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WHITEPAPER

Web Performance Management

12 Steps To Ensure Successful SAAS Delivery How To Protect Revenue, Renewals & Customer Satisfaction

Software as a service (SaaS) continues its fast-paced growth as companies seek shorter deployment times, faster ROI and more flexible pay-as-you-go pricing. Gartner estimates this growth is going to continue for the foreseeable future as the market grows to $16 billion by 2013.[1] While there is significant growth potential for SaaS offerings, there are also major barriers to adoption including customization and security concerns, outstanding questions about the total cost of ownership, and ongoing challenges with web application performance and stability.

Software as a service (SaaS) continues its fast-paced growth as companies seek shorter deployment times, faster ROI and more flexible pay-as-you-go pricing. Gartner estimates this growth is going to continue for the foreseeable future as the market grows to $16 billion by 2013.1 While there is significant growth potential for SaaS offerings, there are also major barriers to adoption including customization and security concerns, outstanding questions about the total cost of ownership, and ongoing challenges with web application performance and stability.NetSuite, SuccessFactors and other SaaS leaders have known for years that performance problems can impact customer experience and have a huge impact on revenues, renewals, brand perception and overall user satisfaction. Companies like Salesforce.com (http://trust.salesforce.com/trust/status/) and Amazon (http://status.aws.amazon.com/) have elevated their performance as a point of differentiation and publish regular reports on it.

The message is clear: SaaS providers need to protect their customer experiences — availability, responsiveness and consistency — and minimize web performance issues before they have a catastrophic impact on revenue. This means delivering superior web experiences during periods of high growth, for their most important clients and for key user segments.

But ensuring superior web experiences is not always so easy, for two reasons.

First, today's web applications have evolved from a single point of delivery to composite applications incorporating numerous third-party services that take users down rich paths of functionality without requiring them to ever leave the web page. For example, a single CRM application may include search, calendar integration and embedded functionality from external information providers.

Together these functionalities comprise a highly interdependent application delivery chain, and poor performance at any step can bring down performance of the entire application. Remember, end users see your logo at the top of the page and they won't care about the root cause of poor performance. They simply associate poor performance with your organization. Consider the recent Aberdeen Group finding that a one-second delay in response time can reduce satisfaction by 16 percent; and recent Gomez research shows that almost half of users expressed a less positive perception of a company overall after a single bad experience. With so much at stake, SaaS providers can't afford to have performance become a barrier to user adoption or new business. They must actively manage all the components feeding into their web sites and applications, including those beyond their own firewalls.

Second, there is no "one user" for whom SaaS providers need to ensure web performance. End users are dispersed across different clients in diverse geographies and leverage an extremely wide range of technologies including ISPs, desktops and browsers, all of which can impact performance, especially when traffic loads are heavy during business hours.

It is no longer sufficient nor evident of a complete or realistic view of web application performance to load test from an internal lab and assume end-user performance is great. This approach simply does not take into account all the performance-impacting variables that stand between your data center and your end users. Today, the Internet is the data center. To identify performance issues, you must have a true view of how end users across a broad range of usage scenarios experience your application, under both normal and peak traffic loads, direct from their browsers all the way back to your data center, and encompassing all the performance-impacting variables in between (the "outside-in" approach).

Performance monitoring and load testing web applications can be the key to finding and fixing issues before they impact your end users, service levels and business results. In many cases, faster problem resolution can elevate performance as a differentiator in the marketplace. The key is to test the right way: across the extended application delivery chain, under various load sizes, from the last mile (your users) and using an "outside-in" approach.

GOOD PERFORMANCE = GOOD BUSINESS

AOL revealed that users who experience the fastest page load times view 50 percent more pages per visit than users experiencing the slowest page load times.

Bing found that a two-second slowdown caused a 4.3 percent reduction in revenue per user.

Shopzilla reduced page load times from seven seconds to two seconds, resulting in a 7–12 percent increase in revenue and 50 percent reduction in hardware costs.

Source: http://radar.oreilly.com/2009/07/velocity-making-your-site-fast.html

Here's a list of key questions that encompass the full range of issues you, your IT/Operations team and your company need to consider, in order to prioritize and address problems to ensure your web site and applications deliver exceptional performance for all your clients when they need it most.

