

Get the facts - The real ones

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*Microsoft Inc. is running a campaign they name "Get The Facts". In summary this is a way to try to stop the trend of migrating from Microsoft products to GNU/Linux. Let us have a look at it.
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Get the facts

The introduction for [the campaign](#) says, and I quote *"As you weigh the costs and risks of Windows and Linux, consider this: More and more independent analysts and leading companies find that Windows Server System outperforms Linux on TCO, reliability, security, and indemnification. Get the facts, and make the decision that's right for your business."*

An interesting observation to this is that although the analysis is performed by independent sources, they are often sponsored by Microsoft or an affiliate. I agree completely with the last sentence "Get the facts, and make the decision that's right for your business", but get them yourself, and don't trust a single source of information.

Now don't get me wrong, Microsoft has its place and in many situations it can be profitable to use Microsoft applications. Their collaboration suites have potential and management of many computers can be relatively easy. At least in theory. The problems come if you try to use a non-Microsoft system in addition to the windows computer, as Microsoft for one keep their communication formats and document formats for themselves, as well as changing the application programmer interface (API) constantly with little documentation.

I stopped using Microsoft software completely several years ago. My primary operating system (OS) is GNU/Linux, usually one of Mandriva or Gentoo. I have gotten several of my friends to use either GNU/Linux or Mac OS X, which has at least reduced my time spent on technical support.

One thing I got out of doing on a regular basis is formatting and re-installing the applications. There are several reasons for this. The move towards high-speed Internet connections has brought with it routers that introduce firewalls in home systems, as opposed to direct connection through analogue phone lines or Integrated Services Digital Network (ISDN). There has also been more focus on computer security, and product-layer firewalls are more common than before. There has also been a growth in alternatives for free antivirus(AV) solutions and anti-spyware applications. More about securing a windows sytem can be read at secure-my-internet.com if you are looking for more information, it isn't the primay concern of this article.

Microsoft Windows itself has matured nicely, and the move to the New Technology (NT) codebase changed many user's experience. But still applications such as Internet Explorer and Microsoft Outlook bring constant agony for its users.

But Microsoft's greatest problem isn't necessarily Microsoft itself, but its users. Albert Einstein is quoted as saying "Only two things are infinite, the universe and human stupidity, and I'm not sure about the former." Asking the average computer user which web browser they use tend to bring up a confused look. With a followup question it usually brings the conversation in the direction of something such as "OH, The Internet, The blue E on the desktop", referring to the Internet Explorer icon.

Due to Internet Explorer's interaction with the Operating System (Windows) this lack of knowledge can be quite damaging for the system. Alternative applications, such as [Mozilla Foundation's browser Firefox](http://www.mozilla.org) run in application space and has potentially less damage for the system than Internet Explorer, which traditionally has had problems e.g. with its ActiveX extension features.

But the Get the Facts campaign is about servers, why all this about clients and users? Well, that is what the server is intended to provide services for, and hence it is quite related.

In order to provide interoperability between different businesses, or between different people in general, it is important to have a common understanding of some fundamentals such as language. Have you ever tried to get directions while being lost in a foreign country where you don't know the language? In the computer world languages are called protocols.

When you visit a website your web browser is talking the HyperText Transfer Protocol (HTTP) with the web server. When sending an email using Mozilla Thunderbird it is talking Simple Mail Transfer Protocol (SMTP) with the mailserver, and when receiving emails they are talking in either the Post Office Protocol (POP3) or Internet Message Access Protocol (IMAP). These are protocols defined by the Internet Engineering Task Force (IETF) to ensure interoperability between different Mail User Agents (MUA) and Mail Transfer Agents (MTA).

The windows file sharing protocol is called Server Message Block (SMB). An open source implementation is developed by [Samba](http://www.samba.org). As Microsoft didn't provide proper documentation on the SMB protocol, the developers had to look at traffic between windows computers in order to figure out what everything meant, a procedure commonly referred to as Reverse Engineering.

One of the areas that Microsoft has problems with in the European Union currently is its Multimedia Message Service (MMS) and file formats such as Windows Media Video (WMV) which is difficult to reverse engineer and changes rapidly. The document format used by Microsoft Word (.doc) has also been focused on lately as the alternative OpenDocument Format (ODF) gains momentum by being used in productivity suites such as OpenOffice.org and AbiWord.

The Open Document Format as well as Adobe's Portable Document format(PDF) are examples of ways to ensure interoperability between systems. OpenOffice.org provide its use for Windows users, GNU/Linux users, Macintosh users as well as FreeBSD and Solaris users. In a real emergency you can unzip the file and read the plain-text extensible markup language (XML) files at your will in any text editor, although then without the intended formatting.

