

Regulator API design notes

This document provides a brief, partially structured, overview of some of the design considerations which impact the regulator API design.

Safety

- Errors in regulator configuration can have very serious consequences for the system, potentially including lasting hardware damage.
- It is not possible to automatically determine the power configuration of the system - software-equivalent variants of the same chip may have different power requirements, and not all components with power requirements are visible to software.

Note

The API should make no changes to the hardware state unless it has specific knowledge that these changes are safe to perform on this particular system.

Consumer use cases

- The overwhelming majority of devices in a system will have no requirement to do any runtime configuration of their power beyond being able to turn it on or off.
- Many of the power supplies in the system will be shared between many different consumers.

Note

The consumer API should be structured so that these use cases are very easy to handle and so that consumers will work with shared supplies without any additional effort.