ARE YOU "THUMBS UP?" TAKE A MOMENT TO ANSWER THESE QUESTIONS ABOUT YOUR COMPANY'S SAAS READINESS.

QUESTION	WHY THIS MATTERS	THUMBS UP	THUMBS DOWN	NOT SURE
Are our most important transactions and pages available to customers?	Availability is the most important metric for any web site because if your site is unavailable to your users, they think "the application is broken and closed." Although a web site may be lightning fast, it may be available only 85 percent of the time. That means that 15 percent of the time users try to access your SaaS products and turn away and/or calling your help desk. According to Gomez Benchmark research, the average availability for end users of top enterprise software providers' homepages is 99.72 percent.			
Are our most important transactions and pages performing quickly?	Responsiveness of web pages is a key driver for visitor satisfaction and conversions. According to a recent Aberdeen Research report, each additional second of response time above 3.9 seconds per page impacts the business by: ▸ decreasing page views by 11 percent ▸ decreasing user satisfaction by 16 percent ▸ decreasing conversions by 7 percent. Based on Gomez Benchmark research, the average response time for top enterprise software providers is 3.67 seconds.			
Are our customers having a positive experience (e.g., quickly loading pages without errors) across different geographies?	On the Internet, variations in page response times across different geographies occur naturally based on the distance between the host data center(s) and your clients' branches and office locations. A common issue with performance differences across geographies is exhibited in difference in successful task completion and user satisfaction. Understanding the magnitude of those differences and their impact on end users can help to determine if additional investments in hardware, acceleration services or a new data center are needed.			

QUESTION	WHY THIS MATTERS	THUMBS UP	THUMBS DOWN	NOT SURE
How quickly does my web site perform across different times of the day and at different levels of load?				
	Varied response times may occur depending on the time of day, indicating capacity problems. For instance, too many users trying to perform analysis on a Monday morning may impact response times. Regardless of the underlying cause, your end users' experiences and your renewals are potentially impacted during these brownouts. Experiencing performance problems during peak traffic periods — when you have the most users trying to perform common tasks — directly impacts user satisfaction and puts service levels at risk. Industry best practices suggest load testing prior to major traffic events to ensure web sites scale to handle peak traffic loads.			
How does our performance compare to our competition? Are we better than, the same as or worse than our competitors?				
	Comparing your performance to that of your industry competitors provides an unbiased view of the state of your web site. This insight helps you tune performance and determine if infrastructure investments are needed. Understanding your rank versus competitors can answer whether or not you are over or under investing in infrastructure. Another major benefit for SaaS providers who compare themselves to their competition is the ability to establish their performance as a competitive advantage. If your SaaS application is the fastest in your industry, then your sales and marketing teams can use it to differentiate your company and gain new clients.			
Are our most important transactions and pages performing optimally for corporate users? For home users? or users at mobile connection?				
	Monitoring performance from the "last mile"' shifts the perspective from the lab-like environment of the Internet backbone toward a viewpoint closer to your end users — your source of revenue. A sub-4-second page response time at Internet backbone locations may translate to download times of as much as 16 seconds for an end user working remotely on your SaaS application. Last mile performance also helps to quantify "edge of the network" benefits of content delivery network (CDNs) investments. Slow performance across key end-user segments, such as at-home users and mobile users, can drive end-user and client complaints.			

