

Reading: Future of IT Operations – Leveraging Observability for Self-Healing

Estimated time needed: **15 minutes**

In DevOps, observability is a strong skillset similar to being a super detective. Its prowess goes beyond just spotting impending issues; it extends to unraveling the **why** behind these problems and diagnosing the source. Instead of passively awaiting system breakdowns, observability empowers insights from all corners of the software, unveiling the broader context proactively.

To navigate this expansive landscape, developers adopt the acronym M.E.L.T. This framework encapsulates the diverse data types:

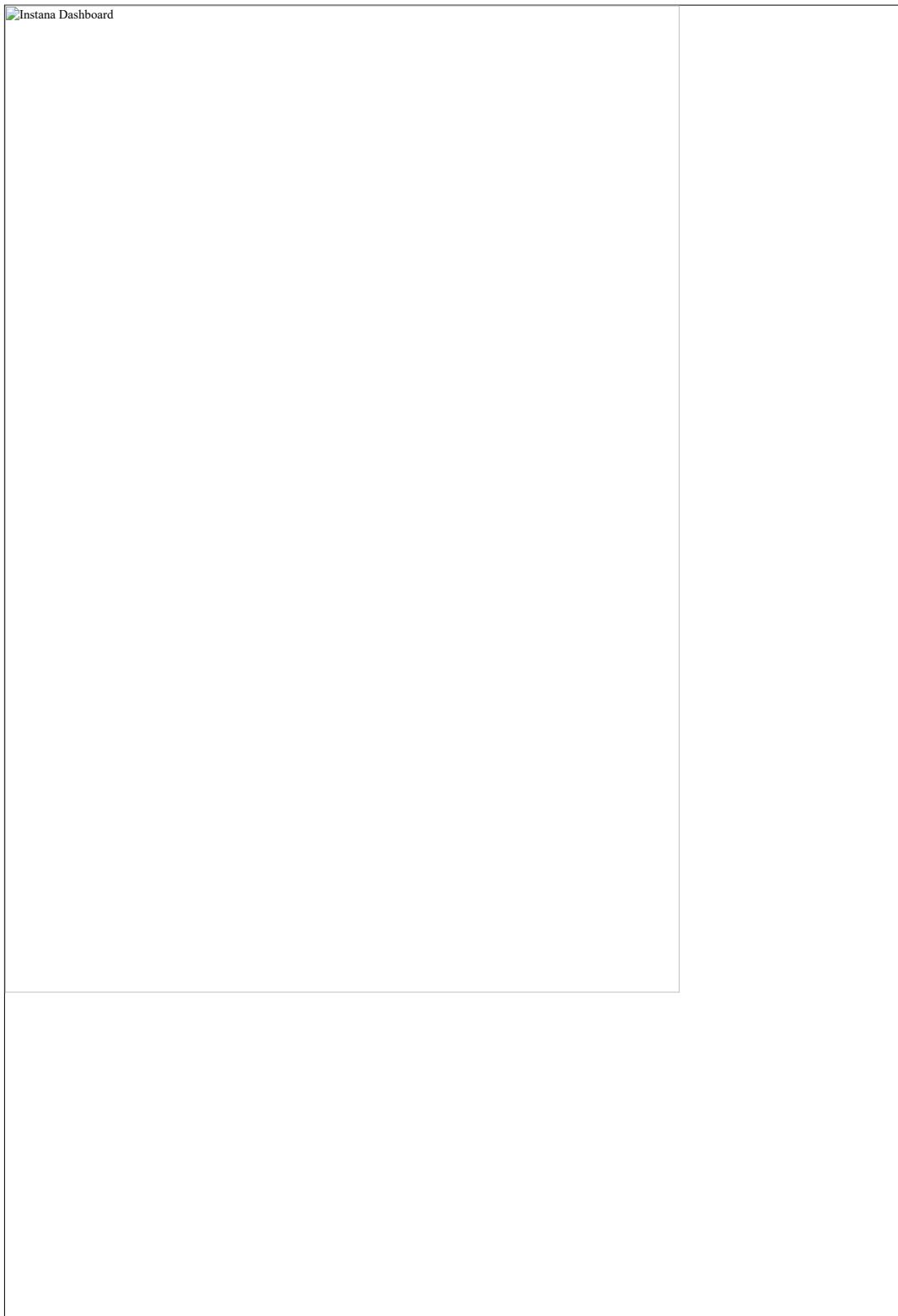
- **Metrics:** Comparable to an application's vital signs, metrics offer numerical indications of system health, allowing quick assessments of smooth operations.
- **Events:** Think of events as small flags unfurling when pivotal occurrences happen. These act as signposts, guiding our understanding of ongoing actions.
- **Logs:** Logs serve as meticulous records, capturing intricate details of system activities. They pave the way for piecing together the narrative behind events.
- **Traces:** Traces resemble a trail of breadcrumbs, illuminating the route a request takes through the software's various components.

