



PSI3542 2023

SISTEMAS EMBARCADOS PARA IOT

AULA 15 19/10/2023 OPEN FIRMWARE TASMOTA PARA IOT DEVICES

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Dispositivos IoT comerciais

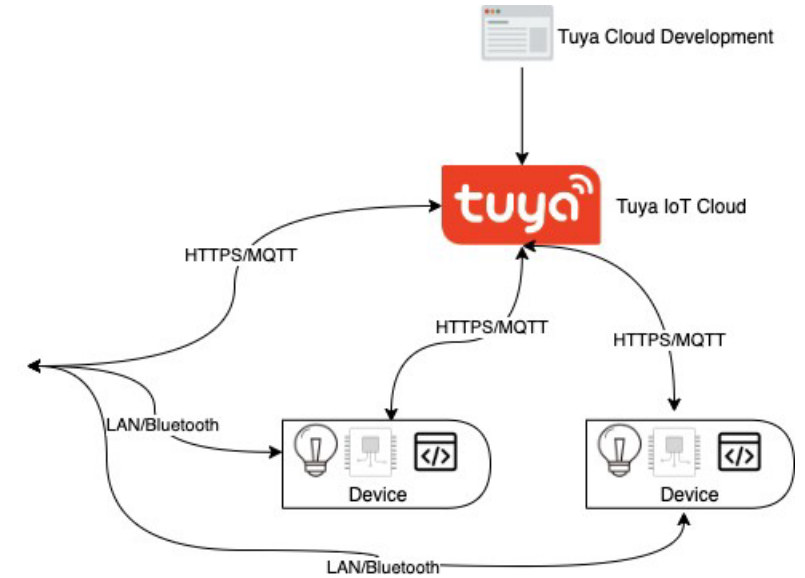
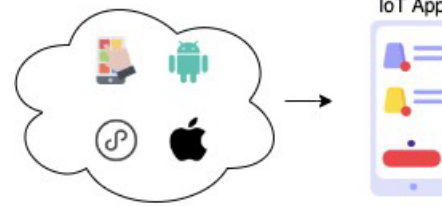
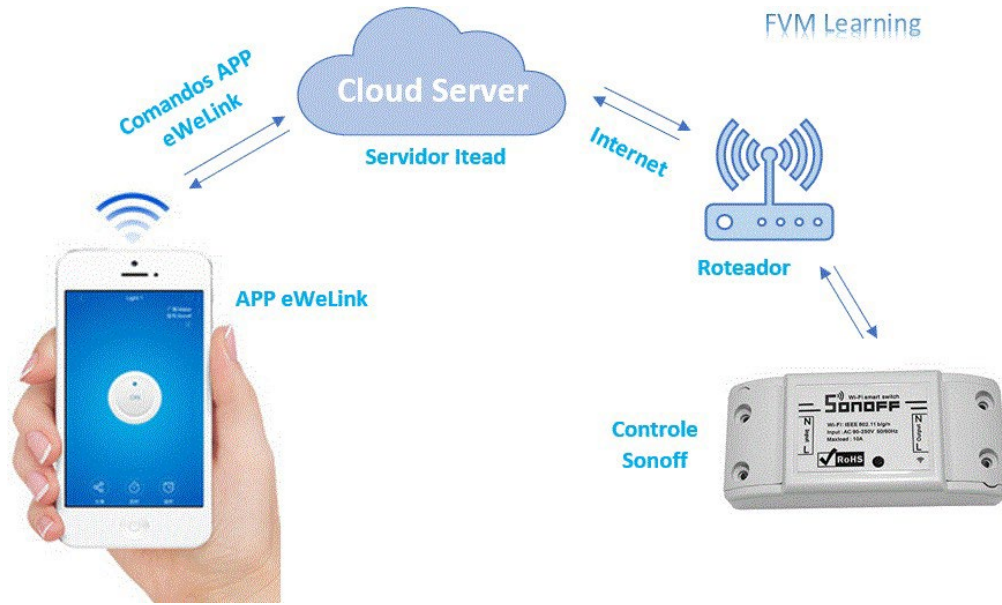


INTEROPERABILIDADE?

