WebThings Gateway Kit

Getting started

Everything you need to set up a private IoT network

WebThings
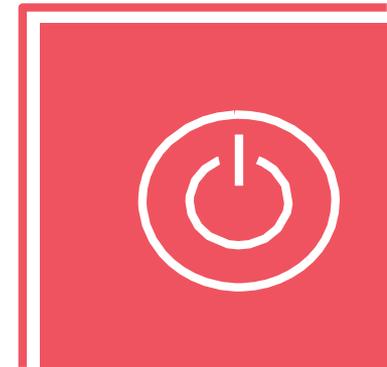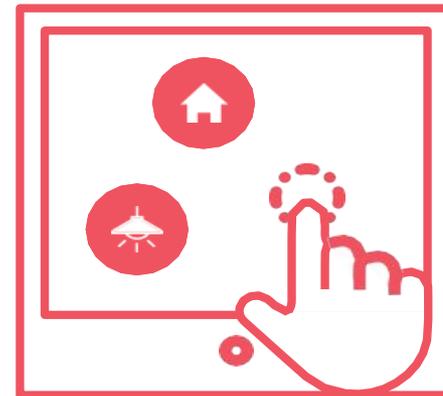
Quick Start

Get up and running in five easy steps!
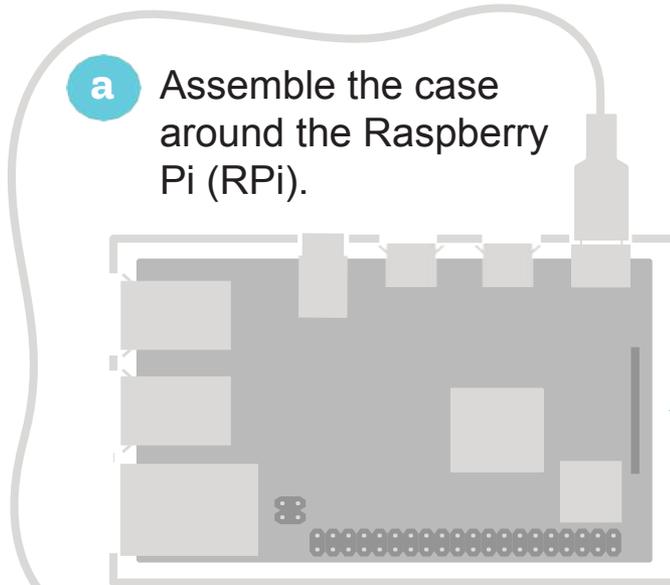
a Assemble the case around the Raspberry Pi (RPi).

Steps 2-6 can be performed on a personal computer (PC) or smartphone. PC screenshots are shown on pages 4-9.

b Insert the pre-flashed microSD card into the RPi.

Figure 2. Network list.

Figure 1. Diagram of the WebThings Gateway hardware.

c Connect the power supply and plug into power.

Not working? Find more detailed setup instructions starting on page 4.

**1** **Assemble the gateway and power on.**
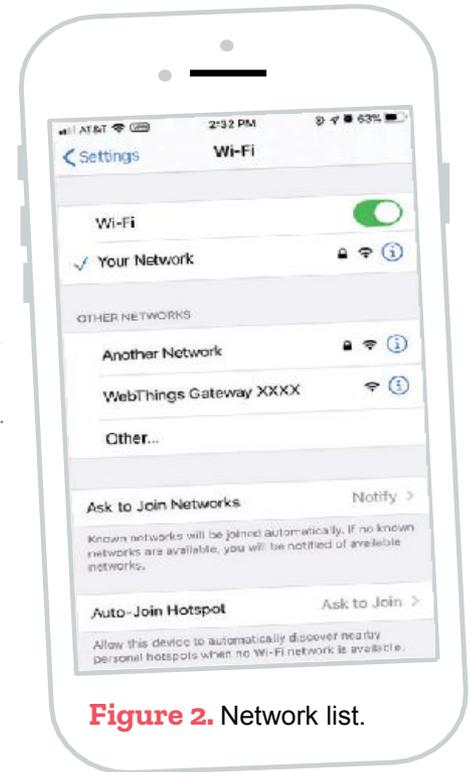
Scan for and select the network WebThings Gateway XXXX.

2

Figure 3. The captive portal page.

Select a Wi-Fi network for your IoT hub from the captive portal page.
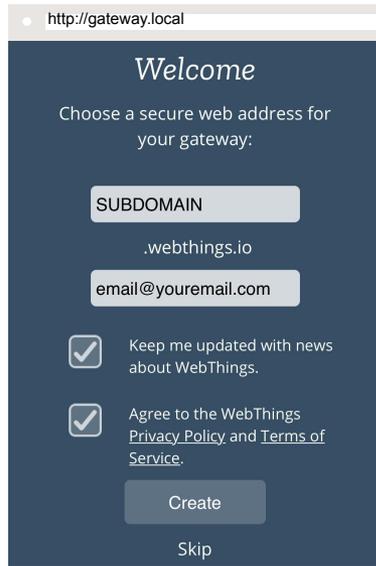
Figure 4. Create your subdomain.

Open a browser and go to http://gateway.local to **create your subdomain.**
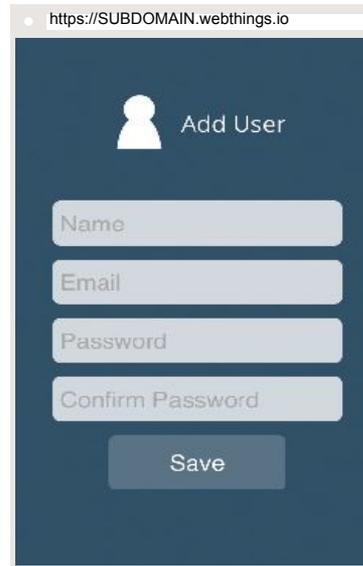
Figure 5. Create your user account.

