

Can migrating to an Open Source solution reduce operational costs? Yes. However...

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As partner to numerous publishers, both proprietary and Open Source, dbi services is frequently asked to provide software solutions. Our list of partnerships includes EnterpriseDB, Severalnines, Cloudera, Red Hat, MariaDB as well as Oracle, Microsoft and Dbvisit, all three of which are proprietary software publishers.

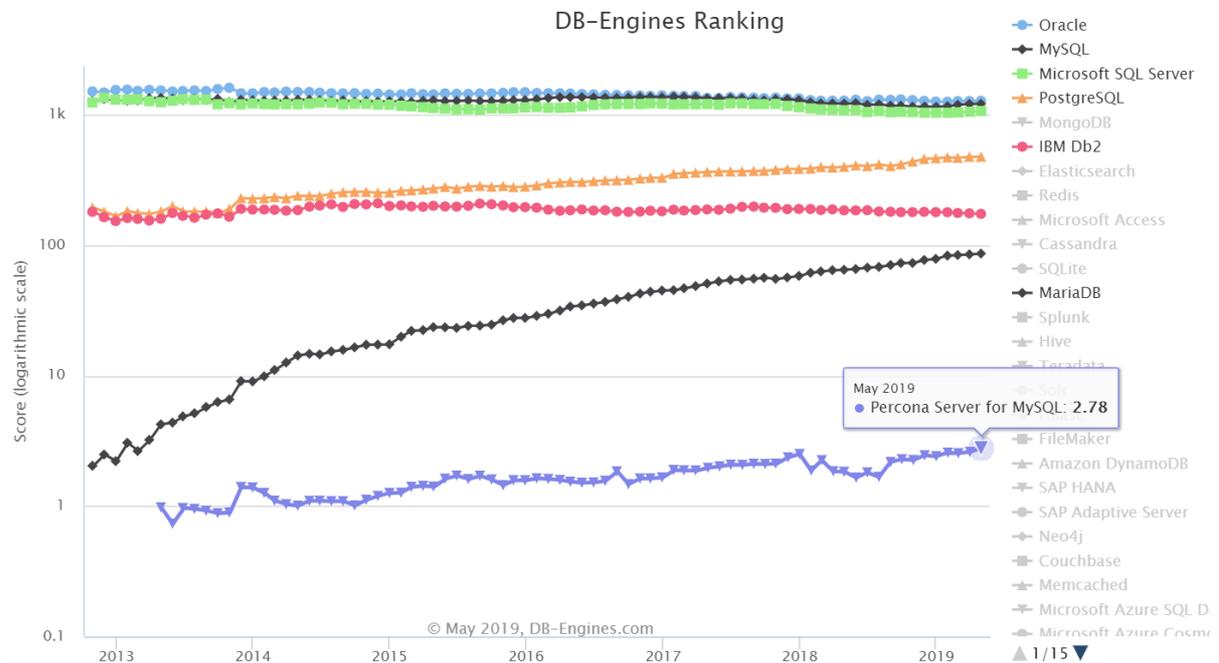
The rise of Open Source solutions

For the past several years, dbi services has noticed a growing enthusiasm for Open Source software among a large number of companies, regardless of their size or business sector. Yet this does not mean that they have completely given up on the major proprietary software publishers. In fact, most Open Source software is used in conjunction with proprietary software.

Nowadays, companies which would never have used their environments on platforms other than AIX in the past, such as banks, are now using Linux systems even for environments which do not have to make compromises in terms of performance or availability. While major publishers are still perceived to be a guarantee of longevity, current constraints such as time to market, agility and interoperability put past selection criteria on the backburner. Open Source solutions are thus generating real interest which is resulting not only in an increase in demand, but also in a growing number of sessions at international events, such as the DOAG conference (a conference for the Oracle user group in Germany). Even user groups such as the SOUG (Swiss Oracle User Group) are opening up to having non-Oracle Open Source solutions at their events to attract more participants.

The case of relational databases

Open Source solutions involve all layers of software infrastructure, and databases are no different. Today, a large number of our clients who use Oracle or Microsoft also use PostgreSQL. MySQL and its derivatives (often referred to as forks) have always been widely deployed, sometimes even without the client's knowledge, because they are integrated in software solutions such as Content Management Systems (CMS), Document Management Systems (DMS) and even Customer Relationship Management (CRM) solutions. Even though MySQL is losing popularity, which undoubtedly benefits MariaDB and Percona, it is still the second most popular database as of May 2019 according to db-engines.com.



Our experience in the field of IT infrastructure has shown us that opting for an Open Source solution, when not business-driven, is often based on a desire to save money on investments and operational costs. In this case, the potential use of Open Source software serves as a bargaining tool in negotiations with major publishers.

Obviously, it is possible to save money by migrating from a proprietary solution to an Open Source solution, as it is when migrating from one proprietary solution to another. At the same time, Open Source does not mean free, and this is even more true when the availability and performance of a solution are of the utmost importance. So, what does all this mean? What is the true cost of Open Source?

