

WEB APPLICATION PERFORMANCE MANAGEMENT

SOLVE THE THREE TOUGHEST WEB
APPLICATION PERFORMANCE
CHALLENGES



MEASURING END-USER WEB PERFORMANCE

Deploying Web Application Performance Management technology is particularly important to the economics of running web applications.

SOLVE THE THREE TOUGHEST WEB PERFORMANCE CHALLENGES

Organizations provide faster, more reliable applications delivered via web technology. Clients and end-users of these applications expect a fully seamless user experience, fast results and error free operation.

But most organizations struggle to deliver on these promises. In fact it's difficult to measure end-user activity or site performance with traditional IT tools, and that can result in frustrated users, disputes, and ultimately in lost business.

Web Application Performance Management addresses this gap in end-user visibility by watching every web transaction from every user in real time. Web Application Performance Management offers rich reporting and analysis across an entire application along with per-user drill-down and problem investigation. The result is faster detection and localization of incidents; an understanding of the impact change has on users; and accurate, authoritative measurement of service quality across customers.

Web Application Performance Management provides in-depth reporting on performance delivered to every user of web applications.

SHORTCOMINGS THAT HAVE AN EFFECT ON WEB ECONOMY

Web operations teams face three big challenges when they try to deliver on the promise of cost effective applications.

- They can't effectively measure end-user service levels: What's most important to clients? Excellent, measurable performance. Most operations teams report on the performance of a service as an abstract idea—a specific test from a controlled environment. But end users think of the service as how they experienced the application. This means that operations teams and customers think of service levels in entirely different ways. When there's an outage, a slowdown, or errors, the user or the customer

will go elsewhere (in the case of an ecommerce application) or complain to management about the application. Poor service levels lead to lower utilization, and complaints that IT is not helping the business.

- IT operations teams take too long to find and fix problems: The math explains it all. Less than four per cent of users will report an error; and less than 20 per cent of errors are detected by monitoring systems. This means that companies see only one per cent of the errors their end users receive. And when problems are detected, they have no way of re-creating the issue and escalating it to the right technical team.
- Developers and engineers don't see the impact of their changes: Web applications change constantly. This may include content modifications, platform alterations, changes to application logic, or network adjustments. Each of these may have an impact on end users. And yet most organizations cannot measure the impact of their changes on end users. Instead, they roll out new functionality and wait to see if it breaks. Or they try to fix a bottleneck, then rely on self-testing and anecdotal evidence to decide whether things improved. The result is changes based on guesswork, and no understanding of end-user impact until it's too late.

THE WRONG TOOLS FOR THE JOB

Much of the challenge stems from using the wrong tools, leaving operations, engineering, and business teams blind and poorly equipped to operate their applications.

People who run web applications have traditionally relied on four basic tools to measure and improve the performance of those applications:

- Device monitoring tells them the health of the systems themselves, from CPU usage and RAM to more complex measurements such as queue depth and thread count.



- Sniffers and flow monitors show them traffic by packets and ports, helping them to understand traffic volumes and the top-talking networks and hosts on the application.
- Load-generation tools flood a new version of the application with traffic to stress-test it and try to identify problems that weren't caught earlier in the development cycle.
- Synthetic testing simulates a user's transaction by repeatedly running a script at intervals and reporting on the success or failure of that script as well as the application's latency.

WEB APPLICATION PERFORMANCE MANAGEMENT

A new set of tools—known as Web Application Performance Management, has emerged. It works by measuring the performance, availability, and traffic levels of an application from the perspective of actual end-user transactions. This is in sharp contrast to earlier methods, since it shows what actually happened. And unlike sniffers or flow monitoring tools, Web Application Performance Management works at the application level. They can measure actual object and page load times, broken down into the elements of delay.

Deploying Web Application Performance Management technology is particularly important for organizations with large audiences of end users.

Individual and Aggregate: Two essential perspectives

IT operations face unique web monitoring and management challenges. IT must understand and must work in two ways: At the aggregate application level, measuring all activity for a particular function; and at the individual customer and user level, to identify problems, resolve disputes and troubleshoot incidents.

Aggregate views look at broad swaths of an application. They are typically used for capacity planning, change management, and service level management. An aggregate view might report on delivered performance levels to an entire customer group, or report on specific elements such as the health and availability of the login function. For example, the operator may want to

see “all sessions from Acme Corporation yesterday. Or it might measure how well the application can deliver at a certain level of load.

By contrast, an individual view looks at a single user and tracks their activity across an application. These views show where someone encountered a problem, or why a particular instance of a page took a long time. They are typically used for problem localization and diagnostics.

For an IT organization that wants to deliver better levels of service, these two perspectives are equally important, allowing the operations team to move smoothly from an incident to its impact on all users—or from a broad slow-down to the individuals that were affected.

The economic benefits of Web Application Performance Management are clear, and have been proven in hundreds of production environments at many of the leading web properties in the world.