**Create your user account** from your new subdomain at https://SUBDOMAIN.webthings.io
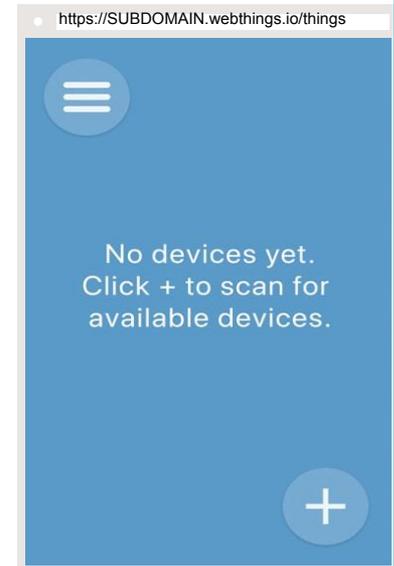
Figure 6. The main Things page.

You're all set! The ☰ Main Menu is your launching point to start playing with your web of things.

go!

Assemble Gateway and Power On

1. Assemble the case around the Raspberry Pi (RPi).
2. Insert the pre-flashed microSD card into the RPi.
3. Connect the power supply and plug into power.
4. Check that LEDs light up: red indicates power, green indicates activity.
5. Wait a few minutes for the software to boot.
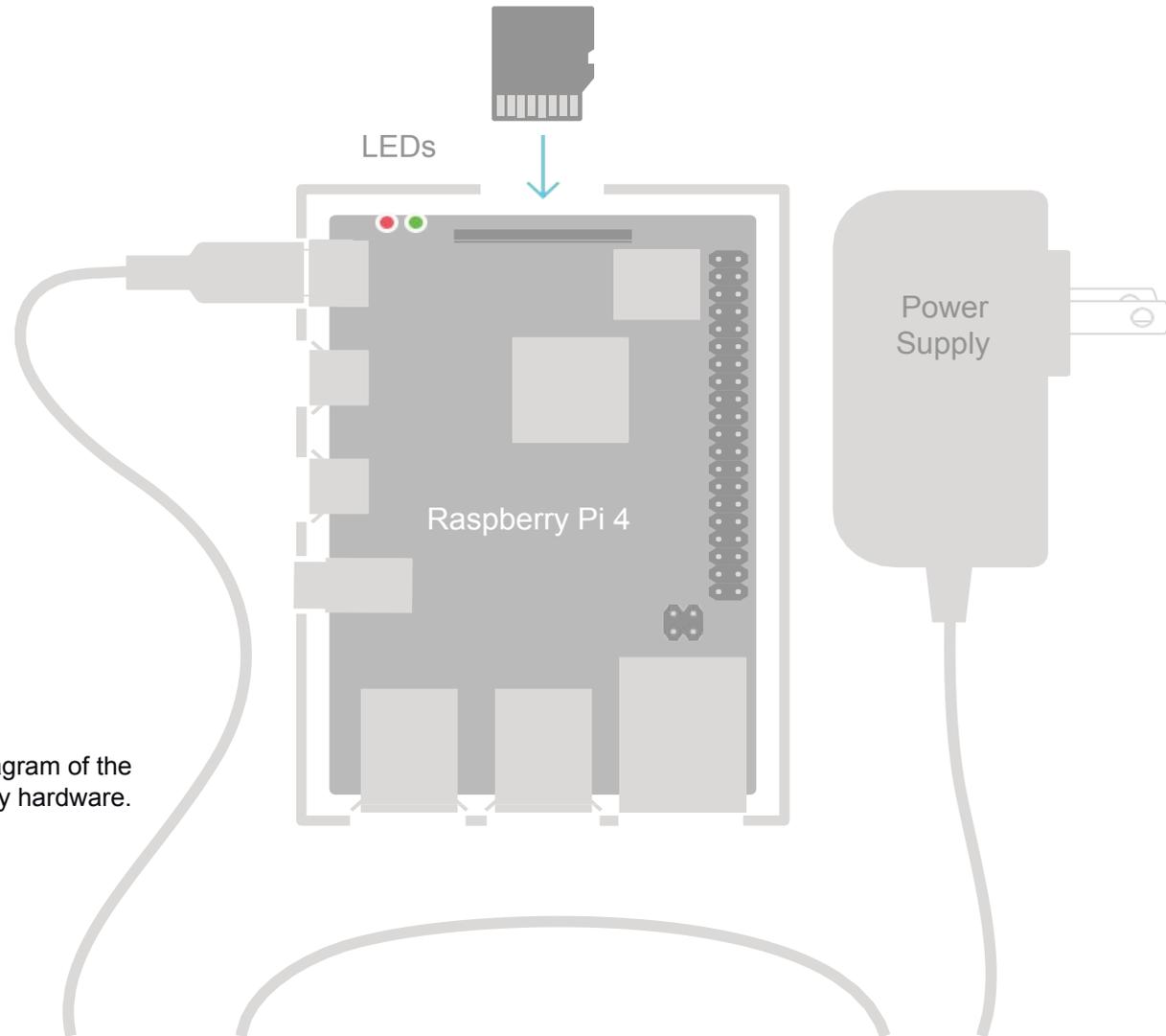
Figure 7. Diagram of the WebThings Gateway hardware.

LEDs

Power Supply

Raspberry Pi 4

Configure Wi-Fi Network

Figure 8. Network list on a personal computer (MacOS).

Note: For troubleshooting issues, see "Resources"
on page 18 of this guide.

Your gateway will most likely connect to the Internet and also communicate with all your devices via Wi-Fi, which needs to be set up next.

