Call for Participation

**Summer School
Johannes Kepler University Linz**

**4th ACCM Real-Time Linux
Workshop**

July 11th - 15th, 2011

**Jointly Organized By
Institute for Measurement
Technology**

**Austrian Center of Competence
in Mechatronics GmbH (ACCM)**

Scope

In general, Open-Source software and GNU/Linux in specific is being increasingly incorporated in consumer, industrial and also scientific projects. While it has been a key element in computer-science education and computer centric research for quite some time - one now can observe a wide proliferation into almost any domain of industrial and scientific endeavour.

This summer school is jointly hosted by the Institute for Measurement Technology of Johannes Kepler University in Linz and the Austrian Center of Competence in Mechatronics GmbH (ACCM). At these institutions Linux and Open-Source technologies have been in continuous use over the past years in teaching and in scientific research as well as in research projects in collaboration with industrial partners in the context of the ACCM. This use of Open-Source technologies has lead to a continuous interaction with the Open-Source community which this summer school is one part of.

While there are many large conferences focussed on different hot topics, this summer school plans to introduce the breadth of GNU/Linux and related open-source technologies by presentations which cover the quite diverse fields of the FLOSS development.

At this summer school we will also offer a scientific presentation/discussion track on the first day with invited speakers giving an in-depth introduction to a wide variety of topics with the intent of encouraging discussions and scientific exchange.

Scientific Day (July 11th, 2011)

Scientific chair: Professor Bernhard Zagar
Scientific co-chair: Nicholas Mc Guire

Invited Speakers

Prof. Dr.sc.techn. (ETH) Wolfgang Kuechlin
Universität Tübingen, Wilhelm Schickard Institut für Informatik
Topic: Symbolic debugging of complex software

Carsten Emde
Open Source Automation Development Lab
Topic: OSADL QA-Farm – quality assurance for Linux

Thomas Gleixner
Linutronix (X86 maintainer RT-Preempt core developer)
Topic: (to be announced)

Julia Laval
Datalogisk Institut – Københavns Universitet
Topic: Coccinelle - semantic patching

Bernhard Noelte
TÜV Süd Rail
Topic: Certification of open-source components

Thomas Wollinger, Andre Osterhues
escrypt GmbH - Embedded Security
Topic: Enhancing Linux Security

Nicholas Mc Guire
OpenTech EDV Research GmbH,
OSADL Real Time Linux Working Group
Topic: Linux Security Methods for Safety related systems

Venue

Johannes Kepler University, A-4040 Linz, Altenberger Strasse 69.
Room: HF 9901, Hochschulfonds Building.

WebSite

www.jku.at/conferences/RTL2011

Language

The scientific part will be held in English, while the workshop will be in German.

Jointly Organized By

Austrian Center of Competence in Mechatronics GmbH (ACCM)

and

Johannes Kepler University Linz
Institute for Measurement Technology
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Workshop Schedule

A four day hands-on workshop focuses on Real-Time Linux capabilities of mainline Linux and tools. Some scattered advanced topics will offer the opportunity to gain a deeper understanding of the capabilities of GNU/Linux based on on-going work in the context of the OVERSEE FP7 project.

Tuesday, July 12th, 2011, 08:00-17:00
Intro to the Linux kernel
- Kernel Development Life Cycle
- GIT, patching and configuring the kernel
- Building kernel packages
- Kernel Driver basics

Wednesday, July 13th, 2011, 08:00-17:00
RT-Preempt introduction
- RT-Preempt concepts
- Tools for temporal analysis
- Tracing in kernel space
- Evaluating systems

Thursday, July 14th, 2011, 08:00-17:00
RT applications on mainline Linux
- Basics of thread programming
- Real-Time threads and PI
- Resource handling for RT processes
- Synchronization and deadlocks

Friday, July 15th, 2011, 08:00-17:00
Kernel security capabilities - a few advanced topics
- Short intro into extended attributes (user-space)
- Introduction to fuse, writing simple fuse-FS
- A quick look at Linux security modules, writing your own
- Hard-coding iptables in a kernel modules

Fees

July 11th, 2011
- Industrial researchers   € 200,--
- ACCM, OSADL, JKU affiliated   € 100,--
- Fulltime students   € 50,--

July 11th, 2011 – July 15th, 2011
- Industrial researchers   € 1.250,--
- ACCM, OSADL, JKU affiliated   € 650,--
- Fulltime students   € 150,--

All prices excl. 10 % VAT.
Please provide a proof of claimed status.
Subject to a minimum attendance of 10 full-paying participants.

Cancellation Fee

50 % fee after June 15th, 2011.   .
80 % fee after July 1st, 2011.

Registration by June 1st, 2011

Please download the registration form you find in the registration section of the website: www.jku.at/conferences/RTL2011.

Expected Skills

- C-programming: writing functions, passing parameters, making a mess with pointers.
- Basic operating system know-how: fifo scheduling, what is a mutex?
- UNIX basics: we will not be explaining "ls" or "echo $USER".
- Editing files on a UNIX/Linux box: vi, emacs, joe... as long as you can write and save files you should be fine!