lost ferret
E-Commerce Specialists

Page load speed case study.

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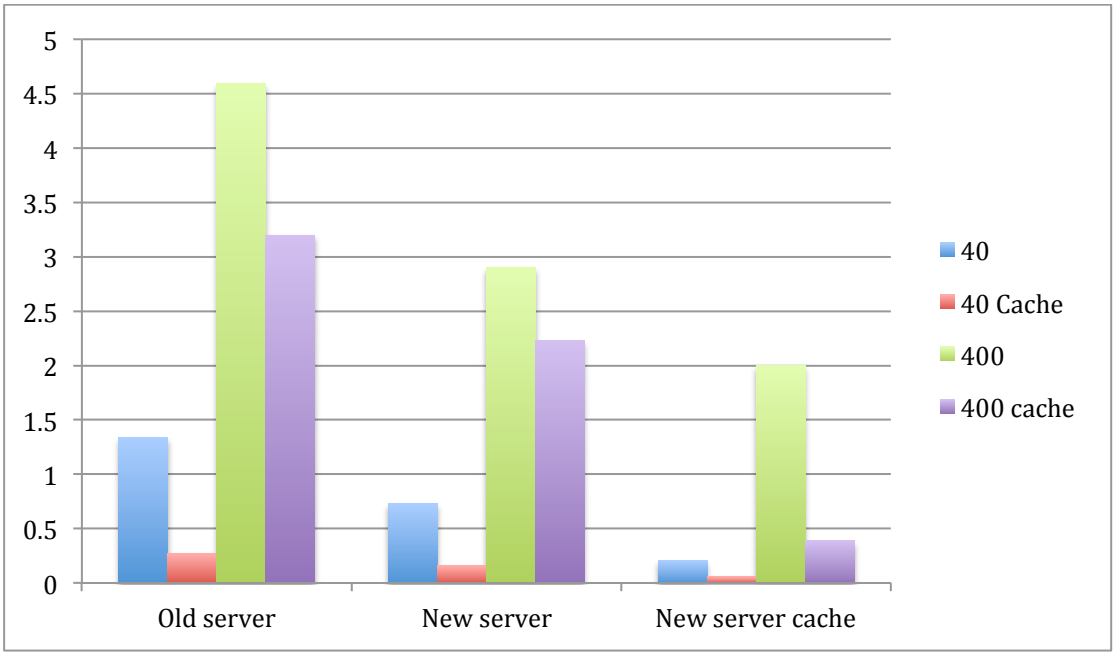
At the beginning of every year, certain industry trends begin to appear that we follow very closely. This year we felt that speed was going to become more and more of an issue for websites, and we set about to bring in front and back-end improvements.

The first step we took towards this was signing a long-term contract with Dedipower to allow us to migrate clients over to a private cloud network with substantial resources behind it. More secure, easier to upgrade, more control over back-ups and more support were just a few of the benefits, but the real advantage came in the speed it could bring to existing and future clients websites.

Hereafter, using tools like Google Page Speed and GTMetrix, we were able to go through our demo website and find the best method of implementing a whole series of front-end changes that would bring around real-world speed improvements. By real-world I mean that anyone could actually tell it's quicker, rather than some nerds in a lab somewhere. With just one client alone we were able to almost half the load of their home page, using a variety of techniques such as compressing and minifying all of their CSS and Javascript into just 1 file, improving our product image compression software, parallelising information across domains and following all of the guidelines set out by Google and other leading experts in the field.

But we didn't want to stop there. All of these changes had an impact in that they improved the front-end experience, which is the time it takes for images and the design to load onto your computer. With mobile being an important part of e-commerce, we really wanted to ensure that not only did we pay a huge amount of attention to the front-end changes, but also the back-end. To simplify this: the back-end is how long it takes the initial page to load, and then the front-end is all of the images/text that is displayed.

So we set about creating new features for Aurora and implementing a robust caching system. I won't go into a massively technical overview here of exactly what we did, but below are some of the results from installing additional software within Aurora and onto specific servers, and modifying accordingly until we were able to discover the best setup for specific clients.