The cost of Open Source

There is only one answer to the question “How much does Open Source cost?” and that is “It depends...” Nevertheless, there are certain costs which can be predicted in any situation no matter the context, specifically the largest areas of expenditure:

- Team training costs
- Migration costs
- Solution support costs

Open Source solutions entail a significant cost in investment, and it is only through this investment that operational costs can be minimised in the medium term. In fact, the investment required when adopting or migrating to an Open Source system will only make it possible to reach the break-even point after a few years.

An example of an Oracle migration to MySQL

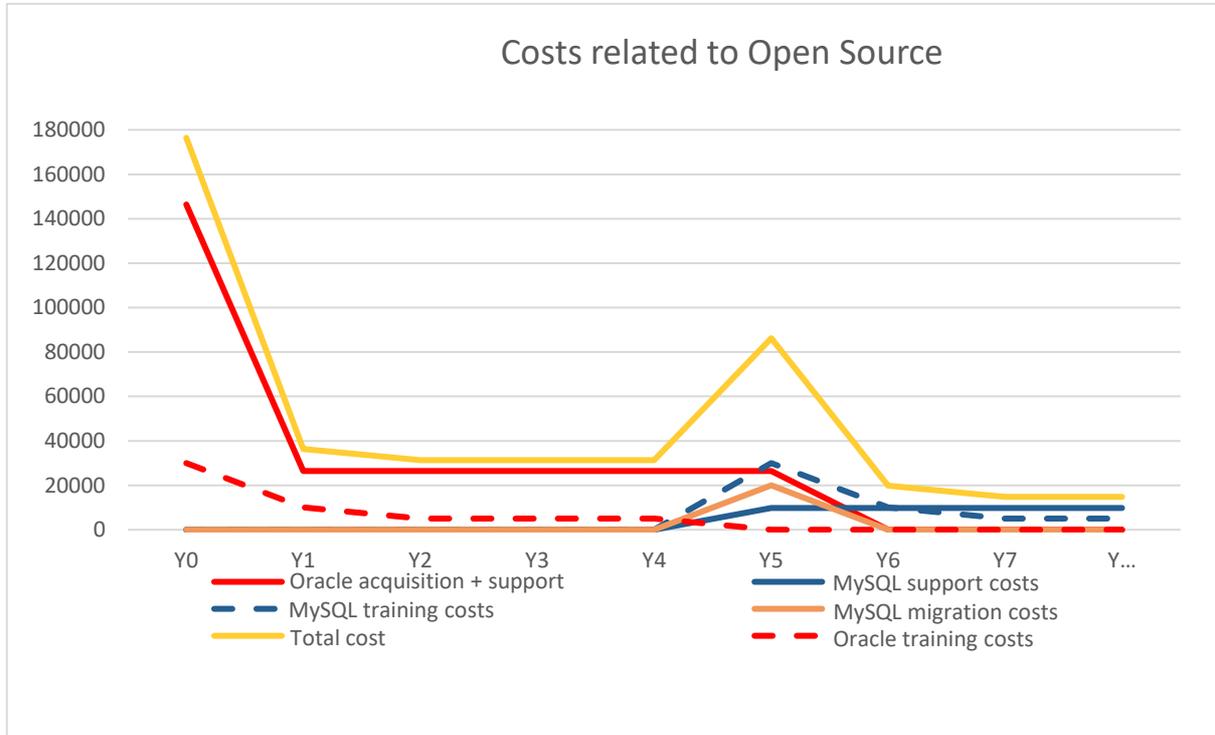
Let us use a simple scenario to illustrate a migration from Oracle to MySQL. Naturally, Oracle and MySQL can only be compared in terms of their functionality. PostgreSQL also could have been used for this example, particularly if there were stored procedures. That said, the premise here is that the only functions required are those provided by MySQL and that the current Oracle infrastructure is based on two Oracle processors (Intel Xeon 4 core x 0.5 Intel core factors (Oracle) = 2 Oracle processors).

The Oracle processor costs \$47,500 (listed price), which makes for a total of \$95,000. During installation, you need to add the Diagnostics Pack and the Tuning Pack (i.e. 2x \$7,500 + 2x \$5,000 = \$25,000). **The acquisition cost is thus \$120,000.** Add to this the first year of support at 22% of the cost (i.e. \$26,400). **The total cost for the first year thus rises to \$146,400.** For every following year, you must then add 22% of the total cost in support, or \$26,400 (excluding the mark-up calculated every year by Oracle).

