

Easing the Strain of Virtualised IT

Virtualisation is an innovative technology that has changed the way businesses work with IT. The virtualising of servers, networks, and storage is now highly commoditised, and businesses of all sizes have adopted it. By **Arun Balachandran**, Product Marketing Manager, ManageEngine.

MANY enterprises have focussed on server virtualisation to increase the flexibility, efficiency, and cost-effectiveness of their data centres. These businesses are also leveraging server virtualisation as an important starting point on their journey to adopt cloud computing. Server virtualisation is thus moving beyond basic consolidation, and into a strategic enabling of technology for organisations looking to move towards a cloud experience.

The Challenges of Managing Virtual Environments

Although server virtualisation offers plenty of benefits to businesses, it also introduces many new complexities from an IT management point of view. Due to the dynamic and complex nature of virtual environments, and their co-existence with physical and cloud components, IT administrators have to deal with a new set of challenges, including the following:

Complex Root Cause Analysis

When an organisation virtualises its server environment, it is basically adding a new layer of complexity to the whole system. This new layer can cause new problems, though, which can be hard to diagnose and troubleshoot. Organisations may struggle to find a link between physical and virtual machines (VMs), and the resources available, to sustain key business applications. Additionally, applications may keep moving from one host to another based on the load, which can complicate keeping track of these applications.

VM Sprawl

Since it has become so easy to provision new VMs and applications in the data centre, the number of active VMs could go unchecked. Many companies don't have policies in place to plan or manage VMs, or to tell if these VMs are still used or needed in a production environment. As a result, VMs accumulate over time and suck up computing resources, as well as backup and disaster recovery resources.

No Clarity in Transaction Flow

Transactions move critical data and information from one part of the IT infrastructure to another, and they typically span multiple subsystems such as database, storage, and more. With virtualisation, a whole new level of abstraction is introduced to the system. As a result, many organisations tend to lose visibility into the transaction flow needed to run their business services.

This blind spot impairs their ability to effectively manage the availability and health of critical web applications. When there is an interruption, the IT teams may not be able to pinpoint the exact root cause, and could end up spending hours trying to isolate the problem.

Increased Impact of Server Hardware Failures

When a physical server fails while running multiple VMs, all the workloads on that server will be affected. When the server consolidation level increases, more workloads will be assigned to each server, and thus be impacted by further server failures.

Capacity Planning Critical

Due to the dynamic and complex nature of virtual environments, there are increased chances of IT teams under-provisioning resources. In such scenarios, the performance of business-critical applications and services could be affected by the resource shortage. The reverse effect is also possible; IT teams might designate more resources than necessary for certain services, thereby impairing overall operational efficiency. Hence, post virtualisation, businesses need to plan capacity effectively to ensure optimal performance of their applications.

The Drawbacks of Traditional Monitoring

Traditionally, most organisations prefer a silo-based monitoring approach for their physical servers, and have tried extending this to their virtual servers as well. However, the tools were generally unable to provide the necessary

operational intelligence to monitor complex virtualised infrastructures.

The overall health of a virtualised environment depends on the combined performance of its physical, virtual, and cloud systems. Most traditional tools neither help in capacity planning nor provide adequate performance metrics relevant to virtual environments. As a result, they are unable to effectively diagnose, isolate, and resolve performance issues in a hybrid IT environment.

To overcome these challenges, the IT team needs to look beyond tools that follow the traditional monitoring approach.

The Right Strategy for Virtualised Environments

The good news for businesses today is that there is a bevy of virtualisation monitoring tools available in the market. Some of these tools help with monitoring and troubleshooting performance issues, while others help with

capacity planning and chargeback of virtual infrastructure resources.

The ideal monitoring strategy should include end-to-end performance monitoring of the entire virtualised data centre - including virtual desktops, hypervisors, VMs, applications running on the VMs, servers, and storage hardware. This will enable IT admins to proactively identify performance issues across the application delivery chain and initiate remedial actions quickly, to ensure a great user experience.

The interests of the organisation will be well-served if they choose monitoring tools that provide capacity planning analysis in addition to performance monitoring statistics.

There are some monitoring tools that help to dynamically provision VMs based on workloads. Workloads can be spun down when not in use. On certain occasions, they can be even shunted out to a public cloud, if they are not critical. This will allow the mission-critical workload to use the available, in-house physical resources.

Finally, it is better to opt for monitoring solutions that support multiple virtual platforms, such as VMware, Microsoft Hyper-V, and Citrix, rather than choosing a mix of management tools. A single monitoring solution cuts the complexity of virtualisation monitoring and management.

By re-inventing their monitoring strategy in a holistic manner, enterprise IT departments can be confident that their services meet their business goals.

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