



Research Report

Ruxit – A Virtual Operations Team Powered by Artificial Intelligence

Introduction

I recently published a blog in Computerworld about Application Performance Management (APM) and how the market has evolved in the past five or so years. Stefan Greifeneder, Digital Marketing Manager at [Ruxit](#), read the blog and reached out to me, asking if I would like to hear more about the “artificial intelligence” capabilities in Ruxit’s APM solution. Intrigued, I followed up and received a briefing from Alois Reibauer, Chief Evangelist at Ruxit.

While other APM vendors tout their analytics functionality as a means to identify and solve performance problems, Ruxit’s message centers around artificial intelligence –the Ruxit software learns to do what humans do. This enables Ruxit to operate as a kind of virtual member of the operations team, replacing a human member (or potentially the entire team) with software that provides a causal dependency chain identifying root cause much more quickly and providing a rich context rather than a series of possibly unrelated alerts.

Background

Operating as a division of Dynatrace with shared upper management, Ruxit maintains the “nimbleness” of a start-up company while still having the resources of a larger company at its disposal. Engineering teams are separate, but there is technology crossover with elements of the Dynatrace product that have their heritage in Ruxit and vice versa. In terms of target markets, Ruxit’s sweet spot is the very large web-scale business and full-stack web application monitoring. As a Software-as-a-Service (SaaS) offering, the sales and engagement model suits these businesses that start small but may need to scale quickly. In a traditional enterprise environment, Ruxit would be employed to monitor new web-based applications, with Dynatrace as a complement, monitoring core legacy applications.

The Ruxit solution was released just under a year ago and has over 200 customers to date. Fully subscription based, customers pay \$0.15 per hour per server, \$0.15 per 1000 visits for Real User Monitoring and \$0.15 per 25 web checks for synthetic monitoring. Customers only pay for what they use with no long-term contract or commitments. The first 1,000 hours are free and start-ups are offered a special package— monitor up to 10 machines and 2 million user visits per month for up to 12 months.

Ruxit – A Closer Look

Ruxit provides web application performance monitoring for the entire technology stack in an out-of-the-box solution. Installing a single agent (no start-up scripts, plug-ins or manual interaction) to enable monitoring, a simple command injects the Ruxit agent into web page application code and automatically learns dependencies (within 2-5 minutes) — modeling the application in real-time and learning normal behavior for metrics like response time and CPU health.

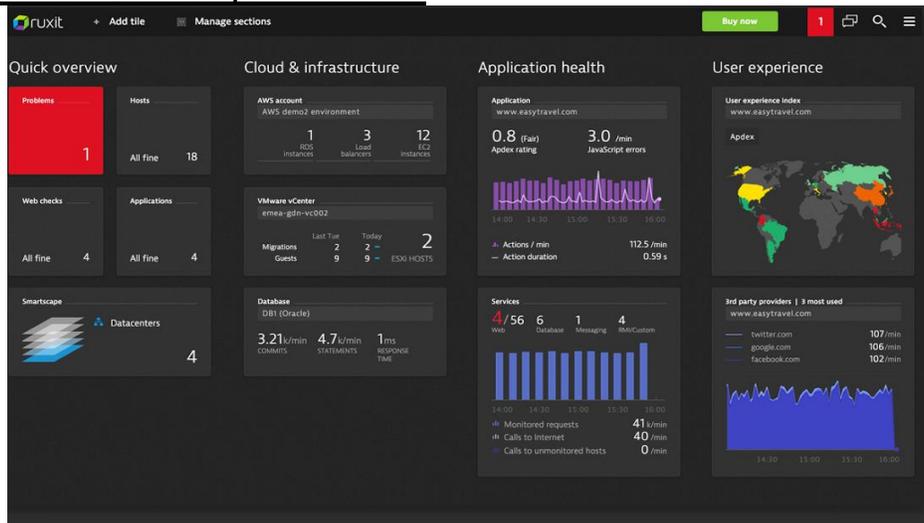
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Capabilities include:

- *Web monitoring* for availability monitoring and real user monitoring to examine user performance in live situations in real-time
- *Integrated synthetic monitoring* to monitor performance and SLAs 24x7 using web checks of real browsers in real locations (rather than scripts) to analyze performance trends over time and to check performance of new applications before they are released to customers
- *Application performance monitoring* for Java, .NET, Node.js, PHP, and Ruby. Ruxit tracks and inspects all SQL statements and NoSQL queries sent by your application. SQL databases like MySQL, SQL Server, and Oracle, as well as NoSQL databases like Cassandra and MongoDB are auto-detected and analyzed
- *Server monitoring* for CPU, memory, and network health metrics down to process level; VMware monitoring; Docker monitoring
- *Network monitoring* down to the process level for comprehensive view of virtualized network infrastructure including VMs, ESXi hosts and cloud instances. Monitors network traffic on host and processor to see which processes are consuming the most bandwidth.
- *Cloud monitoring* including AWS monitoring

Websites, applications, services, network infrastructure, and the dependencies between these components are auto-detected and automatically visualized from a single screen with Ruxit's smartscape technology (see [Figure 1](#), below). In fewer than five minutes—and with no manual configuration—pre-built and customizable dashboard views show application performance data, SQL statements, and code level insights.

