Open source legal: business as usual

malcolm bain
lawyer

Regular Girona GIS Conf speaker

x groupie
Open Source is no longer a special case

But “a” or “the” mainstream software development model
1997: Eric S. Raymond wrote *The Cathedral and the Bazaar*

- Release early. Release often. And listen to your customers
- Given enough eyeballs, all bugs are shallow."

I dub this: ```Linus's Law```. ```
• Chris diBona, et al. Open Sources: Voices from the Open Source Revolution (1999)


• Martin Fink. Business and Economics of Linux and Open Source (2002)

• Chris diBona, et.al. Open Sources 2.0: The Continuing Evolution (2005)
Even *The Economist* writes about it
“A force for good”

“Is open source really a new post-capitalist economic model?” In fact, open source might be said to be parasitic upon capitalism. IBM, for example, pays an army of programmers to work on Linux, both for the greater good and as a competitive ploy against Microsoft. And many people who contribute to open-source projects do so with the approval of (and using the resources of) their employers, be they universities or firms. Ultimately the open-source approach may prove to be symbiotic with capitalism. Computing firms including Novell, Sun and Apple are adopting hybrid models in which they “open source” (yes, it is a verb) some bits of some of their products.”
Most if not all companies and governments are doing it.

They not just end-users of FOSS, either on the desktop or on the server, but also intensively use Open Source in their software development projects - or have to make their software compliant with open source stacks.
Open Source

Introduction

Facebook has been developed from the ground up using open source software. Developers building with Platform scale their own applications using many of the same infrastructure technologies that power Facebook.

Want to learn more? Check out Engineering at Facebook.

Platform

Our Platform engineering team has released and maintains open source SDKs for Android, iOS, JavaScript and PHP.
Open Source

Introduction
Twitter is built on open source software, from the back-end to the front-end. Twitter engineers use, contribute to and release a lot of open source software. We of the Twitter Open Source Program Office support a variety of open source organizations and are grateful to the open source community for their contributions, and want to maintain our healthy, reciprocal relationship.

If you have questions or problems, please tweet us at @twitteross. For media inquiries, please go here.

Development
If you’re interested in the projects we have released, check out our official organization on GitHub.

If you want to stay up to date, please follow our official twitter account. Follow @twitteross 29.5K followers

Like what we do? Then consider finding a job you’re passionate about and come @JoinTheFlock!

Code and Documentation Licensing
The majority of open source software exclusively developed by Twitter is licensed under the liberal terms of the Apache License, Version 2.0. The documentation is generally available under the Creative Commons Attribution 3.0 Unported License. In the end, you are free to use, modify and distribute any documentation, source code or examples within our open source projects as long as you adhere to the licensing conditions present within the projects.
Gartner: 85 percent of enterprises using open source

Gartner is worried about the 60 percent of enterprises who are adopting open source without its formal involvement.

Admit it. When you read that headline - "Gartner: 85 percent of enterprises using open source" - you assumed that was a good thing, right? Who's afraid of enterprises saving a lot of money and getting much more flexible IT for their IT budgets?

Gartner, apparently. According to Gartner, that widespread adoption is cause for alarm, as Glyn Moody rightly notes (and pillories). Somehow, Gartner assumes that if 85 percent are using open source and 69 percent don't have a formal open-source management team, the world is going to end.

As Moody notes, however, IT organizations have virtually nothing to worry about when adopting open source:
Gartner on FOSS use - 2011

Primary Reasons for Using OSS

- Using OSS for projects in some departments of the company: 46.3%
- Using OSS consistently in all departments of the company: 22.3%
- Conducting simple projects or prototypes to prove value of OSS: 20.3%
- Using OSS strategically to gain competitive advantage: 11.0%
- Others: 0.2%
- ROI or TCO: 25%
- Business Strategy: 24%
- OSS Maturity: 16%
- IT Strategy: 31%
Gartner on enterprise software deployment

Survey Question: What percentage of your organization's currently deployed software (applications and infrastructure) is/will be classified into each of the following categories?

