Whitepaper

Inventory and Analytics – The Key to Taking Command of Browser and Cloud Estates in the Enterprise

Overview

Times are changing. Desktop and client/server business applications (collectively referred to as native applications in this paper) that dominated enterprise computing in the 90s have been rapidly overtaken by a wave of browser-based web applications that run your business workloads today. Workloads such as ERP, CRM, document management, and time reporting are all experienced in a web browser, making your browser the epicenter of business user activity and critical workplace application use. In fact, web applications have supplanted native applications in both number and importance – with 12 web applications for each native desktop application in the typical enterprise, according to Microsoft.

This web application transformation brings with it a variety of opportunities for you to improve efficiency and security, while saving your company significant amounts of money. The key is knowing how to address the unique challenges this paradigm shift presents.

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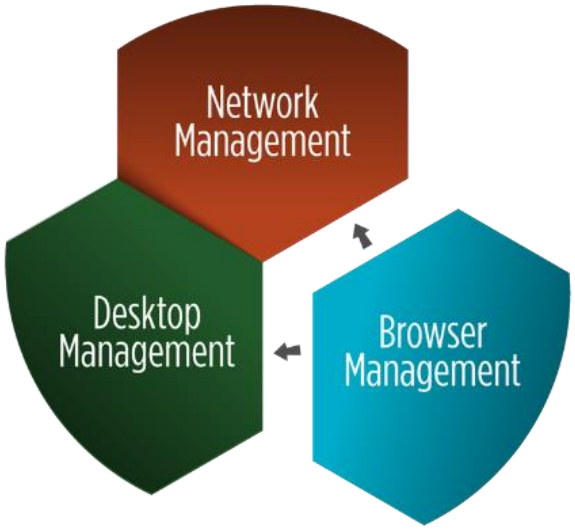
The value of this new platform to your enterprise is as boundless as the Internet. Anything a developer can dream up can be implemented quickly on a web server and deployed instantly to tens or hundreds of thousands of users simply by having them pull up a website in a browser. But with this awesome power comes a tremendous IT management challenge. The browser is largely opaque to enterprise IT without the right tools. The management tools that tell you what native desktop and client/server applications are installed and used throughout your enterprise have no knowledge of what goes on inside the browser. This massive blind spot creates security risk, blocks migrations, hampers efforts to increase employee productivity, and inhibits software license optimization and compliance.

Today, you need management tools designed for browser-based applications and the unique complexities and challenges of the Internet-centric world in which we all now live – tools that can uncover the critical correlations between your browsers and web applications, so you can make informed decisions that positively impact the bottom line. This document provides an overview of the unique nature of browser-based applications, the challenges IT organizations like yours face managing these applications, and the inventory and analytics solutions now available to help you take charge of this new paradigm.

Browser-based applications become the standard

Most existing Windows application inventory and management tools were designed only for native desktop or client/server applications. They are mature and play an integral role in daily enterprise native application management. Enterprise IT organizations use these tools to easily identify which native applications are deployed to which users, what versions are in use, and gather application performance and usage data. This information is then used to evaluate migration compatibility issues, deploy updates, track license compliance, and deprecate unused or insecure software. No organization can envision managing IT operations without these tools. But can these tools work in your browser-based application environment?



Gathering an inventory of web applications is no easy task, as traditional management tools lack the ability to track applications that run solely in a browser. In addition, the scope of application management has changed drastically due to the complexities of a browser environment. The challenge can appear insurmountable when combined with the need to understand dependencies between web applications (including where independent applications are connected at run time) and identify component requirements and compatibility issues. To solve this challenge, your enterprise needs a solution that is optimized to deliver a deep understanding of enterprise web applications.

To better understand what you need to manage browser-based applications, it's important to understand the difference between native and browser-based applications.

