



# Documentation WG

Charter: <https://github.com/tock/tock/tree/master/doc/wg/documentation>

TockWorld 7 | June 2024



# Goals

The goals of the Tock Documentation Working Group (DOC) are to:

- Maintain and improve the [Tock Book](#)
- Oversee and improve the [API docs](#)
- Maintain and improve the informational content on the [Tock website](#)
- Review changes to Tock documentation in the [doc folder](#)

Members:

- Brad Campbell (Chair)
- Branden Ghena

# Tock Book Expansion

The screenshot shows the website for 'The Tock Book'. The top navigation bar includes a hamburger menu, a search icon, the title 'The Tock Book', and a share icon. The left sidebar contains a table of contents with the following items:

- Introduction
- 1. Hands-on Guides
  - 1.1. Getting Started
  - 1.2. Tock Course
    - 1.2.1. Course Setup
    - 1.2.2. USB Security Key
      - 1.2.2.1. Setup
      - 1.2.2.2. HOTP Application
      - 1.2.2.3. Encryption Oracle Capsule
      - 1.2.2.4. Access Control
    - 1.2.3. Kernel Boot
    - 1.2.4. Policies
    - 1.2.5. TickV
    - 1.2.6. USB Keyboard
    - 1.2.7. Application
    - 1.2.8. Graduation
    - 1.2.9. Deprecated
      - 1.2.9.1. Important Client
      - 1.2.9.2. Capsule
  - 1.3. Mini Tutorials
    - 1.3.1. Blink an LED
    - 1.3.2. Button to Printf()
    - 1.3.3. BLE Advertisement Scanning
    - 1.3.4. Sample Sensors and Use Drivers
    - 1.3.5. Inter-process Communication- 2. Kernel Development Guides
  - 2.1. Chip Peripheral Driver
  - 2.2. Sensor Driver
  - 2.3. System Call Interface
  - 2.4. HIL
  - 2.5. Virtualizers
  - 2.6. Kernel Tests

The main content area displays the 'Tock OS Book' section, which includes a description: 'This book introduces you to Tock, a secure embedded operating system for sensor networks and the Internet of Things. Tock is the first operating system to allow multiple untrusted applications to run concurrently on a microcontroller-based computer. The Tock kernel is written in Rust, a memory-safe systems language that does not rely on a garbage collector. Userspace applications are run in single-threaded processes that can be written in any language.' Below this is the 'Getting Started' section, which states 'The book includes a quick start guide.' The 'Tock Workshop Courses' section says 'For a more in-depth walkthrough-style less, look here.' The 'Development Guides' section says 'The book also has walkthroughs on how to implement different features in Tock OS.' A blue arrow button is visible at the bottom right of the main content area.

Summer 2023

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- Introduction
- 1. Getting Started
  - 1.1. Quickstart
  - 1.2. Hardware Setup
  - 1.3. Building the Kernel
  - 1.4. Installing Applications
  - 1.5. Tockuser
- 2. Tock Course
  - 2.1. USB Security Key
    - 2.1.1. Kernel: USB Keyboard
    - 2.1.2. Kernel: HMAC
    - 2.1.3. Kernel: Key-Value
    - 2.1.4. HOTP Application
    - 2.1.5. Encryption Oracle Capsule
    - 2.1.6. Access Control
    - 2.1.7. Security Key Demo
  - 2.2. Thread Temperature Sensor
    - 2.2.1. Router Setup
    - 2.2.2. Sensor App
    - 2.2.3. Control App
    - 2.2.4. Communications App
    - 2.2.5. Robustness
  - 2.3. Kernel Boot
  - 2.4. Policies
  - 2.5. TickV
  - 2.6. Application
  - 2.7. Graduation
  - 2.8. Deprecated
    - 2.8.1. Important Client
    - 2.8.2. Capsule
- 3. Mini Tutorials
  - 3.1. Blink an LED
  - 3.2. Button to Printf()
  - 3.3. BLE Advertisement Scanning
  - 3.4. Sample Sensors and Use Drivers
  - 3.5. Inter-process Communication
- 4. Kernel Development Guides
  - 4.1. Chip Peripheral Driver
  - 4.2. Sensor Driver
  - 4.3. System Call Interface
  - 4.4. HIL
  - 4.5. Virtualizers
  - 4.6. Kernel Tests
  - 4.7. Component
  - 4.8. Optimize Code Size
  - 4.9. Porting Tock
    - 4.9.1. Porting from 1.x to 2.x
    - 4.9.2. VSCode Debugging
- 5. Kernel Documentation
  - 5.1. Overview
  - 5.2. Design
  - 5.3. Soundness
  - 5.4. Lifetimes

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# Docs in [github.com/tock/tock](https://github.com/tock/tock)

- Now focused on:
  - *How to implement*
  - Contributing guidelines
- Majority of content moved to book
  - Make the book the go-to place for finding Tock documentation

## Tock Documentation

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General kernel documentation is in the [Tock Book](#). Information about Tock policies and development practices is here. This folder also contains documentation on [syscall interfaces](#).

For short tutorials and longer courses on how to use Tock, see the [Tock OS Book](#).

## Tock Policies

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### Interface Details

- [Syscall Interfaces](#) - API between userland and the kernel.
- [Internal Kernel Interfaces](#) - Hardware Interface Layers (HILs) for kernel components.

