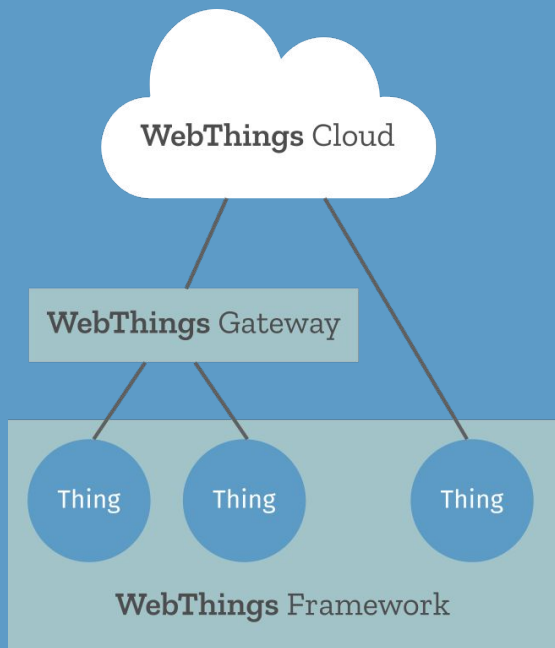




W3C Conformance

WoT Virtual F2F - March 2021

WebThings



Web Thing API

Web Thing API

Unofficial Draft

Web Thing API

Unofficial Draft 08 December 2020

Latest editor's draft:
<https://iot.mozilla.org/wot/>

Editor:
Ben Francis (Mozilla Corporation)

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Abstract

This document describes a common data model and API for the Web of Things. The [Web Thing Description](#) provides a vocabulary for describing physical devices connected to the World Wide Web in a machine readable format with a default JSON encoding. Common device capabilities can be specified using optional semantic annotations. The [Web Thing REST API](#) and [Web Thing WebSocket API](#) allow a web client to access the properties of devices, request the execution of actions and subscribe to events representing a change in state.

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Status of This Document

Thing Description

W3C Recommendation

Web of Things (WoT) Thing Description

W3C Recommendation 9 April 2020 (Link errors corrected 23 June 2020)

This version:
<https://www.w3.org/TR/2020/REC-wot-thing-description-20200409/>

Latest published version:
<https://www.w3.org/TR/wot-thing-description/>

Latest editor's draft:
<https://w3c.github.io/wot-thing-description/>

Implementation report:
<https://w3c.github.io/wot-thing-description/testing/report.html>

Previous version:
<https://www.w3.org/TR/2020/PR-wot-thing-description-20200130/>

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W3C

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Web Thing Protocol

W3C Community Group
Draft Report

Web Thing Protocol

Use Cases & Requirements

Draft Community Group Report 08 July 2020

Editor:
Ben Francis (Krellian)

