

The Changing Space of IT Infrastructure Monitoring



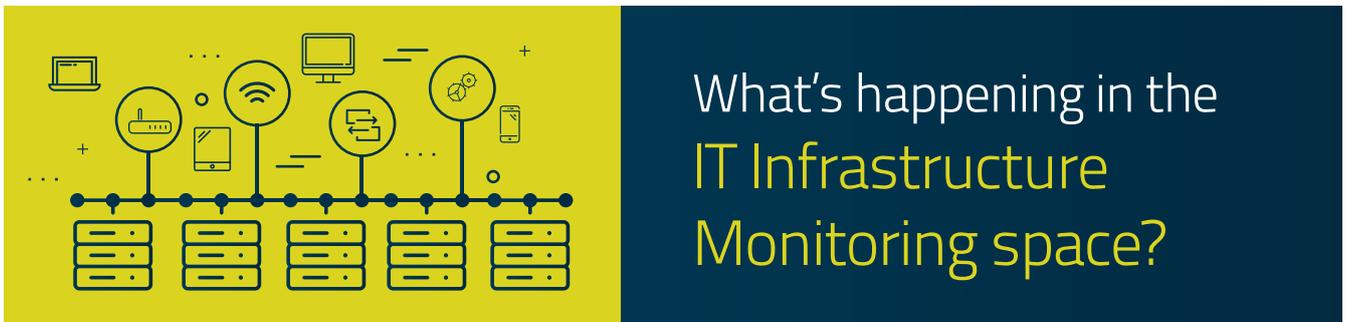
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Introduction

The IT infrastructure landscape has seen a sea of changes in the last few years, thanks to evolving technologies, new business models and ever- changing market demands. The business, market, and the consumer demands are the driving force behind these great IT advancements like Cloud, Mobility, IoT or D.C 4.0. All these technology advancements are largely driven by automation or multiple tools in IT. We have entered into an era where tools and automation matters a lot compared to the traditional service- oriented IT environment. **Gartner's technology predictions** reveal that by 2017, 75% of large enterprises will have more than four diverse automation technologies within their IT management portfolio, up from less than 20% in 2014. IT is driven by tools now and amalgamation of these multiple tools form a Platform in an IT environment. In this new age IT environment where both cloud and on-premise business model work simultaneously, Infrastructure monitoring is very critical for an organization to identify any potential issues way before it starts adversely affecting any of the critical business functions. A right infrastructure monitoring is imperative for any organization in getting the visibility and deep insights regarding their **IT infrastructure**.



New age organizations have started choosing infrastructure monitoring tools that predict anticipated challenges and prescribes the right solution to address those challenges. The IT infrastructure monitoring space is grown from the traditional reactive support in IT environment to an era of 'Predictive Monitoring' and support where the tools predict what's going to happen in the future. The Predictive monitoring is gradually getting matured into the next step 'Prescriptive Monitoring' where advanced analytics will provide insights into the future possibilities, challenges with the infrastructure in an IT environment. All these monitoring steps or stages are the outcomes based on the technological changes which is driven by the monitoring tools in an IT environment.

If we notice the current IT environments we can see that, Level 1 support services and the supporting engineers are getting reduced year by year. Increased level of automation and leveraging of multiple tools are the reasons for this. However, this automation is bringing in reduced response time and resolution time, which leads to a better SLA. As we said now, since the 70-75% of level 1 monitoring and support in IT environments is automated, it is crucial to ensure that an organization has the right tools to monitor and provide reactive, predictive and prescriptive solutions to the issues pertaining to the infrastructure.

In this back drop let us analyze what all are the available infrastructure monitoring tools available in an IT environment which can dramatically change the way IT is monitored and managed.

Tools to be considered by Organizations to manage their Hybrid estates

Basic IT Service Monitoring Tools

The basic IT service monitoring is done by the in-house IT admins or external resources in the case of outsourced services. This includes the base hardware monitoring of the IT infrastructure in an organization, including servers, storage, applications, databases, networks etc. The basic monitoring supports Incident monitoring, service requests, problem management, change management and knowledge management. In the current IT environment, most of these basic monitoring is done manually. Incorporating automation or usage of tools for basic monitoring services can increase the IT efficiency drastically.

Virtualization Monitoring Tools

Virtualization enables running multiple operating systems, servers or storage devices on a single physical computing system. It increases business efficiency and enables cost savings. However, managing a virtualized environment without proper monitoring tools is challenging for IT admins. A reliable virtualization monitoring solution helps organizations to gain insights regarding the performance of their virtual infrastructure. In addition, it helps in hardware monitoring and troubleshooting issues before it gets affected the end users. Automated resource provisioning enables significant improvement in operational efficiency as well.

Application Monitoring Tools

Be it infrastructure applications or business applications, usage of application monitoring tools help in reducing the downtime drastically. Application monitoring tools will get detailed performance metrics and quickly pinpoints to the root causes of the issues.

Database Monitoring Tools

Data base monitoring tools enable complete monitoring of database servers and databases – including availability, database and table sizes, cache ratios, and other key metrics. This brings in increased database performance, application availability, much better outage detection, **predictive analysis** of storage requirements. It helps in compiling reports and performance metrics to help organizations in analyzing the database server usage, availability and server health.

