

A company called “BadaCorp” recently realized more profits after they made their private APIs public. It enabled them to increase their reach and sell advertising. The company which uses Windows operating system now wants to deploy a new server but are not yet certain which route they should follow. Two teams in the web server management department are going to debate on whether to use open-source solution or closed-source solution.

Moderator: Good day everyone, as you should all know already, my name is Tommy, one of the team leads in the web server management department, and I will be moderating today’s discussion. BadaCorp wants to deploy a new server so, we have divided you all into two teams, Team O and Team C, so that we can have opposing views on whether to use an open-source solution or a closed-source solution. Representative of Team O, please can you give us your name, the solution you choose and a brief reason why.

Team O: Good day everyone, my name is Jim, and I will be representing Team O in support of using an open-source solution. My team and I have chosen an open-source solution because, it is the most popular approach nowadays. A survey carried out by NetCraft in 2014 states that the open systems, Apache, has about 42% of market shares while the closed-source system, Microsoft’s IIS, has 32% of market shares. Why are open systems more popular? Well, it is because they are freely distributed and they can run on all major operating systems.

Moderator: Thank you Team O. Representative of Team C, please give us your name, the solution you choose and a brief reason why.

Team C: Good day everyone, my name is Jean, and I will be representing Team C in support of using a closed-source solution. We choose a closed source solution because, even though open source solutions seem to be more common, a closed system such as Microsoft’s IIS also hold a significant market share. Contrary to the report cited by Jim, a more recent survey carried out by the same NetCraft Company in 2019, states that IIS and Apache are now virtually tied in market share of installations, although Apache still has more “active sites”. In fact, IIS now has 28.4% of market share of installations while Apache has 26.1%. So, IIS is becoming more popular. A good reason to settle for Microsoft’s IIS is because all BadaCorp computers use Microsoft’s Windows operating system which integrates well with IIS.

Moderator: Thank you team C. Security is a very important feature in web server management, Team C, what do you have to say about the security of open-source systems?

Team C: In terms of security, IIS is better than Apache because IIS is developed in a controlled environment. With individual users all around the world developing Apache, there could be lack of continuity and common direction that prevents effective communication. A new version of the Apache software developed by a random user might not be peer-reviewed which could lead to some developers embedding a backdoor virus into the software without the user knowing.

On the other hand, Microsoft's IIS is developed in a controlled environment by a concentrated team with a common direction. The development team are the only ones authorized to view or edit the source code which reduces the risk of backdoor Trojans.

Moderator: Team O, what do you have to say about Team C's statement on system security?

Team O: When it comes to systems security, IIS is actually not safer than Apache. Windows operating system is very popular, so there are more hackers that spend a great deal of their time and efforts trying to exploit and breach it. Since IIS is exclusive to windows operating systems, IIS deployments are also exposed to such security breaches.

On the other hand, since Apache is open source, there are more eyes on the code being deployed. New modifications to code are first examined by a strong online community, the Apache HTTP Project Management Committee, before being approved.

Moderator: Team O, with respect to performance, that is, the measure of how well the server does its job using preset known standards, how would you compare the two solutions?

Team O: A research carried out in 2019 by a web developer named Janjic, showed that Apache had better performance than IIS. The test was performed using the same hardware (2.4GHz Intel Xeon CPU and 1GB RAM memory) for the two servers. Also, Ubuntu, Apache, MySQL, and PHP 5 were used as software for Apache while Windows Server 2012, IIS 8.0, MSSQL, and ASP .NET 4.5 were used as software for IIS. The result of the test showed that Apache was significantly faster than IIS in both latency and response time in all categories.

Moderator: Team C, what do you have to say about performance?

Team C: First of all, I would like to critique the research quoted by Team O. You cannot test core web server using the criteria mentioned by Team O. The appropriate way to test core web servers would be by serving static files. When you test using frameworks and database engines that have no relationship with IIS or Apache, you are indirectly testing other factors especially how well you wrote the PHP or ASP.NET code.

Now, Apache does have good performance but this does not mean that IIS has bad performance. Most importantly, IIS is the golden standard for serving application on Windows Server 2019 and other Windows Server version. The web server is tightly integrated with the .NET framework and Windows operating system which we already have.

Moderator: Team C, what is your conclusion?

Team C: Microsoft's IIS security is excellent and its performance is better due to how well it is integrated with Windows operating systems. Since, we already use Windows operating system, we can as well use the IIS server. IIS is also easier to use; this is a benefit of closed-source models that see usability as a high selling point. User manuals are also provided for reference while support services are available to help maximize the use of the software.

Moderator: Thank you Team C. Team O, what is your conclusion?

Team O: Apache is supported on Linux, UNIX, Mac, and Windows operating systems. So, if BadaCorp decides tomorrow to change operating systems, the system will operate seamlessly. Apache as a bigger community support since it is open source, it is completely free, we can contribute to its development, its security and performance is good, and it still maintains the largest market share.

Moderator: Thank you Team O. From the discussion we just had, both solutions are good but they both have pros and cons. For example, Apache's ability to work on multiple operating systems is an attractive feature while IIS as an excellent .NET support. We will need more time to analyze which solution meets most of our needs.

References

Apache. (n.d.). About Apache: Development. Retrieved from Apache HTTP Server Project:
https://httpd.apache.org/ABOUT_APACHE.html

Janjic, V. (2019). Performance Comparison: Apache vs. IIS. Retrieved from DevX:
<http://www.devx.com/webdev/performance-comparison-apache-vs.-iis.html>

NetCraft. (2014). January 2014 Web Server Survey. Retrieved from NetCraft:
<https://news.netcraft.com/archives/2014/01/03/january-2014-web-server-survey.html>

Saltis, S. (2019). Comparing Open Source Software vs Closed Source Software. Retrieved from Core dna: <https://www.coredna.com/blogs/comparing-open-closed-source-software>

UpGuard. (2019). IIS vs Apache: Which is the Best Web Server? Retrieved from UpGuard:
<https://www.upguard.com/articles/iis-apache>