



# FOSDEM 14.org

Brussels

1 & 2 February

## Donations

FOSDEM is free to attend. The event is organised by volunteers and funded entirely by sponsors, the sale of T-Shirts, and individual donations.

In order to keep the event free, we kindly ask you to buy a T-Shirt and/or to make a donation at one of the infodesks. Your donation supports FOSDEM 2014 and future editions.

Depending on the amount you donate, you will receive one or more of the following along with our gratitude:

|                      | €25 | €50 | €100 |
|----------------------|-----|-----|------|
| FOSDEM T-Shirt       | X   | X   | X    |
| O'Reilly pocket book |     | X   |      |
| O'Reilly book        |     |     | X    |

Small print: It is not possible to get a refund for any reason. Donations are not tax-deductible.

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## Infodesk

Welcome to the 14<sup>th</sup> edition of FOSDEM!

In this booklet, you will find useful information about scheduled talks, the location of the rooms, and other practicalities. If you have any questions, the volunteers at the infodesks will be happy to help you. The main infodesk is located in the K building. A secondary infodesk can be found in the H building. Staff and volunteers roaming around the campus in bright yellow and orange T-Shirts and hoodies are also happy to help you.

There is a handy map on the back of this booklet, pointing out the locations of all buildings, rooms, and the infodesks.

**In an emergency, you can phone the infodesk  
on +32 2 788 74 74**

## Social conduct policy

The FOSDEM organisers were surprised to hear that harassment is a common problem at open source conferences around the world. While we have no evidence of anti-social behaviour ever having been a problem at FOSDEM, we would like to remind everyone that harassment of any kind will not be tolerated.

Please report any concerns to a FOSDEM staff member (yellow shirts), or contact our coordinator Wynke on +32 483 52 46 37.

# General information

## Network

Best-effort wireless network coverage is available everywhere on campus.

To encourage you to support IPv6 in your programs we will use IPv6-only on ESSID “**FOSDEM**” as much as possible. We will adapt network configuration based on user feedback. If you are having problems, please let infodesk know.

We may or may not offer two additional ESSIDs: “**FOSDEM-dualstack**” for IPv4 and IPv6 and “**FOSDEM-v6**” for IPv6 only (with DNS64).

## Online schedule

The full conference schedule is available on our website: <https://fosdem.org/schedule/>.

There are third-party apps for just about every smartphone OS. Check your respective app store/market or see the list at <https://fosdem.org/schedule/mobile/>.

## First aid

A Red Cross first aid team is present throughout the weekend. This team is located at the secondary infodesk in the H building.

## Cloakroom

Do you want to get rid of heavy bags, or are you tired of carrying your coat or umbrella around with you? Store them free of charge at our staffed cloakroom during the event. Simply follow the signs in the K building.

## Lost Property

Lost one of your precious belongings? Found something that looks like someone lost it? Please go to the infodesk in the K building for assistance.

## Catering

There are three places on the campus where you can get food and/or drinks (see the map at the back for the exact locations):

- **The cafeteria** has comfortable seating and serves espresso, breakfast, sandwiches, and drinks throughout the event.
- **The food court** has catering vans offering hot food including burgers, hot dogs, fries, sandwiches, vegetarian wraps, and waffles.
- **The bar** under Janson has sandwiches and loads of beer. Please try to stay quiet while in there. People in Janson can hear you.

In the area surrounding the campus there are many other shops and restaurants where you can get food. See the surroundings map on page 120.

## Public transport

The following STIB/MIVB routes call at “ULB”:

|         |                        |
|---------|------------------------|
| Bus 71  | De Brouckère – Delta   |
| Bus 72  | ADEPS – Devèze-ULB     |
| Tram 25 | Rogier – Boondael Gare |
| Tram 94 | Louise – Musée du Tram |

See the back cover for a map.

## Free shuttle buses

On Sunday afternoon, FOSDEM provides a free shuttle bus service from the conference venue to Brussels South (Midi) railway station which has a regular service to many popular destinations within Belgium and to surrounding countries.

Three buses will provide the service between 15:30 and 19:30. The journey takes approximately 20 minutes. Buses depart from Av. de l’Université.

Between 15:30 and 17:15, a bus is scheduled to depart every 15 minutes. Based on previous experience, we expect the buses to be busiest from 17:30 on. We will abandon our fixed schedule then with buses departing as soon as they are full to maximize throughput. The last departure will be at 19:30.

If you don’t want to queue, why not leave later? There are plenty of bars in the neighbourhood where you can pass the time!

## Taxi

If you need a taxi, we suggest calling Taxi Verts on +32 2 349 49 49. The address of the venue is:

ULB Campus Solbosch  
50, Av. Franklin D. Roosevelt  
1050 Bruxelles

The location where taxis expect to pick you up is marked on the map on the back cover.

## Cash points

There is a cash point on the campus, just past the main bar near the food stands, but experience shows that it runs out of cash quickly during FOSDEM. An alternative cash point can be found at 466, Chaussée de Boondael. To get there, leave the campus towards where the buses and trams stop, and continue straight ahead until the third roundabout and turn left there. You will find the cash point on the left side of the street.

## Accessibility

We try to be as accommodating as possible to attendees with accessibility needs. All rooms except for **AW1.121**, **AW1.125**, **UA\***, and **UD\*** should be reasonably accessible. Ask someone at the infodesk or call Mark (+32 486 961 726) for help or more information.

## Garbage & glass

Please try to keep the campus clean! Throw your garbage into the bins. If you see a full bin, please let staff, volunteers, or infodesk know.

Glass bottles should be put in the cardboard boxes located near some bins or in the designated container near the lower level of the H building.

If you see people scavenging bottles, please report them to security, staff, volunteers, or infodesk immediately.

## Keysigning

The keysigning will take place on Sunday at 14:00 in the corridor on the second level of the U building. Please bring the printed and verified list, a pen, and appropriate form of identification with you to FOSDEM.

Be on time!

Please complete your signing homework before **Sunday, 8 June 2014**, and upload new signatures on your keys to a well-connected keyserver.

## Feedback

How are we doing? Are you enjoying this edition of FOSDEM? Is there anything we can do to make future events better? Please take a minute to fill in our feedback form on page 114.

## Hacker rooms

Need a break? Want to spend some quiet time coding? Need to recharge yourself and/or your devices? There are two hacker rooms where you can sit back and do all that.

The two rooms are **H.2111** in the upper H building and **AW1.124** below the stairs in the AW building.

## BoF rooms

These rooms are intended for ad-hoc discussions, meet-ups, or brainstorming sessions. They are not replacements for developer rooms and they are certainly not intended for talks. These rooms are deliberately not equipped with projectors. The rooms are small and cosy. There are seats for approximately thirty people.

The concept is simple: any project or community can reserve a timeslot (fifteen minutes to an hour) during which they have the room just to themselves.

Reservations are made on a first-come, first-served basis. Signup sheets are available at the infodesk in building H. Directions to the rooms can also be obtained there.

## Cleanup

After FOSDEM is over, we will need to clean up, and quickly. We would greatly appreciate your help. This can be as simple as helping stands carry their equipment, grabbing a broom and starting to clean, or to help collecting all of FOSDEM's gear. Simply talk to staff, volunteers, or infodesk.

| Time               | Title  | Speaker(s)        |
|--------------------|--|-------------------|
| Sat. 10:30 – 10:55 | Welcome to FOSDEM 2014   | FOSDEM Staff      |
| Sat. 11:00 – 11:50 | How we found 10 <sup>6</sup> style and grammar errors in the English Wikipedia | Daniel Naber      |
| Sat. 12:00 – 12:50 | Software Archaeology for Beginners   | James Turnbull    |
| Sun. 17:00 – 17:50 | NSA operation ORCHESTRA: Annual Status Report                                  | Poul-Henning Kamp |
| Sun. 17:50 – 18:00 | Closing FOSDEM 2014  | FOSDEM Staff      |

## Welcome to FOSDEM 2014

**FOSDEM Staff**

Sat. 10:30 – 10:55

FOSDEM welcome and opening talk.

## How we found 10<sup>6</sup> style and grammar errors in the English Wikipedia

...and how to fix them

**Daniel Naber**

Sat. 11:00 – 11:50

LanguageTool is an Open Source proofreading tool developed to detect errors that a common spell checker cannot find, including grammar and style issues. The talk shows how we run LanguageTool on Wikipedia texts, finding many errors (as well as a lot of false alarms). Errors are detected by searching for error patterns that can be specified in XML, making LanguageTool easily extensible.

## Software Archaeology for Beginners

Code, Culture and Community

**James Turnbull**

Sat. 12:00 – 12:50

Most open source projects are rightly proud of their communities, long histories (both measured in time and version control), passionate debates and occasional

trolling. Newcomers to these communities often face an uphill battle, though. Not just in understanding decision making processes and community standards, but in coming to terms with often complex, contradictory, and poorly documented code bases. This talk will introduce you to the concepts and tools you need to be an expert code, culture, and community archaeologist and quickly become productive and knowledgeable in an unknown or legacy code base.

## NSA operation ORCHESTRA: Annual Status Report

**Poul-Henning Kamp**

Sun. 17:00 – 17:50

(TOP SECRET/COMINT) NSAs operation ORCHESTRA has been a resounding success again this year. This year's status report will update decision makers and programme liasons on the goals, achievements and means of ORCHESTRA.

## Closing FOSDEM 2014

**FOSDEM Staff**

Sun. 17:50 – 18:00

Some closing words, and the legendary FOSDEM dance. Don't miss it!

# Main tracks Saturday

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Mathematics page 7

Tracing and debugging page 8

| Time               | Title   | Speaker(s)             |
|--------------------|---|------------------------|
| Sat. 15:00 – 15:50 | Dovecot's way of scaling to millions of users | Timo Sirainen          |
| Sat. 16:00 – 16:50 | Postfix open source mail                      | Wietse Venema          |
| Sat. 17:00 – 17:50 | Mailpile                                      | Bjarni Rúnar Einarsson |

## Dovecot's way of scaling to millions of users

**Timo Sirainen**

Sat. 15:00 – 15:50

Dovecot is an IMAP/POP3 server that can easily run in both tiny installations and in installations with tens of millions of users. This talk explains some methods and design decisions on how Dovecot nowadays does clustering, as well as some problems found on the way there: Proxying, NFS issues, dsync replication, caching, object storage.

## Postfix open source mail server

lessons learned and recent developments

**Wietse Venema**

Sat. 16:00 – 16:50

In the 15 years since its initial release, the Postfix mail

system has become a significant component of the email infrastructure. As the system became more feature-complete, the focus of development has moved towards making the system more extensible and more resilient in the face of changing threats. I will present lessons learned and recent developments, including some new features in this year's release.

## Mailpile

**Bjarni Rúnar Einarsson**

Sat. 17:00 – 17:50

Mailpile is the new kid on the block in the world of F/LOSS e-mail clients. This talk introduces Mailpile from a F/LOSS hacker's perspective, going briefly into the motivation of the project before delving into demos and technical implementation details.



| Time               | Title                            | Speaker(s)    |
|--------------------|----------------------------------|---------------|
| Sat. 13:00 – 13:50 | An Introduction to Sage          | Arvind S Raj  |
| Sat. 14:00 – 14:50 | Calc: GPU enabling a spreadsheet | Michael Meeks |

## An Introduction to Sage

**Arvind S Raj**

Sat. 13:00 – 13:50

Sage is an open source mathematical software system that is built on many components, such as Python, sympy, numpy, gap and scipy, and also brings along the power of the Python programming language. This talk will introduce cover some capabilities of Sage and enable participants to use Sage for their computation needs.

## Calc: GPU enabling a spreadsheet

LibreOffice Calc – now available on your GPU

**Michael Meeks**

Sat. 14:00 – 14:50

Traditionally, LibreOffice has had an appallingly slow and mis-architected spreadsheet core. Come and hear how we've re-designed it to take advantage of the major wins possible with both GPU and CPU parallelism, and extrapolate that to your application.

| Time               | Title   | Speaker(s)                   |
|--------------------|---|------------------------------|
| Sat. 13:00 – 13:50 | Linux tracing with LTTng                        | David Goulet                 |
| Sat. 14:00 – 14:50 | Making the Linux Kernel better (without coding) | Wolfram Sang                 |
| Sat. 15:00 – 15:50 | Your Application versus GDB                     | Tom Tromej                   |
| Sat. 16:00 – 16:50 | Who ate my battery?                             | Jeremy Bennett, Kerstin Eder |

## Linux tracing with LTTng

The love of development without `printf()`

**David Goulet**

Sat. 13:00 – 13:50

In the past, a lot of effort has been invested in high performance kernel tracing tools, but now the focus of the tracing community seems to be shifting over to efficient user space application tracing. By providing joint kernel and user space tracing, developers now have deeper insights into their applications. Furthermore, system administrators can now put in place a new way to monitor and debug systems using a low intrusiveness tracing system, LTTng.

This presentation explains how LTTng can be used as a powerful development and debugging tool for user space applications taking advantage of this year's exciting new features such as network streaming and snapshots. It demonstrates how open source developers and hackers can use LTTng kernel and user space tracers to create powerful logging systems and easier debugging, thus greatly improving development and maintainability of their project(s).

Finally, this talk concludes with the future work we will be doing on LTTng, and how the community can help with improving the project from feedback to very valuable contributions.

## Making the Linux Kernel better (without coding)

**Wolfram Sang**

Sat. 14:00 – 14:50

In this presentation, I want to show little-known mechanisms to add hardware support to the kernel at runtime, i.e. without recompiling. After this presentation, the Linux kernel will have gained support for a previously unsupported USB device (without having to write any code).

## Your Application versus GDB

**Tom Tromej**

Sat. 15:00 – 15:50

In recent years GDB has undergone a renaissance, adding Python scripting and other cool new features. This talk will show you how to customize GDB for your application and your debugging needs. We'll go into depth about pretty printing, stack trace filtering, and writing new commands; and will also discuss writing GUIs and other tools inside GDB. Finally, we'll cover other interesting and useful GDB projects.

## Who ate my battery?

**Jeremy Bennett, Kerstin Eder**

Sat. 16:00 – 16:50

Despite a decade of innovative development, and despite improvements in battery technology, a modern smartphone needs recharging far more often than its turn-of-the-century predecessor. Yet the blame cannot be laid at the door of hardware engineers; the problem lies in the software. Fortunately free and open source technology is racing to the rescue. With this talk we aim to promote energy efficiency to a first class software design goal.

# Main tracks Sunday

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| Time               | Title  | Speaker(s)         |
|--------------------|--|--------------------|
| Sun. 10:00 – 10:50 | OpTiMSoC   | Philipp Wagner     |
| Sun. 11:00 – 11:50 | ARM: Allwinner sunxi SoC's and the community behind it | Olliver Schinagl   |
| Sun. 12:00 – 12:50 | Power management: a system wide challenge              | Peter De Schrijver |

## OpTiMSoC

### Build Your Own System-on-Chip!

**Philipp Wagner**

Sun. 10:00 – 10:50

This talk introduces OpTiMSoC, a set of open source building blocks to create your own System-on-Chip, which then runs on an FPGA or can be simulated on a PC. The system is formed by tiles like processors or memories connected by a Network-on-Chip, all written in Verilog and supported by a set of software required to run it out of the box. The talk shows how you can use OpTiMSoC to gain insight into a complex System-on-Chip, to evaluate the benefit of new hardware accelerators, or to compare different multicore hardware architectures.

## ARM: Allwinner sunxi SoC's and the community behind it

The most opensource (friendly) SoC!

**Olliver Schinagl**

Sun. 11:00 – 11:50

The Allwinner series of System on Chip (SoC)'s has a healthy community around this interesting little chip. This talk will bring interested listeners up to speed in how it all got started and where we, as a community, are today.

## Power management: a system wide challenge

**Peter De Schrijver**

Sun. 12:00 – 12:50

In this presentation we will start from basic CMOS power consumption factors. We will use that as the basis to explain the various possibilities to balance power versus performance. We will then continue explaining how these techniques are implemented both in the SoC hardware and in the the operating system and application software. Android, maemo, OMAP and Tegra will be used to illustrate the techniques.

| Time               | Title  | Speaker(s)       |
|--------------------|--|------------------|
| Sun. 15:00 – 15:50 | No more IPv4   | Eric Vyncke      |
| Sun. 16:00 – 16:50 | Using RIPE Atlas API for measuring IPv6 Reachability | Vesna Manojlovic |

### No more IPv4

Impact on applications and measuring IPv6 deployment

**Eric Vyncke**

Sun. 15:00 – 15:50

The IPv4 address exhaustion brings a broken Internet with the heavy use of NAT. While HTTP is now a major vehicle for any application, and while NAT is friendly with HTTP, there are still issues with large scale NAT as used by some ISPs (mainly mobile). This session explains the security and application issues of NAT, but also explains how an application can easily be extended to support the next generation IPv6, which does not require NAT.

### Using RIPE Atlas API for measuring IPv6 Reachability

**Vesna Manojlovic**

Sun. 16:00 – 16:50

Cooperation and sharing are the keywords for this talk — sharing of data, of efforts, or results.

RIPE Atlas is a global network of probes that measure Internet connectivity and reachability. Out of 5000 active probes, more than 1000 support IPv6. Supported measurements are ping, traceroute6, DNS and SSL. There are API calls for starting your own measurements, and for downloading results of “built-in” measurements from all probes towards root nameservers. Code for analysing data is shared on GitHub.

Many analysis papers and articles were already published using RIPE Atlas data.

My goal is to encourage FOSDEM participants to contribute with their knowledge and their curiosity, by using the existing data and producing interesting research, and by sharing their code with others.

| Time               | Title                              | Speaker(s)                   |
|--------------------|------------------------------------|------------------------------|
| Sun. 14:00 – 14:50 | What's New in OpenLDAP             | Howard Chu                   |
| Sun. 15:00 – 15:50 | Persistent Memory                  | Ric Wheeler                  |
| Sun. 16:00 – 16:50 | Concurrent Programming Made Simple | Nuno Diegues, Torvald Riegel |

## What's New in OpenLDAP

**Howard Chu**

Sun. 14:00 – 14:50

Overview of recent developments in the OpenLDAP Project, features for OpenLDAP 2.5, and new work related to the Lightning Database LMDB.

## Persistent Memory

Changing the Way We Store Data

**Ric Wheeler**

Sun. 15:00 – 15:50

Persistent memory parts have roughly the same capacity, speed and cost as current DRAM, but do not lose state when the power goes out. Some of these parts are on the market today, more will be coming out over the next few years. The Linux IO and File System stack is already

challenged in handling existing SSD devices at hundreds of thousands of IO's per second and these devices will be able to sustain an order of magnitude more IOP's.

This talk will give an overview of what is being proposed in standards bodies and the Linux based solutions being proposed that will help us take full advantage of these new parts.

## Concurrent Programming Made Simple

The (r)evolution of Transactional Memory

**Nuno Diegues, Torvald Riegel** Sun. 16:00 – 16:50

This talk will present Transactional Memory, a programming abstraction for managing concurrency, both in multi-threaded programs running on multi-core processors as well as in distributed cloud infra-structures.

| Time               | Title  | Speaker(s)                         |
|--------------------|--|------------------------------------|
| Sun. 10:00 – 10:50 | F-Droid  | Daniel Martí                       |
| Sun. 11:00 – 11:50 | HTML5 Video Part Deux                                    | Michael Dale                       |
| Sun. 12:00 – 12:50 | The Wikipedia stack                                      | Erik Moeller                       |
| Sun. 13:00 – 13:50 | MirageOS: compiling functional library operating systems | Anil Madhavapeddy, Richard Mortier |

## F-Droid

Free Software app distribution for Android

**Daniel Martí** Sun. 10:00 – 10:50

F-Droid brings Free Software to your Android and helps you regain control over your device.

## HTML5 Video Part Deux

New Opportunities and New Challenges

**Michael Dale** Sun. 11:00 – 11:50

This talk gives a close look at second wave HTML5 features around video delivery — specifically, mediaSource API / adaptive streaming, encrypted media extension and WebRTC. We look at open tools and techniques for transcending platform limitations and delivery these experiences across increasingly diverse set of devices and platforms. Real world usage examples are highlighted from experience with open tools we have built and integrated.

## The Wikipedia stack

An insider's look at the free encyclopedia's code that anyone can clone, branch & commit

**Erik Moeller** Sun. 12:00 – 12:50

Let's explore the fully open source technology stack of

Wikipedia and Wikimedia's other projects, and the many ways to get involved in making the sum of all knowledge available to every person on the planet.

## MirageOS: compiling functional library operating systems

**A. Madhavapeddy, R. Mortier** Sun. 13:00 – 13:50

Public compute clouds provide a flexible platform to host applications as a set of appliances, e.g., web servers or databases. Each appliance usually contains an OS kernel and userspace processes, within which applications access resources via APIs such as POSIX. The flexible architecture of the cloud comes at a cost: the addition of another layer in the already complex software stack. This reduces performance and increases the size of the trusted computing base.

Our Mirage operating system proposes a radically different way of building these appliances. Mirage supports the progressive specialisation of functional language (OCaml) application source code, and gradually replaces traditional OS components with type-safe libraries. This ultimately results in "unikernels": sealed, fixed-purpose images that run directly on a hypervisor without an intervening guest OS such as Linux.

| Time               | Title   | Speaker(s)        |
|--------------------|---|-------------------|
| Sun. 13:00 – 13:50 | USE OTR or how we learned to start worrying and love cryptography | David Goulet      |
| Sun. 14:00 – 14:50 | Capsicum  | Jonathan Anderson |

## USE OTR or how we learned to start worrying and love cryptography

**David Goulet**

Sun. 13:00 – 13:50

USE OTR (USable Encryption with OTR) is an organisation with a simple goal: improving security, usability and encryption of IM software. This talk will outline our organization, the ecosystem of Off The Record Messaging (OTR) and how to start loving end-to-end encryption.

## Capsicum

Practical capabilities for UNIX

**Jonathan Anderson**

Sun. 14:00 – 14:50

The Capsicum project adds new security primitives to FreeBSD and other UNIX-like operating systems, blending security models from capability systems with the practicality of real running code, today. This talk will describe what Capsicum is, how it works, and several exciting new developments in its deployment.



# Developer rooms Saturday

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Ada is a general-purpose language originally designed for safety- and mission-critical software engineering. It is used extensively in air traffic control, rail transportation, aerospace, nuclear, financial services and medical devices. It is also perfectly suited for open source development.

This developer room aims to present the possibilities offered by the Ada Language (object-oriented, multi-core, embedded programming) as well as some of the many exciting tools and projects using Ada.

| Time               | Title   | Speaker(s)            |
|--------------------|---|-----------------------|
| Sat. 11:00 – 11:05 | Welcome   | Dirk Craeynest        |
| Sat. 11:05 – 11:55 | Introduction to Ada   | Jean-Pierre Rosen     |
| Sat. 12:00 – 12:50 | Ada Task Pools: Multithreading Made Easy                    | Ludovic Brenta        |
| Sat. 13:00 – 14:00 | Informal Discussion & Lunch Break                           |                       |
| Sat. 14:00 – 14:50 | SPARK 2014: Hybrid Verification using Proofs and Tests      | José F. Ruiz          |
| Sat. 15:00 – 15:50 | Contract Based Programming in Ada 2012                      | Jacob Sparre Andersen |
| Sat. 16:00 – 16:25 | Formal Verification with Ada 2012: a Very Simple Case Study | Didier Willame        |
| Sat. 16:30 – 16:55 | Speedup and Quality Up with Ada Tasking                     | Jan Verschelde        |
| Sat. 17:00 – 17:50 | Safer Web Servers with Ada and AWS                          | Jean-Pierre Rosen     |
| Sat. 18:00 – 18:15 | Ada in Fedora Linux   | Pavel Zhukov          |
| Sat. 18:15 – 18:30 | Ada in Debian Linux   | Ludovic Brenta        |
| Sat. 18:30 – 18:45 | Ada in *BSD   | John Marino           |
| Sat. 18:45 – 19:00 | Wrap Up & Future Plans                                      |                       |

## Welcome

**Dirk Craeynest**

Sat. 11:00 – 11:05

Welcome to the Ada Developer Room at FOSDEM 2014, which is organized by Ada-Belgium in cooperation with Ada-Europe.

Ada-Belgium and Ada-Europe are non-profit organizations set up to promote the use of the Ada programming language and related technology, and to disseminate knowledge and experience into academia, research and industry in Belgium and Europe, resp. Ada-Europe has member-organizations, such as Ada-Belgium, in various countries.

## Introduction to Ada for Beginning and Experienced Programmers

**Jean-Pierre Rosen**

Sat. 11:05 – 11:55

Overview of the main features of the Ada language, with special emphasis on those features that make it especially attractive for free software development.

## Ada Task Pools: Multithreading Made Easy

**Ludovic Brenta**

Sat. 12:00 – 12:50

Ada is one of very few programming languages that support multi-threading as part of the language, as opposed to libraries.

Last year, we showed how Ada makes it easy to turn a single-threaded program into a multi-threaded program. We ended up with ten thousand threads working concurrently. I will briefly recap this first episode and then continue with the same program, introducing a task pool wherein a small number of threads (one per processor core) process thousands of small work units.

## Informal Discussion & Lunch Break

Sat. 13:00 – 14:00

A one-hour slot has been reserved for much needed interaction and informal discussion among Ada DevRoom participants and anyone potentially interested in Ada.

## **SPARK 2014: Hybrid Verification using Proofs and Tests**

**José F. Ruiz**

Sat. 14:00 – 14:50

This presentation will talk about hybrid verification, an innovative approach to demonstrating the functional correctness of a program using a combination of automated proof and unit testing.

## **Contract Based Programming in Ada 2012**

**Jacob Sparre Andersen**

Sat. 15:00 – 15:50

A tutorial on how to use the Ada 2012 features for specifying detailed, checked contracts for types and subprograms – “classes, functions, and methods” if you aren’t an Ada programmer already.

## **Formal Verification with Ada 2012: a Very Simple Case Study**

**Didier Willame**

Sat. 16:00 – 16:25

After a quick reminder of the Hoare Logic and the approach for designing software by contracts, the tool suite developed by AdaCore for formal verifications is presented. To make the concepts easily understood, a little program simulating a sandpile is used.

## **Speedup & Quality Up with Ada Tasking**

Solving polynomial systems faster and better on multicore computers with PHCpack

**Jan Verschelde**

Sat. 16:30 – 16:55

Writing parallel versions for shared memory multi-core computers with Ada tasks requires minimal modifications of the original source code. For pleasingly parallel computations we experienced almost optimal speedups. If we can afford to spend the same amount of time as one core, then we can ask how much better (e.g.: how much more accurate) we can solve a problem with  $p$  cores. This leads to the notion to “quality up”. Similar to speedup factors, we can compute “quality up” factors.

In this talk we report on our coding efforts to write multi-core versions of the path trackers in PHCpack, a free and open source software package to solve polynomial systems. We started investigating the use of multi-threading to compensate for the overhead of double double and quad double arithmetic.

## **Safer Web Servers with Ada and AWS**

**Jean-Pierre Rosen**

Sat. 17:00 – 17:50

AWS is a framework that allows web servers to be written entirely in Ada. This presentation shows the main principles of AWS, emphasizes how Ada features can be used to make servers more secure and immune to buffer overrun attacks.

## **Ada in Fedora Linux**

**Pavel Zhukov**

Sat. 18:00 – 18:15

This presentation explains and demonstrates how the Fedora Linux distribution can be used for developing in the Ada language. Available tools and frameworks will be demonstrated.

## **Ada in Debian Linux**

**Ludovic Brenta**

Sat. 18:15 – 18:30

A short update on the current state of Ada in Debian and the plans for the next stable release which is due early 2015.

## **Ada in \*BSD**

**John Marino**

Sat. 18:30 – 18:45

A short overview of the Ada compilers and packages available on FreeBSD, NetBSD, and DragonFly.

## **Wrap Up & Future Plans**

Sat. 18:45 – 19:00

Informal discussion on ideas and proposals for future events.

The BSD developer room is a forum for talks about all BSD operating systems – from FreeBSD, NetBSD, OpenBSD to Dragonfly and newer projects, such as EdgeBSD. The range of topics goes from internal hacker discussion to real-world examples and presentations about new and shiny features.

| <b>Time</b>        | <b>Title</b>                        | <b>Speaker(s)</b>  |
|--------------------|-------------------------------------|--------------------|
| Sat. 10:55 – 11:00 | Welcome to the BSD devroom          | Benny Siegert      |
| Sat. 11:00 – 12:00 | Introduction to FreeNAS development | John Hixson        |
| Sat. 12:00 – 12:45 | DTrace integration and quick start  | Veniamin Gvozdikov |
| Sat. 13:00 – 14:00 | The EdgeBSD Project                 | Pierre Pronchery   |
| Sat. 14:00 – 15:00 | The DeforaOS desktop environment    | Pierre Pronchery   |
| Sat. 15:00 – 15:45 | Porting FreeBSD on Xen on ARM       | Julien Grall       |
| Sat. 16:00 – 17:00 | What's new in FreeBSD 10?           | Paul Schenkeveld   |
| Sat. 17:00 – 18:00 | FreeBSD: toward ports v2            | Baptiste Daroussin |

## Welcome to the BSD devroom

**Benny Siegert** Sat. 10:55 – 11:00  
Your host will kick off the BSD devroom with a few opening remarks.

**Introduction to FreeNAS development**  
**John Hixson** Sat. 11:00 – 12:00  
How to develop on FreeNAS.

**DTrace integration and quick start**  
**Veniamin Gvozdikov** Sat. 12:00 – 12:45  
This talk will explain how to use DTrace, where to use it, and how to quickly introduce DTrace in your applications.

**The EdgeBSD Project**  
Introducing the EdgeBSD Project  
**Pierre Pronchery** Sat. 13:00 – 14:00  
This presentation will detail the reasons, objective, status and roadmap of the EdgeBSD project, which started from the NetBSD codebase earlier this year. It aims at broadening and experimenting around community development around NetBSD thanks to a tentatively more modern development workflow, based on Git.

**The DeforaOS desktop environment**  
An alternative desktop for all ranges of devices  
**Pierre Pronchery** Sat. 14:00 – 15:00

The DeforaOS desktop environment is one of three major components from the DeforaOS Operating System project. It is Open Source and meant to be portable, currently supporting Linux, \*BSD, MacOS X, and possibly more. More than just an alternative desktop, it can be adapted for embedded use, be it with a stylus or with finger-based interaction. It has already been released and presented as a Debian-based smartphone (Openmoko) and a NetBSD-based tablet device for instance.

**Porting FreeBSD on Xen on ARM**  
How to support your OS as Xen ARM guest  
**Julien Grall** Sat. 15:00 – 15:45

The goal of this talk is to provide information about Xen on ARM project and encourage hackers to port their OSes as ARM guests.

**What's new in FreeBSD 10?**  
**Paul Schenkeveld** Sat. 16:00 – 17:00

The new FreeBSD 10.0 has been released just before FOSDEM. This new release adds many new features and enhancements to FreeBSD.

**FreeBSD: toward ports v2**  
Trimming the biggest bonsai  
**Baptiste Daroussin** Sat. 17:00 – 18:00

A summary of 3 years of heavy lifting of the ports tree, and what is coming next: cross compilation, sub packages, requires/provides and more.

| Time               | Title  | Speaker(s)       |
|--------------------|--|------------------|
| Sat. 11:00 – 12:00 | Configuration Management 101                         | Sean OMeara      |
| Sat. 12:00 – 12:25 | Configuration Management in an enterprise Linux Team | Remi Bergsma     |
| Sat. 12:30 – 12:55 | ncf  | Jonathan Clarke  |
| Sat. 13:00 – 13:25 | Deploying Cloudstack with Chef                       | Michael Ducy     |
| Sat. 14:00 – 14:25 | Introduction to Docker                               | James Turnbull   |
| Sat. 14:30 – 14:55 | A metadata ocean in Puppet and Chef                  | Marc Cluet       |
| Sat. 15:00 – 15:25 | SaltStack  | Corey Quinn      |
| Sat. 15:30 – 15:55 | Razor – Provision like a Boss                        | David Lutterkort |
| Sat. 16:30 – 16:55 | Foreman integration with Chef (and others)           | Marek Hulán      |
| Sat. 17:00 – 17:25 | Manageable Puppet Infrastructure                     | Ger Apeldoorn    |
| Sat. 17:30 – 17:55 | The classification problem: challenges and solutions | Marco Marongiu   |
| Sat. 18:00 – 18:25 | NixOS: declarative configuration Linux distribution  | Domen Kožar      |
| Sat. 18:30 – 18:55 | Service orchestration in the cloud with Juju         | Marco Ceppi      |

## Configuration Management 101

**Sean OMeara**

Sat. 11:00 – 12:00

Common threads run through modern configuration management systems.

## Use case: Configuration Management in an enterprise Linux Team

How I automated myself out of my job

**Remi Bergsma**

Sat. 12:00 – 12:25

How I automated myself out of my job.

## ncf

abstracting CFEngine’s complexity to provide a structured and powerful framework

**Jonathan Clarke**

Sat. 12:30 – 12:55

After 4 years of “experience in the trenches” providing enterprise configuration management solutions based on CFEngine 3, it became clear that our customers wanted CFEngine’s speed, small footprint, and features but were having a hard time with the language and tooling, and needed an easier way.

