

# Open Source

Benefiting from it  
Contributing to it

An introduction to the "[Open Source](#)" community, how it has changed the landscape of the software industry.

How "[Open Source](#)" can help you in your work and thereafter in your involvement with product development.

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Duration: [60 +/- 15 minutes](#)



A glimpse of the "Open Source" community.



A glimpse of the "Open Source" community.

## Foundations



## Pioneer Projects



## Desktop to Development Environments



## Collaboration Sites



## Corporate Companies



# GNU's Not Unix

Founded in **1985** by an MIT AI Labs Professor  
Ambitiously created to be the ultimate free  
POSIX compliant OS

The keystone to all "Free Software" products that  
built the gnusphere.

*Free as in Freedom / Libre*

Against Intellectual Property Law, Copyrights and  
Patents

Introduced Copylefting of software with the GPL  
Strong belief that software should have no  
owners

Moral, Ethical and Philosophical Fundamentalism



guess who?

visit [www.fsf.org](http://www.fsf.org) or [www.gnu.org](http://www.gnu.org) for their history,  
manifesto, plans and philosophy



# GNU's Not Unix



The GNU Operating System - the alternative to UNIX

Binary Utilities (binutils )

Compiler (gcc, now GCC )

Editor (EMACS)

Kernel (?)

System Tools (GNU systools) - filesystems, etc.

Applications (mostly created by enthusiasts)

Built on the strength of the "Internet"

e-mail, usenet, bulletin boards, mailing lists, ftp



Richard M  
Stallman

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# Open Source Initiative (OSI)

Co-Founded in **1998** by "Bruce Perens" who wrote the "Open Source" definition.

A bifurcation from the unified "Free Software" community

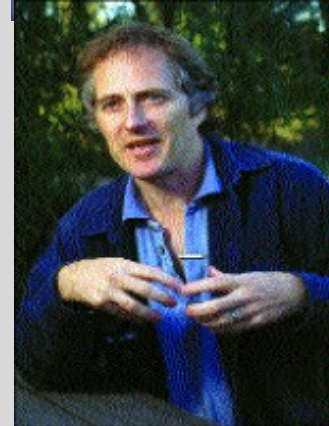
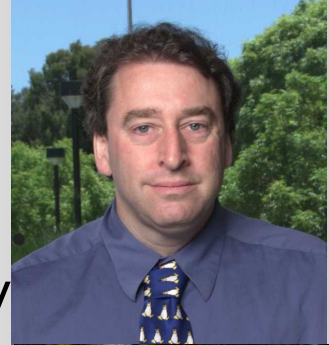
To support multiple licenses, a broader definition and recognise copyright/patent/intellectual property law, promoting business activity.

You can learn more from:

<http://www.opensource.org>

<http://www.opensource.org/docs/definition.php>

<http://www.opensource.org/advocacy/faq.php>



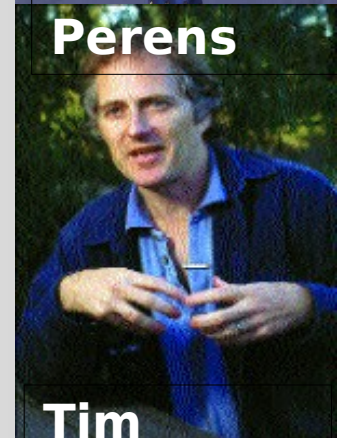
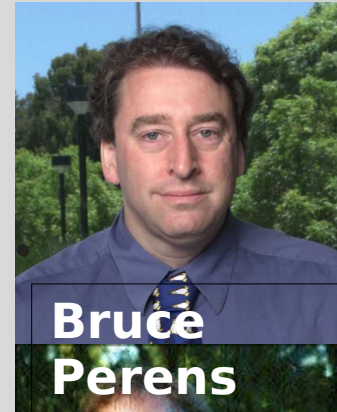
# Open Source Initiative (OSI)

## Open Source Initiative License certification

1. Free Redistribution
2. Source Code
3. Derived Works
4. Integrity of The Author's Source Code
5. No Discrimination Against Persons or Groups
6. No Discrimination Against Fields of Endeavour
7. Distribution of License
8. License Must Not Be Specific to a Product
9. License Must Not Restrict Other Software
10. License Must Be Technology-Neutral

Fundamentally - *Academic Licenses, Reciprocal Licenses*

GPL, BSD, MPL, CPL, Artistic License, LGPL



# The Open Source Community has a Scribe

Eric Steven Raymond

[www.catb.org/~esr/writings/](http://www.catb.org/~esr/writings/)



Works that describe the *success* of the Open Source software development model.