- Internally Developed Software: Currently Deployed 26.69%, Next Budget Year 27.78%
- Proprietary or Commercial Software (Non-OSS): Currently Deployed 47.59%, Next Budget Year 44.78%
- Open-Source Software (OSS): Currently Deployed 25.71%, Next Budget Year 27.32%

OSS Percentage of Deployed Software Grows, While Proprietary Software Declines
Gartner’s gone “bimodal”

<table>
<thead>
<tr>
<th>Implication – IT moves to a bimodal organization</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mode 1</strong></td>
</tr>
<tr>
<td>Reliability</td>
</tr>
<tr>
<td>Price for performance</td>
</tr>
<tr>
<td>Waterfall, V-Model, high-ceremony IID</td>
</tr>
<tr>
<td>Plan-driven, approval-based</td>
</tr>
<tr>
<td>Enterprise suppliers, long-term deals</td>
</tr>
<tr>
<td>Good at conventional process, projects</td>
</tr>
<tr>
<td>IT-centric, removed from customer</td>
</tr>
<tr>
<td>Long (months)</td>
</tr>
</tbody>
</table>

Think Marathon Runner - Think Sprinter
WHAT’S YOUR VIEW ON OPEN SOURCE SOFTWARE FOR ENTERPRISE DESKTOPS?

- Don't know: 8%
- We'll never deploy open source software to the desktop: 4%
- Some apps will become open source eventually: 12%
- We're open to the idea, but adoption depends on future of open source support: 53%

Data: InformationWeek Analytics State of Open Source Survey of 557 business technology professionals using open source software

Open Source Database Adoption is Accelerating

- Database: 53%
- Operating Systems: 36%
- Business Intelligence: 28%
- Web Content Management: 22%

2009 OSBC Survey

Which technology sector is MOST susceptible to disruption by open source within the next five years?

435 survey respondents

Big 4 Competition Dominates Larger Deals

- Competition in Deals Won, $40K, 2008

- Big 4 (2/3 HP OpenView, 1/3 Tivoli) main competition
- Upgrading from Free Open Source (Nagios, Ganglia) next largest
- OpsView (Nagios-based, UK) only Commercial Open Source competition seen
- Zenoss & Hyperic not seen in larger deals
Today you can’t build a product without using open source software,” said Ibrahim Haddad, head of the open source innovation group at Samsung Research America, a subsidiary of Samsung Electronics.
Big names in Open Source

Microsoft

Google

Novell

IBM

Sun Microsystems
MOST IMPORTANT!

Google Searches 2014

http://bigwaterconsulting.net/commercial-open-source-gis-comparison-report/
Management of the legal issues of open source can no longer be seen as a special case either, but fully integrated into the software development, testing and release cycle.
License review???
• You thought licenses were complex?
• We’ve taken the legal aspects of FOSS to the “next level”
• Open source Legal tools!

NOW Available
I accept
A number of tools have been set up to support this legal management, and aid compliance with FOSS licensing obligations.

Anyone developing FOSS should be aware of and become proficient in these.
• Fossology, SPDX, the BAT, OpenChain, License choosers and License calculators, ...

Compliance Tools

Introduction

This page highlights compliance tools developed by or sponsored by The Linux Foundation and encourages community involvement in the tools’ evolution. The tools developed by The Linux Foundation that are described below are licensed under the MIT license. A copy of the license is included as part of the source code package.

Secondly, this page will list other open source tools of value to the compliance process and commercial tools that may be of interest. If your company or organization has a tool you would like listed, please contact the Open Compliance Program at compliance@linuxfoundation.org.

FOSS Bar Code Tracker

The FOSS Bar Code Tracker, available under the MIT license, simplifies the way FOSS components are tracked and reported in a commercial product. The tool allows companies to easily generate a custom QR code for each product containing FOSS. The QR code contains important information on the FOSS stack contained in a product, such as component names, version numbers, license information and links to download the source code, among other details.