## Deploying Cloudstack with Chef

**Michael Ducy**

Sat. 13:00 – 13:25

Learn about how to use the OSS Automation Platform Chef to deploy the OSS Cloud Platform Cloudstack.

## Introduction to Docker

Containerization is the new virtualization

**James Turnbull**

Sat. 14:00 – 14:25

Docker is an open source LXC-based container service that was released in March 2013. It makes it easy to create lightweight, portable, and self-sufficient containers. Containers which you can use to test applications, build, and run services or even to build your own platform-as-a-service. Learn why Docker matters, how to get started with it and see some cool examples of Docker in action.

## A metadata ocean in Puppet and Chef

How to cope with metadata organisation

**Marc Cluet**

Sat. 14:30 – 14:55

How to handle metadata in puppet and chef, what are our observed best practices and how to maintain coherence

## SaltStack

Configuration Management Meets Remote Execution

**Corey Quinn**

Sat. 15:00 – 15:25

Saltstack is arguably one of the best of the “new breed” of configuration management solutions. In this talk, Corey takes the audience through a stand-up of a Salt environment and leads into some examples of how you can leverage the message bus to automate not just configuration management, but your entire infrastructure.

If time permits, and only at explicit request from the audience, Corey will perform the second half of his presentation by means of interpretive dance.

## **Razor – Provision like a Boss**

**David Lutterkort** Sat. 15:30 – 15:55

Razor is a flexible open-source provisioning tool that makes it easy to control how machines are built based on rules and policies. It maintains an inventory of nodes and their hardware characteristics, gathered by booting each node into a discovery image. Discovery information, together with user-defined policies is used to make installation decisions.

## **Foreman integration with Chef (and others)**

**Marek Hulàn** Sat. 16:30 – 16:55

In this talk I'd like to show a live demo covering status of Foreman and Chef integration and try to answer the question “where do we want to get”? Also I could sum up what's needed to add similar support for config management tools of your will.

## **Manageable Puppet Infrastructure**

Forging the pieces together

**Ger Apeldoorn** Sat. 17:00 – 17:25

This talk is not about a specific component or a small part of using Puppet, but about a complete workflow on a Puppet infrastructure design that is easy to collaborate on, well-structured, and safe to use.

Target audience: Puppet users with prior experience, but the basics are covered quickly as well.

## **The classification problem: challenges and solutions**

External node classification, the CFEngine way  
**Marco Marongiu** Sat. 17:30 – 17:55

In this talk I'll briefly compare the approach to External Node Classification (ENC) of Puppet and CFEngine, and then describe a very simple yet powerful approach that has so far allowed Opera to cope with a sudden increase of managed nodes.

## **NixOS: declarative configuration Linux distribution**

**Domen Kožar** Sat. 18:00 – 18:25

In recent years, we've seen many advances from typical imperative configuration of Linux distributions to more sophisticated declarative configuration systems. NixOS takes a different path to achieve declarative configuration than current widely used state-of-art configuration management systems. By redefining how we package software today using Nix package manager, Linux distribution is configured stateless without examining current state of configuration on the machine.

During the talk, we'll be looking at concepts behind NixOS stack and I'll show some real world examples of usage.

## **Service orchestration in the cloud with Juju**

**Marco Ceppi** Sat. 18:30 – 18:55

Building service orchestration with any language! Be it Bash, Python, Ruby, Chef, Node.js, Ansible, Salt, and most anything in between.

The Desktops developer room is a unique opportunity to show novel ideas and developments related to desktop computing to a wide technical audience.

We invite developers and systems administrators to present their talks about Free/Libre/Open-source Software on the topics of Desktop development, Desktop applications and interoperability amongst Desktop Environments. Topics accepted include, but are not limited to: Enlightenment, Gnome, KDE, Unity, XFCE/Razor, Windows, Mac OS X, general desktop matters, applications that enhance desktops and web (when related to desktop).

The developer room organisation is taken care of by a team that represents the major open source desktops: Gnome, KDE, Unity, Enlightenment, and LXDE. Other desktops as invited to join as well.

| Time               | Title  | Speaker(s)  |
|--------------------|--|---|
| Sat. 10:55 – 11:00 | Desktops DevRoom Opening   | Christophe Fergeau, Pau Garcia i Quiles, Philippe Caseiro, Jerome Leclanche, Didier Roche |
| Sat. 11:00 – 11:30 | What's cooking in GStreamer  | Tim-Philipp Müller, Sebastian Dröge (slomo)   |
| Sat. 11:35 – 12:05 | Enlightenment as Standalone Wayland Compositor                     | Stefan Schmidt, Chris Michael   |
| Sat. 12:10 – 12:40 | Swimming with chum in shark infested waters                        | Sriram Ramkrishna   |
| Sat. 12:45 – 13:30 | Anatomy of kdbus   | Lennart Poettering  |
| Sat. 13:35 – 14:05 | Porting legacy X11/GL applications to Wayland                      | Manuel Bachmann   |
| Sat. 14:10 – 14:40 | Qt Creator for desktop developers                                  | Tobias Hunger   |
| Sat. 14:45 – 15:15 | LXQt: Introducing Intents  | Jerome Leclanche  |
| Sat. 15:20 – 16:05 | Mir & Unity8 in the Converged World                                | Thomas Voß  |
| Sat. 16:10 – 16:40 | Hawaii   | Pier Luigi Fiorini  |
| Sat. 16:45 – 17:30 | The KDE Frameworks are here  | Alex Pol Gonzalez   |
| Sat. 17:35 – 17:55 | KDE Connect  | Àlex Fiestas  |
| Sat. 18:00 – 18:50 | Panel with the governing bodies of the GNOME Foundation and KDE eV | Lydia Pintscher, Tobias Mueller   |

## Desktops DevRoom Opening

**Christophe Fergeau, Pau Garcia i Quiles, Philippe Caseiro, Jerome Leclanche, Didier Roche** Sat. 10:55 – 11:00

Presentation of the Desktops DevRoom by its Organization Team & Technical Committee: Christophe Fergeau (Gnome), Pau Garcia i Quiles (KDE), Didier Roche (Unity), Philippe Caseiro (Enlightenment) and Jérôme Leclanche (LXDE)

## What's cooking in GStreamer

**Tim-Philipp Müller, Sebastian Dröge (slomo)** Sat. 11:00 – 11:30

This talk will take a look at what's been happening in the

GStreamer multimedia framework as of late and what shiny new features you can expect to land in the near future.

It is targeted at both application developers and anyone interested in multimedia on the Linux desktop and elsewhere.

## Enlightenment as Standalone Wayland Compositor

**Stefan Schmidt, Chris Michael** Sat. 11:35 – 12:05

Porting a X window manager to the wayland protocol is huge task. This talk describes the journey we took to make it possible to run Enlightenment as a standalone wayland compositor.

## Swimming with chum in shark infested waters

GNOME 3 outreach in the modern age.

**Sriram Ramkrishna**

Sat. 12:10 – 12:40

A talk on engaging the F/OSS community and the lessons learned in the many releases after GNOME 3. Discuss measures we took to engage community, the effect of social media in the modern age, and lessons for others who also release software.

## Anatomy of kdbus

**Lennart Poettering**

Sat. 12:45 – 13:30

With kdbus we move the D-Bus IPC system into the Linux kernel to improve performance and functionality while keeping compatibility.

## Porting legacy X11/GL applications to Wayland

OpenCPN and wxWidgets wrapped for Wayland

**Manuel Bachmann**

Sat. 13:35 – 14:05

Many state-of-the-art graphical applications and frameworks still use direct X11 and legacy GL API calls. As we need to move further and follow new evolutions of the UNIX display stack, especially on embedded platforms, we need to adapt or wrap our codebase to Wayland and GLES.

## Qt Creator for desktop developers

Why you should not waste time coding in a text editor

**Tobias Hunger**

Sat. 14:10 – 14:40

Qt Creator is a full-featured IDE that can help you with your C++ (and C where that does not conflict with C++) coding – with and without Qt!

In this presentation I want to encourage all the a-texteditor-is-all-I-need developers out there to give integrated development environments a try.

## LXQt: Introducing Intents

**Jerome Leclanche**

Sat. 14:45 – 15:15

Intents are a way for applications to declaratively de-

scribe their capabilities and let other applications invoke it. Sounds simple? It's still not possible today.

LXQt is introducing intents. Inspired by Android's intents, they solve several long-standing issues on the desktop. Best of all, they are being developed as an open spec, so that other DEs can use them.

## Mir & Unity8 in the Converged World

**Thomas Voß**

Sat. 15:20 – 16:05

Mir and Unity8 are the cornerstones for enabling Ubuntu for a converged world. This talk dives into both technical and semantic issues that Mir and a shell (here: Unity8) are facing when considering different form factors and seamless transitions between different usage scenarios of a device. We present an overview of the open challenges, plans to tackle them and deep-dive into a selected range of issues.

## Hawaii

Meet Hawaii, the Wayland QtQuick based desktop

**Pier Luigi Fiorini**

Sat. 16:10 – 16:40

Hawaii is a Wayland and QtQuick based desktop environment with few dependencies aiming at desktop and mobile convergence. It is primarily used by Maui, a Linux system with atomic upgrades and bundles. This talk introduces the project to those who don't know it yet, presents the progress that have been made and future directions.

## The KDE Frameworks are here

Adopt it!

**Alex Pol Gonzalez**

Sat. 16:45 – 17:30

The KDE software has been built on Qt since its birth, but often we've needed to create libraries on top of Qt to solve our needs. This ended up being a huge project that was both hard to maintain and a huge dependency, especially on embedded platforms.

## KDE Connect

Making devices know each other

**Alex Fiestas**

Sat. 17:35 – 17:55

KDE Connect tries to create a network of "KDE



Connect"-aware devices that will enable interaction among them by means of compatible services. This talk will explain why we created yet another universal service provider, what is the current status and where we want to go.

## **Panel with the governing bodies of the GNOME Foundation and KDE eV**

**Lydia Pintscher, Tobias Mueller** Sat. 18:00 – 18:50

The GNOME Foundation and the KDE e.V. are the governing bodies for the GNOME and KDE project, respectively. Their roles are to find funds to enable creative hackers to do a great job at creating awesome Free Software for everyone.

We want to shed light into the inner workings of the GNOME Foundation Board of Directors and the KDE eV Board, not only to give you information about how we work, but also to demystify the ivory tower we're sitting in.

| Time               | Title  | Speaker(s)            |
|--------------------|--|-----------------------|
| Sat. 11:00 – 11:50 | Reproducible Builds for Debian                                     | Jérémy Bobbio (Lunar) |
| Sat. 12:00 – 12:50 | Is distribution-level package management obsolete?                 | Donnie Berkholz       |
| Sat. 13:00 – 13:50 | Do you have to be brain damaged to care about desktop Linux?       | Jonathan Riddell      |
| Sat. 14:00 – 14:50 | A Method for Distributing Applications Independent from the Distro | Langdon White         |
| Sat. 15:00 – 15:50 | CentOS: Planning for Variants and the Next Chapter                 | Karanbir Singh        |
| Sat. 16:00 – 16:50 | Fedora.NEXT  | Stephen Gallagher     |
| Sat. 17:00 – 17:50 | Debian Contributors  | Enrico Zini           |

## Reproducible Builds for Debian

**Jérémy Bobbio (Lunar)** Sat. 11:00 – 11:50

How can we enable multiple parties to verify that a binary package has been produced untampered from a given source in a distribution like Debian?

## Is distribution-level package management obsolete?

**Donnie Berkholz** Sat. 12:00 – 12:50

Recent trends in software development have raised questions as to whether package management in Linux distributions is still relevant. Whether it's independent package managers in popular Web frameworks and languages (Node.js, Ruby, Python, etc) or bundling and containerization that's become increasingly popular in DevOps culture, it appears that integrated approaches to package management are on the decline. Yet at the same time we've seen package managers in the Windows world such as NuGet grow more popular. This talk from a leader of the Gentoo Linux distribution will explore the reasoning and history behind this shift and whether it's the right move for the FLOSS movement as a whole.

## Do you have to be brain damaged to care about desktop Linux?

A personal account of severe head trauma and distro development

**Jonathan Riddell** Sat. 13:00 – 13:50

A personal talk about what happened when a car crash left me in a coma for three days and the recovery that has happened in the two years since. The ups and downs of this is mixed with the ups and downs of developing a KDE Linux distro, Kubuntu.

## A Method for Distributing Applications Independent from the Distro

**Langdon White** Sat. 14:00 – 14:50

For many years the Linux distro concept has been about "inclusion of applications" sometimes at the detriment to co-habiting applications and the stability of the core OS. Much discussion has been made over the years about JEOS, embedded Linux, custom distros, appliance building, etc, but not a lot of discussion about how applications could be delivered such that they were more readily able to co-habitate.

## CentOS: Planning for Variants and the Next Chapter

A Broader, Faster, Easier Route to Contributions in CentOS

**Karanbir Singh** Sat. 15:00 – 15:50

CentOS has cemented a reputation as the "community enterprise operating system" – one that provides a reliable rebuild, but is not known for innovation in its own right. With the news that Red Hat and CentOS are joining forces, this is going to change. Here's how CentOS is planning to change, and how other distros can learn from our next phase.

## **Fedora.NEXT**

Developing the Fedora Server, Workstation and Cloud

**Stephen Gallagher**

Sat. 16:00 – 16:50

As you may or may not be aware, Fedora is transitioning from its classic “one-size-fits-all” approach to one where we intend to target three specific user types with individual products: Fedora Workstation, Fedora Server and Fedora Cloud. Gathering Fedora contributors at FOSDEM to work on the logistics around this change in direction would be a valuable opportunity.

## **Debian Contributors**

A new, automatic, doocratic membership to change the face of Debian

**Enrico Zini**

Sat. 17:00 – 17:50

There is a new hat in Debian, bearing the flattering title of “Debian Contributor”. Everyone who contributes to Debian is entitled to have it, and gets it automatically. It is a way to give due credit to all manners of contributions to the project. It is a way to make all the energy that is poured into Debian visible. I will show the reasons behind the idea, and how contributors.debian.org works. I will show how it may change the way we perceive Debian, and very much for the better.

| Time               | Title   | Speaker(s)                          |
|--------------------|---|-------------------------------------|
| Sat. 12:00 – 12:30 | SoCs + FPGAs  | Steffen Trumtrar                    |
| Sat. 12:30 – 13:00 | ABF   | Aleksei Vokhmin, Aleksandr Khriukin |
| Sat. 13:00 – 14:00 | Profiling sensor nodes with call graphs   | Daniel Willmann                     |
| Sat. 14:00 – 15:00 | MINIX 3 on ARM  | Kees Jongenburger                   |
| Sat. 15:00 – 16:00 | Technical introduction to the deeper parts of SailfishOS, a Qt5-Wayland based mobile OS | Carsten Munk                        |
| Sat. 16:00 – 16:30 | Contributing to the Tizen Project   | Phil Coval (rzz)                    |
| Sat. 16:30 – 17:00 | The xpc microcontroller framework   | Niklas Hauser, Kevin Laeuffer       |
| Sat. 17:00 – 17:30 | QtCreator BareMetal development   | Tim Sander                          |
| Sat. 17:30 – 18:00 | wolfSSL 2013 Technical and Community Update   | Chris Conlon                        |

## SoCs + FPGAs

Why settle for only one if you can have them both?

**Steffen Trumtrar**

Sat. 12:00 – 12:30

Xilinx and Altera both took the next step in integrating System on Chips (SoC) with Field Programmable Gate Arrays (FPGA): put them both on the same die and connect them with a high speed interface. This talk will describe the Altera Socfpga platform, its current support in the mainline Linux kernel, lessons learned in using the vendor supplied information and what this new kind of dual core CPU and FPGA alliance opens up for possibilities in low latency RT applications.

## ABF

**Aleksei Vokhmin, Aleksandr Khriukin** Sat. 12:30 – 13:00

ABF as a development framework with ARM-powered build nodes by the example of OpenMandriva 2013.0 / Cooker armv7hl

## Profiling sensor nodes with call graphs

**Daniel Willmann**

Sat. 13:00 – 14:00

Due to resource constraints common in sensor nodes it is often complicated to profile the performance of an application. One solution is simulating the node and profiling the application in there. This talk presents a flexible infrastructure to generate a call graph and cal-

culate the function runtime.

## MINIX 3 on ARM

**Kees Jongenburger**

Sat. 14:00 – 15:00

In the past one and a half years the MINIX team has been working on a port of MINIX 3 to the ARM platform. We now have a port of MINIX 3 to the popular BeagleBone Black.

In this talk I will look back at MINIX 3 on ARM and explain how it became what it is. I will show a few nice features it has, including some stolen from NetBSD and some related to automatic recovery from otherwise fatal system errors.

The goal of the talk is to shine an other light at embedded development and share our experience in this area.

## Technical introduction to the deeper parts of SailfishOS, a Qt5-Wayland based mobile OS

**Carsten Munk**

Sat. 15:00 – 16:00

In this talk, I'd like to walk through some of the more technical parts of SailfishOS ([www.sailfishos.org](http://www.sailfishos.org)). Recently, Jolla ([www.jolla.com](http://www.jolla.com)) has shipped a mobile device based on the typical GNU/Linux stack together with new technologies such as Qt5 and Wayland. Information is presented such as how factual contribution to the open source parts of SailfishOS is done, with pro-

jects such as Mer Core and Nemo Mobile in the picture plus a walk-through of some of the more exotic pieces such as the ability to leverage Android hardware adaptations for Wayland based systems, through libhybris.

### **Contributing to the Tizen Project**

Tizen : Apps, core, platform, hardware, what ? where ? how ? and when ?

**Phil Coval (rzt)**

Sat. 16:00 – 16:30

General presentation of the Tizen project and how to interact with it at the application or core level or even for designing your own Tizen system.

### **The xpc microcontroller framework**

An efficient, object-oriented approach to embedded software development.

**Niklas Hauser, Kevin Laeuffer**

Sat. 16:30 – 17:00

This talk introduces the xpc framework for efficient object-oriented programming for micro-controllers.

### **QtCreator BareMetal development**

See QtCreator, OpenOCD and qbs in action.

**Tim Sander**

Sat. 17:00 – 17:30

QtCreator gained the ability to talk with these really small ARM Boards with CortexM processor. This presentation will show how easy it is to get into development on these boards with a GCC toolchain, OpenOCD and QtCreator with BareMetal plugin.

### **wolfSSL 2013 Technical and Community Update**

**Chris Conlon**

Sat. 17:30 – 18:00

wolfSSL, author of the open source CyaSSL embedded SSL library has made significant progress in 2013 towards bringing the community a more usable, feature-rich, and better supported library for use in an ever-growing range of embedded platforms and environments. This talk will provide an overview of technical progress in the last year and news on the current state of wolfSSL. Details on what's new include the addition of new crypto ciphers and algorithms, better hardware cryptography support, more flexible abstraction layers, a JNI wrapper, new platform support, and better development tool integration.

| Time               | Title   | Speaker(s)              |
|--------------------|---|-------------------------|
| Sat. 11:00 – 11:45 | Event-driven networking library                       | Pierre Talbot           |
| Sat. 11:50 – 12:50 | Ethical questions of game developing                  | Fabian Müller (fendrin) |
| Sat. 13:00 – 13:25 | Building a cross platform media layer based on Doom 3 | Justin Squirek          |
| Sat. 13:30 – 14:15 | Game and Simulation development with Qt               | Martin Scheffler        |
| Sat. 14:20 – 15:20 | Killer Engine for Remixing Games                      | Jesse Himmelstein       |
| Sat. 15:25 – 15:40 | MADE  | Rubén Héctor            |
| Sat. 15:45 – 16:00 | Ero.coli – a synthetic biology game                   | Raphael Goujet          |
| Sat. 16:05 – 17:05 | The rise and fall of open source gaming projects      | Fabian Müller (fendrin) |
| Sat. 17:10 – 17:55 | Community based translations of games                 | Nils Kneuper            |
| Sat. 18:00 – 19:00 | OpenPandora and a peek into the future                | Michael Mrozek          |

## Event-driven networking library

On top of Boost.Asio

**Pierre Talbot**

Sat. 11:00 – 11:45

This talk presents Neev, a simple high-level networking library in C++ based on Boost.Asio that allows to setup client-server applications in a few lines of code. This library was designed and then used to code an add-on server for the game Battle for Wesnoth during Google Summer of Code.

## Ethical questions of game developing

**Fabian Müller (fendrin)**

Sat. 11:50 – 12:50

## Building a cross platform media layer based on Doom 3

Resolving API dependencies and Id Tech 4 modding

**Justin Squirek**

Sat. 13:00 – 13:25

A short talk on common programming APIs used by games as well as creating simple Doom 3 levels and menus - with examples from current programming projects AdaDoom3 and a Neotokyo tribute modification.

## Game and Simulation development with Qt

Use of Qt for developing tools and core components for games and simulations

**Martin Scheffler**

Sat. 13:30 – 14:15

The Qt toolkit offers a huge amount of cross-platform functionality. Qt can be used in a lot of different ways for game programming, from quickly creating throw-away external debug tools to providing core game infrastructure. This talk will highlight different ways that Qt can make the lives of game developers easier.

## Killer Engine for Remixing Games

Great game developers steal!

**Jesse Himmelstein**

Sat. 14:20 – 15:20

Game programming is so fragile that most new games get written from scratch, again and again. We've created a new game engine for pulling apart games into atoms and stitching them back together in novel ways. Our techniques are inspired by functional programming, reactive programming, and dataflow, but still use imperative blocks that many programmers are familiar with. The game engine is completely open source, as are the games written on it.

## MADE

Massive Artificial Drama Engine for non-player characters

**Rubén Héctor**

Sat. 15:25 – 15:40

MADE (Massive Artificial Drama Engine for non-player characters) is a procedural content generator (PGC), with stochastic generation and modelled as a generate-and-test algorithm (search based) that performs the optimizations of the process during the game development

(offline). It presents an environment where many characters interact to generate plots where complex behaviors can emerge. Currently, an article about MADE is being evaluated by the committee of the Evostar 2014 (European conference on the applications of evolutionary computation).

### **Ero.coli – a synthetic biology game**

Citizen Science: Popularisation & crowd-sourcing

**Raphael Goujet**

Sat. 15:45 – 16:00

Ero.Coli retraces the journey of a nano-robot in its quest of ensuring the balance and prosperity of their living world.

This project is a single-player 2D top-down adventure game where the hero, a tiny nano-robot, has to explore a living world, collect, and combine functional DNA fragments in order to engineer and control the abilities of his bacterium companion and face obstacles and dangers.

### **The rise and fall of open source gaming projects**

**Fabian Müller (fendrin)**

Sat. 16:05 – 17:05

### **Community based translations of games**

Why babelfish ain't enough

**Nils Kneuper**

Sat. 17:10 – 17:55

The battle for Wesnoth is in the rare position of being an open source game project featuring many different translations for its huge amount of content. Currently Wesnoth features 54 translations of which 15 translations of the stable series are more than 90

### **OpenPandora and a peek into the future**

OpenSource video game handheld

**Michael Mrozek**

Sat. 18:00 – 19:00

Presenting the currently available OpenPandora handheld, which is a miniature PC with Gaming controls running Linux, to interested people. Additionally, there will be a sneak peek into the future, maybe already with some hardware to demonstrate.

| Time               | Title  | Speaker(s)           |
|--------------------|--|----------------------|
| Sat. 12:00 – 12:50 | Three Years Experience with a Tree-like Shader IR        | Ian Romanick         |
| Sat. 13:00 – 13:50 | State of the X.org foundation                            | Martin Peres         |
| Sat. 14:00 – 14:50 | Open-Source Miracast                                     | David Herrmann       |
| Sat. 15:00 – 15:50 | Making the X-server run without root rights              | Hans de Goede        |
| Sat. 16:00 – 16:50 | DRI3000 and Compositing                                  | Keith Packard        |
| Sat. 17:00 – 17:50 | Movit: High-speed, high-quality video filters on the GPU | Steinar H. Gunderson |
| Sat. 18:00 – 18:50 | Status of GPU offloading on Wayland                      | Axel Davy            |

## Three Years Experience with a Tree-like Shader IR

**Ian Romanick**

Sat. 12:00 – 12:50

Three years ago a small team at Intel took on the task of rewriting the OpenGL Shading Language compiler in Mesa. One of the most fundamental design choices in any compiler is the intermediate representation (IR) used for programs. The IR is the internal data structure used for all program transformations including optimization and code generation. At the time the compiler was designed, a number of alternatives were investigated. In the end, a tree-like IR was selected. With hindsight being 20/20, this talk will present the tree-like IR that was chosen and the issues that have been found with that IR in the interim.

## State of the X.org foundation

Merging with SPI, including Wayland and Mesa under the umbrella

**Martin Peres**

Sat. 13:00 – 13:50

The state of the FLOSS graphics stack is rapidly changing and so is the X.org foundation. We are currently working on merging with SPI to get rid of the bureaucracy that goes along with having the non-profit association status in the USA (501(c)(3)). Since we are changing our legal status, it is also grand-time for us to broaden our purpose beyond the X Windowing System. Projects like Mesa and Wayland have accepted to be placed under the X.org foundation umbrella, it is time for us to make it clear that the X.org foundation is not only about X anymore! This talk will also advise people to become

members of the foundation in order to get a voice in this process.

## Open-Source Miracast

Wifi-Display on linux

**David Herrmann**

Sat. 14:00 – 14:50

Miracast is the name of a WiFi-Alliance certification program for the WiFi-Display standard. It basically defines a “wireless HDMI-cable” so you can connect monitors via WiFi. Some Android vendors implement it, Microsoft ships it with Windows 8.1 and with OpenWFD we now also have the first Open-Source implementation available. This talk shows what Miracast is, how it works, and how you can use it on your favourite linux distribution already.

## Making the X-server run without root rights

**Hans de Goede**

Sat. 15:00 – 15:50

Xorg (the X-server) is a big and complex beast. Currently it runs as root as it needs root privileges for various reasons. But with the latest systemd-logind all necessary infrastructure is in place to allow the server to run as a normal user and use systemd-logind to do input and graphics device management.

This talk looks at the work being done to leverage this new infrastructure to run Xorg without root rights.

## DRI3000 and Compositing

Saving Power by Reducing Copies

**Keith Packard**

Sat. 16:00 – 16:50



The X Composite extension opened up a wealth of possibilities for enhancing the free software desktop, however it came with a cost in performance and power – extra memory used by applications and extra copies of that memory from application buffers to the screen. This presentation will describe and demonstrate enhancements to the Present extension which can eliminate most of these additional copies, and with suitable kernel and application changes, eliminate even more copies for non full-screen double buffered applications.

## **Movit: High-speed, high-quality video filters on the GPU**

**Steinar H. Gunderson**

Sat. 17:00 – 17:50

Movit (the “Modern Video Toolkit”) is a high-performance, high-quality, open-source library for video filters, running on the GPU. Come see what the future holds when open-source video editing steps into 2014!

## **Status of GPU offloading on Wayland**

**Axel Davy**

Sat. 18:00 – 18:50

This talk will be about the principles of GPU offloading, how it is handled with X DRI2, and how we decided to handle it on Wayland.

The High-Performance Computing (HPC) and Computational Science developer room provides an opportunity for open source software developers in the HPC community to present their work and discuss it with FOSDEM attendees.

We invite system administrators, user support team members and end users of HPC infrastructure to participate and present their open source software project(s).// Topics include tools relevant to the HPC community (large-scale system administration, scalable technologies, user support), scientific software projects, etc., that adhere to the 'open source' format in some way or another.

The developer room organisation is taken care of by the HPC team of Ghent University (<http://www.ugent.be/hpc/en>), in collaboration with the Flemish Supercomputer Centre (VSC) (<https://vscentrum.be/nl/en>).

| Time               | Title   | Speaker(s)                        |
|--------------------|---|-----------------------------------|
| Sat. 11:00 – 11:15 | HPC devroom welcome, introduction to HPC-UGent and VSC              | Kenneth Hoste                     |
| Sat. 11:20 – 12:20 | Using OpenMP to Simply Parallelize CPU-Intensive C Code             | Klaas van Gend                    |
| Sat. 12:25 – 12:45 | Kadeploy  | Lucas Nussbaum                    |
| Sat. 12:50 – 13:10 | Quattor   | Luis Fernando Muñoz Mejías        |
| Sat. 13:15 – 13:35 | An Overview of Aquilon  | James Adams                       |
| Sat. 13:40 – 14:00 | Reduce the Storage Consumption of Your Storage Clusters with RozoFS | Dimitri Pertin                    |
| Sat. 14:05 – 14:25 | RestFS: the Next Generation Cloud Storage                           | Fabrizio Manfredi                 |
| Sat. 14:30 – 14:50 | How To Save The Environment   | Aaron Zauner                      |
| Sat. 14:55 – 15:15 | EasyBuild: Building Software With Ease                              | Jens Timmerman                    |
| Sat. 15:20 – 15:40 | HPCBIOS: Getting Your Software, Users & Documentation in Sync       | Fotis Georgatos                   |
| Sat. 15:45 – 16:05 | Automatic Testing of Installed Software                             | Xavier Besson                     |
| Sat. 16:10 – 16:30 | Introduction to Scalasca  | Alexandre Strube                  |
| Sat. 16:35 – 16:55 | HPC Node Performance and Power Simulation with Sniper               | Trevor Carlson                    |
| Sat. 17:00 – 17:20 | Solving NP-complete Problems with Metaheuristics                    | Geoffrey De Smet                  |
| Sat. 17:25 – 17:45 | Scientific GPU Computing with Google's Go Language                  | Arne Vansteenkiste                |
| Sat. 17:50 – 18:10 | Open Microscopy Environment   | Blazej Pindelski, Douglas Russell |

## HPC devroom welcome, introduction to HPC-UGent and VSC

**Kenneth Hoste**

Sat. 11:00 – 11:15

A word of welcome, the devroom agenda, and other practical info followed by a brief introduction to HPC-UGent and the Flemish Supercomputer Centre (VSC).

## Using OpenMP to Simply Parallelize CPU-Intensive C Code

**Klaas van Gend**

Sat. 11:20 – 12:20

Compute-intensive applications usually benefit hugely

from parallelization: running code on multiple CPU cores at the same time. One mechanism to implement such parallelism is to use OpenMP, an official open standard that allows for easy parallelization of existing C or C++ code. The latest OpenMP version (4.0, released summer 2013) also covers offloading to accelerators like GPUs and SIMD.

Klaas van Gend will introduce OpenMP, its applicability and usefulness and how to use OpenMP to speed up your code.

## Kadeploy

From Scalable and Reliable Bare-metal Provi-

sioning to a Reconfigurable Experimental Testbed

**Lucas Nussbaum**

Sat. 12:25 – 12:45

Kadeploy is a scalable, efficient, and reliable bare-metal provisioning solution for HPC clusters. In this talk, I will first present the design choices that enable system administrators to install a 300-nodes cluster in a couple of minutes. Then, I will present how Kadeploy is used in the context of the Grid'5000 testbed. Grid'5000 is a large-scale testbed for research on HPC, Cloud, Grid and P2P computing, where Kadeploy provides users with the ability to deploy their own software stacks, making it the ideal testbed to design, test and evaluate IaaS Cloud stacks.

## Quattor

Configuration and Fabric Management Done Right

**Luis Fernando Muñoz Mejías**

Sat. 12:50 – 13:10

Quattor is a systems administration toolkit allowing controlling the whole life cycle of large and very large computer fabrics. It aims to provide great flexibility (use as much or as little of it as you want), accuracy, and consistency (catching lots of configuration errors way before deployment) and scalability, with installations from tens to tens of thousands of systems.

In this talk we'll describe the main characteristics of Quattor, its simple language and show how a simple service can be deployed.

## An Overview of Aquilon

**James Adams**

Sat. 13:15 – 13:35

Aquilon is the third generation configuration data-store for Quattor (The first being CDB and the second being SCDB).

This talk will cover the architecture and motivation behind Aquilon, experience from a site migrating to it and some examples of the power it can give to SysAdmins.

## Reduce the Storage Consumption of Your Storage Clusters with RozoFS

The Flexible Distributed File System, based on

an Erasure Code

**Dimitri Pertin**

Sat. 13:40 – 14:00

Distributed storage systems like RozoFS provide the best solution to adapt the resources of your system to an evolving demand, but data protection entails a huge data consumption.

This topic would interest those who cares about the data consumption (which is directly linked with energy consumption and architecture cost) of their clusters.

## RestFS: the Next Generation Cloud Storage

**Fabrizio Manfredi**

Sat. 14:05 – 14:25

RestFS is an experimental project to develop an open-source distributed filesystem for large environments. It is designed to scale up from a single server to thousand of nodes and delivering a high-availability storage system with special features for high i/o performance and network optimisation for work better in WAN environment. The Project is on the beginning stage, with some technology previews released.

## How To Save The Environment

..and get rid of virtualenv, vrm, pythonbrew, rbenv, pythonz (...)

**Aaron Zauner**

Sat. 14:30 – 14:50

Although the "Modules" system has been around since the early 1990ties it has yet to find widespread adoption outside of the scientific computing and HPC community. Most FOSS developers rely on a wide range of tools to abstract and manage their Linux and UNIX environments for different scripting languages, compiler toolchains and applications. This problem has been long solved in the world of High Performance Computing where optimization of applications, toolchains and libraries is paramount. Environment Modules are a wonderful tool that will save time, help ease of development processes, reproducibility, and management of your development environment. This talk will give insight into how Modules work, which implementations are out there and how to use Modules instead of language bound tools as well as a comparison with common tools that the community uses to develop on Py-

thon and Ruby (for example) projects.