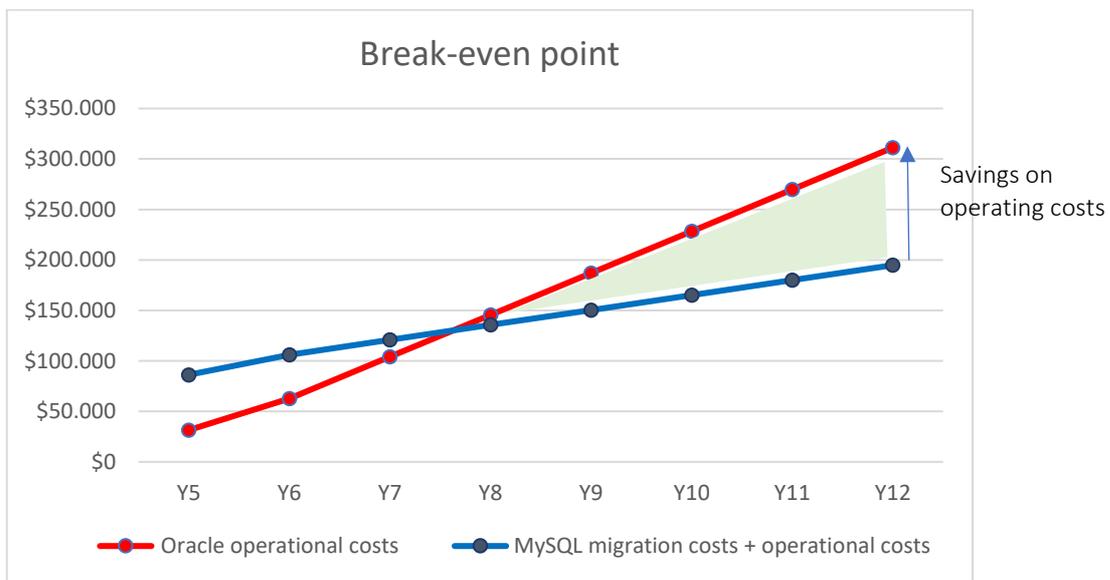
After five years, the decision is made to migrate the database to an Open Source solution (Oracle MySQL or MariaDB). The acquisition cost is zero. The cost of support is \$9,600 (MariaDB TX) or \$5,000 (Oracle MySQL 1-4 sockets) and \$3,000 for a provisioning and monitoring solution such as ClusterControl provided by Severalnines (for monitoring, MariaDB Enterprise integrates Monyog and MySQL Enterprise integrates MySQL Enterprise Monitor). This all amounts to somewhere between \$5,000 and \$12,600 per year.

In addition to this, you obviously have to add the cost of migration (which is totally dependent on the infrastructure in place and estimated here at \$20,000) as well as the cost to train the database administrators (DBAs) on how to use MySQL. For the sake of comparability and fairness, this training cost is calculated in the same way as the training for Oracle (i.e. \$30,000 for the first year, \$10,000 for the second and then \$5,000 for each additional year). This cost reflects both the time spent on self-study as well as external training.

Finally, in this scenario, the decision was made to retain Oracle support during the year of migration. This means an increase in operational costs compared to previous years. This decision is generally justified by the fact that the old infrastructure which is supported can continue to be used during the transition period and the subsequent few months. This must be factored into the migration budget.



During the migration year, operational costs will potentially increase and need to be factored into the annual budget. Based on the abovementioned case study, the break-even point could be reached approximately two and half years after migration.



Is using an Open Source solution too costly?

It is becoming increasingly common for IT managers to be asked to do more with less. In such a situation, it is highly likely that the company's leadership will point out the costs of an Open Source solution to the IT manager and require them to be reduced just a few years after the migration. In fact, as times goes by, we tend to forget about the money saved in the past and focus only on the costs.

The fact is, like anything else, **Open Source has a cost**. The budget for IT products and services needs to be reviewed every year and adjusted to reflect the quality, security and availability of the service. Below a certain threshold, the quality of the service will begin to be directly affected. The IT manager is responsible for highlighting the need to maintain this level of quality and not cross the threshold at which it would be negatively affected. Downtime also entails a cost which will naturally be borne by the IT manager in the case of data loss or downtime for the service.

Conclusion

Too often people draw a connection between the terms "Open Source" and "free". However, migrating to Open Source software is not free. Before you can save money on your operational costs, you will inevitably have to increase them. To maintain the availability of a production infrastructure, you will need support which is never provided free of charge. Not many IT managers would consider using an IBM P-Series infrastructure or an Oracle database without support. Meanwhile, this is a common scenario for Open Source software, whether it be a PostgreSQL database, a Linux operating system or a CRM, such as SugarCRM. Unfortunately, this lack of support inevitably results in a decrease in the service's quality.

Lastly, migrating to Open Source software incurs indirect costs related to training costs, migration costs and the potential cost of needing dual support for a period of time. Therefore, this investment will probably only become economically beneficial after a few years. It is important not to be misleading about this. As previously mentioned, these issues should not be the only ones factored into your decision-making process. Open Source software is experiencing an unprecedented surge in interest, and you will probably generate more interest by hiring for a position using an Open Source technology than a proprietary technology.

To sum it up, Open Source is wonderful - but not free.