### Tock Setup and Development

- [Getting Started](#) - Installing the Tock toolchain and programming hardware.
- [Repository Structure](#) - How the tock/ repo is organized.
- [Nested Boards](#) - How Tock supports nesting board platforms.
- [Out of Tree Boards](#) - Best practices for maintaining boards not in Tock master.
- [Style](#) - Stylistic aspects of Tock code.
- [External Dependencies](#) - Policy for including external dependencies.

### Management of Tock

- [Working Groups](#) - Development groups for specific aspects of Tock.
- [Code Review Process](#) - Process for pull request reviews.
- [Tock Management](#) - Management processes for Tock, including releases.

# Non-meeting notes PRs

- Document what we look for during code review
- Clarify WG roles
- Check for READMEs in CI

<a href="#">doc:reference/trd104: bump draft version and date modified</a> <a href="#">documentation</a>	1 of 2 tasks	#4032 by lischuermann was merged 3 days ago · Approved	0	2
<a href="#">TRD: Tock Storage Permissions</a> <a href="#">documentation</a>		#4021 by bradjc was merged last week · Approved	0	2
<a href="#">boards: nrf52840dk: update readme</a> <a href="#">documentation</a> <a href="#">P-Upkeep</a>		#3980 by bradjc was merged on May 9 · Approved	0	2
<a href="#">doc: Getting Started updates</a> <a href="#">documentation</a> <a href="#">P-Upkeep</a>		#3978 by bradjc was merged on May 8 · Approved	0	2
<a href="#">Tools: add readmes</a> <a href="#">documentation</a>		#3911 by bradjc was merged on Mar 15 · Approved	0	2
<a href="#">Capsules: update readme with new capsules</a> <a href="#">documentation</a> <a href="#">P-Upkeep</a>		#3910 by bradjc was merged on Mar 15 · Approved	0	2
<a href="#">Doc: update boards readme with new boards and add script</a> <a href="#">documentation</a>		#3908 by bradjc was merged on Mar 12 · Approved	0	2
<a href="#">Update chips readme with chip support</a> <a href="#">documentation</a>		#3907 by bradjc was merged on Mar 15 · Approved	0	2
<a href="#">chips: virtio: add readme</a> <a href="#">documentation</a>		#3906 by bradjc was merged on Mar 15 · Approved	0	2
<a href="#">New provisions for what Core WG vs other WGs do</a> <a href="#">documentation</a>		#3894 by alevy was merged on Mar 4 · Approved	0	2
<a href="#">Add @alexandruradovici to Core WG</a> <a href="#">documentation</a> <a href="#">WG-Core</a>		#3882 by alevy was merged on Feb 26 · Approved	0	1
<a href="#">doc: trd103: fix link</a> <a href="#">documentation</a> <a href="#">P-Upkeep</a>		#3852 by bradjc was merged on Feb 16 · Approved	0	2
<a href="#">doc: syscall: reorg driver numbers</a> <a href="#">documentation</a>		#3843 by bradjc was merged on Feb 23 · Approved	0	2
<a href="#">doc: minor TRD102 fixes</a> <a href="#">documentation</a>		#3838 by bradjc was merged on Feb 7 · Approved	0	2
<a href="#">doc: wg: DOC: add date</a> <a href="#">documentation</a>		#3831 by bradjc was merged on Feb 2 · Approved	0	2
<a href="#">Doc: TRD: Finalize Legal TRD (TRD4)</a> <a href="#">documentation</a>		#3821 by bradjc was merged on Feb 2 · Approved	0	2
<a href="#">doc: syscall: add K-V syscall doc</a> <a href="#">documentation</a>		#3785 by bradjc was merged on Jan 24 · Approved	0	2
<a href="#">trd: legal: fix spdx uri</a> <a href="#">documentation</a> <a href="#">P-Upkeep</a>		#3784 by bradjc was merged on Jan 12 · Approved	0	2
<a href="#">Update Syscalls.md</a> <a href="#">documentation</a>		#3777 by bradjc was merged on Jan 12 · Approved	0	2
<a href="#">Syscall Spec: Allow Command 0 to return Success with value or lock it down</a> <a href="#">documentation</a>		#3626 by ppannuto was merged on Sep 12, 2023 · Approved	0	2
<a href="#">doc: remove dangling reference to IRC</a> <a href="#">documentation</a>		#3620 by ppannuto was merged on Aug 17, 2023 · Approved	0	2
<a href="#">doc: Update compilation document with information about fixed-address apps</a> <a href="#">documentation</a>		#3611 by bradjc was merged on Aug 18, 2023 · Approved	0	2
<a href="#">Document Code Review Principles</a> <a href="#">documentation</a> <a href="#">last-call</a>		#3596 by bradjc was merged on Aug 29, 2023 · Approved	0	2
<a href="#">doc: core-wg: update Leon's affiliation</a> <a href="#">documentation</a> <a href="#">P-Upkeep</a>		#3592 by bradjc was merged on Aug 4, 2023 · Approved	0	2

## Tock Blog posts (<https://tockos.org/blog/>)

- Five posts over the past year
  - Key-value store updates
  - Network WG
  - Tock on stable Rust
  - Libtock-c redesign
  - Analyzing code size bloat (cross-post)