1. Use a personal computer or smartphone to scan for and connect to the gateway's broadcast SSID in the form of WebThings Gateway XXXX (Figure 8).

2. A captive portal page will appear, showing nearby Wi-Fi networks (Figure 9).

3. Select the desired network and enter the password when prompted.

4. The "Connecting to Wi-Fi…" page will automatically disappear.

Figure 9. The captive portal page.

Configure Ethernet
(optional)
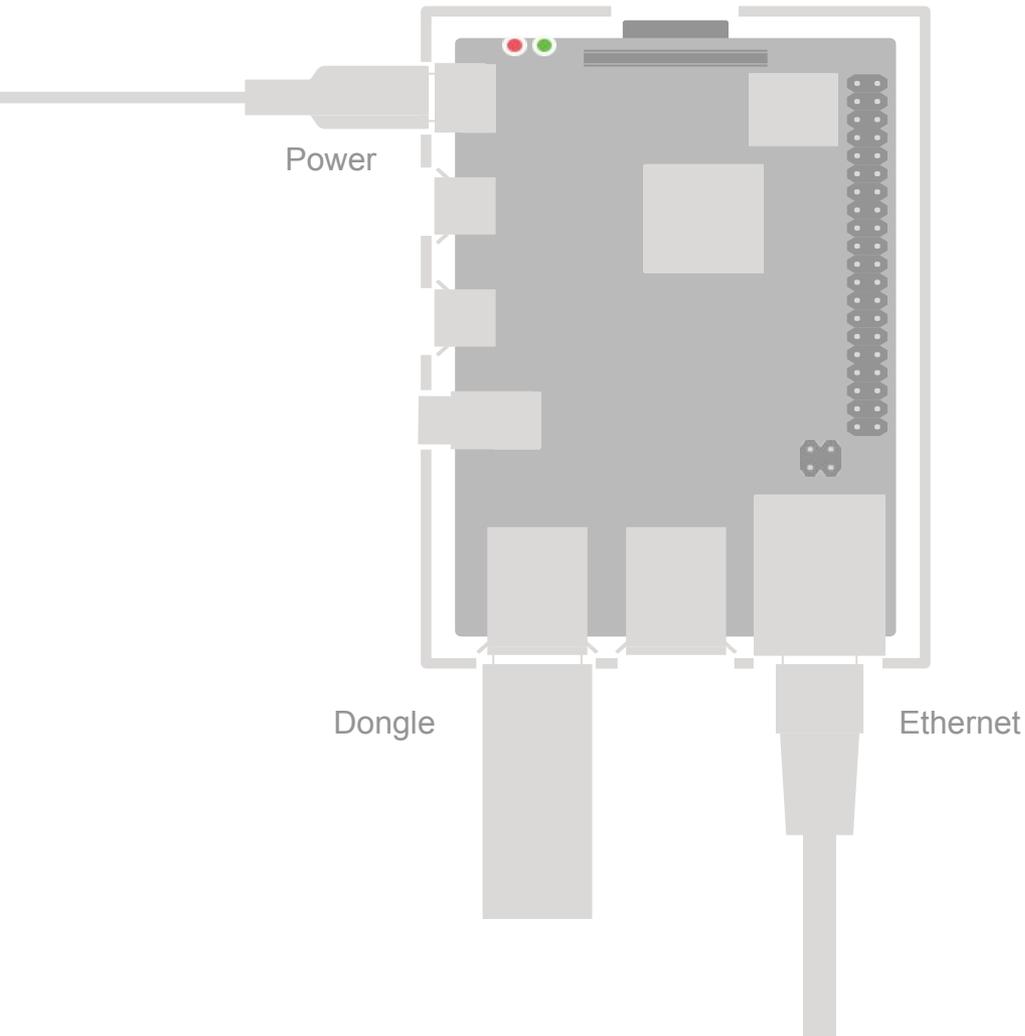
To connect over Ethernet instead of Wi-Fi (or in addition to it), simply plug the gateway into a local network that provides DHCP leases.

The gateway should obtain an IP address automatically.

Power

Dongle

Ethernet

Figure 10. Hardware setup for connecting over Ethernet.

Create a Secure Subdomain

Figure 11. Create your subdomain.

After you've connected the RPi to your wireless network, register a subdomain to safely access your gateway over the Internet using a secure tunnelling service.

Note: You may skip this step now (either to only use the gateway locally on your network or to manually configure DNS yourself), but if you change your mind later you'll have to re-flash the gateway in order to register a subdomain. Learn more from our detailed Gateway Getting Started User Guide, listed on page 18 under "Resources."

1. Point your browser to http:// gateway.local or the gateway IP address (Figure 11).
2. Create a subdomain that is personal and memorable. Enter it along with a valid email address.
3. Click **Create** and wait for a few moments.
4. Try loading https://SUBDO-MAIN.webthings.io once the certificate installation is complete.

RECLAIM YOUR SUBDOMAIN

If you confirm your email, you will be able to reclaim your subdomain later to re-install on a new gateway.

Figure 12. Reclaim your subdomain.

Create a User Account

Figure 13. Create a user account.

Enter credentials for your own user account. This is how you'll access the gateway to discover, add, monitor, and manage all your connected devices.

(You can add more user accounts later.)

Add-ons

The WebThings Gateway has an add-on system that lets it understand how different connected devices and services ("things") operate. For each type of device (or service) you'll need to install and configure the proper add-on so the gateway can use it to discover and connect to them as things.