Native applications

Defined, mature architecture

Native applications, and their required components, are contained to the boundaries of the desktop operating system environment. It can be helpful to think of native applications as a defined set of self-contained executables and DLLs, with installers laying down only what is needed. Native applications can be analyzed with Process Monitor, and similar tools, to see the linking and dependencies. For example, loading a document in Word or a patient record in X-ray software is a highly specific function, where the application monitoring would yield obvious information on the performance of that software's function. Native applications run directly on Microsoft Windows and can load whatever system resources are needed, or provide their own custom resources via unique DLLs. Settings for one application are contained to that application and don't impact others running at the same time, providing a healthy level of isolation between native applications.

Browser-based web applications

Open, versatile, dynamic architecture

Browser-based web applications operate in a much more complex environment. Therefore, they are significantly less isolated and are, in many ways, the opposite of native applications. Unlike native applications, which are designed for single-use scenarios and requirements of the desktop operating system, browsers are designed to deliver your users a virtually endless number of web application experiences using a combination of programing languages, APIs, and extensibility interfaces. For example, it is very common to have one browser-based application deliver unique interactive experiences complete with some impressive multi-media components. Delivering this capability requires the browser to be more like a powerful operating system itself, with all the inherent complexity, but without the maturity and sophistication of a modern operating system. As a result, browser-based applications require a different application management toolset to meet the unique challenges of your new end user workspace.

The unique challenges of browser-based applications

One of the most evident challenges in managing your browser-based application environment is managing the browser platform itself. However, the challenges don't stop there. Other obstacles such as evolving web technologies, use of multiple browsers by individual end users, the large number of web applications, the accelerating adoption of Cloud and SaaS applications, and a lack of browser-based application data and analytics further amplifies this overall challenge. Here's a deeper look at these issues.

Complexities of the browser platform

Unlike a self-contained and easily monitored desktop operating system, the browser platform is dynamic and calls upon resources to support browser-based applications from any combination of local or remote systems. The locations of these systems are not well-defined, often beyond your control, and they utilize a broad mix of security contexts. Browser-based applications can load script libraries from anywhere and, as a result, dependencies can't be determined with a single tool. In addition, your browser must support applications that utilize a compiler (for script) and renderer (for layout). The browser itself runs inside a security container context within your operating system. There are more security vulnerabilities with browser-based applications due to the distributed resources they call upon.

Your browser is designed to be able to do anything – load any web page, render a variety of content, play videos and games, enable access to customer services. Unlike highly-specific, executable, native Windows applications, the wide range of possibilities is generally limitless. Each browser activity can happen in different tabs, which all occupy portions of a shared memory space and operate under the same core executable. Existing native desktop management tools can't see inside the browser executable. The data those tools provide is binary, rather than granular. Trying to manage your browser systems and identify performance issues, whether with the browser, add-ons, or poorly designed content, requires tools built for the specific challenges of the browser.

Evolving technologies and multiple browsers

Another primary challenge you face managing browser-based applications is the continual evolution of interdependent technologies. As new capabilities are unlocked, older approaches often need to be eliminated or modified to adjust to the new platform. Those changes can cause 'breakage' in terms of functionality, compatibility, and security. In addition, the need for browser add-ons, such as Java and ActiveX, is here to stay regardless of the introduction of HTML5 or other evolving standards. Browser

extensions will most likely evolve to settle on JavaScript as the underlying platform (as Chrome has supported for some time), but ultimately extensions are still all 'bolt-ons' to your browser that expand your attack surface and increase the complexities of managing your browser. Add to this the challenge of running multiple browsers in an enterprise, typically Internet Explorer plus either Chrome or Firefox, and it becomes clear why browser management is becoming an even more vital part of every organization's IT strategy.

High number of web and SaaS applications, along with dependencies

Next, consider the sheer size of an enterprise IT environment with hundreds or thousands of browser-based web applications in need of management. This is a daunting task when you lack a complete picture of application usage and ownership due to insufficient tools to track and report this data. In addition, new SaaS applications are deployed continually in many organizations, often with no oversight. This leads to a shadow IT issue and makes the inventory of applications a moving target. Dependency tracking adds to this challenge. It is important for your IT team to know which applications work in which browser version, what Java versions are being invoked to balance security and compatibility, and what configuration is needed for users to reliably run their most critical applications. Traditional application management tools are unable to meet the needs of modern PC environments with more and more business applications running in the browser, multiplying the complexity of IT management.

