

# Software Livre e de Código Aberto

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**Adaptar** — remixar, transformar, e criar a partir do material

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# O que essas organizações têm em comum?



- 1 O que é Software Livre?
- 2 O que é Software de Código Aberto?
- 3 Quais são as diferenças e semelhanças entre os dois?
- 4 Empresas estão interessadas em FLOSS?
- 5 Como você pode se beneficiar?



# Software Livre

# O que é Software Livre?

## Ideologicamente

- Software cujos usuários têm liberdade para
  - executar
  - copiar
  - distribuir
  - estudar
  - modificar
  - melhorar





# O que é Software Livre?

## Estritamente falando

Um programa é **livre** se seus usuários têm as 4 liberdades essenciais:





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- 0 Liberdade de **executar** o programa, para qualquer fim.
- 1 Liberdade para **estudar** o funcionamento do programa e **modificá-lo** para fazer o que você **deseja**.
- 2 Liberdade para **redistribuir** cópias.
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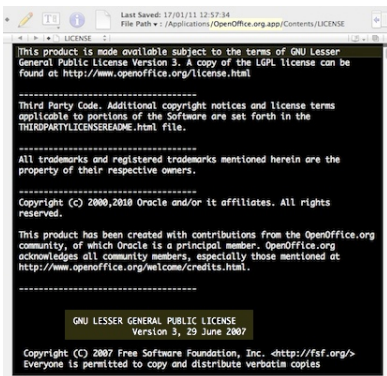
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**Acesso ao código fonte** é condição para as liberdades 1 e 3.

# O que é Software Livre?

## Legalmente

- Software **distribuído** de acordo com uma **licença** que respeita as 4 liberdades



A screenshot of a text editor window displaying the GNU Lesser General Public License (LGPL) version 3. The window title is "LICENSE" and the file path is "/Applications/OpenOffice.org.app/Contents/LICENSE". The text in the editor includes: "This product is made available subject to the terms of GNU Lesser General Public License Version 3. A copy of the LGPL license can be found at <http://www.openoffice.org/license.html>", "Third Party Code. Additional copyright notices and license terms applicable to portions of the Software are set forth in the THIRDPARTYLICENSEREADME.html file.", "All trademarks and registered trademarks mentioned herein are the property of their respective owners.", "Copyright (c) 2000,2010 Oracle and/or its affiliates. All rights reserved.", "This product has been created with contributions from the OpenOffice.org community, of which Oracle is a principal member. OpenOffice.org acknowledges all community members, especially those mentioned at <http://www.openoffice.org/welcome/credits.html>.", and a footer that reads "GNU LESSER GENERAL PUBLIC LICENSE Version 3, 29 June 2007" and "Copyright (C) 2007 Free Software Foundation, Inc. <<http://fsf.org/>> Everyone is permitted to copy and distribute verbatim copies".

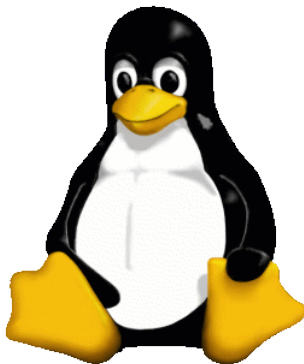




# Este programa é software Livre?



# Este programa é software Livre?



# Este programa é software Livre?



(considerando apenas a versão gratuita)



# Software de Código Aberto



# O que é Software de Código Aberto?

## Ideologicamente

O foco do movimento Open Source **não é ideológico**.



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## Em poucas palavras...

- “Campanha de Marketing” em prol do Software Livre
  - Com foco em vantagens práticas
  - Sem viés ideológico
  - Para chamar a atenção de grandes corporações



# Por que “Código Aberto”?

- A palavra “free” em *Free Software* é problemática
  - “Free as in freedom, not free beer”



- Com “Código Aberto” a ênfase fica em algo mais palpável, o código

# *Open source doesn't just mean access to the source code*

## Práticas

### ① Desenvolvimento distribuído





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## Práticas

- 1 Desenvolvimento distribuído
- 2 Depuração em massa, com usuários envolvidos no desenvolvimento