## **EasyBuild: Building Software With Ease**

**Jens Timmerman**

Sat. 14:55 – 15:15

EasyBuild is a software build and installation framework written in Python that allows you to install software in a structured, repeatable, and robust way. This talk will present the problem with building with scientific software, introduce EasyBuild, and discuss the main features of the tool.

## **HPCBIOS: Getting Your Software, Users & Documentation in Sync**

Definition of Common Environment for HPC Platforms and Beyond

**Fotis Georgatos**

Sat. 15:20 – 15:40

HPCBIOS is concerned with the ability of users to handle tasks across computational platforms (HPC, Grids, Clouds) uniformly and painlessly, as much as technically feasible.

The aim of this work is to present ongoing efforts and concepts tried in centers located in the EU & US, trying to streamline the user experience in scientific computing, as well as, probe the interest of the community for current needs and future work.

## **Automatic Testing of Installed Software**

**Xavier Besseron**

Sat. 15:45 – 16:05

Automatic Testing of Installed Software is a testing framework to validate the various flavors of software installed on an HPC site. It is composed of a set of unit tests, a runtime and a result-gathering dashboard. These tests are user-oriented as they assess the basic features that a general user expect to work on an HPC platform.

Currently, it only focuses on generic MPI functionality as it is one complex and critical component of an HPC platform, but it will be extended to compilers, libraries and performance validation and regression in the future.

## **Introduction to Scalasca**

A Performance Analysis Toolset for Parallel

Programs

**Alexandre Strube**

Sat. 16:10 – 16:30

Scalasca is a comprehensive open source performance analysis toolset for parallel programs, built with the aim of helping developers to identify opportunities for optimization. It covers all steps of performance analysis, from code instrumentation, measurement, and analysis to the visualization of the results.

## **HPC Node Performance and Power Simulation with Sniper**

**Trevor Carlson**

Sat. 16:35 – 16:55

Sniper is a performance modeling simulator. The goal of Sniper is to provide software developers with an easy way to analyze their applications. We provide both performance and energy/power analysis, as well as advanced visualization support.

## **Solving NP-complete Problems with Metaheuristics**

An Introduction to Tabu Search, Simulated Annealing and Late Acceptance

**Geoffrey De Smet**

Sat. 17:00 – 17:20

Some scientific research problems inherently suffer from an NP-complete problem. This session will explain several meta-heuristic algorithms which can handle such problems in reasonable time.

This session will also do lightning introduction of OptaPlanner, an open source Apache licensed Java library, which implements those algorithms.

## **Scientific GPU Computing with Google's Go Language**

A Novel Approach to Highly Reliable CUDA HPC

**Arne Vansteenkiste**

Sat. 17:25 – 17:45

We show general purpose GPU computing using Google's Go language together with minimal use of Nvidia CUDA. This unusual match can perform very reliable, high-performance scientific computation using surprisingly brief and clear code.

## **Open Microscopy Environment**

Informatics for Biological Imaging

**Blazej Pindelski, Douglas Russell**

Sat. 17:50 –

18:10

The Open Microscopy Environment (OME) is an open-source software framework for addressing informatics challenges in biological imaging and analysis: propri-

etary file formats, lack of storage, and analysis facilities and standards for sharing image data and results. The Java-based OMERO client-server platform and its model-based architecture is applicable to a range of imaging domains, including light and electron microscopy, high-content screening, and recently into applications using non-image data from clinical and genomic studies.

| Time               | Title   | Speaker(s)  |
|--------------------|---|---|
| Sat. 11:00 – 11:25 | The State of OpenJDK                                | Mark Reinhold                                       |
| Sat. 11:30 – 11:55 | OpenJDK on AArch64 Update                           | Andrew Haley, Andrew Dinn                           |
| Sat. 12:00 – 12:25 | Shenandoah  | Roman Kennke  |
| Sat. 12:30 – 12:55 | The OpenJDK PowerPC/AIX port endgame                | Volker Simonis, Goetz Lindenmaier                   |
| Sat. 14:00 – 14:25 | What a Long Strange Trip It's Been                  | Steve O'Grady                                       |
| Sat. 14:30 – 14:55 | The evolution of Android's runtime                  | Ian Rogers  |
| Sat. 15:00 – 15:25 | Adding support for OpenJDK 8 to JamVM               | Robert Lougher                                      |
| Sat. 15:30 – 15:55 | Ji Gong   | Sven Gothel, Xerxes Rånby                           |
| Sat. 16:00 – 16:25 | The Java Native Runtime                             | Charles Nutter                                      |
| Sat. 16:30 – 16:55 | From Webrev to Betterrev                            | Daniel Bryant, Mani Sarkar                          |
| Sat. 17:00 – 17:25 | JDK 7 Updates: Lessons Learned                      | Dalibor Tópic                                       |
| Sat. 17:30 – 17:55 | Thermostat 1.0, two years of awesomeness and beyond | Mario Torre   |
| Sat. 18:00 – 19:00 | OpenJDK Governing Board Q&A Panel Session           | Mark Reinhold, Andrew Haley, Georges Saab, Doug Lea |

## The State of OpenJDK

**Mark Reinhold**

Sat. 11:00 – 11:25

A review of the past year in the life of the OpenJDK Community, with a particular focus on the nearly-finished JDK 8 release, the upcoming JDK 9 release, and a look ahead to planned process and infrastructure improvements.

## OpenJDK on AArch64 Update

**Andrew Haley, Andrew Dinn**

Sat. 11:30 – 11:55

Red Hat's project of porting OpenJDK to run on ARM's new 64-bit architecture began about 18 months ago. This talk will describe the work we have performed over the last year, explaining how we went about implementing the client and server JIT compilers. In particular, we will give details and examples of how we have tuned the server compiler to generate code that has been optimized to make use of the AArch64 instruction set.

## Shenandoah

an ultra-low pause-time GC for OpenJDK

**Roman Kennke**

Sat. 12:00 – 12:25

Current garbage collectors for OpenJDK all need to stop the application periodically to perform garbage collec-

tion tasks. This is a scalability bottleneck because those pause times are dependent on heap size. Shenandoah is a new garbage collector for OpenJDK, currently developed by Red Hat, that aims to reduce GC pause times to a minimum by implementing marking and object evacuation to run concurrently with application threads, and utilizing parallel garbage collection threads.

## The OpenJDK PowerPC/AIX port endgame

**Volker Simonis, Goetz Lindenmaier**

Sat. 12:30 – 12:55

The PowerPC/AIX porting project currently driven by IBM and SAP is a good example how the OpenJDK fosters the cooperation of different players in the Java ecosystem in an open environment. At last year's FOSDEM, we presented our JCK-certified JDK7 port. This year, we will showcase our JDK8 port. But more importantly, we will describe the lengthy process of integrating the port into the main OpenJDK repository, thus making it a first class citizen in the OpenJDK environment.

## What a Long Strange Trip It's Been

The Past, Present and Future of Java

**Steve O'Grady**

Sat. 14:00 – 14:25

From its early beginnings in 1991 as the runtime for interactive television set top boxes to its fundamental role in everything from big data to cloud today, Java's rise has had more than its share of twists and turns. In this session, we'll quantitatively explore the decline of some Java projects against the rise of others. Understanding what Java was, is, and might become will help Java advocates from all areas to better communicate the strengths and future of the platform moving forward.

## The evolution of Android's runtime

**Ian Rogers**

Sat. 14:30 – 14:55

Android is a popular open source Linux based operating system that has been activated on over 1 billion mobile devices. This talk will describe the evolution of Android's runtime from Dalvik to ART, a new runtime introduced as a developer preview in the 4.4 release.

## Adding support for OpenJDK 8 to JamVM

**Robert Lougher**

Sat. 15:00 – 15:25

OpenJDK 8 has required substantial changes to the VM to support the new features in the language. This talk will provide an overview of the modifications required to JamVM to support them. This includes JSR292 (invoke-dynamic), JSR308 (type annotations), JSR335 (lambda expressions) and JSR901 (method parameter reflection). As of now, JamVM fully supports OpenJDK 8.

## Ji Gong

Proposal for High Availability JVM Technology on All Platforms

**Sven Gothel, Xerxes Rånby**

Sat. 15:30 – 15:55

Ji Gong project focuses on empowering JVM technology and guaranteeing its availability. Ji Gong discusses deployment of a minimal and efficient JVM on all platforms including web browsers on mobile devices. Ji Gong re-purpose and utilizes existing work, e.g. IcedTea-web, OpenJDK 8 and FOSS JVM implementations such as JamVM. We will showcase deployment of SCC signed applications using JogAmp APIs running on top of Ji Gong within a browser on embedded devices and desktop.

## The Java Native Runtime

**Charles Nutter**

Sat. 16:00 – 16:25

Write once run anywhere is both a blessing and a curse. For years, the WORA promise has ensured a consistent, compile-free experience for JVM users. Unfortunately, sometimes pure-Java libraries just can't do what developers need done. Sometimes, you just have to go full native. The Java Native Runtime is a core library and suite of support libraries for binding and calling out to native code. I'll show how JNR is designed, compare code and performance with alternative approaches, and talk about why the JDK needs a standard FFI (foreign function interface) in Java 9.

## From Webrev to Betterrev

Facilitating Contributions to OpenJDK

**Daniel Bryant, Mani Sarkar**

Sat. 16:30 – 16:55

With the rise of GitHub and the recent move of the Eclipse foundation to a social coding model, more and more people are wondering why participation in OpenJDK isn't keeping up with the times. A small group of people from the London Java Community (LJC) and Adopt OpenJDK are trying to solve this problem by building Betterrev, a platform that will reduce barriers to entry for participation in OpenJDK: our intent is that all attendees will be excited by the potential benefits that the social-coding philosophy could bring to OpenJDK.

## JDK 7 Updates: Lessons Learned

**Dalibor Topić**

Sat. 17:00 – 17:25

The JDK 7 Updates Project in the OpenJDK Community has been around for more than two years, breaking a new ground in how JDK updates are made and trying out a few new things in the process. This session will go into lessons learned from producing updates to the JDK as part of an Open Source project.

## Thermostat 1.0, two years of awesomeness and beyond

**Mario Torre**

Sat. 17:30 – 17:55

Thermostat is an awesome platform with the focus on Java Virtual Machines monitoring. This short present-

ation will discuss what has been done in the past two years until the release of Thermostat 1.0 and its current features and will disclose some spoilers on the future of Thermostat.

## **OpenJDK Governing Board Q&A Panel Session**

**Mark Reinhold, Andrew Haley, Georges Saab, Doug Lea**

Sat. 18:00 – 19:00

An open Q&A session with members of the OpenJDK Governing Board.



| Time               | Title   | Speaker(s)   |
|--------------------|---|--|
| Sat. 11:00 – 11:05 | Welcome to the Legal and Policy Issues DevRoom        | Tom Marble, Bradley M. Kuhn, Karen Sandler, Richard Fontana  |
| Sat. 11:05 – 11:55 | Trolls Aren't the Only Threat Under the Bridge        | Deb Nicholson  |
| Sat. 12:00 – 12:50 | Open Source Compliance at Twitter                     | Chris Aniszczyk  |
| Sat. 13:00 – 13:50 | Legal and Technical Issues of Safety Critical Devices | Karen Sandler, John Sullivan, Jeremiah C. Foster, Amanda Brock                                     |
| Sat. 15:00 – 15:25 | Fiduciary License Agreement                           | Matija Šuklje  |
| Sat. 15:30 – 15:55 | Patents, Free Software & Standards (Oh My!)           | Tom Callaway   |
| Sat. 16:00 – 16:50 | JavaScript  | John Sullivan  |
| Sat. 17:00 – 17:50 | The road ahead for network freedom                    | Christopher Webber   |
| Sat. 18:00 – 18:50 | Open Source Governance best practices roundtable      | Stefano Zacchiroli, Karen Sandler, Christopher Webber, Eileen Evans, Tom Callaway, Chris Aniszczyk |

## Welcome to the Legal and Policy Issues DevRoom

Third Year of This DevRoom Includes an Excellent Panel of Speakers

**Tom Marble, Bradley M. Kuhn, Karen Sandler, Richard Fontana**

Sat. 11:00 – 11:05

Now in its third year, the FOSDEM Legal and Policy Issues DevRoom covers topics of licensing, legal, governance issues, and more as it relates to Open Source and Free Software projects.

## Trolls Aren't the Only Threat Under the Bridge

What should we do about anti-competitive software patent suits?

**Deb Nicholson**

Sat. 11:05 – 11:55

Many small and medium free software projects are staffed by volunteers that don't have any money to tempt a patent aggression entity. There's been plenty of talk about patent trolls, but money isn't the only motive for a patent suit. Even if non-practicing entities are eventually curtailed, ill-intentioned practicing entities may not be affected. The free software community will still have to worry about anti-competitive suits, nuisance suits and suits designed to spread fear, uncertainty

and doubt about the adoption of free software. So, what can we as free software builders, promoters and users do to protect the code we care about?

## Open Source Compliance at Twitter

Lessons from the Twitter Open Source Office

**Chris Aniszczyk**

Sat. 12:00 – 12:50

In 2011, Twitter embarked on creating an open source office. Since there's no real book out there when it comes to starting an open source office, we have a lot of interesting/hilarious lessons and stories to tell about the experience.

## Legal and Technical Issues of Safety Critical Devices

**Karen Sandler, John Sullivan, Jeremiah C. Foster, Amanda Brock**

Sat. 13:00 – 13:50

Safety Critical Devices.

## Fiduciary License Agreement

Lessons Learned

**Matija Šuklje**

Sat. 15:00 – 15:25

The first version of the Fiduciary License Agreement was published by the FSFE in 2007 in order to offer something that was missing at that time — a well balanced

copyright assignment for the FS community.

Since then different FS projects have made use of it. Some to assign copyright to FSFE and others to assign it to different entities in order to take care of paperwork and copyright issues for the FS project.

In this presentation we will look at the lessons learnt in the diverse history of the FLA and look ahead what is in line for the next version of the FLA.

## **Patents, Free Software & Standards (Oh My!)**

**Tom Callaway**

Sat. 15:30 – 15:55

h264, MPEG LA and patents.

## **JavaScript**

If you love it, set it free

**John Sullivan**

Sat. 16:00 – 16:50

On the Free Software implications of JavaScript.

## **The road ahead for network freedom**

**Christopher Webber**

Sat. 17:00 – 17:50

Christopher Allan Webber of GNU MediaGoblin discusses the past, present, and future of free network services.

## **Open Source Governance best practices roundtable**

Query panelists for their best ideas on Open Source Governance

**Stefano Zacchiroli, Karen Sandler, Christopher Webber, Eileen Evans, Tom Callaway, Chris Aniszczyk**

Sat. 18:00 –

18:50

Five of our speakers from the Legal and Policy Issues devroom have agreed to participate in a governance best practices roundtable. These practices may touch on contribution policy, review boards, policy manuals, licensing tools, trademark guidelines, etc.

Questions will be asked of the panelists to start the roundtable and the audience will also be encouraged to participate in order to have more interaction with the panelists. Karen Sandler will be the moderator.

| Time               | Title   | Speaker(s)                       |
|--------------------|---|----------------------------------|
| Sat. 11:00 – 11:30 | Webmaker and MozEdu – Mozilla in the education and the code | Ashickur Rahman, Eduardo Urcullú |
| Sat. 11:30 – 12:00 | Developing Webapps for Firefox OS                           | Robert Kaiser, Sayak Sarkar      |
| Sat. 12:00 – 12:30 | State of Firefox for Android                                | Chris Lord, Gian-Carlo Pascutto  |
| Sat. 12:30 – 13:00 | State of Firefox OS   | Fabien Cazenave                  |
| Sat. 13:00 – 13:30 | Mozilla Persona: an easy way to sign into websites          | Srikar Ananthula                 |
| Sat. 13:30 – 14:00 | Designing for Participation and Web Literacy                | William Duyck (FuzzyFox)         |
| Sat. 14:00 – 14:30 | Google Summer of code and Mozilla                           | Gervase Markham, Florian Quèze   |
| Sat. 14:30 – 15:00 | JavaScript for the skeptics                                 | Soumya Deb                       |
| Sat. 15:00 – 15:30 | Servo: building a parallel web browser                      | Josh Matthews                    |
| Sat. 15:30 – 16:00 | Web Audio API   | Paul Adenot                      |
| Sat. 16:00 – 16:30 | Extending Firefox Developer Tools                           | Jeff Griffiths                   |
| Sat. 16:30 – 17:00 | Utilizing GPUs to accelerate 2D content                     | Bas Schouten                     |
| Sat. 17:00 – 17:30 | Testing for a Better Web                                    | James Graham                     |
| Sat. 17:30 – 18:00 | Women and Technology  | Priyanka Nag                     |
| Sat. 18:00 – 18:30 | Observe online tracking with Lightbeam                      | Antoine Duparay                  |
| Sat. 18:30 – 19:00 | State of Thunderbird  | Ludovic Hirlimann                |

## Webmaker and MozEdu – Mozilla in the education and the code

A new way to learn code

**Ashickur Rahman, Eduardo Urcullú** Sat. 11:00 – 11:30

This is a project that already has been in operation for a few months, born about a year ago from Mozilla Hispano, primarily about teaching young children and schools about the dangers out there on the Internet, how to avoid them, privacy in social networks, and others. Webmaker is a preamble (prior to beginning need to know these things). Success Stories of our events in Paraguay (the pioneers) and other countries, with rooms full of people who want to learn.

## Developing Webapps for Firefox OS

The Efficient & Simplistic Approach

**Robert Kaiser, Sayak Sarkar** Sat. 11:30 – 12:00

This session will mostly concentrate on tips for designing and developing apps for the web as a platform while using the latest development tools and resources for Firefox OS in an efficient way.

## State of Firefox for Android

**Chris Lord, Gian-Carlo Pascutto** Sat. 12:00 – 12:30

We'll provide an overview of what happened with Firefox for Android in the past year. What features did we add, what performance improvements did we achieve, what usability improvements we made, and what entertaining stories we can tell from that experience? Also, where did we fail and where are we still aiming to improve?

## State of Firefox OS

**Fabien Cazenave** Sat. 12:30 – 13:00

What we did in 2013, the cool dev tools we got for X-mas, the great stuff we're planning for 2014, and how to get a free tablet.

## Mozilla Persona: an easy way to sign into websites

**Srikar Ananthula** Sat. 13:00 – 13:30

What is Persona? How does it work? What are benefits of Persona? Let's see it through a demo!

## Designing for Participation and Web Literacy

**William Duyck (FuzzyFox)** Sat. 13:30 – 14:00

Mozilla has 4 pillars of activity, to build, empower, teach, and shape the web. One of the ways we can help others join with these activities is to design our systems and processes with participation in mind, but why stop there? We also try to teach, and its a waste to teach someone a proces, and not tie it into a broader understanding.

## Google Summer of code and Mozilla

**Gervase Markham, Florian Quèze** Sat. 14:00 – 14:30

Mozilla has been participating to Google Summer of Code every year since the program started in 2005. Let's review how this program has benefited to the Mozilla community. We will show a few very successful projects, and explain opportunities for students and mentors.

## JavaScript for the skeptics

A contemporary retrospective on Advanced & Applied JavaScript

**Soumya Deb** Sat. 14:30 – 15:00

Starting with pdf.js, spiraling around shumway & zip-file.js, we'll explore what JS is already capable of, even though it never seemed practical. Then we'll go on to explain the WebAPIs to bring the "native" right in the browser (with a tinge of FxOS - so that it's not up in the air, it's already there - in fact it's **so-last-FOSDEM** actually). Finally, we will talk about the (near) future, and how `browserify.js`, `asm.js` (Emscripten, LLVM) et al. are going the change the web - for good!

## Servo: building a parallel web browser

**Josh Matthews** Sat. 15:00 – 15:30

Servo is a brand new browser engine being written by Mozilla Research, Samsung, and members of the Mozilla community. It's built in Rust, a new programming language created by Mozilla, and designed to take full advantage of modern hardware and security practices. Come learn about what sets Servo apart from the com-

petition, and how you can contribute!

## Web Audio API

How to properly make noise on the Web

**Paul Adenot** Sat. 15:30 – 16:00

Now that `<audio>` starts to get traction on the Web, let's talk about the new API authors can use to make noise in their web pages.

We will briefly cover the API, and then show what is possible to achieve with it (and what is, at the moment, hard or impossible) and how it fits in the Web platform. We finish with possible plans for future of the API.

## Extending Firefox Developer Tools

**Jeff Griffiths** Sat. 16:00 – 16:30

The Firefox Developer Tools team has been working hard over the last two years to provide web developers with useful, performant developer tools in Firefox. These tools are now excellent and are receiving a lot of attention from web developers. We have always thought that in addition to being useful and performant they also need to be extensible so that add-on hackers and web developers can create their own customized tools and provide better support for specific web frameworks and technologies.

## Utilizing GPUs to accelerate 2D content

**Bas Schouten** Sat. 16:30 – 17:00

Over the last 15 years, GPUs have gone from being a piece of hardware found almost exclusively on the machines of gamers to being present in almost every single desktop and laptop computer. This hardware presents opportunities to greatly improve power usage and performance for graphics applications. Over the last 5 years GPU utilization in the desktop application world for accelerating 2D graphics has slowly moved forward, however their intended use for video games also presents us with a number of limitations.

## Testing for a Better Web

**James Graham** Sat. 17:00 – 17:30

Poor interoperability between browsers is one of the

main frustrations faced when trying to develop for the web platform. Solving this is essential for safeguarding the future of the open web, and requires a comprehensive web platform test suite that is run by all browser vendors. The challenge of creating this test suite is being coordinated by the W3C under the “Test The Web Forward” banner. In this talk, I will present the current state of the test suite, how Mozilla are using these tests in their automated testing infrastructure, and explain how to get involved with improving the web by contributing to the testing effort.

## Women and Technology

**Priyanka Nag**

Sat. 17:30 – 18:00

Most of us are aware of the shocking statistic of ‘Men vs Women’ ratio in the Open Source world. The tough job right now is to find the reason for this shocking differ-

ence and figure out ways to get more women involved in Open Source. Being a woman in the Open source world, I have analyzed a few reasons for this scenario. This lightning talk will let me share my views with others and in turn will help me get a more global view point.

## Observe online tracking with Lightbeam

**Antoine Duparay**

Sat. 18:00 – 18:30

Using the new Lightbeam add-on for Firefox, we will monitor web-tracking and discover solutions to protect ourselves.

## State of Thunderbird

**Ludovic Hirlimann**

Sat. 18:30 – 19:00

What happened to the Thunderbird Project since the last version completely done by Mozilla staff. How things are going and what the plans are for the next version.

The MySQL & Friends developer room gives the opportunity to the open source MySQL community to present and discuss innovative development, share experiences and best practices in administering or deploying MySQL servers. Proxies, Clusters, new features, new engines and performances will be covered by the speakers.

This is the best place in Europe for the Community and professionals to meet.

| Time               | Title   | Speaker(s)                         |
|--------------------|---|------------------------------------|
| Sat. 11:00 – 11:05 | Welcome in the MySQL & Friends Devroom 2014                       | Frédéric Descamps                  |
| Sat. 11:05 – 11:35 | Getting started with MySQL Performance Schema                     | Dimitri Kravtchuk                  |
| Sat. 11:35 – 12:05 | mysqlv8udfs – Writing MySQL UDFs in Javascript                    | Roland Bouman                      |
| Sat. 12:05 – 12:35 | Galera Cluster IRL  | Art van Scheppingen                |
| Sat. 12:35 – 13:05 | 15 Tips to improve your Galera Cluster                            | Frédéric Descamps                  |
| Sat. 13:05 – 13:35 | Advanced Fulltext Search with Sphinx                              | Adrian Nuta                        |
| Sat. 13:35 – 14:05 | MariaDB Connect Storage Engine                                    | Serge Frezefond                    |
| Sat. 14:05 – 14:35 | Incompatible changes proposed in MySQL 5.7                        | Morgan Tocker                      |
| Sat. 14:35 – 15:05 | Inside MySQL 5.7 Replication Features                             | Luis Soares                        |
| Sat. 15:05 – 15:35 | Handling failover with MySQL 5.6 and Global Transaction IDs       | Stephane Combaudon                 |
| Sat. 15:35 – 16:05 | Spider Storage Engine   | Stéphane Varoqui , Colin Charles   |
| Sat. 16:05 – 16:35 | Sharding and Scale-out using MySQL Fabric                         | Lars Thalmann                      |
| Sat. 16:35 – 17:05 | Troubleshooting performance problems in MySQL                     | Maciej Dobrzanski                  |
| Sat. 17:05 – 17:35 | ProxySQL : High Availability and High Performance Proxy for MySQL | René Cannàò                        |
| Sat. 17:35 – 18:05 | Practical sysbench  | Peter Boros                        |
| Sat. 18:05 – 18:35 | OSM data in MySQL   | Hartmut Holzgraefe                 |
| Sat. 18:35 – 19:05 | MaxScale, the Pluggable Router                                    | Massimiliano Pinto, Vilho Raatikka |

## Welcome in the MySQL & Friends Devroom 2014

**Frédéric Descamps**

Sat. 11:00 – 11:05

Open and welcome session

## Getting started with MySQL Performance Schema

**Dimitri Kravtchuk**

Sat. 11:05 – 11:35

Getting started with MySQL Performance Schema - a short overview of features available by default with zero efforts from user and zero config as well.

## mysqlv8udfs – Writing MySQL UDFs in Javascript

**Roland Bouman**

Sat. 11:35 – 12:05

MySQL offers two paths for users who want to add

custom functions: SQL stored routines (SRs) and user-defined functions (UDFs).

SRs are simple to create, safe to execute, and offer features such as SQL queries. Their downside is poor performance, clunky syntax, and no support for aggregate functions. UDFs are harder to create and can be unsafe. However, performance is about as fast as it ever gets. UDFs do support aggregate functions.

## Galera Cluster IRL

Migrate an infrastructure to Galera Cluster

**Art van Scheppingen**

Sat. 12:05 – 12:35

Galera Cluster is a synchronous multi-master cluster for MySQL which allows you to synchronously replicate your data to every node in the cluster. Galera Cluster makes the life of a DBA easier with features like automatic node joining, electing donor nodes, and automatic node removal once a node has failed. There is no need to dis-

tinguish master and slave relations in your application as all nodes in the cluster are writable. Consider all nodes in the cluster as one big MySQL database server.

The session will include design choices, lessons learned, and the pitfalls us at Spil Games fell into.

## 15 Tips to improve your Galera Cluster

**Frédéric Descamps**

Sat. 12:35 – 13:05

15 tips to boost your Galera Cluster.

## Advanced Fulltext Search with Sphinx

**Adrian Nuta**

Sat. 13:05 – 13:35

Sphinx is one of the best open-source alternative to replace MySQLs full text indices. This is not only because of its superior speed and smaller resource usage, but also because it provides extended features for full text searching, which are not available on MySQL FTS indices.

## MariaDB Connect Storage Engine

**Serge Frezefond**

Sat. 13:35 – 14:05

The MariaDB CONNECT Storage Engine allows access to various file formats (CSV, XML, Excel, etc). It give access to any ODBC data sources (Oracle, DB2, SQLServer, etc). Also, it allows access to remote MySQL tables. A CONNECT table itself can be a set of remote MySQL tables. This opens the door to interesting distributed architectures that can help to address big data. We will show practical examples of how the MariaDB CONNECT Storage Engine can help you get benefits from your existing data sources.

## Incompatible changes proposed in MySQL 5.7

**Morgan Tocker**

Sat. 14:05 – 14:35

For MySQL 5.7, one of the engineering goals is to continue to clean up and simplify code, and improve the architecture of the MySQL Server.

As part of this spring cleaning process, some features in MySQL 5.7 had a change in behaviour; for example the EXPLAIN PARTITIONS and EXPLAIN EXTENDED syntax

will be enabled by default. Other features will be deprecated and may be removed; for example the InnoDB Monitor tables.

This session aims to describe the motivations behind each of these changes proposed, and how they will affect those that administrate MySQL servers.

## Inside MySQL 5.7 Replication Features

**Luis Soares**

Sat. 14:35 – 15:05

The new replication features in MySQL 5.7 help users to further reduce downtime, thus increasing data and service availability. Moreover, they consolidate MySQL as a perfect fit for distributed environments such as elastic clouds.

## Handling failover with MySQL 5.6 and Global Transaction IDs

**Stéphane Combaudon**

Sat. 15:05 – 15:35

Global Transaction IDs (GTIDs) are a new feature of MySQL 5.6 that can ease failover. Discover the benefits and challenges of GTIDs.

## Spider Storage Engine

The sharding plugin for MySQL/MariaDB

**Stéphane Varoqui , Colin Charles**

Sat. 15:35 – 16:05

Spider is a storage engine for database sharding for MySQL/MariaDB. Spider is already bundled in MariaDB 10.0. I will introduce Spider and new topics.

## Sharding and Scale-out using MySQL Fabric

**Lars Thalmann**

Sat. 16:05 – 16:35

MySQL Fabric is an open-source solution released by the MySQL Engineering team at Oracle. It makes management of MySQL server farms easy and available for both applications with small and large number of servers.

## Troubleshooting performance problems in MySQL

**Maciej Dobrzanski**

Sat. 16:35 – 17:05

It is a typical day at work when suddenly someone notices that the application loads slow. They immediately switch to complaining about database performance and demand that you find the problem and fix it. But how to verify the problem is really with the database? What are the common symptoms and where to look for them? And how to isolate the culprit?

The session will discuss the practical approach to troubleshooting performance problems in MySQL: where to start the investigation, what information to look at and how to interpret it. I will also be talking about useful tools and preparing the environment for effective troubleshooting.

## **ProxySQL : High Availability and High Performance Proxy for MySQL**

**René Cannaò** Sat. 17:05 – 17:35

There are excellent Enterprise software which are able to scale out and boost performances of a cluster, but none open source. ProxySQL is a new proxy (currently under development) that aims to become the first open source proxy in the MySQL ecosystem able to provide HA and high performance with no changes in the application, using several built-in features and integration with clustering software.

## **Practical sysbench**

Benchmarking mysql and IO subsystems

**Peter Boros** Sat. 17:35 – 18:05

This session will be about benchmarking MySQL and disk IO subsystems with sysbench and interpreting the results. In our consulting company, I helped a reason-

able number of customers with sysbench so I know the common caveats most people run into. This talk will cover benchmarking IO subsystems with fileio tests, as well as benchmarking MySQL.

## **OSM data in MySQL**

All the world in a few large tables

**Hartmut Holzgraefe** Sat. 18:05 – 18:35

So far the main workhorse database for OpenStreetMap data was PostgreSQL/PostGIS. With the GIS improvements in latest MySQL and MariaDB releases, especially having true spatial relationship functions instead of just max bounding rectangle (MBR) based ones, have become viable alternatives though. This talk is going to present the most important improvements, a MySQL backend for the osm2pgsql importer tool, and some sample applications including performance comparisons.

## **MaxScale, the Pluggable Router**

**Massimiliano Pinto, Vilho Raatikka** Sat. 18:35 – 19:05

Flexible database clusters impose challenges in terms of load balancing, load splitting, write conflict avoidance, and service availability to name a few. MaxScale is a highly modular proxy with a pluggable API, which assists in offloading tasks away from both clients and the back-end servers. In its simplest form it acts as a non-blocking zero-copy load balancer for read-only connections, while in the other extreme it examines packets and parses queries, which are then processed according to the dynamically changeable rules exposed by plugged-in modules.



| Time               | Title   | Speaker(s)             |
|--------------------|---|------------------------|
| Sat. 11:00 – 11:05 | Welcome   | Italo Vignoli          |
| Sat. 11:05 – 11:20 | WebODF: office in the browser                                     | Jos van den Oever      |
| Sat. 11:20 – 11:35 | LibreOffice plumbing on iOS and Android                           | Tor Lillqvist          |
| Sat. 11:45 – 12:00 | Changes to ‘fields’ in Writer for Apache OpenOffice 4.1           | Oliver-Rainer Wittmann |
| Sat. 12:00 – 12:15 | Writer internals: How are the pages rendered                      | Jan Holesovsky         |
| Sat. 12:30 – 12:45 | Real-time compatible ODF change-tracking                          | Svante Schubert        |
| Sat. 12:45 – 12:55 | OX Documents  | Svante Schubert        |
| Sat. 12:55 – 13:10 | Once Upon a Primitive Slideshow                                   | Thorsten Behrens       |
| Sat. 13:10 – 13:25 | Simplifying reuse with metadata support in ODF and plugin APIs    | Peter Liljeborg        |
| Sat. 13:25 – 13:40 | Time based charting for Libreoffice                               | Markus Mohrhard        |
| Sat. 13:50 – 14:00 | Automated import and export testing of file import and export     | Markus Mohrhard        |
| Sat. 14:00 – 14:15 | Improving the XHTML export filter                                 | Andrea Pescetti        |
| Sat. 14:15 – 14:30 | InteropGrabBag in LibreOffice Writer                              | Miklos Vajna           |
| Sat. 14:30 – 14:45 | libvenge is suite   | Fridrich Strba         |
| Sat. 15:00 – 15:15 | genLang, a new workflow for translation.                          | Jan Iversen            |
| Sat. 15:15 – 15:30 | How to squeeze a language tag into a Locale                       | Eike Rathke            |
| Sat. 15:30 – 15:45 | Quality Assurance   | Raphael Bircher        |
| Sat. 15:55 – 16:05 | Create Sidebar Extensions for OpenOffice                          | Andre Fischer          |
| Sat. 16:05 – 16:20 | How to use the new ui format to do Accessibility right            | Caolán McNamara        |
| Sat. 16:20 – 16:35 | re-using and re-targetting LibreOffice                            | Michael Meeks          |
| Sat. 16:50 – 17:05 | OpenOffice and Eclipse  | Andre Fischer          |
| Sat. 17:05 – 17:20 | Central configuration management of large LibreOffice deployments | Andras Timar           |
| Sat. 17:20 – 17:35 | Debugging BoF   | Phillip Muldoon        |
| Sat. 17:35 – 17:50 | Exploring OpenOffice History using GIT Grafts                     | Herbert Duerr          |
| Sat. 17:50 – 18:05 | LO++14  | Stephan Bergmann       |
| Sat. 18:20 – 18:35 | Liberated Build System: Mission Accomplished                      | Bjoern Michaelsen      |
| Sat. 18:35 – 18:45 | Digital signing of releases                                       | Jan Iversen            |
| Sat. 18:55 – 19:00 | Wrap Up   | Italo Vignoli          |

## Welcome

**Italo Vignoli**

Sat. 11:00 – 11:05

Welcome and introduction to the open document editors devroom.

