

Linux Kernel

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Requirements Engineering

- No explicit RE
 - » No plans for future releases & rejection of fixed interfaces
- RE as a mix of community needs and quality control
 - » community provides input and implementations (unstructured)
 - » maintainers perform strict Quality Control
- Quality Control as a workflow
 - » very strict and hierarchical workflow
 - » every step includes Quality Control
 - » actual Quality Control is assured by taking personal responsibility
- TODO: Implications and historical development

Architecture

- Description of the high-level architecture
- Linux as a product line
 - » How it is done
 - » Pros & Cons of the used approach (TBD)
- Focus on LKMs(Loadable Kernel Modules)
 - » Load/Unload Mechanism
 - » Architectural design for module abstraction (TBD)
- Analysis of a specific module: Linux Livepatching
 - » General functionality
 - » Code-Analysis with tools
- Analysis of another module/kernel functionality (TBD)

Architecture

Linux Livepatching

Besteht aus 2 Teilen

- Kernel Modul führt Live Patching aus
- Userspace bereiten hot patch kernel Module vor
- Funktionen können ersetzt werden
- Änderungen an Kernel Datenstrukturen nicht möglich