Access source code via git: http://git.linuxfoundation.org/foss-barcode.git
Subscribe to the mailing list: http://lists.linuxfoundation.org/mailman/listinfo/foss-barcode
File bugs or feature requests via bugzilla: http://bugs.linuxfoundation.org
LF listed tools

- **Linux Foundation tools**
  - FOSS Bar Code Tracker: custom QR code for each product containing FOSS
  - Dependency Checker Tool: identifying code combinations at the dynamic and static link level
  - Code Janitor Tool: linguistic review
  - SPDX: tagging software packages
  - OpenChain: guidelines for compliance programs
Other great tools

• **Binary Analysis Tool**
  – Analyses binaries (mainly Linux, but other stuff) to identify code snippets leading to licensing information

• **FOSSology**
  – Software source code scanner - license and copyright discovery

• **SPDX**
  – standardize their bills of material to ease the discovery and labeling of open source components
The Binary Analysis Tool (BAT) makes it easier and cheaper to look inside binary code, find compliance issues, and reduce uncertainty when deploying Free and Open Source Software. It is a modular framework that assists compliance and due diligence activities by using the same type of approach applied by copyright holders to discover issues in consumer electronics. BAT is available for free under the Apache license so that everyone can use, study, share and improve it.

BAT can open more than 30 types of compressed files, file systems and media files, search for Linux kernel and BusyBox issues, identify dynamically linked libraries and scan arbitrary ELF, Android Dalvik and Java class files using a database with information extracted from source code to find out what software is inside.

Version 25 of the tool was released on March 29, 2016.

- Learn more about the Binary Analysis Tool!
- Learn more about the people behind the tool!
- See a video of the tool in action
- Download the tool
- Read the documentation
- Get involved
- Got questions?

The Binary Analysis Tool was created by Tjaldur Software Governance Solutions and Opendawn. It is currently maintained and further developed by Tjaldur Software Governance Solutions. Initial development was sponsored by Nlnet Foundation, and further development has been sponsored by Linux Foundation. Development of security analysis features has been made possible through a joint grant from Nlnet foundation and the programme “veilig door innovatie” from NCTV.
FOSSology is an open source license compliance software system and toolkit. As a tool, you can run license, copyright and export control scans from the command line. As a system, a database and web UI are provided to give you a compliance workflow. In one click you can generate an SPDX file, or a ReadMe with the copyrights notices from your software. FOSSology dissection means that you can scan an entire distro, submit a new version, and only the changed files will get re-scanned. This is a big time saver for large projects.

Click here to see who uses FOSSology.

FOSSology does not give legal advice.

Please see the Contact Us page to subscribe to our mailing lists and/or join our IRC channel. If you register you can also use the forum on fossology.org.

Our source repository, developer documentation and issue tracker are on http://github.com/fossology/fossology

Went to try out FOSSology? Try our demo server:
http://52.26.97.143/epo/
(user: testuser, password: test, this is a user w/o admin rights)

Another demo server is hosted by the University of Nebraska - Omaha:
https://fossology.itc.unomaha.edu/

The latest release can be found here:
https://github.com/fossology/releases

An archive of packages for download are available from http://www.fossology.org/releases/. You can also find a source tarball there. Want to try our nightly builds packages? See https://www.fossology.org/nightlybuild/

Confused about where to start on our website? Need download instructions or screenshots? Start here.
- Homepage: fossology.org

Members
Manager: Rob Gobeille, Michael C. Jaeger, Oliver Kundt, Paul Gutmann
Developer: Andreas Wurl, Bob Gobeille, Bruno Coronec, Dan Stangel, Danielle Fognini, Dong Ma, Gervase Markham, Johannes Najjar, Liang Cao, Paul Gutmann, Raimo Lintulamp, Silvano Cirujano Cuesta, Steffen Weber

Latest news
DEBS and SPDX Top-Value
On the way to release 3.1, the master has been updated with DEBS and SPDX Top-Value generation
Added by Michael C. Jaeger 6 months ago

FOSSology 3.0.0
FOSSology 3.0.0 has been tagged and released. It involves many new features.
Added by Michael C. Jaeger 6 months ago

Who Uses FOSSology?
The Software Package Data Exchange® (SPDX®) specification is a standard format for communicating the components, licenses and copyrights associated with a software package.

Announcing the SPDX Report Program

The objective of the SPDX Report program is to create a repository of articles to capture and share community knowledge about anything and everything SPDX. Submit something today!

Reports

A community initiative

News

From the SPDX Workgroup

Version 2.2 of the License List Released

Submitted by Jack on October 26th, 2015

SPDX License List: The year in review
by Jilayne Lovejoy, Legal team Co-Chair

Version 2.2 of the SPDX License List is now available and it seemed like a good opportunity to

The SPDX Specification

Download the current version

SPDX Version 2.0

This is the current version of the specification

more versions...

