



```
static int
task_function_callback(struct task_struct *func) (void *info), void *info)
{
    struct remote_task_info *cal = info;
    .p = p,
    .func = func,
    .info = info,
    .ret = -ESRCH, /* No such (running) process */1 - disallow cpu events for unpriv
};

    static inline struct perf_cpu_context *
__get_cpu_context(struct perf_event_context *ctx)
{
    /* level: at all
     * tracepoint access for unpriv
     *      return this_cpu_ptr(ctx->pmu->pmu_cpu_context);
     *      2 - disallow kernel profiling for unpriv
     */
}
```

SCALE 10x	2012	Jan. 20-22	Hilton Los Angeles Airport
SCALE 9x	2011	Feb. 25-27	Hilton Los Angeles Airport
SCALE 8x	2010	Feb. 19-21	Westin Los Angeles Airport
SCALE 7x	2009	Feb. 20-22	Westin Los Angeles Airport
SCALE 6x	2008	Feb. 8-10	Westin Los Angeles Airport
SCALE 5x	2007	Feb. 9-11	Westin Los Angeles Airport
SCALE 4x	2006	Feb. 10-12	Radisson Hotel Los Angeles Airport
SCALE 3x	2005	Feb. 12-13	Los Angeles Convention Center
SCALE 2x	2003	Nov. 22	Los Angeles Convention Center
SCALE	2002	Dec. 2	USC Davidson Conference Center

Use the ↑ and ↓ keys to select which entry is highlighted. Press enter to boot the selected OS,'e' to edit the commands before booting, or 'c' for a command-line.

EVENT\_ALL = EVENT\_FLEXIBLE | EVENT\_PINNED,static void update\_context\_time(struct perf\_event\_context \*ctx);  
};  
static u64 perf\_event\_time(struct perf\_event \*event);  
/\*  
 \* perf\_sched\_events : >0 events exist  
 \* perf\_cgroup\_events: >0 per-cpu group events exist on this cpu  
 \*/  
static DEFINE\_PER\_CPU(int, perf\_sched\_events);  
static DEFINE\_PER\_CPU(int, perf\_group\_events);  
static DEFINE\_PER\_CPU(int, perf\_task\_events);  
static atomic\_t nr\_mmap\_events; \_\_read\_mostly; return "mmap";  
static atomic\_t nr\_comm\_events; \_\_read\_mostly;  
static atomic\_t nr\_task\_events; \_\_read\_mostly;  
static LIST\_HEAD(pmusers);  
static DEFINE\_MUTEX(pmusers\_lock);  
static struct srcu\_struct pmus\_srcu;

static inline void perf\_get\_cgroup(struct perf\_event \*event,  
 struct ring\_buffer \*rb);  
 css\_get(&event->cgrp->css);  
} \_\_weak void \_perf\_event\_print\_debug(void) { }  
static inline void perf\_put\_cgroup(struct perf\_event \*event)  
{  
 css\_put(&event->cgrp->css);  
}  
static inline void perf\_detach\_cgroup(struct perf\_event \*event)  
{  
 perf\_put\_cgroup(event);  
 event->cgrp = NULL;  
}





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SPECIAL PRESENTATION  
**Deploying OpenStack**

OpenStack is a collection of open source technologies delivering a massively scalable cloud operating system.

Come hear **Jesse Andrews** from Rackspace Cloud Builders present lessons learned from real OpenStack deployments in the field at Sony Computer Entertainment America and x.commerce.

DAY  
Saturday

TIME  
4:30 PM

ROOM  
La Jolla

# ACROSS YOUR UNIVERSE

Innovating at scale. A converged infrastructure for big data, cloud computing, and social / mobile connectivity.

<http://hp.com/go/linux>  
<http://hp.com/go/opensource>  
<http://developer.palm.go>



# Friday, January 20th Speaker Schedule

Time:	La Jolla	Los Angeles A	Los Angeles B	Los Angeles C	Century AB	Century CD	Marina	Bel Air	Catalina D
9:00am		Elizabeth Krumbach Getting involved with Ubuntu			Josh Drake Dumb Simple PostgreSQL Performance				Amber Graner Mentoring Moments: Creating Opportunities for Success
10:00am	Lee Thompson DevOps Day Keynote	Nathan Haines Ubucon Introductions and Lightning Talks	Paul Bokor Deep Packet Inspection Using Wireshark	N. Nadine Miller Technical Resume Writing	Matt Soldo PostgreSQL's Place in the New World Order	David Stokes MySQL Update	Carl Caum Puppet Master Training	Ross Brunson LPI Exam Cram - LPI-101	Larry Cafiero User Groups 2.1: Noob Morning in America
11:00am	Break	Break			Break	Break			Break
11:30am	Christopher Nolan nventory - Your Infrastructure's Source of Truth	Meet the Cloud			Jim Mlodgenski Scaling PostgreSQL Queries with Stado	Colin Charles The MySQL Storage Engines Landscape			Deb Nicholson Messaging Free Software
12:30pm	Break	Break			Break	Break			Break
1:30pm	DevOps Lightening Talks	The Future of Unity	Break	Break	Josh Berkus PostgreSQL Web Application Security	Lynn Ferrante Playing in the Same Sandbox: MySQL and Oracle	Break	Break	Joe Brockmeier All You Wanted to Know About Working with the Media (But Were Afraid To Ask)
2:30pm	Break	Break	Aleksey Tsalolikhin Time Management for System Administrators	Lee Damon NASes for the Masses	Break	Break	Jorge Castro juju Charm School	Ross Brunson LPI Exam Cram - LPI-102	Break
3:00pm	John Vincent Panel: Monitoring Sucks!	Nathan Haines Open Question and Answer Session			Deepak Murthy MySQL to Postgres Migration	Keith Larson MySQL Replication			Karsten Wade How to start and sustain an open source project of any size and scope
4:00pm	Mark Burgess 3 Myths and 3 Challenges to Bring System Administration out of the Dark Ages	Richard Gaskin Customizing Unity			Jennifer Scheuerell Hydra - Project Case Study	Max Mether A Closer Look at MySQL Cluster: An Architectural Overview			Garrett DAmore Experiences starting a new Operating Systems Project
5:00pm	John Willis DevOps Newly Wed Game					Colin Charles MariaDB: The New M in LAMP			Josh Berkus Should we get a Foundation?
5:30pm		Break			Break				
8:00pm	UpSCALE								

Sponsored

Ubucon

PostgreSQL

Mentoring

DevOps

ScaleU

MySQL

Break

UpSCALE

Fedora Activity Day is taking place from 9:00am-5:00pm in Catalina C.