Lack of browser-based application data

To meet these browser-based application management challenges, you first need to know what applications you have and how those applications work. That requires data which is not available today. Due to a lack of accurate web application usage statistics, many enterprises can see their migration projects stall while trying to understand what applications are running within the organization, the dependencies which may exist between applications, or even what applications are running outside of their organization and beyond their control. Routine IT management can also be hampered if you can't determine application performance levels and isolate them down to the individual application-level to ensure employee productivity is optimized. In addition, IT staffs often make incorrect usage assumptions based on license counts and purchase history. A lack of accurate web application data can result in unnecessary software licensing, hosting, and maintenance expenses, while increasing the size of your attack surface. However, there are tools designed to help.

Tools for web application inventory and analytics

New web application inventory and analytics tools can provide rich information to help you better understand application needs, dependencies, usage, and performance. This information is extremely valuable in making quality, proactive IT decisions that can take your IT services to the next level. The following is an overview of two different tools used for web application inventory and analytics.

Enterprise Site Discovery Toolkit

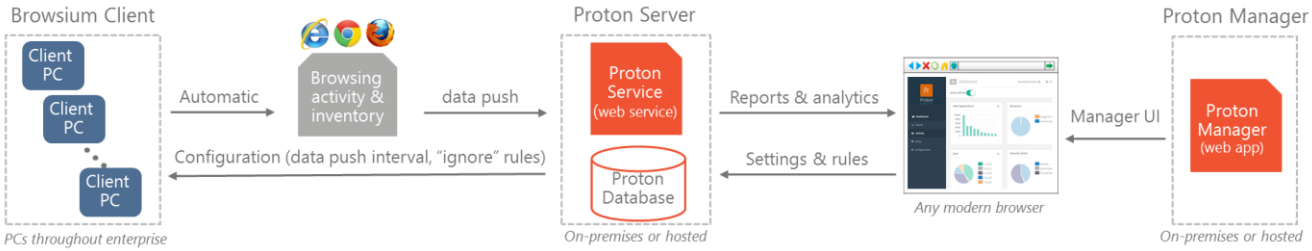
Microsoft Enterprise Site Discovery Toolkit enables you to collect information from Internet Explorer about sites visited by users. With this toolkit, certain Internet Explorer usage data is tracked and stored on each PC in log files. Once the endpoint data collection issue is addressed, you are left with an array of log files you need to parse, index, and categorize. Once that is done, you must to build a custom reporting solution to query and view the data. Site Discovery Toolkit is a building block to address web application inventory and analysis needs and it was designed for migration scenarios. However, the browser is a core part of your modern end user workspace and your daily business operations rely upon it. Today enterprises need a more powerful web application inventory and analytics tool which focuses on an operations methodology and not simply migration.

Browsium Proton

Browsium Proton is a comprehensive web application inventory and analytics solution for your modern enterprise and it is a part of Browsium's browser management software suite. It goes beyond simply providing you with raw usage data, to instead deliver easy to understand tables and charts that help your IT team discover the critical correlations between browsers and web applications and in turn make better decisions.

