Application Performance Metrics

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Project Name	Project - IoT based safety gadget for Child Safety Monitoring and Notification
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Analyze application performance:

I have collected a few important pieces of information you need about an application you analyze; irrespective of the type of device you should know these**,**

1. Support for Operating System.
2. Browser Compatibility.
3. Size of the application.
4. Security Protocol.
5. The device it is running on (Smartphones)
6. User Journeys (End to end)

APM metric:

Application performance monitoring (APM) agent collects and compileskey metrics of your application and infrastructure that allow your IT or DevOps team to identify and resolve functionality issues before they have a negative impact on business outcomes.

To measure software delivery performance, more and more organizations are defaulting to the four key metrics as defined by the DORA research program: **change lead time, deployment frequency, mean time to restore (MTTR) and change fail percentage**.

Data is the fuel that powers an effective application monitoring and management strategy. When properly collected, managed and reviewed, application metrics transform meaningless chunks of technical information into a comprehensive narrative that reveals the reliability of your system and provides important clues regarding the overall user experience.

Application performance monitoring (APM) agent collects and compiles key metrics of your application and infrastructure that allow your IT or DevOps team to identify and resolve functionality issues before they have a negative impact on business outcomes. Some of these metrics are response times, error rate, throughput, etc.

The key to application monitoring involves developing a greater understanding of your system and its users by collecting data that reveals if apps are behaving normally, alerting if there are anomalies, providing context about how functionality issues impact business outcomes, and optimizing the application to prevent performance issues.

Key metrics to monitor:

The abundance of data available can make application performance management seem overwhelming. Knowing which application performance metrics to focus on is essential to finding an APM solution that works for your organization. The following metrics are critical to identifying application errors or system issues:

- Error rates: Monitor how often app performance degrades or fails.
- CPU usage: Assess CPU usage, memory allocation, and desk read/write speeds to evaluate the effect of usage on performance.

- Response times: Determine whether speed is affecting application performance by tracking the average response time.
- Request rates: Measure your application traffic including spikes, inactivity, or number of active users.
- Uptime: Track your application availability over time to check compliance with service level agreements and assess overall reliability.
- Number of instances: Scale your application to meet actual user demand with auto scaling, based on the number of app or server instances running at any one time.
- Garbage collection: Improve performance by identifying and eliminating the problems caused by heavy memory use in Java or other languages that use GC.
- Customer experience: Understand and improve upon the user experience by using a combination of Apdex scores and SLA thresholds to measure customer tolerance or satisfaction.