Radware's FastView for Web Performance Optimization

Eighty percent of performance issues occur at the front end or browser level. Therefore, the key to faster websites and web-based applications is to improve front-end performance and optimize each page's code for faster rendering in the browser. In the past, front-end optimization (FEO) was time consuming and could only be performed manually by developers with specific performance expertise. Radware's FastView transforms FEO from a lengthy and complex coding process to an automated function performed in real time that accelerates web application response time out-of-the-box.

FastView: Industry-Leading Web Performance Optimization Solution

There are several best practices and rules organizations should follow in order to optimize web performance. FastView automatically applies these performance rules across the website or web application to immediately deliver faster page-load times.

This results in happier users, increased conversions, higher revenues, improved search engine results, and more productive employees. In addition, the development team can focus on building new features rather than optimizing website code for faster web application response time. FastView automates the performance optimization task and reduces new application's time to market.

5 Critical Performance Bottlenecks Solved

Radware's FastView solution employs a unique and holistic approach to accelerate web applications by solving several performance bottlenecks. Here are a few examples:

1. **Simplified large, complex web pages.** The average web page is a staggering 1950k and contains over 90 objects[1]. It takes dozens of requests to the server to retrieve the page's content, making the overall page load time slower. Though there are several coding best practices for reducing the number of server roundtrips and making pages smaller, implementing these is a never-ending task. FastView automatically applies these best practices across the website or web application, making each page as fast as possible.

---

1 http archive - http://httparchive.org/trends.php#bytesTotal&reqTotal

2. **Accelerate entire web transactions.** Using a behavioral analysis algorithm, FastView automatically learns the browsing patterns of end-users on the website it accelerates, and understands which web page users are likely to visit next. While the end user is busy interacting with the current page, FastView preloads objects to the browser's cache required for the next page the end user is likely to visit next. This way when the user eventually visits that page it will load instantaneously. This technique significantly accelerates the entire transaction for end users on most web sites, devices and browsers.

3. **Image optimization.** A typical web page consists of over 50 images that represent over 60% of a typical web page's payload[2]. Recent studies show that most websites either fail to optimize images or do a very poor job at it[3]. Using PerfectImage algorithm, FastView typically compresses images by 60-80%, resulting in a significant reduction of accelerated web pages payload and ultimately increased page load times. PerfectImage optimizes images on the fly; ensuring image quality is degraded by up to 1.5% for desktops and by up to 3.5% for mobile devices (a degradation amount which is invisible to the human eye). It also uses the most effective image compression format according to the type of browser requesting it (adjusting the image type, e.g. JPG for IE, or WebP for Chrome).

4. **Dynamic discovery of resources requested by code running on the client side.** Several websites use java scripts (JS) and CSS templates in web pages which request objects and images as part of the page's representation. FastView emulates the browsers' behavior, executing browser side code and enabling it to discover objects dynamically requested by the browser. FastView can then apply its acceleration treatments on those resources (such as image optimization and preloading). This capability significantly increases the amount of acceleration that can be applied on typical web pages and on single page application sites which requests the web page's content through JSs and CSSs.

5. **Recognizing that not all browsers are created equal.** Each browser type has its own preference as to how it renders pages, how many connections are opened, etc. Techniques that work for one browser type can slow down, or even break pages in a different browser. FastView creates custom optimization templates for each browser, making pages load in the most efficient way possible on each browser type.

Best Acceleration for Mobile Clients and the Mobile Workforce

When it comes to mobile clients, many of the performance problems that plague desktop clients still apply. However, there are inherent characteristics in mobile clients that make the application acceleration treatments different. For instance, a traditional browser cache in mobile clients is limited in size, making traditional browser caching difficult and ineffective. As a result, FastView uses the scaffolding of HTML5 local storage to offer a mobile browser cache that is comparable to the desktop browser cache. Mobile Super Cache, enabled through Radware's FastView solution, offers site owners the ability to configure persistent, reliable storage for caching objects from its site on mobile devices and enables significant acceleration for mobile users.

The form factor of mobile platforms presents new opportunities for acceleration that enhance certain techniques. For example, image compression with FastView's PerfectImage, not only reduces the payload of images, but also reduces the mobile data bill that lowers data transfer. With PerfectImage, image compression can be applied based on the characteristics of a handheld device; while degrees of variance can also be applied based on whether the device is a phone or a tablet.

