

## Role of Newrelic to Monitor Application Performance

Ravi Kiran Kanneganti

Senior Manager, Capgemini America Inc, USA

\*Corresponding author

Ravi Kiran Kanneganti, Senior Manager, Capgemini America Inc, USA.

Received: September 02, 2024; Accepted: September 07, 2024; Published: September 16, 2024

New Relic plays the role of a comprehensive **observability platform** and is a leader in **Application Performance Monitoring (APM)**.<sup>1</sup> Its primary function is to provide real-time, deep visibility into the performance, health, and reliability of applications, microservices, and the entire technology stack.<sup>2</sup> Here is a breakdown of New Relic's key roles in application performance:

### Application Performance Monitoring (APM)<sup>3</sup>

This is New Relic's core offering. Its main role is to instrument your application code (using language agents for Java, .NET, Node.js, Python, etc.) to collect, analyze, and visualize crucial performance data.<sup>4</sup>

- **Code-Level Diagnostics:** It tracks individual transactions and traces them down to the exact line of code, helping developers quickly pinpoint the source of performance bottlenecks (e.g., slow functions, inefficient loops).<sup>5</sup>
- **Transaction Tracing:** It records the lifecycle of a request as it moves through various application components, database calls, and external services, showing where latency is occurring.<sup>6</sup>
- **Key Performance Metrics:** It monitors the "golden signals" of application health:<sup>7</sup>
  - **Response Time:** Measures the speed and efficiency of the application.<sup>8</sup>
  - **Throughput:** Tracks the number of transactions processed per minute.<sup>9</sup>
  - **Error Rates:** Quantifies the frequency and types of errors to assess stability.<sup>10</sup>
  - **Apdex Score:** Provides a user-centric measure of satisfaction based on response time thresholds.<sup>11</sup>

### Full-Stack Observability<sup>12</sup>

New Relic moves beyond just the application to provide a unified view of the entire system, helping correlate application issues with infrastructure problems.<sup>13</sup>

- **Infrastructure Monitoring:** Tracks the health and performance of underlying hosts, servers, containers (e.g., Kubernetes), and cloud services (AWS, Azure, GCP).<sup>14</sup>
- **Log Management:** Centralizes log data and correlates it with performance metrics and traces, providing context for troubleshooting.<sup>15</sup>
- **Distributed Tracing:** Essential for modern microservices architectures, it tracks a single request across all the services it touches to identify performance degradation points in a complex, multi-service environment.

### Proactive Issue Detection and Alerting<sup>16</sup>

New Relic shifts teams from reactive troubleshooting to proactive problem solving.<sup>17</sup>

- **Real-Time Alerts:** Allows users to set specific thresholds for critical metrics (e.g., response time, CPU usage).<sup>18</sup> When a threshold is breached, it automatically triggers an alert, notifying teams before an issue becomes an outage.<sup>19</sup>
- **Anomaly Detection (AIOps):** Uses AI and machine learning to automatically detect unusual behavior or performance deviations that fall outside of normal operating patterns.<sup>20</sup>
- **Synthetic Monitoring:** Simulates user interactions from various global locations to proactively test the application's availability, performance, and functionality.<sup>21</sup>

### Enhancing User Experience (UX)<sup>22</sup>

New Relic provides tools to monitor the performance of the application as experienced by actual users.<sup>23</sup>

- **Browser Monitoring (RUM):** Tracks the real user experience (RUM) by monitoring page load times, AJAX requests, and JavaScript errors from the end-user's browser.<sup>24</sup>
  - **Mobile Monitoring:** Monitors the performance and crash rates of iOS and Android mobile applications.<sup>25</sup>
- In essence, New Relic's role is to provide the data, insights, and tools necessary for development, operations, and business teams to monitor, analyze, optimize, and secure their software, ultimately ensuring reliability and a positive customer experience.

**Copyright:** ©2024 Ravi Kiran Kanneganti. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.