If a prospect (potential customer) can't read the proposal you are most likely losing the sale. If a customer can't browse the online catalog of an internet based shopping cart he will find another store. Hopefully this has provided you with some reasons to consider interoperability when, amongst other things considering the Total Cost of Ownership of running a service.

Through special programs from Microsoft it is possible to gain access to Microsoft's communication protocols and document formats. The problem that rise is that you generally can't use it in Open Source applications due to its licensing and in order to avoid Intellectual Property claims.

Lets get back to the Get The Facts campaign. Microsoft list several topics on microsoft.com let us walk through them one by one and have a look at it.

Total Cost of Ownership (TCO)

See what independent third-party analysts and customers have to say about weighing the TCO of Windows and Linux.

Eweek has written a story about the TCO between windows and linux with regards to the research by the yankee group eweek.com stating:

"Some of Microsoft's "facts" came from research by The Yankee Group. Then, Microsoft claimed that Yankee had found that switching to Linux from Windows was "prohibitively expensive, extremely complex [and] provides no tangible business gains." Things have changed. Now, Yankee Group senior analyst Laura DiDio has found that most U.S. businesses say there is almost no difference between the costs of maintaining Windows-based versus Linux-based corporate servers. Who knew? Well, anyone who's used both. According to DiDio, the true costs of server operating systems for an enterprise are determined by how long it takes to develop applications and ensure the security of servers. Development time, in my experience, has little to do with any operating system and a whole lot to do with your programmers' skills and tool sets. "

Reliability

Compare Windows and Linux on ease of maintenance, end-user availability, and predictability.

reliability

An attribute of any system that consistently produces the same results, preferably meeting or exceeding its specifications.

The reliability of a system is very dependent on the administrator or administrators managing the system. The better you know the system you work with, Windows or GNU/Linux, the more stable and reliable it is.

ZDNet has [a story stating](#) "A four-year research project has found 985 bugs in the latest Linux kernel - less than 20 percent of the figure that would be expected for proprietary software". This project in question is Coverity, the producer of a software to automate the detection of program defects and security vulnerabilities. At the website linuxbugs.coverity.com you can read more about the project.

I would like to thank Coverity, since as they say "Linux has revolutionized the computing world by providing a reliable server platform at a fraction of the traditional IT costs. As a service to the Linux community, and as a quality assurance test for our tools, Coverity periodically analyzes the latest Linux kernel and makes the results available to visitors to this website."

Another reason why GNU/Linux tends to be more reliable is the modular design. If one service stop, it seldom bring down the others. Using virtualization techniques such as Xen or Vserver you can also substantially reduce the time it take to recover from security attacks. Xen for one thing allow you to move live virtual servers, so that the only downtime you will get is when switching the IP-address routing.

Security

Examine recent studies that compare Windows and Linux on key security issues, such as the costs of patch management, efforts to patch, and vulnerabilities.

Security is one of my passions, especially digital signatures and encryption, then preferably using OpenPGP. OpenPGP is the most widely used email encryption standard in the world. It is defined by the OpenPGP Working Group of the Internet Engineering Task Force. The OpenPGP standard was originally derived from PGP (Pretty Good Privacy), first created by Phil Zimmermann in 1991. For more information you can visit secure-my-email.com .



A good article related to the get the facts campaign is to be found at theregister.co.uk .

I'm quoting: "But what's the truth? For every claim there is, somewhere, a counterclaim. But until now there has been no systematic and detailed effort to address Microsoft's major security bullet points in report form. In a new analysis published here, however, Nicholas Petreley sets out to correct this deficit, considering the claims one at a time in detail, and providing assessments backed by hard data. Petreley concludes that Microsoft's efforts to dispel Linux 'myths' are based largely on faulty reasoning and overly narrow statistical

analysis. Even if you think you know this already (as we fear may be the case for numerous Register readers), we think you'll find it useful to be able to say why you know it, what the facts and the numbers really are, and where you can get the document to back up what you're saying."

The PDF article is located at theregister.co.uk I recommend that you read it.

"If we reality-check these conclusions against another scale, we find that vulnerability metrics used by the US Computer Emergency Readiness Team (CERT) return 250 results for Microsoft, with 39 having a severity rating of 40 or greater, and 46 for Red Hat, with only three scoring over 40. So simply making claims based on that one metric (as Steve Ballmer did, again, earlier this week) is like judging a hospital's effectiveness in dealing with emergency cardiac care from its average speed in dealing with all patients..."