This example shows how to install the Weather add-on so you can connect to an open weather information service and display current conditions.
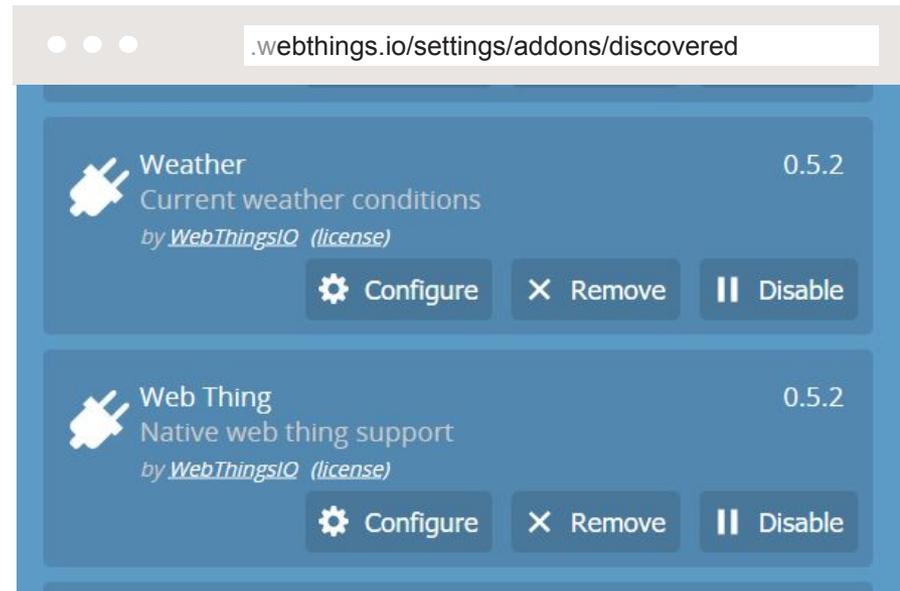

Figure 14. A list of installable add-ons.

1. From the ☰ Main Menu, go to Settings and select Add-ons.
2. From the Add-ons page, click on the icon ⊕ to bring up an alphabetical list of more installable add-ons. Find the Weather add-on and click **Add** (Figure 14).

CONNECT THINGS

MAIN.webthings.io/settings/addons
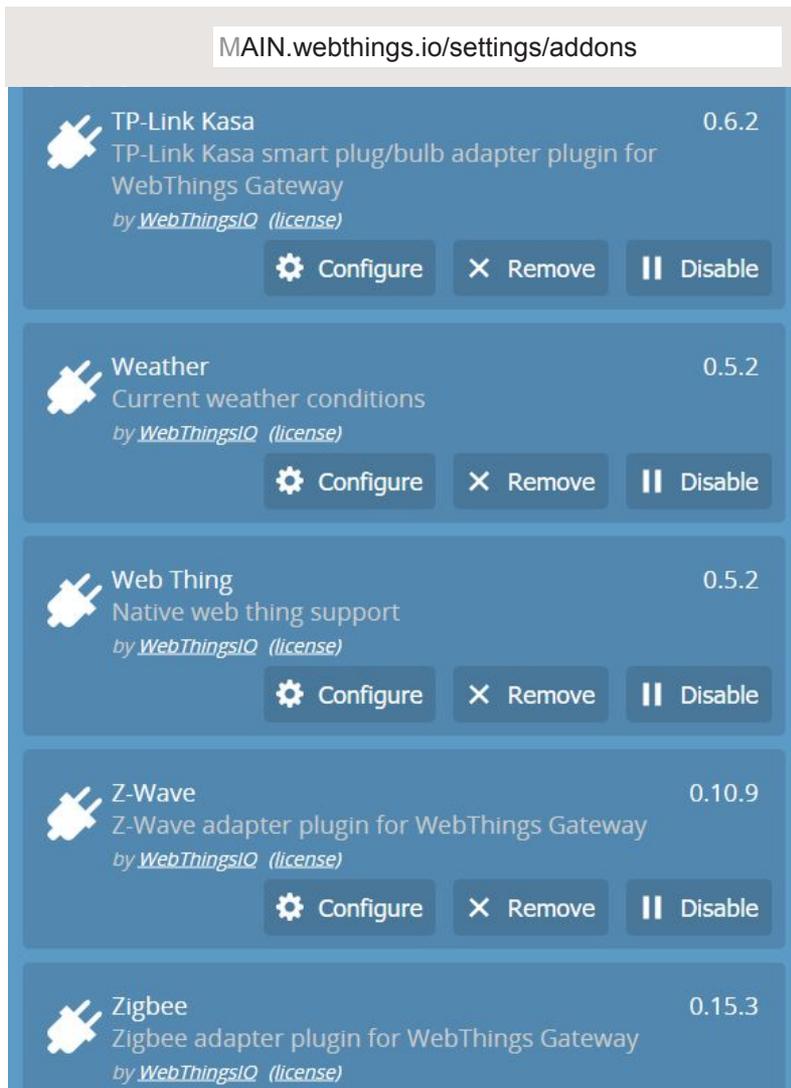
Figure 15. List of your installed add-ons.