Build a Cloud Day is taking place from 9:00am-5:30pm in Carmel.

## Dumb Simple PostgreSQL Performance

### Josh Drake

Designed for the non-DBA, Dumb Simple PostgreSQL Performance provides down to earth performance advice for users of the database who don't want to bother with the finer details usually assigned to a Database Administrator. The people who will get the most out of this talk are application developers, web developers and system administrators who have somehow also become a DBA.

## Mentoring Moments: Creating Opportunities for Success

### Amber Graner

Each of us bring unique experiences and abilities to a project and being aware of our strengths and weaknesses give each of us the ability to teach and learn from those around us. How many times have you heard someone say "I would be happy to teach or share with people but I don't have time"?

## DevOps Day Keynote

### Speaker: Lee Thompson

## Deep Packet Inspection Using Wireshark

### Mike Pennacchi

Sometimes using tools like PING and Traceroute aren't enough to isolate the cause of network problems. This class will take a hands-on approach to learning how to use the Wireshark protocol analyzer to analyze network traffic. Numerous examples will be used throughout the day to walk the attendees though the process of filtering out those packets that are working well and drilling to those that are at the root of the problem. Attendees will be provided with a CD containing open source network troubleshooting tools, as well as the trace files used in the class. Laptops are required

## Technical Resume Writing

### N. Nadine Miller

Technical Resume Writing covers the high points of overhauling your resume to receive better responses from the HR "gatekeepers" as well as potential IT managers and colleagues.

## PostgreSQL's Place in the New World Order

### Matt Soldo

Recent shifts in the tech world - including PasS, cloud-services, and NoSQL - have dramatically altered the manner in which software is written, deployed, and run. This talk will discuss how PostgreSQL fits into - and can potentially take advantage of - this world.

## MySQL Update

### David Stokes

MySQL is the database in the LAMP stack and there are many new features to be found in MySQL 5.5 and the MySQL 5.6 previews. From NoSQL access of data to connection pooling, the developers have been very busy to improve the product. This session will cover these new features, how to best take advantage of them, and what you will see in the future. If you run the MySQL database, you need to attend this session to learn how to make your systems faster and your life easier.

## User Groups 2.1: Noob Morning in America

### Larry Cafiero

With a wide variety of new users coming to Linux User Groups (LUGs) for help, LUGs are faced with a somewhat daunting task: The care and feeding of new users. Helping LUGs handle the influx of new users -- and also helping LUGs with outreach. These two facets of user groups -- helping others and doing outreach -- are vital to the success of FOSS. This presentation is a reprise of the talk "User Groups 2.0: Noob Morning in America" that I gave at SCALE 9X, with additional information regarding updates and a how-to in forming a LUG.

## Puppet Master Training

### Carl Caum

This training is ideal for those who want a Puppet jumpstart. Newer members at an organization already using Puppet, or experienced sysadmins wanting to bring Puppet into their team will get everything they need to deploy solutions. This course will be a compressed version of Puppet Labs 3 day course. Note: This class is part of the SCALE University Program and includes an additional fee.

## LPI Exam Cram - LPI-101

### Ross Brunson

Ross Brunson of LPI will host two half day exam cram sessions for LPI-101 and LPI-102 -- exams necessary for LPIC-1 certification. These sessions will assist exam candidates in preparing for the LPIC-1 exams. Exam cram sessions include information on exam structure, question types, and how to use practical experience and one's knowledge of Linux to determine the correct answers to exam questions. Participants in these exam cram sessions will also gain important tips, tricks and techniques in order to successfully complete and pass their LPI exams. Ross is an experienced presenter on this subject and welcomes all questions during his examcram sessions. \*Note: This class is part of the SCALE University Program and includes an additional fee.\*

## nventory - Your Infrastructure's Source of Truth

### Christopher Nolan, Darren Dao, Jeff Roberts

We will first provide an overview of the components a modern web infrastructure needs to scale. A central Source of Truth ties all of these things together and we'll demonstrate why, discussing some of the essentials and some of the potential pitfalls. Finally we will talk about how we solved the problem with nventory. This talk will be about 1/3 on why a SoT is important and how it fits into the big picture and the remaining 2/3 will specific to nventory and how it solves the problem.

<http://sourceforge.net/apps/trac/nventory>

## Scaling PostgreSQL Queries with Stado

### Jim Mlodgenski

Stado provides a powerful and flexible analytical environment allowing users to process large amounts of data using a shared-nothing, massively parallel processing (MPP) architecture with PostgreSQL and PostGIS. Data is automatically partitioned across multiple nodes and each node processes its subset of data allowing queries to be distributed across the cluster and run in parallel. This fully open source architecture allows database performance to scale linearly as servers are added to the cluster while appearing as a single database to applications.

