White Paper

Open Source is Quickly, and Rightfully, Becoming Enterprise's First Choice

Abstract

Those leading the technology decision-making within today's largest organizations face critical decisions over whether to utilize propriety or open source software solutions. While the former once enjoyed dominance, the tide has now turned such that open source skepticism has rightfully waned and open source popularity has pulled even among enterprises—for good reason.

"Free software is a matter of liberty, not price. To understand the concept you should think of 'free' as in 'free speech', not as in 'free beer'."

Richard M. Stallman, Free Software Foundation

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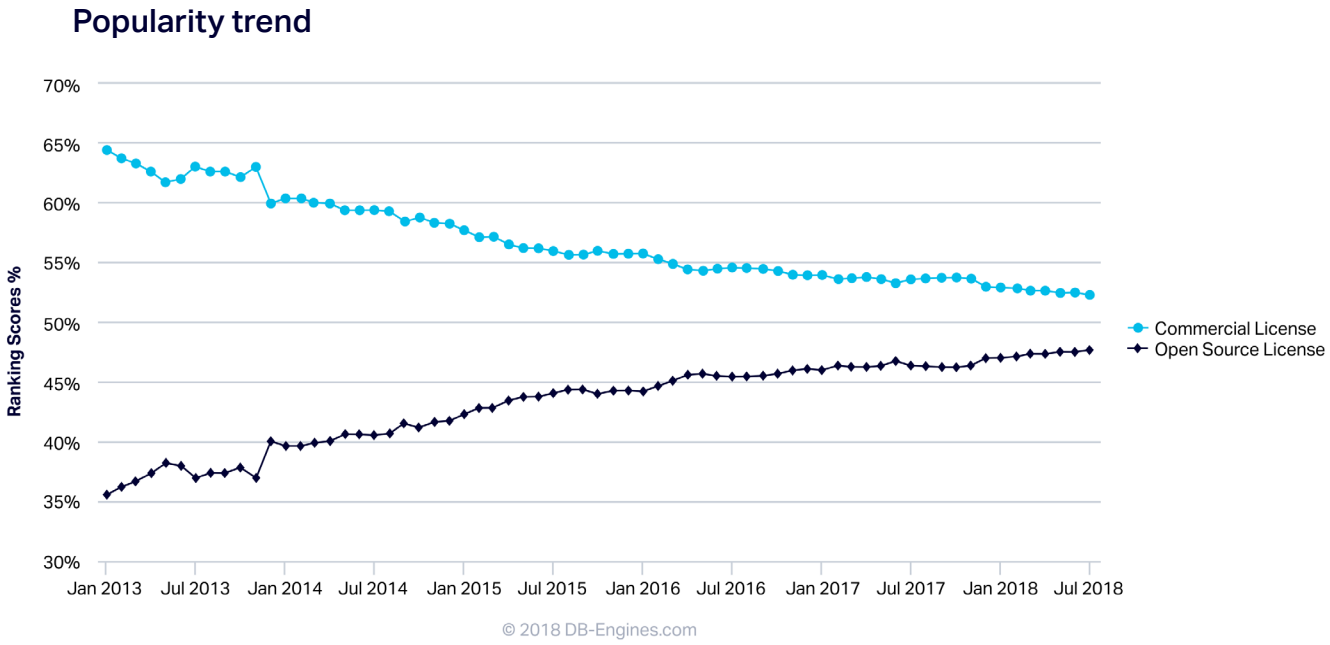
Introduction

In the database management systems (DBMS) space, adoption of open source and propriety solutions is now in a virtual tie. However, the trendline over the past half-decade clearly shows a constant rise of open source implementation. Confidence in open source is upending the enterprise market, and this is perhaps been especially true when it comes databases and related analytics solutions.



Graph 1: the historical trend of the popularity of open source and commercial database management systems.

The trend is expected to continue. Gartner predicts that by 2022, more than 70% of new in-house applications will be developed using an open source DBMS, and half of existing relational DBMS instances will have been converted or will be in the process of doing so—signaling a major paradigm shift. Open source technologies have been proven in enterprise environments, with some of the largest deployments of NoSQL databases and related technologies now built on open source and not proprietary solutions. Netflix and Atlassian are two examples of organizations that have thrived after their full embrace of open source.

Enterprises must weigh a number of factors when selecting the right technology implementation for their needs, including:

- how the technology fits with their current infrastructure
- cost
- how best to optimize IT performance
- future plans.

By their nature, open source solutions inherently offer economies of scale and strong community support, and these attributes have been ever-more-strongly joined by robustness, manageability, high-performance, scalability, security, and reliability as open source technologies increase in prominence and recognition.

Here are six open source advantages that are fueling the enterprise adoption trendline:

1. Economies of Scale

Because open source software is created and supported by a worldwide community of organizations and individual developers, it offers key benefits around cost, flexibility, and freedom that proprietary software solutions cannot match. Here's why:

Sharing isn't just caring, it's also cost-effective. With open source, the software itself is free, and the costs of development are shared across the community. Pooling efforts around a single standardized platform—through a community committed to a technology's continuous improvement—results in solutions more robust and refined than what proprietary providers can offer.