Figure 1 – Ruxit Smartscape Dashboard

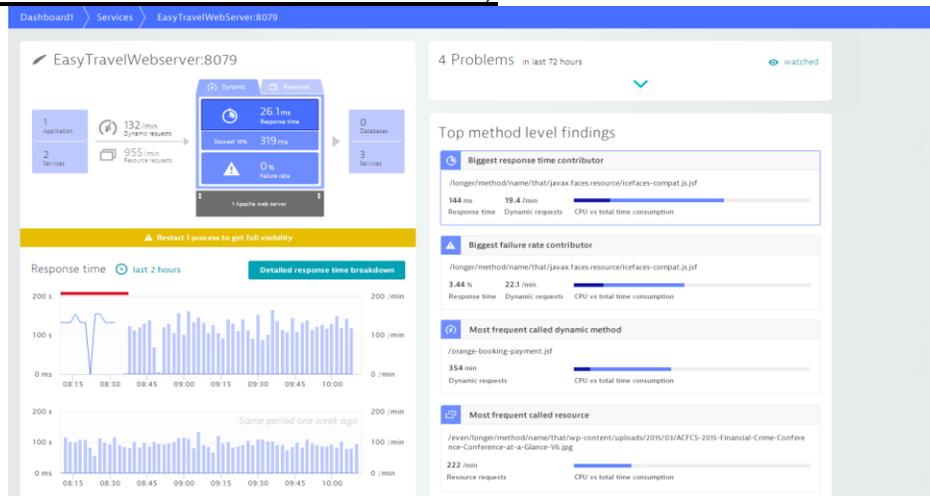


Source: Ruxit 2015

Graphic visualization dashboards are built automatically and are monitored and updated on-the-fly when any changes occur. Metrics such as network health, CPU, memory and disk are displayed in a single integrated view with visualization that illustrates deltas between normal and faulty behavior. Query capabilities can answer questions such as, “What location is creating most of the load?”

Ruxit can learn normal behavior in as little as half a day, according to Ruxit—and within minutes Ruxit can easily identify anomalies in behavior, automatically detect whether or not the problem is impacting users and discover root cause by analyzing millions of data points (source: Ruxit) —client-side, server-side, and infrastructure level. After 7 days, weekly patterns can be detected. Deep insight is provided including method level code visibility (see **Figure 2**, below); database metrics down to the DB statement (SQL, NoSQL); and execution count and execution times per resource (CPU, Network, etc.).

Figure 2 – Ruxit Method Level Code Visibility



Source: Ruxit 2015

Ruxit uses an internal knowledge base that knows how software, applications and infrastructure work together, linking front-end services to back-end code, and can analyze millions of dependencies with an artificial intelligence layer. Rather than using thresholds and alerts, dependencies are correlated with both real-time and historic data and can provide a chain of events from the end-user to the root cause. When problems are identified, they are categorized based on actual or potential impact so fixes can be prioritized. For example, one problem may not yet be affecting users, while another may be impacting many users. Human operators—notified through a mobile app or email — are given information about root cause, as well as a causal chain, and can then determine which problems to fix in what order.

Customer Examples

The examples Ruxit provided demonstrated how the solution can be used in place of one or more members of an operations team.

In one example, a small start-up shop with a one-person operations team has completely outsourced monitoring to Ruxit. The operator uses the mobile application and waits to be notified of problems before taking any action. A large customer doing an AWS cloud migration project is replacing a manual “2 people for 2 weeks” process (verifying which machines are ready to migrate) with the Ruxit solution that gathers migration-readiness information in minutes. Not only does this change save person-hours, it also speeds the entire migration process.

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Perhaps one of the most interesting examples is the company's own use of the solution and the results they have seen. Ruxit budgeted for a dedicated 24x7 operations team of 3-5 people, and after one year in business they have never built the team!! This "no ops" approach has given them the ability to focus resources on their own product development. As a result, Ruxit releases new features as often as every two weeks and does bi-weekly Agile development sprints getting new features to users sooner.

Summary Observations

Customers have many more choices today when it comes to APM tools. New entrants (like Ruxit) offer innovative sales and engagement models (like free trials by download), "as-a-service" pricing, and a quick time to value. Ruxit's closest competitor, New Relic, made its mark using this model to sell to start-ups and small to medium businesses (SMB's) and to sell "bottom-up" in the enterprise. Much of the complexity has been removed even in more mature solutions from vendors such as CA Technologies IBM and Compuware (now Dynatrace). This means that businesses— both large and small— can easily and cost-effectively monitor and manage application performance for a range of application types.

Ruxit has been built from the ground-up specifically for today's web-based and user-facing applications. It is designed to be easy to implement and use, and highly scalable. Without the baggage of having to support legacy applications, mainframe infrastructure, and agents for all supported environments, Ruxit can focus on what it does best — full stack web-scale monitoring and analytics-based artificial intelligence.

I like the artificial intelligence message — it is understandable and quantifiable. I particularly like it when vendors use their own products and can recount the benefits of doing so. With an out-of-the-box purpose-built solution, a veteran leadership team and an easy SaaS-based pricing model, Ruxit should definitely be on your short list. So who said \$0.15 doesn't buy anything anymore??

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