## The MySQL Storage Engines Landscape

**Speaker: Colin Charles**

A unique selling point of MySQL is that it supports multiple storage engines, which basically means users get to use the same top-level SQL interface while storing their data in many different sorts of methods. There is a storage engine API that was well nurtured, and a myriad of companies continuing on with creating opensource & commercial storage engines, with the API being extended in forks like MariaDB. Which engine is right for your workload? Do you choose a mix or just stick with something default like MyISAM or InnoDB? This and more will be answered in the talk.

## Messaging Free Software

**Deb Nicholson**

It's easy to talk with people who already "get" you, but how do you open the conversation about free software with someone who's never heard of it? This talk is for people who are interested in refining their message and more effectively sharing their excitement about the free software movement.

## DevOps Lightening Talks

**Various**

A series of short presentations on DevOps related topics.

## PostgreSQL Web Application Security

**Josh Berkus**

Core team member Josh Berkus explains the basics of how to use database security to make your web application resistant to SQL injection and other forms of hacking.

## Playing in the Same Sandbox: MySQL and Oracle

**Lynn Ferrante**

Many MySQL users also use the Oracle database and other associated Oracle software. Oracle is integrating MySQL with many of its other software products. The Oracle product certifications and integrations will allow you to use a common set of tools for Oracle and MySQL databases as a data source or as a metadata repository using the same software. Some products have already been integrated, and others are in the works. The products I will cover include Oracle Goldengate, Secure Backup, Audit Vault, OVM, and Firewall as well as some middleware products.

## All You Wanted to Know About Working with the Media (But Were Afraid To Ask)

**Joe Brockmeier**

Whether you're an individual developer, working with an open source project, or working with a business that is involved in open source, odds are you could benefit from working well with the media. In this talk, I'll give an overview of what tech press do, what we look to cover, and how you can work with the media (or become the media) to benefit yourself, your project, and/or your company.

## Time Management for System Administrators

**Aleksey Tsalolikhin**

Based on Tom Limoncelli's life-saving book, this course will cover Tom's Cycle System. These time management tips and practices can greatly increase the efficiency of any single sysadmin, and when applied in a group their effects can be a quantum shift in productivity. They also give the sysadmin practitioner greater peace of mind and more power and control. Please remember to select the "SCALE University" addon at registration. \*Note: This class is part of the SCALE University Program and includes an additional fee.\*

## NASes for the Masses

**Lee Damon**

We will start with a review of the pros and cons of different base operating systems as well as off-the-shelf NAS servers (both hardware and software). We will look at the more popular RAID levels and the impacts of software vs. hardware RAID implementations, data reliability, and rebuild time. We'll spend some time exploring ZFS. Attention will be paid to backups and some of the more common protocols used for accessing data from a NAS server. Note: This class is part of the SCALE University Program and includes an additional fee.

## juju Charm School

**Jorge Castro, Clint Byrum**

juju Charm School is an event where a juju expert is available to answer questions about writing your own juju charms. The intended audience are people who deploy software and want to contribute charms to the wider devops community to make deploying in the public and private cloud easy. Though not required, we recommend that you have juju installed and configured if you want to get deep into the event. \*Note: This is a sponsored event by Canonical\*

## LPI Exam Cram - LPI-102

**Ross Brunson**

Ross Brunson of LPI will host two half day exam cram sessions for LPI-101 and LPI-102 -- exams necessary for LPIC-1 certification. These sessions will assist exam candidates in preparing for the LPIC-1 exams. Exam cram sessions include information on exam structure, question types, and how to use practical experience and one's knowledge of Linux to determine the correct answers to exam questions. Participants in these exam cram sessions will also gain important tips, tricks and techniques in order to successfully complete and pass their LPI exams. Ross is an experienced presenter on this subject and welcomes all questions during his examcram sessions. \*Note: This class is part of the SCALE University Program and includes an additional fee.\*

## Panel: Monitoring Sucks!

**John Vincent, Simon Jakesch, et. al**

This is DevOps Day, we clearly do not hate monitoring. Those metrics and measurements are a key part of management the informed decisions. Over the summer the DevOps community and the "Monitoring Sucks" project kicked off discussions about the current state of monitoring and where it needs to improve. At DevOps Day LA we will bring together DevOps community members and developers of monitoring software to discuss the current state of the art, what its missing, and what we as a community can do to fix it.

## **MySQL to Postgres migration**

**Deepak Murthy**

Many in the industry are looking for change from one database to another. There are multiple solutions to migrate from a MySQL to PostgreSQL database. mysql2pgsql Ruby gem is one that is open source, simple, and does successful migrations. It provides various options and a simple solution to migrate a MySQL database to PostgreSQL database.

## **MySQL Replication**

**Keith Larson**

MySQL Replication is a native feature of MySQL. This session will give a broad overview of replication within MySQL as well as a simple real world configuration example to get you started. We will then continue with a more of the MySQL Replication Features in MySQL 5.6.

## **How to start and sustain an open source project of any size and scope**

**Karsten Wade**

Learning what it takes to create and grow an open source project is trapped in the brains of many people. This session is going to open the brain of one person who will channel all the experience he has, all that he has learned in open source communities and working for Red Hat, in to taking the audience through how to start and sustain an open source project.

## **3 Myths and 3 Challenges to Bring System Administration out of the Dark Ages**

**Mark Burgess**

Mark Burgess, a provocative thinker about system administration since the 1990s, recently wrote a controversial blog about three ideas that he believes are holding the field of system administration in the past. In this talk he outlines those and chooses three themes everyone should have in mind to accelerate the future of the field: business integration, knowledge management, and emergent design to handle complexity. These are a part of the DevOps movement, but have people really thought through the issues?

## **Hydra - A Project Case Study**

**Jennifer Scheuerell**

Hydra is a PostgreSQL / Django / GeoDjango / Plone solution that provides data processing, management, and sharing to fisheries researches studying movement of aquatic animals using acoustic telemetry. Hydra began as a solution for a single research group in Puget Sound and has grown to now extend along the west coast of North America with researchers from 30 different government agencies, academic institutions, tribes and tribal associations, and both non and for profit companies.

