



This pie is just 2% of all OS installations in the world

The Windows' total cost of ownership



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This article is written collecting different LinkedIn posts previously published:

- [Microsoft Windows' total cost of ownership \(TCO\)](#)
- [Switzerland, avalanche effect in favor of Open-Source](#)
- [Too bad that all this cake is only 2%](#)

Introduction

The first important fact that we need to consider is that the pie above is just 2% of the all operative system that are currently running on a CPU because it refers to the desktop and laptop hardware.

This hardware is just the peak of the iceberg but if you look around you will discover that there are a lot of other systems with a CPU running an operative system (OS) like tablets, smartphones, smartwatches, smart TVs, video and game consoles, satellite tuners, infotainment and navigation system in the modern cars, the servers that are routing the Internet traffic, those are storing data for the cloud, etc.

The second important fact that we need to consider is that the term "market share" does not refer to the number of "installations" but to the license price and the sum of the costs paid for install them and keep running them. Fortunately, comparing the statistics about the market shares and the number of installation we can find the relative total cost of ownership (TCO).

The relative TCO is a great key performance indicator (KPI) about how using an OS can be cheaper than another one. You may not agree with this conclusion because from the user-end point of view (PoV) your Windows license is paid with the computer because an OEM agreement and you find Windows much more easy to use. Then ask yourself why you have not bought a Windows smartphone, for example.

Relative TCO: Windows -vs- Linux

First of all, we can start with some statistics about OS market share:

- Mobile (Windows <1%, Android 72.2%)
- Tablet (Windows <1%, Linux & Android 44%)
- Desktop/Laptop (Windows 73%, Linux & ChromeOS 6%)
- Server (Windows 25%, Linux 62%)

Data sources: lnkd.in/dPPEwgyY and lnkd.in/d5Wv8kHN

Which are interesting numbers but they are not homogeneous. Why?

The answer is reported into Fortune Business title: "*Server Operating System Market Volume*". The same appears obvious to me for the mobile devices.

However, let continue with the server.

According to server statistics, Linux is becoming increasingly important on the internet. In fact, 96.3% account for the servers which use Linux and it is one of the top one million. Windows (1.9%), and FreeBSD (1.8%) are the main players. -- Google, Aug 11, 2023

Therefore 96.3% of Linux Server installations are accountable for only 62% of the volume market. This means also that less than 4% of Windows server creates 25% market volume. By a simple arithmetic proportion, we can establish the relative average TCO, for example:

- $K (3.8\% : 25\%) = 96.2\% : 62\% \rightarrow K = 10.21$

Because, $25\% + 62\% \neq 100\%$ obviously there is some other kind of server that generates the 13% of the market volume. Because 13% is almost half of 25%, it would be more reasonable to put 2% in that equation. However, this can arise debates and we keep that equation as-is.

A reasonable conclusion is that Windows server average TCO is something between 10x and 20x times more expensive than Linux.

Why Microsoft loves Linux?

Easy to answer question: Outlook then Azure infrastructures are much more profitable when the TCO is 20x time lesser. Plus, scalability for a large infrastructure is also the other aspect that can play an essential role about adopting an OS, in particular.

Why do not use the Berkeley Software Distribution (BSD) like Apple did for the MacOS X?

Considering this part referred to the statistics above from the Goggled quote:

- Windows (1.9%), and FreeBSD (1.8%)

It means that the relative TCO is about 20x for both Windows and BSD servers. Hence MacOS X is almost costly as much as Windows. Which does not bring to us any surprise because the end-users are much likely keen to pay for a pre-installed and pre-paid OS.



Image from Fortune 23rd October 2015

Switzerland switched for Open-Source

After more than a decade of pro-cons evaluations, finally Switzerland decided in favor of the open-source. The Linux kernel is open-source and the BSD as well. However, there is a difference between the two. The Linux kernel adopted the GPL v2.0 which more than an open-source licence but also the reference for the software-libre.

23th July 2024 - Switzerland now requires all government software to be open source. The United States remains reluctant to work with open source, but European countries are bolder.

-- source: [ZD NET](#)

This kind of news are not taken overnight but requires many years of evaluation. In fact, reading the article we got acknowledged that they started to consider this opportunity in 2011, two years after that Microsoft have been forced to the European Commission to publish all the information in order to let other companies compete in delivering software for Windows platform.

However, today is the day after that decision. And yesterday might not be a day like others. Two important things happened in these last days:

- 19th July 2023 - [lnkd.in/d_MwfCVt](https://www.linkedin.com/d_MwfCVt) - CrowdStrike Falcon BSOD world day
- 23th July 2023 - [lnkd.in/dwYWqv7X](https://www.linkedin.com/dwYWqv7X) - Microsoft accused EU for such a fault

In the meantime, a lot of people were struggling in trying to bring back to live the faulted system. One by one, manually. Plus, those were panicking in front of encrypted disks with Bitlocker. - [lnkd.in/dqRdBD4s](https://www.linkedin.com/dqRdBD4s)

At the same time, the GNU/Linux users were laughing at the idea that less than 1% of Windows machine put down the world and created such a peak of effort and troubles. While everything could have been never happen. - [lnkd.in/dJ7wUam6](https://www.linkedin.com/dJ7wUam6)

A school case that shows how and why Windows OS has a TCO estimated 20 times more expensive than GNU/Linux systems.

I am pretty sure that in Switzerland they were stuck on data-driven decision dilemma - especially because data can be tortured enough to saying what we like they say - but finally the reality popped up in all its brutality.

The avalanche effect.

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