

## Training evaluation report

**Training session:** Embedded Linux Training

**Training dates:** March 20 - 24, 2006

**Number of participants:** 17

**Returned feedback forms:** 11 / 17

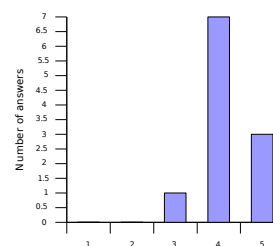
Thank you for having organized a Free Electronics training session!

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	1	
4	7	
5	3	Fully met



5 - I think we went in without knowing what to expect. I think we learned more than expected.

3 - The tools and kernel sections were of most value.

4 - I might have preferred a little more emphasis on driver implementation and slightly less on the userspace tools / infrastructure.

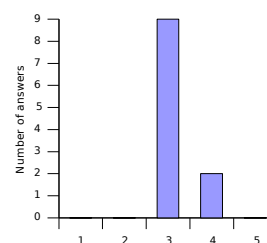
4 - Wouldn't mind a generic overview of BSP setup / configuration.

4 - The labs were great. I would have liked to learn a little more about USB drivers since they seem a bit more complicated than char drivers alone.

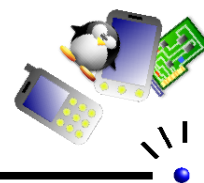
4 - MTD, block device drivers, more kernel internals, gstreamer.

#### 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	0	A little too short
3	9	Just fine
4	2	A little too long
5	0	Definitely too long. The concepts could be learned in much less time.



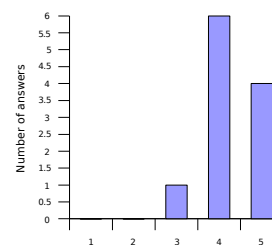
3 - Duration was very good



## Lecture materials

### 3. How helpful did you find the lecture materials?

Rating	Answers	Description
1	0	Not helpful. Made things more difficult to learn and understand.
2	0	
3	1	
4	6	
5	4	Really made things easier to understand and learn.

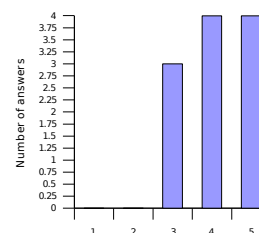


3 - Mostly review, given my background.

4 - The lectures helped quite a bit in the areas I was interested in learning about.

### 4. Will you recommend these materials to others?

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



5 - A very valuable course

5 - Lots of topics are covered

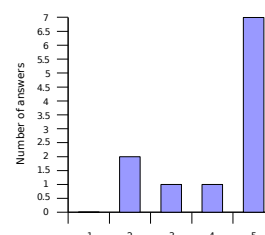
3 - See next question's responses.

4 - I thing these slides are most helpful for someone with a foundational / introductory understanding of Linux. They really clarified much of what I've been reading.

3 - The materials alone could be helpful to others primarily for pointing them to resources that more thoroughly cover the material.

### 5. Will you use these materials again in the future, for command or resource references?

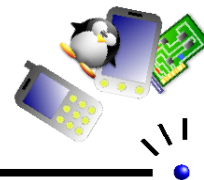
Rating	Answers	Description
1	0	No. I will look for other sources of information.
2	2	
3	1	
4	1	
5	7	I thing this material is very valuable + helpful



3 - If I even have to train someone in Linux, I will definitely use this course as a reference. However, I probably won't refer to it often personally.

2 - I thing the lecture notes are nice for giving students the "flavor" of what is under discussion, but the HOWTO's are more to my liking as a reference.

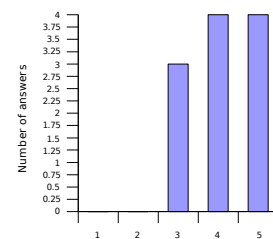
2 - I will probably use them again for examples in a few cases and for finding more in-depth materials.



## Instructor added value

### 6. How knowledgeable was the instructor?

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



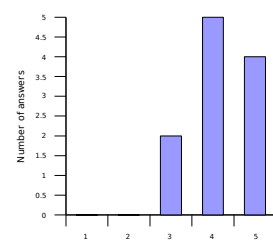
4 - The instructor clearly has some firsthand experience with kernel implementation and construction of FS images for embedded targets.

4 - Good background -> it might be valuable to research more on bootloaders and filesystems / MTD

3 - General knowledge was good, but instructor was rarely able to answer more in-depth questions.

### 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	2	
4	5	
5	4	Yes. The instructor really made very useful oral explanations.