Smaller is best

	40	40 Cache	400	400 cache
Old server	1.34	0.27	4.59	3.2
New server	0.73	0.16	2.9	2.23
New server cache	0.21	0.06	2	0.39

The above chart shows the difference between the old server, the new server, and the new server with the latest caching software in place. The real impact begins to be witnessed once the caching has taken place, and speed times more than double. So suddenly you are seeing over 400 products load on a page in 0.39 seconds versus a previous account of 2.23 on the exact same server.

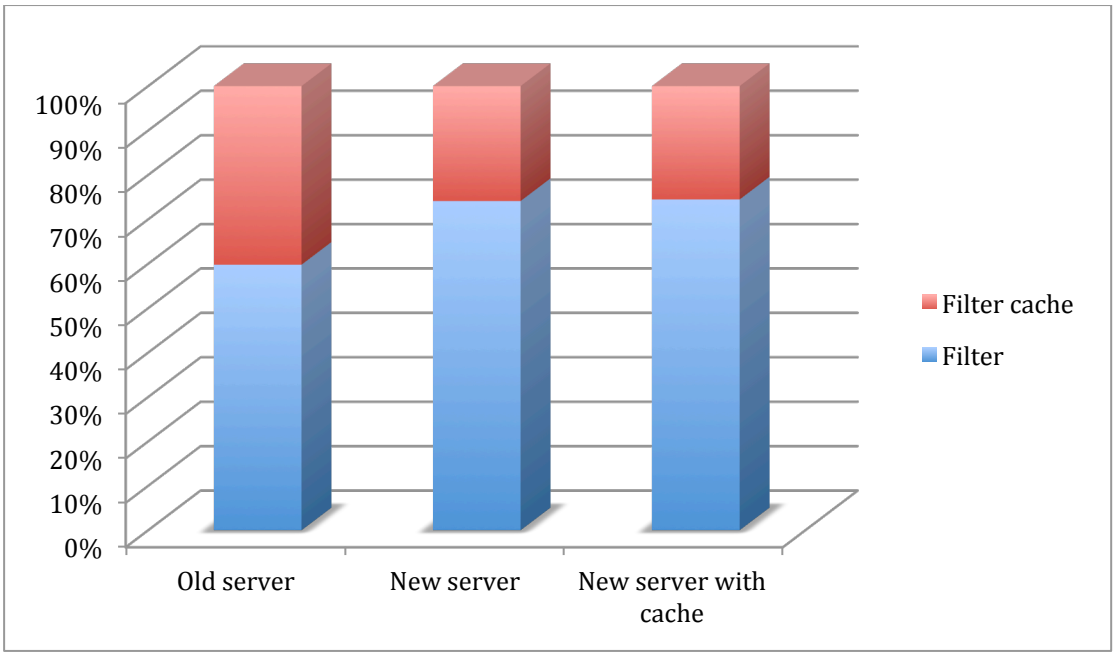
This has serious world implications, as Atlantic Shopping were able to witness first hand:

"As owners of websites we always try to come up with the latest features and follow the newest trends within the market place, giving our potential customers and existing customers the best shopping experience we can. Our sole intention is to gain that edge on our competition and increase our conversion rates…. and we are all happy to use our budgets to achieve this.

However as we add all these new wizzy features it can lead to an increase of download time. As part of our development programme we're delighted that you recommended we step back and take a slightly different approach to improve our site - you were dead right.

We collectively started to look at site speed and how we could improve it and hence give our customers the fastest shopping experience we could. This took the form of a whole host of topics ranging from optimizing site images through to more technical features such as parallelized downloads across hostnames and leverage browser caching. The results were amazing and far out weighed our expectations, made possible due to the customisable features and infrastructure of Aurora.

The site speed nearly doubled and our orders increased by more than 10%. I must admit very few new site features manage to come even close to this and of course the icing on the cake is that it helps with SEO too – it's a win-win situation and one I would recommend to anyone that has a customisable system like Aurora."



Smaller is best

	Filter	Filter cache
Old server	1100	740
New server	873	305
New server with cache	554	190

The above demonstrates the use of the new sidebar filtering system that we have built this year. This again has a real world implication on users, as the speed difference on loading a filter has dramatically decreased through a use of hardware and Aurora improvements.

All in all, the importance of speed is going to become more and more important. Atlantic Shopping have seen an increase in search engine rankings, an increase in sales and an improved customer experience.