Faster time to market. Since open source solutions are openly available and can be explored for free, it's often much faster to investigate options and get solutions off the ground.

No vendor or technological lock-in. Proprietary software can cost your business more than you might realize. If you think about the out-of-the-box expense of the software itself, and then add mandatory virus protection, support charges, ongoing upgrade expenses, and other costs associated with being locked in, it often doesn't make economic sense. Open source software provides cutting-edge technology and meaningful community support at the fraction of the price. This economic advantage of open source solutions easily translates into a competitive one.

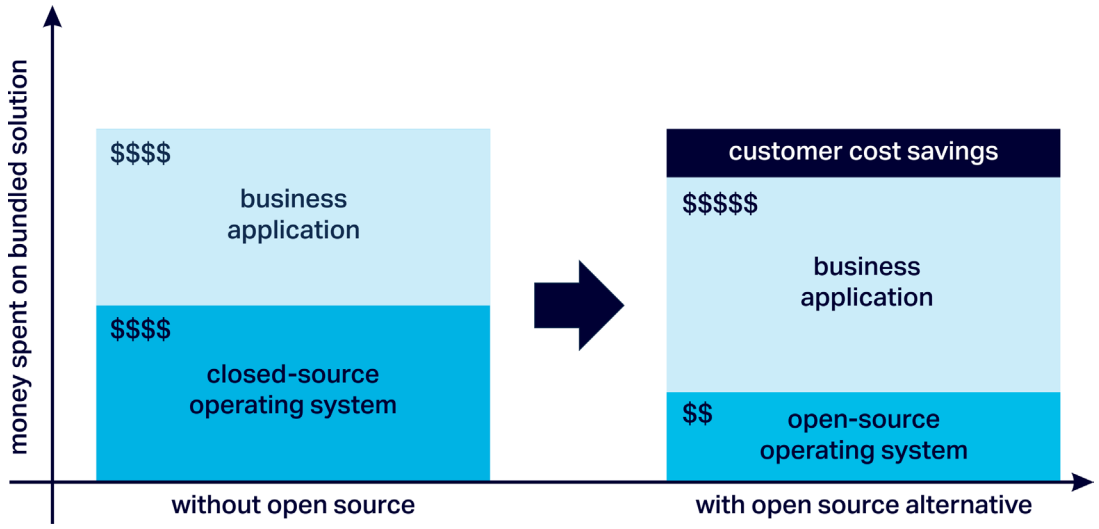


Figure 1: The support of open source software lets vendors seel at a higher price

As shown above in Figure 1, replacing a high-cost closed source technology stack component with a lower-priced open source component increases pricing flexibility for purchasing other components, and can also reduce costs for customers.

Reach more customers at a lower price point. The lower the price of your application, the more customers that will buy it. Replacing expensive closed source solutions with lower-cost open source alternatives allows you to reduce prices while selling to more customers and increasing profits.

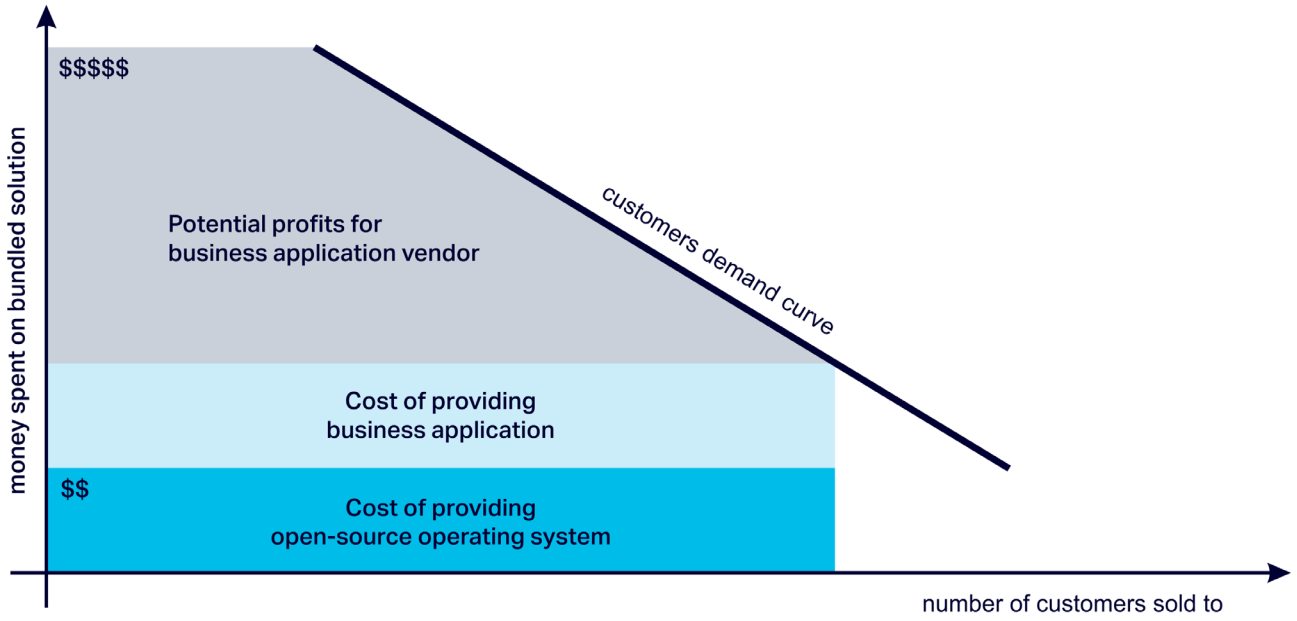


Figure 2: The support of open source software lets software firms sell to more customers.

