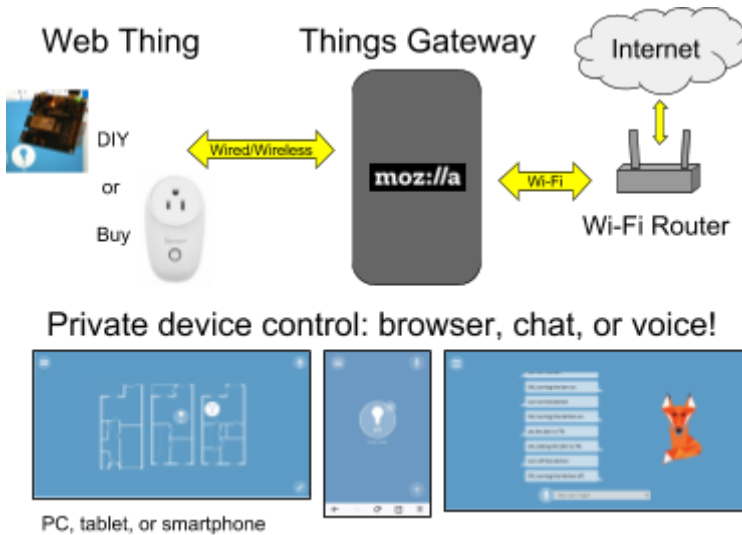


# Mozilla Things Gateway

## Setup and User Guide



A Mozilla **Things Gateway** Provides Privacy, Security, and “Web of Things” Interoperability for Your Internet of Things (IoT) Devices

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# Introduction

This guide describes how to set up and operate a Mozilla Things Gateway. The Things Gateway represents a “hub” of interoperability and interaction between “web of things” devices that describe their capabilities using plain JSON descriptions, following Mozilla’s [proposed definition](#) to the W3C Web of Things interest group.

Using the Mozilla Things Framework, it is easy to manage commercial smart home devices, or follow examples that will help you develop your own custom web of things ready prototypes or products. Connected devices can be directly monitored and controlled using a web browser. Your private data remain local (on the gateway), accessible only to you, with remote access possible over the Internet (via a password protected and secure tunnel).

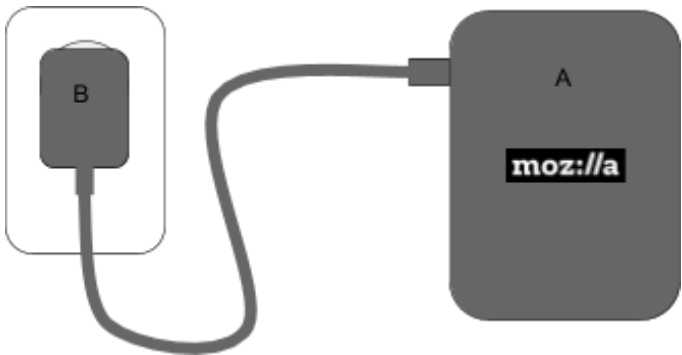
This Things Gateway guide assumes use of Raspberry Pi hardware, but should be similar for other platforms. The uSD card in the Raspberry Pi should be pre-loaded with the latest Mozilla Things Gateway image, available for download at: <https://iot.mozilla.org/gateway>.

This guide will explain how to connect the gateway to your own home Wi-Fi network, set up a secure tunnel and user account, and connect your own smart home devices (commercial devices or prototypes). Using the Things Gateway you can dynamically command, control, monitor, and make your own rules to automate your smart home.

Using the Mozilla Things Gateway, you can be confident in the privacy and security of your own smart home, and it will work even without an Internet connection!

# 1. First Time Setup

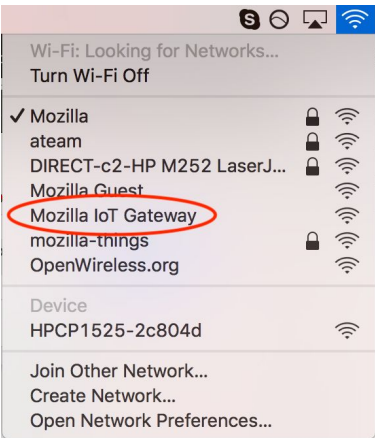
## 1.1 Plug In Power Adapter



- (1) Power **Mozilla Gateway (A)** using micro USB **power supply (B)**
- (2) Wait 3 minutes

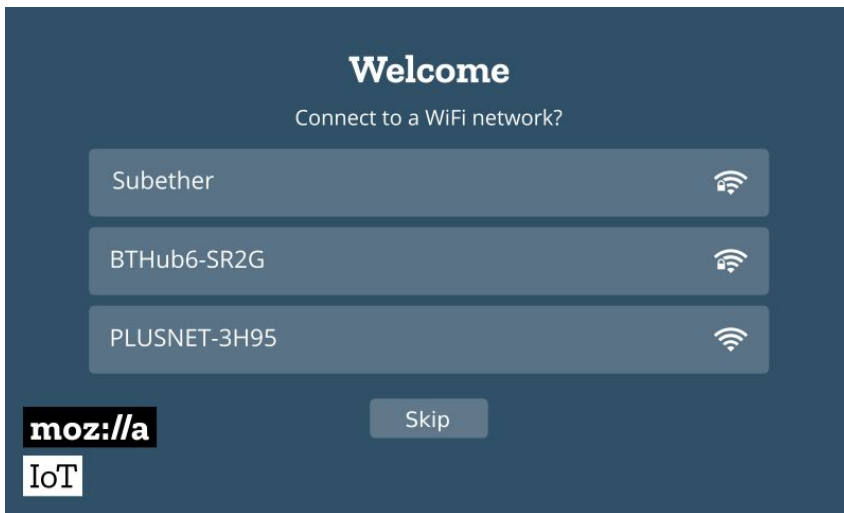
## 1.2 Connect the Gateway to Your Wi-Fi Network

To redirect the gateway to your home Wi-Fi network, you must first connect to its own broadcasted network called “**Mozilla IoT Gateway**” (which may take a few minutes to appear).