FastView offers web application owners additional web performance acceleration capabilities which are optimized for mobile clients and browsers and also include touch-to-click conversion that eliminates mobile redirects.

Flexible Deployment Models

Whether web applications run from a personal datacenter or hosted on a cloud or whether it uses a CDN service or not, FastView delivers acceleration to all types of web application deployment scenarios through a variety of deployment models. It can be deployed as a hardware appliance in the data center or software/virtual appliance in the data center that front ends applications with seamless capacity scalability and high availability options.

---

2 http archive - *http://httparchive.org/trends.php#bytesImg&reqImg*
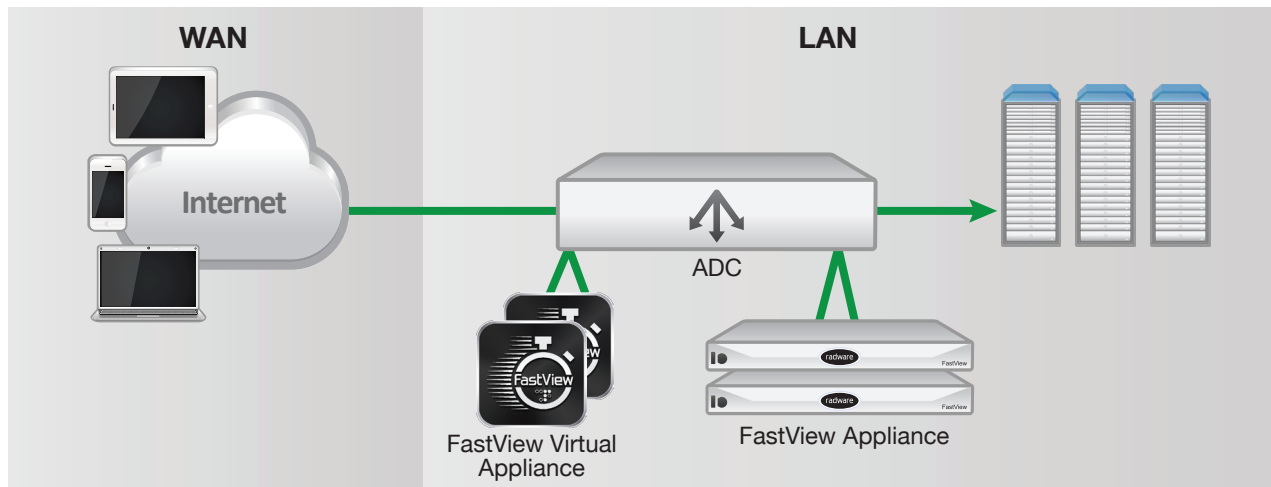3 *Spring 2015 State of the Union*

Figure 1 - deployment models in the data center

Web Performance Optimization as a Service – Acceleration Without the Hassle

To benefit from the acceleration and performance improvements FastView offers, but avoid the CAPEX investment and installation hassle of an in-house dedicated appliance (or virtual appliances), Radware offers FastView as a cloud service – with full support from start to finish and includes:

1. Full FastView acceleration optimization for the web application (whether installed in the customer's datacenter or in the cloud)
2. Traffic redirection with full high availability (HA) configuration
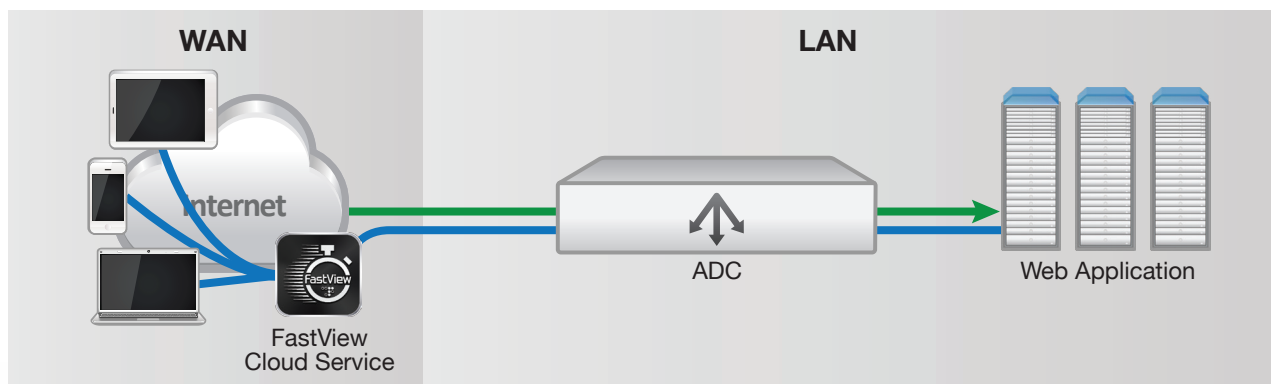3. Ongoing acceleration for production traffic