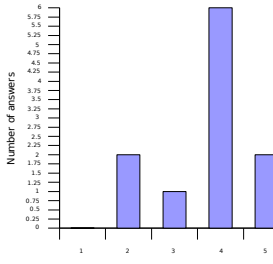


4 - Good responses when students asked for more elaboration on various topics.

4 - Oral explanations greatly supplemented materials.

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

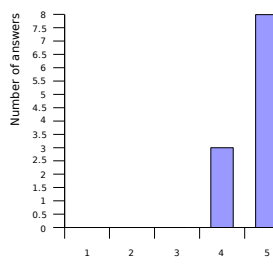
Rating	Answers	Description
1	0	Poorly. Didn't try to understand the questions well or rarely managed to find useful answers.
2	2	
3	1	
4	6	
5	2	Answered very well to questions from the audience



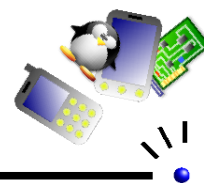
2 - Instructor lacked in-depth knowledge in most areas to answer in-depth questions.

### 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	3	
5	8	Yes. The instructor definitely helped to make labs a learning opportunity.



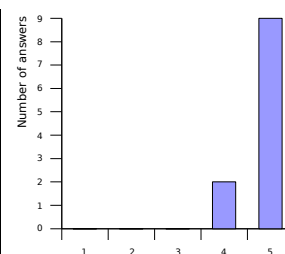
4 - Instructor did a good job using problems encountered in labs as a teaching tool.



## Training labs

### 10. How useful did you find the training labs?

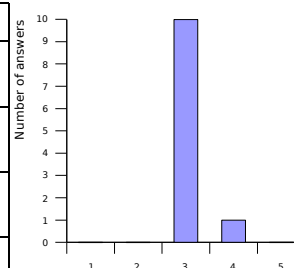
Rating	Answers	Description
1	0	Not useful. Didn't add significant value to the lectures.
2	0	
3	0	
4	2	
5	9	Very useful. Helped to highlight things not understood and build useful experience.



5 - This is where I learned the most and pieces started to come together.  
 5 - Hands on experience add a lot to understanding the lecture notes.  
 5 - Really enjoyed driver implementations.  
 5 - The labs are very good, some of the instructions could be clearer. I would suggest a pthreads lab.  
 4 - Good. The more labs, the better.  
 5 - Labs were by far most educational part of instruction. I suggest more labs that go deeper into topics like device drivers.

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

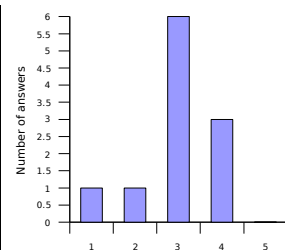
Rating	Answers	Description
1	0	Too difficult. Didn't help or even discouraged a beginner to get more familiar with the tools and concepts.
2	0	A bit too difficult. Would be better if the lab instructions gave a bit more details about explanations.
3	10	Just fine. Prompted me to look for answers, get 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.



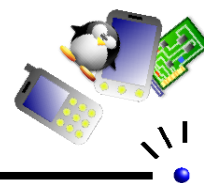
3 - Most labs emphasized main ideas without making us spend time solving complex problems not related to the materials. I think this is the right approach.

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

Rating	Answers	Description
1	1	No. More practice is needed
2	1	A little bit more time would help.
3	6	Just fine
4	3	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 anyway.



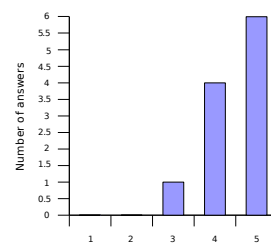
2 - Since we had some time, more labs would have been great, but it was OK as is.  
 4 - Clarification: the number of labs was good (could even be more), but the amount of time allowed for each lab was a little long.  
 1 - I think that increasing the lab time spent on drivers via an iterative approach (more labs building upon previous labs by further developing driver with more features) would have let us go deeper into the topic and learn more.



## Training conditions

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

Rating	Answers	Description
1	0	Poor.
2	0	
3	1	
4	4	
5	6	Very good.



3 - Room + group size was good, the equipment could have been better.

5 - Except that I \*hate\* live CD's :-)

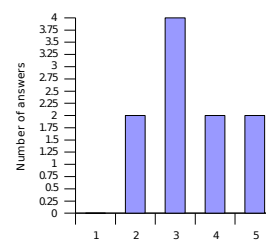
I understand why they are the most reasonable way to get a controlled training environment, though.

4 - Good -> Nice to have laptops

4 - Seemed good to me.

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

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



4 - On Friday, my laptop lost power twice for no apparent reason. ID on company tag: 00009206

2 - Very slow and easy to crash. Wasn't near enough memory.