Use your laptop, tablet, or smartphone to connect to the gateway’s Wi-Fi network.

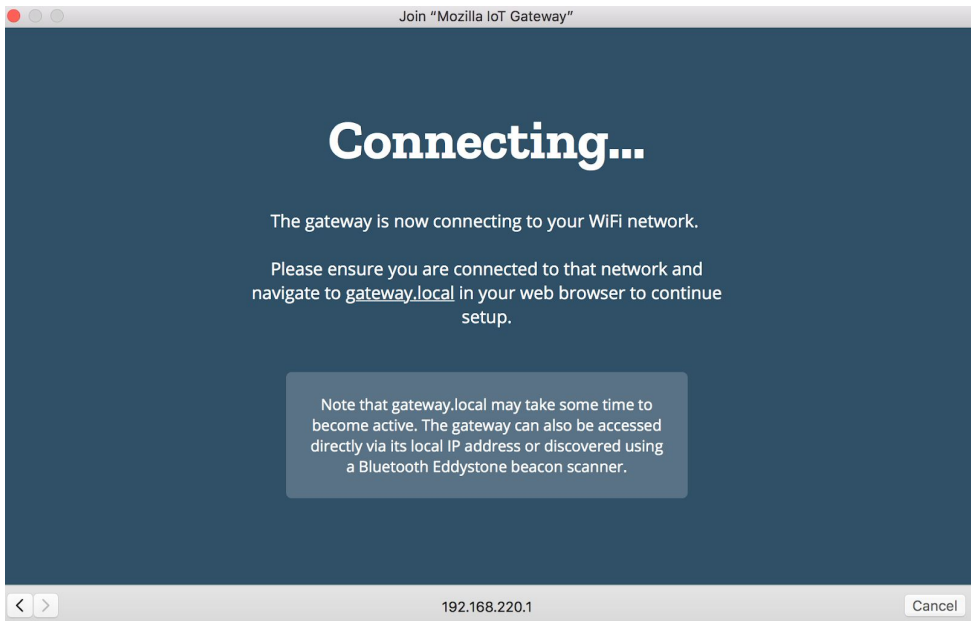
Once connected, you should automatically be redirected to the screen below. Select the name of your home Wi-Fi network from the list and you will be prompted to enter your home Wi-Fi password.



**Tip:** If you were not redirected to the above screen, you can also type `192.168.220.1` into your web browser and the page should load.

Once you've entered your Wi-Fi password, you should see the message "Connecting..." as shown below. The "Mozilla IoT Gateway" SSID will disappear, and your laptop, tablet, or smartphone should automatically fall back to connecting to your home network. If you didn't automatically revert, manually select the same network as you selected for the gateway.

**Tip:** If you don't have a Wi-Fi connection or it doesn't appear in the list, you can plug the gateway directly into your broadband router using an Ethernet cable (not provided) and click "Skip".



## 1.3 Choose Web Address

After Wi-Fi setup is complete, and after about a 30 second delay, browse to `http://gateway.local` in your web browser.



You should see a “Welcome” screen which allows you to choose a unique web address which you can use to securely access your gateway over the Internet. Choose a subdomain “name” (perhaps your own name) that you might like to keep forever, because it will be registered to you. Then enter your email and click “Create”.

Welcome

Choose a secure web address for your gateway:

subdomain .mozilla-iot.org

Email

Create

Skip

moz://a  
IoT

**Note:** you will receive an email from [certificate@mozilla-iot.org](mailto:certificate@mozilla-iot.org) asking you to confirm it. Although you do not need to confirm immediately to continue, by confirming later you will establish ownership of the secure certificate for your new domain, and you can renew it for free for as long as you want.

If you have trouble loading the above screen, check out “Troubleshooting Setup Problems” in the appendix.

## 1.4 Create User Account

You should then see the screen below which prompts you to create a user account. The email and password that you enter on this page will thereafter be used to securely log into the gateway. Complete the form and click “Next”.

Welcome

Create your first user account:

