

Web of Things at FOSDEM 2026

Quick start

- [Print on the receipt printer](#) (select a photo then click “Invoke”)
- [display images on the e-paper screen](#)

Advanced: Web of Things

Web of Things is a set of standards for Internet of Things use cases. At the Matrix Hackathon and FOSDEM 2026, I brought the following hardware. They support support Web of Things via HTTP and Websockets.

Receipt printer

Current status: Ready



- Epson TM-T20III
- Native colors: 1-bit
 - #ffffff (white)
 - #000000 (black)
- Native resolution: 576 pixels wide, any height (will be converted to be divisible by 8 pixels)
- Supported image formats: PNG (best results), JPG

URLs

Use these URLs to prepare for the event or test your scripts. They will not print anything.

- Test URL for images:
<https://wot-wrench.chrpaul.de/#try=https://wot-why.jaller.de/receipt-printers-for-events/photo>
 - Thing Description: <https://wot-why.jaller.de/receipt-printers-for-events/photo>
- Test URL for text:
<https://wot-wrench.chrpaul.de/#try=https://wot-why.jaller.de/receipt-printers-for-events/text>
 - Thing Description: <https://wot-why.jaller.de/receipt-printers-for-events/text>

The final URLs will be published at the Matrix Hackathon.

Code examples

Bash:

```
curl -X POST \  
-H "Content-Type: application/json" \  
--data "{\"image\": \"$(base64 image.png | tr -d '\\n')\"}" \  
https://wot-why.jaller.de/receipt-printers-for-events/photo/actions/print-photo
```

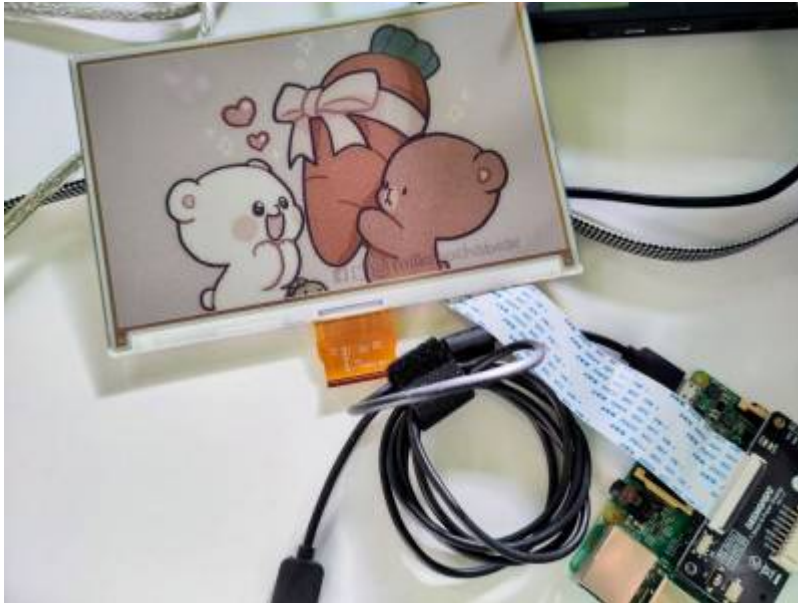
Or in NodeJS / Bun / Deno:

```
import { readFile } from "node:fs/promise";  
  
const image = await readFile("image.png");  
const response = await  
fetch("https://wot-why.jaller.de/receipt-printers-for-events/photo/actions/p  
rint-photo", {  
  method: "POST",  
  headers: {  
    "Content-Type": "application/json",  
  },  
  body: JSON.stringify({  
    image: image.toString("base64"),  
  }),  
});  
  
if (!response.ok) {  
  throw Error(`Failed to upload image. HTTP ${response.status}`);  
}
```

E-paper screen

Current status: Ready at

<https://wot-wrench.chrpaul.de/#try=https://wot.chrpaul.de/image-storage/LDN3dJE3vu>



- [7.3inch ACeP 7-Color E-Paper Display](#)
- Native colors: 7 colors
 - #000000 (black)
 - #ffffff (white)
 - #ff0000 (red)
 - #00ff00 (green)
 - #0000ff (blue)
 - #ffff00 (yellow)
 - #ff8000 (orange)
- Native resolution: 800×480 pixels
- Supported image formats: PNG (best results), JPG

URLs

Use these URLs to prepare for the event or test your scripts. They will not display anything on the screen, but the Thing has a preview property.

- Test URL: <https://wot-wrench.chrpaul.de/#try=https://wot.chrpaul.de/image-storage/fosdem>
 - Image property: <https://wot.chrpaul.de/image-storage/fosdem>
- Production URL for scripts:
<https://wot-wrench.chrpaul.de/#try=https://wot.chrpaul.de/image-storage/LDN3dJE3vu>
 - Image property for scripts:
<https://wot.chrpaul.de/image-storage/LDN3dJE3vu/properties/image>

Code Examples

To upload a local PNG file `image.png` via a Bash:

```
curl -X PUT \  
-H "Content-Type: application/json" \  
--data "\"$(base64 image.png | tr -d '\n')\"" \  

```

<https://wot.chrpaul.de/image-storage/fosdem/properties/image>

Or in NodeJS / Bun / Deno:

Have a look at this demo project: <https://codeberg.org/jaller94/wot-fosdem-demo>

```
import { readFile } from "node:fs/promise";

const image = await readFile("image.png");
const response = await
fetch("https://wot.chrpaul.de/image-storage/fosdem/properties/image", {
  method: "PUT",
  headers: {
    "Content-Type": "application/json",
  },
  body: JSON.stringify(image.toString("base64")),
});

if (!response.ok) {
  throw Error(`Failed to upload image. HTTP ${response.status}`);
}
```

Dithering

Images will be resized and [dithered](#) automatically. However, if you want full control over the result, you can send images in the right resolution using only the supported color palette.

For TypeScript, I recommend using [my fork of dither-me-this](#). It supports custom color palettes which is optimal for the e-paper screens. Previously, I used [my fork of canvas-dither](#). Its API is easier and more mature, but it only supports 1-bit dithering. It's most suitable for the receipt printer.

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