3 - My only complain is that the OS would occasionally lock up. It would have been nice to install the distribution on the hard disk rather than running from the CD.

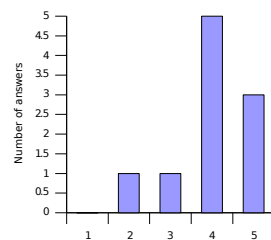
3 - Kind of old laptops though.

3 - Computer slowed down completely sometimes, might want to install Linux rather than using a Live CD.

4 - My only complaint is that running from a CD can be slow, especially for rebooting.

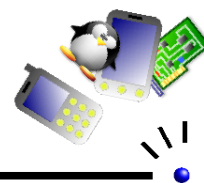
15. How well was the course organized (program, registration, meeting the schedule...)?

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



4 - Good organization.

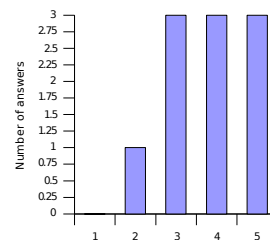
3 - Organization was good for planned materials, but when we finished those early, instructor seemed ill-prepared for adding more topics.



## Overall rating

### 16. How much did you learn?

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



3 - Amount learned met my expectations

5 - I learned a lot.

2 - I learned the most from the tools section and the things are different in the 2.6 kernel, such as "cdev" routines. I would have liked a more thorough investigation of the kernel.

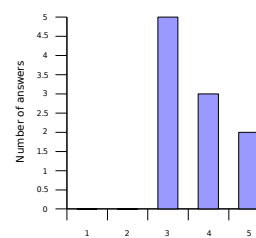
3 - I didn't have very precise expectations beforehand.

5 - Only had basic Linux experience coming in, so learned a lot.

4 - About what I expected.

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

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



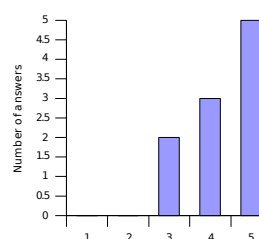
3 - Training will give me a good foundation to build on for future tasks

3 - Though I like the kernel implementation best, my job mainly deals with userspace.

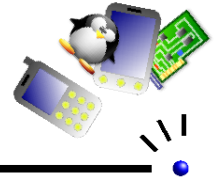
5 - The Linux experience will be very useful in upcoming products.

### 18. Would you recommend this course to others?

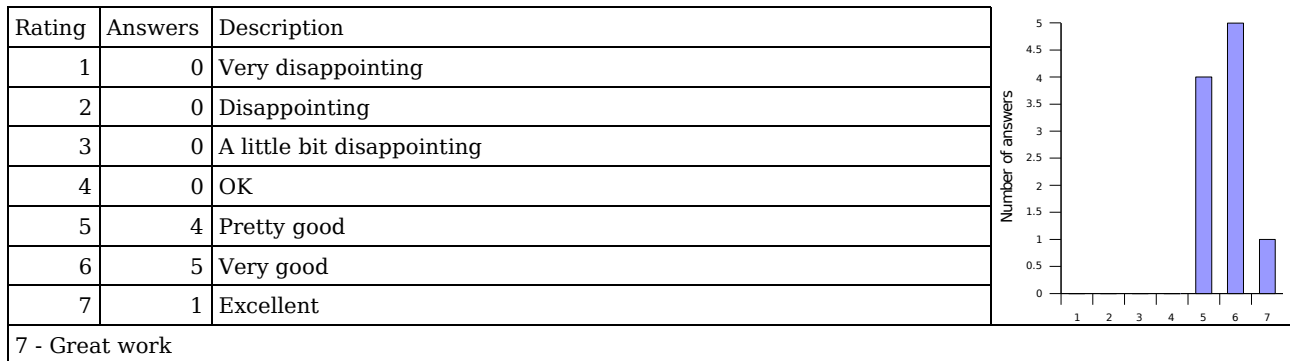
Rating	Answers	Description
1	0	No.
2	0	
3	2	
4	3	
5	5	Yes, definitely



3 - Would recommend for low-level and systems engineers



## 19. Overall rating



## Instructor comments

Thanks to the (sometimes oral) suggestions from the audience, I will improve the training session:

- By adding an in-depth overview on kernel internals
- By having students install the contents of the live CD on the hard disk (possible with Knoppix GNU/Linux). This would increase lab speed and reliability.
- By making more kernel materials and labs available (MTD, USB, bootloaders, BSPs), to satisfy extra needs expressed by the audience during the session.

Thank you very much for your valuable suggestions!