Name

Email

Password

Confirm Password

Next

moz://a

IoT

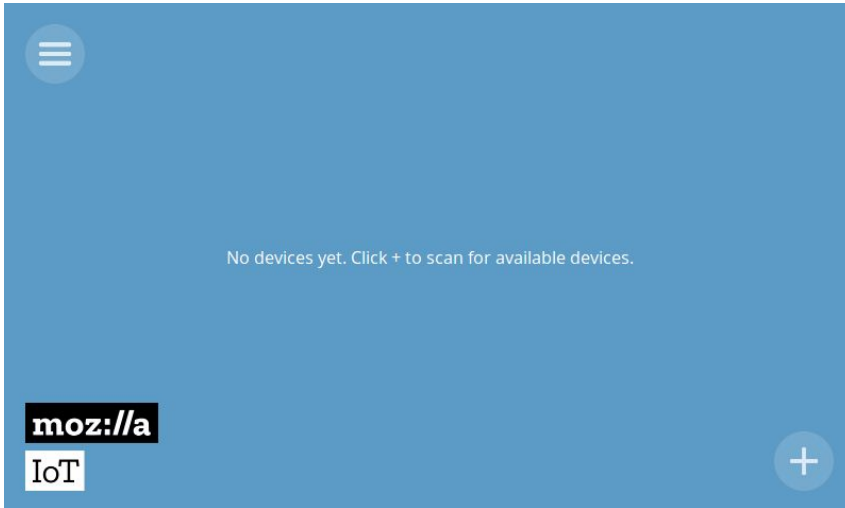
With setup steps complete, you should then be automatically logged into the gateway.

**Tips:**

1. Be careful to remember your email and password as the gateway does not yet offer a forgotten password recovery mechanism.
2. Under the Settings menu, you can later create additional login accounts, and edit existing ones.



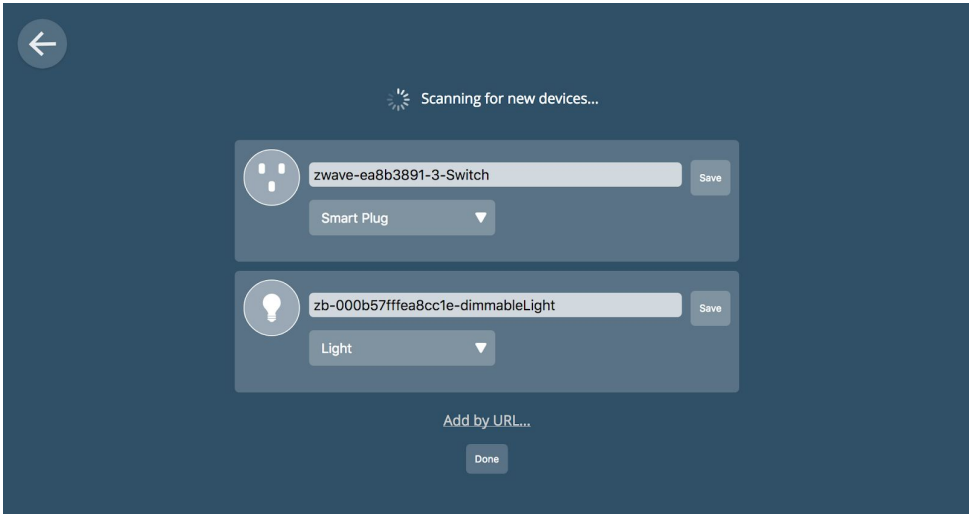
## 2. Add Devices



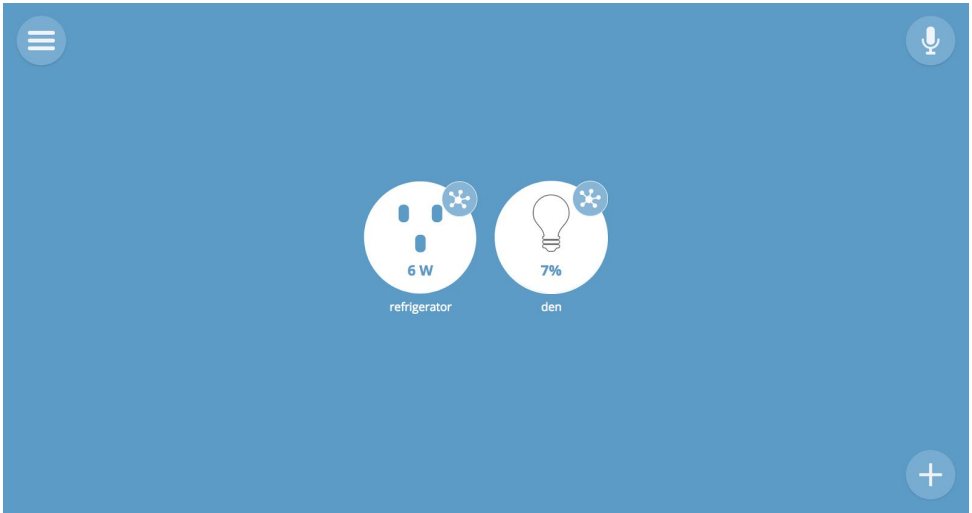
### 2.1 Adding a Device


You will use your gateway to “scan” for smart home devices (over both wired and wireless networks). To scan, click the “+” button at the bottom right corner of the screen. Devices should be powered on (batteries or plugged in) and in an unconfigured state. Some devices require an extra step to put them into pairing mode (e.g., a button press). See the instructions that came with each device. Native “web of things” ready devices will be detected if they broadcast via mDNS or Eddystone beacons. You can alternatively type a url using a device’s IP address if the device is not addressable from a local host name.

If a device is automatically detected it should appear on the screen as below (note that many devices appear with long IDs by default). You can change the name of the device to something friendly such as “Kitchen”, before clicking “Save” during this pairing process. When you have renamed and saved all your devices, click “Done”. (You can also edit device names later.)