Observability uses all this data and transcends mere troubleshooting; it's a proactive detective's toolset for early issue detection and extensive comprehension of system dynamics. Real-time visibility emerges as one of observability's chief benefits. It slashes downtime and lays the groundwork for the ultimate goal – **self-healing solutions with zero downtime**. In a rapidly evolving technology landscape, inefficiencies can seep in. Observability's evolution empowers systems to self-correct, minimizing inefficiencies or proactively addressing and escalating issues.

More companies are migrating to adopt observability as a practice, and the day it is part of the process is not far. An astonishing 89% of the companies that use observability now exude unwavering confidence in ensuring seamless application functionality. Embracing observability solves two main pain areas that most systems have:

- Addressing unforeseen issues or downtime
- Resolving concerns within minutes, not days

IBM Instana is one of the leaders in the observability landscape. As the transition unfolds from DevOps to AIOps, a promising horizon emerges. Instana and the like are harnessing observability and monitoring synergistically with AI for proactive self-healing. View the video in this [link](#) to understand more about Instana Observability.



Observability, in essence, serves as the compass guiding the enhancement of products and services. It doesn't merely function as a tool; it embodies the future. Once relegated to a tool's role, observability has now become a fundamental business asset. It occupies a pivotal spot within the puzzle, transcending routine diagnostics.

In operations, the need to confront contemporary challenges often entails revitalizing tools, systems, and processes that have been used for decades. Navigating issues such as alert fatigue and identifying underlying root causes, poses challenges. Familiar pains like tight schedules and the pressure to align on remediation strategies further compound the landscape. A pivotal avenue for bolstering IT operational efficiency involves the automation of alert rectification. When anomalies are detected in IT endpoints, triggering alarms due to deviations from specifications, a validation and diagnostic process begins, promptly followed by automated correction workflows. For instance, services set to automatic mode can be restarted if inactive, and filling disk drives can trigger the safe removal of temporary files. With well-deployed auto-correction mechanisms, the risk of unexpected service disruptions and the Mean Time To Resolution (MTTR) decreases. Instead of channeling efforts into achieving ultra-high reliability, organizations often opt for fewer outages and reduced downtime. This leads to self-healing IT, integrating self-service technology, AI-driven insights through AIOps, machine learning, remote monitoring, and human intervention when needed.

The core objective is to detect, analyze, and pre-emptively resolve emerging issues before users notice. This preventive strategy leverages AI-enhanced monitoring, initiating automated scripts to rectify problems seamlessly. The vision extends to end-to-end self-healing scenarios, where alerts or issues are autonomously addressed across processes without manual intervention. Such systems entail automated, well-documented, and pre-tested healing workflows triggered by events, enabling secure and orchestrated infrastructure actions. The interplay of observability and auto-remediation equips IT to proactively identify and promptly address anomalies, minimizing disruption risks and elevating MTTR challenges.

Yet, the transition to observability presents new challenges for companies. It necessitates more than adapting the existing monitoring tools; it calls for an architectural transformation tailored to this new ecosystem. The prerequisites have transformed – heightened data volumes, greater intricacies, and dynamic systems. These shifts extend beyond observability, sparking a new era in security and deployment strategies. Observability stands as a cornerstone, compelling businesses to reimagine their problem-solving approaches.

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