## **A Closer Look at MySQL Cluster: An Architectural Overview**

**Max Mether**

MySQL Cluster is tightly linked to the MySQL server, yet it is a separate product. Due to its distributed nature, MySQL Cluster has a far more complicated architecture than a standard MySQL database. This presentation will describe the internal architecture of the MySQL Cluster product and how the process and data flow takes place between the nodes of the cluster.

## **Experiences starting a new Operating Systems Project**

**Garrett DAmore**

The illumos project is now over a year old, and has grown at a remarkable rate since we first announced it. We will do a brief review of where we came from, and where we hope to go. We will review some of the challenges we have faced, how we have dealt with them, and also talk more about the challenges that remain.

## **DevOps Newly Wed Game**

**John Willis**

How well do yours Dev and Ops teams know each other? Join us for the DevOps Newly Wed and find out!

## **MariaDB: The New M in LAMP**

**Colin Charles**

MariaDB is a branch of the popular MySQL database. The project began in 2009 circled around a storage engine, but quickly evolved to being another database, with two major releases in 2010. This session aims to introduce the project, and will help and DBA or developer get to grips with MariaDB. MariaDB is community developed, feature enhanced and backward compatible with MySQL.

## **Should we get a Foundation?**

**Josh Berkus**

Has your open source project grown to the point where you need a legal structure for it? Do you need somewhere to put trademarks, domains, funds, servers and copyrights so that they won't belong to individual contributors? Learn about your options for incorporation in this session.

# Saturday, January 21st

## Speaker Schedule

Time:	La Jolla	Carmel	Los Angeles A	Los Angeles B	Century AB	Century CD	Bel Air	Catalina D	Expo
10:00am	<b>Greg DeKoenigsberg</b> Keynote: Amazon and the Future of the Open Cloud						<b>Elizabeth Krumbach</b> Bringing Linux into Public Schools and Community Centers		
11:00am	Break								
11:30am	<b>Kyle Rankin</b> Practice Penetration Testing on Your Home Router	<b>Daniel Greenfeld</b> Intro to Python	<b>Jacob Shucart</b> Replacing Your Proprietary Scale-out NAS with GlusterFS	<b>Quim Gil</b> The Qt Project and the relevance of open development	<b>Brendan Gregg</b> Performance Analysis: New Tools and Concepts from The Cloud	<b>David Kavanagh</b> Installing Eucalyptus: Past, Present, and Future	<b>Carol Bigeno</b> Sugar! SoaS Brings This Sweet Educational Software To Almost Any Computer	<b>Mimi Cafiero</b> Ultimate Boredom 2.0	
12:30am	Break								
1:30pm	<b>John Mark Walker</b> Introducing the Open Cloud Initiative	<b>Ron Toland</b> Getting Started with Git	<b>der hans</b> nginx: Proxy Your Web Servers for Better Performance	<b>Colin Charles</b> The MySQL Diaspora	<b>Chris Mason</b> Btrfs	<b>Jim Garrison</b> Wikiotics: an interactive wiki for language teachers and students	<b>Dana Ross</b> Using Open Source Software for the Media Professional and Educators	<b>Katia Jenkins-Brown</b> Tux Paint Demo Cat Allman Overview of Google Summer of Code	
2:30pm	Break								
3:00pm	<b>Jonathan Thomas</b> Create Stunning Videos with OpenShot!	<b>Philippe Robin</b> Consolidating Linux and Open Source Projects on ARM	<b>Clint Byrum</b> Juju - DevOps Distilled	<b>Larry Cafiero</b> On Beyond Zenwalk	<b>Tully Foote</b> Linux Based Personal Robotics	<b>Thomas Stocking</b> Cloud Computing for Small Business	<b>Abe Kazemzadeh</b> OLPC for Middle School After-School Programs	<b>Philip Ballew</b> Getting involved in open source at a young age	
4:00pm	Break								
4:30pm	<b>Jesse Andrews</b> State of the OpenStack	<b>Alan Kasindorf</b> Modern Memcached	<b>Christer Edwards</b> Remote Execution Management with Salt	<b>Bradley Kuhn</b> 12 Years of FLOSS License Compliance: A Historical Perspective	<b>Bryan Smith</b> Pandaboard: Embedded Linux Extravaganza	<b>Kris Moore</b> Introduction to PC-BSD 9	<b>Sebastian Dziallas</b> Undergraduate Education Strategies	<b>SCALE TNG</b> Scavenger Hunt	
5:30pm	Break								
6:00pm	Panel: Open Source Operating Systems	<b>Lars Kurth</b> Xen in the Cloud	<b>Alison Chaiken</b> Automotive: the Next Frontier for Mobile Linux	<b>Deb Nicholson</b> Software Patents: What You Can Do	<b>Gordon Ross</b> FUSE with In-Kernel Meta-Data Caching	<b>David Stokes</b> Care and Feeding of a MySQL database for Linux Administrators		<b>SCALE TNG</b> Open Demonstrations	
8:00pm	Weakest Geek								

**Keynote**   **Open Source Software in Education**   **General**   **Developer**   **SysAdmin**   **Kernel**   **Cloud and Virtualization**   **Youth**   **Break**   **UpSCALE**

**Linux Beginner Training - Day 1** is taking place from 10:00am-6:30pm in Marina.

The Schedule of events is subject to change without prior notification.

### Keynote: Amazon and the Future of the Open Cloud

**Greg DeKoenigsberg**

Amazon Web Services is the dominant public cloud provider in the industry. And for good reason: they make it dead simple to get up and running in the cloud. Lock-in risks in the public cloud world, though, are enormous: what alternatives will users have if, for whatever reason, they decide that Amazon services are no longer for them? How do we leverage the freedom of choice provided by open source in a cloud world that is increasingly dominated by a single entity?

