

# Training evaluation report

**Training session:** Embedded Linux Training  
**Training dates:** Dec. 1-5, 2008 (5 days)

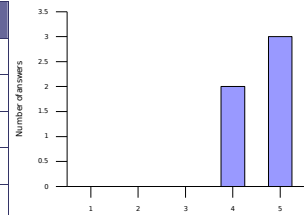
**Number of participants:** 6  
**Returned feedback forms:** 6/6

Thank you for having organized a Free Electrons training session!  
Here is a wrap-up of evaluations from participants.

## Learning objectives

### 1. How well did the course meet your learning objectives?

Rating	Answers	Description
1	0	Not met
2	0	
3	0	
4	2	
5	3	Fully met

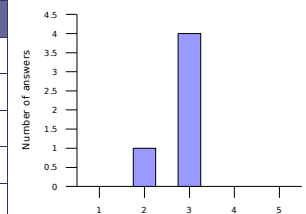


1 - Expected more power management stuff

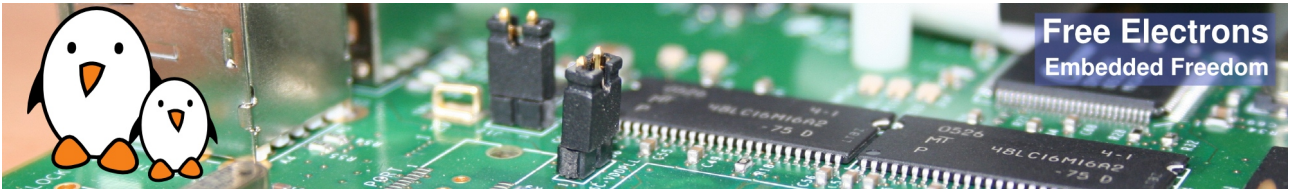
4 - Pretty well. I was expecting to get as much info as possible on Linux (a global view)

### 2. How was the duration of the course?

Rating	Answers	Description
1	0	Too short. Couldn't learn enough in such a short time.
2	1	A little too short
3	4	Just fine
4	0	A little too long
5	0	Definitely too long. The concepts could be learned in much less time.



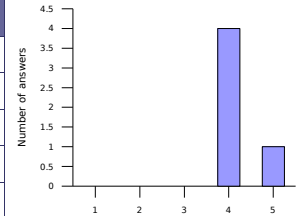
3 - I was expecting maybe the first part (kernel) in like a 4-5 days session + user space development in another 2-3 days, but this of course depends on the current level / experience.



## Lecture materials

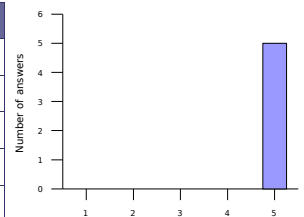
3. How helpful were the lecture materials?

Rating	Answers	Description
1	0	Not helpful. Made things more difficult to learn and understand.
2	0	
3	0	
4	4	
5	1	Really made things easier to understand and learn.



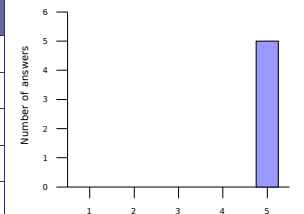
4. Will you recommend these materials to others?

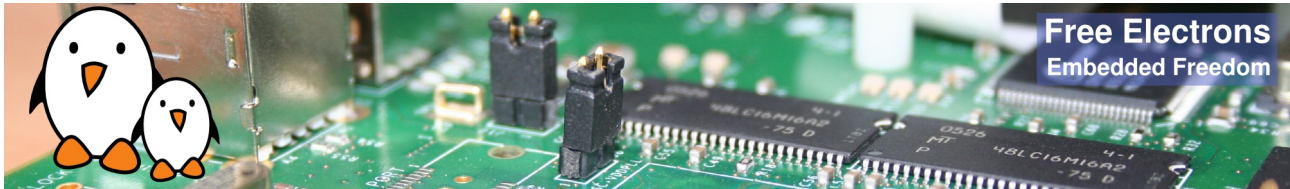
Rating	Answers	Description
1	0	No. Not helpful without following the sessions.
2	0	
3	0	
4	0	
5	5	Definitely



5. If you have Linux project opportunities, will you use these materials again?

Rating	Answers	Description
1	0	No. I will look for other sources of information.
2	0	
3	0	
4	0	
5	5	Definitely

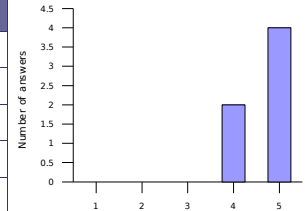




## Instructor added value

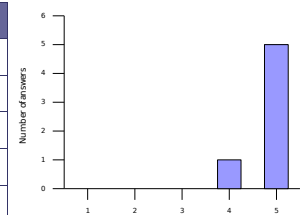
6. How knowledgeable was the instructor?