## WebODF: office in the browser

**Jos van den Oever**

Sat. 11:05 – 11:20

WebODF is an office suite for both local and cloud use. It works anywhere there is a browser or a browser widget. With WebODF you can edit office documents, share them, or publish them. WebODF is compatible with Lib-

reOffice, Microsoft Office, OpenOffice and others, but can also be used stand-alone. It requires no special server software; it can be easily integrated with any web software.

## LibreOffice plumbing on iOS and Android

**Tor Lillqvist**

Sat. 11:20 – 11:35

In this presentation, I will present a summary of the peculiarities of LibreOffice internals on iOS and Android, and tell about some recent advances like running as 64-

bit ARM64 code on the newest iOS devices.

## Changes to 'fields' in Writer for Apache OpenOffice 4.1

in-place editing of Input Fields and annotations on text ranges

**Oliver-Rainer Wittmann** Sat. 11:45 – 12:00

Presentation on the two changes in Writer for Apache OpenOffice 4.1 regarding 'fields' from the developers point of view. The in-place editing of Input Fields is the one PoV, the other is the enhancement of comments/annotations to apply them on arbitrary text ranges.

## Writer internals: How are the pages rendered

**Jan Holesovsky** Sat. 12:00 – 12:15

Witer internals: How are the pages rendered?

## Real-time compatible ODF change-tracking

OASIS ODF Standardization

**Svante Schubert** Sat. 12:30 – 12:45

The OASIS Advanced Document Collaboration subcommittee is working on an update of OpenDocument change-tracking (CT). The update will not only enhance the existing CT feature set to the current state of the art, e.g. tracking style changes, but also lay the foundation for the standardization of real-time collaboration (RTC) by making CT compatible to RTC.

## OX Documents

OpenDocument Editor

**Svante Schubert** Sat. 12:45 – 12:55

OX Documents is a browser based ODF editor using the upcoming OASIS ODF change operations as principle design.

## Once Upon a Primitive Slideshow

and other news from LibreOffice graphics

**Thorsten Behrens** Sat. 12:55 – 13:10

Once Upon a Primitive Slideshow, and other news from

LibreOffice graphics.

## Simplifying reuse with metadata support in ODF and plugin APIs

**Peter Liljenberg** Sat. 13:10 – 13:25

Reusing images shared with Creative Commons licenses would be much easier if we could use tools that keep track of the attribution and license metadata for the images. This talk shows how this can be done today with a set of plugins to Firefox and LibreOffice/OpenOffice, and what could be done better with improved support in the plugin APIs.

## Time based charting for Libreoffice

**Markus Mohrhard** Sat. 13:25 – 13:40

A short overview of the new time based charting feature in Libreoffice.

## Automated import and export testing of file import and export

**Markus Mohrhard** Sat. 13:50 – 14:00

A short presentation of the tests the Libreoffice team uses to test import and export filters.

## Improving the XHTML export filter

And mentoring students through patches and licenses

**Andrea Pescetti** Sat. 14:00 – 14:15

The XHTML Export filter in OpenOffice has traditionally been quite limited. In an ongoing project, students are being mentored to integrate work by Habib Louafi based on an older version of OpenOffice into the current trunk. This work adds substantial new features such as: support for fonts, better layout, better support for images, and support for shapes. We will see the technical progress, but also the process with students working in different phases and having to work around licensing issues and dependency issues.

## InteropGrabBag in LibreOffice Writer

What it is, how to use it and what uses it already.

**Miklos Vajna**

Sat. 14:15 – 14:30

LibreOffice Writer's ODF filter was always capable of remembering attributes of elements which it does not understand, so after a load and save, such attributes were not lost. But what about the rest of the file formats? InteropGrabBag is a new API we have been creating over the past few months that lets foreign filters store their unhandled attributes, so such information is not lost during such a round trip. Come and see where we are, what still needs to be done, and how you can help.

## librevenge is suite

What is new in the world of import filters and what is coming soon

**Fridrich Strba**

Sat. 14:30 – 14:45

What is new in the file-format coverage within LibreOffice? Focusing on new improved APIs which will land in LibreOffice 4.3, encouraging details about the growth of filter-writing community.

## genLang, a new workflow for translation.

Apache OpenOffice

**Jan Iversen**

Sat. 15:00 – 15:15

Workflow from developer creates a text string, until a released product with n languages.

## How to squeeze a language tag into a Locale

What you need to know about BCP 47 language tags in your ODF editor.

**Eike Rathke**

Sat. 15:15 – 15:30

ODF 1.2, additionally to the fo:language and fo:country attributes, introduced fo:script and \*:rfc-language-tag attributes to allow for the full range of BCP 47 language tags. This talk will give a brief overview what it means to applications and how LibreOffice implemented it and the consequences it may have for extension developers.

## Quality Assurance

The important work, who no one wants to pay for

**Raphael Bircher**

Sat. 15:30 – 15:45

The important work which no one wants to pay for.

## Create Sidebar Extensions for OpenOffice

**Andre Fischer**

Sat. 15:55 – 16:05

An introduction of how to create new panels for the OpenOffice sidebar.

## How to use the new ui format to do Accessibility right

Notes for developers to get accessibility right in dialogs for LibreOffice when using the new ui format

**Caolàn McNamara**

Sat. 16:05 – 16:20

Notes for developers to get accessibility right in dialogs for LibreOffice when using the new UI format. How to convert existing accessibility relations in old code into the new XML descriptions. How to set mnemonics and why it is important. How to tweak containers to enhance accessibility.

## re-using and re-targetting LibreOffice

liblibreoffice and other ways of re-using us

**Michael Meeks**

Sat. 16:20 – 16:35

Come and hear how you can re-use LibreOffice's powerful functionality in a variety of settings: for document indexing, headless on a server, file format shifting, charting, and more.

## OpenOffice and Eclipse

**Andre Fischer**

Sat. 16:50 – 17:05

Use Eclipse and CDT to improve OpenOffice development.

## Central configuration management of large LibreOffice deployments

... demonstration of new tools and new options

**Andras Timar**

Sat. 17:05 – 17:20

In large organizations there is a need for central configuration management of desktops, including LibreOffice deployments. The new Windows registry configuration

backend allows integration of LibreOffice into Windows Server environments. LibreOffice can be configured with Group Policy Objects. Under Linux, configuration packages can be managed with Remote Root, which is an easy to use, new open source central management solution for Linux (or other package based) systems. This talk will show how these tools work.

## Debugging BoF

Community Outreach for Open Document Developers

**Phillip Muldoon**

Sat. 17:20 – 17:35

Workshop for questions related to GDB usage and strategies, and outreach from the GDB community to developers in the field of open document design and implementation.

## Exploring OpenOffice History using GIT Grafts

Abandon hope all ye who enter here

**Herbert Duerr**

Sat. 17:35 – 17:50

OpenOffice has a huge and old code base. When working with it one all too often stumbles over parts where knowledge of some code's unmangled commit comments, the motivation behind a change, the caveats surrounding it, references to issue numbers, its relationship with other source files, or its relationship with other issues would be very useful. Some of this knowledge is still available but many pieces were almost lost in each major change of the repository. Using GIT grafts allows to revive that old history as well as possible in only one

revision control system: Git.

## LO++14

How to make use of 21st century C++ in LibreOffice development

**Stephan Bergmann**

Sat. 17:50 – 18:05

Advances in C++ have gathered momentum with C++11 and forthcoming C++14, and compiler writers busy to keep up. However, for reasons of cross-platform, cross-compiler, aging baselines, etc., the LibreOffice code base is still mostly stuck with C++98. We will discuss how to overcome blockers in adoption of modern C++ features and in what ways LibreOffice would benefit from them.

## Liberated Build System: Mission Accomplished

What's next?

**Bjoern Michaelsen**

Sat. 18:20 – 18:35

Many hands helped migrating LibreOffice to the purely GNU make based gbuild build system.

## Digital signing of releases

Apache OpenOffice

**Jan Iversen**

Sat. 18:35 – 18:45

Digital signatures for OpenOffice releases.

## Wrap Up

**Italo Vignoli**

Sat. 18:55 – 19:00

Wrap Up

Perl is an open source programming language with over 26 years of development. Perl is used all over the world for virtually all purposes, ranging from small sysadmin jobs and rapid prototyping to large scale development projects. Our motto is “There is more than one way to do it” and Perl offers all the flexibility to get the job done.

The Perl-community is tremendously active with over 250 Perl user groups (so-called “Perl Mongers”) worldwide. Most Perl Monger groups have regular, monthly, meetings. The Amsterdam Perl Mongers meet every 1st Tuesday for dinner and technical presentations. The Niederrhein Perl Mongers meet on the 3rd Tuesday, the Brussels Perl Mongers on the 2nd Tuesday.

Visit our booth or our devroom to learn about the present state and the future developments of the language and how people are using Perl today.

| Time               | Title   | Speaker(s)                      |
|--------------------|---|---------------------------------|
| Sat. 11:00 – 11:15 | Welcome to the Perl devroom                                       | Claudio Ramirez, Wendy Van Dijk |
| Sat. 11:15 – 11:55 | Convos, a modern IRC client for your browser                      | Marcus Ramberg                  |
| Sat. 12:00 – 12:40 | Asynchronous programming: Futures                                 | Paul ‘LeoNerd’ Evans            |
| Sat. 12:45 – 13:25 | Perl Community Essentials   | Salve J Nilsen                  |
| Sat. 13:30 – 14:10 | Writing novels using Perl   | Juan Juliàn Merelo              |
| Sat. 14:15 – 14:55 | A/B testing: what your mother never told you                      | Curtis ‘Ovid’ Poe               |
| Sat. 15:00 – 15:40 | Perl and the Web – A Love Story                                   | Sawyer X                        |
| Sat. 15:45 – 16:25 | Perl 5 and Unicode  | David Lowe                      |
| Sat. 16:30 – 16:50 | Nearly Everything you do is Optimization                          | Matthew ‘diakopter’ Wilson      |
| Sat. 16:50 – 17:10 | Stop Building Bridges to Nowhere: Build Bridges to MoarVM instead | Matthew ‘diakopter’ Wilson      |
| Sat. 17:15 – 17:55 | Net::LDAP   | Clément Oudot                   |
| Sat. 18:00 – 19:00 | Perl 6: what can you do today?                                    | Jonathan Worthington            |

## Welcome to the Perl devroom

**Claudio Ramirez, Wendy Van Dijk** Sat. 11:00 – 11:15

Welcome!

## Convos, a modern IRC client for your browser

A fully HTML5 async Node.js-like application in Perl

**Marcus Ramberg** Sat. 11:15 – 11:55

Convos is a modern IRC client for your browser, built in the Mojolicious framework using HTML5 Web Technologies like Web Sockets, Desktop Notifications, Media Queries, and Push State. It’s always on, storing your messages in a Redis backend even when you are not connected. In my presentation, I will go through some of our technology choices and challenges in building a

fully asynchronous Node.js-like application in Perl.

## Asynchronous programming: Futures

**Paul ‘LeoNerd’ Evans** Sat. 12:00 – 12:40

A Future object represents an operation that is currently in progress, or has recently completed. It can be used in a variety of ways to manage the flow of control and data, through an asynchronous program. It is intended that library functions which perform asynchronous operations would use future objects to represent outstanding operations, and allow their calling programs to control or wait for these operations to complete.

## Perl Community Essentials

How to get the most out of the Perl community?

**Salve J Nilsen** Sat. 12:45 – 13:25

How can one get the most out of the Perl community? Good question! I'm so glad you asked.

In this presentation, Salve J. Nilsen attempts to give a concise and information-rich overview of what the Perl community can offer, what to expect, and how to get the most out of it. The intended audience is **everyone** who wants to be ore useful and effective with Perl, and isn't already familiar with the community.

## Writing novels using Perl

**Juan Juliàn Merelo**

Sat. 13:30 – 14:10

Do you need Perl to write a novel? Indeed you don't and many, if not most, novelists write them without using it, and I'm positive about this. However, Perl can help you through the process of writing a novel and that's what I've done with the open source "Manuel the Magnificent Mechanical Man", which you can either buy in Amazon or download as a CPAN module. I'll talk about how I organized the workflow for writing the novel using Perl, Git, GitHub, and the modules and Perl features which helped me through the process.

## A/B testing: what your mother never told you

**Curtis 'Ovid' Poe**

Sat. 14:15 – 14:55

People keep hearing about A/B testing, but not a lot of people understand it. Rather than focusing on what your software does, it helps you focus on what your customers do. This talk will introduce some basic concepts of A/B testing, explain some common mistakes people make, and (if I'm lucky), will introduce the first open-source A/B testing module for Perl (I've already written it, but it needs to be renamed and have a better interface).

## Perl and the Web – A Love Story

**Sawyer X**

Sat. 15:00 – 15:40

In the beginning of the great kingdom of the Internet, there was one ruler: Perl. With time, fallen from grace, the beautiful princess language lost its place on the throne, giving way to Ruby, Python, and to the dismay and horror of everyone in the kingdom, PHP.

But all is not lost. While underground, Perl has schemed a plot to overthrow the competitors. That plan is Plack/PSGI.

Interested in knowing more? Attend the talk, if you dare!

## Perl 5 and Unicode

### A Thorough Introduction

**David Lowe**

Sat. 15:45 – 16:25

This talk will start at the basics that any programmer in any language will need to know, moving on to Perl's approach to Unicode and its gotchas. To keep things interesting there will be a short puzzle to figure out every few slides. Some of them will be testing if you've been paying attention to the previous slides, and some of them will be trick questions which will be explained subsequently. See if you can get a perfect score!

## Nearly Everything you do is Optimization

Stop. – Really, Stop

**Matthew 'diakopter' Wilson**

Sat. 16:30 – 16:50

Which of your daily programming or system analysis and design activities aren't attempts to find and choose the best way to do something - an activity in which computers and automation are, in the long run, far superior? Learn to do those things instead of doing the things machines can do better than you.

## Stop Building Bridges to Nowhere: Build Bridges to MoarVM instead

**Matthew 'diakopter' Wilson**

Sat. 16:50 – 17:10

How many ways to interoperate? Build bindings to libraries in-process. Build bindings as RPC wrappers. Build bindings as web service wrappers. Build bindings as cross-VM sharing. OR build bindings to a VM which has bindings to all the others.

## Net::LDAP

Basic concepts of LDAP, the Net::LDAP module and some real life examples

**Clément Oudot**

Sat. 17:15 – 17:55

Net::LDAP is a great LDAP client API, managing standard LDAP operations (add, search, bind, modify, ...), and extended operations and controls (VLV, password policy, change password, etc.). It also includes an LDIF API which is very useful when managing mass import/export between directories. This talk will present basic concepts of LDAP, the Net::LDAP module, and some real life examples.

## **Perl 6: what can you do today?**

State of the Butterfly

**Jonathan Worthington**

Sat. 18:00 – 19:00

In this session, we'll answer "how far along is Perl 6" by exploring the things you can do with Perl 6 today. Along the way we'll discover a powerful way to parse, composable concurrent programming, a rich and extensible object system, and much more.

| Time               | Title  | Speaker(s)                           |
|--------------------|--|--------------------------------------|
| Sat. 11:00 – 11:50 | Managing Postgres in a devops environment            | Gabriele Bartolini, Marco Nenciarini |
| Sat. 12:00 – 12:50 | Real-Life PostgreSQL JSON                            | Christophe Pettus                    |
| Sat. 13:00 – 13:50 | A look at the Elephants trunk – PostgreSQL 9.4       | Magnus Hagander                      |
| Sat. 14:00 – 14:50 | Postgres Performance for Humans                      | Craig Kerstiens                      |
| Sat. 15:00 – 15:50 | Postgres for Application Developers                  | Will Leinweber                       |
| Sat. 16:00 – 16:50 | Identifying Hotspots in the PostgreSQL Build Process | Shane McIntosh                       |
| Sat. 17:00 – 17:30 | Announcements, Annual Report and Election Results    | Magnus Hagander                      |

## Managing Postgres in a devops environment

**Gabriele Bartolini, Marco Nenciarini** Sat. 11:00 – 11:50

Communication and collaboration between developers and systems administrators represent a key aspect of the “devops” cultural movement that has been growing in popularity over the last few years. Database administrators, most of the times, find themselves in between developers and sysadmins and their role is strategic. This talk will address some of the main concepts of “devops” as well as outline the reasons why Postgres can be considered the perfect companion in the database area.

## Real-Life PostgreSQL JSON

**Christophe Pettus** Sat. 12:00 – 12:50

PostgreSQL has added some wonderful new JSON features in 9.2 and 9.3. They look fascinating, exciting, and should have all kinds of great applications...

Like what?

We’ll talk about some real-life use-cases that actual companies are deploying, and what the trade-offs, performance issues, and challenges they’ve faced are.

## A look at the Elephants trunk – PostgreSQL 9.4

**Magnus Hagander** Sat. 13:00 – 13:50

PostgreSQL 9.3 was released in September 2013, but

the development of 9.4 is close to reaching beta. This talk will take a look at some of the things that are available in what will eventually become PostgreSQL 9.4.

## Postgres Performance for Humans

**Craig Kerstiens** Sat. 14:00 – 14:50

To many developers the database is a black box. You expect to be able to put data into your database, have it to stay there, and get it out when you query it... hopefully in a performant manner. When its not performant enough the two options are usually add some indices or throw some hardware at it. We’ll walk through a bit of a clearer guide of how you can understand how database is doing from a 30,000 foot perspective as well as analyze specific problematic queries and how to tune them. In particular we’ll cover Postgres Caching, Postgres Indexing, Explain Plans, extensions, and more.

## Postgres for Application Developers

**Will Leinweber** Sat. 15:00 – 15:50

In recent years, Postgres has gone beyond a traditional database and has become more of a data platform. While keeping its roots as a robust RDMS, it has added flexible, friendly document storage, and more.

We’ll take a tour of features which make Postgres a compelling choice for your next project, including Embedded JavaScript and JSON, other Extensions and Datatypes, Window Functions and accessing non-postgres data like Redis, Mysql, and even Mongo.



## **Identifying Hotspots in the PostgreSQL Build Process**

**Shane McIntosh**

Sat. 16:00 – 16:50

Software developers rely on a fast and correct build system to compile their source code changes and produce modified deliverables for testing and deployment. The scale and complexity of the PostgreSQL build process makes build performance an important topic to discuss and address.

In this talk, we will introduce a new build performance analysis technique which identifies “build hotspots”,

i.e., files that are slow to rebuild (by analyzing a build dependency graph), yet change often (by analyzing version control history). We will discuss the identified hotspots in the 9.2.4 release of PostgreSQL.

## **Announcements, Annual Report and Election Results**

**Magnus Hagander**

Sat. 17:00 – 17:30

PostgreSQL Europe’s Annual report will be presented along with other announcements, and the results of the 2014 board elections revealed.

Smalltalk environments offer a very high development productivity, unmatched by their successors. Come do some pair programming with us and experience yourself the advantages of a real OO environment.

This year, we show two new smalltalk(like) environments, developments in two existing ones, and applications of smalltalk in, among others, TDD with animations and robot control.

| Time               | Title                              | Speaker(s)          |
|--------------------|------------------------------------|---------------------|
| Sat. 11:00 – 11:30 | TDD with BabyMock2                 | Attila Magyar       |
| Sat. 11:30 – 12:00 | How to get a JIT Compiler for Free | Stefan Marr         |
| Sat. 12:00 – 12:30 | Pharo3: Status                     | Marcus Denker       |
| Sat. 13:00 – 13:30 | Annual Squeak Shoutout             | Craig Latta         |
| Sat. 13:30 – 14:00 | Pharo4: Plans and Dreams           | Marcus Denker       |
| Sat. 14:00 – 14:30 | Objective-Smalltalk                | Marcel Weiher       |
| Sat. 14:30 – 15:00 | Visualizing Delphi with Moose      | Stephan Eggermont   |
| Sat. 15:00 – 15:30 | Gravel                             | Wouter Gazendam     |
| Sat. 15:30 – 16:00 | PhaROS                             | Santiago Bragagnolo |
| Sat. 16:00 – 16:30 | A Spoonful of Raspberry Pi         | Craig Latta         |
| Sat. 16:30 – 19:00 | Getting started with Smalltalk     | Stephan Eggermont   |

## TDD with BabyMock2

**Attila Magyar**

Sat. 11:00 – 11:30

A new mocking framework for Pharo. It provides an animation of the interaction between the tested objects.

## How to get a JIT Compiler for Free

Implementing Smalltalk with RPython and Truffle/Graal

**Stefan Marr**

Sat. 11:30 – 12:00

SOM (Simple Object Machine) Smalltalk has Truffle-based and RPython (PyPy) based implementations. It shows modern ways of language implementations with the goal of achieving high performance.

## Pharo3: Status

**Marcus Denker**

Sat. 12:00 – 12:30

Pharo 2 was released in March 2013. Not even a year later, we are close to the release of Pharo3. With over 1200 issues fixed and many deep changes, it is the release with most changes yet.

This talk will give an overview of the changes and improvements done and present some examples of what can be done with Pharo3.

## Annual Squeak Shoutout

**Craig Latta**

Sat. 13:00 – 13:30

Progress made in squeak the past year and a look at the development of spur, the new VM.

## Pharo4: Plans and Dreams

**Marcus Denker**

Sat. 13:30 – 14:00

Pharo3 is close to being released. But development is not standing still: Soon the development of Pharo4 will start. As with Pharo3, the plan is to integrate changes for 10 months with a 2 month bug fix period and a release within one year.

This talk will give an overview of what people are working on for Pharo4. Topics will be - Bootstrap from Source - Minimal and virtual images - towards one image file - better model for saving changes - VM level work (e.g. type feedback optimisation)

## Objective-Smalltalk

**Marcel Weiher**

Sat. 14:00 – 14:30

Objective-Smalltalk is a re-imagining of Objective-C for the 21st century. Like Objective-C, it blends features from Smalltalk and C, but instead of adding some Small-

talk features to C, it adds ideas from Objective-C to Smalltalk.

It is intended as a full-stack language capable of complementing or replacing Objective-C for iOS and Mac OS X programming as well as replacing most scripting language use in those environments. It is not Smalltalk-80 compatible.

## Visualizing Delphi with Moose

**Stephan Eggermont** Sat. 14:30 – 15:00

Moose provides the tools allowing the analysis, visualization and refactoring of Delphi source code.

## Gravel

**Wouter Gazendam** Sat. 15:00 – 15:30

Gravel is a modern Smalltalk implementation for the JVM. It's aim is to provide an interactive development environment in the Smalltalk philosophy as well as a stable and fast runtime platform. Gravel aims to be fully

ANSI Smalltalk compatible.

(Family circumstances might force the speaker to cancel at the last moment. The time slot would then be used for "Show us your projects" instead.)

## PhaROS

Towards live environments in robotics

**Santiago Bragagnolo** Sat. 15:30 – 16:00

ROS is an open software integration framework for robots that is becoming more mature day by day.

## A Spoonful of Raspberry Pi

**Craig Latta** Sat. 16:00 – 16:30

Spoon on the Raspberry Pi.

## Getting started with Smalltalk

**Stephan Eggermont** Sat. 16:30 – 19:00

Learn how to use a smalltalk system.

This devroom will present and foster collaboration between open source, openly-developed projects in the areas of virtualisation and IaaS type clouds (ranging from low level to data center, up to cloud management platforms and cloud resource orchestration).

| Time               | Title  | Speaker(s)          |
|--------------------|--|---------------------|
| Sat. 11:00 – 11:40 | Unified Cloud Storage with Synnefo + Ganeti + Archipelago + Ceph           | Vangelis Koukis     |
| Sat. 11:40 – 12:20 | Dual-Android on Nexus 10 using XEN   | Srinivas Kalaga     |
| Sat. 12:20 – 13:00 | Autoscaling best practices   | Marc Cluet          |
| Sat. 13:00 – 13:40 | Network Function Virtualization and Network Service Insertion and Chaining | Balaji Padnala      |
| Sat. 13:40 – 14:20 | oVirt and OpenStack Storage (present and future)                           | Federico Simoncelli |
| Sat. 14:20 – 15:00 | New Developments and Advanced Features in the Libvirt Management API       | Daniel Berrange     |
| Sat. 15:00 – 15:40 | Why, Where, What and How to contribute to OpenStack                        | Thierry Carrez      |
| Sat. 15:40 – 16:20 | Foreman Project  | Ohad Levy           |
| Sat. 16:20 – 17:00 | OSv, a New Operating System Designed for the Cloud                         | Pekka Enberg        |
| Sat. 17:00 – 17:40 | High Performance Network Function Virtualization with ClickOS              | Joao Martins        |
| Sat. 17:40 – 18:20 | oVirt applying Nova scheduler concepts for data center virtualization      | Gilad Chaplik       |
| Sat. 18:20 – 19:00 | Jailhouse, a Partitioning Hypervisor for Linux                             | Jan Kiszka          |

### Unified Cloud Storage with Synnefo + Ganeti + Archipelago + Ceph

**Vangelis Koukis**

Sat. 11:00 – 11:40

This talk presents Synnefo's evolution since FOSDEM '13, focusing on its integration with Ganeti, Archipelago, and Ceph to deliver a unified, scalable storage substrate for IaaS clouds.

### Dual-Android on Nexus 10 using XEN

**Srinivas Kalaga**

Sat. 11:40 – 12:20

Samsung will present the challenges of creating a dual-Android platform on the Nexus 10 (Cortex A15 based) using Xen on ARM. Samsung has been endeavoring to run XEN on ARM based mobile devices using para-virtualization for CortexA9 devices earlier and now with virtualization extensions on cortexA15 devices.

### Autoscaling best practices

How did we survive the peak

**Marc Cluet**

Sat. 12:20 – 13:00

This talk will cover the basics of autoscaling, different types of auto-scaling, and how you can use your metrics to take good auto-scaling decisions. Targeted to entry

level to mid level auto-scaling users.

### Network Function Virtualization and Network Service Insertion and Chaining OpenStack for NFV and SDN

**Balaji Padnala**

Sat. 13:00 – 13:40

Network Function Virtualization and Network Service Insertion and Chaining has several advantages like reducing the CAPEX and OPEX along with ease of use for Network Services deployment. In this session we describe how these dynamic network service requirements can be handled using KVM, libvirt and Openstack. They can understand how virtualization can be used for designing systems for data centre environment. Basic knowledge of virtualization would be helpful while attending the session.

### oVirt and OpenStack Storage (present and future)

**Federico Simoncelli**

Sat. 13:40 – 14:20

This session will cover the current status of integration between oVirt and the OpenStack image repository (Glance), analyzing the motivations, the low level implementation (including Keystone authentication), and

ideas for the future. This presentation will include also an ample part dedicated to the future work and ideas to introduce the integration with Cinder (the OpenStack volume manager).

## **New Developments and Advanced Features in the Libvirt Management API**

**Daniel Berrange**

Sat. 14:20 – 15:00

Topics to be covered in the talk include capabilities for mutual exclusion / locking of guest disk images, fine grained access control against individual operations, users and objects in the API, the sVirt mandatory access control framework, auditing and structured logging via the systemd journal and integration with systemd and cgroups for resource management.

## **Why, Where, What and How to contribute to OpenStack**

**Thierry Carrez**

Sat. 15:00 – 15:40

This talk should appeal to curious developers interested in learning about OpenStack development and why contributing to it is a smart, interesting, and simple move. Although familiarity with open source development is assumed, no previous knowledge of OpenStack itself is necessary.

## **Foreman Project**

**Ohad Levy**

Sat. 15:40 – 16:20

Foreman is a complete lifecycle management tool for virtual, cloud, and physical servers. Through deep integration with configuration management, infrastructure services, and PXE and Image-based unattended installations, Foreman manages every stage of the lifecycle of your servers. Foreman provides comprehensive, auditable interaction facilities including a web frontend and robust, RESTful API.

## **OSv, a New Operating System Designed for the Cloud**

**Pekka Enberg**

Sat. 16:20 – 17:00

OSv is a new open source operating system for the cloud. It is designed to run a single application per virtual machine and its tuned for applications running

under the Java virtual machine.

In this talk, we will introduce OSv, showcase its architecture, and explain performance and application management improvements. We will also talk about OSv specific improvements to the JVM that improve application performance in virtualized environments.

Operating system developers, as well as application developers who deploy to the cloud, may enjoy the talk. No special expertise is required.

## **High Performance Network Function Virtualization with ClickOS**

**Joao Martins**

Sat. 17:00 – 17:40

Middleboxes are both crucial to today's networks and ubiquitous, but embed knowledge of today's protocols and applications to the detriment of those of tomorrow, making the network harder to evolve. While virtualization technologies like Xen have been around for a long time, it is only in recent years that they have started to be targeted as viable systems for implementing middle-box processing (e.g., firewalls, NATs).

## **oVirt applying Nova scheduler concepts for data center virtualization**

**Gilad Chaplik**

Sat. 17:40 – 18:20

For several years now, the oVirt project has been leveraging KVM and relevant technologies (ksm, etc) in data center virtualizations. Being a mature and feature rich, oVirt takes another step forward with introducing a Pluggable Scheduling API. This presentation will review recent oVirt improvements in the areas of VM scheduling. The first part will discuss the architecture of the new scheduler. In the second part we will show samples of VM scheduling plug-ins, and integrate it to a live setup.

## **Jailhouse, a Partitioning Hypervisor for Linux**

**Jan Kiszka**

Sat. 18:20 – 19:00

This talk will introduce the architecture of Jailhouse, describe typical use cases, demonstrate the development progress on a target system and sketch the project road map.

Wikis are essential tools for online collaboration, open knowledge and free software. They are everywhere: from the mainstream Wikipedia to a myriad of public, academic and corporate knowledge bases and personal sites. And most of them are open source software.

Wikis developer room is a place to showcase and discuss: new features, especially exploring areas beyond plain text editing; compatibility and integration with other tools and services; lessons learned from deployments, surveys, research...; and cross-project collaboration.

We want to focus on sessions for a technical audience including savvy editors.

Coordination: Quim Gil (MediaWiki), Vincent Massol (XWiki) and Jean-Marc Libs (Tiki).

| Time               | Title   | Speaker(s)                      |
|--------------------|---|---------------------------------|
| Sat. 11:00 – 11:25 | A comparison between MediaWiki, TWiki and XWiki communities       | Alvaro del Castillo San Felix   |
| Sat. 11:30 – 11:55 | show.tiki.org project: improve bug reporting and solving          | Jean-Marc Libs                  |
| Sat. 12:00 – 12:25 | Coverage for basic language support components – A Dashboard view | Harsh Kothari, Sucheta Ghoshal  |
| Sat. 12:30 – 12:55 | Crowdsourced translation using MediaWiki                          | Siebrand Mazeland               |
| Sat. 13:00 – 13:25 | Counting (on) views — Page views on Wikipedia                     | Christian Aistleitner           |
| Sat. 13:30 – 13:55 | wikiLingo – a unified approach to wysiwyg... programming?!?!      | Torsten Fabricius               |
| Sat. 14:00 – 14:25 | XWiki Rendering: A content rendering engine                       | Vincent Massol                  |
| Sat. 14:30 – 14:55 | VisualEditor  | Roan Kattouw                    |
| Sat. 15:00 – 15:55 | Panel   |                                 |
| Sat. 16:00 – 16:25 | Developing the XWiki software                                     | Marius Florea                   |
| Sat. 16:30 – 16:55 | Force Multiplication  | Marc A. Pelletier               |
| Sat. 17:00 – 17:25 | Wikidata  | Lydia Pintscher, Jeroen De Dauw |
| Sat. 17:30 – 17:40 | Repository-based wikis  | Radomir Dopieralski             |
| Sat. 17:40 – 17:50 | Useful and Necessary Mediawiki Gadgets                            | Harsh Kothari                   |
| Sat. 17:50 – 18:00 | 5 Unexpected usages of wikis                                      | Vincent Massol                  |
| Sat. 18:00 – 18:25 | A web development runtime platform based on the wiki paradigm     | Vincent Massol                  |
| Sat. 18:30 – 18:55 | Addressing the long tail of applications                          | Vincent Massol                  |

## A comparison between MediaWiki, TWiki and XWiki communities

Using metrics to measure communities

**Alvaro del Castillo San Felix** Sat. 11:00 – 11:25

Presentation about the communities around. The report will be based in gathering community metrics from the three projects. Code and Issues contributors will be covered and analyzed with total global metrics and the evolution in time of those metrics.

