

Training Network and Linux

Day 1 – Basics

Network architecture and network components in (Embedded) Linux – an overview

Function

Configuration

Interfaces

ConnMan

Wi-Fi details

Network components (wpa_supplicant, hostapd, WT (iwconfig, ...), dhcp (server/client), ...)

Network communication (Wext, nl80211, cfg80211, mac80211, ...)

Network connection and configuration

Routing

Day 2 - Analysis / Protocols / Data transfer

Network analysis and -test

IPv4, IPv6 (incl. Neighbor Discovery Protocol)

Data transfer (net_dev, sockets, (Net-Link, TCP, UDP),...)

Day 3 – Network security

Security

(Firewall, encryption): crypto mechanism, IPTables, protocols recommended

Day 4 – Network drivers – development and integration into Linux

Network drivers

Integration of custom specific drivers

Software:

Linutronix provides an USB HDD with an x86 64-bit based Debian system for the host system, a Debian and a Codesourcery toolchain and for the target system an ARM Linux (running in a virtual machine).

The HDD is a gift for the participant and can be taken home for further studies.

Hands-On training:

Scheduled are hands-on examples for the following themes: shell, cross compiling, and cross debugging (hardware could be provided by Linutronix; please contact us if wished).

Hands-on examples might be limited to 2 persons for a single device

Number of participants:

Due to our experience, we know that a single instructor could coach a maximum of 6 persons. Our courses are therefore limited to this number of individuals.