Rating	Answers	Description
1	0	Not enough for my own technical experience.
2	0	
3	0	
4	2	
5	4	More than enough for my own experience.



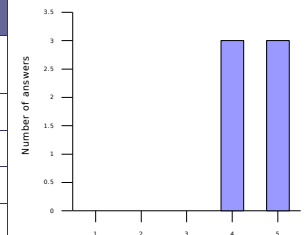
7. Did instructor oral explanations add value to the lecture materials?

Rating	Answers	Description
1	0	No added value to reading the materials.
2	0	
3	0	
4	1	
5	5	Yes. The instructor really made very useful oral explanations.



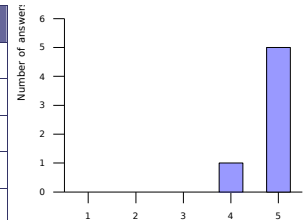
8. How well did the instructor answer questions from the audience?

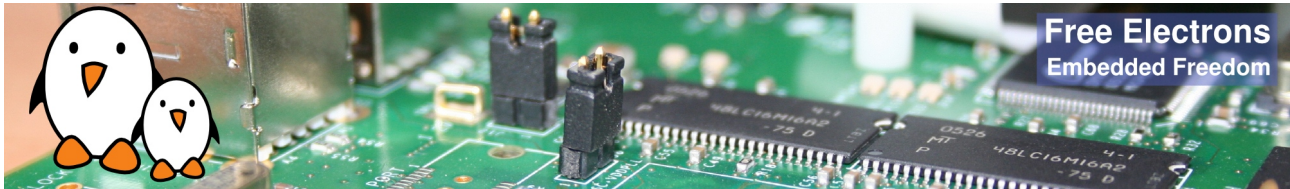
Rating	Answers	Description
1	0	Poorly. Didn't try to understand the questions well or rarely managed to find useful answers.
2	0	
3	0	
4	3	
5	3	Answered very well to questions from the audience



9. Was the instructor helpful with practical labs?

Rating	Answers	Description
1	0	No, not enough available and helpful during the labs.
2	0	
3	0	
4	1	
5	5	Yes. The instructor definitely helped to make labs a learning opportunity.

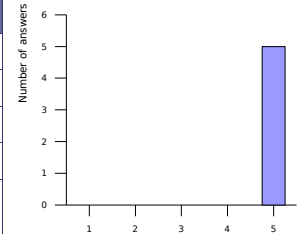




## Training labs

### 10. How useful were the training labs?

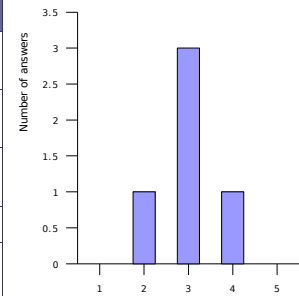
Rating	Answers	Description
1	0	Not useful. Didn't add significant value to the lectures.
2	0	
3	0	
4	0	
5	5	Very useful. Helped to highlight things not understood and build useful experience.



5 - Would have been great to have a real ARM eval board for the tests (especially in combination with the the drivers, like interrupts).  
*Note: our next sessions will use real ARM boards, and not just emulated ones.*

### 11. How difficult were the training labs?

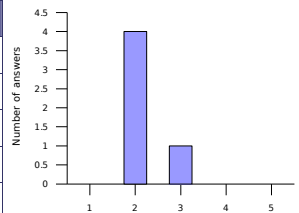
Rating	Answers	Description
1	0	Too difficult. Didn't help or even discouraged a beginner to get more familiar with the tools and concepts.
2	1	A bit too difficult. Would be better if the lab instructions gave a bit more details about explanations.
3	3	Just fine. Prompted me to look for answers, get my own experience and find my own solutions.
4	1	Too easy for my own technical level.
5	0	Too easy for everyone. Should challenge participants more and help everyone to practice on real issues.



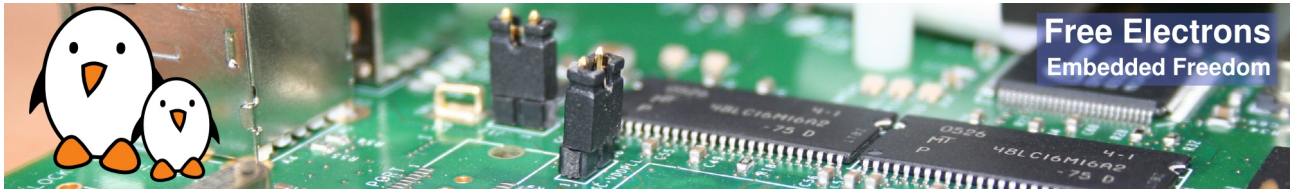
2 - May be a few more explanations required for beginners (like me) to avoid blocking in trivial things (for experts, not so trivial for me).