## **Practice Penetration Testing on Your Home Router**

**Kyle Rankin**

While it is fun to learn how to hack, sometimes it's tough to practice your skills without breaking any laws. It turns out if you have any consumer devices on your local network, you already have everything you need to practice penetration testing. In this talk I will discuss my experience with the Dlink DIR-685 Wireless N router and how with just a few basic skills I was able to find multiple exploits, including one that gave me root, all through the web interface. As I describe the attacks I'll demonstrate the exploits with a live demo.

## **Intro to Python**

**Daniel Greenfeld**

Python is often considered a "new" scripting language but has been around for over 20 years. This talk will go over who uses Python, how Python is similar and different to other languages, core concepts of Python, basic language constructs, live code examples, web framework overview, the Python Package Index, the Southern California Python community, and will finish up with some of the more exciting and interesting contributions and efforts of the Python community.

## **The Qt Project and the relevance of open development**

**Quim Gil**

Qt is a cross-platform application and UI framework used by thousands of companies for multiple industries and types of devices, from traditional desktops to mobile and embedded devices. Created by Trolltech in 1992 and acquired by Nokia in 2008, nowadays the Qt Project is run by a non-profit organization open to all contributors. In the past years the use of Qt has increased at all levels, and now the open development setup is allowing the Qt Project to advance wider and faster. <http://qt-project.org> is the home of this collaborative effort.

## **Replacing Your Proprietary Scale-out NAS with GlusterFS**

**Jacob Shucart**

GlusterFS is an open source, software-only, highly available, scalable, distributed storage system for modern data centers. GlusterFS is one way for public, private and hybrid cloud environments to scale their data storage capacity to hundreds of petabytes, and across multiple geographic locations. Learn how Pandora users GlusterFS to scale out their file serving operation around the globe.

## **Bringing Linux into Public Schools and Community Centers**

**Elizabeth Krumbach**

With examples taken from the work of Partimus and educators in the San Francisco Bay Area who are working to bring F/OSS solutions into public schools, this talk will cover the challenges faced by the organization from getting into schools to coming up with a scalable technological solution to problems in various environments, dealing with administrative challenges, and how to work with busy teachers.

The solutions that the organization has come up with are always evolving but have led to a dynamic organization of volunteers which now works with six bay area schools.

## **Performance Analysis: New Tools and Concepts from The Cloud**

**Brendan Gregg**

Cloud Computing introduces new challenges for performance analysis, for both customers and operators of the cloud. Apart from monitoring a scaling environment, issues within a system can be complicated when tenants are competing for the same resources, and are invisible to each other. Other factors include rapidly changing production code and wildly unpredictable traffic surges. For performance analysis in the Joyent public cloud, we use a variety of tools including Dynamic Tracing, which allows us to create custom tools and metrics and to explore new concepts.

## **Installing Eucalyptus: Past, Present, and Future**

**David Kavanagh**

From the start, Eucalyptus has been installed using a set of instructions that walked the user through various options, from distro to hypervisor to network mode. While there is still value in that for the ultimate flexibility, there are other ways to get Eucalyptus installed. FastStart is one such technology. It uses a set of simplifying assumptions to create a POC installer. For those who want to not only provision Eucalyptus, but handle ongoing configuration management, Puppet and Silvereye can help to take things to the next level.

## **Introducing the Open Cloud Initiative**

**John Mark Walker**

This session will be an introduction to the Open Cloud Initiative, its makeup, and our planned activities. Attendees will learn why we have been formed and what our goals are. The Open Cloud Initiative is patterned after the OSI in structure.

## **Getting Started with Git**

**Ron Toland**

Git is arguably the best version control system out there. But habits formed from years of using svn or CVS can trip you up when you switch to using git. I'll cover basic git usage, point out the pitfalls of treating git like svn, and share some best practices to help you take advantage of git's features.

## **The MySQL Diaspora**

**Colin Charles**

MySQL is the world's most popular open source database. It's been popular for years, and was relatively safe in the hands of MySQL AB. MySQL AB got involved in a series of acquisitions and the ecosystem developed with a myriad of trees and forks. Find out what to use, when to use it, and which is the right solution for you.

## **nginx: Proxy Your Web Servers for Better Performance**

**der hans**

Want to build some redundancy for your web server? Use nginx as a reverse-proxy for multiple web servers. nginx will cache, provide simple load balancing, and monitor health for your backend web servers. nginx can also rewrite URLs and handle SSL, offloading those tasks from your web server.

## **Sugar! SoS Brings This Sweet Educational Software To Almost Any Computer**

### **Caryl Bigeno**

Sugar! It just gets sweeter and sweeter! This award-winning open source educational software, originally created for One Laptop Per Child's XO computers, is now available in a new version that runs well on PCs and now, with improved support, on most Intel based Macs. SoS Pineapple, codename for Sugar on a Stick v.6, includes many of the favorite activities found on the XO laptop. In this session you will receive a DVD copy of SoS Pineapple, learn how to prepare it for use on your own computer, and explore what you can do with some of the great activities included in the package.

### **Btrfs**

#### **Chris Mason**

Learn about the latest developments in Btrfs, the next generation file system included in the Linux 3.0 kernel.

## **Wikiotics: an interactive wiki for language teachers and students**

### **Jim Garrison, Ian Sullivan**

Wikiotics is dedicated to making learning in every language possible for everyone. First and foremost, we have built a web application at [wikiotics.org](http://wikiotics.org) that allows people to create interactive language lessons using rich multimedia elements. These lessons exist as structured wiki pages, and they can be viewed in various interactive ways including quizzes. The site is powered by free software, and all contributed content is available under the Creative Commons Attribution-ShareAlike license. Anyone who knows or wants to know a language is welcome to join our community.