SPDX Tools

Implement SPDX in your organization

Events

Protecode

Protecode is an innovative provider of software compliance and vulnerability management systems, and an active member of the Linux Foundation.
• What is the SPDX Specification?
  – The SPDX Specification enables suppliers and consumers of software that contains open source code to provide a "bill of materials" that describes the open source licenses and components that are included. The specification defines a common file format to communicate this information.

• Who do you expect to use the SPDX Specification?
  – The specification is designed for use by participants in the software supply chain. Some potential use cases for the spec:
    • Developers of open source projects could provide an SPDX file to users of that project
    • Linux distros could require upstream projects that are included in the distro to provide an SPDX file
    • Developers of software that includes a Linux distro or open source project could provide an SPDX file to their users or customers
    • In the mobile industry, chipset providers, mobile providers and carriers could exchange SPDX files as software moves through the supply chain
SPDX handles Package Relationships

Package

MQ Apache

Jetty Web Container

javax.servlet

SPDX Doc

Apache MQ

contains

Jetty Web Container

contains

javax.servlet

cont'd by

cont'd by

The SPDX License List

SPDX® license repo

- List of most common licenses (300+)
- Include common exceptions
- Standardized license names
- Exact text of licenses
- Available on SPDX website – URLs won’t change
- License Matching Guidelines used for the purposes of matching licenses against those included on the SPDX License List
- License Templates denote license text which is optional or replaceable per the license matching guidelines
<table>
<thead>
<tr>
<th>File Name</th>
<th>File Type</th>
<th>File Checksum</th>
<th>License Concluded</th>
<th>License Info In File</th>
<th>License Comments</th>
<th>Copyright Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>time-1/errno.c</td>
<td>SOURCE</td>
<td>95F96D9A9AB9D817FA 89D44B21E5D3E120</td>
<td>GPL-2.0+</td>
<td>GPL-2.0+</td>
<td></td>
<td>copyright (c) 1990, 91, 92, 93, 94, 95, 96 free software foundation, inc.</td>
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<td>time-1/gelopt.c</td>
<td>SOURCE</td>
<td>4ECF371CD6AE3A4F696 C29864B5A4D068C75</td>
<td>GPL-2.0+</td>
<td>GPL-2.0+</td>
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<td>copyright (c) 1967, 88, 89, 90, 91, 92, 93, 94, 95, 1966</td>
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<tr>
<td>time-1/gelopt.h</td>
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<td>GPL-2.0+</td>
<td></td>
<td>copyright (c) 1989, 90, 91, 92, 93, 94 free software foundation, inc.</td>
</tr>
<tr>
<td>time-1/mdate-sh</td>
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<td>177C2F89D0D21F3A875A E639E9C6D2B30BDF60</td>
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<td>GPL-2.0+</td>
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<td>copyright (c) 1995 software foundation, inc.</td>
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<td>GPL-2.0+</td>
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<td>copyright (c) 1990, 91, 92, 93, 96 free software foundation, inc.</td>
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<td>NOASSERTION</td>
<td>NONE</td>
<td></td>
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<tr>
<td>time-1/iread.c</td>
<td>SOURCE</td>
<td>5552E59387B1E250B 55093A282E9206</td>
<td>NOASSERTION</td>
<td>NONE</td>
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<td>time-1/iread.c</td>
<td>SOURCE</td>
<td>5552E59387B1E250B 55093A282E9206</td>
<td>NOASSERTION</td>
<td>NONE</td>
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<td>time-1/copy.c</td>
<td>SOURCE</td>
<td>0F552E59387B1E250B 55093A282E9206</td>
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<td>NONE</td>
<td></td>
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<td>time-1/copy.c</td>
<td>SOURCE</td>
<td>0F552E59387B1E250B 55093A282E9206</td>
<td>NONE</td>
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<tr>
<td>time-1/makefile.am</td>
<td>SOURCE</td>
<td>031F7D12AEF3D2040A231 D714247AD07A9</td>
<td>NONE</td>
<td></td>
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<tr>
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<td>NONE</td>
<td></td>
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</tr>
</tbody>
</table>
Commercially Available Tools

**protecode**
Protecode is an innovative provider of software compliance and vulnerability management systems, and an active member of the Linux Foundation's Software Package Data Exchange (SPDX) group.