### 12. Was enough time dedicated to the practical labs?

Rating	Answers	Description
1	0	No. More practice is needed
2	4	A little bit more time would help.
3	1	Just fine
4	0	A little bit less time would be enough.
5	0	Don't need to spend so much time on labs. On-the-job practice is best



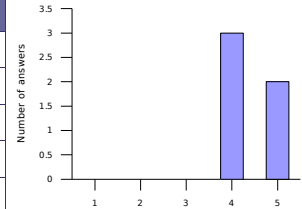
2 - I would have preferred to do all labs. It's the best way to remember and finish understanding the concepts.



## Training conditions

13. How do you rate training conditions (room size, equipment, environment...)?

Rating	Answers	Description
1	0	Poor.
2	0	
3	0	
4	3	
5	2	Very good.

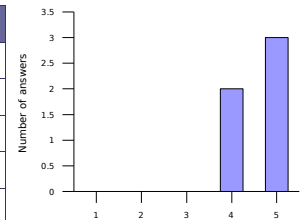


4 - ARM eval boards would have lead to a "5" grade/

5 - Overall, the best conditions I've even found on a training.

14. How do you rate the training equipment (mainly computers)?

Rating	Answers	Description
1	0	Poor. Not powerful enough to execute practical labs.
2	0	
3	0	
4	2	
5	3	Very good. Very little time waiting, more time learning.

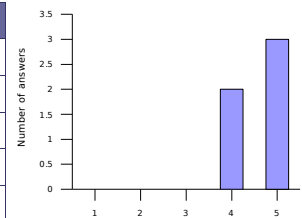


4 - Use a central powerful machine for compiling faster?

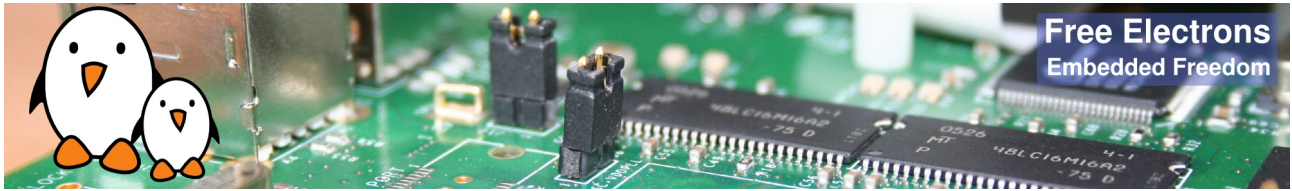
5 - Spent some time with Internet connection issues. Would have been great if there was a private LAN behind a SQUID proxy (and with DNS, DHCP).

15. How well was the course organized (program, registration, meeting the schedule...)?

Rating	Answers	Description
1	0	Not well
2	0	
3	0	
4	2	
5	3	Very well



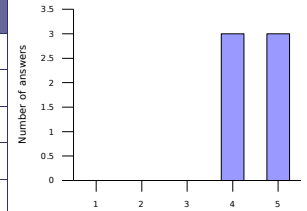
4 - Just need time to complete the labs.



## Overall rating

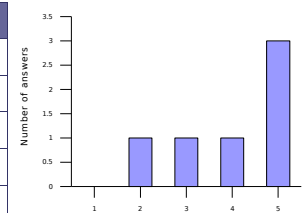
16. How much did you learn?

Rating	Answers	Description
1	0	Definitely not much
2	0	
3	0	
4	3	
5	3	Definitely more than I expected.



17. How useful will this course be in your daily job?

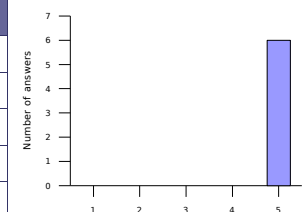
Rating	Answers	Description
1	0	Not useful.
2	1	
3	1	
4	1	
5	3	Very useful. Will make my job easier and more productive.



2 - Doesn't really apply to my current daily job, but gave me some ideas and I expect to apply them in the future.

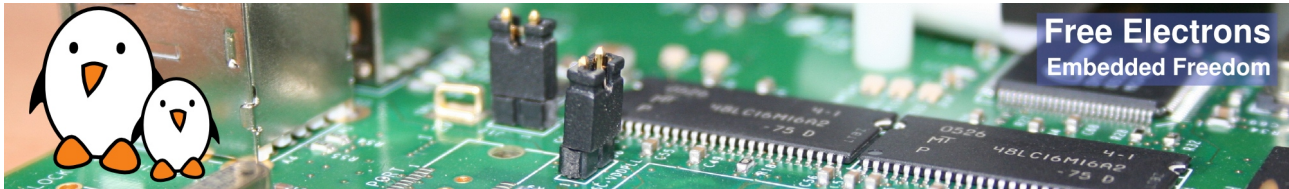
18. Would you recommend this course to others?