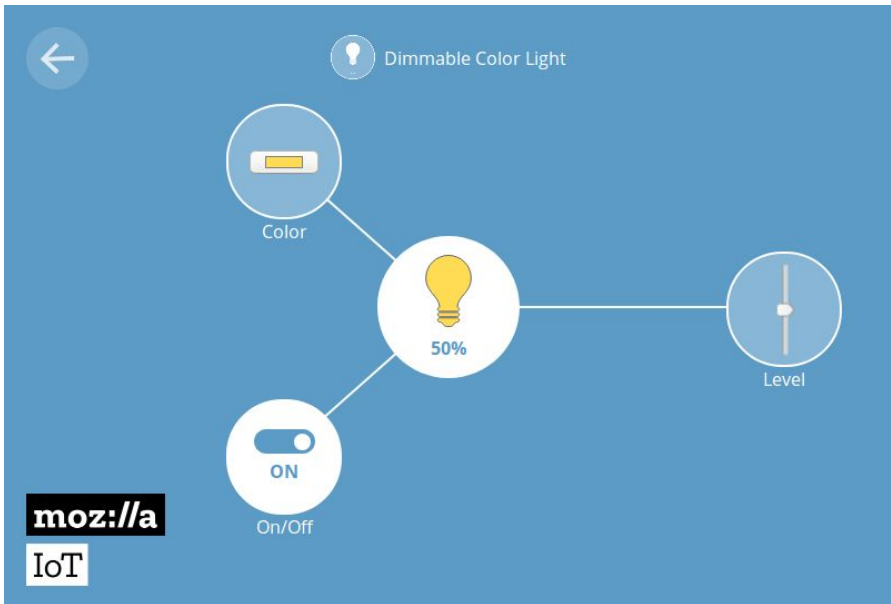
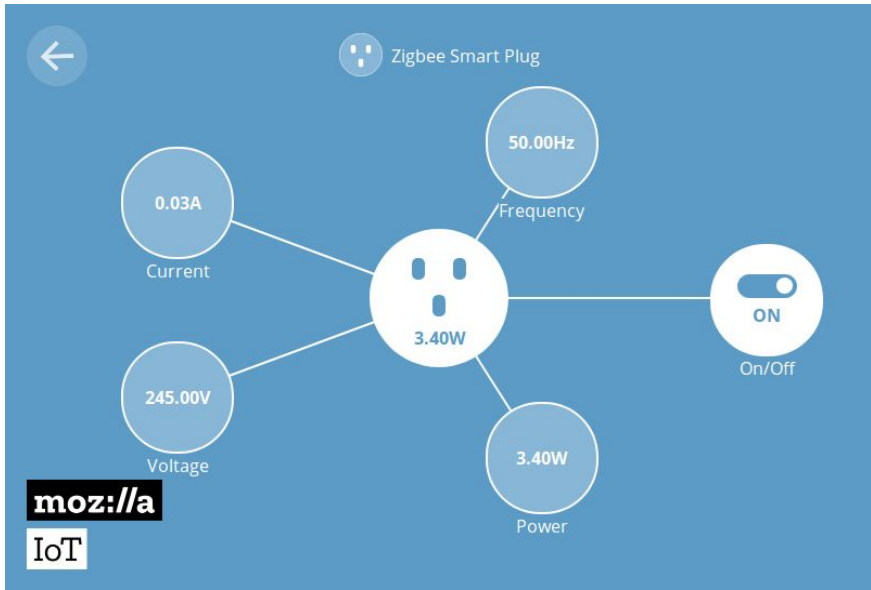


The devices you added should appear as icons like those shown below.

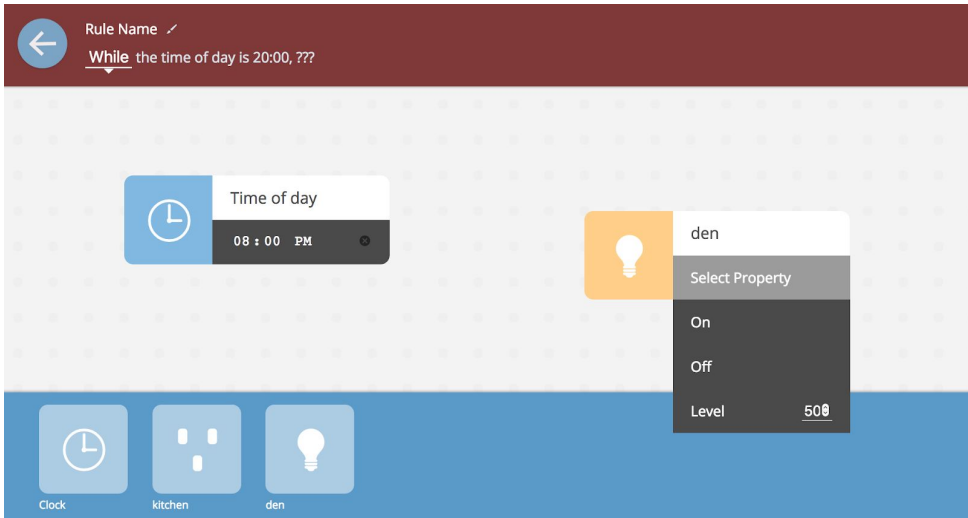
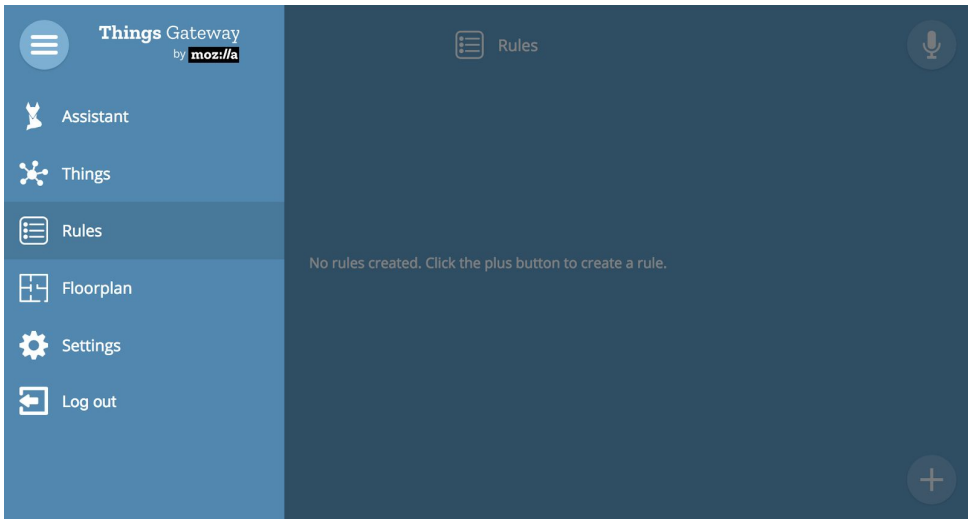