DISPOSITIVOS IOT: INTEROPERABILIDADE

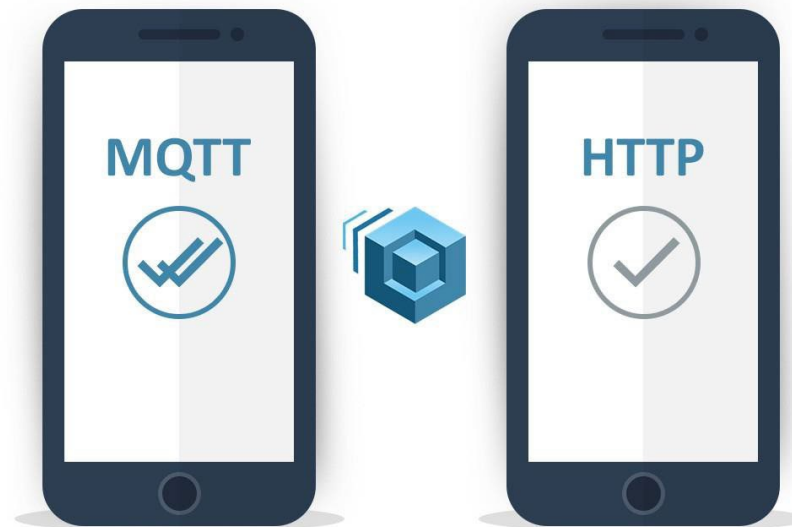
- IoT interoperability is the capacity for multiple components within an IoT deployment to effectively communicate, share data and perform together to achieve a shared outcome. Organizations must be able to transmit and understand data throughout all the connections from devices to the cloud...
- ALGUNS ASPECTOS
(<https://link.springer.com/article/10.1007/s11036-018-1089-9>)
 - TECHNICAL (DEVICE, NETWORK)
 - SYNTACTIC
 - SEMANTIC
 - PLATFORM

