



With Open Source to Sustainability

DINACON 2018

Peter Mumenthaler
Solution Architect

Linus Torvalds

Path: gmdzi!unido!fauern!ira.uka.de!sol.ctr.columbia.edu!zaphod.mps.ohio-state.edu!wupost!uunet!mcsun!news.funet.fi!hydra!klaava!torvalds
From: torv...@klaava.Helsinki.FI (Linus Benedict Torvalds)
Newsgroups: comp.os.minix
Subject: What would you like to see most in minix?
Summary: small poll for my new operating system
Keywords: 386, preferences
Message-ID: <1991Aug25.205708.9541@klaava.Helsinki.FI>
Date: 25 Aug 91 20:57:08 GMT
Organization: University of Helsinki
Lines: 20

Hello everybody out there using minix -

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I've currently ported bash(1.08) and gcc(1.40), and things seem to work. This implies that I'll get something practical within a few months, and I'd like to know what features most people would want. Any suggestions are welcome, but I won't promise I'll implement them :-)

Linus (torv...@kruuna.helsinki.fi)

PS. Yes - it's free of any minix code, and it has a multi-threaded fs. It is NOT protable (uses 386 task switching etc), and it probably never will support anything other than AT-harddisks, as that's all I have :-).



Richard Stallman (March 16th, 1953)



Open Source

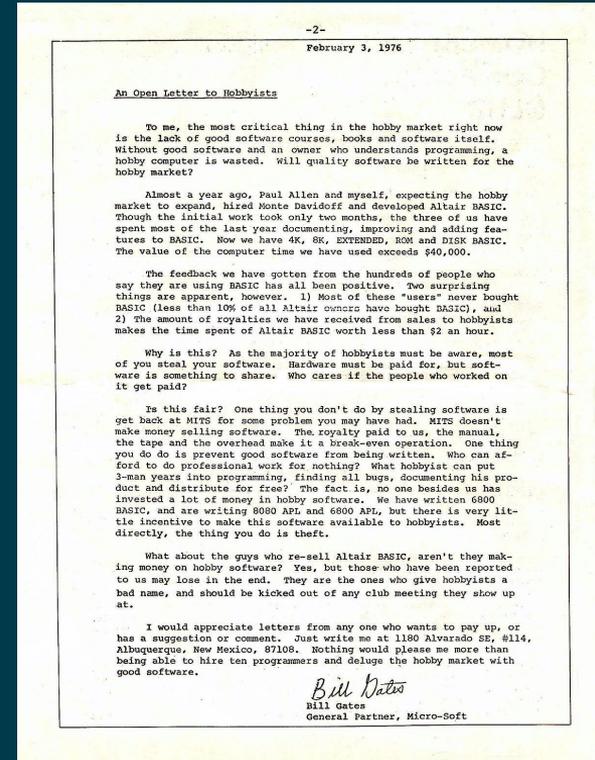
A way of people to collaborate on software without problems on Intellectual Property

- Worked at the MIT AI Lab since 1971
- Explored what can be done with computers and software
- Philosophy: everybody who sits on a computer should be able to what he wants
- Even did not use password for his account

Open Source

Start of Open Source

- In the beginning software was exchanged and distributed among hackers (friendly hackers :-)
- Microsoft started to close software (Unix was proprietary too, btw)
- And wrote “An Open Letter to Hobbyists”
 - Altair BASIC
 - 1) Most of these "users" never bought BASIC
 - 2) The amount of royalties we have received from sales to hobbyists makes the time spent on Altair BASIC worth less than \$2 an hour.
 - Why is this? As the majority of hobbyists must be aware, most of you steal your software.
 - Is this fair? One thing you don't do by stealing software is get back at MITS for some problem you may have had.



Richard Stallman

- Wanted to fix bugs. But wasn't allowed
- “Kept us to do useful things”
- Share software, so it could evolve
- Wanted to start to develop another operating system



Free Software Foundation

Founder Free Software Foundation in 1985:

- Software
- Art
- Documents
- Scientific discoveries
- Medicinal instruments
- ...



Richard Stallman

And the Free Software Foundation

Founder of GNU-Projects (1984) :

GNU - GNU's not Unix

- GNU Emacs
- GCC
- GNU Debugger
- GNU coreutils

ls

chmod

cd

...



