Building The Web Of Things: With Examples In Node.js And Raspberry Pi
Synopsis

A hands-on guide that will teach how to design and implement scalable, flexible, and open IoT solutions using web technologies. This book focuses on providing the right balance of theory, code samples, and practical examples to enable you to successfully connect all sorts of devices to the web and to expose their services and data over REST APIs. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications.

About the Technology

Because the Internet of Things is still new, there is no universal application protocol. Fortunately, the IoT can take advantage of the web, where IoT protocols connect applications thanks to universal and open APIs.

About the Book

Building the Web of Things is a guide to using cutting-edge web technologies to build the IoT. This step-by-step book teaches you how to use web protocols to connect real-world devices to the web, including the Semantic and Social Webs. Along the way you'll gain vital concepts as you follow instructions for making Web of Things devices. By the end, you'll have the practical skills you need to implement your own web-connected products and services.

What's Inside

- Introduction to IoT protocols and devices
- Connect electronic actuators and sensors (GPIO) to a Raspberry Pi
- Implement standard REST and Pub/Sub APIs with Node.js on embedded systems
- Learn about IoT protocols like MQTT and CoAP and integrate them to the Web of Things
- Use the Semantic Web (JSON-LD, RDFa, etc.) to discover and find Web Things
- Share Things via Social Networks to create the Social Web of Things
- Build a web-based smart home with HTTP and WebSocket
- Compose physical mashups with EVRYTHNG, Node-RED, and IFTTT

About the Reader

For both seasoned programmers and those with only basic programming skills.

About the Authors

Dominique Guinard and Vlad Trifa pioneered the Web of Things and cofounded EVRYTHNG, a large-scale IoT cloud powering billions of Web Things.

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Book Information

Paperback: 344 pages
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I cannot recommend this book enough. Despite having a good knowledge of the IoT and Web of Things spaces myself (I've worked in the industry since 2014), I've found the content to be really useful and educative. I enjoyed the fact that as new concepts of the WoT are introduced, there are real examples for you to follow and program in your Raspberry Pi, which makes the book a real journey. You go from zero to hero whilst having fun along the way. All in all, a highly recommended book for beginners, WoT enthusiasts, developers wanting to move into the physical devices world and/or anyone that would like to understand what all the connected devices and objects universe is about!

Building the Web of Things is an excellent book to understand and explore the concepts and technologies underpinning the Internet of Things. The Web of Things is especially interesting because Web technologies and tools have the potential to trigger a user-driven transformation of the Internet of Things, from individual and centralised platforms to a truly distributed, organically growing digital representation of our physical and imagined world. Think of the Web of Things as the Internet of Things of the People. This book takes the reader step by step through the technology stack of the Internet of Things. Each chapter is a blend of theory and hands-on engineering, which results in a concrete deliverable, for example a Node.js application that runs on an embedded device (Raspberry Pi). To the best of my knowledge, this is the first time someone provided such a complete and comprehensive work about the Internet of Things for technical and non-technical users. Building the Web of Things is an important and much needed contribution, if the Internet of Things is truly reach its full potential. Because in its current shape, building applications and products for the Internet of Things requires a level of technical understanding and effort that discourages all but the most dedicated users. The Web of Things promises to remove the technical
hurdles by using user-friendly Web technologies and tools that allow non-technical users to use, share and build applications, devices and information on the Internet of Things.

Does the book cover scenarios in which the Raspberry Pi reaches out to a cloud based server with a static address (the server has a static address) rather than acting as a server in itself that clients reach directly? In such scenarios the Raspberry Pi would send state, sensor data, etc. in JSON to the server, meanwhile the server would send the Raspberry Pi control signals, also in JSON to the Raspberry Pi. This is the preferred architecture with many IoT applications as it avoids the need to assign a public static address to the Raspberry Pi. In any case, I wanted to confirm if this is covered in this publication before purchasing it? Thanks

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