Dispositivos, Cloud e APPs



TASMOTA: MQTT E HTTP

- DISPOSITIVOS TASMOTA PODEM SER CONTROLADOS POR MQTT OU POR HTTP

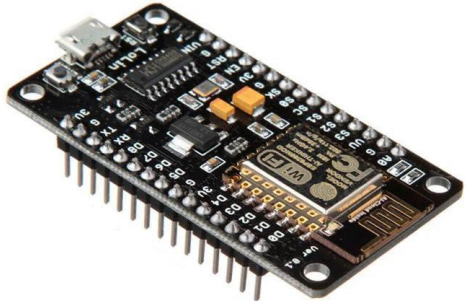


TASMOTA: COMO ENVIAR COMANDOS

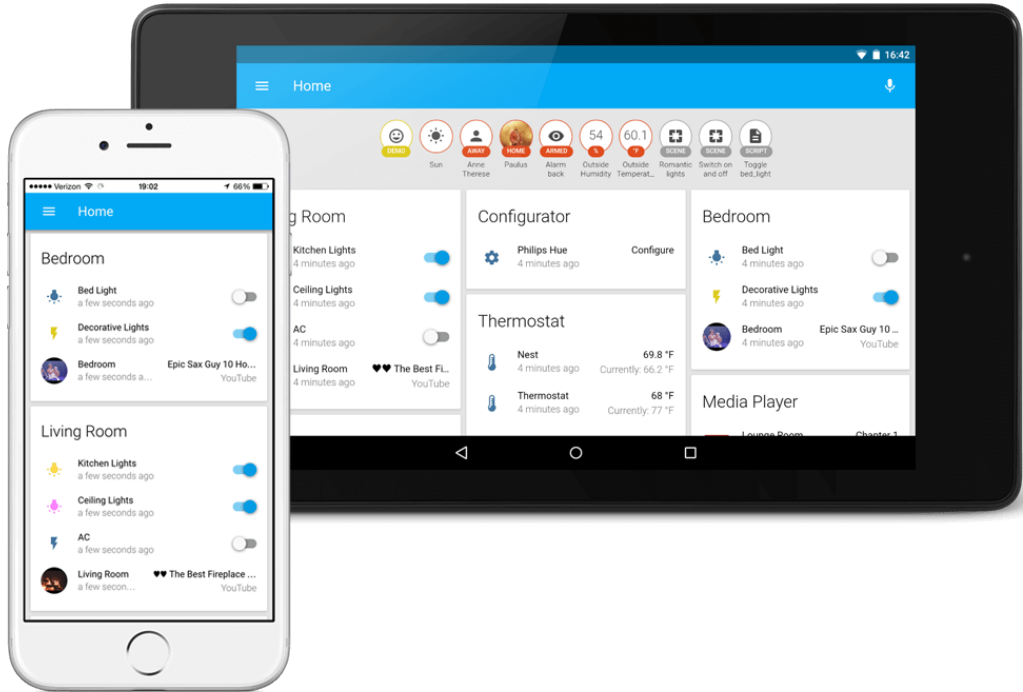
<https://tasmota.github.io/docs/Commands/#with-mqtt>

- WEB REQUESTS
 - `http://<ip>/cm?cmnd=Power%20TOGGLE`
 - `http://<ip>/cm?cmnd=Power%20On`
 - `http://<ip>/cm?cmnd=Power%20off`
 - `http://<ip>/cm?user=admin&password=joker&cmnd=Power%20Toggle`
- MQTT
 - `cmnd/%topic%/<command> (SP)<payload>`
- CONSOLE DE COMANDOS
- SERIAL BRIDGE