Free Software

Everywhere the software goes the freedom goes too

Copyleft - (share-alike)

Free software :-)

- Copyleft is a way of using the copyright on the program
- Proprietary software developers use copyright to take away the users' freedom; we use copyright to guarantee their freedom. That's why we reverse the name, changing “copyright” into “copyleft.”
- Copyleft says that anyone who redistributes the software, with or without changes, must pass along the freedom to further copy and change it.



<https://www.gnu.org/licenses/copyleft.en.html>

GPL - GNU Public License (v3)

Copyleft - (share-alike)

Nobody should be restricted by the software they use. There are four freedoms that every user should have:

- The freedom to run the program as you wish, for any purpose (freedom 0)
- The freedom to study how the program works, and change it so it does your computing as you wish (freedom 1). Access to the source code is a precondition for this.
- The freedom to redistribute copies so you can help others (freedom 2).
- The freedom to distribute copies of your modified versions to others (freedom 3). By doing this you can give the whole community a chance to benefit from your changes. Access to the source code is a precondition for this.

OpenSource License Types (simplified)

Weak obligations

Strong obligations



Permissive

Weak Copyleft

Strong Copyleft

Main obligation:

If you redistribute the software, also provide it's license and copyright notices

Main obligation:

Similar to Strong Copyleft, with differences in the boundaries for the software to which the copyleft obligations apply

Main obligation:

If you redistribute the software also provide the same freedoms / rights to the downstream recipients

OpenSource License Types (simplified)

Weak obligations

Strong obligations



Permissive

Weak Copyleft

Strong Copyleft

Examples:

- BSD-2
- BSD-3
- MIT
- Apache-2.0
- ...

Examples:

- GNU Lesser Public License (LGPL)
- Mozilla Public License (MPL)
- Eclipse Public License (EPL)
- ...

Examples:

- GNU Public License (GPL)
- GNU Affero Public License (AGPL)

Good to know



Under the Berne Convention, which most countries have signed, anything written down is automatically copyrighted.

<http://www.wipo.int/treaties/en/ip/berne/>

Software with no IP - What about \$\$\$

- With proprietary software you are bound to this one and only company
- no wonder support is bad (mostly - to be honest)
- Make revenue through services/lifecycle of any software

Value of a Red Hat Subscription



CUSTOMER
PORTAL



TECHNICAL
SUPPORT



AUTOMATED
SERVICES



SECURITY



EXPERTISE



CERTIFICATIONS



COMMUNITIES



CONTINUOUS
FEEDBACK



ASSURANCES



LIFE-CYCLE
PROMISE

GNU Toolkit was there - but no free Kernel ("OS")

- GNU Herd
- Very modular - years to programm
- Linus Torvalds came into play 1991
- Linus developed a kernel really fast and really robust - monolithic