3. Click ← to return to list of installed add-ons. Find the Weather add-on and click **Configure**. (Figure 15.)
4. Configure the Weather add-on (Figure 16):
   ○ Enter the name of the location for which you want to track weather.
   ○ Enter the latitude and longitude (find on www.latlong.net).
   ○ You can use the default OpenWeatherMap API key.
5. Return to the main Things page (https://SUBDOMAIN.webthings.io/things) and click the ⊕ icon.
6. Scanning for new devices should discover the Weather thing with the name you specified. Click **Save**. (Figure 17).
7. Now you can view weather data by going to the main Things page to see the installed Weather thing (Figure 18).

tings/addons/config/weather-adapter

Locations

List of locations

Name*
Name of location

Los Gatos, CA

Latitude*
Latitude of location

37.227

Longitude*
Longitude of location

-121.975

Units*
Units to use, i.e. imperial for °F, metric for °C

imperial

Provider*
Weather data provider to use

openweathermap

Use Default OpenWeatherMap API Key
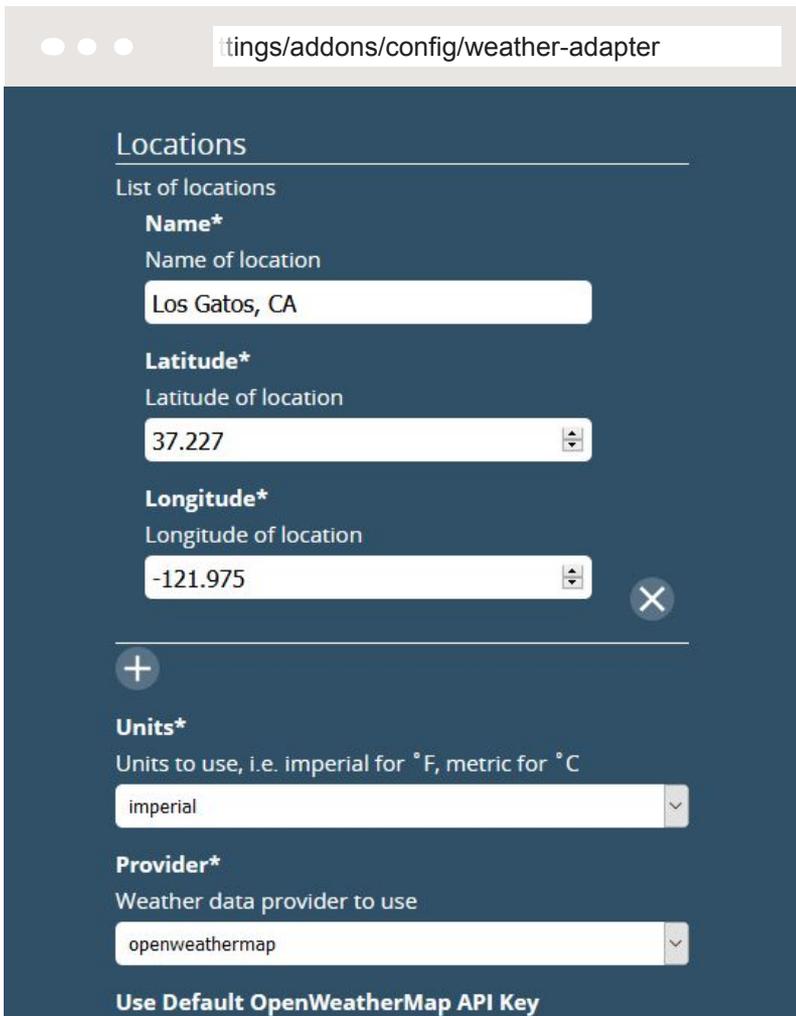
Figure 16. Configuring the Weather add-on.

s://SUBDOMAIN.webthings.io/things

Scanning for new devices...

Weather (Los Gatos, CA)   Save

Temperature Sensor

Add by URL...

Cancel
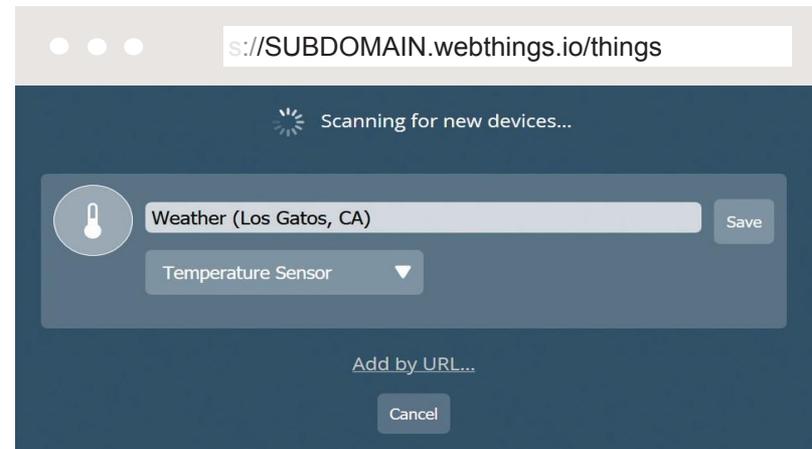
Figure 17. Adding a Weather thing.

s://SUBDOMAIN.webthings.io/things

OFF
Family Room Lamp

69°F
Weather (Los Gatos, CA)

OFF
Front Door Switch
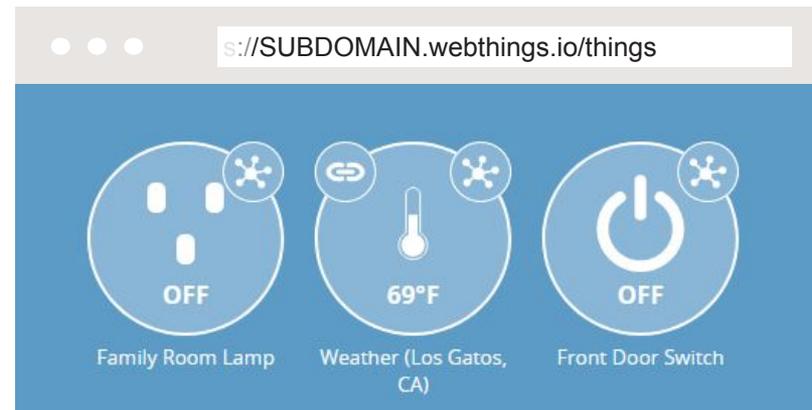
Figure 18. Weather data from your Weather thing.

Scan, Save, Monitor and Control Things

Now that your gateway is set up it's easy to discover connected devices in the environment around you.