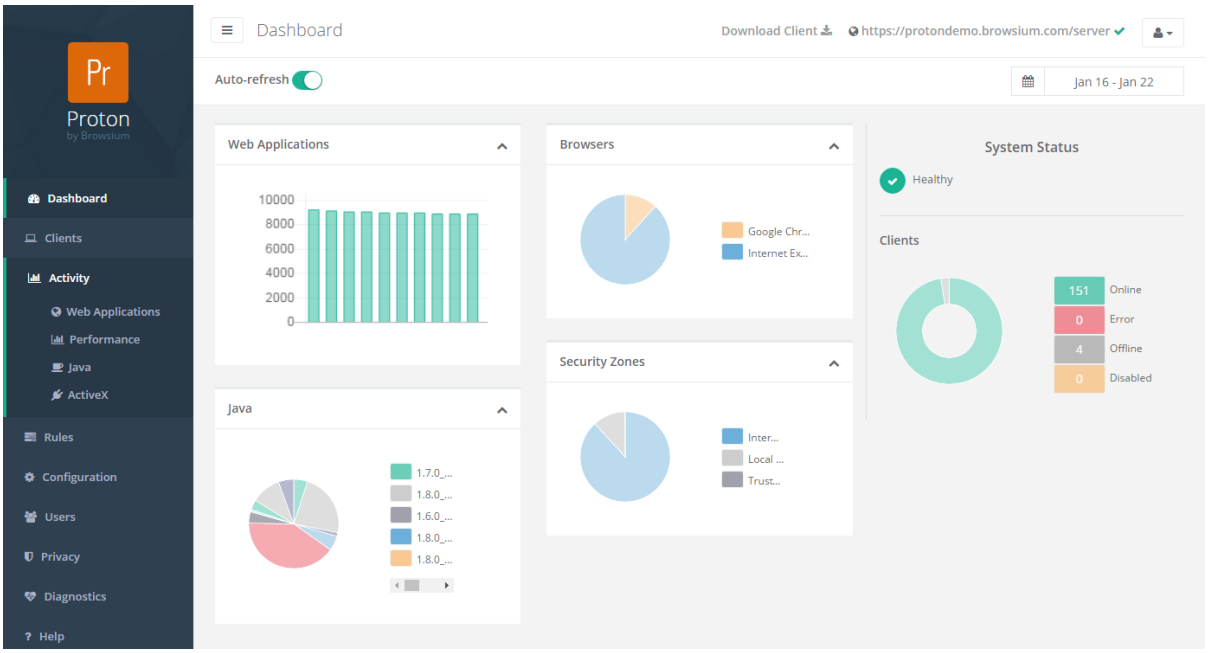
Proton was designed to meet the challenges of the new web application delivery paradigm. It delivers robust end-point discovery for your enterprise IT staff who need to know what line-of-business web applications users are accessing, how often they use those applications, how many active users access each application, the performance of applications, usage trends over time, and what browser is being used to access which application. This includes information about ActiveX control settings and values, along with what browser add-ons and extensions are used by those sites.

Proton is a multi-tiered solution, starting with the lightweight Proton Client installed throughout your enterprise, invisible to end users. The Proton Client periodically pushes activity and inventory data to the Proton Server which is a Windows Server running IIS and Microsoft SQL Server. The Proton Manager, the reporting and analytics web application, enables any IT manager with a user account to see and interact with the data from any device running a modern web browser in your environment.