## **Create Stunning Videos with OpenShot!**

### **Jonathan Thomas**

Join us in exploring OpenShot Video Editor, and learn how to create your own stunning videos. In this presentation, we will create a short video which tells the story of Steve, a resident of Minecraft, who wakes up to find monsters invading his land. Steve looks for safety in an abandoned cave, and unknowingly stumbles into the real world. As I create this video, you will learn the techniques and tricks to create your own stunning videos with OpenShot. At the end of the presentation, we will watch the final video and upload it to YouTube.

## **Consolidating Linux and Open Source Projects on ARM**

### **Philippe Robin**

Devices and platforms based on ARM architecture have become some of the most widely used platforms running Linux. This talk will present the current status of Linux on ARM and how ARM and its partners are addressing these challenges to better support Linux kernel and upstream open source projects, with a particular focus on improving the balance between power usage and performance. Linaro will also be discussed as an illustration of how companies can collaborate to achieve some of these goals and engage with the developer community.

## **On Beyond Zenwalk**

### **Larry Cafiero**

From Arch to Zenwalk, there are roughly 320 active Linux and Unix (BSD) distributions, according to Distrowatch. Many of them are standard-issue, production-model distros made for the average user, and some are specialized, higher performance distros with racing stripes and mag wheels. This is a look at the

latter.

## **Juju - DevOps Distilled**

### **Clint Byrum, Jorge Castro**

Formerly called Ensemble, juju is DevOps DistilledTM. Through the use of charms (renamed from formulas), juju provides you with shareable, re-usable, and repeatable expressions of DevOps best practices. You can use them unmodified, or easily change and connect them to fit your needs. Deploying a charm is similar to installing a package on Ubuntu: ask for it and it's there; remove it and it's completely gone.

In this talk, we will discuss the concepts behind juju, and run a live demonstration of juju for deploying and managing various workloads.

## **Using Open Source Software for the Media Professional and Educators**

### **Dana Ross**

Most independent media professionals can't afford to pay the high price of professional Closed Source software and constant upgrades. Enter the Open Source alternatives. Here is a review of the best of the Open Source choices for Photographers, Graphic Artists and Video Shooters. Dana Ross, a lifelong working professional, shares his experience, recommendations and tips for using Open Source Software when your career and livelihood depend on it.

## **Linux Based Personal Robotics**

### **Tully Foote**

ROS (Robot Operating System) provides libraries and tools to help software developers create robot applications. It provides hardware abstraction, device drivers, libraries, visualizers, message-passing, package management, and more. In building ROS we use Linux both as a platform and a model for development. As a platform Linux provides a great development environment and tools in addition to well packaged libraries which are tested and integrated. As a model for development, the open source community built up around Linux is one of the most productive ways to develop.

## **Cloud Computing for Small Business**

### **Thomas Stocking**

Thomas Stocking will talk about the uses of Linux and open source in cloud computing, and how small businesses can take advantage of the cloud. With a short review of what the cloud means to small business, we will discuss a couple of general use cases for public and private clouds. We will also cover SaaS, and how small businesses can use it to get online and sell products, software, and services. In Q&A, participants will be asked what use they have made of cloud computing, and how it has worked (or failed) to enable their small business ventures.

## **State of the OpenStack**

### **Jesse Andrews**

Because OpenStack abstracts servers, networks and storage to a single restful API, integrating it with your system(s) can be an ordeal. Lessons learned in the field with real deployments at Sony Computer Entertainment America and x.commerce. To help getting it to work for you, we will explore the architecture of major components and how to setup a complete development environment using devstack, a documented shell script that goes from Ubuntu to a running cloud in 5 minutes.

## **Modern Memcached**

### **Alan Kasindorf**

Memcached was an original high speed networked key/value store developed by LiveJournal. Over time many new ideas have sprung up around the idea of key/value storage: persistence, autoscaling, schemas. The memcached protocol is even used as a side protocol for new versions of MySQL. Recently development has picked up pace, as the project continues to push the envelope for high performance and simplicity. Come hear about the new changes from the project developer also known as Dormando.

## **12 Years of FLOSS License Compliance: A Historical Perspective**

### **Speaker: Bradley Kuhn**

Since working on his first GPL enforcement effort in 1999 Kuhn has tracked and followed the state of compliance with the GPL and LGPL. Kuhn will survey the types of FLOSS compliance problems that were and are encountered, and how they have changed historically.

Much progress has been made since late 1990s, but widespread adoption of BusyBox/Linux and Android/Linux systems has led to more GPL violations than ever before (counting by sheer volume) particularly in embedded products. Kuhn will discuss how our community can meet these challenges and improve worldwide compliance.

## **Remote Execution Management with Salt**

### **Christer Edwards**

Salt is a distributed remote execution system used to execute commands and query data. It was developed in order to bring the best solutions found in the world of remote execution together and make them better, faster and more malleable.

Salt accomplishes this via its ability to handle larger loads of information, from not just dozens but hundreds or even thousands of individual servers, and handle them quickly and through a simple and manageable interface.

## **OLPC for Middle School After-School Programs**

### **Abe Kazemzadeh**

This talk presents experiences from an after-school program's activities with the OLPC project's XO computers at the Foundation for Arts, Mentoring, Leadership, and Innovation (FAMI L.A.). We'll cover how kids and adults learned to use the XOs, the kids' usage of XO software, introducing the kids to hardware, projects using the XO, and the usage of XOs in comparison with other computers.