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W3C

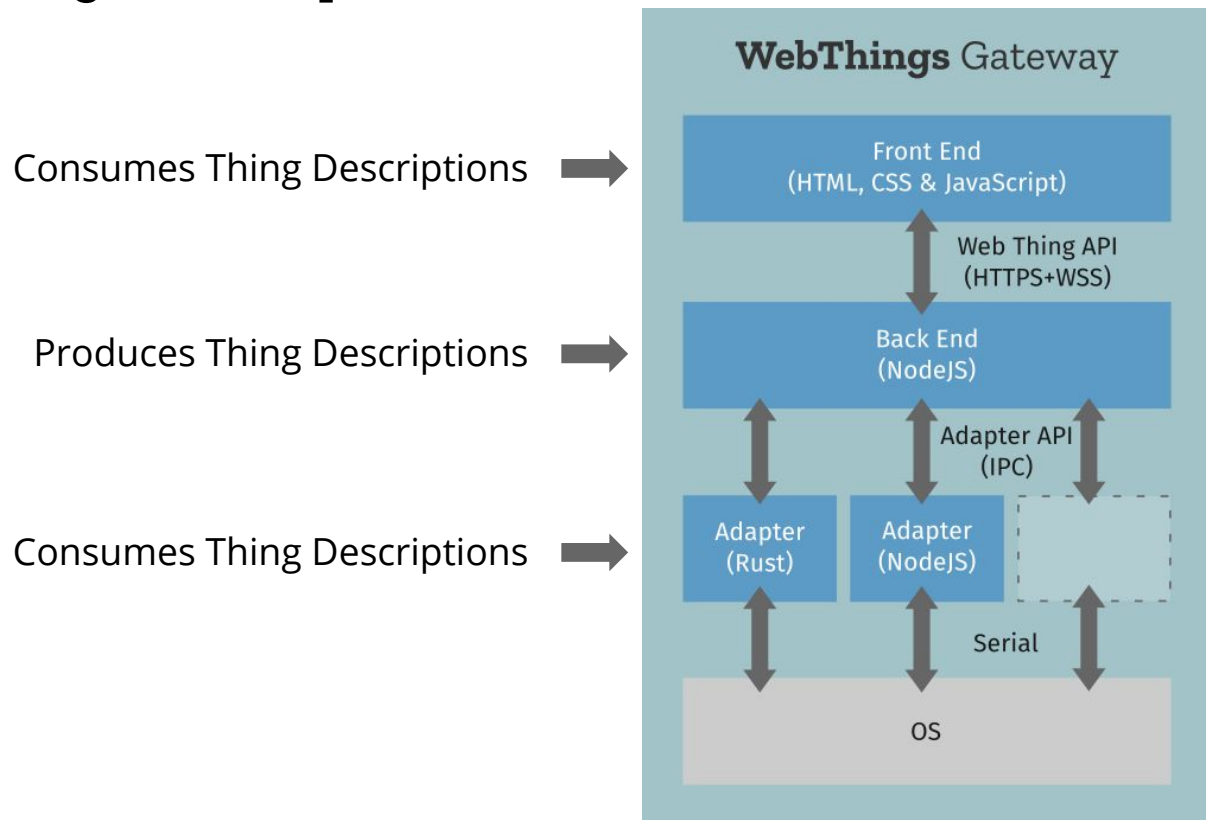
Abstract

This document outlines the use cases and requirements for a common sub-protocol for the [Web of Things](#), to enable ad-hoc interoperability between WoT clients and WoT devices. This includes requirements for an HTTP sub-protocol and a WebSocket sub-protocol which define a standard way to monitor and control a connected device over the World Wide Web.

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iot.mozilla.org/wot

WebThings Gateway



WebThings Framework

WebThings Libraries



Node.js



Python



Java



Rust



Arduino



MicroPython

Third Party Libraries



Moddable



Atmosphere
IoT



IoT.js
by rzh



C#
by lillo42



Go
by rzh



Go
by dravenk



ESP-IDF
by
akshayvernekar



ESP-IDF
by
KrzysztofZurek1973



PHP
by maliknaik16



Python
by hldaris

webthings.io/framework

Making WebThings W3C Compliant

1. WoT Thing Description & WoT Core Profile
 - a. WebThings Gateway (producer & consumer)
 - b. WebThings Framework (producer)
2. WoT Discovery
 - a. WebThings Gateway (DNS-SD & Directory)
 - b. WebThings Framework (DNS-SD)
3. (Web Thing Protocol)
 - a. WebSocket sub-protocol
 - b. HTTP sub-protocol?

Implementation Plan

1. WebThings Gateway - producer¹
 - a. Focused on making exposed Thing Descriptions & API W3C compliant
2. WebThings Gateway - consumer (wot-adapter)
 - a. Depends on a constrained HTTP+JSON core profile
3. WebThings Framework
 - a. Migrated to WoT TD & Profile over time

Future:

1. WebThings App
2. WebThings Cloud

WoT Thing Description - Open Questions

1. [Change `links` to `forms` in API](#)
 - a. Should a top level link to a WebSocket API endpoint be a link or a form?
 - b. What should we do with top level links to properties, actions and events endpoints?
2. [Remove object wrappers from API payloads](#)
 - a. What should we do about Event resources, which currently return an array of objects in their HTTP response?
 - b. What should we do about ActionRequest resources?
 - c. What should we do about Actions and Events resources, which currently don't have an obvious representation which is W3C compliant?
3. [Change `mediaType` to `type` for `links` in API](#)
4. [Change `@context` of Thing Descriptions](#)
 - a. We still want to be able to provide `https://webthings.io/schemas/` as a context in order to add semantic annotations from the WebThings capability schemas. What's the best way to do this?

WoT Profile - Feedback

[Feedback on mailing list](#)

1. [Consider splitting Core Profile into Core Profile and Constrained Profile](#)
2. [Allow multiple forms for interaction affordances in Core Profile](#)
3. [Reduce the number of constraints in section 5.1 WoT Core Data Model](#)

WoT Discovery - Feedback

1. [Proposals for Directory Service API](#)
2. [Define a two stage authentication process](#)



Discussion

webthings.io