2. Security: Safety in Numbers

"Given enough eyeballs, all bugs are shallow." **Linus' Law**

Open source solutions have the potential to be vastly more secure (and therefore more reliable and scalable) than proprietary solutions can manage. The more people that can see and test a set of code, the more likely any flaws will be caught and fixed quickly —a fact that gives OSS a decisive security advantage. For example, ***more than 60 million lines of code were committed*** to The Apache Software Foundation last year.

Closed source proprietary software does find some benefit in "security through obscurity", meaning that the software is so unknown and has such a small userbase that attackers either don't know about it or find it worth their time. However, this isn't a reliable basis for functional security. On the other hand, open source takes a security-through-visibility-and-disclosure approach. Bugs in open source software tend to get fixed quickly, as the number of

developers looking at an open source software solution for vulnerabilities and other bugs to fix is disproportionately large in comparison to proprietary software's limited developer base.

3. Intellectual Property

In software development, three categories of intellectual property rights must be considered: the copyright (of the source code and related texts), the trademarks, and the patents.

Open source foundations provide clear and well-defined processes that clarify any issues around intellectual property rights associated with the software. In the end, the open source project is provided under an open source license that spells out its usage conditions, and defines the relationship between a contributor and the project through a contributor agreement. This ensures that enterprises benefit from clarity intellectual property and licensing questions.

4. Scalability and Reliability

Scalable and reliable architecture is foundational to the business case for open source solutions. By its very definition, peer-reviewed open-source software has the potential to be more reliable than closed, proprietary software. For example, companies like Netflix—whose service has long run on Apache Cassandra™ clusters—utilizes the scalability of open source to its advantage. The automated tooling Netflix has developed enables it to quickly deploy large scale Cassandra clusters. Such open source solutions demonstrate a level of reliability and robustness under fast-changing conditions that outperform even the best closed source commercial software. Enterprises focusing on continually-evolving and data-heavy technologies (such as the IoT) are successfully using open source for their DBMS solutions as well.

5. Open Code, Supportive Community

Many closed source proprietary solutions require a leap of faith from the end user, trusting that a service adheres to security and auditability standards. In contrast, the visibility of open source code means you can be as confident in the software as you are in your own eyes. At the same time, the community contributing to the code is always looking to improve it, and the fact that any code additions are peer reviewed means that help and support is always available. Most foundations have an online community with excellent documentation, forums, forges, and wikis. Enterprise support for open source software also tends to be more responsive, especially those that are committed to the open source project.

6. Interoperability

The flexibility of OSS means that business users can often tweak solutions to suit their needs. Since the code is open, it's really just a matter of modifying it to add required functionality. This simply cannot be done with proprietary software.

Wrapping Up

Open source is not just a community, it's a movement. And while its popularity has, of course, existed for decades, it's accelerating growth in today's enterprise is unmistakable.

While some proprietary vendors create their own technology stacks from a mix of acquired and open source products bunched together to create a 'unique offering,' such solutions only go through a limited number of iterations to ensure quality—and thus suffer the limitations familiar to proprietary software. Furthermore, using proprietary software for core infrastructure increases the risk of vendor or technology lock-in, which can put an enterprise at a mercy of vendors' price increases and mean a lack of flexibility they can't easily and readily escape. Therefore, enterprises opting for an open source strategy must be careful to use **100% open source solutions**, rather than those from providers that repackage open source software to include proprietary hooks.

With true open source, enterprises can know that community supporters contribute code, peer-reviews, and more with the motivation to continually improve the quality of the solution, not just their bottom lines. This pursuit of excellence will always ensure that open source solutions remain cost effective, cutting-edge, secure, reliable, and scalable technologies.

About Instaclustr

Instaclustr delivers reliability at scale through our integrated data platform of open source technologies such as **Apache Cassandra®**, **Apache Kafka®**, **Apache Spark™**, **Elasticsearch** and **Redis**.

Our expertise stems from delivering more than 70 million node hours under management, allowing us to run the world's most powerful data technologies effortlessly.

We provide a range of managed, consulting, and support services to help our customers develop and deploy solutions around open source technologies. Our integrated data platform, built on open source technologies, powers mission critical, highly available applications for our customers and help them achieve scalability, reliability, and performance for their applications.

Build, run, and scale your app with confidence

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If you're looking at building a proof of concept for your application, or looking for production grade nodes, contact a member of our **Sales team** to discuss your specific needs.