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- 2 Depuração em massa, com usuários envolvidos no desenvolvimento
- 3 Software disponível cedo e frequentemente
- 4 Meritocracia
- 5 Sem uma hierarquia rígida e sem coerção
- 6 Abertura do código fonte é uma pré-condição



# Software de Código Aberto também tem uma definição

**Open Source Initiative**

Home

Search this site:

**Navigation**

- About the OSI
- **The Open Source Definition**
  - Amendment
  - License Review Process
  - License Prohibition
- Open Source Licenses
- Trademark and Logo Usage
- FAQ
- Open Standards
- Open Source Education
- Making lists
- Getting help
- Donate to the OSI
- OSI Individual Membership
- OSI Affiliate Membership
- Contact OSI
- Terms of Service
- OSI Corporate Sponsors

**The Open Source Definition**

**Introduction**

Open source doesn't just mean access to the source code. The distribution terms of open-source software must comply with the following criteria:

- 1. Free Redistribution**

The licensee shall not restrict any party from selling or giving away the software as a component of an aggregate software distribution containing programs from several different sources. The licensee shall not require a royalty or other fee for such sale.
- 2. Source Code**

The program must include source code, and must allow distribution in source code as well as compiled form. Where some form of a product is not distributed with source code, there must be a well-publicized means of obtaining the source code for no more than a reasonable reproduction cost preferably, downloading via the Internet without charge. The source code must be the preferred form in which a programmer would modify the program. Deliberately obfuscated source code is not allowed. Intermediate forms such as the output of a preprocessor or translator are not allowed.
- 3. Derived Works**

The licensee must allow modifications and derived works, and must allow them to be distributed under the same terms as the license of the original software.
- 4. Integrity of The Author's Source Code**

The licensee may restrict source code from being distributed in modified form only if the licensee allows the distribution of "patch files" with the source code for the purpose of modifying the program at build time. The licensee must explicitly permit distribution of software built from modified source code. The licensee may require derived works to carry a different name or version number from the original software.
- 5. No Discrimination Against Persons or Groups**

The licensee must not discriminate against any person or group of persons.
- 6. No Discrimination Against Fields of Endeavor**


The licensee must not restrict anyone from making use of the program in a specific field of endeavor. For example, it may not restrict the program from being used in a business, or from being used for genetic research.
- 7. Distribution of License**

The rights attached to the program must apply to all to whom the program is redistributed without the need for execution of an additional license by those parties.
- 8. License Must Not Be Specific to a Product**




The rights attached to the program must not depend on the program's being part of a particular software distribution. If the program is extracted from that distribution and used or distributed within the terms of the program's license, all parties to whom the program is redistributed should have the same rights as those that are granted in conjunction with the original software distribution.
- 9. License Must Not Restrict Other Software**

The licensee must not place restrictions on other software that is distributed along with the licensed software. For example, the licensee must not insist that all other programs distributed on the same medium must be open-source software.
- 10. License Must Be Technology-Neutral**

No provision of the license may be predicated on any individual technology or style of interface.



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SOFTWARE PRODUCTIVITY GROUP

# “Open Source” é mais popular que “Free Software”



# Diferenças e Semelhanças entre FS e OSS



Em pouquíssimas palavras...

A democracia é um direito moral





Em pouquíssimas palavras...

A democracia é um direito moral

vs

A democracia é o sistema mais  
eficiente que se conhece



# Pragmaticamente

- Práticas **indistinguíveis**
  - Principalmente após “The Cathedral and the Bazaar”
- Amplo espectro de pontos de vista
- Dois meios de atingir o mesmo fim



# Aspectos Econômicos de Software Livre e de Código Aberto



# Eu posso vender software livre? E de código aberto?

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Resposta curta: **SIM!**

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## Na prática

- Não faz sentido
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## Na prática

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- E cobrar por instalações em máquinas, pode?
- Restringir uso comercial?





# Por que se contribui com Software Livre?

- 1 Explicação ultrapassada:  
**Economia de Dom** (*gift economy*)
  - Em particular, justifica a ação de **voluntários**



# Por que se contribui com Software Livre?

- 1 Explicação ultrapassada:  
**Economia de Dom** (*gift economy*)
  - Em particular, justifica a ação de **voluntários**
- 2 Não explica tão bem o interesse de corporações
  - Economia de **escassez**, teoricamente
  - Por que **gastar dinheiro** em algo disponível gratuitamente?
  - Por que alguém **abriria** o código do seu produto?