Using information in development repositories of MediaWiki, TWiki, and XWiki, this talk will explore how the

communities are evolving. Different techniques will be used to show different aspects of the evolution, from analysis of commits or tickets to comparison of released source code.

## show.tiki.org project: improve bug reporting and solving

The new Tiki infrastructure for improving bug reporting and solving

**Jean-Marc Libs**

Sat. 11:30 – 11:55

Tiki Wiki CMS Groupware (Tiki for short) is the Free and Open Source Web Application with the most built-

in features. It also has a very open developer community policy which supports “the wiki way of writing software”. This emphasizes some common challenges, especially in terms of debugging and bug reporting.

This talk is about the infrastructure at [show.tiki.org](http://show.tiki.org) which we have set up for bug reporters to showcase the bugs on a running Tiki instance.

## Coverage for basic language support components – A Dashboard view

**Harsh Kothari, Sucheta Ghoshal** Sat. 12:00 – 12:25

Language Coverage Matrix Dashboard, a product supported by the Language Engineering Team, aims to provide an overview of all the resources that are available for Wikipedia and its sister projects. The talk will cover the basic introduction to this product, followed by the detailed description of its architecture, roadmap, and future plans.

## Crowdsourced translation using MediaWiki

**Siebrand Mazeland** Sat. 12:30 – 12:55

The MediaWiki Translate was first introduced in 2007. Initially it was only used on [translatewiki.net](http://translatewiki.net) for software localisation. Later it was also enabled on KDE’s userbase wiki for translating their documentation. These days, the Translate extension is also used on Wikimedia wikis where the equivalent of more than one thousand A4 pages of pages of structured documentations is being translated each month. The next step is a feature for the mass translation of Wikipedia pages into any language combination to combine machine translation and content generation to allow every single human to freely share in the sum of all knowledge.

## Counting (on) views — Page views on Wikipedia

**Christian Aistleitner** Sat. 13:00 – 13:25

While total number of page views still serves as simple, purely traffic-based metric to compare sites, it is an often misused metric around wikis. Management, analysts, and wiki communities have different understand-

ings about which requests (should) qualify as page views. We exhibit the key differences, expose the resulting challenges and finally discuss possible solutions in a Wikipedia context.

## wikiLingo – a unified approach to wysiwyg... programming?!?! what you see is programming

**Torsten Fabricius**

Sat. 13:30 – 13:55

wikiLingo is a programming environment that is wysiwyg first. It is parsed JIT and creates a sort of DOM that is traversable and modifiable. wikiLingo comes with wiki markup, but it is so much more than that. It is a cross CMS platform for a living whiteboard.

## XWiki Rendering: A content rendering engine

**Vincent Massol**

Sat. 14:00 – 14:25

Presents <http://rendering.xwiki.org/> a generic engine for transforming content in a given syntax (mediawiki, confluence, JSPWiki, Markdown, HTML, XWiki Syntax, etc) into an output format (PDF, HTML, XML, etc), applying optional transformations.

This framework is generic and can be used outside of XWiki easily into your own Java applications.

## VisualEditor

Wikipedia’s new editing system for wikis and for the web

**Roan Kattouw**

Sat. 14:30 – 14:55

Wikipedia is supposed to be “the free encyclopedia that anyone can edit”. However, from our research we know that that’s not really true. The wikitext markup used on most Wikipedia articles has gotten so complex that most people can’t figure out how to make changes. To address this problem, the Wikimedia Foundation and Wikia are developing VisualEditor, a new, WYSIWYG-like editor for wiki pages. VisualEditor is already available on Wikipedia, but in this presentation I will show you how you can install VisualEditor on your own wiki and customize it to your needs.

## Panel (topic to be defined)

Sat. 15:00 – 15:55

Cross-wiki collaboration topic and speakers to be decided at the wikis-devroom mailing list.

## Developing the XWiki software

**Marius Florea**

Sat. 16:00 – 16:25

Explains how the XWiki software is developed on all aspects: Governance; Build process; Release process; Communication tools; Code quality; xwiki.org vs xwiki.com; And more...

## Force Multiplication

Victory through external tool writing

**Marc A. Pelletier**

Sat. 16:30 – 16:55

Fostering an environment where user-developers are enabled and encouraged to automate and interface with our wikis with their code has allowed their productivity and impact to be greatly increased, has stimulated development work on the core code itself, and has allowed the establishment of a vibrant ecosystem of open source development around our projects.

In this presentation, I show what measures we took to stimulate that ecosystem and what lessons we learned about the impact it has on vitality of the developer community of our projects.

## Wikidata

What we learned in its first 2 years and what is in store for the future

**Lydia Pintscher, Jeroen De Dauw**

Sat. 17:00 – 17:25

Wikidata is a new Wikimedia project that builds a free and open knowledgebase of structured data for Wikipedia and the world. We want to take a look back and talk about what we learned while building the project and take a look at what is coming in the future.

## Repository-based wikis

Mercurial, git or bazaar for storing wiki pages

**Radomir Dopieralski**

Sat. 17:30 – 17:40

Hatta Wiki is one of the many small wiki engines that

use a version control system repository for storage of their pages. I want to talk about the benefits and drawbacks of using a repository instead of a database, and about different approaches to doing that.

## Useful and Necessary Mediawiki Gadgets

**Harsh Kothari**

Sat. 17:40 – 17:50

Gadgets are very useful and a time saver. In this talk, I will show some of very useful and necessary gadgets that may be less known. Gadgets make editing and reading task very easy. I will show few gadgets that really make great impact on reading as well as editing stuff.

## 5 Unexpected usages of wikis

**Vincent Massol**

Sat. 17:50 – 18:00

Wikis have been evolving dramatically in the past few years and they are no longer the first generation wikis we used to know like Wikipedia. This session will be an eye opener showing all the capabilities of the next generation wikis. Examples will be mostly from XWiki open source project usages in the wild (<http://xwiki.org>).

## A web development runtime platform based on the wiki paradigm

**Vincent Massol**

Sat. 18:00 – 18:25

When developing a web application, the traditional way is to develop the application from scratch using a general purpose language such as PHP, Grails, Play, Java/JSP, etc.

This presentation will show that a next generation wiki (examples based on XWiki: <http://xwiki.org>) can be used as a web development platform to develop applications on top of it, providing a strong infrastructure scaffolding to building web applications.

## Addressing the long tail of applications

**Vincent Massol**

Sat. 18:30 – 18:55

We'll demonstrate how a next generation wiki platform allows to do just that by using the XWiki open source project as an example.



# Developer rooms Sunday

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| Time               | Title   | Speaker(s)         |
|--------------------|---|--------------------|
| Sun. 09:00 – 09:20 | Automotive Development devroom  | Jeremiah C. Foster |
| Sun. 09:25 – 10:00 | Media wrangling in the car with GENIVI requirements                         | Jeremiah C. Foster |
| Sun. 10:00 – 10:40 | Research on an Open-Source Software Platform for Autonomous Driving Systems | Lukas Bulwahn      |
| Sun. 10:45 – 11:35 | Building automotive HTML 5 UIs with Franca                                  | Klaus Birken       |
| Sun. 11:45 – 12:25 | Xen on ARM  | Stefano Stabellini |
| Sun. 12:30 – 13:10 | The Connected Car and FOSS  | Mikael Söderberg   |
| Sun. 13:15 – 13:40 | In-vehicle DLNA with Rygel and dLeyna                                       | Jussi Kukkonen     |
| Sun. 13:45 – 14:30 | Managing the Car Cloud connection   | Daniel Wagner      |
| Sun. 14:35 – 15:10 | Fuel Stop Advisor: the GENIVI LBS APIs into action                          | Philippe Colliot   |
| Sun. 15:15 – 15:55 | Tizen 3 Application Framework   | Dominig ar Foll    |
| Sun. 16:00 – 16:30 | Tizen IVI “from scratch”: customizing, building and testing                 | Stéphane Desneux   |
| Sun. 16:35 – 17:05 | NFC and the Vehicle   | Timo Müller        |

## Automotive Development devroom

Quick introduction to the automotive devroom at FOSDEM

**Jeremiah C. Foster** Sun. 09:00 – 09:20

A quick overview of the state of Open Source Automotive software.

## Media wrangling in the car with GENIVI requirements

Collecting all your music in one place

**Jeremiah C. Foster** Sun. 09:25 – 10:00

Having all your media available in the car is the Holy Grail for carmakers. Unifying playlists, quick access to Internet radio, AM/FM, and traffic information is a complex task. This talk will discuss the currently available ways to index media in the car providing one of the pieces of the complex puzzle.

## Research on an Open-Source Software Platform for Autonomous Driving Systems

Open Source platform for autonomous driving

**Lukas Bulwahn** Sun. 10:00 – 10:40

The next larger step in automotive development will be towards autonomously driving cars. Autonomous

driving is a highly complex and safety-related function in future vehicles, and current software platforms are not adequate for this function. We present our ongoing research on an open-source software platform for autonomous driving software systems.

## Building automotive HTML 5 UIs with Franca

Franca is proposed as an official project of the Eclipse Foundation

**Klaus Birken** Sun. 10:45 – 11:35

Franca is an open source framework for definition and transformation of software interfaces. It is especially useful for integrating software components e.g. in the context of the GENIVI Automotive/Infotainment platform.

## Xen on ARM

Virtualization for the Automotive industry

**Stefano Stabellini** Sun. 11:45 – 12:25

During the last few months of 2011 the Xen Community started an effort to port Xen to ARMv7 with virtualization extensions, using the Cortex A15 processor as reference platform.

The new Xen port is exploiting this set of hardware cap-

abilities to run guest VMs in the most efficient way possible while keeping the ARM specific changes to the hypervisor and the Linux kernel to a minimum. Developing the new port we took the chance to remove legacy concepts like PV or HVM guests and only support a single kind of guests that is comparable to "PVH" in the Xen X86 world.

Linux 3.7 was the first kernel release to run Xen on ARM as Dom0 and DomU. Xen 4.3, out in July 2013, is the first hypervisor release to support ARMv7 with virtualization extensions and ARMv8.

This talk will explain why ARM virtualization is set to be increasingly relevant for the automotive industry in the coming years. We will go on to describe how Xen exploits the strengths of the hardware to meet the requirements of the industry. We will illustrate the early design choices and we will evaluate whether they were proven successful or a failure.

## The Connected Car and FOSS

How does the modern connected car use and interact with FOSS?

**Mikael Söderberg** Sun. 12:30 – 13:10

How do modern connected cars use and interact with FOSS? How can an industry adopt the best practices from Open Source and Free Software? Its more than just using Linux and incorporating environments like Android, you have to engage communities. How do you as a developer engage?

This talk will describe how you can engage with various initiatives in the industry. We'll also describe the landscape of various collaboration projects and alliances to help negotiate a rapidly changing ecosystem.

## In-vehicle DLNA with Rygel and dLeyna

**Jussi Kukkonen** Sun. 13:15 – 13:40

In-vehicle media systems are going to be increasingly connected with other devices and media sources, that much seems certain. This could just mean integrating services like Spotify into the system or it could mean delegating actual media handling to personal devices and using the vehicle media system as just a dumb output device... but it could also mean car entertainment

systems that use DLNA to interoperate with other media devices to give users all the media they want on whatever device they want.

## Managing the Car Cloud connection

ConnMan, systemd, and the Internet

**Daniel Wagner** Sun. 13:45 – 14:30

Modern vehicle infotainment systems depend on Internet connections, but there are different use cases and expectations from the driver. We'll dive into the topic of managing internet connections in the car.

## Fuel Stop Advisor: the GENIVI LBS APIs into action

Current status of the Fuel Stop Advisor project

**Philippe Colliot** Sun. 14:35 – 15:10

Fuel Stop Advisor (FSA) is software based on GENIVI APIs that gives a predictive evaluation of the tank distance on the route ahead and, if needed, propose to reroute to an available and reachable refill station. The navigation engine of the FSA is powered by Navit.

## Tizen 3 Application Framework

A multi User App Framework for IVI

**Dominic ar Foll** Sun. 15:15 – 15:55

Embedded system such as those used in Automotive, TV, or phones did not need to offer multi user support until recently. With the increasing of personalisation and security requirement, offering single user model, in particular for Automotive, is not any more acceptable. Tizen 3 new Application Framework, which is currently under developement at Tizen.org, introduces a new model which aims at solving those issues. This talk explains how.

## Tizen IVI "from scratch": customizing, building and testing

Setting up your own build system to mirror Tizen IVI and automate tests for your own requirements.

**Stéphane Desneux** Sun. 16:00 – 16:30

Currently, Tizen images are built with infrastructure on tizen.org. But if someone wants to customize the distro

for their own requirements (specific device, pre-installed applications...), a way to do this is to setup a private build infrastructure.

## **NFC and the Vehicle**

Testing the linux NFC stack

**Timo Müller**

Sun. 16:35 – 17:05

The use cases for NFC in modern vehicles are growing with the number of NFC-enabled smartphones. Establishing a Wi-Fi or Bluetooth connection or opening the car by simply touching it with your smartphone are just two examples.

| Time               | Title   | Speaker(s)                             |
|--------------------|---|--|
| Sun. 10:00 – 10:55 | AppStream & Listaller                           | Matthias Klumpp                        |
| Sun. 11:00 – 11:50 | Cross Distro Automation                         | Michael Ducy                           |
| Sun. 12:00 – 12:50 | Growing a GNU with Guix                         | Ludovic Courtès                        |
| Sun. 14:00 – 14:50 | See Your Project Pulse in Real-Time with Fedmsg | Nicolas Dandrimont, Pierre-Yves Chibon |
| Sun. 15:00 – 15:50 | Non-Coders Wanted                               | Deb Nicholson                          |
| Sun. 16:00 – 16:50 | UEFI is not your enemy                          | Leif Lindholm                          |
| Sun. 17:00 – 17:50 | What Ubuntu Does to Help Users                  | Philip Ballew                          |

## AppStream & Listaller

The next step in application management and deployment on Linux

**Matthias Klumpp**

Sun. 10:00 – 10:55

AppStream provides a solution for application-centric software management using existing package managers, while Listaller extends the package manager with the ability to install 3rd-party applications in a secure way, without introducing additional UI. This talk explains the basic concepts of both projects and the motivation behind them, as well as the obstacles in cross-distro collaboration which we hit while developing these tools.

## Cross Distro Automation

**Michael Ducy**

Sun. 11:00 – 11:50

Automation is eating the world. No longer can you run systems with out any level of automation. But how do you build that automation so that it will work in a mixed distro environment? This talk will cover how to build cross distro automation using Chef.

## Growing a GNU with Guix

A Foundation for the GNU System

**Ludovic Courtès**

Sun. 12:00 – 12:50

Guix is GNU's package manager and distribution. It seeks to empower users in several ways: by being a dependable system foundation, by providing the tools to formally correlate a binary package and the "recipes" and source code that led to it, by allowing users to cus-

tomize the distribution, and by lowering the barrier to entry in distribution development.

This talk will describe the features and foundations of GNU Guix as a package manager. It will report on the current status of building a stand-alone GNU distribution, and outline design goals that set it apart from existing distros.

## See Your Project Pulse in Real-Time with Fedmsg

**Nicolas Dandrimont, Pierre-Yves Chibon**

Sun.

14:00 – 14:50

Fedmsg, the federated message bus, is a distributed system allowing bits of a project's infrastructure to publish events. This lightweight framework provides a central place to watch the life of a project, and allows anyone to listen in and trigger actions when an event is received.

## Non-Coders Wanted

How to Get and Keep Non-technical Volunteers

**Deb Nicholson**

Sun. 15:00 – 15:50

Many distributions sorely need writers for documentation, press releases and blogging or experts on outreach, fundraising and volunteer management or a friendly pack of translators, but aren't sure how to get them. In this talk, I'll discuss how to set parameters for non-coding tasks so that everyone is happy. With some basic benchmarks for scheduling, accountability and volunteer empowerment, you'll be able to retain and ex-

cite your new non-coding volunteers.

## **UEFI is not your enemy**

**Leif Lindholm**

Sun. 16:00 – 16:50

This talk gives an overview of UEFI and the components and organisations surrounding it - intending to clarify certain topics that may have been muddled by association.

## **What Ubuntu Does to Help Users**

And What other Distros Can Learn from Ubuntu

**Philip Ballew**

Sun. 17:00 – 17:50

I will be presenting a practical guide that shows an overview of the ways that Ubuntu offers support to their users and relate this to how other developers and distributions can help out their users.

| Time               | Title   | Speaker(s)             |
|--------------------|---|------------------------|
| Sun. 10:00 – 10:30 | The mbed platform                                   | Bogdan Marinescu       |
| Sun. 10:30 – 11:00 | mbed Open SDK & Open HDK                            | Emilio Monti           |
| Sun. 11:00 – 12:00 | Memory Tuning Android for Low-RAM devices           | Chris Kühn, Iago López |
| Sun. 12:00 – 13:00 | Bootling Linux Made Easy: A Barebox Update          | Robert Schwebel        |
| Sun. 13:00 – 13:30 | Lumicall – an open alternative to Viber             | Daniel Pocock          |
| Sun. 13:30 – 14:00 | Android Sensors 101                                 | Atilla Filiz           |
| Sun. 14:00 – 15:00 | Underwater Acoustics to Opkg                        | Paul Barker            |
| Sun. 15:00 – 15:30 | What if we could change programming languages?      | Kolja Dummann          |
| Sun. 15:30 – 16:00 | Integrity protection solutions for embedded systems | Dmitry Kasatkin        |
| Sun. 16:00 – 17:00 | Metadata tracker                                    | Philip Van Hoof        |

## The mbed platform

Development platform for embedded devices

**Bogdan Marinescu** Sun. 10:00 – 10:30

The mbed platform is a framework for developing embedded applications with ARM MCUs. It consists of a SDK (software development kit) and a HDK (hardware development kit) which work together to provide a complete software and hardware solution and reference platform for developing a broad range of embedded applications.

## mbed Open SDK & Open HDK

meet the mbed open platform

**Emilio Monti** Sun. 10:30 – 11:00

Meet the mbed open platform for developing ARM-based embedded devices. A clean and concise presentation about how to start developing today your new embedded device on the mbed platform only using the Free GNU GCC Toolchain and the open mbed SDK (Apache v2).

## Memory Tuning Android for Low-RAM devices

Tuning Android to run on Low-RAM devices

**Chris Kühn, Iago López** Sun. 11:00 – 12:00

Running Android on low-RAM systems can present unique challenges. Tuning Android for these systems requires a knowledge of general Linux memory man-

agement and the memory tuning mechanisms specific to Android. This presentation will explore the tools and knobs available at all levels of the system to optimize and configure Android for devices at, or below, the recommended available RAM.

## Bootling Linux Made Easy: A Barebox Update

**Robert Schwebel** Sun. 12:00 – 13:00

The talk starts with a short introduction of the Barebox bootloader. Recently, barebox gained several new features: one of the most prominent is multi image support with full initialization from the open firmware device tree. Using this method, it is now possible to generate bootloader binaries for a whole family of devices, just by writing an open firmware device tree. Porting Linux to new hardware has never been so easy.

## Lumicall – an open alternative to Viber

Free and open communications from mobile devices

**Daniel Pocock** Sun. 13:00 – 13:30

Lumicall is a fork of the original Sipdroid SIP phone for Android. As far as forks go, it is one of the more innovative ones, loading up the original project with cool features like encryption (TLS, SRTP, and ZRTP), ICE for NAT traversal and ENUM dialing.

## Android Sensors 101

What you can do with sensors and how you can integrate them with Android

**Atilla Filiz**

Sun. 13:30 – 14:00

This presentation is about a general information on sensors, how to “fuse” data from multiple sensors for more accurate information, how Android handles the available sensors, and also a practical tutorial on how to introduce new sensors to Android so they can be seamlessly accessed by applications.

## Underwater Acoustics to Opkg

via The Yocto Project

**Paul Barker**

Sun. 14:00 – 15:00

Underwater noise produced by human activities in the ocean is a serious problem for marine mammals and fish. To produce the data needed to address this problem, an underwater noise monitoring device (the UDAQ) and a software toolkit for noise analysis (named TUNA) has been developed. Both of these components act as open platforms for the further development of noise monitoring and analysis methods. An initial prototype of the UDAQ platform has been produced using a Beagleboard xM single board computer along with an appropriate analog-to-digital converter, preamplifier, battery pack and pressure housing.

## What if we could change programming languages?

How mbeddr works and how you can use it

**Kolja Dummann**

Sun. 15:00 – 15:30

I would like to give brief overview about the mbeddr project. Which is a open source extensible C implementation. I would like to show the existing extensions which are built for embedded systems and how we were able to enrich C with stuff like state machines and components. I will also show how language extensions can help to work with hardware feature at an Arduino example.

## Integrity protection solutions for embedded systems

**Dmitry Kasatkin**

Sun. 15:30 – 16:00

Runtime system integrity is protected by access control mechanisms. The Linux kernel provides Discretionary Access Control (DAC) and several Mandatory Access Control modules, such as SELinux, SMACK, Tomoyo, AppArmor. All of these assume trustworthiness of the access control related data. Integrity protection is required to ensure that offline modification of such data will not remain undetected. This presentation will summarize the different methods of achieving integrity protection at different layers, compare them and will show how to use them to build integrity protected embedded system.

## Metadata tracker

Metadata indexing and RDF SPARQL endpoint for mobile and embedded

**Philip Van Hoof**

Sun. 16:00 – 17:00

A presentation about the current state of the project and technologies where the software is being used (Jolla Phone, N9, N900, GNOME and infotainment systems in cars). Encountered pitfalls and lessons learned.



| Time               | Title  | Speaker(s)   |
|--------------------|--|--|
| Sun. 09:00 – 09:30 | Energy scavenging, battery life and should we build more power stations        | Jeremy Bennett   |
| Sun. 09:30 – 10:15 | Measuring energy consumption in embedded systems                               | Simon Hollis   |
| Sun. 10:15 – 10:45 | An approach for energy consumption analysis of programs using LLVM             | Kerstin Eder, Kyriakos Georgiou, Neville Grech                                       |
| Sun. 10:45 – 11:45 | spEEDO: Energy Efficiency through Debug support                                | David Greaves  |
| Sun. 11:45 – 12:15 | Open Energy Measurement Hardware   | James Pallister  |
| Sun. 12:15 – 12:30 | Open Low Power Devices   | Emilio Monti   |
| Sun. 12:30 – 15:30 | Measuring application energy consumption with instrumented hardware (workshop) | Andrew Back, Jeremy Bennett, Kerstin Eder, Simon Hollis, James Pallister, Simon Cook |
| Sun. 15:30 – 16:15 | MAGEEC   | Simon Cook   |
| Sun. 16:15 – 16:45 | EACOF: The Energy-Aware COmputing Framework                                    | Hayden Field, Kerstin Eder, James Pedlingham   |

## Energy scavenging, battery life and should we build more power stations

Why energy-efficiency of hardware and software matters

**Jeremy Bennett**

Sun. 09:00 – 09:30

This introductory talk will set the context for the day. It will take a look at how energy efficiency is **the** major challenge for systems developers, and will then provide an overview of a number of open source projects that demonstrate how the energy efficiency of the entire system can be significantly improved.

## Measuring energy consumption in embedded systems

**Simon Hollis**

Sun. 09:30 – 10:15

In this talk, I will introduce the need for energy measurements for embedded devices and show how they may be performed accurately and for very low cost using a combination of off-the shelf parts and a wide range of target embedded systems.

I will cover the basic physics of energy measurement and go on to display designs for energy measurement kits, including the power sensing boards recently developed as part of the MAGEEC research project.

## An approach for energy consumption analysis of programs using LLVM

**Kerstin Eder, Kyriakos Georgiou, Neville Grech**

Sun. 10:15 – 10:45

Energy models can be constructed by characterizing the energy consumed by executing each instruction in a processor's instruction set. This can be used to determine how much energy is required to execute a sequence of assembly instructions.

However, statically analyzing low level program structures is hard, and the gap between the high-level program structure and the low-level energy models needs to be bridged. We have developed a tool for performing a static analysis on the intermediate compiler representations of a program. Specifically, we target LLVM IR, a representation used by most modern compilers including Clang.

## spEEDO: Energy Efficiency through Debug support

**David Greaves**

Sun. 10:45 – 11:45

The spEEDO project aims to augment existing debug APIs (such as GNU's RSP and ARM's Coresight) with a power component for reporting and tracing energy use

in multicore systems-on-chip. Energy is logged per IP block and per application thread and reports are made available to the operating system, to applications programs and over the debug interface. The aim is facilitate optimizations for energy-efficiency at all stages of software and silicon development.

## Open Energy Measurement Hardware

**James Pallister**

Sun. 11:45 – 12:15

I will discuss how to measure energy consumption and show off the University of Bristol-designed energy monitor. This board can sample energy use with up to 6 million samples per second and the designs are open. This will allow fine-grained measurements of energy consumption, and power profiling of applications to find the energy hot-spots of a program

## Open Low Power Devices

meet the mbed open platform

**Emilio Monti**

Sun. 12:15 – 12:30

mbed is an open platform for developing ARM-based low power embedded systems (with a focus on IoT devices).

This talk will provide an overview about: why you might want to base your next low power device on the mbed platform; how to start developing only using the Free GNU GCC Toolchain and the open mbed SDK (Apache v2); and the measuring of the energy consumption of an mbed.

## Measuring application energy consumption with instrumented hardware (workshop)

**Andrew Back, Jeremy Bennett, Kerstin Eder, Simon Hollis, James Pallister, Simon Cook**

Sun.

12:30 – 15:30

Bring along your applications and have their energy consumption measured on a pre-instrumented Arduino, Raspberry Pi or BeagleBone. Alternatively, bring along your own design on a breadboard and we'll hook up a PowerSense shield to measure the energy usage.

## MAGEEC

MAchine Guided Energy Efficient Compilation

**Simon Cook**

Sun. 15:30 – 16:15

MAGEEC, a collaboration between the open source software house, Embecosm, and Bristol University's micro-computer group, aims to use machine learning to improve the energy efficiency of compiled code. This entirely open source project is funded by the UK government through the Technology Strategy Board, and aims to provide working systems based on LLVM and GCC by the end of 2014.

## EACOF: The Energy-Aware COmputing Framework

**Hayden Field, Kerstin Eder, James Pedlingham**

Sun. 16:15 – 16:45

This talk will cover a new open source framework, EACOF, that provides energy transparency to enable energy-aware software development.

Go is an open source programming language with a thriving community.

Join us in our devroom to learn about the future of the language and how people are using Go today.

| Time               | Title                                  | Speaker(s)         |
|--------------------|--|--------------------|
| Sun. 09:45 – 10:00 | Go Devroom Welcome                     | Andrew Gerrand     |
| Sun. 10:05 – 10:35 | Iris Decentralized Messaging           | Péter Szilágyi     |
| Sun. 10:40 – 11:40 | Camlistore                             | Brad Fitzpatrick   |
| Sun. 11:45 – 12:15 | Interfaces: a new leaf for an old book | Matthew Cottingham |
| Sun. 13:00 – 14:00 | Scaling with go: Youtube's Vitess      | Sugu Sougoumarane  |
| Sun. 14:05 – 14:35 | Write your own Go compiler             | Elliott Stoneham   |
| Sun. 14:40 – 15:10 | Looking toward Go 1.3                  | Andrew Gerrand     |
| Sun. 15:15 – 16:15 | Porting Go to New Platforms            | Aram Hävärnanu     |
| Sun. 16:20 – 17:20 | Go Lightning Talks                     | Andrew Gerrand     |

## Go Devroom Welcome

**Andrew Gerrand**

Sun. 09:45 – 10:00

Your host adg will kick off the Go Devroom with some opening remarks.

## Iris Decentralized Messaging

Peer-to-peer based messaging for back-end service decentralization

**Péter Szilágyi**

Sun. 10:05 – 10:35

To cope with an ever increasing number of internet connected devices, large scale computer clusters are becoming an everyday requirement for any web-service provider; and with the prevalence of compute clouds, these can be obtained effortlessly at a scale that was previously unimaginable. However, the distribution models available have not caught up with the advancements of clouds yet, and as such, distributed programs running on top of these platforms require significant efforts to take full advantage of their hosts' capabilities.

## Camlistore

your personal storage system for life

**Brad Fitzpatrick**

Sun. 10:40 – 11:40

Camlistore (camlistore.org) is your personal storage system for life, putting you in control, and designed to last. It's open source, under nearly 4 years of active development, and extremely flexible. Come see why we built it,

what it does, and hear about its design.

## Interfaces: a new leaf for an old book

**Matthew Cottingham**

Sun. 11:45 – 12:15

This talk is about how we can use interfaces in Go to write testable code that can be easily modified, or "grows with grace".

## Scaling with go: Youtube's Vitess

**Sugu Sougoumarane**

Sun. 13:00 – 14:00

In this talk YouTube Engineer Sugu Sougoumarane describes how they built Vitess in Go to help scale YouTube.

## Write your own Go compiler

More adventures with go.tools/ssa

**Elliott Stoneham**

Sun. 14:05 – 14:35

I'll be explaining the potential I see for Go as a very portable language and reviewing the Go tools that make that such an exciting possibility.

## Looking toward Go 1.3

What's coming in the next major release of Go

**Andrew Gerrand**

Sun. 14:40 – 15:10

Go team member Andrew Gerrand will take a look at what's coming in the next major release of Go.

## **Porting Go to New Platforms**

Lessons learned from the Solaris port

**Aram Hävärnanu**

Sun. 15:15 – 16:15

Go is easy to port, but through this talk I hope to make it even easier.

## **Go Lightning Talks**

**Andrew Gerrand**

Sun. 16:20 – 17:20

Go Lightning Talks. Come over to the Go Devroom to sign up!

| Time               | Title   | Speaker(s)          |
|--------------------|---|---------------------|
| Sun. 09:00 – 09:05 | Welcome to Graph Devroom 2014                           |                     |
| Sun. 09:05 – 09:45 | Graphbuilder  | Nathan Segerlind    |
| Sun. 09:45 – 10:15 | From 0 to a complex webapp in 30 minutes                | Axel Morgner        |
| Sun. 10:15 – 10:45 | Fast and Memory Efficient Road Routing with GraphHopper | Peter Karich        |
| Sun. 10:45 – 11:15 | The LDBC Social Graph Data Generator                    | Peter Boncz         |
| Sun. 11:15 – 11:45 | Giraph: two years later                                 | Armando Miraglia    |
| Sun. 11:45 – 12:15 | The Power of Graphs to Analyze Biological Data          | Davy Suvee          |
| Sun. 12:15 – 12:45 | Bio4j: bigger, faster, leaner                           | Pablo Pareja        |
| Sun. 12:45 – 13:00 | Bio4j + Statika   | Pablo Pareja        |
| Sun. 13:00 – 14:00 | Semantic Graphs Are For Everyone                        | Hector Perez-Urbina |
| Sun. 14:00 – 14:30 | LevelGraph – a graph store for node.js and the browser! | elf Pavlik          |
| Sun. 14:30 – 15:15 | Natural Language Processing with Neo4J                  | Kenny Bastani       |
| Sun. 15:15 – 16:00 | Graphgists – live graph documentation on steroids.      | Peter Neubauer      |
| Sun. 16:00 – 16:30 | Graph Search  | Max De Marzi        |
| Sun. 16:30 – 17:00 | Visualize your Graph Database                           | Michael Hackstein   |

## Welcome to Graph Devroom 2014

### Welcome to Graph Devroom 2014

Sun. 09:00 – 09:05

Welcome talk...

## Graphbuilder

Where'd you get that big old graph?

**Nathan Segerlind**

Sun. 09:05 – 09:45

This talk will discuss the basics, the challenges, and the possibilities of graph construction.

## From 0 to a complex webapp in 30 minutes

Let's create a complex, graph-based webapp, live, within 30 min, with input from the audience only

**Axel Morgner**

Sun. 09:45 – 10:15

With the help of the audience, I'll try to create a complex webapp within 30 minutes. Complex in the sense of: Custom use case (unprepared, told by audience), custom JSON/REST backend, beautiful HTML5/CSS3 template, dynamic data, user interaction, Twitter/FB connect). Everything we need is the Open Source frame-

work Structr, on top of the graph database Neo4j. This will be very interactive, and even fun if it works. ;-)

## Fast and Memory Efficient Road Routing with GraphHopper

Solving spatial problems with Graphs and OpenStreetMap

**Peter Karich**

Sun. 10:15 – 10:45

GraphHopper is a fast Open Source road routing engine written in Java running on the server as well as on Android. It uses OpenStreetMap as data source and implements road routing via Dijkstra algorithm and variations. In this talk I'll describe the challenges faced while implementing fast and memory efficient graph algorithms and storage solutions.

