Public Training Week: Real-time Linux

The Real-time Training Week is a hands-on course for engineers who develop and operate real-time Linux systems. It covers real-time Linux application development, tracing and debugging techniques. Participants will better understand Preempt-RT, system latency and timing behavior across the entire software stack afterward. The training is delivered by experienced Linutronix engineers and focuses on practical knowledge directly applicable to industrial projects. The course is publicly bookable and open to individual participants.

Real-Time LINUX

Training Overview

This intensive **Real-time Training Week** combines three advanced Linutronix trainings into one coherent program:

- Application development with Preempt-RT
- Tracing & Debugging latency issues
- Real-time system configuration and testing

The course provides a deep practical understanding of real-time Linux systems, from real-time application design to kernel latency analysis.

Training Format

- Public classroom training
- Open and bookable for single participants
- Instructor-led with hands-on labs

Target Audience

- Embedded Linux developers
- Software engineers developing real-time systems on Linux

Weekly Agenda

Day 1: What is Real-time Linux

- Preempt-RT concepts and requirements
- Linux scheduling policies affecting real-time development
- Linux memory-management policies affecting real-time
- Labs: Scheduling and memory-management effects on latency

Day 2: Real-time Application Development

- Designing the real-time application event flow
- Clocking, synchronization, and notification mechanisms
- Pitfalls while developing Linux real-time applications
- Using the rtapp runtime verification monitor
- Labs: Writing a real-time Linux application from scratch for an embedded board

Day 3: System Configuration and Testing

- Creating the right real-time Linux kernel configuration
- Required runtime system configurations
- Labs: Measuring latency under different stressful system conditions

Day 4: Real-time Debugging and Tracing

- Debugging real-time issues with perf and tracefs
- Using eBPF for real-time tracing
- Using graphical tracing tools
- Labs: Running the aforementioned tools live on the embedded board

Prerequisites

- Solid Linux command-line experience
- Basic understanding of embedded systems
- C programming knowledge recommended

Training Environment

- Participants bring their own laptops
- USB-bootable Linux training systems provided
- Preconfigured lab environment and tools

What's Included

- Full 4-day training
- Hands-on labs and exercises
- Digital training documentation
- USB media with tools and examples
- Preconfigured embedded Linux board
- Direct access to real-time experts

Trainer Profile

- Senior Linutronix real-time and kernel engineers
- Active contributors to the Linux ecosystem
- Strong focus on production-ready solutions

Dates & Location

Training Week: Monday–Thursday, 22–25 June 2026
Daily Schedule: 09:00–17:00
Location: Uhldingen-Mühlhofen, Germany (Linutronix training venue)
Maximum participants: 8
Language: English

Booking & Registration

To register, please contact:
schulung@linutronix.de
Phone: +49 7556 25999-0

Linutronix GmbH
Bahnhofstraße 3 | D-88690 Uhldingen-Mühlhofen
Phone: +49 7556 25 999 0 | sales@linutronix.de
www.linutronix.de | Visit us

Are you interested?
Would you like to learn more about our products and solutions?
Simply contact us via phone or email.