THE ECONOMIC BENEFITS FOR ONLINE ORGANIZATIONS

Web Application Performance Management tools have many uses, but they ultimately serve three important functions:

- Reporting on the service quality of an individual user or group
- Detecting, capturing, and localizing problems
- Measuring the impact of a change on real users

These three functions directly address the challenges outlined above. With the right application of Web Application Performance Management technology, firms can dramatically improve their operational performance and deliver on the promises of web applications.

- Faster problem detection and repair: By detecting a problem as soon as a single user experiences it—and capturing all of the forensic detail needed to identify and reproduce it—user report a dramatic reduction in Time To Repair. A reduction in Time To Repair from 100 hours to 20 hours per incident is typical for many implementations.

- **Cost reduction:** With less time to identify and localize problems, frontline technical staff can escalate issues more efficiently and reduce the time it takes engineers to make a fix. Adopters of Web Application Performance Management report a reduction of one day a week—20 per cent fewer man-hours—spent on problem isolation, leading to lower costs and more competitive offerings. Some organizations have also reduced their dependence on hosted testing services, saving even more money.
- **Dispute resolution:** Many of the disputes between a service provider and its end users are the fault of the end user. But without evidence, “the customer is always right.” Web Application Performance Management delivers reports with the authority and accountability that lets SaaS support personnel identify what’s their responsibility, and lets them direct the customer towards problems in their own network. The tools quickly pinpoint common customer-side problems such as bad caching configuration, proxy server issues, and HTTP version incompatibility.
- **Rollout acceleration:** With better visibility into the health of new code during deployment, development and IT not only prevents problems early in the release cycle—they can actually accelerate the rollout of healthy code to a broader audience.
- **Competitive differentiation:** Service Level reports gives organizations such as SaaS providers advanced visibility into end-user performance and application health as a selling point. This lets them emphasize that their higher performance and more sophisticated operational tools and skills are a reason to choose their service.
- **Early identification of problem users or customers:** IT professionals report that Web Application Performance Management technology lets them identify errors that effect end-users, and allows them to be proactive about solving the problem, rather than waiting for a call from an angry customer or frustrated employee.
- **Subscriber renewal:** With tangible proof of service levels, SaaS providers can work with customers to convince them that hosted applications perform as well or better than in-house ones, leading to lower attrition and better service renewals.

IMPLEMENTING AN WEB APPLICATION PERFORMANCE MANAGEMENT ROADMAP

The benefits off Web Application Performance Management are clear, and have been proven in hundreds of production environments at many of the leading application service companies in the world. But how to begin?

The good news is that Web Application Performance Management tools from Coradiant are surprisingly easy to deploy. Most deployments follow the same basic steps:

Initial deployment

- 1) Plan for the deployment: Choose the most visible and important applications and decide where monitoring technology will be deployed.
- 2) Install the Web Application Performance Management appliance, define key application functions to monitor and build a baseline of what’s “normal.” Review individual sessions to understand key functions and typical patterns, and to validate session- and page-building configuration. Data will be collected immediately.
- 3) After several days, review the baselines and generate performance targets for each function

Early awareness

- 1) Build a basic set of reports for distribution on a regular basis.
- 2) Send reports to the various application stakeholders to educate them about the new visibility.
- 3) Collect and implement requests for additional reports as they arise.
- 4) When incidents occur, use analysis at the individual level to communicate what happened throughout the organization.

Because of the visibility, forensic detail, and rich data collection it offers, Web Application Performance Management technology can help any organization overcome the challenges they face in delivering high-quality web applications.



Operational integration

- 1) Integrate the functions into existing monitoring software tools for thresholding and alerting, typically using SNMP MIBs, traps, and email alerts.
- 2) Extract raw user data as needed for offline storage or analysis.
- 3) Train second-level support teams to localize and escalate incidents using the extracted session history.

Change impact analysis

- 1) Prior to implementing site changes, set the tool to watch the specific element that will change—whether this is content, application, network, or infrastructure.
- 2) Circulate before/after reports of the change to communicate its impact.
- 3) Make change impact analysis a part of a Change Control process or CMDB workflow.

Service level reporting

- 1) Generate reports about service levels for every application.
- 2) Determine service level requirements for each part of the web applications and for each part of the business.
- 3) Use service level reports as part of the IT organizations contribution to the business.

CONCLUSIONS

Web applications are an important part of any organization. IT must deliver a high-quality, appropriate service level to every constituent. Having access to better incident management tools, cleaner change impact analysis, and more precise service level management is required in order to fully contribute to the organization's goals.

Because of the visibility, forensic detail, and rich data collection it offers, Web Application Performance Management technology can help organizations overcome the challenges they face and deliver operational excellence. Without it, they

will be at a significant disadvantage in the market as its adoption becomes commonplace and customers start to expect it from their providers.

ABOUT CORADIANT

Coradiant is the leading provider of equipment used to manage, optimize and troubleshoot web applications. Coradiant's award-winning TrueSight™ products use customer metrics gathered from each web user visit as their primary data source for IT management. Coradiant products are deployed in hundreds of leading Fortune 500 companies including software as a service (SaaS), e-commerce, entertainment, finance, insurance, healthcare, and education. Coradiant is headquartered in San Diego.

For more information, please visit <http://www.coradiant.com> or call 1-877-731-7277.