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Cloud Monitoring Tools

Even though cloud brings in more convenience, flexibility and cost effectiveness it has made enterprise IT more complex than ever before. Operations team needs to have the same insights into the **cloud infrastructure** as well like the on- premise or virtualized infrastructure. Cloud monitoring tools bring in the 360- degree view of the cloud infrastructure. The automated cloud monitoring tools help organizations to ensure the availability of critical applications/ systems while reducing the cost, complexity, and manual errors.

Communication Monitoring Tools

Monitoring an organization's **unified communication** ensures that the users are getting a quality experience. It will track configuration changes, identify any anomalies and provide reports. The automated tools with remote trouble shooting capabilities will fix the issues swiftly and cost efficiently.

Storage Replication Tools

Storage replication enables duplication of stored or archived data in real time for DR purposes. This ensures continuous availability of data even in disaster hit situations. However, manually replicating the stored data and managing it is a daunting task. Storage replication tools simplify this task by automating file replication, data replication, and remote storage replication. It streamlines disaster recovery processes and also ensures fast and highly predictable recovery times, simplifies management through automation, and minimizes the associated costs.

Application Performance Management Tools

In application driven enterprises of today, application monitoring tools are key. APM tools enable monitoring the resources used by applications and correlate that data with meaningful user insights. These insights will be used in aligning the performance of the applications with the business processes. The APM tools ensure the quality end user experience of an application. APM tools collect data about client CPU utilization, memory demands, data throughput and bandwidth. It helps in quickly discovering, isolating and solving problems that can adversely impact an application's performance.

Tools to be considered by Organizations to manage their Hybrid estates

Asset Management Tools

Any organization irrespective of its size or stream needs to track and manage their assets. Asset Management tools help organizations in optimizing all the assets they possess and its availability in an organization. It also helps in seamlessly automating the processes and effectively discover, configure, manage, and secure all of an organization's IT endpoints. It proactively identifies and address the potential **security threats**, performs impact analysis across multiple end points, and helps in reducing systems and software TCO. Compared to traditional manual processes new age automated asset management tools allow businesses to manage assets without the cost and maintenance of owning a server.

Capacity Monitoring Tools

Since the down time means loss of business, loss of revenue and customer dissatisfaction, organizations require their infrastructure to operate at its maximum efficiency all the time. The inability to assess the capacity of the resources, especially CPU, memory or storage leads to availability and performance issues in an organization. Here comes the relevance of efficient automated tools for capacity monitoring. Capacity monitoring tools provide a consolidated view of the infrastructure and help in planning if there is any upgrade for the current infrastructure. It reduces the infrastructure surplus, if any and helps in balancing the demand. The tool helps in better planning, managing and reporting on IT capacity across all your servers, applications, and networks.

Server Monitoring Tools

Automated server monitoring tools detect performance issues early, enabling organizations to address the issues before they do harm. It accurately finds the reasons of down time and provides an in depth analysis of event logs, CPU, disk and memory utilization, crash reports etc. to figure out the actual cause of a server to go down.

PDU Monitoring Tools

Power Distribution Unit Management tools enable close monitoring and efficient utilization of the data center power infrastructure. It helps in identifying the real time power load, cooling, airflow, capacity and trends and chances of any outages.

Conclusion

We have seen the changes in the traditional IT infrastructure environment and the new age tools for addressing the monitoring challenges. The next step of automation is the orchestration. Organizations require an efficient orchestration platform to integrate all these tools into a single platform and manage it efficiently. An efficient orchestration platform will provide a holistic view of the IT environment comprising of multiple silos which need to be worked together to deliver efficiency, agility and premium performance. The features of this orchestration platform must include:



Integrated management of all the siloed tools



The CXO dashboard

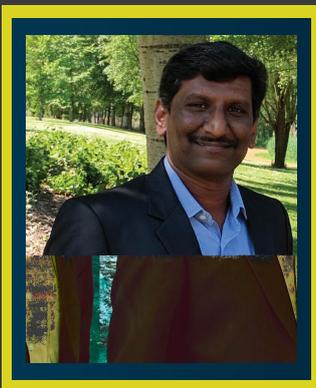


IT admin view



Business Services view

An organization requires reliable infrastructure monitoring tools so that they can identify any potential issues way before it starts adversely affecting any of the critical business functions. A well planned and organized automation strategy can improve an organization's business efficiency and at the same time dramatically reduces the cost. So why wait?



About the Author

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Suresh has about 18 plus years of IT experience and have performed various roles in solutions and platform development. Some of the platforms he has developed on open source technologies are focused towards End user experience on unified communication

About Happiest Minds Technologies

Happiest Minds enables Digital Transformation for enterprises and technology providers by delivering seamless customer experience, business efficiency and actionable insights through an integrated set of disruptive technologies: big data analytics, internet of things, mobility, cloud, security, unified communications, etc. Happiest Minds offers domain centric solutions, IPs in IT Services, Product Engineering, Infrastructure Management and Security. These services have applicability across industry sectors such as retail, CPG, e-commerce, banking, insurance, hi-tech, engineering R&D, manufacturing, automotive and travel/ transportation/hospitality. As a Mindful IT Company, the focus is on 'Being Mindful' and 'Doing Mindful' which involves perceiving immersively, processing non-judgmentally and performing empathetically. 60 minutes in a week is committed towards inculcating a mindful approach within the organization, using a select set of tools and techniques. Headquartered in Bangalore, India, Happiest Minds has operations in the US, UK, The Netherlands, Australia, Middle East and Turkey.