QUESTION	WHY THIS MATTERS	THUMBS UP	THUMBS DOWN	NOT SURE
How well does your web site perform for your end users when traffic levels are high and your infrastructure is under load?	The performance of your web application under load is key to your long-term success as more and more clients start to adopt your SaaS solution. Having to wonder whether or not your application starts to slow down as new accounts are added or how long users will wait for a report or to complete a transaction is not productive. You need actual data. With the reliance on the Internet for SaaS providers, you must be prepared for peak traffic volumes so end users can search for contacts, generate reports or launch email campaigns.			
Does the size of my web page or the number of objects on the page impact performance for end users?	Overall page size has the greatest impact on the performance of a page, especially for your users at the end of the application delivery chain. While a large page with rich content and lots of images may be what the marketing and product teams require, it may not always deliver the best experience for all end users. Large pages often frustrate end users who are forced to wait while content downloads slowly. The same challenge holds true for web pages with a large number of objects on them. A large number of objects can increase web-page latency (how long users are forced to wait for content). There are several common ways to optimize web pages with a large number of objects, such as combining external objects and using CSS sprites where possible.			
Are third-party providers such as ratings and reviews, ads, news feeds, e-commerce engines and CDNs hurting our performance?	Today's web applications are complex, with content and web services delivered to the end users' browsers from multiple sources. These sources include components delivered from within your data center — what traditional load testing and monitoring solutions address — as well as third-party components delivered from beyond the firewall including CDNs, information providers, charting services and web analytics. The performance of these key third parties is often overlooked when it comes to measuring and monitoring the performance of an entire multistep application under load. Even though third-party content does not come from your data center, the performance of that content, at least in the minds of your end users, reAects your web site, business and brand.			

QUESTION	WHY THIS MATTERS	THUMBS UP	THUMBS DOWN	NOT SURE
Is my web page optimized for fast performance?	The coding, content, delivery and construction of web pages in the browser is a complex process with numerous steps that rely heavily on content delivered by you and your partners. How well each part of the process works can impact end-user performance. There are numerous techniques that can be used to optimize SaaS web application performance, including: compressing objects and images with gzip; reducing the number of network requests; minifying JavaScript and CSS; optimizing database queries; and removing duplicate JavaScript and CSS files.			
How well do my web pages perform across top browsers [Internet Explorer (IE) 6, IE7, IE8, Firefox 3.0 and Safari 3.2]?	Next-generation versions of browsers have emerged, offering end users even more choices for accessing and navigating the web. For SaaS web application providers, these "browser wars" create a burden because web pages can look, function and perform differently in each browser and version. No longer is it safe, or reasonable, to rely only on the current version of IE for your performance monitoring and tuning. End users, especially those who are Internet-savvy, use Firefox, Chrome and Safari regularly. Browser diversity is at an all-time high: Internet Explorer 8.0 — 29.99% Firefox 3.6 — 25.36% Internet Explorer 7.0 — 10.60% Chrome 8.0 — 9.84% Internet Explorer 6.0 — 5.10% Other — 19.07% Source: http://gs.statcounter.com/			
Do my web pages visually render correctly across top browsers (IE, Firefox, Chrome, Safari, etc.)?	At the application level, different browsers may load source code, images and third-party objects in different orders, leading to inconsistent presentation and frustrated end users. Nowadays, rendering issues on any of the top browsers can mean lost productivity and frustrated end users.			

CONCLUSION

Imagine it's the beginning of the new quarter and your big marketing campaign has landed one of the best prospects that you have seen in weeks. Your sales team is prepped and ready to deliver the full product demonstration that the prospect requested. Boom! Something in your web application goes awry the very day that exceptional performance is needed most, souring the start of the big deal.Now picture some of your key accounts getting ready to renew. They experience poor site performance and start to complain and want to know what you are doing to improve performance before they renew their contracts.

While these may seem like remotely possible worst-case scenarios, ask yourself this: Is the risk to revenues, renewals and customer satisfaction something you can live with this year?

ABOUT NETMAGIC

Netmagic Solutions, an NTT Communications Group company, is India's first and largest pure-play managed IT Hosting Services Provider. Netmagic Solutions is ISO 27001, ISO 9001:2008 and ISO 20000-1 certified and its processes are designed as per the ITIL framework. Netmagic Solutions delivers mission critical hosted applications for over 1200 of the world's best-known enterprises from multiple locations and has been awarded the 'Datacenter Service Provider of the Year 2011' by Frost & Sullivan. Netmagic's Chennai Datacenter is the only Gold LEED certified datacenter by the USGBC in India. Netmagic has 7 carrier neutral, state-of-the-art datacenters located in Mumbai, Bangalore, Noida (Delhi-NCR) and Chennai with over 2,00,000 sq. ft. floor space. As part of the NTT Communications group, it also has access to leading global tier-1 IP network, Arcstar Universal One™ VPN network reaching over 150 countries, and over 130 secure data centers.

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