Figure 2 - FastView deployment model in the cloud

FastView service requires minimal to no resource investment from the customer side for the initial setup and ongoing operation. It doesn't require an initial CAPEX investment as it can be purchased based on an OPEX model with monthly charges per the number of pages accessed through the FastView acceleration service.

Business Benefits of Radware FastView

Improving end-user quality of experience (QoE) and accelerating web application response time delivers several benefits to organizations.

Improving online business metrics: Each second reduced with Radware's FastView immediately translates to improved online business metrics:
   – More page views
   – Higher conversion rates
   – Increased customer satisfaction
   – Higher revenues

Faster time to market new applications and services: By automating the performance optimization task, the development cycle of new applications and services doesn't need to go through the tedious, extended phase of performance optimization. Instead it quickly moves to production with superior performance with FastView's advanced and adaptive acceleration capabilities.

Optimize development resources: FastView not only optimizes application performance; but it also optimizes the development. It allows the development team to focus on creating core functionalities required for business, rather than optimizing code for faster response time. FastView automatically adapts to application changes, and updates its capabilities with every new browser version so that development teams aren't required to spend any time or effort on application performance optimization.

Top Reasons to Choose FastView for Web Application Performance Optimization

- Only enterprise-scale WPO solution provider
- Experience with accelerating global sites and applications
- Industry's only mature, best-of-breed web acceleration available as a standalone product or service
- Flexible deployment and purchase options from on premise appliance to cloud/OPEX based service requiring no initial investment
- Optimizes web applications for desktop and mobile devices
- Unparalleled 24/7 support, including on-site support
- Leading provider of both WPO and ADC

What Customers Say About FastView

"At PETCO, we're committed to helping pet parents give their pets the quality of life they deserve. Providing pet parents with an efficient, convenient and enjoyable user experience when shopping with us online is an important part of that commitment. With FastView, we've been able to decrease the average page load time on PETCO.com by 5.5 seconds – a phenomenal improvement."

John Lazarchic, VP of E-Commerce, PETCO

"Our goal is a two-second page load time for our site's visitors. Before testing FastView, 12% of our site traffic hit that goal. During our three-month trial run with FastView, that number leaped to 87%. The decision to implement was clear."

Allen Noren, VP Online, O'Reilly Media

"FastView has obviously improved conversion and revenue for us. When you affect conversion by 9%, that is very significant on an annual basis."

Parag Patel, CTO, AutoAnything

About Radware

Radware (NASDAQ: RDWR), is a global leader of application delivery and application security solutions for virtual, cloud and software defined data centers. Its award-winning solutions portfolio delivers service level assurance for business-critical applications, while maximizing IT efficiency. Radware's solutions empower more than 10,000 enterprise and carrier customers worldwide to adapt to market challenges quickly, maintain business continuity and achieve maximum productivity while keeping costs down. For more information, please visit www.radware.com.

Radware encourages you to join our community and follow us on: Facebook, Google+, LinkedIn, Radware Blog, SlideShare, Twitter, YouTube, Radware Connect app for iPhone® and our security center DDoSWarriors.com that provides a comprehensive analysis on DDoS attack tools, trends and threats.

Certainty Support

Radware offers technical support for all of its products through the Certainty Support Program. Each level of the Certainty Support Program consists of four elements: phone support, software updates, hardware maintenance, and on-site support. Radware also has dedicated engineering staff that can assist customers on a professional services basis for advanced project deployments.

Learn More

To learn more about how Radware's integrated application delivery & security solutions can enable you to get the most of your business and IT investments, email us at info@radware.com or go to www.radware.com.