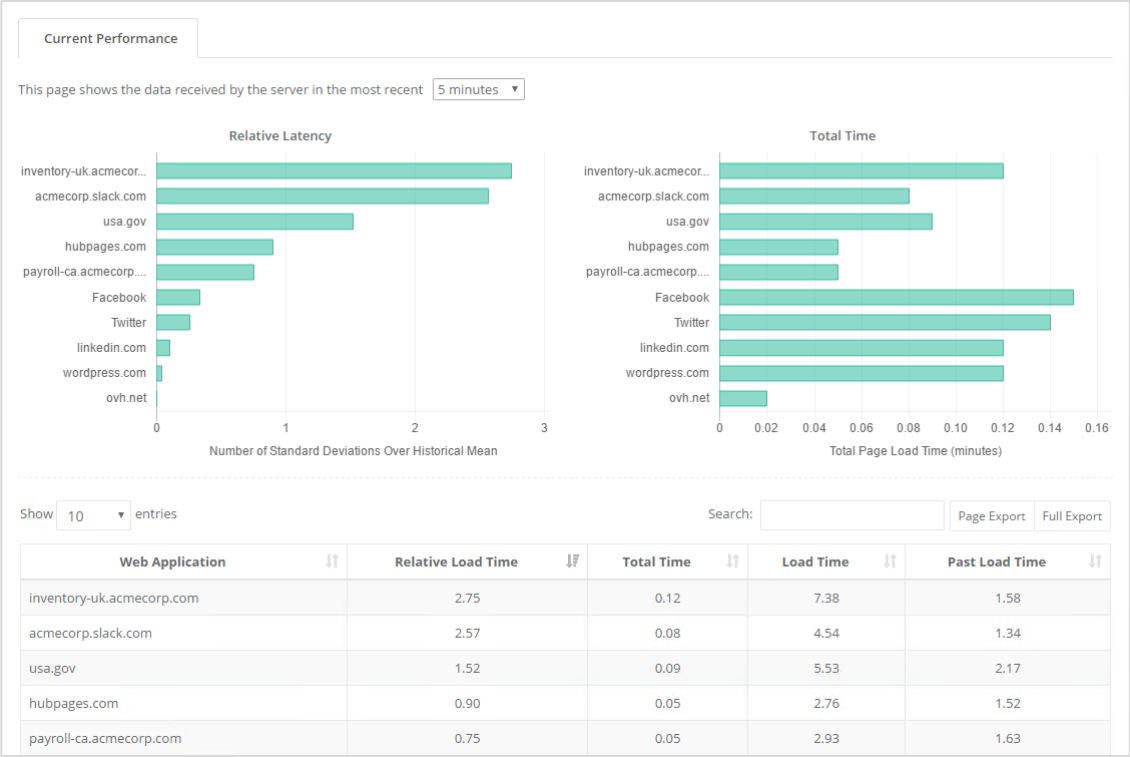
The Proton Server can be run on-premises, in a private cloud, or in a hybrid configuration with the Proton Service and Database on-premises and the Proton Manager, the reporting and analytics web application, running as a SaaS application hosted by Browsium. This is the default configuration which enables continuous rapid improvements to the Manager with no deployment overhead for you, while all activity and inventory data remains safely stored on your on-premises server.

The following screenshot of the Proton Manager web application gives you a snapshot of the rich, visual reporting delivered by Proton.



Delving deeper into the Proton Manager, you'll find reports on browsers, Java, and ActiveX inventory for every user in your enterprise. It also reports all browsing activity (e.g., browser history and performance data) correlated to browser version, Java version, and the entire scope of operating system and browser components that make up your web application platform.

For example, the Current Performance Report (shown below) details the relative latency and total time of page loads for each web application. This data is critical for optimizing the end user experience and improving productivity within your organization.



Browsium Proton is essential to your enterprise

It's common to find IT organizations that lack a comprehensive web application inventory and have no process to compile a reliable list. Those organizations that are aware of the web applications in use, often lack insights into dependencies and other operational requirements. For example, an organization may have a variety of web applications which require Java. These applications may each require a different version of Java and some of these versions have known security vulnerabilities. With Proton, applications which require a vulnerable version of Java can be identified by department and user, including identification of those Java versions that are invoked by an untrusted site on the Internet. IT can then work to evaluate and implement remediation solutions (such as Browsium Ion) to better manage Java in your enteprise, removing the vulnerability and improving your overall security profile.

The absence of this type of information causes critical migration projects to be delayed and creates a major obstacle in the deployment of new line-of-business applications. Proton provides you with these critical insights, giving you the data needed to move high-priority projects forward and while continuing to manage your increasingly complex web application environment securely and efficiently into the future. For this reason, Proton should not be viewed as a one-time inventory solution; Proton should be an essential component of every IT organization's ongoing IT asset management, resource and capacity planning, user experience optimization, and application inventory processes.

