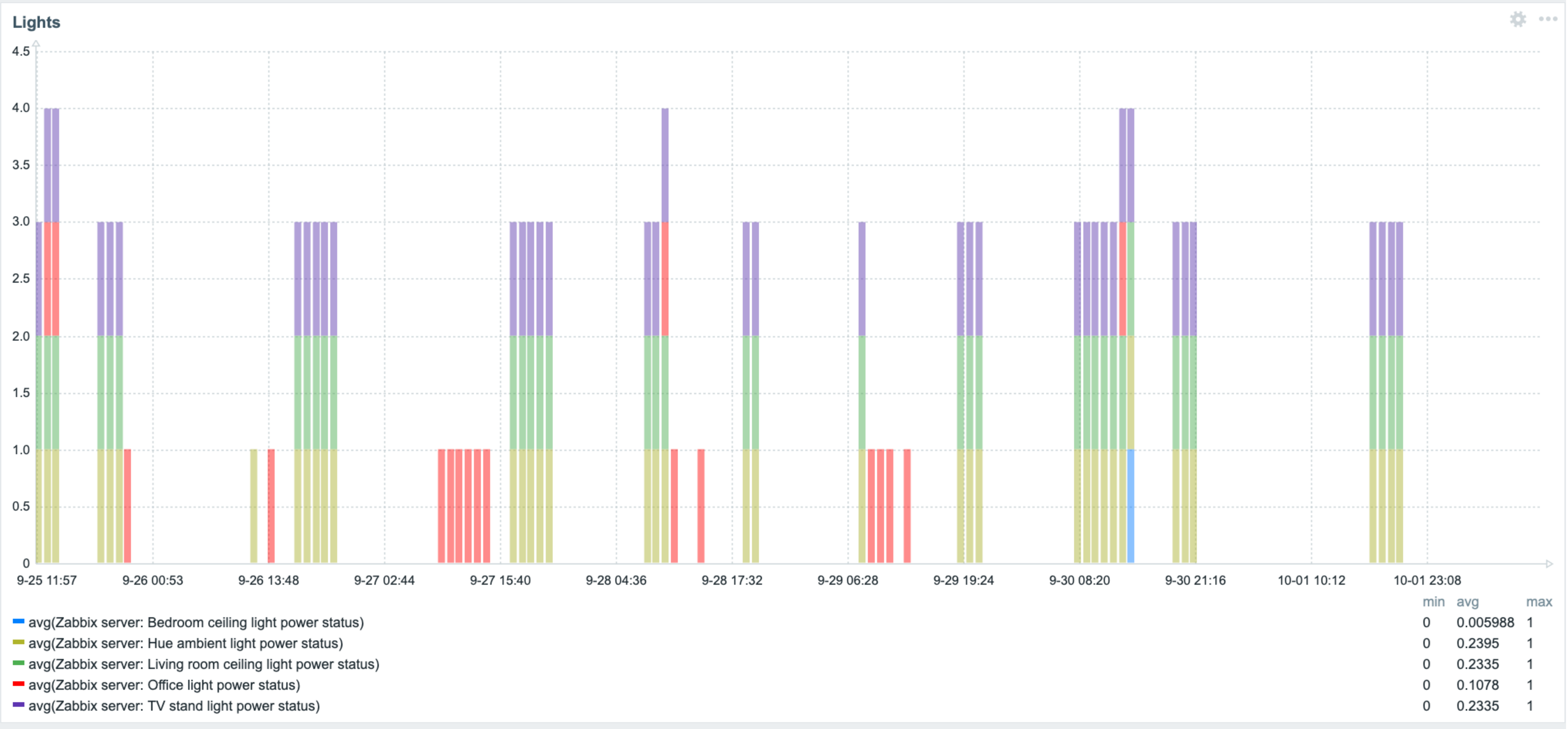
- Integration done with Cozify
- See the number of hours and number of power cycles for individual smart power sockets
- Control smart power sockets via Zabbix
- Use cases
 - Surprise a burglar with some special device. Glitter bomb? VERY loud siren?
 - Turn dumb devices on/off when needed; for example, our air humidifier
 - Turn devices off when we are not at home
 - Restart a failing device; for example, if our CCTV stream is not available, power cycle the camera

CONTROLLING LIGHTS

- Integration done via Cozify
- See the number of hours and power cycles for individual smart lights
- Control lights via Zabbix
- Use cases
 - Make a burglar to think twice before entering our home as lights can simulate people at home
 - During early/dark hours, automatically turn on home office light if I enter the room / unlock my laptop
 - Automatically turn on emergency lights

<input type="checkbox"/>	Lights/Baby's room/Off	Manual host action	Script	Server	/usr/share/zabbix/externalscene=babysroom
<input type="checkbox"/>	Lights/Baby's room/On	Manual host action	Script	Server	/usr/share/zabbix/externalscene=babysroom
<input type="checkbox"/>	Lights/Bedroom/Off	Manual host action	Script	Server	/usr/share/zabbix/externalscene=bedroom
<input type="checkbox"/>	Lights/Bedroom/On	Manual host action	Script	Server	/usr/share/zabbix/externalscene=bedroom
<input type="checkbox"/>	Lights/Home office/Off	Manual host action	Script	Server	/usr/share/zabbix/externalscene=homeoffice
<input type="checkbox"/>	Lights/Home office/On	Manual host action	Script	Server	/usr/share/zabbix/externalscene=homeoffice
<input type="checkbox"/>	Lights/Living room/Off	Manual host action	Script	Server	/usr/share/zabbix/externalscene=livingroom
<input type="checkbox"/>	Lights/Living room/On	Manual host action	Script	Server	/usr/share/zabbix/externalscene=livingroom

LIGHTS GRAPH



REACT TO TEMPERATURE

- Integration done both with Cozify and Home Assistant
- Freezer/fridge too warm? Alert!
- Garage too cold? Turn on the dumb heater by turning on its smart power socket
- Daytime and living room too hot? Turn on the AC
- Night and bedroom too hot? Turn on the AC
- Sauna is ready? Send a notification

<input type="checkbox"/>	Severity	Value	Name ▲	Operational data	Expression
<input type="checkbox"/>	Disaster	OK	Freezer temperature rising! Check its status, please		<code>min(/Zabbix server/temp.freezer,30m)>-10</code>
<input type="checkbox"/>	High	OK	Freezer temperature sensor not available		<code>max(/Zabbix server/reachability.freezer,1h)=0</code>
<input type="checkbox"/>	Disaster	OK	Fridge temperature rising! Check its status, please		<code>min(/Zabbix server/temp.fridge,30m)>12</code>
<input type="checkbox"/>	High	OK	Fridge temperature sensor not available		<code>max(/Zabbix server/reachability.fridge,1h)=0</code>

REACT TO EMERGENCIES

- Automatically react to emergencies and gain our attention in as many ways as possible
- Example: ~~Janne forgot his facial cream~~ Smoke detected in garage
 - Turn on all the lights at home as red
 - Play alert sound via smart speaker
 - Send alert notifications via e-mail
 - Send camera screenshots
 - Report current temperature

MORE INFORMATION

- Zabbix blog: <https://blog.zabbix.com/>
- LinkedIn: <https://linkedin.com/in/jannepik/>
- GitHub: <https://github.com/jannepikkarainen/whatsuphome/>
- Email: contact@whatsuphome.fi
- Technical details of all the topics covered today will be published as new blog posts after this event

THANK YOU!