Back to start

```
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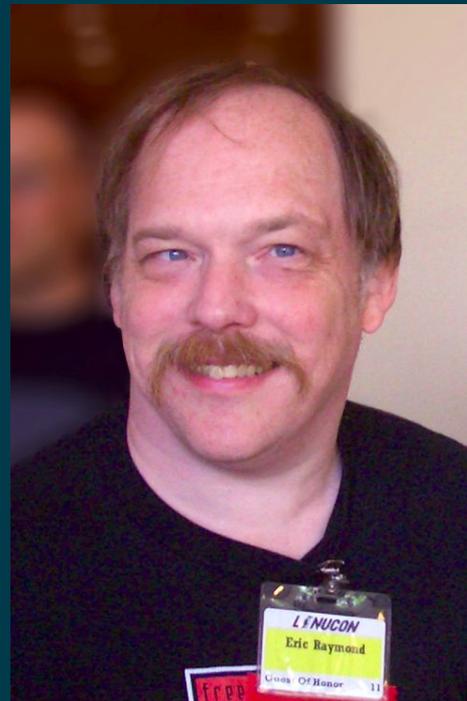
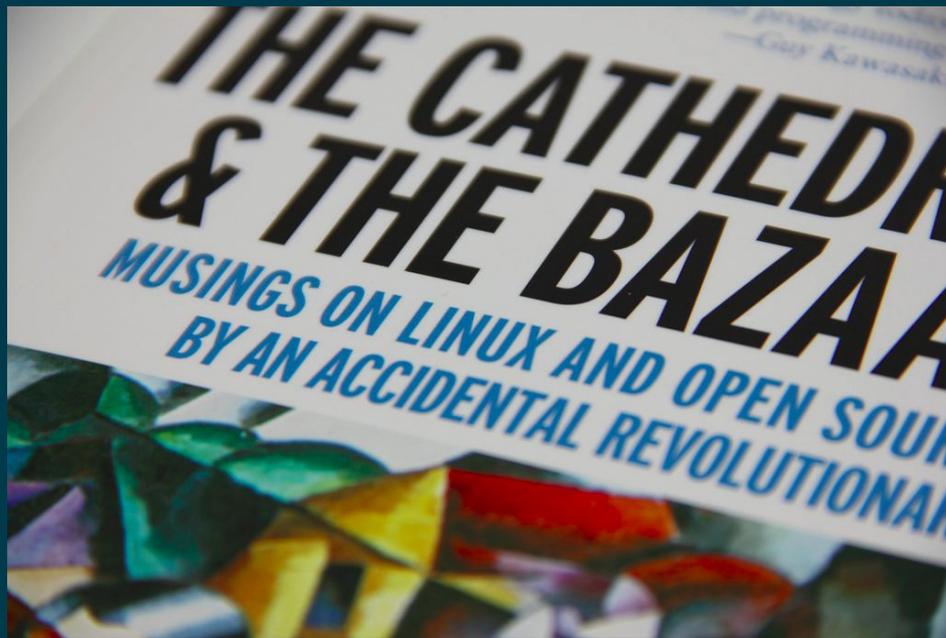
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The Cathedral and the Bazaar (1999)

Eric S. Raymond - Musings on Linux and Open Source by an Accidental Revolutionary



How a Community works

The Fedora Community

- Founded on 22 September 2003
- The Fedora Project is a partnership between Red Hat and the OSS community
- The Fedora Board has nine members, five of whom are Red Hat employees, and four of whom are community members. That breakdown is not set in stone -- that's just what we started with



The Fedora Community

Council Responsibilities

- Its primary role is to identify the short, medium, and long term goals of the Fedora community and to organize and enable the project to best achieve them
- Govern Fedora's financial resources
- Decides on issues regarding use of the Fedora trademarks
- Arbitration of complaints related to project policies and for settling disputes escalated from other committees or subgroups
- and may handle sensitive legal or personnel issues which require research and discussion to protect the interests of the Fedora Project or its sponsor(s).

The Fedora Community

Making Decisions

- Many basic decisions are made through a process known as “lazy approval”, in which general consent is assumed unless valid objections are raised within a period of time
- More significant decisions are made through a process of full consensus. In order to pass, these decisions need three positive votes (+3) and no negative votes (-1). A negative vote immediately halts the process and requires discussion
- In general, the Council conducts business in public discussion, and any Fedora project member can make negative or positive votes. It is the duty of the Council to take concerns raised in this way into serious consideration, but only Council members' votes are binding in the final tally.

The Fedora community

Current Members of the Fedora Council

- Elected Representative: Dennis Gilmore, Red Hat
- Elected Representative: Till Maas, Red Hat
