



On Prem, In-Cloud, or Hybrid Monitoring? *Assess what is best for your team.*

The challenges of on-prem vs. in-cloud monitoring and what to do when you have to straddle both worlds

Leading IT professionals have been in a long standing debate about which monitoring system yields the best outcomes. On-prem and in-cloud have been the dominant contenders among monitoring solutions, however, they both create distinct challenges which must be acknowledged before making the transition.

Let's break it down by comparing the challenges that IT professionals face with On Prem and Cloud Monitoring.

Challenges that IT professionals face with On Prem Monitoring:

- 1. Scaling Systems:** When critical incidents or major outages start to develop, enterprise IT Operations tools can generate a significantly larger amount of data compared to the baseline. Many on-premises incident response solutions, both commercial and homegrown, struggle to elastically scale to handle these loads, severely hindering their ability to deal with service degradations.
- 2. Significant downtime for upgrades and enhancements/ Time to Value:** Organizations expect software tools to be always up-to-date, and continually improved with new features and enhancements. At the same time, they must serve their own customers 24/7, so they cannot tolerate downtime, even if it is scheduled. This creates a major challenge for on-premises tools.
- 3. Lack of Reliability:** Most organizations serve demanding customers 24/7 and cannot afford any downtime or gaps in visibility into the health, availability and performance of critical apps and services. Many on-premises IT Operations tools experience disruptions or downtime when dealing with high loads.
- 4. High Cost:** Total cost of ownership is a major concern for organizations. On-premises tools require expensive hardware as well as expensive admin hours to provision, set up and maintain the system over time.



Challenges that IT professionals face with Cloud Monitoring:

- 1. Internet Requirement:** Unlike On-prem solutions, Cloud solutions require fast and reliable internet connectivity to remain reliable and efficient user experience. Slow internet connections may degrade user experience and create inefficient processes. Furthermore, employee productivity and project timelines may not be able to be met if important files are stored on servers with unreliable internet.
- 2. Ownership:** As cloud monitoring is outsourced to third party vendors, ownership of data gets murky. Data and encryption keys reside within your third-party provider, so if the unexpected happens and there is downtime, you may be unable to access that data.
- 3. High Cost:** While cloud computing allows for unlimited storage of data, the price of scalability is directly correlated with volume of storage.
- 4. Security:** The existence of a third party vendor creates security roadblocks as unauthorized personnel may have access to the data. Strict security practices and procedures need to be established.

Turning to a Hybrid Model:

In recent years, companies across all industries have embarked on complex, multi-year cloud adoption and migration journeys. In their transition state, which often lasts decades, enterprises need to operate both traditional on-premise systems and modern cloud-based applications. In other words, enterprises today operate hybrid IT stacks and will realistically continue to operate these hybrid stacks for the next several years.

They're doing this because one or more of these reasons:

- Order-of-magnitude improvement in development velocity and infrastructure scaling
- Improved system stability and performance due to increased redundancy
- Reduced costs through elasticity and reduced infrastructure maintenance burden
- Necessity – it's the only option for many enterprises

This transformation initiative creates two main problems for IT operations:



Hybrid cloud = IT Ops complexity

1. Centralized visibility into hybrid cloud environments is hard- There are tools for traditional IT stacks, and there are tools for modern, cloud-native IT stacks. But enterprises – wary of silo-ed tools, and wanting to provide their IT Ops, NOC, DevOps and SRE teams centralized visibility across both traditional and modern stacks – struggle.
2. Increased operating costs, and performance and availability challenges: IT Ops, NOC and DevOps teams don't have cohesive, end-to-end visibility into applications and services that span hybrid IT stacks. Teams are unable to detect incidents when they happen and, instead, have to constantly operate in a reactive firefighting mode. This increases downtime and other related costs, and decreases the performance and availability of critical applications and services.
3. Reduced operating costs, and improved performance and availability: By giving IT Ops, NOC, DevOps and SRE teams cohesive, end-to-end visibility into applications and services that span hybrid IT stacks, it becomes easier to detect problems in real-time, before they escalate into costly, crippling outages.

Increased resolution times

1. Detecting, investigating and resolving incidents and outages in hybrid IT stacks is hard
2. Modern IT environments consist of hybrid IT stacks. These stacks encompass both
 - dynamic, cloud-native architectures that consist of containers, Kubernetes, microservices, infrastructure-as-code etc. which change constantly and rapidly, and
 - slower-moving, on-prem IT systems, applications and infrastructure
3. ITSM methodologies and tools as well as other traditional approaches like CMDB, Change Management and Problem Management, were designed for environments with infrequent changes by humans and periodical auto-discovery jobs. As a result, they cannot address operational challenges posed by these modern hybrid IT environments.
4. Increased operating costs: Hybrid cloud environments are complex and noisy, and suffer from frequent, painful and prolonged incidents and outages. Enterprises resort to headcount growth in an attempt to detect, investigate and resolve those incidents and outages. This is expensive.



5. Performance and availability problems: Traditional IT Ops practices such as Change Management, Problem Management and traditional IT Ops tools like CMDBs were designed/built for on-prem applications and not built for cloud-native applications. So, as companies migrate to the cloud and operate hybrid cloud stacks, these tools and practices are ineffective and make incidents/outages more frequent, more painful and prolonged.

6. Decreased business velocity:

- When critical revenue and customer-facing applications and services suffer frequent problems (downtime, performance issues), customer loyalty and revenue both take a hit. Business velocity in affected business units slows down.
- In hybrid IT environments, because the L1 teams inside central IT Ops/NOC teams can't handle and/or resolve many issues, they indiscriminately escalate them to L3s and DevOps teams who are then pulled away from strategic projects. This slows down business velocity

How BigPanda Can Help:

BigPanda provides centralized visibility across enterprise hybrid stacks. BigPanda was architected from the ground-up to provide consistent visibility across all generations of infrastructure, including mainframes, bare-metal servers, private & public clouds, containers and serverless, by letting you easily integrate with all of your monitoring tools. This includes monitoring tools for traditional and modern IT stacks, and it includes commercial, legacy, homegrown, open source, and custom monitoring tools.