Devices with an on/off feature can be turned on and off by clicking their main icon. Clicking the little  icon will open a new page with more detailed information and controls.

# WORK IN PROGRESS...



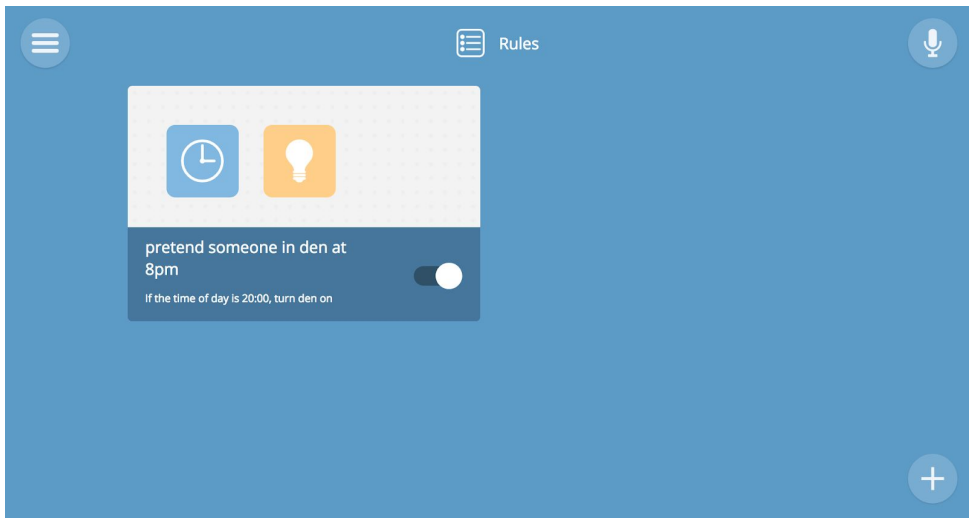
# 3. Automating with Rules



Select an input and output and property of each to complete a rule.



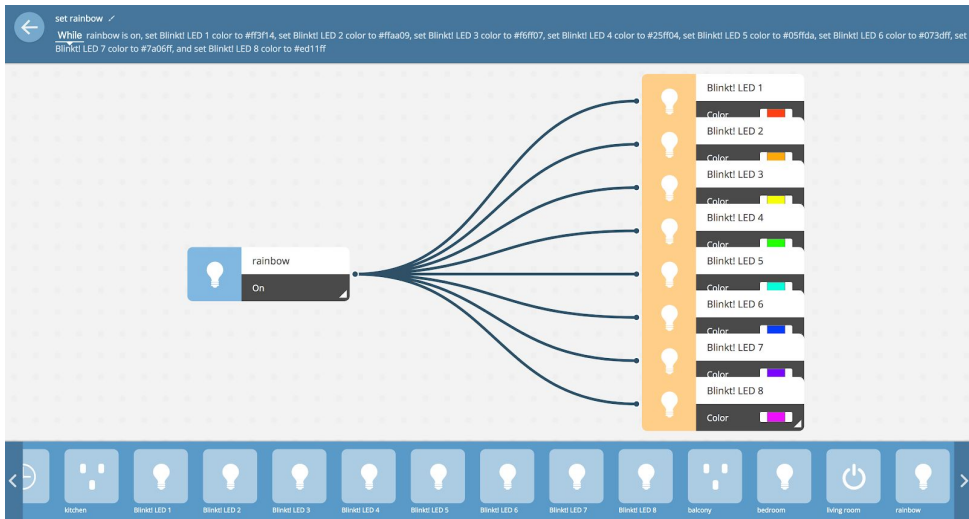
Give the rule a name, and change the logic of the definition as desired.



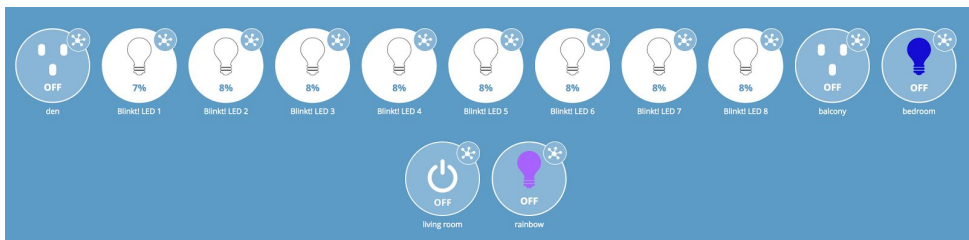
You can enable/disable rules, edit, and delete them from the rules screen.