By default the RPi supports Wi-Fi, Bluetooth, and Ethernet. Additional accessories may be purchased to increase the number of devices your gateway can connect to.
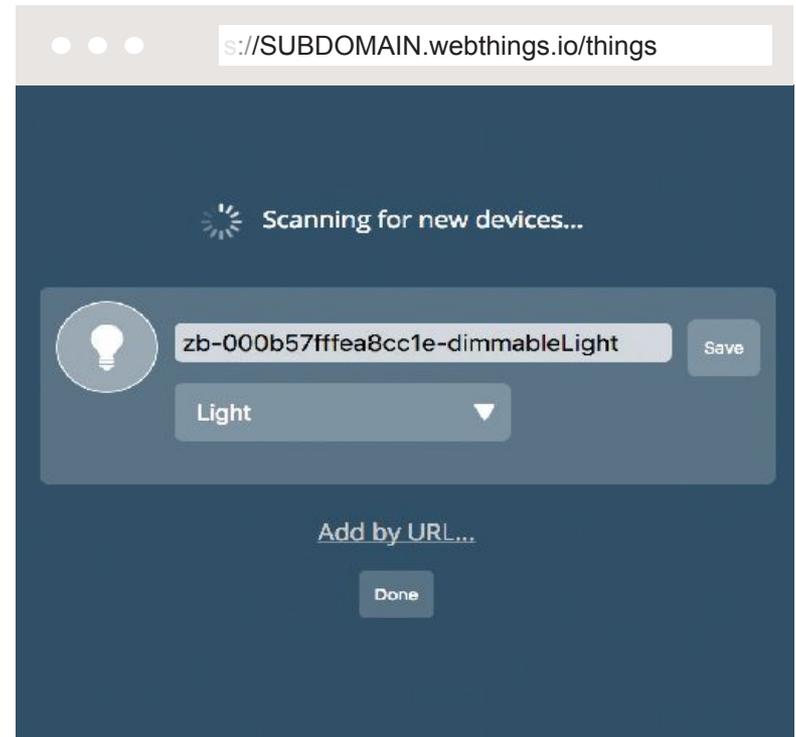
Figure 19. Scanning and finding a thing.

Scan for Things

- Click ⊕ to scan for new things in your environment to connect.
- You may rename things to make it easy to remember what and where they are. Click **Save** and **Done** to finish adding a thing.
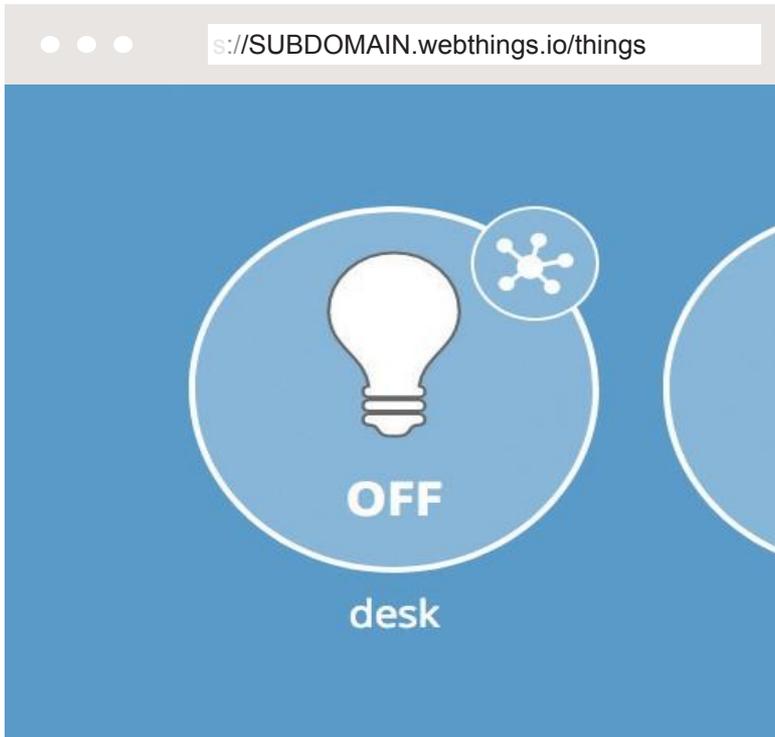
Figure 20. Main icon for a thing.

Figure 21. Detailed view of a thing.

Monitor Things

- The main icon shows the status of the thing.
- Click the ⊛ splat icon to see a detailed view of all properties and actions.

Control Things

- Try clicking an icon directly to see if it supports on/off toggling.
- Click the ⋮ vertical ellipsis icon to see the thing's events, change its name, or remove it.