Rating	Answers	Description
1	0	No.
2	0	
3	0	
4	0	
5	6	Yes, definitely



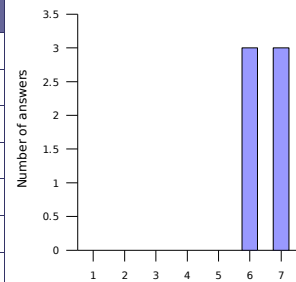
5 - Already did ;-)





## 19. Overall rating

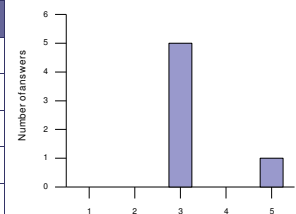
Rating	Answers	Description
1	0	Very disappointing
2	0	Disappointing
3	0	A little bit disappointing
4	0	OK
5	0	Pretty good
6	3	Very good
7	3	Excellent



6 - Yes, on improvement that will help I think a lot: need to have at least 1 lab where we use a real target instead of qemu.  
*Note: real hardware will be available in our next sessions, instead of just emulated boards.*

## 20. An extra session?

Rating	Answers	Description
1	0	No
2	0	
3	5	Why not?
4	0	
5	1	Yes, definitely



3 - Suggestion: ARM driver example with interrupts (e.g. timer)

3 - But need to digest all this info first.

5 - Since I am a beginner, I would be interested in any session which goes deeper in details.

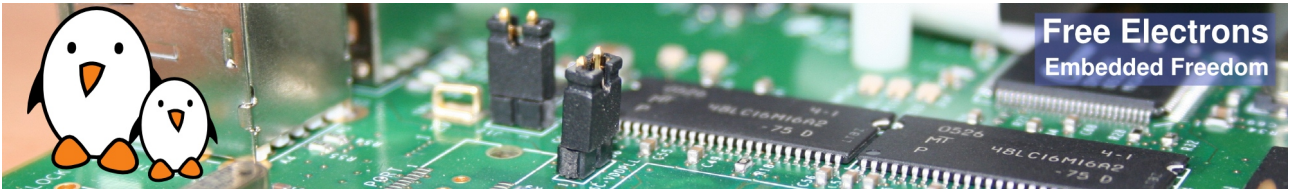
## Number of votes for topics in an extra session

Understanding the Linux kernel	Linux device driver development	Linux board support packages	Embedded system development	Miscellaneous needs
Process management	USB device drivers	2 Processor specific code	Lightweight tools	Java
Filesystem implementation	USB host drivers	1 Board specific code	1 Embedded system development tools	Real-time
Memory management	PCI drivers	Board specific interrupt support code	1 Cross-compiling toolchains	Audio
Scheduling implementation	Network drivers	1 DMA support	3 Debugging solutions	1 Video
Bootstrap code	2 Block drivers	Bootloader development	1 Software development tools	uClinux
Other: minimal DSP	1 Flash drivers		Programming with graphical libraries	1 Voice over IP
	I2S drivers		POSIX API	
	Input drivers	1	System optimization	
	Sound drivers		Root filesystem creation	
	Video drivers			
	CAN drivers	2		

## Free Electrons comments

Thanks to the (sometimes oral) suggestions from the audience, we will improve future training sessions...

- By making the lectures a little bit shorter (skipping the least important details), to leave more time for practical labs.
- By using real ARM boards in our training sessions (coming soon)
- When network access is slow, by using the instructor's laptop as a caching http proxy (like SQUID)



## Life after training

After this training session, do not hesitate to get back to us! Here are things we could do to support you in your embedded Linux projects:

- More training: we can organize custom training sessions or workshops on specific topics. Examples: USB device drivers, developing multimedia systems, uClinux, BSP development...
- If some people in your organization missed the session, and you don't have enough requests to organize another session, they can choose to go to our public training sessions. See <http://free-electrons.com/training/sessions> for details.
- Linux kernel porting. Adding Linux support to your boards, or supporting you in doing this.
- Having your board support code merged in mainstream sources (Linux, U-boot), so that your sources are maintained by the community. This also means for customers that your boards will be supported for a long time.
- System development and integration. Creating demos and prototypes.
- System optimization: improving system performance and features (power consumption, speed, size...)
- Investigating and fixing nasty bugs that you don't have time to cope with by yourselves.

See <http://free-electrons.com/services> for details.