Um *potlach* dos Kwakwaka'wakw

## *Free as in free beer?*

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- ❸ O Google desenvolveu um dos melhores Web Browsers
  - E **abriu ele**, via projeto Chromium
  - Incluindo o **engenho V8** para JavaScript



Software Livre  
○○○○○○○

Código Aberto  
○○○○○

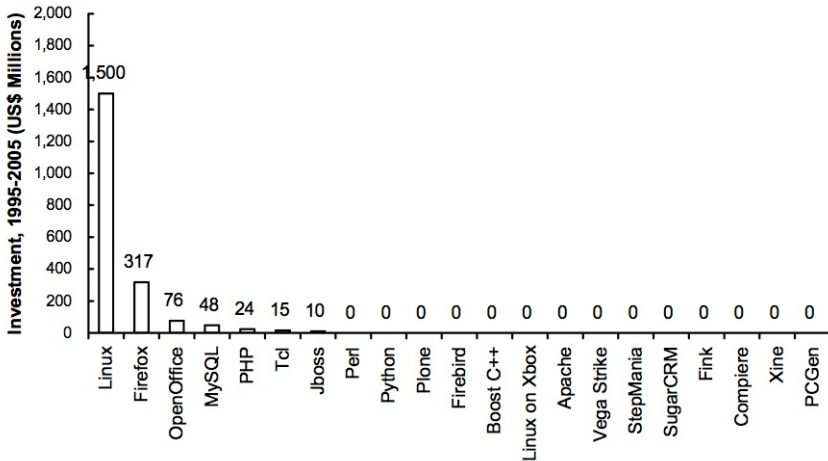
Diferenças e Semelhanças  
○○○

Aspectos Econômicos  
○○○●○○○○○○○○

Como se Beneficiar?  
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# Investimento em projetos FLOSS, por projeto



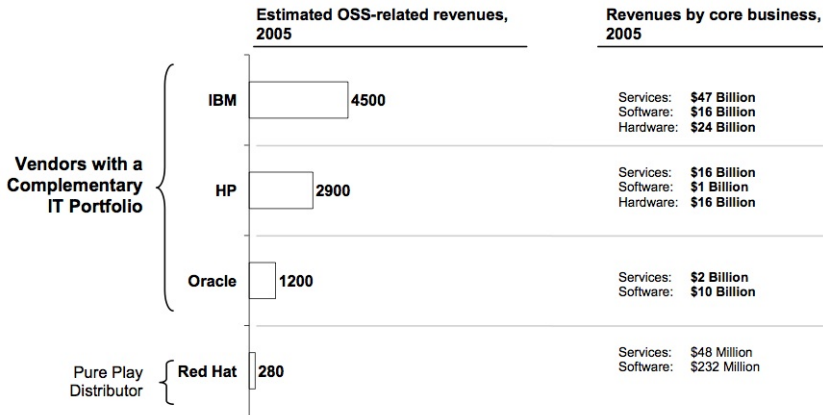
# Receita relacionada a FLOSS vs. receita por área

Corporações não tem fins humanitários...

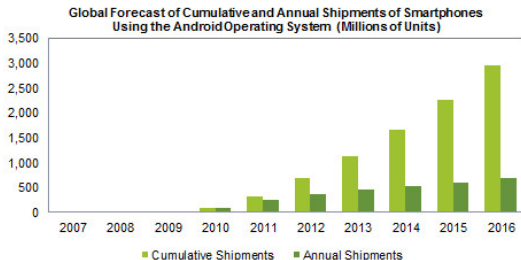


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# Smartphones com o sistema Android



Source: IHS iSuppli/Screen Digest Research September 2012

## Cada um desses smartphones...

- é um ponto de entrada para pessoas conectarem-se à Internet;
- funciona bem com as ferramentas do Google;
- e coleta informações que o Google pode usar!