## The LDBC Social Graph Data Generator

Graph Query Benchmarking to the next level

**Peter Boncz**

Sun. 10:45 – 11:15

The Linked Data Benchmark Council (LDBC) is an initiative to develop industry-grade database benchmarks. This talk focuses on the activities of its Social Network Benchmark (SNB) task force of LDBC, which developed an advanced graph generator during past year which

creates a huge social graph with realistic correlations between structure and data. The datasets it generates will be tested by three different workloads (interactive, BI, graph analytics), that I will shortly outline.

## **Giraph: two years later**

The new Giraph APIs for Python, Rexster and Gora.

**Armando Miraglia**

Sun. 11:15 – 11:45

Since its initial incubation, Giraph has turned into a different beast. It is now a solid, full-featured tool used in production at many companies that need to analyse massive graphs. The success of a data analysis tool relies on the usability of its programming API and its ability to play well with the ecosystem of data stores.

## **The Power of Graphs to Analyze Biological Data**

**Davy Suvee**

Sun. 11:45 – 12:15

This talk will illustrate the power and flexibility of Graph Databases to help in the overall analysis of biological data sets. Davy will show how to build a visual exploration environment that helps researchers at identifying clusters within various biological data sets, including gene expression and mutation prevalence data. Additionally, he will demo BRAIN (Bio Relations and Intelligence Network), a powerful data exploration platform that combines various scientific data sources (including Pubmed, Swissprot and Drugbank). It uses a graph database under the cover to both store and enable powerful querying capabilities that provide key insights and deductions.

## **Bio4j: bigger, faster, leaner**

**Pablo Pareja**

Sun. 12:15 – 12:45

Bio4j is a high-performance cloud-enabled graph-based bioinformatics data platform. It integrates most data available in UniProt KB (SwissProt + Trembl), Gene Ontology (GO), UniRef (50, 90, 100), RefSeq, NCBI taxonomy, and Expaty Enzyme DBs. Data is organized in a way semantically equivalent to what it represents in the graph structure, and thanks to this, queries which would even be impossible to perform with a standard

Relational DB can just take a couple of seconds with Bio4j.

## **Bio4j + Statika**

Managing module dependencies on the type level

**Pablo Pareja**

Sun. 12:45 – 13:00

Bio4j bioinformatics graph database is modular and customizable, allowing you to import just the data you are interested in. There exist, though, dependencies among these resources that must be taken into account and that's where Statika enters the picture; a set of Scala libraries which allows you to declare dependencies between components of any modular system and track their correctness using Scala type system. Thanks to this, it's possible now to deploy only selected components of the integrated data sets, with Amazon Web Services deployments on hardware specifically configured for them.

## **Semantic Graphs Are For Everyone**

Stardog RDF Database

**Hector Perez-Urbina**

Sun. 13:00 – 14:00

Stardog is an RDF database for querying, searching, and reasoning about semantic graphs.

## **LevelGraph – a graph store for node.js and the browser!**

#JIFSNIF – JavaScript is fun so node is funnier...

**elf Pavlik**

Sun. 14:00 – 14:30

<https://github.com/mcollina/levelgraph>

I would like to publish similar interactive walk through for LevelGraph ASAP: <http://nodeschool.io/#levelmeup> and we could use it during hands on workshop!

Currently it supports RDF through two extensions LevelGraph-N3 and LevelGraph-JSON-LD. We also plan work on LevelGraph-SPARQL

## **Natural Language Processing with Neo4J**

**Kenny Bastani**

Sun. 14:30 – 15:15

Recent natural language processing advancements have propelled search engine and information retrieval innov-

ations into the public spotlight. People want to be able to interact with their devices in a natural way. In this talk I will be introducing you to natural language search using a Neo4j graph database. I will show you how to interact with an abstract graph data structure using natural language and how this approach is key to future innovations in the way we interact with our devices.

## **Graphgists – live graph documentation on steroids.**

**Peter Neubauer**

Sun. 15:15 – 16:00

In this talk, Peter will describe the implementation and working of <http://gist.neo4j.org>. It is based on AS-CIIDOC, Opal.js, Heroku and Neo4j and rendered all client side. Also, Peter will show some of the examples community members have been contributing - everything from Chess play graphs to product configurations.

## **Graph Search**

**Max De Marzi**

Sun. 16:00 – 16:30

Facebook Graph Search has given the Graph Database community a simpler way to explain what it is we do and why it matters. Max will show you how easy it is to build your own Graph Search... and for the truly lazy, a second way to perform graph search with just mouse clicks using the connectedness of the data and a little metadata magic to build a multi-term search bar.

## **Visualize your Graph Database**

Techniques to view, explore and modify your graph data with ArangoDB

**Michael Hackstein**

Sun. 16:30 – 17:00

If you are using a graph database you might want to get a visual representation of your data. In this talk I will present a visualization tool build on top of the Open Source Database ArangoDB. This tool allows a user to explore the graph by visually traversing through it. I will also present some challenges of graph visualization and my solutions for them.

| Time               | Title  | Speaker(s)     |
|--------------------|--|----------------|
| Sun. 10:00 – 10:50 | Testing Kernel GFX Drivers                       | Daniel Vetter  |
| Sun. 11:00 – 11:20 | Intel BayTrail graphics overview                 | Jesse Barnes   |
| Sun. 12:00 – 12:50 | Nouveau – On-going work, demos and research      | Martin Peres   |
| Sun. 13:00 – 13:50 | Grate  | Erik Faye-Lund |
| Sun. 14:00 – 14:50 | An Introduction to the Video4Linux Framework     | Hans Verkuil   |
| Sun. 15:00 – 15:50 | The Lima driver                                  | Luc Verhaegen  |
| Sun. 16:00 – 16:50 | lima driver: Opening up the Mali instruction set | Connor Abbott  |
| Sun. 17:00 – 17:20 | Sunxi KMS driver                                 | Luc Verhaegen  |

### Testing Kernel GFX Drivers

How to get drm/i915 off the number 1 spot on the kernel regression list ...

**Daniel Vetter** Sun. 10:00 – 10:50

Three years ago, the Intel kernel gfx driver infamously occupied the top spot on the regression list. This sordid state has massively improved thanks to a big effort over the past few years.

This talk will detail what we’ve all done to achieve this. Process improvements, improvements in the driver, test-suite infrastructure and new testing techniques developed to exercise specific features will all be covered. And of course a unsparing look at what didn’t work out, what still needs to be improved, and the plans for the near future won’t be missing, either.

### Intel BayTrail graphics overview

Discussion of the Intel BayTrail platform and architecture

**Jesse Barnes** Sun. 11:00 – 11:20

Discussion of Intel BayTrail SoC architecture from a graphics perspective, including overview of render engine, display engine, memory architecture characteristics, and current status in Linux. Hopefully the presenter will have some sample platforms for people to play with after the talk.

### Nouveau – On-going work, demos and research

**Martin Peres** Sun. 12:00 – 12:50

Nouveau is an open-source driver for NVIDIA GPUs developed through reverse engineering by the community. This talk will discuss the achievements of the driver, what happened these last 2 years, what we are working on and what may change in the future. Special emphasis will be put on power management as it is the most-lacking feature in our driver. Some demos and Q&A will close the talk.

### Grate

Liberating the Tegra GPU

**Erik Faye-Lund** Sun. 13:00 – 13:50

The Grate project works on liberating NVIDIA’s Tegra GPU user-space components by reverse-engineering the proprietary drivers. This talk will discuss where we are and what the future might bring.

### An Introduction to the Video4Linux Framework

How to write a video capture driver

**Hans Verkuil** Sun. 14:00 – 14:50

During the past five years a lot of work went into the video4linux subsystem of the kernel, in particular with respect to the frameworks that help the driver developers. This talk gives an overview of the kernel frameworks that help video4linux driver developers create good drivers.

### The Lima driver

An update on the command stream/driver side



of the open source driver for ARM Mali GPUs.

**Luc Verhaegen**

Sun. 15:00 – 15:50

This talk provides an update on the lima driver progress of the past year. It will cover the work done on providing a Mesa driver for the Mali M family (M200/M400), and it will describe the current status of the reverse engineering work on the Mali T-series GPUs.

## **lima driver: Opening up the Mali instruction set**

**Connor Abbott**

Sun. 16:00 – 16:50

This talk will describe the Instruction Set Architecture of the Mali 200/400 Geometry Processor and Pixel Processor, efforts to write an open-source compiler backend, and preliminary information about the new T6xx instruction set.

## **Sunxi KMS driver**

A new display driver for allwinner SoCs

**Luc Verhaegen**

Sun. 17:00 – 17:20

This short talk covers the Allwinner SoCs display engines and the development of a (work in progress) KMS driver for this hardware.

The Internet of Things devroom will cover topics such as: machine-to-machine communication on small embedded devices, distributed applications for autonomous/self-controlled devices, discovery and infrastructure, and interoperability. Most talks will consist of a demo followed by explanations and discussion. There is a two-hour slot in the afternoon for participant-driven talks and further demos.

| Time               | Title  | Speaker(s)             |
|--------------------|--|------------------------|
| Sun. 09:45 – 10:00 | Welcome to IoT Devroom   | Pieter Hintjens        |
| Sun. 10:00 – 10:25 | Flow-based programming for heterogeneous systems                     | Jon Nordby             |
| Sun. 10:30 – 10:55 | OpenIoT  | John Soldatos          |
| Sun. 11:00 – 11:25 | Current State of IEEE 802.15.4/6LoWPAN Stack inside the Linux Kernel | Alexander Aring        |
| Sun. 11:30 – 11:55 | Federating Access to IoT using OAuth                                 | Paul Fremantle         |
| Sun. 12:00 – 12:25 | XMPP in the world of IoT   | Joachim Lindborg       |
| Sun. 12:30 – 12:55 | LTE in your Linux-based system                                       | Aleksander Morgado     |
| Sun. 13:00 – 13:25 | The Fluksometer as an IoT hub  | Bart Van Der Meerssche |
| Sun. 13:30 – 13:55 | PicoTCP  | Maxime Vincent         |
| Sun. 14:00 – 14:25 | OpenTRV: resource-constrained computing: less is more                | Damon Hart-Davis       |
| Sun. 14:30 – 16:30 | Participant driven discussion  |                        |

## Welcome to IoT Devroom

Welcome to participants and explanation of the day

**Pieter Hintjens** Sun. 09:45 – 10:00

Welcome to participants and explanation of the devroom format.

## Flow-based programming for heterogeneous systems

with NoFlo and MicroFlo

**Jon Nordby** Sun. 10:00 – 10:25

Heterogeneous systems as found in the Internet of Things are made up of many devices of different types working together. Each device class is typically developed with separate tools using different paradigms. We propose that using NoFlo and MicroFlo one can develop heterogeneous systems consisting of micro-controllers, servers, and mobile devices using flow-based programming (FBP) as an unifying programming model.

## OpenIoT

The Open Source Project for the Internet of

## Things

**John Soldatos** Sun. 10:30 – 10:55

The aim of this talk is to introduce OpenIoT, a FOSS project for developing/integrating Internet-of-Things (IoT) applications and services. OpenIoT is developing a platform and a range of tools for developing and deploying non-trivial IoT solutions. The introduction of the project will be made in the form of a lecture/presentation/lightening talk, yet it will also include practical examples and demonstrations of IoT applications based on the OpenIoT platform. Furthermore, a short programming tutorial could be provided. The aim of the presentation will be to attract interested developers/contributors to the project, thereby boosting OpenIoT's community building efforts.

## Current State of IEEE 802.15.4/6LoWPAN Stack inside the Linux Kernel

**Alexander Aring** Sun. 11:00 – 11:25

At the moment the most common solution to bring Linux embedded devices into the Internet of Things world requires a gateway or border router device. These devices use a separate IEEE 802.15.4/6LoWPAN Stack from

ContikiOS, TinyOS, etc.

The somewhat misnamed linux-zigbee project aims to implement the IEEE 802.15.4/6LoWPAN functionality (but not ZigBee) inside the Linux kernel so that you can bring a Linux machine into the Internet of Things world easily. The required hardware is an IEEE 802.15.4 radio frequency module which is typically connected via SPI or USB. On top of the 6LoWPAN stack you can run any IPv6 userspace software.

## Federating Access to IoT using OAuth

**Paul Fremantle**

Sun. 11:30 – 11:55

The Internet of Things (IoT) is being used for lots of personal data, but what little authentication and authorization is mainly being done using traditional centralized role-based approaches. This talk shows how we can use Federated identity and access management approaches such as OAuth2 with MQTT and CoAP to support IoT.

## XMPP in the world of IoT

An open standard for interoperable IoT

**Joachim Lindborg**

Sun. 12:00 – 12:25

Talk on how XMPP fit into the world of IoT. The big advantages, technologies, possibilities, and differences.

## LTE in your Linux-based system

**Aleksander Morgado**

Sun. 12:30 – 12:55

Wireless connections have improved a lot lately and the data-rates and latencies that are now achievable with LTE make mobile broadband connections a key ingredient in every M2M recipe. But LTE mobile broadband connections in Linux-based systems are no longer setup using the good old AT+PPP pair. LTE-capable modems now use ECM-like network interfaces and even new control protocols, like QMI or MBIM.

## The Fluksometer as an IoT hub

**Bart Van Der Meerssche**

Sun. 13:00 – 13:25

The Fluksometer is an open hardware/software platform that facilitates the visualisation and monitoring of 'utility' streams like water, gas, and electricity. The recently released v2B of the hardware comes with a Jeenode-

compatible 868MHz radio interface. As such, the Fluksometer can now take on the role of an IoT hub which greatly expands the possible range of domestic applications it can enable. This talk would like to describe and demonstrate the new hardware as well as software components we are currently building that will turn this concept into reality.

## PicoTCP

the reference TCP/IP stack for IoT

**Maxime Vincent**

Sun. 13:30 – 13:55

PicoTCP: the reference TCP/IP stack for IoT

PicoTCP is a fully featured TCP/IP stack designed for embedded devices and released under the terms of GNU GPL. Our purpose is to propose it as the reference TCP/IP stack for IoT, especially due to its high portability and modularity.

This talk will explain the architecture of the stack, the way we have been developing it and the many features we support. Moreover, we will briefly show how easy it is to port the stack to a complete new architecture in no time.

## OpenTRV: resource-constrained computing: less is more

Saving energy while saving energy

**Damon Hart-Davis**

Sun. 14:00 – 14:25

A talk about work so far on OpenTRV.

OpenTRV sets out to make it easy to save lots of energy by not heating rooms that you're not in, and by no longer trying to use a single thermostat to get your whole house comfortable.

OpenTRV also allows a simple schedule to be set (no complex displays though!) and tries to anticipate when you'll need heating to improve comfort while boosting efficiency.

## Participant driven discussion

Sun. 14:30 – 16:30

A space for participant-driven discussions, unconference style.

The JavaScript developer room gives the opportunity to the open-source JavaScript community to present both its front-end and back-end expertise. The selected speakers will discuss, among other things, Angular.js, d3.js, npm and even robotics.

| Time               | Title   | Speaker(s)  |
|--------------------|---|---|
| Sun. 09:30 – 10:00 | Javascript Room Welcome                       | Steven Beeckman                                     |
| Sun. 10:00 – 10:40 | Beyond the To-do List                         | Jan van Thoor                                       |
| Sun. 10:45 – 11:25 | Building front-end JavaScript apps that scale | Phil Leggetter                                      |
| Sun. 11:30 – 12:10 | Cute – a smaller Angular                      | Tim Ruffles   |
| Sun. 12:15 – 12:55 | Evolutionary algorithms                       | Juan Juliàn Merelo                                  |
| Sun. 13:00 – 13:25 | Using a hypermedia API with Angular.js        | Pieter Herroelen                                    |
| Sun. 13:30 – 14:10 | Javascript for enterprise                     | Sandro Munda  |
| Sun. 14:15 – 14:55 | Hidden gems in npm                            | Robert Kowalski                                     |
| Sun. 15:00 – 15:40 | Javascript & Robotics                         | Laurent Eschenauer                                  |
| Sun. 15:45 – 16:25 | JavaScript in the Real World                  | Andrew Nesbitt                                      |
| Sun. 16:30 – 17:00 | Javascript Devroom Wrap-up                    | Steven Beeckman, Laurent Eschenauer, Andrew Nesbitt |

## Javascript Room Welcome

**Steven Beeckman** Sun. 09:30 – 10:00

The organizing team will welcome you and kick off the first ever Fosdem Javascript Devroom!

## Beyond the To-do List

Advanced Javascript Architecture with AMD, Modules, and Backbone

**Jan van Thoor** Sun. 10:00 – 10:40

There are thousands of examples, using a myriad of JavaScript frameworks, of how to code a To-Do list. However, when looking for examples of more complex architectures, it is easy to despair.... Based on experience gathered as a Web Developer at trivago, here is one approach to structuring complex JavaScript applications using AMD, modules, and Backbone.

## Building front-end JavaScript apps that scale

**Phil Leggetter** Sun. 10:45 – 11:25

Developing large apps is difficult. Ensuring that the code is consistent, well structured, tested, and that the architecture encourages maintainability is essential. When

it comes to building large server-focused apps the solutions to this problem have been tried and tested. But, how do we achieve this when it comes to HTML5 single page apps?

In this talk you'll learn about the main concepts we have applied, how we have applied them - and how you can too - to achieve what might sound like the impossible.

## Cute – a smaller Angular

**Tim Ruffles** Sun. 11:30 – 12:10

AngularJS is voodoo, big voodoo. How much of Angular's goodness could be fitted into a library the size of Backbone (10x smaller)? Cute is a attempt to do just that.

## Evolutionary algorithms

In the browser and in the server and multi-threaded and everywhere

**Juan Juliàn Merelo** Sun. 12:15 – 12:55

In this talk, we will present the state of the art and history of volunteer and, in particular, browser-based computing, will make a general introduction to evolutionary computation, and then how this type of algorithms can be adapted to run on ephemeral, distributed, asynchronous, and heterogeneous nodes. We will present

our NodeO and jsEO evolutionary algorithm libraries and the result of some experiments using this platform. Finally, we will generalize and show a general methodology for doing scientific computing using JavaScript.

## Using a hypermedia API with Angular.js

**Pieter Herroelen**

Sun. 13:00 – 13:25

A big part of REST is the idea of Hypermedia As The Engine Of Application State. Using HATEOAS brings the qualities of the web such as the robustness and scalability to your system.

In this presentation you will see how we have built a hypermedia-driven client using Angular.js. The media type we have used is HAL.

## Javascript for enterprise

**Sandro Munda**

Sun. 13:30 – 14:10

Developing in enterprise is different to develop alone at home for fun. You need to have a mature stack with a tool chain that covers debugging, unit testing, software architecture, design patterns, etc. Nowadays, the Javascript community is mature enough to propose a stack that matches all aspects of the enterprise world perfectly.

## Hidden gems in npm

New features and hidden gems to make you more productive

**Robert Kowalski**

Sun. 14:15 – 14:55

Node has one of the best package managers around: npm. With more than 50k packages the npm registry

has an average growth of 116 packages/day and every month a lot of features are added to npm itself. In my talk I will show some brand new features and hidden gems to make you a more productive npm user.

## Javascript & Robotics

Implementing autonomous flight of a quadcopter in NodeJS.

**Laurent Eschenauer**

Sun. 15:00 – 15:40

Will you have an autonomous flying robot taking your pictures and filming you during your next holidays?

## JavaScript in the Real World

**Andrew Nesbitt**

Sun. 15:45 – 16:25

Anything that can be written in JavaScript will eventually be written in JavaScript. First client side web apps, then server side programs, and now you can control hardware, embedded devices and even flying robots with JavaScript.

We'll look at how you can get started writing JavaScript for Arduino and Raspberry Pi to read sensors and control servos and build your own JavaScript powered robots.

## Javascript Devroom Wrap-up

Feedback on the day and discussion about next year

**Steven Beeckman, Laurent Eschenauer, Andrew Nesbitt**

Sun. 16:30 – 17:00

We just had the first ever Javascript Devroom at FOSDEM and want to get some feedback on the day, and an open discussion on future editions.

| Time               | Title  | Speaker(s)                      |
|--------------------|--|---------------------------------|
| Sun. 09:00 – 09:05 | Introduction to LLVM dev-room  | Sylvestre Ledru, Tobias Grosser |
| Sun. 09:05 – 09:55 | Clang: Re-inventing the Compiler   | Alp Toker                       |
| Sun. 10:00 – 10:25 | Auto-Vectorization in LLVM   | Renato Golin                    |
| Sun. 10:30 – 10:55 | The Avatar project – improving embedded security with S2E, KLEE and Qemu             | Luca Bruno                      |
| Sun. 11:00 – 11:55 | The LLVMLinux project  | Jan-Simon Möller                |
| Sun. 12:00 – 12:25 | How to contribute to LLVM  | Sylvestre Ledru                 |
| Sun. 12:30 – 12:55 | Two uses cases for the clang C++ parser: Online Code Browser and Qt moc Replacement. | Olivier Goffart                 |
| Sun. 13:00 – 13:55 | Statically compiling Ruby with LLVM  | Laurent Sansonetti              |
| Sun. 14:00 – 14:55 | LDC – the LLVM-based D compiler  | Kai Nacke                       |
| Sun. 15:00 – 15:55 | Case study/tutorial on using LLVM in REPL systems                                    | David Tweed                     |
| Sun. 16:00 – 16:25 | An approach for energy consumption analysis of programs using LLVM                   | Neville Grech                   |
| Sun. 16:30 – 16:55 | High Level Loop Optimizations in LLVM  | Tobias Grosser                  |

## Introduction to LLVM dev-room

**Sylvestre Ledru, Tobias Grosser** Sun. 09:00 – 09:05

The LLVM Project is a collection of modular and reusable compiler and toolchain technologies. Despite its name, LLVM has little to do with traditional virtual machines, though it does provide helpful libraries that can be used to build them. The name “LLVM” itself is not an acronym; it is the full name of the project.

## Clang: Re-inventing the Compiler

**Alp Toker** Sun. 09:05 – 09:55

The LLVM clang C++ compiler has exceeded all expectations the last year, gaining unprecedented new features that let you explore, rewrite, and rediscover your source code.

This is a talk about the human story of a compiler: What can we achieve going beyond compilation? Why are we compelled to invent a better wheel? How can we make everyday life better for coders, and could the compiler itself become an instrument for wider social change?

## Auto-Vectorization in LLVM

Past, Present and Future

**Renato Golin**

Sun. 10:00 – 10:25

Auto-Vectorization has come a long way since the early vector-processing CPUs, and compilers generally take a long time to implement it, prioritizing other more generic features instead. But with all recent high-end chips containing some form of SIMD operations, auto-vectorization became a necessary feature on any modern compiler. LLVM was perhaps the last of the big compilers to have a decent vectorization engine, but it has grown considerably for the last year, and the investment on SIMD code generation will not diminish. This presentation outlines the past implementations, what we currently have available and peeks into the engineering pipeline to see what else we are working on.

## The Avatar project – improving embedded security with S2E, KLEE and Qemu

LLVM-powered dynamic security analysis of embedded firmwares

**Luca Bruno**

Sun. 10:30 – 10:55

Avatar is a research framework that enables complex dynamic analysis of embedded devices by orchestrating the execution of an emulator together with real hardware. It is built on top of S2E/Qemu, KLEE and LLVM

and its main goal is to enable advanced security analysis of pristine ARM source-less firmware, eg. through dynamic tracing or symbolic execution.

This talk will show key features of S2E in enabling runtime binary analysis (using Qemu virtualization and KLEE/LLVM symbolic execution) and how Avatar uses it to orchestrate analysis and execution at the emulator->device edge.

## The LLVMLinux project

The Linux Kernel on Dragon Wings

**Jan-Simon Möller**

Sun. 11:00 – 11:55

Jan-Simon Möller will introduce the audience to the LLVMLinux project which goal it is to compile the Linux Kernel with the compiler tools provided by the LLVM project (clang). He will talk about the steps needed to compile the Kernel itself, the issues found during this endeavour and the status of upstreaming patches to the Kernel and the LLVM project.

## How to contribute to LLVM

**Sylvestre Ledru**

Sun. 12:00 – 12:25

When starting to contribute to LLVM knowing the technical steps and especially the community habits can make the first (and upcoming) contribution a lot easier and the contribution process will become a more positive experience. This talk will discuss technical points such as your first patch for LLVM, how to get +w permissions, the various workflows, but also more soft skills such as 'how can I find a reviewer for my patch', 'should I review patches myself', or 'what is this the right strategy to add a larger feature to LLVM'?

## Two uses cases for the clang C++ parser: Online Code Browser and Qt moc Replacement.

**Olivier Goffart**

Sun. 12:30 – 12:55

In this talk we will see how one can use the clang libraries to build two practical tools. The first tool is an online C/C++ online code browser that uses clang to parse the AST in order to provide information about each token and build a cross reference

database. [<http://code.woboq.org>] The second tool is a replacement for Qt's moc (meta-object compiler) which is used by Qt to provide introspection and enable signals and slots and the QML language, both as a stand alone executable or as a clang plugin. [<https://github.com/woboq/moc-ng>] The talk goes over implementation details and challenges encountered while developing.

## Statically compiling Ruby with LLVM

... or how RubyMotion works internally

**Laurent Sansonetti**

Sun. 13:00 – 13:55

RubyMotion is a commercial implementation of the Ruby language for iOS and OS X development. RubyMotion makes intensive use of LLVM in order to statically compile Ruby. In this session we will focus on how RubyMotion uses LLVM also a bit of history with the MacRuby project (which uses LLVM as a JIT).

## LDC – the LLVM-based D compiler

Using LLVM as backend for a D compiler

**Kai Nacke**

Sun. 14:00 – 14:55

D is a language with C-like syntax and static typing. It pragmatically combines efficiency, control, and modeling power, with safety and programmer productivity. LDC is a fully open source, portable D compiler which uses LLVM as backend. In my talk, I will introduce the overall architecture of LDC first. I will then use the mapping of the front end AST to LLVM IR to show the required LLVM features. Experiences with LLVM in general, porting to other LLVM backends and integrating features like the AddressSanitizer are highlighted. At last, areas of improvement for LLVM are shown from the perspective of a D compiler (ABI, vararg, exception handling).

## Case study/tutorial on using LLVM in REPL systems

**David Tweed**

Sun. 15:00 – 15:55

LLVM is a modular system of compiler components with backends for most popular architectures. It is primarily designed as a compiler construction framework, but also provides facilities for Just-In-Time (JIT) compilation

of code. Although a lot of interest has focused on the implementation of LLVM-based compilers for 'compiled ahead-of-time' (AOT) languages (eg, clang for C), one of the most exciting uses is to generate code on-the-fly, taking advantage of situation-specific knowledge to perform better on the particular computation at hand.

## **An approach for energy consumption analysis of programs using LLVM**

**Neville Grech**

Sun. 16:00 – 16:25

Energy models can be constructed by characterizing the energy consumed by executing each instruction in a processor's instruction set. This can be used to determine

how much energy is required to execute a sequence of assembly instructions.

## **High Level Loop Optimizations in LLVM**

A tutorial on how to use Polly/isl/ppcg

**Tobias Grosser**

Sun. 16:30 – 16:55

For several important program classes (image processing, scientific computing, ...) High Level Loop Optimizations are essential to reach top performance. With Polly, we present a high-level loop optimization framework for LLVM, which provides a flexible infrastructure to develop and describe such high-level loop optimizations.



| Time               | Title  | Speaker(s)                               |
|--------------------|--|--|
| Sun. 09:00 – 09:25 | IP risks for OSS developers                            | Yung Shin Van Der Sype, Soo Mee Provoost |
| Sun. 09:30 – 09:55 | Sisyphus is Happy                                      | Alexios Zavras                           |
| Sun. 10:00 – 10:50 | Licensing and Packaging FOSS with SPDX                 | Nuno Brito                               |
| Sun. 11:00 – 11:50 | Considering the Future of Copyleft                     | Bradley M. Kuhn                          |
| Sun. 12:00 – 12:50 | Legal issues from a radical community angle            | Stefano Zacchiroli                       |
| Sun. 14:00 – 15:00 | Taking license compatibility semi-seriously            | Richard Fontana                          |
| Sun. 15:00 – 15:50 | Why Licenses Requiring Use of Trademarks are Non-Free  | Pamela Chestek                           |
| Sun. 16:00 – 16:25 | Licensing Models and Building an Open Source Community | Eileen Evans                             |
| Sun. 16:30 – 16:55 | EU research funding – Horizon 2020 and Free Software   | Marc Hoffmann                            |

## IP risks for OSS developers

How to protect yourself against IP infringements by other developers in an open source project?

**Yung Shin Van Der Sype, Soo Mee Provoost** Sun. 09:00 – 09:25

Open source software developers, just like any other developers, have to be aware of the legal liability they can incur.

## Sisyphus is Happy

Fighting for Software Legal Compliance

**Alexios Zavras** Sun. 09:30 – 09:55

Nowadays software is usually a combination of own-written code and FOSS; in some cases it also contains parts licensed under non-FOSS licenses. FOSS licenses stipulate different obligations and, in order to be legally compliant, one has to abide by the obligations of every license.

This talk will present lessons learned while building a corporate compliance system that is sensitive to the needs of developers while still pleasing the lawyers.

## Licensing and Packaging FOSS with SPDX

Learning to combine and distribute software with open source licenses

**Nuno Brito** Sun. 10:00 – 10:50

As developers of open source and free software, we share our code freely, we make a positive change on this world. However, too often great pieces of open source software are declined for integration inside amazing projects. Aren't they good enough? From a technical perspective, yes. But when you don't express clearly which licenses and third-party resources were used (images, libraries, code) then these "unknown libraries" become too much a risk to bear.

Are we doing the right things in regards to licensing? Come and join our talk to find out.

## Considering the Future of Copyleft

How Will The Next Generation Perceive GPL?

**Bradley M. Kuhn** Sun. 11:00 – 11:50

Copyleft licenses, particularly the GPL and LGPL, are widely used throughout the Free Software community. Over the last few years, recent debates have led many to various conclusions about the popularity of copyleft. This talk will discuss where copyleft stands today, how it interacts with the modern Free Software world, and how copyleft advocates may need to adapt to the future of Free Software licensing.

## Legal issues from a radical community angle

**Stefano Zacchiroli** Sun. 12:00 – 12:50

Throughout its 20-year history, Debian had to face a

number of legal issues, in all fields of the so (improperly) called “Intellectual Property”. From trademarks to patents, from copyright to export control and embargoes, Debian didn’t miss a single pesky issue. In this talk we review some of the most relevant legal issues that Debian has faced in recent years and how the project has responded to them. Doing so is a chance not only to share legal best practices with other Free Software communities, but also to highlight the policy annoyances that widespread legal systems imposes on radical Free Software communities such as Debian.

## **Taking license compatibility seriously**

**Richard Fontana**

Sun. 14:00 – 15:00

This talk critiques what passes for orthodox license compatibility doctrine and suggests ways of adjusting how we interpret licenses (and therefore how we think about compatibility) to reconcile formalist notions of incompatibility with actual behavior by FLOSS community developers.

## **Why Licenses Requiring Use of Trademarks are Non-Free**

**Pamela Chestek**

Sun. 15:00 – 15:50

Why “badgeware” or other licenses that require use of a trademark are non-free licenses under both the Four Freedoms and the Open Source Definition.

## **Licensing Models and Building an Open Source Community**

**Eileen Evans**

Sun. 16:00 – 16:25

Do you need a copyleft license to build a community? Answering this ten years ago, the answer may have been yes, primarily driven by the contractual obligation to contribute back to the project. However, looking at the question now, open source has grown such that a vibrant, active community may be built with a permissive licensing model. Come hear some thoughts about how licensing models affect building an open source community and how their use has evolved over time.

## **EU research funding – Horizon 2020 and Free Software**

How to apply for funding, legal implications and required project organization

**Marc Hoffmann**

Sun. 16:30 – 16:55

This talk introduces EU research funding for Free Software.

Microkernels and component-based operating systems are pervasive parts of our computing landscape. They are currently used in situations where security and reliability are of utmost importance or where resources are scarce. The microkernel developer room brings the heads behind several projects together and offers a chance to get up to speed with developments in different groups.

Organization of the microkernel developer room is done in turns by groups in the microkernel community. This year's developer room is organized by the OS group of TU Dresden (<http://os.inf.tu-dresden.de/>).

| Time               | Title   | Speaker(s)         |
|--------------------|---|--------------------|
| Sun. 09:00 – 09:05 | Welcoming and Introduction                                    | Julian Stecklina   |
| Sun. 09:05 – 09:50 | Rump Kernels, Just Components                                 | Antti Kantee       |
| Sun. 09:55 – 10:40 | Genode as general-purpose OS                                  | Norman Feske       |
| Sun. 10:45 – 11:30 | HelenOS annual update   | Jakub Jermář       |
| Sun. 11:35 – 12:20 | The microkernel OS Escape                                     | Nils Asmussen      |
| Sun. 13:00 – 13:45 | State of the Union: What's new in the L4Re Microkernel System | Adam Lackorzynski  |
| Sun. 13:50 – 14:20 | Secure applications on top of L4                              | Sartakov A. Vasily |
| Sun. 14:25 – 14:55 | GNU/Hurd DDE userland device drivers                          | Samuel Thibault    |
| Sun. 15:00 – 15:30 | Virtualization Dungeon on ARM                                 | Stefan Kalkowski   |
| Sun. 15:40 – 16:25 | Read-Copy-Update for HelenOS                                  | Martin Dýčký       |
| Sun. 16:30 – 17:00 | Rethinking Resource Control                                   | Michael Engel      |

## Welcoming and Introduction

**Julian Stecklina** Sun. 09:00 – 09:05

A short introduction of the hosts of the devroom and some warm words.