**SOURCE**
The Source Auditor Scanning Tool scans source code for open source code snippet matches, license matches, and copyright text matches.

**WIND RIVER**
A free service that generates an SPDX file from your uploaded software package.

**BLACKDUCK**
A comprehensive, automated approach to open source governance and compliance, helping organizations maximize the benefits of open source.

Community-Maintained Tools

**TripleCheck Reporter**
Straight-forward free tool to create SPDX reports right from your desktop.

**Yocto+SPDX**
The Yocto+SPDX project is built to integrated SPDX generation into the Yocto build process.

**FOSSology + SPDX**
The FOSSology+SPDX project is built using the FOSSology project. The goals are integrating the FOSSology output with the SPDX standard. Existing modules include creating an SPDX file in TAG format, licenses/copyrights information in NOTICE format. The project and was created and is hosted at the University of Nebraska at Omaha. FOSSology+SPDX is licensed under Apache License 2.0 (Apache-2.0).
IDEs and other

• Maven License Plugin
• Eclipse Copyright Tool, Copyright Wizard
• Gradle reports
• http://choosealicense.com/
  https://github.com/blog/1530-choosing-an-open-source-license

• CENATIC license calculator
## Licenses

**Unknown:** backend-services  
**LGPL 2.1:** Javaassist  
**New BSD License:** Hamcrest Core  
**Common Public License Version 1.0:** JUnit

## Dependency File Details

<table>
<thead>
<tr>
<th>Filename</th>
<th>Size</th>
<th>Entries</th>
<th>Classes</th>
<th>Packages</th>
<th>Java Version</th>
<th>Debug Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>javaxassist:3.12.0.GA.jar</td>
<td>633.3 kB</td>
<td>384</td>
<td>360</td>
<td>17</td>
<td>1.4</td>
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</tr>
<tr>
<td>junit:4.11.jar</td>
<td>245 kB</td>
<td>280</td>
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<td>28</td>
<td>1.5</td>
<td>Yes</td>
</tr>
<tr>
<td>hamcrest-core:1.3.jar</td>
<td>45 kB</td>
<td>52</td>
<td>45</td>
<td>3</td>
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<td><strong>Total</strong></td>
<td><strong>923.4 kB</strong></td>
<td><strong>702</strong></td>
<td><strong>638</strong></td>
<td><strong>48</strong></td>
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<tr>
<td>test: 2</td>
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<td>test: 318</td>
<td>test: 278</td>
<td>test: 31</td>
<td>-</td>
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<tr>
<td>provided: 1</td>
<td>provided: 633.3 kB</td>
<td>provided: 384</td>
<td>provided: 360</td>
<td>provided: 17</td>
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<td>provided: 1</td>
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## Dependency Repository Locations

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<th>URL</th>
<th>Release</th>
<th>Snapshot</th>
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</thead>
<tbody>
<tr>
<td>snapshots</td>
<td><a href="http://dorian2.it.lg/artifactory/libs-snapshot">http://dorian2.it.lg/artifactory/libs-snapshot</a></td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>central</td>
<td><a href="https://repo.maven.apache.org/maven2">https://repo.maven.apache.org/maven2</a></td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Repository locations for each of the Dependencies.

<table>
<thead>
<tr>
<th>Artifact</th>
<th>snapshots</th>
<th>central</th>
</tr>
</thead>
<tbody>
<tr>
<td>javaxassist:javaxassist:jar:3.12.0.GA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>junit:junit:junit:4.11</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

This document contains information about licenses, dependency file details, and dependency repository locations.
Calculador de licencias

El "calculador de licencias" ofrece un sistema rápido para seleccionar licencias adecuadas para proyectos de software basado en el modelo de licencias seleccionado.

- **Selector de componentes**: Si el proyecto se licencia bajo una licencia de código abierto, la lista de licencias adecuadas contiene las licencias más utilizadas. Además, si el proyecto incluye componentes basados en licencias de código cerrado, la lista de licencias adecuadas incluirá licencias de código cerrado y licencias de código abierto.

