

Easy Linux Device Driver, Second Edition: First Step Towards Device Driver Programming

Mahesh S. Jadhav

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Easy Linux Device Driver: "First Step Towards Device Driver Programming"

Easy Linux Device Driver book is an easy and friendly way of learning device driver programming . Book contains all latest programs along with output screen screenshots. Highlighting important sections and stepwise approach helps for quick understanding of programming . Book contains Linux installation ,Hello world program up to USB 3.0 ,Display Driver ,PCI device driver programming concepts in stepwise approach. Program gives best understanding of theoretical and practical fundamentals of Linux device driver. Beginners should start learning Linux device driver from this book to become device driver expertise.

-- Topics Covered in book--

*Introduction of Linux

Advantages of Linux

History of Linux

Architecture of Linux

Definitions

*Ubuntu installation

Ubuntu Installation Steps

User Interface Difference

About KNOPPIX

Important links

*Terminal: Soul of Linux

Creating Root account

Terminal Commands

Virtual Editor Commands

*Linux Kernel

Linux Kernel Internals

Kernel Space and User space

*Device Driver

Place of Driver in System

Device Driver working

*Characteristics of Device Driver

Module Commands

Hello World Program

pre-settings

Write Program

Printk function

Makefile

Run program

*Parameter passing

Parameter passing program

Parameter Array

- *Process related program
- *Character Device Driver

Major and Minor number

API to registers a device

Program to show device number

Character Driver File Operations

File operation program.

Include .h header

Functions in module.h file

Important code snippets

Summary of file operations

*PCI Device Driver

Direct Memory Access

Module Device Table

Code for Basic Device Driver

Important code snippets

*USB Device Driver Fundamentals

Architecture of USB device driver

USB Device Driver program

Structure of USB Device Driver

Parts of USB end points

Important features

USB information Driver

*USB device Driver File Operations

Using URB

Simple data transfer

Program to read and write

Important code snippets

Gadget Driver

*Complete USB Device Driver Program

Skeleton Driver Program

*Special USB 3.0

USB 3.0 Port connection

Bulk endpoint streaming

Stream ID

*Device Driver Lock

Mutual Exclusion

Semaphore

Spin Lock

*Display Device Driver

Frame buffer concept

Framebuffer Data Structure

Check and set Parameter

Accelerated Method

Display Driver summary

*Memory Allocation

Kmalloc

Vmalloc

Ioremap

*Interrupt Handling interrupt registration

Proc interface

Path of interrupt

Programming Tips

Softirgs, Tasklets, Work Queues

*I/O Control

Introducing ioctl

Prototype

Stepwise execution of ioctl

*Sample Device Driver

Complete memory Driver

Complete Parallel Port Driver

*Device Driver Debugging

Data Display Debugger

Graphical Display Debugger

Kernel Graphical Debugger

*Appendix I

Exported Symbols

Kobjects, Ksets, and Subsystems

DMA I/O

EasyLDD is best book for beginners to start learning Device Driver programming from basics. Anyone can just take a book and start programming.

Book is easy to understand and friendly to use as book has easy language and screenshot of actual output window along with detailed explanation of each program.

This book is integration of Author's experimental programs, Latest programming concepts like

USB3.0, Contains reference points from all Linux device Driver books and magazines.

Book has also collection of many programs available over websites, books and Linux community programs.

This book is first milestone towards learning driver programming in step-wise approach.

Book will build confidence in you so that you can easily jump in to any type of driver and start coding. All the Best!



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