## Rump Kernels, Just Components

**Antti Kantee** Sun. 09:05 – 09:50

The talk will concentrate more on anecdotes from the “drivers first” development approach. Technical details for how rump kernels work will be provided as links.

## Genode as general-purpose OS – progress report and demonstration

**Norman Feske** Sun. 09:55 – 10:40

The Genode OS project started 2006 as tool kit for building microkernel-based special-purpose operating systems. Over the course of the past years, it has grown to a state where it becomes feasible to be used as general-purpose OS for daily computing needs. This talk will present the many challenges that we faced on our way during the past year.

## HelenOS annual update

**Jakub Jermář** Sun. 10:45 – 11:30

In this presentation, I will briefly talk about the developments that have taken place within the HelenOS project since the last FOSDEM. Codewise, I will mention both the new interesting features already merged into the HelenOS mainline repository and a selection of not yet merged ones. This includes features from a variety of areas such as networking, file systems, platforms, audio, testing, and others. In addition, I would like to utter a word or two about our participation in the Summer of Code in Space program during 2013.

## The microkernel OS Escape

**Nils Asmussen** Sun. 11:35 – 12:20

In the talk I'll give an overview about Escape and explain the most important concepts. Especially, I'll present the virtual file system that the kernel provides and that is among others used for getting access to drivers.

## State of the Union: What's new in the L4Re Microkernel System

**Adam Lackorzynski**

Sun. 13:00 – 13:45

In this talk we will present which changes and extensions to the L4Re microkernel system were required to actually ship L4Re in a commercial product. The talk will be a mix of an experience report and an overview of major features of the L4Re system.

## Secure applications on top of L4

**Sartakov A. Vasily**

Sun. 13:50 – 14:20

L4ReAp: L4Re additional packages, is a collection of “real-life” packages and solutions optimized for working in L4 environment. Main area of usage is high performance and secure networking. In this presentation we outline security enhancements of L4ReAp such as stack protection. In addition, new use-cases will be discussed.

## GNU/Hurd DDE userland device drivers

**Samuel Thibault**

Sun. 14:25 – 14:55

We will explain how userland drivers are implemented in GNU/Hurd thanks to the DDE layer, and what kernel support is needed for that. We will also show the flexibility this brings for the user.

## Virtualization Dungeon on ARM

Hands on experience talk about virtualization

experiments

**Stefan Kalkowski**

Sun. 15:00 – 15:30

The talk introduces ARM's security extensions called TrustZone, and how they are used to run a guest OS on top of Genode's native ARM kernel. It is a hands on experience talk covering pitfalls and blind alleys on the road to success.

## Read-Copy-Update for HelenOS

**Martin Dýcký**

Sun. 15:40 – 16:25

This talk briefly introduces the RCU mechanism and the usual trade-offs that specific RCU implementations need to make. Furthermore, the talk also presents two novel RCU algorithms designed for a microkernel environment and implemented in HelenOS.

## Rethinking Resource Control

Making use of hardware-OS-Compiler interactions

**Michael Engel**

Sun. 16:30 – 17:00

While resource allocation is deemed a domain of the OS, many resource allocation and scheduling decisions actually are performed by the CPU or by a compiler strategy or by a combination of OS, compiler and CPU microarchitecture. In this talk, we provide a basis for discussion how systems can benefit from a closer interaction of these tree HW/SW components, especially in the context of micro- and exokernel systems.

NoSQL encompasses a wide variety of different database technologies and were developed in response to a rise in the volume of data stored about users, objects and products, the frequency in which this data is accessed, and performance and processing needs. Relational databases, on the other hand, were not designed to cope with the scale and agility challenges that face modern applications, nor were they built to take advantage of the cheap storage and processing power available today. NoSQL database types include document databases, graph stores, key-value stores, and wide-column stores.

This devroom is a good place to learn more about NoSQL and meet community members from various database companies.

| Time               | Title   | Speaker(s)         |
|--------------------|---|--------------------|
| Sun. 10:00 – 10:50 | Elasticsearch 1.0   | Honza Král         |
| Sun. 10:50 – 11:40 | How you can benefit from using Redis  | Javier Ramírez     |
| Sun. 11:45 – 12:35 | Schema Design with MongoDB  | Christian Kvalheim |
| Sun. 13:35 – 14:25 | Managing data for interactive applications with Couchbase                     | Terry Dhariwal     |
| Sun. 14:30 – 15:20 | Headless with Cassandra   | Michael Laing      |
| Sun. 15:25 – 16:15 | SQL to NoSQL, what you need to know   | Christian Hergert  |
| Sun. 16:20 – 16:30 | OpenShift & MongoDB   | Diane Mueller      |
| Sun. 16:30 – 17:00 | YARN, the Apache Hadoop Platform for Streaming, Realtime and Batch Processing | Eric Charles       |

## Elasticsearch 1.0

Exploring the new features

**Honza Král**

Sun. 10:00 – 10:50

Elasticsearch has reached 1.0 with many new exciting features including backup & restore, aggregations, and many other smaller changes. I'd like to introduce what's new on real life examples and show what they can be used for.

## How you can benefit from using Redis

**Javier Ramírez**

Sun. 10:50 – 11:40

All the cool cats are using Redis and with reason: It's fast, it's robust, it's easy, and it's web scale. Redis is powering sites like twitter, instagram or pinterest, but you can also benefit from the power of redis even in a more modest project.

## Schema Design with MongoDB

**Christian Kvalheim**

Sun. 11:45 – 12:35

MongoDB's basic unit of storage is a document. Documents can represent rich, schema-free data structures,

meaning that we have several viable alternatives to the normalized, relational model. In this talk, we'll discuss the tradeoff of various data modeling strategies in MongoDB using a library as a sample application. You will learn how to work with documents, evolve your schema, and common schema design patterns.

## Managing data for interactive applications with Couchbase

Building scalable applications on top of a distributed JSON store

**Terry Dhariwal**

Sun. 13:35 – 14:25

Couchbase is a highly scalable distributed database which acts both as a JSON document store and a K/V store. Uniquely, it has an integrated Memcached-compatible caching layer for blistering fast read/write operations. It's an open source, Apache-licensed project.

## Headless with Cassandra

The nytfabrik project at the New York Times

**Michael Laing**

Sun. 14:30 – 15:20

Cassandra provides the global persistence layer for the New York Times nytfabrik project.

nytfabrik (in production January 2014) is reliable, low latency messaging middleware connecting internal clients at the New York Times (breaking news, user generated content, etc) with millions of external clients around the world. The primary technologies employed are: RabbitMQ (AMQP), Cassandra, and web-sockets/sockjs. Components developed by the New York Times will be made open source beginning in 2014.

This presentation will focus on the use of Cassandra as the high performance distributed data store supporting the nytfabrik.

## **SQL to NoSQL, what you need to know**

Ensuring success in a NoSQL world.

**Christian Hergert**

Sun. 15:25 – 16:15

This talk will cover what you need to know for success when developing against MongoDB. Schema design, indexing performance, scalability concerns, and data sharding will be covered.

## **OpenShift & MongoDB**

MongoDB under the hood & in the gears @OpenShift

**Diane Mueller**

Sun. 16:20 – 16:30

OpenShift lightning talk: OpenShift Origin is the Red Hat-sponsored Open Source Platform-as-a-Service. Under the hood, OpenShift itself utilizes a fast and reliable MongoDB cluster. With OpenShift, you can easily deploy and run applications backed by MongoDB using your favorite servers and frameworks. In this lightning talk, we'll quickly talk about MongoDB from both sides of this cloud-based application.

## **YARN, the Apache Hadoop Platform for Streaming, Realtime and Batch Processing**

Bring your Hadoop Cluster to the next Level

**Eric Charles**

Sun. 16:30 – 17:00

As part of Hadoop 2.0, YARN takes the resource management capabilities that were in MapReduce and packages them so they can be used by new engines. This also streamlines MapReduce to do what it does best: process data. With YARN, you can now run multiple applications in Hadoop, all sharing a common resource management. Many organizations are already building applications on YARN in order to bring them in to Hadoop.

A developer room is also organized to apply the presented technologies.

Python is a widely used general-purpose, high-level programming language. Its design philosophy emphasizes code readability, and its syntax allows programmers to express concepts in fewer lines of code than would be possible in other languages. The language provides constructs intended to make clear programs possible on both a small and large scale.

This developer room is a good occasion to discover the Python ecosystem and meet the community around this language.

A Python drink is planned Saturday 1st February, for more details see <http://doodle.com/mn3yck6n3xxidsim>.

| Time               | Title   | Speaker(s)           |
|--------------------|---|----------------------|
| Sun. 09:00 – 09:30 | Logic Programming in Python                                       | Pierre Carboneille   |
| Sun. 09:30 – 10:00 | Introduction to py.test fixtures                                  | Floris Bruynooghe    |
| Sun. 10:00 – 10:30 | OpenPyXL  | Eric Gazoni          |
| Sun. 10:30 – 11:00 | Introducing the Eve REST API Framework                            | Nicola Iarocci       |
| Sun. 11:00 – 11:30 | Stack switching for fun and profit                                | Saúl Ibarra Corretgé |
| Sun. 11:30 – 12:00 | SQLAlchemy Drill  | Erik Janssens        |
| Sun. 12:00 – 12:30 | Some recipes with Alembic   | Claude Huchet        |
| Sun. 12:30 – 13:00 | Post-mortem Debugging and Web Development                         | Alessandro Molina    |
| Sun. 14:00 – 14:30 | The next generation Python Software Foundation (PSF)              | Marc-André Lemburg   |
| Sun. 14:30 – 15:00 | How PyPy makes your code run fast                                 | Romain Guillebert    |
| Sun. 15:00 – 15:30 | Using All These Cores: Transactional Memory under the hood (PyPy) | Armin Rigo           |
| Sun. 15:30 – 16:00 | A deep dive into PEP3156, the new asyncio module                  | Saúl Ibarra Corretgé |
| Sun. 16:00 – 16:30 | Concurrent programming with Python and my little experiment       | Benoit Chesneau      |
| Sun. 16:30 – 17:00 | Integrating Python and C using CFFI                               | Floris Bruynooghe    |
| Sun. 17:00 – 17:30 | Web Scraping 101 in python  | M.Yasoob Ullah       |
| Sun. 17:30 – 18:00 | Generators, or how to step to the infinite and beyond             | Andrea Crotti        |

## Logic Programming in Python

**Pierre Carboneille**

Sun. 09:00 – 09:30

So far, the Python community has shown little interest in Logic Programming.

Yet, it is one of the three main programming paradigms, together with imperative and functional programming. Thanks to pyDatalog, a Python package which embeds Logic Programming within Python, Python programmers can now solve complex problems through highly readable and declarative programs. This talk will introduce you to Logic Programming through examples written in Python + pyDatalog.

## Introduction to py.test fixtures

**Floris Bruynooghe**

Sun. 09:30 – 10:00

py.test is a powerful and Pythonic unit testing tool which can scale from a few quick no-boilerplate tests to running huge unit and integration test suites.

## OpenPyXL

**Eric Gazoni**

Sun. 10:00 – 10:30

Presenting how to easily use Excel as a container for typed tabular data in Python, performance hints, and a progress status of the library after 3 years of development.

## Introducing the Eve REST API Framework

**Nicola Iarocci**

Sun. 10:30 – 11:00

You have data stored somewhere and you want to ex-

pose it to your users through a RESTful Web API. How?

## Stack switching for fun and profit

**Saúl Ibarra Corretgé** Sun. 11:00 – 11:30

Greenlet is a pretty well-known way for implementing cooperative micro-threads in Python, but how does it actually work? How is it similar and different from Stackless? We'll take a peek at how PyPy implemented it using a small library called 'stacklet' and how the python-fibers project takes advantage of it to build a similar project.

## SQLAlchemy Drill

**Erik Janssens** Sun. 11:30 – 12:00

If you have been looking to use SQLAlchemy in one of your projects, but found the documentation a bit overwhelming then this talk is for you.

## Some recipes with Alembic

**Claude Huchet** Sun. 12:00 – 12:30

The SysGrove® project is mainly based on PyQt4 and SQLAlchemy. Application development and enhancement is ongoing and as a matter of fact, the database scheme is changing quite often with many migrations per day.

## Post-mortem Debugging and Web Development

**Alessandro Molina** Sun. 12:30 – 13:00

Developers tend to ignore that users can be more creative than them. Use their debugging skills for your own benefit: post-mortem debugging is one of the most important features your web framework can provide.

This talk will cover some of the simplest practices and available tools for debugging on production environments and to immediately improve quality of your web applications.

## The next generation Python Software Foundation (PSF)

**Marc-André Lemburg** Sun. 14:00 – 14:30

The PSF was founded in 2001 with a closed membership model in mind. The original idea being that all contributors to Python would become members and to have the PSF provide a platform to defend Python's copyright. Since then, the PSF has changed its focus from a purely legal entity to one that supports the international Python community by providing guidance, and financial and organizational help. At the last PSF Membership Meeting the members decided it was time to acknowledge this change in focus and to open up PSF membership to the whole Python community. This talk will explain the reasons, the new model, and the road map to get it implemented.

## How PyPy makes your code run fast

**Romain Guillebert** Sun. 14:30 – 15:00

PyPy is an implementation of Python which is both fast and faithful to the Python syntax, PyPy's Just-In-Time (JIT) compiler is the key to that compromise. This talk will explain how PyPy's JIT can gather data at runtime to produce efficient machine code.

## Using All These Cores: Transactional Memory under the hood (PyPy)

**Armin Rigo** Sun. 15:00 – 15:30

A picture of how the future of multi-threaded programming might look like, for high-level languages like Python.

## A deep dive into PEP3156, the new asyncio module

**Saúl Ibarra Corretgé** Sun. 15:30 – 16:00

Last year I talked about how PEP-3156 and Tulip (the canonical implementation) would change the async i/o landscape in Python. A year later it became real, merged into stdlib, and will be part of Python 3.4. We'll dive deep into the internals of this new module and learn how those coroutines, tasks, and future work together.

## Concurrent programming with Python and my little experiment

**Benoit Chesneau** Sun. 16:00 – 16:30



Concurrent programming in Python may be hard. A lot of solutions exists though. Most of them are based on an eventloop. In this I talk will present what I discovered and tested along the time with code examples, from `asyncore` to `asyncio`, passing by `gevent`, `eventlet`, `twisted`, and some new alternatives like `evergreen` or `gruvi`. I will also present my little experiment in porting the Go concurrency model in Python named “`offset`”, how it progressed in 1 year and how it became a fully usable library at the time of this talk.

## **Integrating Python and C using CFFI**

**Floris Bruynooghe**

Sun. 16:30 – 17:00

One of Python’s early and lasting strengths has been how easy it is to call into or wrap existing C libraries

using extension modules. However, there are still many subtle details to take care off and it is all to easy to leak references or memory.

## **Web Scraping 101 in python**

**M.Yasoob Ullah**

Sun. 17:00 – 17:30

This talk is about web scraping in Python, why web scraping is useful, and what Python libraries are available to help you.

## **Generators, or how to step to the infinite and beyond**

**Andrea Crotti**

Sun. 17:30 – 18:00

After defining what an iterator is, we will show some interesting use cases and explain how they work in depth.

The Software Defined Radio developer room has talks from various SDR projects.

| Time               | Title  | Speaker(s)                                    |
|--------------------|--|---|
| Sun. 09:45 – 10:00 | Intro to the SDR devroom                             | Philip Balister, Martin Braun, Sylvain Munaut |
| Sun. 10:00 – 10:45 | Working with GNU Radio                               | Tom Rondeau                                   |
| Sun. 10:45 – 11:30 | Building Link-Layer Protocols in a Lego-like Fashion | Andre Puschmann                               |
| Sun. 11:30 – 12:15 | osmocom: Overview of our SDR projects                | Sylvain Munaut                                |
| Sun. 12:15 – 13:15 | Tutorial: OFDM Packet Transceivers                   | Martin Braun                                  |
| Sun. 13:15 – 13:45 | Towards an Open Source IEEE 802.11p Stack            | Bastian Bloessl                               |
| Sun. 13:45 – 14:15 | GNURadio as a general purpose DSP environment        | Jean-Michel Friedt                            |
| Sun. 14:15 – 14:45 | Wireless Networks In-the-Loop                        | Nico Otterbach, Gerald Baier                  |
| Sun. 14:45 – 15:15 | libLTE   | Ismael Gomez                                  |
| Sun. 15:15 – 15:35 | GNU Radio Hardware Acceleration on Xilinx Zynq       | Moritz Fischer                                |
| Sun. 15:45 – 17:00 | SDR devroom closing session                          |   |

## Intro to the SDR devroom

**Philip Balister, Martin Braun, Sylvain Munaut**

Sun. 09:45 – 10:00

This year is the first year that FOSDEM will have a developer room dedicated to Software Defined Radio. Here, we will present a quick overview of SDR projects out there and those attending FOSDEM and then start off the day.

## Working with GNU Radio

**Tom Rondeau**

Sun. 10:00 – 10:45

Although GNU Radio is now over ten years old, the project has recently seen an incredible amount of growth in features. The capabilities we have been adding to the project are focused on improving current signal handling techniques, extending the GNU Radio project's ability to handle newer and developing digital wireless signals, and focusing more on the embedded systems world.

## Building Link-Layer Protocols in a Lego-like Fashion

**Andre Puschmann**

Sun. 10:45 – 11:30

Most of the flexibility that has been brought to the development of software defined radios resides in components that can be associated with the physical layer

of the radio. This talk tries to shed some light on how SDRs can also benefit from flexibility in higher protocol layers such as link-layer protocols.

## osmocom: Overview of our SDR projects

rtl-sdr, gr-osmosdr, osmo-tetra, osmo-gmr, gr-fosphor and more !

**Sylvain Munaut**

Sun. 11:30 – 12:15

Osmocom stands for Open-Source MOBILE COMMUNICATION. It's an umbrella project for several sub-projects that focus on implementing various telecom standard. A growing part of these are using SDR and these are the ones that will be presented in this talk.

## Tutorial: OFDM Packet Transceivers

Intro on how to write an OFDM-based PHY/MAC/App

**Martin Braun**

Sun. 12:15 – 13:15

GNU Radio is a powerful tool for signal processing of any kind. It is very much suited for setting up any kind of communication link. In this tutorial, we will discuss how to set up a PHY that can be attached to an application and MAC layer in order to experiment with arbitrarily configured wireless networks.

## **Towards an Open Source IEEE 802.11p Stack**

An SDR-based Transceiver in GNURadio

**Bastian Bloessl**

Sun. 13:15 – 13:45

I will discuss new ideas and application domains of our Open Source IEEE 802.11a/g/p OFDM transceiver for GNU Radio. The transceiver is implemented completely in software without the need for changing the firmware of the FPGA.

## **GNURadio as a general purpose DSP environment**

application to software defined radio and low-cost physics experiments

**Jean-Michel Friedt**

Sun. 13:45 – 14:15

Software defined radio has exhibited tremendous growth in the last years thanks to the wide availability of significant computational power available in embedded and personal computers and ubiquity of radiofrequency interfaces. One Open Source environment suitable for grasping the basics of digital signal processing, in particular applied to radiofrequency signals, is GNURadio. While software is freely available and shared through the internet, hardware remains dependent on the availability of suitable boards from hardware vendors. In order to justify the time investment in learning to use this signal processing environment, we discuss the development of custom processing blocks and adding custom sources.

## **Wireless Networks In-the-Loop**

gr-wineLo – A GNU Radio Network Emulator

**Nico Otterbach, Gerald Baier**

Sun. 14:15 – 14:45

This talk introduces gr-wineLo, an in-the-loop simulation framework for communication networks which are based on the GNU Radio software radio toolkit.

## **libLTE**

An Open Source LTE Library

**Ismael Gomez**

Sun. 14:45 – 15:15

libLTE is a free and open source LTE library for SDR mobile terminals and base stations. The library does not rely on any external dependencies or frameworks.

## **GNU Radio Hardware Acceleration on Xilinx Zynq**

**Moritz Fischer**

Sun. 15:15 – 15:35

Although some of the currently available SDRs come with means of adding FPGA based acceleration to boost performance, almost nobody is making use of them. One of several reasons for that is, that the learning curve is quite steep for a beginner.

This talk will briefly describe a way to add hardware acceleration to Zynq based SDRs, that has already been successfully used in Jonathon Pendlum's GSoC project.

I'll give an overview of where we are at the moment, what the development experience right now is like, what parts are still missing, and what I'm planning on adding.

## **SDR devroom closing session**

Sun. 15:45 – 17:00

We'll wrap up the day with summaries, hacking, and discussion of ideas for the next year.

| Time               | Title   | Speaker(s)             |
|--------------------|---|------------------------|
| Sun. 09:50 – 10:00 | Welcome to the Testing/Automation Devroom                           |                        |
| Sun. 10:00 – 10:50 | Preventing craziness: a deep dive into OpenStack testing automation | Thierry Carrez         |
| Sun. 11:00 – 11:20 | ANSTE – Advanced Network Service Testing Environment                | Julio J. García Martín |
| Sun. 11:30 – 12:20 | cwrap – The libc wrapper project                                    | Andreas Schneider      |
| Sun. 12:30 – 13:20 | Standalone applications testing and automation                      | Vadim Rutkovsky        |
| Sun. 13:30 – 13:50 | Unicorns  | Florian Gilcher        |
| Sun. 14:00 – 14:50 | Automation in the Foreman Infrastructure                            | Greg Sutcliffe         |
| Sun. 15:00 – 15:50 | Using Gatling and Jenkins to Performance Test Puppet                | Brian Cain             |
| Sun. 16:00 – 16:50 | Pride and Prejudice: Testing in the PHP World                       | Sebastian Bergmann     |
| Sun. 17:00 – 17:30 | Jenkins developers/users birds of a feather                         |                        |

## Welcome to the Testing/Automation Devroom

Sun. 09:50 – 10:00

A quick introduction to the devroom.

## Preventing craziness: a deep dive into OpenStack testing automation

Thierry Carrez

Sun. 10:00 – 10:50

OpenStack is a large infrastructure software stack openly developed by hundreds of developers across the world, producing hundreds of changes per day. How do we stay sane, make sure this complex software stack works, and produce releases every 6 months like clockwork?

## ANSTE – Advanced Network Service Testing Environment

Testing Network Services in Multimachine Scenarios

Julio J. García Martín

Sun. 11:00 – 11:20

ANSTE is an open source tool designed to reproduce complex scenarios and simplify the execution of tests in several machines.

## cwrap – The libc wrapper project

Testing your full software stack

Andreas Schneider

Sun. 11:30 – 12:20

Testing network applications correctly is hard. This talk will show how to create a fully isolated network environment for client and server testing on a single host, complete with synthetic account information, hostname resolution, and privilege separation.

## Standalone applications testing and automation

Vadim Rutkovsky

Sun. 12:30 – 13:20

We are a group of engineers from Red Hat's Desktop QE team and we would like to discuss stand-alone application testing on Linux. During this workshop we'd like to show existing workflows of application testing, discuss testing tools, and overall influence of quality engineers on open source software development process.

## Unicorns

Testing Documentation

Florian Gilcher

Sun. 13:30 – 13:50

Ever struggled with outdated documentation which was possibly wrong to begin with? You test your components, you test the integration between services, but what about everything that you write about your software? There are approaches to testing documentation, but they are either cumbersome or too simple to be used at a larger scope. Having struggled with building an

approach to improve the quality of the technical documentation for Padrino.

## **Automation in the Foreman Infrastructure**

A user success story

**Greg Sutcliffe**

Sun. 14:00 – 14:50

A look at how Foreman uses automation internally to handle testing and release management.

## **Using Gatling and Jenkins to Performance Test Puppet**

Puppet Gatling

**Brian Cain**

Sun. 15:00 – 15:50

Puppet Gatling is a Jenkins-CI plugin that post-processes Gatling simulation data to generate useful reports for load-testing Puppet. With this tool, users are able to discover a clear difference in performance

between various versions of Puppet. Puppet Gatling is built upon open source tools such as the Gatling Jenkins plugin, Puppet, Cobbler, and Apache's Maven development tool.

## **Pride and Prejudice: Testing in the PHP World**

**Sebastian Bergmann**

Sun. 16:00 – 16:50

Join Sebastian Bergmann, the creator of PHPUnit, as he shares his experience on how PHPUnit is used in different communities and projects, and what has been learnt along the way.

## **Jenkins developers/users birds of a feather**

Sun. 17:00 – 17:30

Ad-hoc meeting of Jenkins developers and users in attendance at FOSDEM.

| Time               | Title  | Speaker(s)            |
|--------------------|--|-----------------------|
| Sun. 10:00 – 10:25 | Valgrind Support in the Eclipse IDE                  | Roland Grunberg       |
| Sun. 10:30 – 10:55 | Testing of valgrind RPMs in RHEL                     | Miroslav Franc        |
| Sun. 11:00 – 11:50 | SimuVEX  | Yan Shoshitaishvili   |
| Sun. 13:00 – 13:50 | Helgrind: a constraint-based data race detector      | Julian Seward         |
| Sun. 14:00 – 14:25 | Porting Valgrind on Solaris                          | Ivo Raisr, Petr Pavlu |
| Sun. 15:00 – 15:25 | GDB, so where are we now?                            | Pedro Alves           |
| Sun. 15:30 – 15:55 | Combining the power of Valgrind and GDB              | Philippe Waroquiers   |
| Sun. 16:00 – 16:25 | BoF: Valgrind and GDB integration                    | Tom Tromey            |
| Sun. 16:30 – 17:45 | BoF: Ideas, new features and directions for Valgrind | Mark Wielaard         |

## Valgrind Support in the Eclipse IDE

An Overview of the Eclipse Valgrind plugin provided by the Linux Tools Project

**Roland Grunberg** Sun. 10:00 – 10:25

For developers, it can often be a bit of a learning curve to learn the proper use of a new tool. For certain development tools the entry barrier can be quite high and can often discourage users. The Linux Tools Project aims to improve the state of C/C++ development on the Eclipse IDE by integrating popular tools, such as Valgrind.

This talk is aimed at people of varying experience with the Valgrind tool who have never used it within the Eclipse IDE.

## Testing of valgrind RPMs in RHEL

**Miroslav Franc** Sun. 10:30 – 10:55

Valgrind is a tool which can be used for testing but also needs to be tested itself as any other piece of software. This talk will focus on testing done before releasing a new Valgrind RPM in Red Hat Enterprise Linux.

## SimuVEX

Using VEX in Symbolic Analysis

**Yan Shoshitaishvili** Sun. 11:00 – 11:50

VEX, as part of Valgrind, is well-established in the world of dynamic analysis. However, there are certain questions that are best answered by symbolic analyses. In this talk I will describe the ideas behind symbolic ana-

lysis, detail challenges frequently faced when attempting to implement it, and introduce the work ongoing at UC Santa Barbara to use VEX to address these challenges, and implement a large-scale symbolic analysis system.

## Helgrind: a constraint-based data race detector

**Julian Seward** Sun. 13:00 – 13:50

This talk will present the basic algorithm, the metadata compression scheme, and the scheme for collecting both stacks of a race. I'd also like to talk about the relationship between this and "traditional" h-b implementations since both schemes have advantages and disadvantages.

## Porting Valgrind on Solaris

**Ivo Raisr, Petr Pavlu** Sun. 14:00 – 14:25

This talk describes a port of Valgrind to the Solaris operating system. It presents an introduction to the project, a current status of the project, porting difficulties stemming from differences between Linux and Solaris, testing of the port, and plans for the future. A brief introduction to the history of Solaris is included as well.

## GDB, so where are we now?

Status of GDB's ongoing target and run control projects

**Pedro Alves** Sun. 15:00 – 15:25

In this talk, I will present an overview of the current state of several GDB projects of interest to Valgrind developers looking at GDB/Valgrind integration, including the current state of GDBserver in GDB, where we are on local vs remote feature parity, all-stop vs non-stop modes, multi-process and multi-target projects, reverse debugging, and possibly others.

## Combining the power of Valgrind and GDB

**Philippe Waroquiers**

Sun. 15:30 – 15:55

This talk will describe basic and more advanced functionalities provided by the combination of GDB and Valgrind.

## BoF: Valgrind and GDB integration

Crazy and fun ways to make the Valgrind/GDB combo more powerful

**Tom Tromey**

Sun. 16:00 – 16:25

Given the current state of Valgrind and GDB how can we make things even better and smoother? Put some Valgrind and GDB hackers in the same room and let them discuss the technical details needed on each side. Come and help us brainstorm some crazy and fun ways to make the Valgrind/GDB combo even cooler and more powerful.

## BoF: Ideas, new features and directions for Valgrind

Open discussion about small (or big) ideas to improve or change Valgrind.

**Mark Wielaard**

Sun. 16:30 – 17:45

Valgrind developers and users are encouraged to participate either by submitting ideas/suggestions or by joining the discussion. And of course by kindly (or bitterly:) complain about bugs you find important that are **still Not YET** solved for **that** many years!?!@!!!

This devroom will present and foster collaboration between open source, openly-developed projects in the areas of virtualisation and IaaS type clouds (ranging from low level to data center, up to cloud management platforms and cloud resource orchestration).

| Time               | Title   | Speaker(s)         |
|--------------------|---|--------------------|
| Sun. 09:00 – 09:40 | News from the VirtualSquare World   | Renzo Davoli       |
| Sun. 09:40 – 10:20 | Virtualization in Android based and embedded systems                        | Dario Faggioli     |
| Sun. 10:20 – 11:00 | Getting cross-platform: bringing virtualization management to the PPC world | Omer Frenkel       |
| Sun. 11:00 – 11:40 | Ganeti: the New&Arcane  | Guido Trotter      |
| Sun. 11:40 – 12:20 | Expanding oVirt's horizons  | Mike Kolesnik      |
| Sun. 12:20 – 13:00 | oVirt Hosted Engine: The Egg That Hosts its Parent Chicken                  | Doron Fediuck      |
| Sun. 13:00 – 13:40 | Adventures with CloudStack and OpenDaylight                                 | Hugo Trippaers     |
| Sun. 13:40 – 14:20 | Tunnels as a Connectivity and Segregation Solution for Virtualized Networks | Assaf Muller       |
| Sun. 14:20 – 15:00 | Media redirection for Spice remote computing solution                       | Fedor Lyakhov      |
| Sun. 15:00 – 15:40 | How we ported FreeBSD to PVH  | Roger Pau Monné    |
| Sun. 15:40 – 16:20 | You have a Cloud, now What ?  | Sebastien Goasguen |
| Sun. 16:20 – 17:00 | Bring your virtualized networking stack to the next level                   | Mike Kolesnik      |

## News from the VirtualSquare World

**Renzo Davoli**

Sun. 09:00 – 09:40

VirtualSquare community has created a number of tools for virtuality: VDE, View-OS, PureLibC, LWIPv6, etc. An entire new generation of our tools is being designed. This seminar will provide a preview on new developments and new features.

## Virtualization in Android based and embedded systems

Can you run Xen on your phone or car?

**Dario Faggioli**

Sun. 09:40 – 10:20

Embedded systems are becoming powerful enough that virtualization is now both possible and interesting. Xen, as a very tiny microkernel based hypervisor looks like a very good fit for the embedded environment, not to mention that it has been ported to ARM with the number of supported boards in constant increase.

## Getting cross-platform: bringing virtualization management to the PPC world

**Omer Frenkel**

Sun. 10:20 – 11:00

This talk will cover: a short intro to ovirt; a bit about the code contribution effort by eldorado.org research center that made this happen; design consideration of multi arch support - objectives and constraints; basic flow for provisioning PPC enabled clusters; and some code, config files etc to demonstrate what ties it up altogether.

Target audience: Whoever is interested in data-center virtualization in general, ovirt-engine specifically, and PPC support.

## Ganeti: the New&Arcane

The best known secrets that can help your deployment

**Guido Trotter**

Sun. 11:00 – 11:40

New or unknown Ganeti functionality. We will discuss: monitoring daemon; confd; network management; and ext storage.

## Expanding oVirt's horizons

How to extend and modify oVirt even further

**Mike Kolesnik**

Sun. 11:40 – 12:20

As the prominent open-source data center virtualization



solution, oVirt has many features that help you virtualize data center and cloud offerings. Sometimes a feature might be needed to extend oVirt's capabilities, but even though oVirt is open source, you might want to provide a quick and dirty solution..

Mike Kolesnik from Red Hat will show you how you can extend oVirt's capabilities with ease throughout the oVirt stack - UI, engine and host.

Developers are welcome to join us in this session to learn how you can leverage oVirt to suit your virtualization needs.

## **oVirt Hosted Engine: The Egg That Hosts its Parent Chicken**

**Doron Fediuck**

Sun. 12:20 – 13:00

For several years now, oVirt has managed Virtual Machines. Then came the question: can you run oVirt inside a VM, which in turn will be managed by the hosted oVirt? In this session we'll look at the intricacies of an egg hosting it's parent chicken. We'll cover the various aspects starting with installation, going through standard operations, and ending with high-availability for the hosted engine. Participants will be able to get insights of this unique setup, which will save them a physical server (or even two) while allowing standard flows to run the same way they did in the past years.