- Engineering Representative: Josh Boyer, Red Hat
- Mindshare Representative: Sumantra Mukherjee
- Diversity Team Representative: Amita Sharma
- Fedora Project Leader: Matthew Miller, Red Hat
- Fedora Community Action and Impact Coordinator: Brian Exelbierd
- Fedora Program Manager: Ben Cotton
- Langdon White (Fedora Modularity)

The Fedora Community

Roles



Content Writer

- * Writing.
- * Editing.
- * Explaining complex ideas.



Designer

- * Design.
- * Usability.
- * Interaction.



People Person

- * Event organization.
- * Customer service/support.
- * and more...



OS Developer

- * Programming.
- * RPM/Packaging.
- * Bugfiling.



Translator

- * English.
- * Non-English native language.
- * Translation tools.

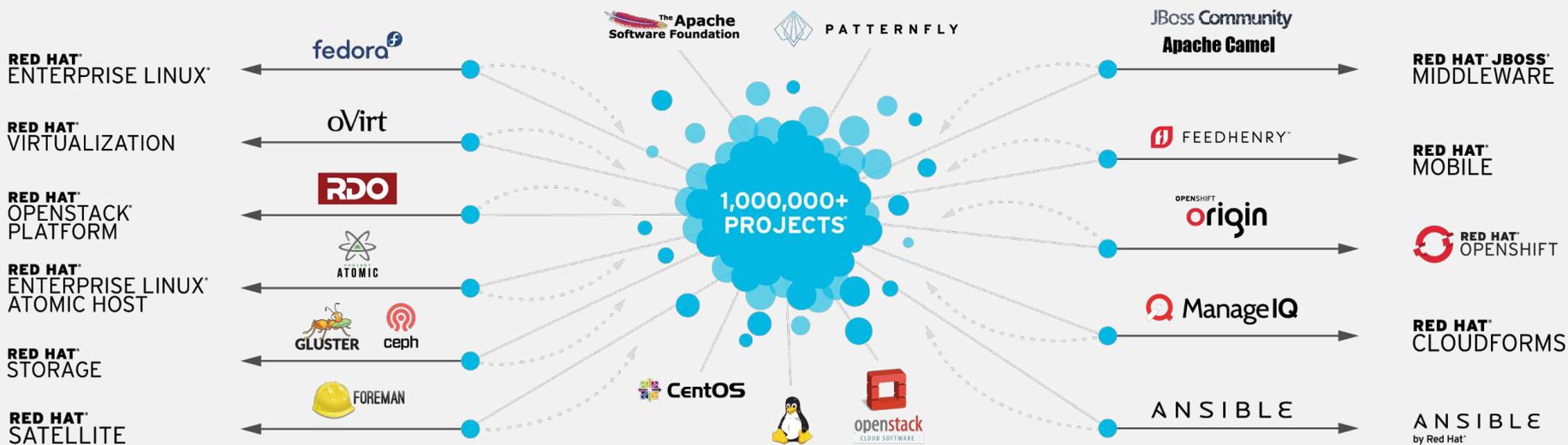


Web Developer or Administrator

- * Python.
- * Web app development.
- * Linux system administration.

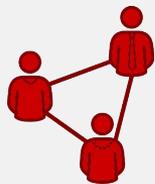
Open Standards and Innovation with Open Source

From Communities To Enterprise



RH0064-3

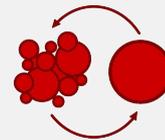
Open Source Culture



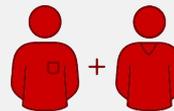
Collaboration



Transparency
(both access and the ability to act)



Shared problems are
solved faster



Working together creates
standardization

HOW WE GOT HERE

- 1993 ○ FOUNDED
- 1999 ○ IPO
- 2002 ○ FIRST RELEASE OF ENTERPRISE LINUX
- 2006 ○ JBOSS ACQUIRED
- 2009 ○ RED HAT VIRTUALIZATION RELEASED
- RED HAT ADDED TO S&P 500 INDEX
- 2011 ○ CLOUDFORMS & OPENSIFT RELEASED
- \$1 BILLION IN REVENUE

- 2012 ○ RED HAT STORAGE RELEASED
- OPENSIFT ENTERPRISE RELEASED
- 2013 ○ RED HAT OPENSTACK PLATFORM RELEASED
- 2014 ○ CENTOS JOINS RED HAT
- INKTANK (CEPH), ENOVANCE (OPENSTACK), & FEEDHENRY (MOBILE) ACQUIRED
- 2015 ○ ANSIBLE ACQUIRED
- 2016 ○ \$2 BILLION IN REVENUE
- 3SCALE ACQUIRED
- 2017 ○ CODENVY ACQUIRED, PERMABIT ACQUIRED
- 2018 ○ COREOS ACQUIRED

DEVELOPER TOOLS



RED HAT JBOSS
DEVELOPER STUDIO

RED HAT
CONTAINER
DEVELOPMENT KIT



MIDDLEWARE AND APPLICATION SERVICES

FOUNDATION

RED HAT JBOSS
ENTERPRISE
APPLICATION PLATFORM

RED HAT JBOSS
WEB SERVER

RED HAT JBOSS
DATA GRID