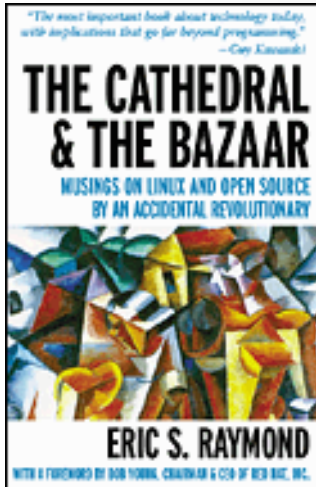
The Cathedral and the Bazaar

The Magic Cauldron

The Hacker How-to

claim to fame: fetchmail, C/intercal  
had a tiff with RMS on adopting the OSI  
definition of OSS (or) FLOSS

[http://www.factbook.org/wikipedia/en/e/er/eric\\_s\\_\\_raymond.html](http://www.factbook.org/wikipedia/en/e/er/eric_s__raymond.html)



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# The OS Stack

Application Suite

UI / Environment

System Software  
Utilities  
Kernel

Computing Hardware

Binary utilities +  
Debugger

Compiler

Text Editor

Development  
environment

Development  
Hardware

# The OS Stack & GNU

lots o' them

X11, bash, ncurses

GNU init, ...

???? Heard of it ?????

Computing Hardware

GNU Binutils + GDB

GCC

GNU Emacs

Unix

Development  
Hardware

# 25-Aug-1991 ... 5-Oct-1991

Do you pine for the nice days of minix-1.1, when men were men and wrote their own device drivers? Are you without a nice project and just dying to cut your teeth on a OS you can try to modify for your needs? Are you finding it frustrating when everything works on minix? No more all-nighters to get a nifty program working? Then this post might be just for you :-)

...

Sources for this pet project of mine can be found at nic.funet.fi (128.214.6.100) in the directory /pub/OS/Linux. The directory also contains some README-file and a couple of binaries to work under Linux (bash, update and gcc, what more can you ask for :-). Full kernel source is provided, as no minix code has been used. Library sources are only partially free, so that cannot be distributed currently. The system is able to compile "as-is" and has been known to work. Heh. Sources to the binaries (bash and gcc) can be found at the same place in /pub/gnu.

...

[http://www.google.com/googlegroups/archive\\_announce\\_20.html](http://www.google.com/googlegroups/archive_announce_20.html)



# GNU & Linux

lots o' them

X11, bash, ncurses

GNU init, ...

The Linux Kernel

Computing Hardware

GNU Binutils + GDB

GCC

GNU Emacs

Unix

Development  
Hardware

# The Process



[www.kernel.org](http://www.kernel.org)



I'm also interested in hearing from anybody who has written any of the utilities/library functions for minix. If your efforts are freely distributable (under copyright or even public domain), I'd like to hear from you, so I can add them to the system. I'm using Earl Chews estdio right now (thanks for a nice and working system Earl), and similar works will be very wellcome. Your (C)'s will of course be left intact. Drop me a line if you are willing to let me use your code.



# Peeling the Onion ...



Wanted to create a scripting environment with powerful string processing capabilities.

They needed to integrate with existing web servers (*ahem*. ... apaches ... ) and provide a 20x performance improvement in string processing capabilities.

To solve this they created a new language " **Perl** "

The runtime interpreter for this language would be called " **perl** " (who isn't case sensitive these days?)

Finally created an Object Based Language which is modularised and still evolving.



# MPlayer - The Movie Player

No Fullscreen movie player in GNU/Linux (other than xine and a couple of others that weren't truly free)

Project aimed to be "the movie player for Linux" and achieves it with a heavily modular and flexible architecture.

Integrates and allows the **usage of codecs** distributed **with Microsoft Windows programs** crossing the thin line between closed and open source (in a way that has not yet been contested in court).

Has emerged in a short period (less than two years) to become the most ubiquitously used video player on Linux.

With support extended to FreeBSD and Darwin, the project has been subsequently renamed "MPlayer - The Movie Player" (sans the 'for Linux' part).

visit <http://mplayerhq.hu/>



# Benefiting from Open Source ...

Using GNU/Linux or any Open Source Software Program  
Incorporating freely licensed components of an Open Source  
Software Program in your Project

Understanding the implementation of fundamental concepts  
behind software and software design

Code Comprehension

"Open Source" Community = **Users** + Developers + Critics +

...

Standards => Implementations (Source Code)

Open Standards are growing and converging into Open Source

TCP/IP Open Standard, FreeBSD TCP/IP stack - Open Source

H.323 Open Standard, Open H.323 - Open Source

POSIX - Standard, Linux - Open Source [Implementation]

MPEG4 - Standard, xVidix - Open Source

USB-OHCI - Standard, Linux USB framework - Open Source



# Samba



Filesharing with Windows uses a NETBEUI/UDP based protocol uses SMB (Samba).

GNU/Linux users could not share files with networks using Windows Workgroup and NT solutions.

One hacker reverse engineers the protocol by writing his own packet sniffer on a GNU/Linux system.

