Synthetic Monitoring of Application Transactions

The Need: Measure End-User Experience and Detect Performance Issues Proactively

End-user satisfaction and productivity are the ultimate measures of an IT infrastructure’s performance. Therefore, IT managers must monitor the end-user experience to understand how well the IT infrastructure is performing and supporting the needs of the business. For example, for an online trading web site, it is important to know if users are able to login, to review their current balance, check stock prices and perform trades successfully and without delay.

By monitoring end-user experience continuously, IT managers will be alerted when users are likely to be experiencing application failures or slowdowns. Pin-pointing the exact transaction that is experiencing a problem can help administrators rapidly discover and diagnose problems, thereby reducing service downtime and its impact on the business.

Many modern applications have built-in instrumentation to track and report key performance metrics. While built-in instrumentation monitors real user activity, it is not effective when users are not actively using the applications being monitored. Furthermore, there are situations where built-in instrumentation is not available (e.g., legacy applications, custom applications, etc.). This is why synthetic end-user experience monitoring is a critical part of any application performance monitoring solution.

The Solution: The eG Enterprise Synthetic End-User Experience Monitor

Synthetic monitoring simulates user activity to key applications and reports on the applications’ availability and responsiveness. In its simplest form, synthetic monitoring can be performed at the application-protocol level – e.g., a HTTP GET to a web server can be used to check if the server is working well. However, this approach is not based on real clients (e.g., web browsers, Citrix Receiver, RDS client, etc.) that users employ to access applications. Furthermore, this approach often does not include multiple transactions in a single session (e.g., logging in, filling a form, accessing an inventory list, etc.).

The eG Enterprise Synthetic End-User Experience Monitor (eG SEUM) uses the same client applications that users access, performs a sequence of mouse clicks, data entry operations and keystrokes (based on prerecorded scripts) to emulate a real user accessing the application, observes the responses at each transaction step, matches the results with expected patterns that are pre-specified by the administrator, and reports the performance metrics via a central web console. Web-based applications, thin-client applications (e.g., Citrix) or thick clients (e.g., SAP GUI) can all be emulated. Based on the results, IT managers can quickly determine which transaction in a session is slow or is not working.

Key Capabilities:

- Provides the end-user perspective of application performance: Deploy geographically dispersed monitors that simulate user interactions to collect performance data. Supports all clients - Web, Citrix or thick clients.
- Isolates performance problems in session-based applications: Performs multiple transactions in a session and identifies the exact transaction that is causing slowdowns.
- Provides instant alerts and notifications so IT managers know about problems before users do.
- Baselines SLAs and tracks service quality trends: Offers a reliable, cost-effective way of baselining and automating service health checks.
- Enables IT managers to track the end-user experience: Goes beyond just alerting on issues. In-depth monitoring of every tier of the infrastructure together with automatic correlation and root-cause diagnosis enables IT managers to rapidly discover, troubleshoot and fix application issues that can impact the user experience.

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By collecting availability and response time statistics over time, IT managers can identify times and situations when the user experience is likely to be poor. They can set fixed or automatic thresholds for metrics in the eG SEUM and when a metric violates its thresholds, they can get instant alerts about a potential service outage or a slowdown.

When eG SEUM alerts about a user experience problem, an IT manager will need insight into what is causing the problem. This is where eG Enterprise’s in-depth monitoring for over 150+ enterprise applications helps. Using these monitors, IT managers can easily determine what is causing the problem – e.g., is it due to excessive load? Is the application misconfigured? Is the database query slowing the transactions?

Benefits of the eG Synthetic End-User Experience Monitor

The eG SEUM offers enterprises several benefits:

- **True 24*7, proactive performance management:** The performance of key applications is tracked irrespective of whether users are accessing the application actively or not. IT managers can now get proactive alerts regarding problems, even if users are not actively accessing the application.

- **Get easily analyzable, consistent measures of performance:** Since the same transactions are repeated periodically from the same location, the results of the emulation can be easily analyzed. In contrast, when monitoring actual user accesses, one would need to account for variables such as location of the user, differences in configuration of user desktops, etc.

- **Monitor applications irrespective of development language:** Since it focuses on application functionality as seen by a user and is not dependent on any APIs, the eG SEUM can be used for monitoring any application – irrespective of the programming language it is developed in.

- **Near zero overhead:** Synthetic monitoring has little/no overheads and the applications being monitored do not have to be changed for the monitoring to be done.

Who Benefits from eG SEUM

- IT managers of enterprise networks who need to keep track of their critical business applications.

- Network managers of distributed infrastructures. They can deploy eG SEUM at different locations and compare application performance across locations to identify locations that have poor performance.

- Application owners of outsourced or multi-domain environments, where the applications may be operated by one team, but another team is responsible for their performance.

- IT managers involved in migration/upgrade projects - for example, physical to virtual server and desktop deployments. The performance of applications can be benchmarked before the migration and compared with the performance after the migration, so that the success of the migration can be proven.

What the eG Synthetic End-User Experience Monitor Reveals:

- Are the critical business applications available to handle user requests?

- What is the total response time for a typical user access to a business-critical service?

- Which of the transactions is failing?

- Which of the transactions of a service is slowing down?

- Are there specific times of day when the slowdown occurs?

- How does the performance vary depending on the geographic location from which the user is connecting?

About eG Innovations

eG Innovations provides intelligent performance management solutions that automate and dramatically accelerate the discovery, diagnosis, and resolution of service performance issues in virtual, cloud, and physical service infrastructures. Managing some of the largest IT deployments in the world, only eG Innovations offers 360-degree service visibility with virtualization aware performance correlation across every layer and every tier - from desktops to applications, and from network to storage. This unique approach delivers deep, actionable insights into the true causes of cross-domain service performance issues and enables administrators to pre-emptively detect, diagnose, and fix root-cause issues - before end users notice.