## **Pandaboard: Embedded Linux Extravaganza**

### **Bryan Smith**

TI's Pandaboard is a Dual-core Arm Cortex A9 processor with 1GB of DDR2 RAM, making it ideal for a myriad of use scenarios. Pandaboard leverages hardware accelerated 1080p HD video playback, 802.11n Wifi, Bluetooth, and USB OTG all on an OMAP 4 platform. We'll have fun exploring this amazing open hardware platform up close and personal.

## **Introduction to PC-BSD 9**

### **Kris Moore**

PC-BSD is the most popular BSD-based desktop operating system. In this talk we will take a look at what makes PC-BSD unique: How it is built from the FreeBSD base operating system, The differences between BSD and Linux, The PBI package management format, Upgrading philosophy, and Virtualization

support with the Warden and "Port Jail"

## **Xen in the Cloud**

### **Lars Kurth**

This talk will give an overview of the various Xen projects and the Xen community, and cover the key developments that occurred in Xen.org projects in the last year, and where the Xen is going. The talk will cover PVOPS (Xen support in the Linux 3.x kernel) and what that means for you, new features and changes to the hypervisor project and exciting developments in the XCP and the Xen ARM projects. We will zoom into interesting projects such as project Kronos, the future of XCP, Xen and ARM virtualisation extensions, how Xen cooperates with cloud orchestration projects and many more.

## **Software Patents: What You Can Do**

### **Deb Nicholson**

This talk goes over the current situation with software patent suits and covers what you can do for the community and your own project and in particular how the Open Invention Network can help.

## **Automotive: the Next Frontier for Mobile Linux**

### **Alison Chaiken**

Desktop, laptop, phone, tablet . . . car! Which OS will dominate car "in-vehicle infotainment" systems: Windows, Android Linux, WebOS, GNU/Linux or a traditional embedded choice like Angstrom? What are the associated opportunities for app developers and systems programmers?

The automotive business model diverges significantly from that of consumer electronics, giving GNU/Linux some advantages over Android. Who are the players in automotive Linux? What are their plans? What reference hardware is suitable for testing car apps? I'll show a simple IVI demo running on an x86 tablet.

## **FUSE with In-Kernel Meta-Data Caching**

### **Gordon Ross**

An alternative to the traditional FUSE design is presented, where the kernel file-system module can do meta-data caching and some aggregation of requests, allowing the rendez-vous with the user-level helper process to be less frequent and more efficient. Experimental results from a prototype of this design are compared with the more traditional implementation.

## **Care and Feeding of a MySQL database for Linux Administrators**

### **David Stokes**

MySQL is the most popular database on the web. But there are relatively few qualified MySQL DBAs. This session provides a guide for Linux Admins who are looking to acquire DBA skills or have inherited servers but do not know how to care for them. Do you know your EXT2 /3 file system may be slowing you down? Do you have the right data indexed? And why you should invest in memory rather than processors.

# Sunday, January 22nd

## Speaker Schedule

Time:	La Jolla	Carmel	Los Angeles A	Los Angeles B	Century AB	Century CD	Santa Monica B	Marina	Bel Air	Expo
10:00am	Selena Deckelmann Keynote: Mistakes Were Made							Linux Beginner Training - Day 2		Expo
11:00am	Break						LPI and BSDA Certification Exams			
11:30am	Karsten Wade oVirt - Infrastructure and Management Platform for the Data Center	Don Marti Advanced web content management with revision control	Sean OMeara Infrastructure Automation with Chef	Tom Rini Giving Linux a boot	Tom King State of Real-time I/O Processing in Embedded Linux Systems.	Robyn Bergeron Don't be an *aaS: Why Community and Open Source Matter in The Cloud			Sebastian Dziallas POSSE intensive -- a cultural immersion workshop	
12:30am	Break									
1:30pm	Owen DeLong IPv6 Essentials for Linux Administrators	Matt Harrison It's All Good: Martha Stewart, Python and Decorators	David Lutterkort Aeolus - Clouds Flying in Assembly	Ruth Suehle The Pop Culture Guide To Open Source	Garrett DAmore Developing for illumos	Cat Allman Fundraising 101 (or "Free as in Freedom So Who Pays for the Beer?")				
2:30pm	Break									
3:00pm	Kir Kolyshkin Reinventing Linux loopback device for clouds	Josh Berkus Firehose Engineering	Tom Callaway Selling Free Software	Robert Mustacchi Using SmartOS as a Hypervisor	Akkana Peck Fun with Linux and Devices	Thomas Cameron SELinux for Mere Mortals (or, "Don't Turn It Off")				
4:00pm	Break									
4:30pm	Panel: Open Source Cloud Computing	Carl Caum Automated EC2 AMI generation with Puppet	Earl Malmo Rose RetroGNOME	Sage Weil Ceph distributed storage system	Brian Reames File Security: Lock Down Your Data	Meghan Gill The Care and Feeding of an Open Source Community				

### Sunday Keynote

Speaker: Selena Deckelmann

### oVirt - Infrastructure and Management Platform for the Data Center

Speaker: Karsten Wade

This presentation is for anyone who cares about Linux-based KVM virtualization. It is to give a high-level look at the new oVirt project. oVirt was restarted as an open sourcing of the RHEV management platform. The new project is releasing code from a community of interested people and vendors you recognize.

### Advanced web content management with revision control

Speaker: Don Marti

The new generation of web content management systems uses a revision control system such as git, Mercurial, or Perforce, instead of a relational database, for storage. We'll cover systems such as ikiwiki, jekyll, and Perforce Chronicle, and see examples of advanced workflow enabled by revision control--while regular users see a simple wiki-like or WYSIWYG interface. We'll also learn to extend a revision-control-backed WCM system with powerful "PageSpec" expressions or ORM-like Records.