He goes on to further reverse engineer other components of the system including pwdump2. Finally he has a usable version of a filesharing daemon, client and utilities to interoperate with MS Windows 3.11/4.0[NT]/2000/XP



# Samba



Andrew Tridgell

He contributes his work back to the open source community as part of the "[www.samba.org](http://www.samba.org)" project  
Creates rsync, distcc, ccache  
breaks bitkeeper-linux marriage by writing the first "independent" opensource bitkeeper compatible tool ... !



# The Process ...



Donald  
Becker



Linus Torvalds

[www.kernel.org](http://www.kernel.org)



Donald Becker needed to create a Clustering system  
He found the Linux kernel was available as "Open Source" (Free Software)  
The Linux kernel did not have a mature networking subsystem  
Donald Becker wrote the network driver framework for the Linux kernel  
and lots of the first networking device drivers

Becker created a clustering system that rivalled other CoWs and was the  
hallmark of clustering for quite some time !



# Benefiting from Open Source ...

Identifying your Problem, Research requisite ...

Searching for the right "Open Source" tool to help solve your problem

<http://www.freshmeat.net/>

<http://www.sourceforge.net/>

<http://www.KDE-apps.org/>

<http://www.gnome-apps.org/>

<ftp://ftp.gnu.org/>

<http://savannah.gnu.org/>

Listing any prerequisite contributions you will need to make before the solution works for you

"Open Source" Community = **Users** + *Developers* + Critics +

...



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[www.beowulf.org](http://www.beowulf.org) (The Beowulf project) - Linux Clusters



# Contributing to Open Source ...

"Open Source" Community = *Users* + ***Developers*** + *Corporates* + Critics + ...

*Use, Hack* (for yourself) or *Work* for Software Major

Solve a problem using Open Source tools

GCC, Mono, GDB, the Linux kernel, ...

Contribute and Maintain the solution.

Document and facilitate others to use and/or develop further.

use the Internet and the tools that facilitated the "Open Source" community more often.

learn e-mail etiquette, research on the net (search/google) before asking questions.

keep your questions short, concise and to the point.

keep your answers elaborate, complete and on context.



# Making Money with Opensource

Multiple Business Strategies

Different Segments (Products, Services, Software,  
Microprocessors and ...)

Derive Different Benefits

Provide the end-consumer with "Freedom."

OR

Market Software/Product with the OpenSource bandwagon.

## Corporate Firms

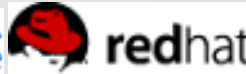


# Making Money with Opensource

## "The Magic Cauldron"

- Widget Frosting
- Free the Recipe, Sell the Food
- Cost sharing, Risk sharing
- Accessorizing
- Free the Future, Sell the Present
- Free the Software, Sell the Content

### Corporate Firms



# Questions ? ( and ?Answers? )

That's about all the content I can come up with without too much of ...text...

If I have an answer, or anyone in the audience does, we'll have it, or we'll take it off-line and earnestly try to sort it out over e-mail.

*The Goal of this presentation was to serve as an introduction, as short and relevant as possible to the "Open Source" community, philosophy and possibilities of our interaction with this community. If you feel that this has not been delivered as the message, please ask your questions in this direction.*

offline? [sunilb \[AT\] dlink \[DOT\] co.in](mailto:sunilb@dlink.co.in)



# Thankyou!!!!

Thanks to everyone for being such a wonderful audience!

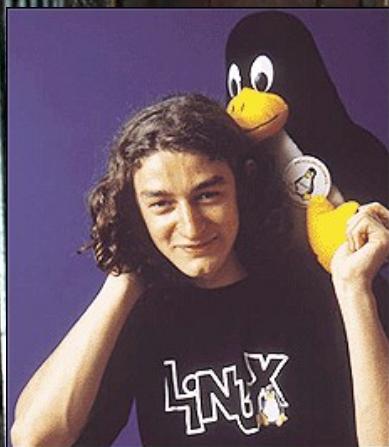
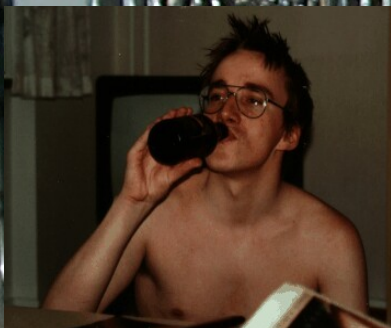
This presentation was created with KDE 3.5, KOffice 1.4:KPresenter

online presentation ([www.sunilbetabaskar.com](http://www.sunilbetabaskar.com))



open source™

# Identity



# Presentation Source

You can obtain the presentation sources from me by e-mail - [betasam@gmail.com](mailto:betasam@gmail.com)

The sources are available for KPresenter 1.4 ( [opensource.kpr](#) ), The trouble with export filters (to OOImpress et al) is that my gradients get blocky, I will also have a TeX version for anyone interested in re-using the text. Please write to me if you are doing so (I'd really love to know!)

They will also be available from <http://www.sunilbetabaskar.com/opensource/opensource.kpr>

I will have an updated version of the presentation kept here.

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