One myth is that Windows only gets attacked most because it's such a big target, and if Linux use (or indeed OS X use) grew then so would the number of attacks.

When it comes to web servers, the biggest target is Apache, the Internet's server of choice. Attacks on Apache are nevertheless far fewer in number, and cause less damage. And in some case Apache-related attacks have the most serious effect on Windows. Attacks are of course aimed at Windows because of the number of users, but its design makes it a much easier target, and much easier for an attack to wreak havoc. Windows' widespread (and often unnecessary) use of features such as RPC meanwhile adds vulnerabilities that really need not be there. Linux's design is not vulnerable in the same ways, and no matter how successful it eventually becomes it simply cannot experience attacks on the same scale, inflicting similar levels of damage, as Windows.

Intellectual Property Indemnification

See what industry analysts are saying about protecting your company from the risks associated with patent, trade secret, trademark, and copyright infringement.

Novell's response to Microsoft's Get the Facts campaign is located at novell.com. Novell comments upon the Intellectual Property (IP) issue as follows: *"recent report by the firm Open Source Risk Management (OSRM) stated that it had identified 283 patents that could potentially be used to challenge Linux users in court. Of these, 98 patents are held by companies like IBM, HP, Novell and others that have a vested interest in Linux. However, 27 patents are held by Microsoft. This report follows the SCO controversy and may be a concern for some customers who are considering Linux and OSS. However, with Linux from Novell, customers need not worry about issues surrounding patents. Reuters and other news agencies recently reported Microsoft CEO Steve Ballmer making public references to OSRM's Linux Patent Review. Many of the reports included inaccurate statements regarding the material findings of this report."* The report can be downloaded at novell.com

Performance

Examine performance benchmarks on comparable operating system workloads and configurations.

As for IP, Novell talk about performance. The appropriate section states, amongst other things: *"The first benchmark with SUSE Linux Enterprise Server 9 and IBM DB2 Universal Database Express Edition set a new world record for best price-performance with \$1.61/tpmC (transactions per minute) on an HP ProLiant Server. The result demonstrates the ability of SUSE Linux Enterprise Server to handle corporate customers' requirements in a high-performing yet cost-effective way."* and *"Tests by IT Week Labs in 2003 indicate "that the latest version of the open-source Samba file and print server software has widened the performance gap separating it from the commercial Windows alternative. IT managers say Samba's better performance means they can use cheaper servers than would be possible with Windows software. And if they run Samba in a completely open-source environment, such as on Linux, they could remove the cost of Windows server licenses.""*

The test in question can be read at vnunet.com . Linux was also faster in providing support for 64 bit computing. Arstechnica wrote the following about 64 bit computing at arstechnica.com : *"If we think realistically about most of the world's commercial software not as "software" in the abstract but as x86 binary code, then it becomes apparent that improvements to the x86 ISA represent one of the most practical and cost-effective ways to advance and expand the x86 software market. Indeed, Intel's continuing extensions of additions to the x86 ISA prove just this point. Consider the move from 16 bits to 32 bits, the addition of the x87 floating-point instructions, and the addition of integer and then floating-point SIMD instructions. All of these modifications of x86 helped bring new capabilities to the PC, allowing it to find new applications and enter new markets. Thus, the ongoing adaptation of the x86 ISA to ever newer technological contexts has been one of the essential subplots in the past two decades' story of the "information revolution.""*

Interoperability:

Read what third-party experts are saying about the interoperability of Windows systems and applications versus Linux.

Interoperability is a very important aspect and I'm glad that Microsoft set focus on it. I do however have to disagree with them that they are the best in the market in it. I mentioned some of the reasons for this in the beginning of the article.

One of the whitepapers in the Microsoft Get The Facts campaign on this subject states as follows: *"ObjectWatch (July 2004): "Interoperability Through Service-Oriented Architectures (SOAs)." This white paper outlines the service-oriented architecture approach to interoperability, which delivers excellent scalability, better ability to leverage existing systems and applications, lower IT costs, and improved user productivity. Microsoft SOA technologies are a strong choice because Microsoft developed most Web service standards, offers integrated developer tools, and has a compelling cost/value proposition."*

Let us start with the basis for websites, HyperText Markup Language(HTML) and its follower, based on extensible markup language (XML), XHTML. The recommendations are provided by the World Wide Web Consortium, W3C for short.