RED HAT
MOBILE

INTEGRATION

RED HAT JBOSS
FUSE

RED HAT JBOSS
AMQ



scale
BY RED HAT

scale
BY RED HAT

AUTOMATION

RED HAT JBOSS
BRMS

RED HAT JBOSS
BPM SUITE

+



SECURITY & MANAGEMENT

RED HAT
CLOUDFORMS

ANSIBLE
by Red Hat

RED HAT
SATELLITE

RED HAT
INSIGHTS

CONTAINER PLATFORM



INFRASTRUCTURE SOFTWARE

RED HAT
ENTERPRISE LINUX

RED HAT
STORAGE

RED HAT
OPENSTACK
PLATFORM

RED HAT
VIRTUALIZATION



PHYSICAL



VIRTUAL



PRIVATE CLOUD



Google



amazon
web services



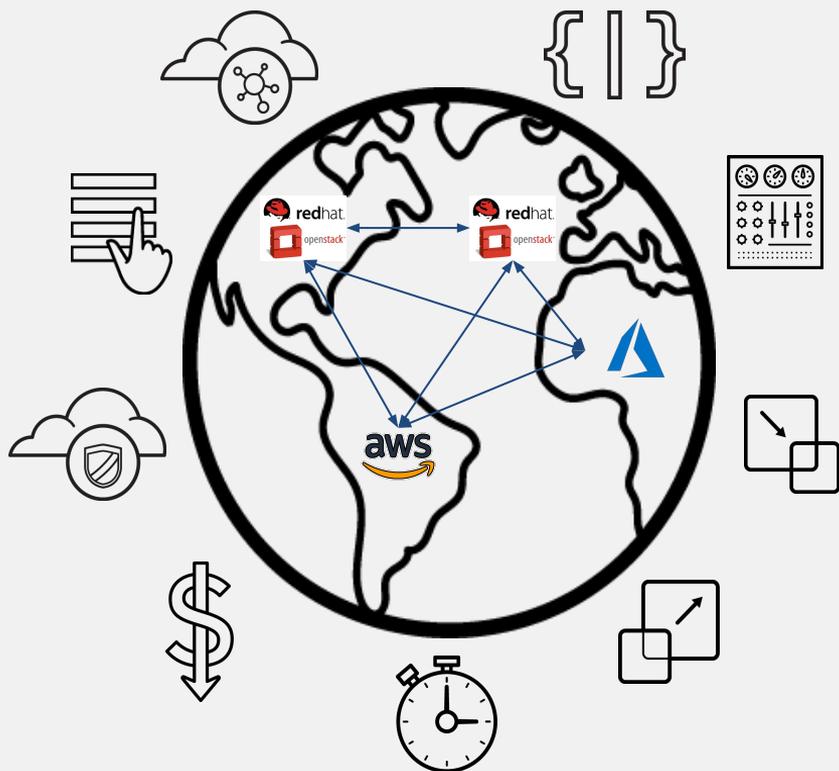
Microsoft Azure



OTHER CLOUD
PROVIDERS

Reduce Vendor Lock-in

Open Source / Data - The foundation for everything



- X86 Hardware (Intel/AMD)
- TV Boxes
- Routers
- Mobiles (Android)
- Hifi Systems
- Network Devices
- Telephony (PBXs)

The Open Organization

THE
OPEN

ORGANIZATION

IGNITING PASSION AND PERFORMANCE

JIM WHITEHURST
CEO, RED HAT

WITH A FOREWORD BY GARY HAMEL

HARVARD BUSINESS REVIEW PRESS

An Open Organization

Has the following characteristics

TRANSPARENCY

INCLUSIVITY

ADAPTABILITY

COLLABORATION

COMMUNITY

MERITOCRACY

An Open Organization

Leads to

Greater Agility

Increased Engagement

Faster Innovation

Better Quality

75%

SCALING OUR OPEN ORGANIZATION



Our company

Why Red Hat exists

How Red Hatters work

Where Red Hat is headed

What Red Hat does

Who Red Hatters collaborate with

The Red Hat Why

Open unlocks the world's potential

...to share knowledge
and build upon each
other's discoveries.

...to solve complex
problems, by bringing
passionate people
together to collaborate.

...to create communities where
everyone is fully supported to
use their voices and talents to
contribute.

The Open Decision Framework

Phases

1. Ideation

2. Planning and Research

**3. Design, Development
and Testing**

4. Launch

Your Mother was right

-

It's better to share

Open Source...

- ensures better software quality
- drives innovation
- creates **open** standards
- reduces vendor lock-in
- saves costs



THANK YOU



plus.google.com/+RedHat



facebook.com/redhatinc



linkedin.com/company/red-hat



twitter.com/RedHatNews



youtube.com/user/RedHatVideos