Rules can have complex logic, with multiple inputs, multiple outputs, and logic to define extra conditionals, such as “while” or “if”; “and” or “or”. The

below rule shows how a virtual light can be used to trigger a whole rainbow of colors on eight separate RGB lights.

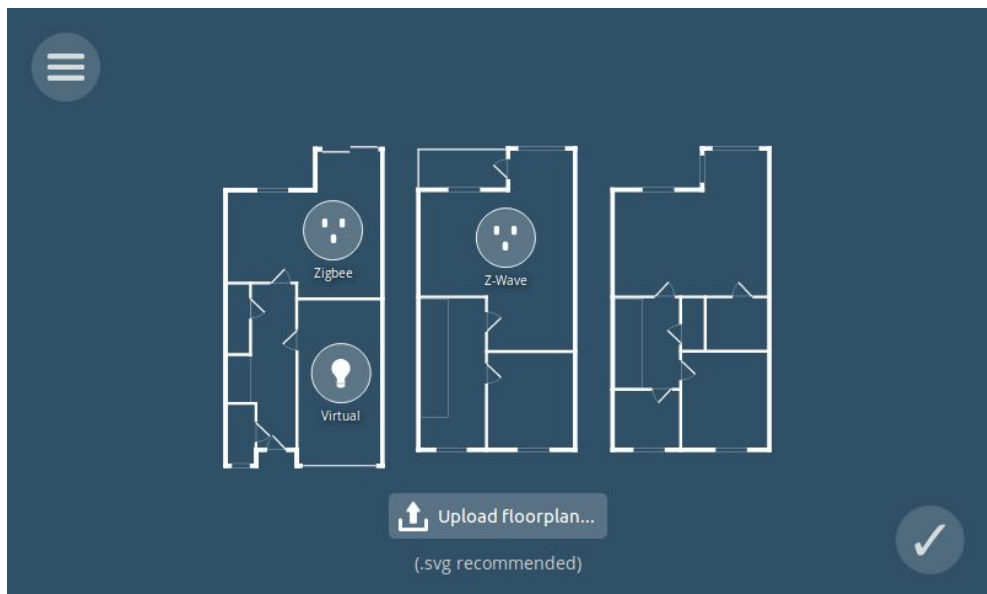
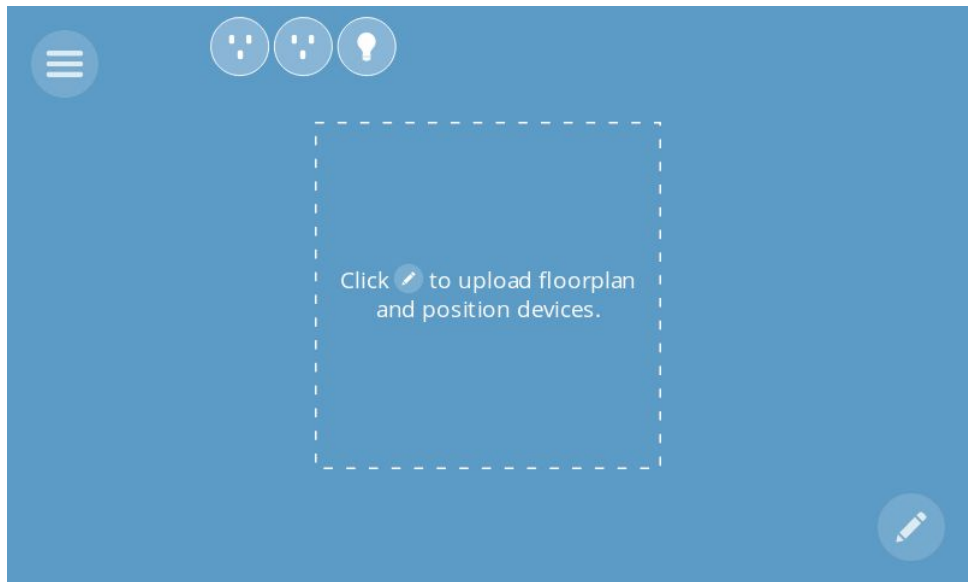