SOAP Version 1.2 (SOAP) is a lightweight protocol intended for exchanging structured information in a decentralized, distributed environment. It uses XML technologies to define an extensible messaging framework providing a message construct that can be exchanged over a variety of underlying protocols. The

framework has been designed to be independent of any particular programming model and other implementation specific semantics. Two major design goals for SOAP are simplicity and extensibility (see XMLP Requirements [XMLP Requirements]). SOAP attempts to meet these goals by omitting, from the messaging framework, features that are often found in distributed systems. Such features include but are not limited to "reliability", "security", "correlation", "routing", and "Message Exchange Patterns" (MEPs). While it is anticipated that many features will be defined, this specification provides specifics only for two MEPs. Other features are left to be defined as extensions by other specifications.

The SOAP specifications can be found at w3.org , in other words, also provided by the W3C.

Interoperability is the primary concern in the ongoing issue between Microsoft and the European Union.

"The European Commission has concluded, after a five-year investigation, that Microsoft Corporation broke European Union competition law by leveraging its near monopoly in the market for PC operating systems (OS) onto the markets for work group server operating systems(1) and for media players(2). Because the illegal behaviour is still ongoing, the Commission has ordered Microsoft to disclose to competitors, within 120 days, the interfaces(3) required for their products to be able to 'talk' with the ubiquitous Windows OS. Microsoft is also required, within 90 days, to offer a version of its Windows OS without Windows Media Player to PC manufacturers (or when selling directly to end users). In addition, Microsoft is fined 497 million for abusing its market power in the EU. " (europa.eu.int)

So why can Microsoft claim to be a leader when it come to interoperability? Because they only discuss interoperability between computers based on Windows, something that is very easy to control in a research project, especially when sponsored by Microsoft as the Jupiter Research report, but indeed hard to control in real life when customers need to communicate with business.

Partner Success

Learn how value-added partners (VAPs) and value-added resellers (VARs) have profited from offering Windows solutions, services, and products.

Microsoft list two whitepapers on this subject. One is titled "Concentrating on Windows Platform Leads to Financial Health for VAPs and VARs" and the other "Worldwide Assessment of Server Operating System Deployment and Preference Share Among Value Added Providers" . This is a very vague topic and the value of the reports is rather low on average. The first focus on different businesses, whether the primary market is Windows or not, divided into three levels. Light, if less than 75% of the revenue is from windows, moderate between 75% and 95% and strong above 95%.

Based on these VAP/VAR segments, study findings indicate that those with a strong windows focus are healthier in terms of "Net profit and profit growth", "Revenue growth and average revenue per employee" and "Employee efficiency and workforce stability". "Based on the data, the Strong windows focus VAP/VARs also service twice as many clients with small, profitable engagements.

Now, I don't want to brag too much about my statistical skills, but I wouldn't sign this report with my name. For one thing, can't the last sentence correlate with the finding? If a company is profitable, it is more likely to

pay its bills, hence a company servicing it has less losses. There are also too many other circumstances that might influence the "results" of this report, that haven't been included in the research. Long story short, omitted variables in the analysis result in biased results.

The the second report concludes: *"While earlier waves of this study indicate there were significant shifts among VAPs in server OS deployment and preference share between 2001 and 2002, the most recent wave indicates that the market has leveled off between 2002 and 2003 - with Unix, Linux and Windows remaining relatively unchanged. And, as indicated by VAPs deployment share forecast for 2004 (see Figure 4), they do not anticipate any significant gains or losses for Linux, UNIX, NetWare, or Windows over the next year. In addition, because server OS deployment share and preference share among VAPs are very similar (see Figures 7 and 3), this also supports the conclusion that VAPs do not expect any significant shifts."*

Conclusion

If you want to use windows, feel free to do so. However, make sure that you've analysed the data yourself. No matter which system you decide to use, remember that knowledge is the key success factor. Don't believe in the Fear, Uncertainty, and Doubt (FUD) Microsoft is trying to spread, but look deeper into the issue before making your final decisions.

Interoperability will only become more important as computers become an even stronger means of communication. Consider this whether using GNU/Linux or Windows. Interoperability, as the name implies, is a two-player game of which common standards and recommendations play an important role.

Use whatever best fits your needs.

About the author

My name is Kristian Fiskerstrand, and I'm currently studying at the Norwegian School of Management where I'm attending my second year of my Bachelor in Business, on my way for a Masters of Science in Economics with a specialty in Finance.

Computers, being one of my many passions has resulted in myself creating amongst others the websites kfwebs.net , secure-my-email.com , secure-my-internet.com and scanners-on-linux.com and mapyourfamily.name.

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