15
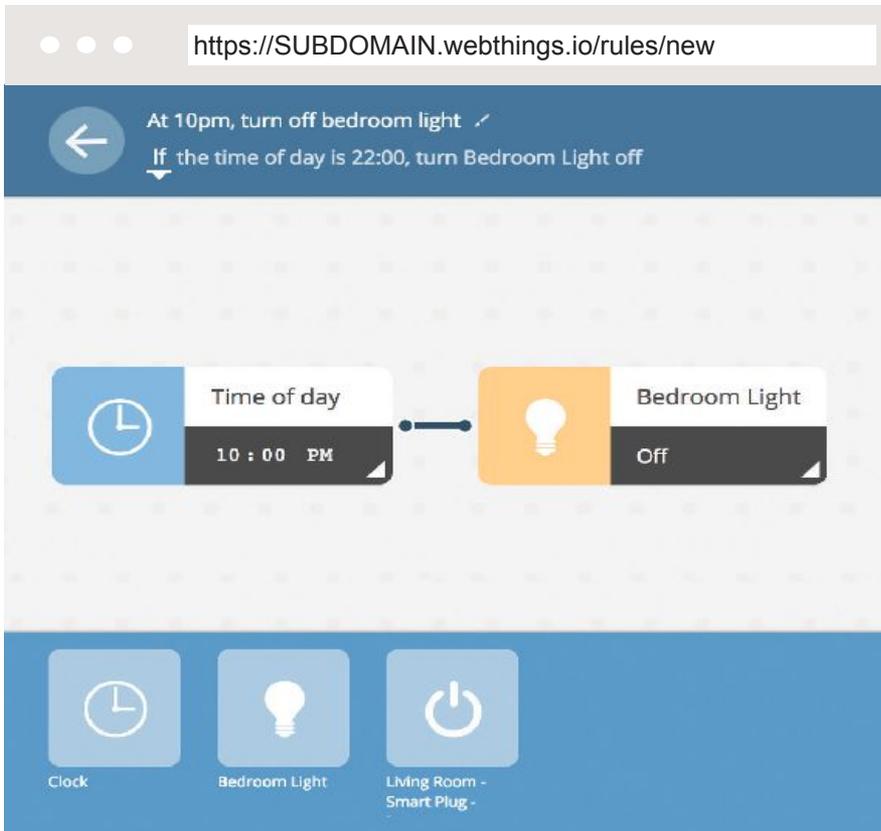
Adding a Rule

Figure 22. Adding a rule.

Once your things are connected, you can create rules to automate them for your convenience.

1. Access the Rules page from the Main Menu and click ⊕ to add a new rule.

2. Rules follow a basic "If (A) then (B)" pattern. Build a rule by dragging out the (A) condition and the (B) action from the panel at the bottom of the page. Configure the desired properties on both the (A) and (B) rule elements.

3. Click ← to activate the rule. You can add/edit/delete rules from the Rules page.

MORE EXAMPLES

Discover Other Smart Devices

When you scanned for things, did the gateway discover other smart devices you have in your environment? If so, try adding them at the main Things page and see what you can observe about them. For example, you should be able to turn a smart outlet device on and off using the gateway user interface.

Extend Your Gateway's Capabilities

The gateway has an add-ons system so that you can expand its reach. A few add-ons are installed by default (WebThing, Zigbee*, and Z-Wave*) so that your gateway will work with a large number of commercial devices right out of the box. However, you can boost support for additional devices if they are supported by an add-on. Find the Add-ons page under Settings, with a long list of additional device types (many of which have been contributed by our WebThings community).

Device Logging

For many devices, the gateway can keep track of the data they report and the actions they take. See that history through the gateway's logging feature, which you can find in the Main Menu. Configure logging for any of your devices that support logging, and then return to the gateway at any time to review the log of data for those devices.

These and many other things to try are described in our detailed Gateway User Guide, listed on page 18 under "Resources."

* These add-ons are available through accessories.

Resources

WebThings Gateway Online Guides

For more information on how to setup or troubleshoot your gateway, visit the Getting Started Guide at webthings.io/docs/gateway-getting-started-guide.html.

Once your gateway is set up, visit the User Guide at webthings.io/docs/gateway-user-guide.html to learn more about operation and enhanced features.

WebThings Gateway

Visit webthings.io/gateway for everything you need to know about WebThings Gateway, which lets you monitor and control all your smart home devices via a unified web interface while respecting your privacy and personal data.

WebThings

To learn more about our open platform for monitoring and controlling devices over the web, visit the WebThings homepage at webthings.io.