IT challenges Proton addresses

Proton's robust design, rich data collection, and comprehensive reporting and analytics enables your enterprise's IT to function more productively and improve services. The following are some example scenarios where Proton delivers tangible business value:

Unblock Browser Migration – Proton gives you a complete picture of your browser-based application environment. Proton inventories all web applications, along with browser environment data, and then presents it in a graphical dashboard of tables and charts. The data is granular-level, with line-item detail and helps you **identify and unblock the web application compatibility issues which most often stall a browser migration.** Proton supports multi-browser environments, including Internet Explorer, Chrome, and Firefox today, with more browsers to be added over time.

Improve Employee Productivity – Maintining a productive environment for your end users is one of your primary responsibilities. Proton is instrumental is helping you achieve this goal by **delivering detailed performance analytics on every web application accessed by every user. With this data, you can detect, isolate, and remediate performance issues to maximize end user productivity.** In addition, the web is a constant distraction for your end users who may spend an inordinate amount of their workday shopping online, using social media, or watching streaming entertainment videos when they should be working. Proton provides your business management with **knowledge and insights to drive productive behavior among employees and identify and correct hotspots before they affect your company's bottom line.**

Maintain and Optimize Client Systems – Proton provides you with an up-to-date, comprehensive inventory with activity data to help your IT team assess current status and better understand your company's web applications and browser infrastructure. This is **critical for prioritizing regression testing as new operating system, browser, and Java patches are released.** With all data and correlations available, your team can be confident everyone has the right configurations, and **unused applications and add-ons can be removed without breaking other systems.** Your IT team can drive better business decisions and improve user experiences because they will have a near real-time view of their web application environment, including usage and performance levels, to help them ensure mission critical web applications run smoothly.

Optimize SaaS Application Licensing – In addition to identifying unused web applications, Proton also **identifies SaaS applications in use, by functional department, which helps IT determine performance levels, usage, and software license optimization.** In addition, you can **identify SaaS applications used by several departments, so volume licensing discounts can be negotiated**. New features are coming soon to help you comprehensively detect shadow IT activity and further reduce software licensing expense.

Proactively Head Off Security Risks – Proton helps reduce your company's attack surfaces by enabling the IT team to see which applications need which add-ons and browser settings, correlating that information with which add-ons or settings are in use, and helping identify gaps between the two. This **enables IT security managers to identify unused applications, browser add-ons, or extensions, such as older versions of Java, reducing the potential for unwanted or unknown security exposure.** Proton also **provides your IT security managers with the information they need to ensure lock-down or bypass configurations are set up properly**, along with reports to prove unwanted sites are unable to bypass these configurations. This can be **used for compliance with regulations such as HIPAA, SOX, and others.** Proton acts as an on-going, targeted, and accurate end-point for data security, making it an essential audit and reporting tool.

Drive Transformational IT Projects – Proton provides comprehensive, rich data and valuable insights that can be acted on immediately, giving your IT leaders command of your increasingly complex web application environment. Proton also provides you with rich planning data by showing what line of business web applications users are accessing, how those applications are used, how many active users access them, usage trends over time, and what extensions and settings are being used to access the application. This near-real-time inventory data and analysis **enables accurate and successful planning of future technology initiatives, improving both your IT services and the company's bottom-line.**

Browsium Proton puts you command of your browser-based application environment

Clearly, times have changed and all enterprises need the right solution to manage this complex world of browser-based business applications. You can manage the challenges presented by this new workspace and not only overcome them, but save money and improve security for your company in the process.

Browsium Proton delivers the accurate and rich data set you need to start your company on the road to a complete and comprehensive browser management strategy. This invaluable information, presented in an easy-to-use dashboard of tables and charts, enables every modern IT department to proactively mitigate risks and ultimately drive better business decisions.

Why wait? Download the Browsium Proton Evaluation Kit or learn more about Browsium Proton, and its web application inventory and analytics capabilities, at www.browsium.com/proton. Information about Browsium's entire browser management suite can be found at http://www.browsium.com/browser-management-suite.

Browsium, Inc.
8201 164th Ave. NE, Suite 200
Redmond, WA 98052
+1.425.285.4424
info@browsium.com