El sistema no es exhaustivo y se presenta a efectos de una lista de licencias más amplias, proporcionando una selección de licencias adecuadas para proyectos de software de código abierto. Para poder resolver las dos partes, todo el proceso debe ser establecido.

Es evidente que este sistema de "calculador de licencias" puede adaptarse a los propios requerimientos para cada caso en el proyecto.

1. **Selector de componentes**
2. **Selector de licencias**
Tools… and processes!

• Create a FOSS Policy
• Read OpenChain
• Use Contributor policy
• Publish checklists, Data Sheets for Developers
• Review sensitive areas
  – App development compliance
  – Supply chain management
The 2016 Open Source Jobs Report: Companies Hungry for Professional Open Source Talent

By Linux/Foundation - May 5, 2016 - 1:00pm

Fifth annual report expands scope beyond Linux to examine what motivates open source professionals and how companies are attracting and retaining this in demand talent.

NEW YORK and SAN FRANCISCO, May 5, 2016 — Recruiting open source talent is a top priority for hiring managers focused on recruiting technology talent, and recruiters are increasingly looking for more professional training credentials from their candidates. According to the 2016 Open Source Jobs Report released today, 65 percent of hiring managers say open source hiring will increase more than any other part of their business over the next six months, and 79 percent of hiring managers have increased incentives to hold on to their current open source professionals.

This is the fifth year Dice®, the leading career site for technology and engineering professionals, and The Linux Foundation, the nonprofit advancing professional open source management for mass collaboration, are partnering to produce the jobs report. The four previous years’ research focused exclusively on the job market for Linux professionals. As open source software has become an ever increasing footprint in technology infrastructure and end products, it is important to understand the opportunities and challenges associated with the overall open source talent market. As a result, the organizations are expanding the report this year to examine the broader job market for open source professionals. While this means comparisons to past years’ results are not exact, the data is more broadly relevant to a larger pool of professionals and hiring managers.

The 2016 Open Source Jobs Survey and Report provides an overview of the trends for open source careers, motivation for professionals in the industry and how employers attract and retain qualified talent.

Key findings from the 2016 Open Source Jobs Survey and Report include:

- Open source talent is one of the top priorities for recruitment this year. Fifty-nine percent of hiring managers say they’ll add more open source professionals to their ranks in the next six months. This is an increase when compared to last year’s Linux-specific jobs report, which found 50 percent planning to add Linux talent during the same time period.
Key findings from the 2016 Open Source Jobs Survey and Report

• **Open source talent is one of the top priorities for recruitment this year.** Fifty-nine percent of hiring managers say they’ll add more open source professionals to their ranks in the next six months.

• **DevOps is among the most sought after skills in the industry.** Fifty-eight percent of hiring managers are seeking DevOps professionals while the need for developers remains the top position on their list at 74 percent. Open source professionals also feed this trend as 13 percent of the surveyed identified DevOps as the most in-demand skill today - more than any other category.

• **Networking is a leading emergent technology.** As the second most in-demand knowledge area, 21 percent of hiring managers say networking has the biggest impact on open source hiring. The only higher category, at 51 percent of surveyed hiring managers, is knowledge of OpenStack, CloudStack and related cloud technologies.

• **Open source professionals are driven to innovate and collaborate.** Only two percent of professionals stated that money and perks were the best thing about their jobs. Working on interesting projects tops the list with 31 percent, while working on the most cutting-edge technology challenges (18%) and collaborating with a global community (17%) are also high on open source professionals’ lists.
Which skills have the biggest impact on open source hiring? The report outlines a few skills hiring managers say are in demand, such as:

- Development: 74% have openings for developers.
- Application development: 60% are seeking application development expertise.
- DevOps: 58% need DevOps talent.
- Cloud: 51% want candidates with OpenStack and CloudStack experience.
- Networking: 21% are looking for new hires with networking skills.
- Security: 14% need security pros.
- Containers: 8% are seeking candidates with container experience.
- **Legal knowledge: 100% want candidates with knowledge of licensing and legal assistance tools** (interviewee: Malcolm Bain)
DevOps → DevELOps

• EL = excellence in licensing
• EL = enterprise legal awareness
• (EL = elegant lawyer)
Simple!
Cheers!

(Get coding....)