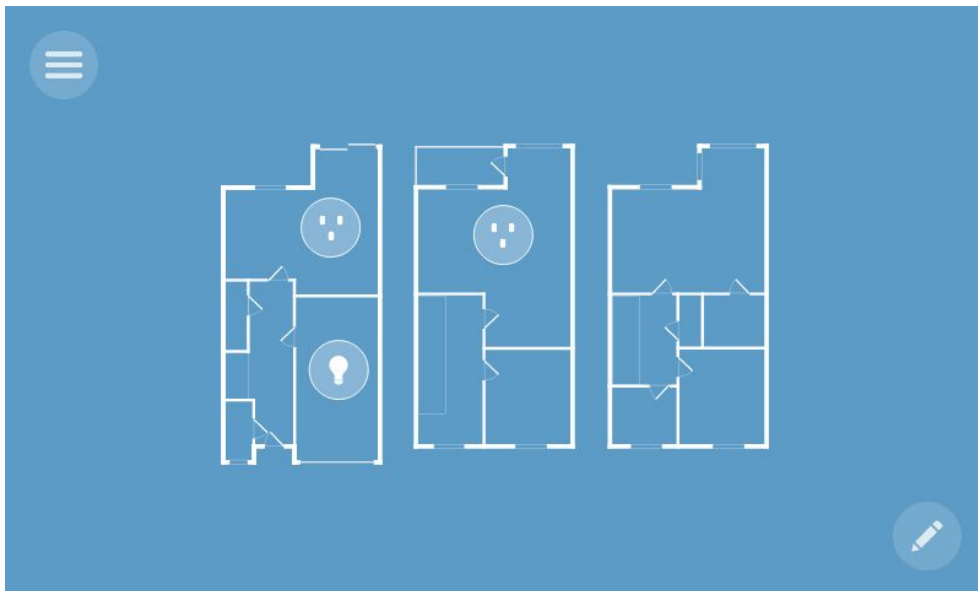
Rainbow “on”.



Rainbow “off”.

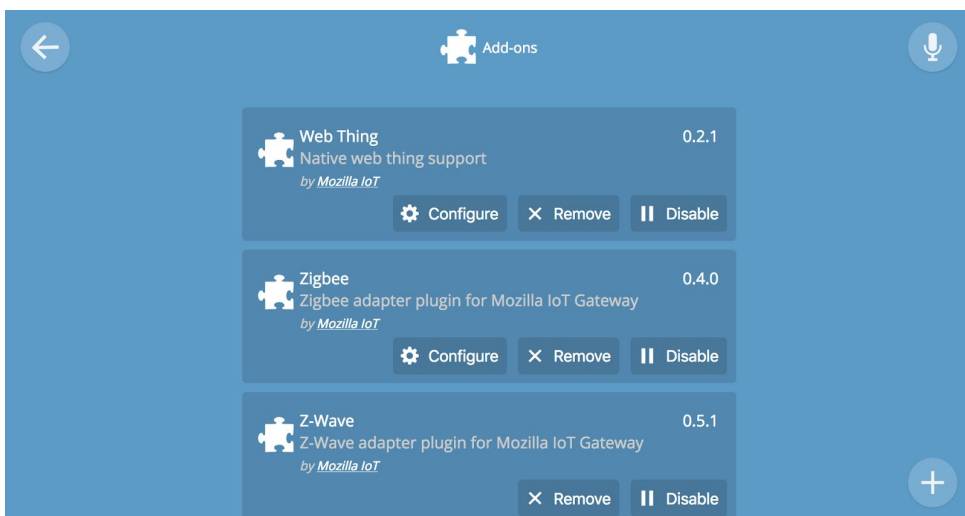
# 4. Creating a Floorplan





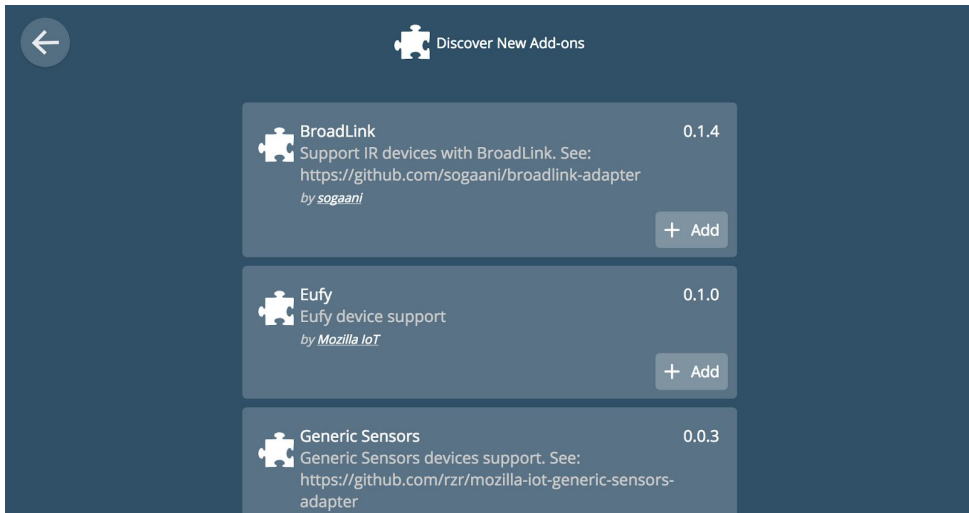
## 5. Extending with Add-ons

Add-ons enable connecting IoT devices not yet defined as web things.



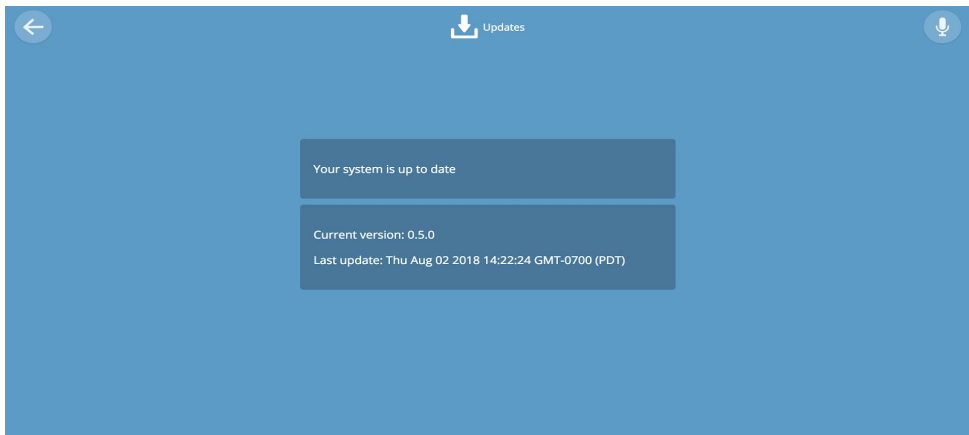


Click the “+” icon in the lower right corner to install new add-ons. Several add-ons have been contributed by the open source community.



