As of 19.05.2024

Embedded Linux for Test and Support - Live Online Training

Objectives

The training provides an understanding of the processes in a Linux system, from the boot process to the system in operation. It covers fault diagnosis in the test field and in support. You learn how to localize and eliminate problems using the operating system tools and standard open source tools.

The required knowledge for handling the Linux Shell is discussed.

The training makes sure that attendees can benefit from their new knowledge when working with embedded as well as with standard Linux systems.

Participants

Quality assurance engineers, test engineers, test managers

Requirements

Motivation to get to know the Linux operating system

Live-Online-Training

* Price per attendee, in Euro plus VAT

Training code: LE-LIN-T

Face-To-Face - English

Duration
4 days

Live Online - German

Duration
4 days

Face-To-Face - German

Duration
4 days

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Content

Linux System Setup

- Using the Shell, essential commands
- History, essential shortcuts, man and info
- Recording and rendering of console videos
- Boot process
- Bootloader grub, u-boot and barebox

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- Linux kernel boot process, device tree
- Tasks of the init daemon (system-V and busybox init, systemd)
- systemd: units, including own daemons and programs, mounts, network settings
- systemd tools: systemctl, journalctl, timedatectl
- udev daemon, udev rules
- TCP, UDP, UNIX and Netlink sockets
- Using device nodes, character and block devices
- Memory mapping, blocking operations

Diagnostic Tools

- C libraries (glibc, uClibc and musl)
- netcat, netstat
- tcpdump, capture file, wireshark, iftop
- Use of BPF
- Tracing with strace and ltrace
- procfs, sysfs and debugfs as diagnostic filesystems
- GNU debugger gdb, gdbserver
- Generating and analyzing cored dumps
- Logging unexpected signals with backtrace
- dmesg, analyzing kernel oops, kernel crashes
- From the fault to the source code with addr2line and objdump
- Ftrace framework
- trace-cmd, kernelshark and perf
- Creating and using tracing events

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