For any organization, the **IT infrastructure** supports its entire operations. Many departments have struggles that they find difficult to identify and overcome. Some of the biggest challenges are downtime issues that can lead to productivity and revenue losses, or implementation of solutions without disruption in the existing workflow.

Infrastructure monitoring is a broad field that consists of many components such as servers and storage, network and security, operating systems and business applications. Some of its **core components** require careful management, hence it’s a challenging task for engineers. It’s vital to develop systems that are responsive and able to bridge gaps within a business.

For this reason, global organizations can suffer from huge losses due to inefficient monitoring and management of their IT infrastructure. At the same time, with complex environment and growing networks, there are increased risks of **security breaches**. Hence, infrastructure engineers need to monitor three things continuously i.e. their storage, servers and security protocols.

Let’s look at some most frequent monitoring challenges that engineers face, along with monitoring IT tools and how these can be resolved.

1. **Lack of Efficient Data Management**

Managing **data storage architectures** is one of the biggest monitoring challenges today. Cloud storage has been widely adopted all over the world, and though its is a scalable and cost-effective data management alternative for engineers, it still does not provide complete storage needs to accommodate a large variety of applications.

Even so, efficient monitoring and cloud migration can be time-consuming and make it longer to implement changes in the absence of good technology. Hence, it’s important that cloud storage options be more flexible and easily optimizable according to the application that is being deployed. It should be archival and long-term instead of a short-term solution.

1. **Inefficient Change Monitoring**

In the absence of an efficient **change monitoring** system, you can face a number of challenges. For instance, without a monitoring system, how do you find out if an unauthorized change takes place? Do you have a reactive approach and only discover a change when a security breach takes place or service is impacted negatively?

1. **Lack of Powerful Processing Platforms**

Though supercomputers are ideal for powering systems at enterprise-level, they aren’t viable for every business. The biggest challenge is the **lack of space and energy** to power supercomputers and engineers have always been look for faster and better systems to allow for faster processing of large amounts of data available.

Thus, the solution lies in **IT monitoring tools** to make upgrades that provide multi-core processors and strong graphical processors. Many upgrades come with less than full replacement, and enable you to optimize your systems with less expensive solutions without increasing consumption rates or spending a fortune.

1. **Data Loss Issues**

A firewall that protects applications, web browsing and emails can sometimes cause **packet loss** in TCP/IP network. This can cause you to lose important data and considerably reduce network speed, eventually making it impossible to collaborate online. Similar kind of losses can occur due to routers and switches that don’t have high-speed memory.

IT Infrastructure engineers need to deploy IT monitoring tools in order to ensure that there are no data losses while communicating and collaborating over the internet. An **IT monitoring software** tool should also ensure better means to gather, filter and store data over high-speed networks.

1. **Unreliable Networks and Connectivity Issues**

For operations to work smoothly, it’s important that there should be a reliable network in place. In the absence of a reliable network, **monitoring IT** infrastructure becomes difficult for the engineers. In order to optimize data, new network architecture designs and software-based methods are required.

1. **Inability to Process Large Amounts of Data**

Another top frequent monitoring challenge for engineers is the large amounts of data available today. In order to conduct high-performance computing of such humungous amounts of data, we need automation and **virtualization** and simplify the tasks while speeding up the processes at the same time.

The solution to this problem lies in using **distributive systems** that divide complex tasks into smaller separate bits. These can further be processed by individual computers connected to network. Grid computing allows for resource virtualization and supports computation across numerous administrative domains. This also helps in quick processing of complex tasks.

1. **Lack of Efficient Monitoring Tools**

Too many IT monitoring tools are outdated. Whereas applications have migrated to dynamic, virtual and cloud environments, many **monitoring software tools** are operating in physical server mindsets. There is a need for simpler yet intelligent tools to optimize and help understand the application service delivery infrastructure.

It’s vital to scale your monitoring tools at the same pace as your infrastructure. The key to ensuring higher efficiency is to combine AIOps and observability tools along with a modern and efficient **monitoring IT software**. Detecting issues on time and automating the connection between an incident and event is important to reduce noise.

**Why You Need Infrastructure Monitoring**

Monitoring infrastructure gives engineers the data necessary to understand its status in real-time along with the ability to measure its progress towards business objectives. With continual collection and reviewing of data about your **IT infrastructure**, monitoring allows you to measure network’s current status as well as progress.

Moreover, ensuring that your network is running at its peak efficiency requires that you not only have knowledge of which devices constitute your infrastructure but also monitor the performance of those devices. Monitoring your IT system proactively allows you to have a better chance of **identifying failures** on time before they can cause a disruption.

There are many examples of what can go wrong if you don’t have appropriate infrastructure monitoring. One such example is the “**zombie server**” phenomenon. According to a 2017 survey by the Anthesis Group and Stanford University, around 30% of servers in big data centers were zombies; running, processing power and still not performing any work.

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