## 6. Settings

The Settings menu has several sub categories.



## 7. Experimenting with Smart Assistant

The Smart Assistant page needs to first be enabled under Settings => Experiments.

## 8. Get Support and Get Involved

Via email: [iot@mozilla.com](mailto:iot@mozilla.com)

Discourse: <https://discourse.mozilla.org/c/iot>

Github: <https://github.com/mozilla-iot>

Github wiki: <https://github.com/mozilla-iot/wiki/wiki>

IRC: #iot on [irc.mozilla.org](https://irc.mozilla.org)

## Appendix

Troubleshooting Setup Problems

Software Updates

Changing the Wi-Fi Network

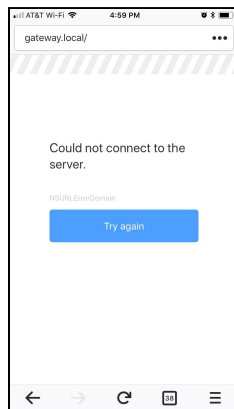
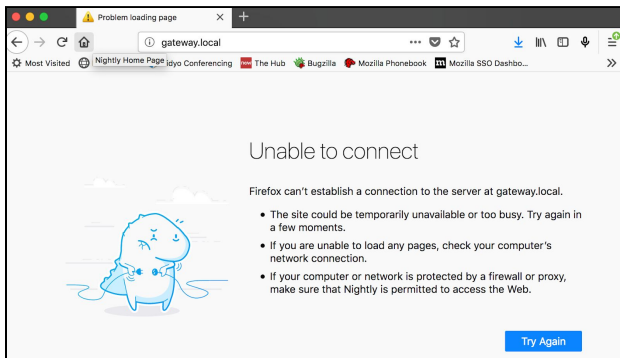
## Troubleshooting Setup Problems

After completing the Wi-Fi redirect steps of section 1.2, it takes 20-30 seconds before you can load `http://gateway.local` in your web browser.

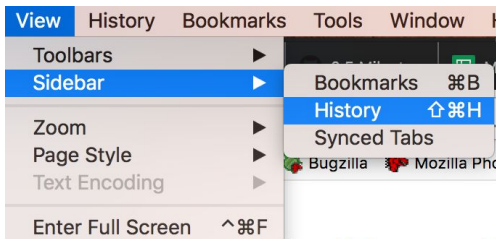


http://gateway.local

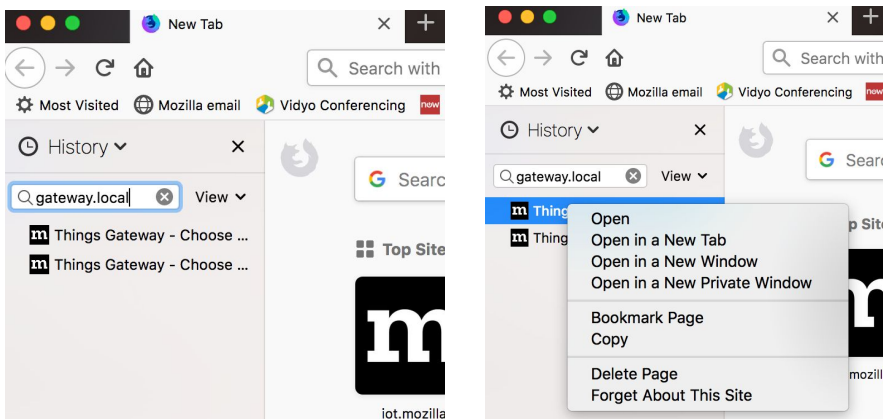
If you tried the `gateway.local` url before the setup processes were ready, you will see a browser error screen (some examples below). Keep refreshing until the “Welcome” page shown in the next section loads.



Note also that your browser may try to redirect `http://gateway.local` to `https://gateway.local`. If so, you may need to remove prior browsing history for that url. The removal process is browser specific, but if you are using Firefox you can type `cmd + shift + H` or navigate using the menu “View => Sidebar => History”.



Search for `gateway.local` then right-click on the folder to select the option “Forget About This Site”. Then try loading `gateway.local` in your browser again.



**Advanced Tip:** If you still can't reach `gateway.local` but you are able to look up its IP address by checking DHCP leases on your home router, you can also type the gateway IP address directly into your browser URL bar (e.g., `http://192.168.1.218`).

#### DHCP Leases

Hostname	IPv4-Address
gateway	192.168.1.218

## Software Updates

The Mozilla Things Gateway software will be automatically updated whenever there is a new stable release available (which occurs approximately quarterly).

## Changing the Wi-Fi Network

If you move the Things Gateway to a different Wi-Fi network, the gateway will resort to acting as a Wi-Fi hot spot so that you can reconfigure the Wi-Fi. Return to Section 1.2 for a description of the process.