

1. Record Nr.	UNINA9910136619503321
Autore	Mulder Patrick
Titolo	Node.js for embedded systems : using web technologies to build connected devices // Patrick Mulder and Kelsey Breseman
Pubbl/distr/stampa	Beijing, [China] : , : O'Reilly, , 2016 ©2016
ISBN	1-4919-2894-8 1-4919-2898-0
Edizione	[First edition.]
Descrizione fisica	1 online resource (264 p.)
Disciplina	006.22
Soggetti	Embedded computer systems - Design and construction JavaScript (Computer program language)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Copyright; Table of Contents; Foreword; Preface; Who This Book Is For; How to Use This Book; Conventions Used in This Book; Using Code Examples; Safari® Books Online; How to Contact Us; Acknowledgments; From Patrick; From Kelsey; Chapter 1. Connecting Worlds; Why the Internet of Things?; Embedded Devices; Embedded Internet; Protocols; Examples and Use Cases; JavaScript for Distributed Programming; JavaScript and the IoT; Hello World with JavaScript; JavaScript Runtime Environments; The Browser; The Server; Embedded Devices; The Node.js API; Buffer; Streams; Chapter 2. Blink with Arduino Getting Started with MicrocontrollersArduino; The Blink Sketch; The Firmata Bridge; Programming an Arduino with JavaScript; Functional Blocks of an MCU; Pins; Microcontroller Versus Microprocessor; Block Diagrams; Analog Inputs; Pulse-Width Modulation; Pinouts; Firmware; Chapter 3. Espruino; The Espruino Hardware; Programming Espruino; Variable Blink; Modules; Flashing Espruino Firmware; Chapter 4. The Tessel 2; Hardware; Toolchain; Command-Line Interface; Pin Abstractions; Digital Pins; Analog Pins; Embedded Internet with System-on-Chip; Chapter 5. Particle Photon; The Particle Photon Particle Command-Line InterfaceOTA Code Deploys; Chapter 6. Single-Board Computers; The Raspberry Pi; BeagleBone; The Intel Edison; Boards with 64-Bit Instruction Sets; Using Embedded Linux; Working

with SD Cards; Embedded Linux Distributions; OpenWRT; Debian; Yocto; Network Configuration; Debugging Network Settings; Running Node.js; Deploy Projects with Git; Chapter 7. Components for Prototyping; Wiring Circuits; Breadboards; Grove Kit; Soldering; Printed Circuit Boards; Tessel Modules; Basic Components; Datasheets; Passive Components; LEDs; Sensors; Temperature; Motion; Ultrasonic Distance Actuators Servo Motors; Stepper Motors; DC Motors; Multimedia; Cables; Jumper Wires; USB Cables; FTDI-USB-Cable; Network Cables; Chapter 8. Node.js Libraries for Hardware; JavaScript for the Hardware Abstraction Layer; The node-serialport Library; Serial Communication with JavaScript; Scanning for Devices; Receiving Data from Arduino; Sending Data to Arduino; The Johnny-Five Library; An Empty Project; The Board Object; The Johnny-Five REPL; Buttons; Analog Inputs; Proximity; Nodebot; The I2C Library; The LibMRAA Library; MRAA Setup; Outputs; Reading Inputs; Interrupts; Communications
The Cylon.js Library Chapter 9. Exploring Network Protocols; The Hypertext Transfer Protocol; Requesting the Weather; Prepare the HTTP Client; Building a Weather Station; Adding a Database; The Transmission Control Protocol and User Datagram Protocol; The WebSocket Protocol; The ws Module; Remote Procedure Calls over Websockets; Chapter 10. Web Frontends for Things; Adding Static Pages; Basic jQuery; Adding the Model-View-Controller; Websockets in a Browser; A Bare Minimum WebSocket Connection; The D3.js Library for Plotting Data; P5.js; Chapter 11. Entering the Cloud Publish-Subscribe Pattern

Sommario/riassunto

How can we build bridges from the digital world of the Internet to the analog world that surrounds us? By bringing accessibility to embedded components such as sensors and microcontrollers, JavaScript and Node.js might shape the world of physical computing as they did for web browsers. This practical guide shows hardware and software engineers, makers, and web developers how to talk in JavaScript with a variety of hardware platforms. Authors Patrick Mulder and Kelsey Breseman also delve into the basics of microcontrollers, single-board computers, and other hardware components.