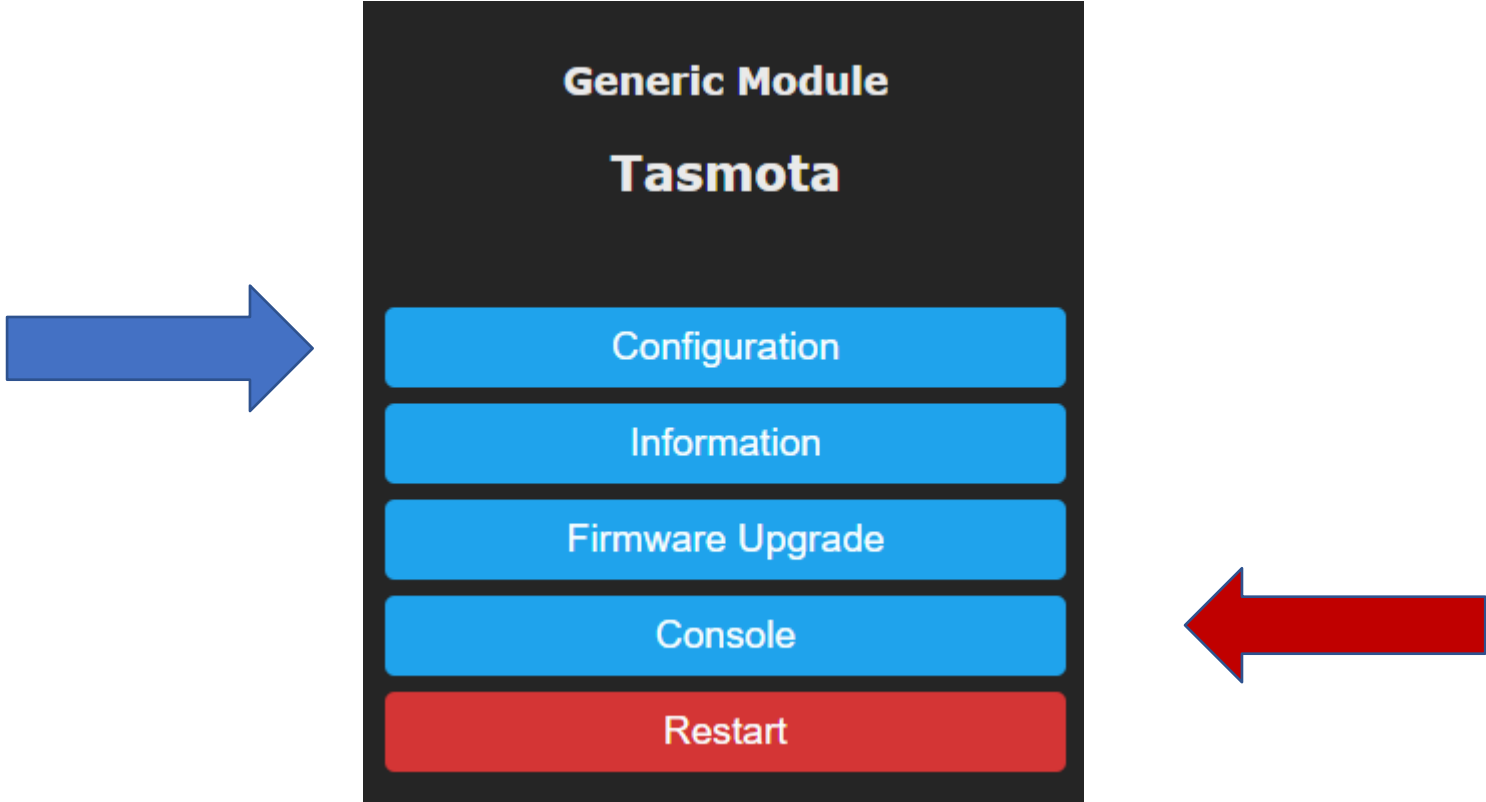
TASMOTA: DISPOSITIVOS



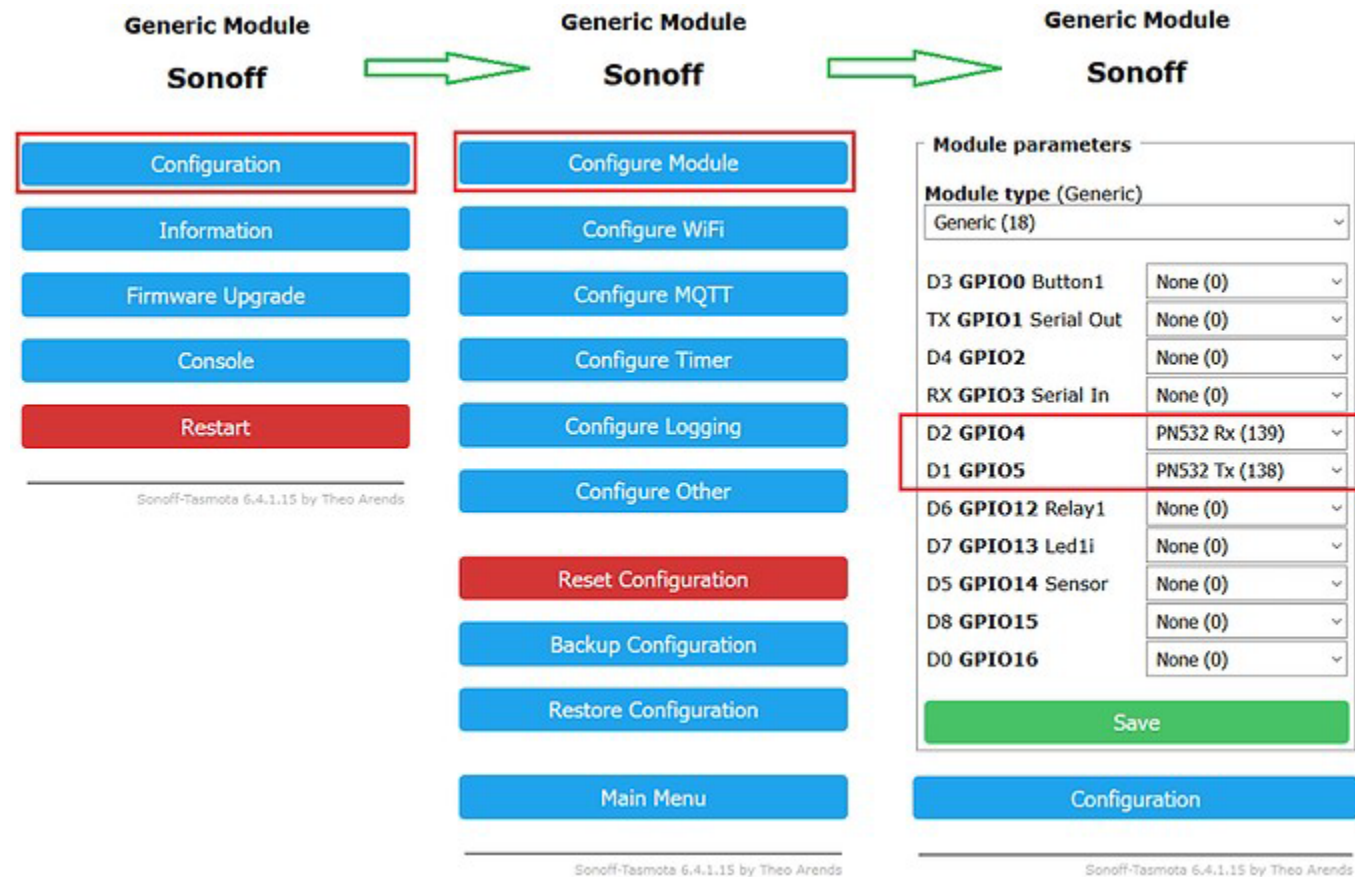
TASMOTA E HOME ASSISTANT



TASMOTA WEB UI



TASMOTA MODULE CONFIGURATION



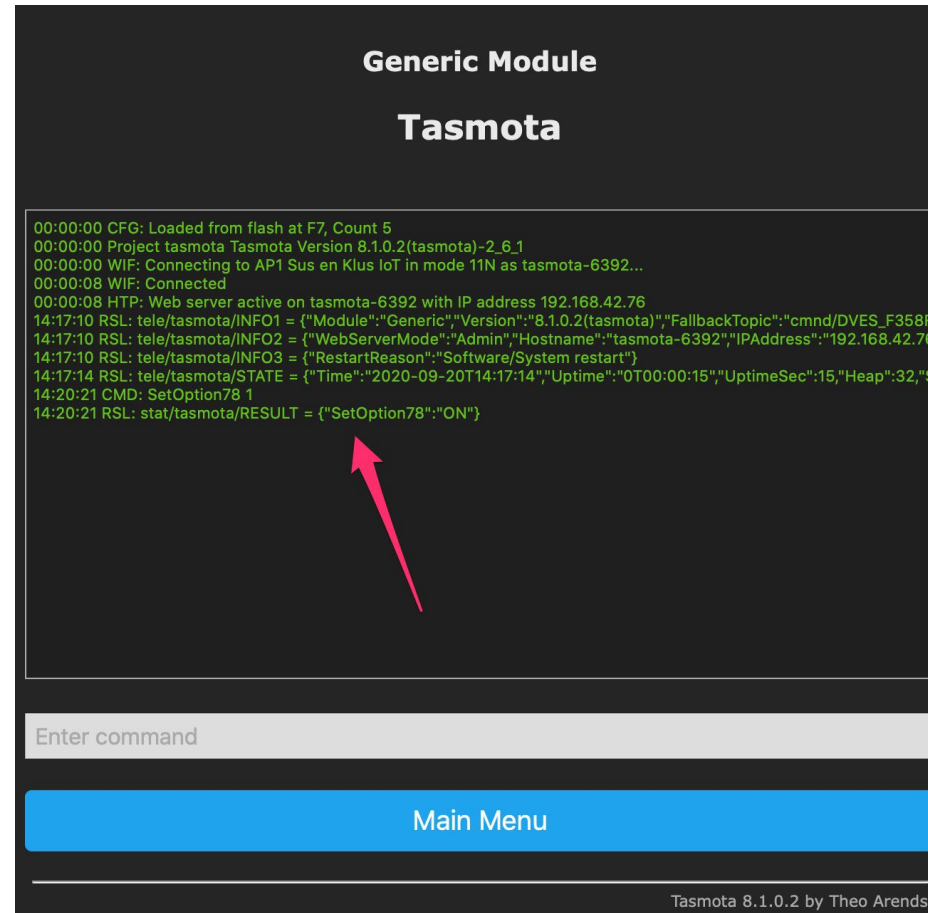
TASMOTA MQTT CONFIGURATION

The image displays three sequential screenshots of the Sonoff Basic Module configuration interface, illustrating the steps to configure MQTT. Red boxes and numbers 1 through 8 highlight the specific actions and fields.

- Step 1:** The first screenshot shows the main menu with the 'Configuration' button highlighted by a red box and the number 1.
- Step 2:** The second screenshot shows the 'Configure MQTT' button highlighted by a red box and the number 2.
- Step 3:** The third screenshot shows the 'MQTT parameters' form. The 'Host' field is highlighted with a red box and the number 3.
- Step 4:** The 'Client' field is highlighted with a red box and the number 4.
- Step 5:** The 'User' field is highlighted with a red box and the number 5.
- Step 6:** The 'Password' field is highlighted with a red box and the number 6.
- Step 7:** The 'Topic' field is highlighted with a red box and the number 7.
- Step 8:** The 'Save' button is highlighted with a red box and the number 8.

Below the main configuration area, there is a 'Configuration' button.

TASMOTA INTERFACE DE COMANDO



The screenshot displays the Tasmota web interface. At the top, it says "Generic Module" and "Tasmota". Below this is a log window showing system startup and configuration messages. A red arrow points to the last log entry: "14:20:21 RSL: stat/tasmota/RESULT = {"SetOption78":"ON"}". Below the log is a text input field labeled "Enter command" and a blue button labeled "Main Menu". At the bottom right, it says "Tasmota 8.1.0.2 by Theo Arends".