## **Adventures with CloudStack and OpenDaylight**

**Hugo Trippaers**

Sun. 13:00 – 13:40

I've been involved with CloudStack as a project management committee member and I have been focusing mainly on the software defined networking implementations. When the OpenDaylight project started to become more popular integration between OpenDaylight and CloudStack was soon something on my wish list. This talk is about my journey to get support of OpenDaylight into the CloudStack project. This talk is partially about the technical implementation is getting the code bases to work together, but also on how ideas on implementation needs to be aligned between project for any interoperation to become a success.

The intended audience for this talk is developers who are interested in software defined networking or who are interested in hearing about some of the cross project hurdles one might have to cross when doing an integration.

## **Tunnels as a Connectivity and Segregation Solution for Virtualized Networks**

**Assaf Muller**

Sun. 13:40 – 14:20

Join me for an architectural, developer oriented overview of (GRE and VXLAN) tunnels in OpenStack Networking.

## **Media redirection for Spice remote computing solution**

Project Melange: optimizing media stream processing for media players and VoIP clients in virtual desktop infrastructures

**Fedor Lyakhov**

Sun. 14:20 – 15:00

Outline:

Common media processing use cases; Red Hat Spice overview; Description of media stream processing problem in VDI; Media redirection concept description; Media redirection prototype description and demo; Feature evolution plan.

Discussion topics:

Architecture & design considerations (Apache Thrift vs D-Bus); New Spice APIs for virtual channels and overlay rendering; Fault-tolerance practices (crash, disconnect).

## **How we ported FreeBSD to PVH**

A description of PVH and how to port an OS to it

**Roger Pau Monné**

Sun. 15:00 – 15:40

Xen has recently gained a new guest type called PVH and it can run as both DomU and Dom0. This talk will focus on the architecture of PVH and the interface exposed to guest OSes in order to run under this mode.

Also, examples will be provided about how we ported FreeBSD to run under this new virtualization mode.

## **You have a Cloud, now What ?**

**Sebastien Goasguen**

Sun. 15:40 – 16:20

You have a Cloud, now what? In the last few years we have seen many presentations focused on how to build IaaS clouds. However very few, if any, actually tackle the issue of how to use a Cloud once you are done building it. In this presentation will look at key open source software that form the cloud ecosystem and are used to make use of a working cloud. Specifically we will review software like apache libcloud, jclouds, delatcloud, hadoop. We will also review the state of configuration management systems and their support for IaaS cloud software. We will go beyond talking about Cloud APIs and focus on API wrappers and how they are used to automate provisioning of virtual infrastructure within IaaS deployments.

## **Bring your virtualized networking stack to the next level**

**oVirt & OpenStack Neutron integration**

**Mike Kolesnik**

Sun. 16:20 – 17:00

As the prominent open-source data center virtualization solution, oVirt relies on a powerful and easy approach to configuring a data center's network. By leveraging the advanced network capabilities offered by OpenStack Networking, oVirt's maintainers aim to bring this field even further, allowing data center administrators to use advanced networking capabilities while maintaining the simplicity of oVirt's network management approach.

Developers & Users are welcome to join us in this session, and to discover how oVirt currently leverages OpenStack Networking, and see the road-map to future network virtualization in the Data Center, all using open source enterprise-grade software.

Wine is an LGPL implementation of the Windows API for Unix systems. It allows users to run Windows programs on Linux and Mac systems, and software developers to easily port Win32 applications to Unix systems.

This developer room is a good place to learn more about the Wine ecosystem and to meet the core developers. There are plenty of ways to contribute to Wine, and we're a merry bunch. Come join us and learn why Alexandre is the most friendly of the pit vipers!

Social planning for Wine is usually at the last minute on the wineconf mailing list (<http://www.winehq.org/mailman/listinfo>)

| Time               | Title   | Speaker(s)                        |
|--------------------|---|-----------------------------------|
| Sun. 09:00 – 09:30 | State of Wine   | Alexandre Julliard                |
| Sun. 09:30 – 10:30 | Pipelight – Netflix and more via Wine                                       | Michael Müller, Sebastian Lackner |
| Sun. 10:30 – 11:30 | The User Experience   | Rosanne DiMesio                   |
| Sun. 11:30 – 12:00 | The Amazing Wine Test Framework   | Jeremy White, François Gouget     |
| Sun. 12:00 – 13:00 | Wine BOF  |                                   |
| Sun. 13:00 – 14:00 | Wine on Android   | Alexandre Julliard                |
| Sun. 14:00 – 15:00 | Performance of Wine and Common Graphics Drivers                             | Stefan Dösinger                   |
| Sun. 15:00 – 15:30 | Direct3D Q&A  | Henri Verbeet                     |
| Sun. 15:30 – 16:10 | Win-builds and Mingw-w64: Package manager and modern toolchains for Windows | Adrien Nader                      |

## State of Wine

**Alexandre Julliard**

Sun. 09:00 – 09:30

This talk will present a quick summary of the current state of Wine and of the plans for the upcoming 1.8 release.

## Pipelight – Netflix and more via Wine

**Michael Müller, Sebastian Lackner**

Sun. 09:30 – 10:30

This talk will discuss how Pipelight combines Wine with native Linux code to run Windows NPAPI plugins such as Silverlight, Flash, and Unity3D in Linux browsers.

## The User Experience

**Rosanne DiMesio**

Sun. 10:30 – 11:30

Report and discussion of issues that impact Wine users.

## The Amazing Wine Test Framework

**Jeremy White, François Gouget** Sun. 11:30 – 12:00

This event will briefly describe the amazing Wine unit test framework, along with the full Windows Test Bot.

It will amaze you so much that you will joyfully leap up to answer our resounding cry for help. This is a particularly good opportunity for Windows developers to help the Wine project.

## Wine BOF

Wine birds of a feather sessions

Sun. 12:00 – 13:00

Wine Birds of a Feather gathering.

## Wine on Android

**Alexandre Julliard**

Sun. 13:00 – 14:00

This talk will present the goals and the current status of the Android version of Wine, and explain some of the technical challenges involved in running Windows applications on Android devices.

## Performance of Wine and Common Graphics Drivers

**Stefan Dösinger**

Sun. 14:00 – 15:00

Last year I gave a presentation about the 3D performance of Wine and various GPU drivers. This talk will

review the changes made to Wine and Mesa and their performance improvements.

## **Direct3D Q&A**

**Henri Verbeet**

Sun. 15:00 – 15:30

Ask wine3d developers questions, and they'll try to answer them.

## **Win-builds and Mingw-w64: Package manager and modern toolchains for Windows**

Setup your development environment in less than 5 minutes

**Adrien Nader**

Sun. 15:30 – 16:10

Building for Windows is not the pain it used to be. This talk is an introduction to the history, philosophy, and current status of the two FOSS projects mingw-w64 and win-builds which, when combined, offer a package manager and up-to-date toolchains and packages for Windows.

Lightning talks are short and focused talks on a wide variety of Open Source topics.

The goal is to showcase projects which do not fit into a specific main track or developer room. Speakers get exactly fifteen minutes to present their project or any aspect of it, including questions.

All lightning talks are scheduled in a large auditorium seating approximately 300 people.

## Lightning talks, Saturday

| Time               | Title   | Speaker(s)                 |
|--------------------|---|----------------------------|
| Sat. 12:55 – 13:00 | Lightning Talks opening   | Tias Guns, Alasdair Kergon |
| Sat. 13:00 – 13:15 | Why You Should Be an Open Source Project  | Carol Huang                |
| Sat. 13:20 – 13:35 | Entangle: Tethered Camera Control & Capture   | Daniel Berrange            |
| Sat. 13:40 – 13:55 | How to Build a Tizen Device at Home?  | Leon Anavi                 |
| Sat. 14:00 – 14:15 | Armstrong – Music with the Arduino — No shields required!   | Steven Goodwin             |
| Sat. 14:20 – 14:35 | Do It Yourself OSHW Linux Computer  | Tsvetan Usunov             |
| Sat. 14:40 – 14:55 | Open Source Backup: from Bacula to Bareos — Forking to develop new features and reanimate the community   | Philipp Storz              |
| Sat. 15:00 – 15:15 | The Linux kernel on dragon wings — Compiling the Kernel with LLVM/clang                                   | Jan-Simon Möller           |
| Sat. 15:20 – 15:35 | Software engineering tools based on syscall instrumentation   | Cédric Vincent             |
| Sat. 15:40 – 15:55 | Listaller — A simple and secure way to distribute 3rd-party applications                                  | Matthias Klumpp            |
| Sat. 16:00 – 16:15 | An overview of Sozi — SVG-based zooming presentation software   | Guillaume Savaton          |
| Sat. 16:20 – 16:35 | MATE Desktop — The continuation of GNOME 2  | Stefano Karapetsas         |
| Sat. 16:40 – 16:55 | Discover DoudouLinux live!  | Jean-Michel Philippe       |
| Sat. 17:00 – 17:15 | MyKolab.com: Free Software to the Rescue — Business collaboration platform turned privacy asylum          | Georg Greve                |
| Sat. 17:20 – 17:35 | Jitsi Videobridge and WebRTC — The life of a rich communications client in Webland                        | Emil Ivov                  |
| Sat. 17:40 – 17:55 | VMUX: P2P plugin-free videocalls in your browser — WebRTC powered videocalls                              | Mauro Pompilio             |
| Sat. 18:00 – 18:15 | Distributed VoIP Platforms — OpenSIPS at the core of a distributed and fully redundant VoIP platform      | Vlad Paiu                  |
| Sat. 18:20 – 18:35 | Upipe video pipelines for multimedia transcoders, streamers and players — Flexible data flow framework    | Christophe Massiot         |
| Sat. 18:40 – 18:55 | Social and Real-time Web Applications using Meteor — Developing Real-time Web Apps in JavaScript on Linux | Anurag Bhandari            |

## Lightning talks, Sunday

| <b>Time</b>        | <b>Title</b>   | <b>Speaker(s)</b>          |
|--------------------|--|----------------------------|
| Sun. 10:00 – 10:15 | python-netsnmpagent – Writing net-snmp AgentX subagents in Python — Implementing custom MIBs made easy   | Pieter Hollants            |
| Sun. 10:20 – 10:35 | Linux Configuration Collector — cfg2html   | Gratien D’haese            |
| Sun. 10:40 – 10:55 | BibOS Admin – a web-based, easy to use admin system for Ubuntu — Because Landscape is too expensive  | Carsten Agger              |
| Sun. 11:00 – 11:15 | What’s New in a Project? — Or: How We Do Regular Development Reports in KDE Commit Digest  | Marta Rybczynska           |
| Sun. 11:20 – 11:35 | Project development & community metrics for fun and profit — How and why to use *Grimoire for analyzing projects   | Jesus M. Gonzalez-Barahona |
| Sun. 11:40 – 11:55 | LSB, LANANA, FHS, LSB 5, LF, RPM5 — attack of the acronyms   | Russ Herrold               |
| Sun. 12:00 – 12:15 | Babelfish for DevOps: syslog-ng  | Peter Czanik               |
| Sun. 12:20 – 12:35 | Blare: policy-based intrusion detection systems — Blare can track information flows in the linux kernel, android and the JVM   | Guillaume Brogi            |
| Sun. 12:40 – 12:55 | Mailvelope: OpenPGP for the browser  | Thomas Oberndörfer         |
| Sun. 14:00 – 14:15 | Identifying Hotspots in Software Build Processes   | Shane McIntosh             |
| Sun. 14:20 – 14:35 | Introducing the Meson build system — The fastest build system in the world   | Jussi Pakkanen             |
| Sun. 14:40 – 14:55 | Introduction to LAVA — Automation and validation for Linux on ARM  | Neil Williams              |
| Sun. 15:00 – 15:15 | Security model using Smack for embedded systems — Small but secure   | José Bollo                 |
| Sun. 15:20 – 15:35 | Web and mobile testing made awesome — with open source   | Bernard Kobos              |
| Sun. 15:40 – 15:55 | Community-Lab — Community-supported Service Provision and Network Experimentation  | Ivan Vilata-i-Balaguer     |
| Sun. 16:00 – 16:15 | Advanced disk image management with libguestfs — libguestfs, virt-builder, virt-sparsify and more  | Richard Jones              |
| Sun. 16:20 – 16:35 | Ceph — a fully open source distributed object store, network block device, and file system designed for reliability, performance, and scalability from terabytes to exabytes | Sebastien Han              |
| Sun. 16:40 – 16:55 | The SAML protocol — Single Sign On in the cloud  | Clément Oudot              |
| Sun. 17:00 – 17:15 | Putting the PaaS in OpenStack — update on cross community collaboration: OpenStack, OpenShift, Heat, Nova, Docker, Solum – oh my!  | Diane Mueller              |
| Sun. 17:20 – 17:35 | Your Complete Open Source Cloud — Mixing oVirt, OpenStack, OpenShift and Gluster for a full private cloud  | Dave Neary                 |

# Certification

Please note that in order to take part in these exams you need to have registered beforehand!

## BSDCG Team

### Saturday – UA2.220 (Guillissen)

| Time               | Title              | Speaker(s) |
|--------------------|--------------------|------------|
| Sat. 12:00 – 14:00 | BSDCG Exam Session | BSDCG Team |

## LPI Team

### Saturday – UA2.220 (Guillissen)

| Time               | Title              | Speaker(s) |
|--------------------|--------------------|------------|
| Sat. 14:00 – 15:45 | LPI Exam Session 1 | LPI Team   |
| Sat. 16:00 – 17:45 | LPI Exam Session 2 | LPI Team   |

### Sunday – UA2.220 (Guillissen)

| Time               | Title              | Speaker(s) |
|--------------------|--------------------|------------|
| Sun. 10:30 – 12:15 | LPI Exam Session 3 | LPI Team   |
| Sun. 13:00 – 14:45 | LPI Exam Session 4 | LPI Team   |
| Sun. 15:00 – 16:45 | LPI Exam Session 5 | LPI Team   |

# Stands

Projects will have stands throughout the hallways. Visit your favourite project's stand, see a demo, buy merchandise, get goodies, and more. Then go visit the other stands and learn new things.

| <b>Building AW</b>           | <b>Building K level 1</b> | <b>Building K level 2</b>  |
|------------------------------|---------------------------|----------------------------|
| BSD                          | CAcert & secure-u         | Apache OpenOffice          |
| CoreBoot & Flashrom          | CentOS                    | Bareos                     |
| MAGEEC                       | Debian                    | CONFINE                    |
| mbed                         | Enlightenment             | DoudouLinux                |
| OLinuXino & Hackable Devices | Fedora Project            | Eclipse                    |
| OpenEmbedded                 | FSFE                      | ElasticSearch              |
| OpenPandora                  | GNOME                     | JBoss                      |
| PostgreSQL                   | Google Summer of Code     | Jenkins                    |
| Wikimedia                    | KDE                       | Jitsi                      |
|                              | Libre Graphics Magazine   | Kolab, MyKolab & Roundcube |
|                              | Mageia                    | LibreOffice                |
|                              | Mozilla                   | MySQL community            |
|                              | OpenMandriva              | Perl community             |
|                              | OpenShift Origin          | Puppet                     |
|                              | OpenStack                 | Python                     |
|                              | OpenStreetMap             | XMPP                       |
|                              | openSUSE                  |                            |
|                              | OSGeo                     |                            |
|                              | oVirt                     |                            |
|                              | Xen.org                   |                            |

# Announcement corner

This is the place to be for all sorts of announcements, including adverts and leaflets of software releases, community projects, and so on. Adverts may not be placed anywhere else on campus! Handing out flyers is likewise not allowed.

In the "job corner" section, information on employment or contracting opportunities can be found.

The corner is at the end of the main corridor in the H building, near the lower entrance.

Some common sense rules apply. Everything must be related to Open Source software. If in doubt, ask a member of staff.



# Sponsors

## Cornerstone sponsor

**Red Hat** is the world's leading provider of open source software solutions, using a community-powered approach to reliable and high-performing cloud, Linux, middleware, storage and virtualization technologies. Red Hat also offers award-winning support, training, and consulting services. As the connective hub in a global network of enterprises, partners, and open source communities, Red Hat helps create relevant, innovative technologies that liberate resources for growth and prepare customers for the future of IT. Learn more at <http://www.redhat.com/>.

Red Hat supports FOSDEM financially.

## Main sponsors

**Cisco** enables people to make powerful connections—whether in business, education, philanthropy, or creativity. Cisco hardware, software, and service offerings are used to create the Internet solutions that make networks possible—providing easy access to information anywhere, at any time.

Cisco provides FOSDEM's wireless network and supports its operation.

**Colt** is the information delivery platform, enabling its customers to deliver, share, process and store their vital business information. An established leader in delivering integrated computing and network services to major organisations, midsized businesses and wholesale customers, Colt operates a 22-country, 43,000km network that includes metropolitan area networks in 39 major European cities with direct fibre connections into 18,000 buildings and 20 carrier neutral Colt data centres.

In 2010, the Colt Data Centre Services business was launched to deliver innovative high quality data centre solutions at a Colt or customer site.

In addition to its direct sales capability, Colt has four indirect channels to market; Agent, Franchise, Distributor and Wholesale which includes Carriers, Service Providers, VARs and Voice Resellers.

Information about Colt and its services can be found at <http://www.colt.net/>.

Colt sponsors Internet connectivity at FOSDEM.

**ElasticSearch** is on a mission to make massive amounts of data usable for everyone, everywhere by delivering the world's most advanced search and analytics engine available. With a laser focus on achieving the best user experience imaginable, the Elasticsearch ELK stack—comprised of Elasticsearch, Logstash, and Kibana—has become one of the most popular and rapidly growing open source solutions in the market. To learn more, visit <http://elasticsearch.com/>.

Elasticsearch supports FOSDEM financially.

**Google's** innovative search technologies connect millions of people around the world with information every day. Founded in 1998 by Stanford Ph.D. students Larry Page and Sergey Brin, Google today is a top web property in all major global markets. Google's targeted advertising program, which is the largest and fastest growing in the industry, provides businesses of all sizes with measurable results, while enhancing the overall web experience for users. Google is headquartered in Silicon Valley with offices throughout North America, Europe, and Asia.

Google supports FOSDEM financially.

**HP**, as the world's largest IT company, focuses on simplifying technology experiences for all its customers—from individual consumers to large enterprises. HP helps businesses focus on innovation instead of IT operations by offering robust solutions based on HP inventions, open source software, and industry-standard hardware in a converged infrastructure.

HP supports FOSDEM financially.

With over 110 million registered players, **InnoGames** is one of the worldwide leading developers and publishers of online games. Currently, 300 people from 22 nations are working in the Hamburg-based headquarters. Here community management, development and system administration work seamlessly together. This, combined with close contact to our players, creates a strong foundation that promotes the continued improvement of our games.

All of InnoGames' online games are free to play without restrictions or time limits. Players have the option to purchase premium accounts or items that offer additional advantages in the games. InnoGames strives to make sure that all players, regardless of standard or premium account, have the opportunity to experience optimal gaming gratification. If you would like to join the team, please find more information on <http://corporate.innogames.com/en/home.html>.

InnoGames supports FOSDEM financially.

The **Linux Professional Institute** (LPI) is an internationally recognised, vendor-independent organisation advocating and assisting the professional use of Linux, Open Source and Free Software, through the certification of Linux professionals. Established as a non-profit organisation in 1999, LPI is community based and supported. LPI's certification program is delivered worldwide in multiple languages at over 7,000 testing locations and is supported by an affiliate network spanning five continents. Since the programs inception, LPI has delivered over 300,000 exams and 100,000+ LPIC certifications around the world.

LPI offers exams with an almost 50% rebate to FOSDEM visitors and donates €10 per exam taken during the event.

The **Oracle** Technology Network is the world's largest community of application developers, database admins, system admins/developers, and architects using industry-standard technologies like Linux, MySQL, Java, and PHP in combination with Oracle products.

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**O'Reilly** are the premier information source for leading-edge computer technologies and communicate the knowledge of experts through our books, conferences, and web sites. Their books, known for their animals on the covers, occupy a treasured place on the shelves of the developers building the next generation of software. Their conferences and summits bring innovators together to shape the revolutionary ideas that spark new industries. From the Internet to the web, Linux, Open Source, and now peer-to-peer networking, O'Reilly puts technologies on the map.

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**Qualcomm**, a heritage of innovation. . .

Launched in 1985, a small company focused on "QUALity COMMunications" evolved into one of the telecommunications industry's greatest success stories. In 1989, Qualcomm demonstrated CDMA, a technology that changed wireless communications forever.

Qualcomm's support of the Eudora email program was an early demonstration of its commitment to open source software. In addition advances in CDMA and complementary technologies earned Qualcomm distinction as the world leader in 3G and 4G mobile broadband. Its ever-growing investment in R&D continues to drive the industry with new mobile breakthroughs.

Today, Qualcomm innovation is redefining mobility and empowering people to transform the way they live, learn, work and play.

Qualcomm supports FOSDEM financially.

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Samsung supports FOSDEM financially.

## A special thanks to...!

The **Université Libre de Bruxelles** is a French-speaking university in Brussels, Belgium. It has about 20,000 students. ULB has hosted FOSDEM (and OSDEM before it) since the beginning of time.

**Cercle Informatique, ULB** is a group of ULB students who help the FOSDEM team liaise with the university administration.

The **FOSDEM Team** spends a lot of free time throughout the year organising this great event. Without them there would be no FOSDEM.

**Last but not least:**

**Thank you to all the volunteers who help where needed during the event!**



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The InnoGames logo features a green lightbulb icon above the word "InnoGames" in a green, sans-serif font.

InnoGames



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## **Help us make FOSDEM better**

### **Tell us what you think!**

Tear off this page and drop it in the feedback box at the Infodesk on your way out.

Alternatively, send email to [feedback@fosdem.org](mailto:feedback@fosdem.org) if you prefer to keep your booklet intact.

Ideas, suggestions, comments, motivating words, criticism, . . . :

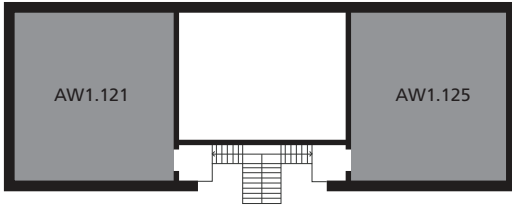
# Maps

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K building page 118

U building page 119

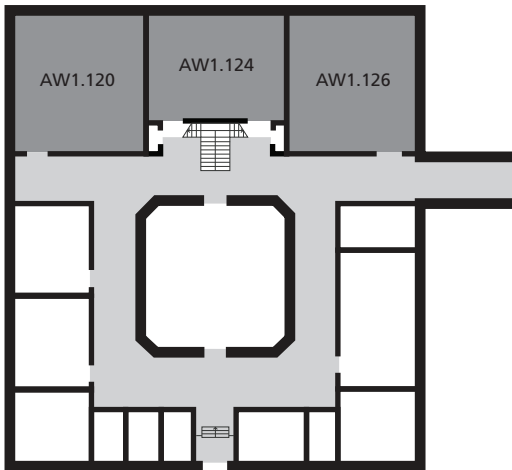


## Building AW upper level

### Developer rooms

**Saturday**  
**AW.1.121** BSD  
**AW.1.125** Games

**Sunday**  
**AW.1.121** Internet of Things  
**AW.1.125** Software-defined  
 Radio



## Building AW lower level

### Stands

BSD  
 Coreboot & Flashrom  
 MAGEEC  
 mbed  
 OlinuXino & Hackable Devices  
 OpenEmbedded  
 OpenPandora  
 PostgreSQL  
 Wikimedia

### Developer rooms

**Saturday**  
**AW.1.120** Wikis  
**AW.1.124** Hacker room  
**AW.1.126** HPC

**Sunday**  
**AW.1.120** Wine  
**AW.1.124** Hacker room  
**AW.1.126** Energy-efficient

MAIN  
 ENTRANCE

# Building H upper level

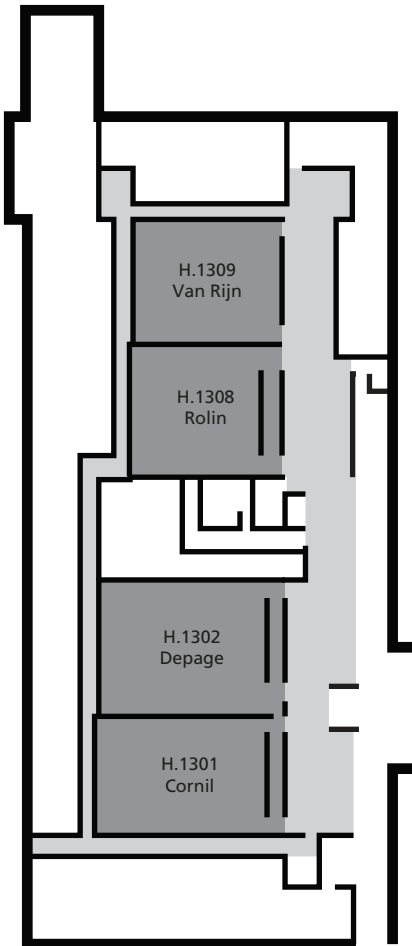
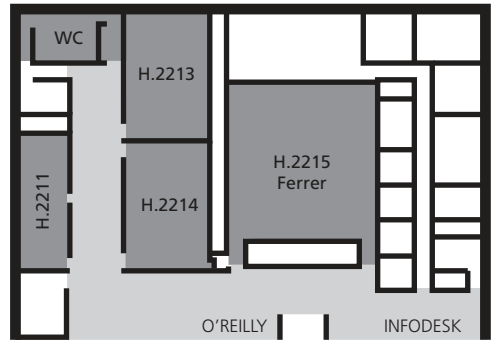
## Developer rooms

### Saturday

- H.2211 Hacker room
- H.2213 Legal and policy issues
- H.2214 Open document editors
- H.2215 Lightning talks

### Sunday

- H.2211 Hacker room
- H.2213 Legal and policy issues
- H.2214 Microkernels
- H.2215 Lightning talks



# Building H lower level

## Developer rooms

### Saturday

- H.1301 Graphics
- H.1302 Distributions
- H.1308 Desktops
- H.1309 Configuration mgmt.

### Sunday

- H.1301 Graphics
- H.1302 Distributions
- H.1308 Graph processing
- H.1309 Automotive

## Building K level 1

### Main tracks

#### Saturday

Mail  
Mathematics

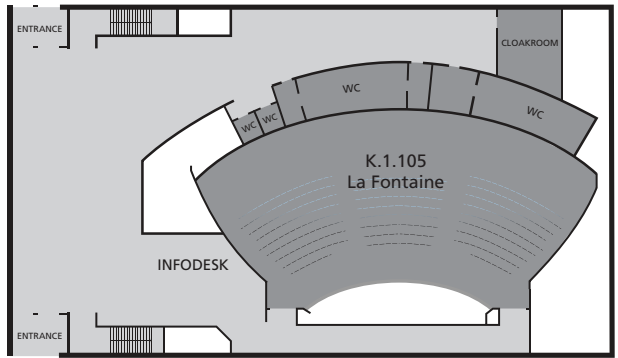
#### Sunday

Hardware  
IPv6  
Security

### Stands

CAcert & secure-u  
CentOS  
Debian  
Enlightenment  
Fedora Project  
FSFE  
GNOME  
Google Summer of Code  
KDE  
Libre Graphics Magazine

Mageia  
Mozilla  
OpenMandriva  
OpenShift Origin  
OpenStack  
OpenStreetMap  
openSUSE  
OSGeo  
oVirt  
Xen.org

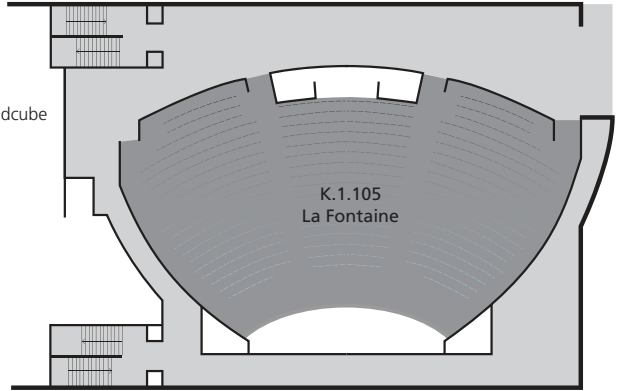


## Building K level 2

### Stands

Apache OpenOffice  
Bareos  
CONFINe  
DoudouLinux  
Eclipse  
ElasticSearch  
JBoss  
Jenkins

Jitsi  
Kolab, MyKolab, Roundcube  
LibreOffice  
MySQL community  
Perl community  
Puppet  
Python  
XMPP



## Building K levels 3 & 4

### Developer rooms

#### Saturday

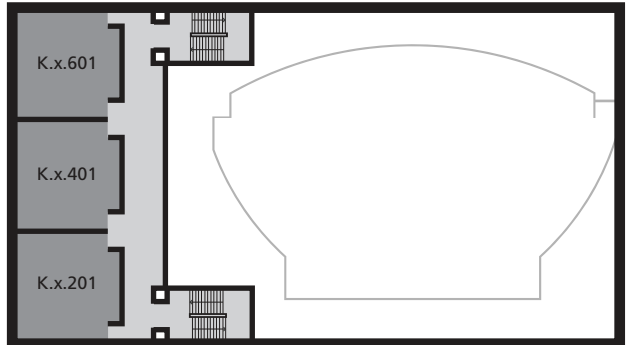
**K.3.201** Perl  
**K.3.401** PostgreSQL

**K.4.201** Java  
**K.4.401** Smalltalk  
**K.4.601** Ada

#### Sunday

**K.3.201** Python  
**K.3.401** JavaScript

**K.4.201** Valgrind  
**K.4.401** LLVM  
**K.4.601** Go





## Building U aisle D level 2

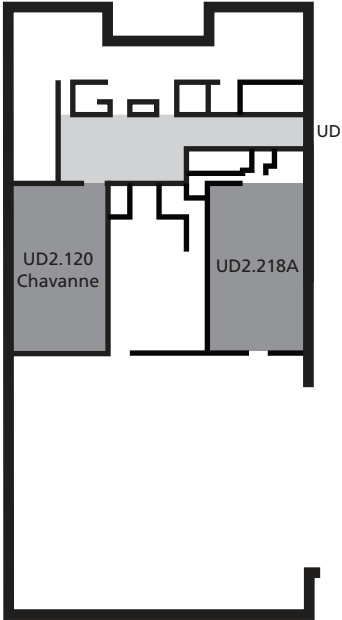
### Developer rooms

Saturday

**UD2.120** Virtualisation and laaS    **UD2.218A** Mozilla

Sunday

**UD2.120** Virtualisation and laaS    **UD2.218A** Testing and automation



## Building U aisle A level 2\*

### Developer rooms & exams

Saturday

**UA2.114** MySQL    **UA2.220** Certification exams

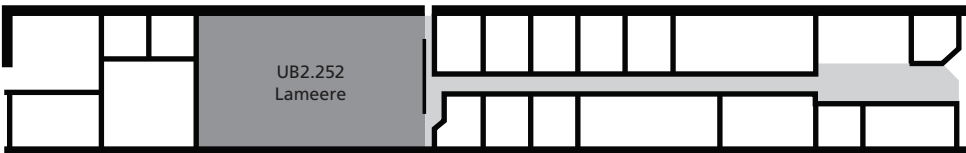
Sunday

**UA2.114** NoSQL    **UA2.220** Certification exams

Note: you must have registered with LPI/BSDCG to write exams.

\* Unfortunately we were unable to secure sufficiently accurate maps of aisle A of building U. Signage to the relevant rooms is provided.

## Building U aisle B level 2



### Developer rooms

Saturday

**UB2.252** Embedded

Sunday

**UB2.252** Embedded



**Supermarket**

Saturday 08:00–20:00  
Sunday 08:00–20:00



**Bank  
+ATM**



ATM

CHAUSSÉE DE BOONDAEL

**Supermarket**

Saturday 08:00–20:00



Bakery



Pharmacy

Saturday 09:00–12:00



Supermarket

Saturday 08:00–20:00  
Sunday 08:00–13:00

Chicken fast food

Saturday & Sunday



AV. GÉNÉRAL MÉDECIN DERACHE

Tobacco

Saturday 08:00–18:00



Pharmacy

Saturday 09:30–13:00

AV. ARMAND HUYSMANS

Bus



Tram



AV. ADOLPHE BUYL



**FOSDEM**

100 METRES

● Food

AV. FRANKLIN D. ROOSEVELT



▶ CITY CENTRE (~5 km)

▶ CITY CENTRE (~5 km)

AVENUE FRANKLIN D. ROOSEVELT



MAIN INFODESK

CAR PARK



H

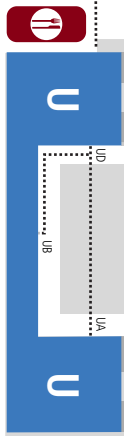
AW

AV. PAUL HEGER

AVENUE PAUL HEGER

TO CAR PARK

AVENUE ADOLPHE BUYL



U

UA

UB

UC



▶ SHOPS, FOOD, ETC...