# Dois pontos de vista complementares

## Software pode ou não ser um diferencial de negócios

- 1 Software livre não é a principal fonte de receita para IBM, HP ou Google
- 2 Mas **ajuda a dividir custos e riscos** para produtos que **não são um diferencial de negócios**



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- 3 Se software não é a diferenciação, é um centro de **custo**, não de lucros

## Tecnologia meio vs. tecnologia fim

- 1 Software pode ser uma tecnologia “possibilitadora”
- 2 Desenvolvimento de software proprietário é uma **minoria**
  - Menos de 10% das vagas para desenvolvimento de software
  - Mais de 70% estão em empresas que são “usuárias de TI”

# Como Você Pode se Beneficiar?



# Pode aumentar sua empregabilidade!

## Education

## Experience

- *September 2009 - December 2009.* Travelled from Japan to England without flying.
- *December 2008 - September 2009.* Mathematical Systems, Tokyo: statistical software consultancy. Member of Knowledge Engineering team doing custom development in Common Lisp for NTT.
  - Monitoring system for large numbers (100k) of routers, with Holt-Winters' seasonal exponential time series forecasting to detect aberrations.
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  - Portable persistent memory-mapped object database integrating into Lisp object system with the Meta-Object Protocol (MOP), including a precise compacting garbage collector and atomic transactions (*manardb*).
- *January 2006 - November 2008.* Travelled in the Middle East, South East Asia, China, North Korea, India, and Japan.
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  - Algorithm evaluation for hardware design: image sensor pipeline (image processing in Matlab), and simulated performance of different i-cache and d-cache sizes and associativities.
  - On-site customer support at Samsung on DMB (mobile TV) phone project. Starting with a dysfunctional project, rebuilt trust with Samsung.
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- *2002-2004.* Trinity College Students' Union.
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- *Summer 2000.* Linux Information Systems AG, Munich: productivity software start-up. Intern.
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- *1998.* Unreleased game framework in C++ with dynamic code generation.

## Recent hobby projects

- *lopecode2*, a high-performance web application platform in Common Lisp, directly calling Linux system calls. Benchmark serving more than 10k dynamically generated pages per second on one processor core.
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# Há muitas oportunidades para trabalhar com FLOSS!

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\$70,000+ (4839)

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\$110,000+ (1026)

\$130,000+ (463)

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### Senior Open Source Web Developer - Oldham - £35k - new

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# Sua empresa pode economizar!

## BLACK DUCK SOFTWARE ESTIMATES DEVELOPMENT COST OF OPEN SOURCE SOFTWARE AT \$387 BILLION



*Reuse of Open Source Software Could Save U.S. Companies \$22 Billion a Year*

**WALTHAM, Mass., April 14, 2009** - Black Duck Software, a leading provider of products and services for accelerating software development through the managed use of open source software (OSS), estimates the total development cost of open source software at more than \$387 Billion U.S.

To put this figure into perspective, the cost to develop open source software code is equivalent to nearly 50 percent of the U.S. government's recently passed stimulus bill, the \$787 billion "American Recovery and Reinvestment Act."

Black Duck Software has the industry's most comprehensive database of open source software and related metadata. According to the company's research, there are over 200,000 open source projects representing over 4.9 billion lines of code. Using its detailed knowledge of open source projects and applying standard industry cost estimation techniques, Black Duck estimates that the total development cost of OSS exceeds \$387 billion and represents a collective investment of more than two million developer years.

An additional analysis, which estimates that 10 percent of IT application development spending is redundant with existing open source projects, indicates U.S. companies could realize savings of more than \$22 billion a year through the reuse of OSS in application development.

# Sua empresa pode economizar!

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# Obrigado!

## Resumo

- **(0)** executar, **(1)** estudar e modificar, **(2)** distribuir e **(3)** distribuir versões modificadas
- Software Livre e Software de Código Aberto são dois lados da mesma moeda
- Vale a pena abrir o código para
  - ① software que **não é um diferencial** de negócios
  - ② software que é uma **tecnologia possibilitadora** para vários negócios
- Há muitas formas de se beneficiar profissionalmente com FLOSS

**Contato:** castor arroba cin.ufpe.br

**Slides:** <http://github.com/fernandocastor>