### Giving Linux a boot

Speaker: Tom Rini

There are many aspects of the Linux boot process developers should consider. This presentation covers all facets of the boot process from power up to running a user application beginning with ROM boot loader progressing through secondary program loader, u-boot, kernel and finishing with user-level initialization. Learn more about the Linux boot process first hand with a live demonstration on one of the popular BeagleBoard.org open source platforms.

### Infrastructure Automation with Chef

Speaker: Sean OMeara

Infrastructure is code. The separation between how you manage infrastructure and applications is disappearing. System administrators love Chef because it gives them flexibility to integrate all aspects of their infrastructure such as monitoring and trending tools with applications. Software developers love Chef because it helps them take care of the muck so they can focus on writing great applications. Get beyond just configuration management. Investigate Chef's architecture and design including tools and capabilities and dissect the anatomy of a Chef run.

### Undergraduate Education Strategies

Speaker: Sebastian Dziallas

The FOSS world and academia operate on radically different schedules -- integrating the two together requires a lot of work.

But it can be incredibly rewarding, to both parties. This session will articulate how all of us can work together to make these collaborations better -- and more often. Finally, I'll report the latest results from the POSSE workshop that happened this summer, and that's been submitted in an intensive-version on this conference as well. Join us for the revolution!

#### POSSE intensive -- a cultural immersion workshop

**Speaker:** Sebastian Dziallas

Working in the open source world can be a daunting proposition. Not everybody has the time to learn about the means, tools and most importantly the culture this world employs. If you're someone with skills that would benefit an open source project – developer, sysadmin, designer, writer, marketer, lawyer, tester, and nearly anything else under the sun – but have a hard time figuring out how to interact with the communities you want to work with, this workshop is for you. Originally designed for professors getting their students started as contributors, we're opening it to the public.

#### State of Real-time I/O Processing in Embedded Linux Systems.

**Speaker:** Tom King

Real-time I/O is important in embedded systems as many of the systems are used for process control. There are two approaches to handling real-time: the Kernel Approach: using RTAI, Xenomai, or PREEMPT\_RT and the Hardware Approach: Embedded Micro, FPGA/CPLD (programmable logic). Discussion of pros and cons of both approaches, as well as, current best practices.

#### Don't be an \*aaS: Why Community and Open Source Matter in The Cloud

**Speaker:** Robyn Bergeron

"Open" and "Cloud" may be the two of the most overused buzz words in technology today -- and certainly also two words with a vast number of interpretations of meaning. In this session, Robyn (as a Service!) will explore the intersections of these two paradigms, discuss the various layers of Freedom in the cloud atmosphere, and explain \*how\* and \*why\* Community Matters Matter in The Cloud.

#### IPv6 Essentials for Linux Administrators

**Speaker:** Owen DeLong

Back by popular demand, this standing-room only talk is updated from last year and introduces participants to the concepts of IPv6 and shows how they can easily add IPv6 capabilities to their Linux Systems, even if their ISP doesn't yet support IPv6.

#### It's All Good: Martha Stewart, Python and Decorators

**Speaker:** Matt Harrison

Talk is intended to arm the attendee with enough knowledge to write their own decorator. It will cover the following:  
Functions, Closures, Decorators, Parameterized Decorators, Class Decorators Example Decorators.

#### The Pop Culture Guide To Open Source

**Speaker:** Ruth Suehle

Explaining open source to someone who barely knows what software is can be hard. Code? Community? It's free? But there's a good chance your software un-savvy friend has heard of Harry Potter. Or World of Goo. Maybe he's a Tron fan. And that's the secret to explaining open source--by using the known as a bridge to the unknown.

#### Aeolus - Clouds Flying in Assembly

**Speaker:** David Lutterkort

Aeolus, an umbrella project for several related open source projects, ties all the cloud resources to which an organization has access together; it allows combining all of them, be they in public or private clouds, into one pool of resources, which can be subdivided into multiple virtual clouds with differing access rights for different users. Aeolus provides tools for managing virtual instances and images across public and private clouds and virtualization management solutions, from image creation to the launch of complex deployments. All fronted by a friendly self-service web application.

#### Developing for illumos

**Speaker:** Garrett DAmore

We will present an overview of the tools and APIs that affect device driver developers, including a sample very simple device driver. We will cover the core DDI, resources to find more information, building the software, the tools to load and test drivers, and some high level debugging strategies.

#### Fundraising 101 (or "Free as in Freedom So Who Pays for the Beer?")

**Speaker:** Cat Allman

Free and Open Source software may be largely created and maintained by passionate volunteers, but projects still need funds to pay for things like bandwidth, hardware and the all important tee-shirts. Asking for money is hard – and taking it can be a lot more complicated than you might think.

This talk covers the basics of sourcing financial support for your project. Participants in this session should walk out with the information they need to develop at least the outline of a fund-raising plan for your project.

#### Reinventing Linux loopback device for clouds

**Speaker:** Kir Kolyshkin, Maxim Patlasov

This talk will débüt a new loopback device which gives all the advantages of virtual machine images by storing the container in a file while preserving the benefits of sharing significant portions with the host OS. We will compare and contrast the technology with the traditional loopback device and LVM, and describe a few features of a new loopback useful in container snapshotting and live migration. This talk will be technical in nature but should be accessible to people interested in cloud, virtualisation and container technologies.

#### Using SmartOS as a Hypervisor

**Speaker:** Robert Mustacchi

SmartOS is an open source distribution of illumos, currently in production for Joyent's public cloud, where it provides a hypervisor that is secure, flexible and observable. It leverages technologies such as ZFS snapshots and clones for rapid provisioning, KVM and Zones for hardware and OS virtualization, and DTrace to safely understand what's going on inside of guests and the hypervisor. This talk will describe these technologies and their use, including engineering challenges encountered, and discuss opportunities for observing guests such as Linux and Windows.

#### Selling Free Software

**Speaker:** Tom Callaway

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