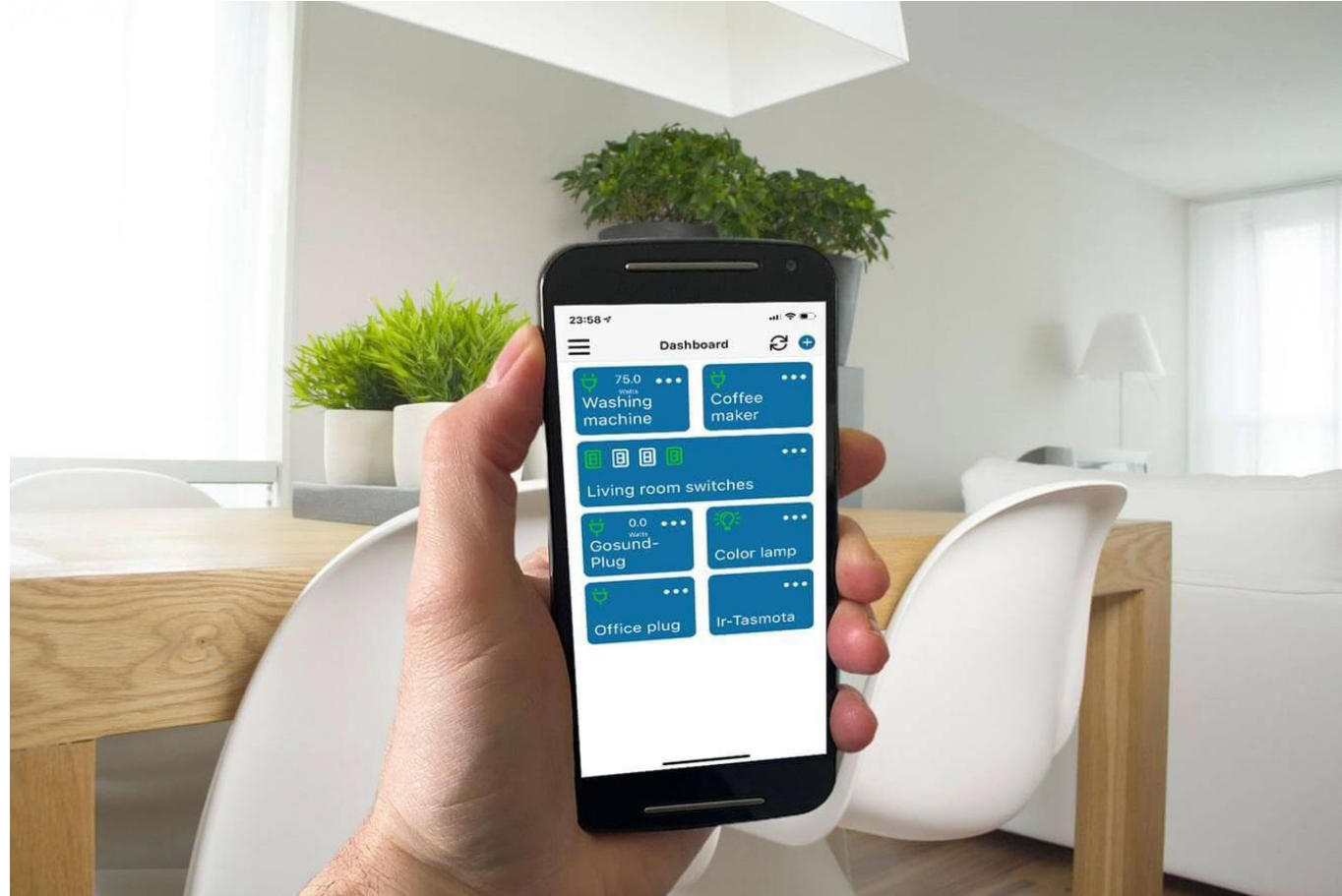
```
00:00:00 CFG: Loaded from flash at F7, Count 5
00:00:00 Project tasmota Tasmota Version 8.1.0.2(tasmota)-2_6_1
00:00:00 WIF: Connecting to AP1 Sus en Klus IoT in mode 11N as tasmota-6392...
00:00:08 WIF: Connected
00:00:08 HTP: Web server active on tasmota-6392 with IP address 192.168.42.76
14:17:10 RSL: tele/tasmota/INFO1 = {"Module":"Generic","Version":"8.1.0.2(tasmota)","FallbackTopic":"cmnd/DVES_F358F
14:17:10 RSL: tele/tasmota/INFO2 = {"WebServerMode":"Admin","Hostname":"tasmota-6392","IPAddress":"192.168.42.76
14:17:10 RSL: tele/tasmota/INFO3 = {"RestartReason":"Software/System restart"}
14:17:14 RSL: tele/tasmota/STATE = {"Time":"2020-09-20T14:17:14","Uptime":"0T00:00:15","UptimeSec":15,"Heap":32,"S
14:20:21 CMD: SetOption78 1
14:20:21 RSL: stat/tasmota/RESULT = {"SetOption78":"ON"}
```

Enter command

Main Menu

Tasmota 8.1.0.2 by Theo Arends

TASMOTA APPS: TASMOTROL



TASMOTA: SECURITY!!!

- <https://tasmota.github.io/docs/Securing-your-IoT-from-hacking/#securing-your-wlan>

DÚVIDAS?

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