Practical Embedded Linux Device Drivers



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- Essentials Level
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- Add-on Level





Types of Programming



Embedded Linux Device Driver Course Layout

Level 1 [Essentials] Whoever wants to start career in Embedded Linux Device Driver area. Cover concepts of Linux basics, shell programming, system level programming and device drivers with real time examples. **Prerequisites:** C & DS

Level 2 [Embedded Linux Projects] Gain 10x times real time hands-on experience on embedded Linux device driver development. **Prerequisites:** Level 1

Level 3 [Add-on] To add Embedded Linux domain experience in a particular area to your skillset. **Prerequisites:** Level 2

Level 1 [Essentials]

This is essential level for those who want to move to Embedded Linux Device Driver development area.



Embedded Linux Device Driver Developer: Level 1 [Essentials]

- This is essential level for those who want to move to Embedded Linux Device Driver development area.
- Main objective of this training is to cover concepts of Linux basics, shell programming, system level programming and device drivers with real time examples.
- Learning these concepts are important, to develop a new device driver or Customize a driver on embedded Linux platform which is the next level that is Level 2.





Level 1 [Essentials] Roadmap



Level 1 [Essentials] -> Linux System Programming (LSP)

Skill Set

- File, Process, Memory Management,
- Inter Process Communication,
- Synchronization Mechanisms,
- Socket Programming,
- Multi Thread

Real Time Examples

- Device driver Test cases
- evtest, fbtest, rtc test, i2cdev, spidev





Level 1 [Essentials] -> Linux Device Drivers (LDD)







Level 2 [Embedded Linux Projects]

Gain 10x times real-time hands-on experience on embedded Linux Device Driver Development.

- Whoever gain **real time hands-on experience** on embedded Linux device driver development.
- Main objective of this module covers how to add or port new devices in to existing hardware on embedded Linux platform, embedded Linux boot sequence, boot loader customization, boot time optimization etc.
- This projects add on your profile up to **3+ Years of real time exposure** in embedded Linux platform.
- Finally understood overall system framework from top to bottom and vice versa.
- You can work any new sub system in Linux kernel.

Level 2 [Embedded Linux Projects] Roadmap



Beagle Bone Black



Kernel Masters Beagle Bone Black [KM-BBB] Expansion Board



Kernel Masters Beagle Bone Black [KM-BBB] Expansion Board





- Linux Porting on target board, Embedded Linux Boot sequence,
- Boot loader, ROM Code, Device tree source, Linux platform/Bus/low Drivers

- Embedded Linux Build systems:
- Create own build system,
- Build Root,
- Yocto Project.
- Embedded Android





- Yocto project build environment
- Customize yocto project as per board requirements.

- Embedded Linux Build systems
- Yocto Project porting on BeagleBone Black Hardware





- I2C Communication Protocol format
- I2C Framework in Uboot & kernel Space
- I2C User space drivers
- Linux I2C Adapter and Client Drivers

- Add I2C Slave Devices in Kernel Space.
 - RTC [DS1307]
 - EEPROM [AT24C02]
 - Accelerometer Sensor [ADXL345]





- GDB, KGDB, KDB, strace, valgrind,
- Kprobe, jprobe, kexec, crash tools

- Kernel panic, kernel crash dump,
- Device driver, kernel debugging, application & system program debugging,





- Add a new GPIO/UART/I2C/SPI devices
- UART, I2C, SPI protocol formats
- Linux I2C, SPI framework

- Add a project in your profile.
- Example: Data Lagger, Weather monitoring system, IoT Gateway, Handson Terminal, Point of Sale, Wi-FI Router, Setup etc...







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Appreciations from Recruiters

Second level interview Shortlisted students for HR Interview -REG Senthil Kumar Pitchai M <senthilkumarp@ami.com>

- Our replied to this message on 18-03-2021 21:09.
- Sent: Thu 18-03-2021 19:32
- To: Madhuri

Greetings

Our Technical Team is very much happy about the performance of the candidates in the test and Interview. Also gave me positive feedback about the students Attitude. HATS OFF to your dedication and support to make this drive result oriented. My Best Wishes to all the students We request you to provide next batch of students at the earliest.



Please find below shortlisted students for your reference. Kindly Let me know when we can schedule HR Interview for 2nd level shortlisted students

Candidate	1st Level Result	2nd Level Result
saivardhan	Selected	Selected
Md yaqub	Rejected	
Gopi	Selected	Selected
KOMATI VENKATA SAI SHASHANK	Rejected	
Budati	Selected	Selected
Amrutha	Selected	Selected
Nagalla Pavan Gopika	Rejected	
Anirudh	Selected	12 - 2pm, 19th March 2021
K V SAI JAYANTH	Selected	Selected
Soma Sundaram	Selected	11.30 - 1.30, 19th March 2021
Pravallika	Selected	11.00 - 1.00, 19th March 2021



Appreciations from Recruiters

Kernel Masters - India's Only Industrial Embedded Systems Training Institute



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420, 2nd Floor, K P H B Phase 7, Kukatpally, Hyderabad, Telangana

 $4.8 \pm \pm \pm \pm 520$ reviews (i)



Mahesh V

★★★★★ 3 months ago

Kernel Master really provides one of the best embedded systems training in India in the embedded domain, but you get to learn about C programming and data structures & Linux Internals in depth. According to me it is the best place where you can learn embedded systems courses @ kernel masters provides the best Placement too.

We Mirafra Hired Many Engineers from this institutes & where as 90% of Engineers got placed from Mirafra to client place within short period...

The Percentage of selections are always high compare to other institutes which makes my job as recruiter quite easy, So i prefer Kernel master is the best !!

Reply

mirafra TECHNOLOGIES





Our Vision and Mission

- Our Mission is to bring as many young Electronics Engineers as possible into Embedded field, train them and supply to the Semiconductor Industry.
- We have been doing this since 10 years as a training industry.
- Now we want to enter the Staffing Industry and work directly with the Semiconductor Giants.
- Quality rather than quantity has been our motto, that shows in the appreciation we get from our recruiters.
- Our vision is to place a minimum of 10 quality resources per month, in Qualcomm in the coming 1 year.

Contact Us

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