WebThings IoT Privacy

Open Internet

your data

https tunnel

your data

just web

your IoT devices

Vendor Private Cloud

your data

apps galore

your IoT devices
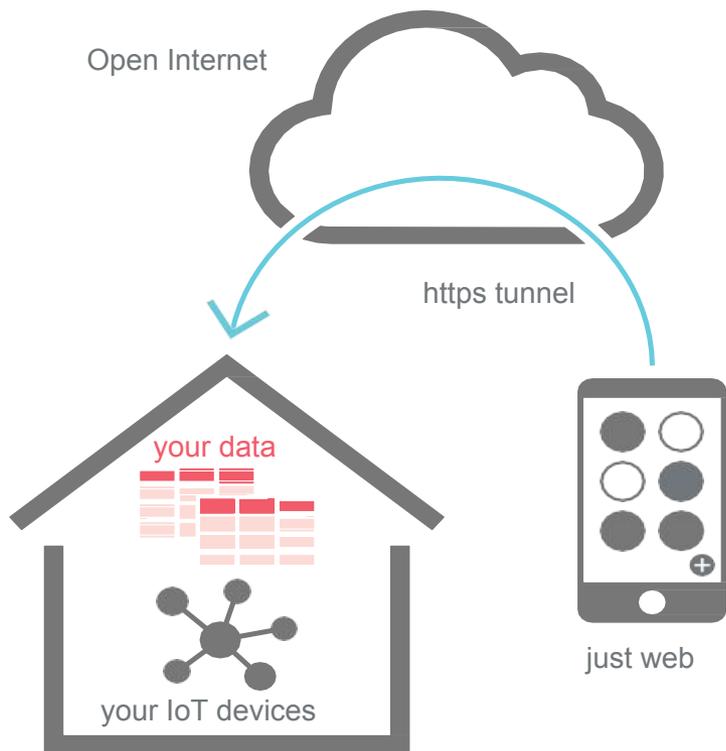
WebThings IoT Privacy

All your data stays local to your devices, always under your control.
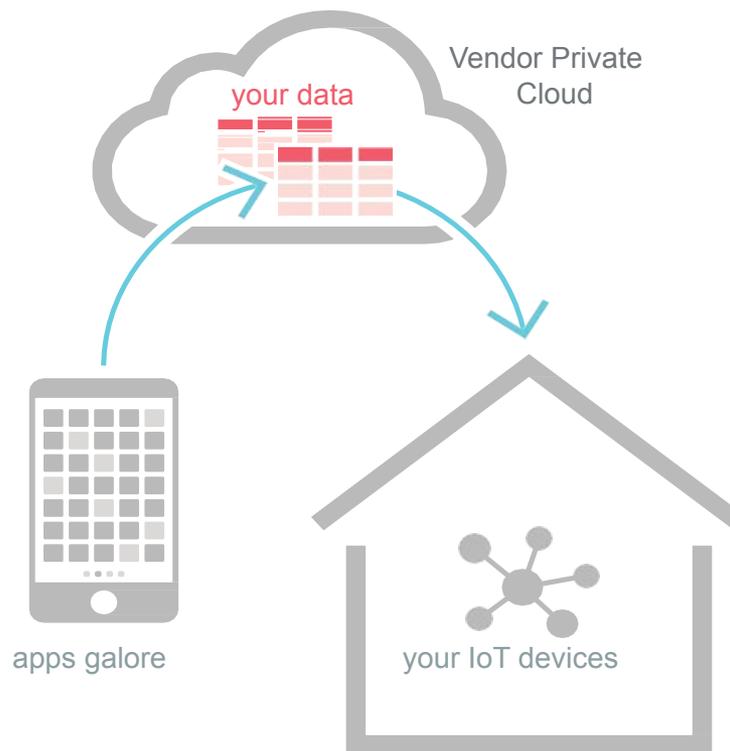
Typical IoT Approach

Vendors collect all your data in their cloud for their use and completely control what you can see through their apps.

microSD card, pre-flashed
with WebThings

Power
Supply

Raspberry Pi 4

Case
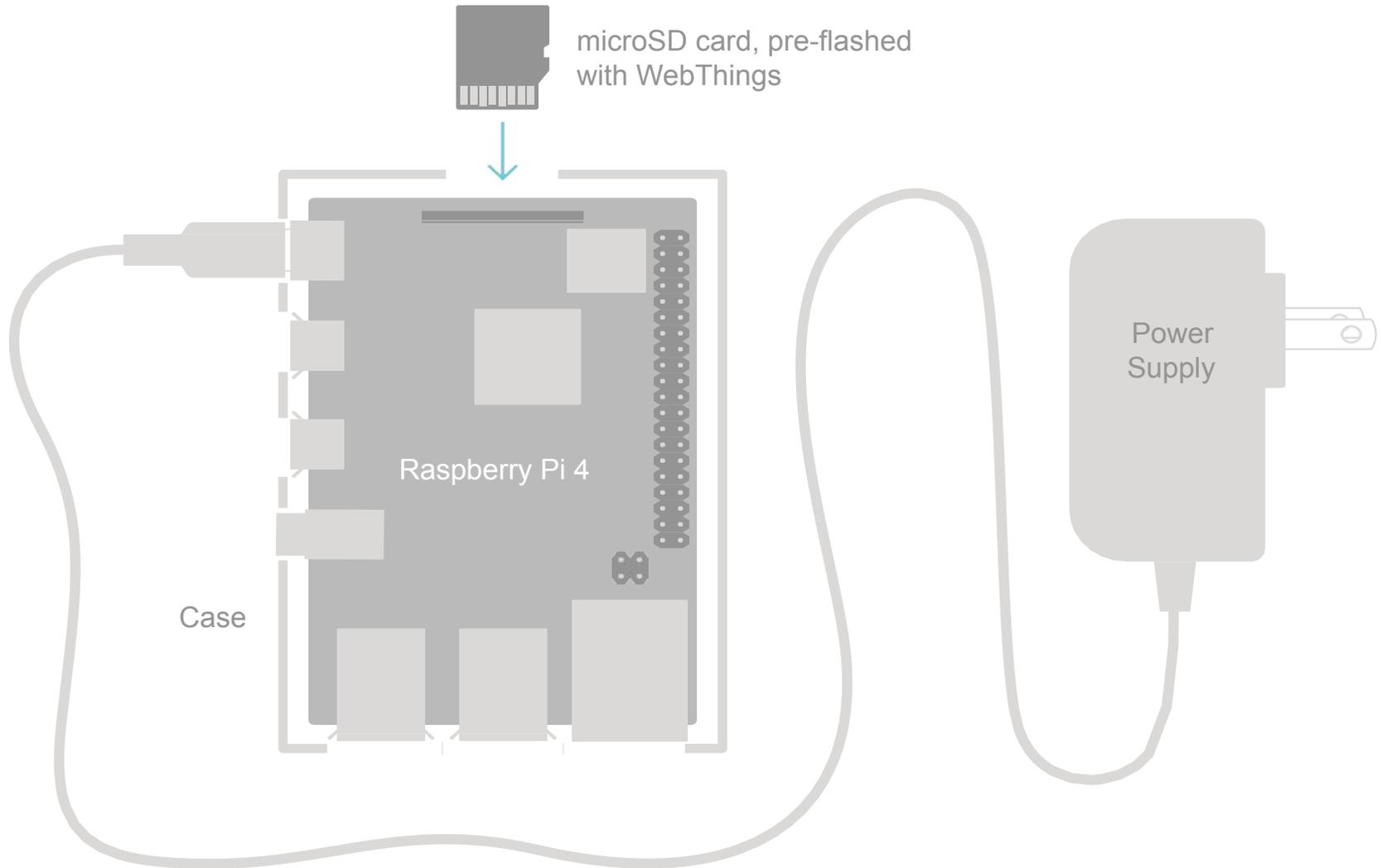
WebThings   https://webthings.io | @WebThingsIO

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