

Dortos Engineering-First Issue: Baseline preformance



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NTC300

**Abstract**

The following material addresses proverbial causes of a system base performance of 35% below what is projected to access data. The monitoring of said system indicates the poor performance could be the network, disk, or CPU. We will explore techniques an organization can address that cover topics such as usage patterns, cloud bursting, storage and the use of virtual machines, the application life cycle and the change of business needs.

**Usage Patterns**

Usage patterns convey when a application is being used throughout the day, as well as the hours are when the application is being utilized by its various users (Rosenstein, 2015). Usage patterns can give an organization an insight to when and for how long its application is being used as well as what times of the day it would behoove an organization to a lot the appropriate infrastructure in order to allow the traffic of utilizing the application during peak times throughout the day.

**Cloud Bursting**

Cloud bursting is a technique that additional resources to private clouds on an as-needed basis (Intricately, 2020). The general idea from this is if a cloud-based system has enough resources to handle its needs it will continue to use its own infrastructure. If this need cannot be met with available internal infrastructure and resources, connections to public cloud systems are established in order to balance out and provide the needed infrastructure as required by the surge in demand placed on the system. Generally, the entity using the extended or busted cloud would be charged for the length of time they are utilizing the added infrastructure (Intricately, 2020).

**Extending Cloud Space, Storage, and Virtual Machines**

Hybrid cloud storage allows for a diminishment of latency and bandwidth issues. “Tier 1 applications with their heavy traffic, high chum rates, and high performance I/O are completely out of the ballgame. However, Tier 2 applications like Exchange, SharePoint, and office application generate the majority of business data” (Taylor, 2014). That being stated, a Tier 2 system allows for better distribution of the cloud infrastructure. Tier 2 systems also allow for better centralized management tools, a more efficient disaster recovery and “may be able to provide application-driven restores that prioritize the data that is downloaded so high-priority applications get up and running as quickly as possible” (Taylor, 2014).

There is also the utilization of virtual machines. Virtual machines are an emulation of a physical computer; when created and deployed they allow for the distribution of system resources in their creation in order to handle assigned tasks towards them (Techpedia, 2020). They can allow multiple operating system environments on a single physical computer, they generally are widely available to manage and maintain, and they offer application and disaster recovery options. They can provide disadvantages since the hardware resources are distributed in an indirect way and its possible for multiple virtual machines on the same hardware platform to cause unstable performance (Saswade, Bharadi, Zanzae, 2016).

**Application Life Cycle**

Its established fact things break down, machines age as they are used, components ware out as they are used therefore there is need for Application Life Cycle Management (ALM). ALM ensures that the life of an application whether it is a physical device or software is tracked as it is used. Plans are eventually made to replace this application as it ages in order to mitigate the chances of the component or application in question causing a failure within a system. “ALM improves product quality, optimized productivity, and eases the management and maintenance of products” Rouse, 2020)

**Business Needs Change**

Adaptation is the key for any organism’s survival, the same is to be said of organizations. “Many organizations think about change management for large-scale implementation like bring in new technology solution in hour or adding a new product line. But what about small changes like a new policy or procedure?” (Lauby, 2018). Small changes can be frustrating to organizations, but necessary. Small changes to an organization can be just as relevant as large ones.

For example, the system base performance of 35% below what is projected to access data. It is believed to be caused by either network, disk, or CPU issues. How does one account for this? Its possible the issue may be a simple fix, such as adding cloud bursting to the infrastructure, which in turn may help alleviate the problem if it is a network, disk, or CPU issue. This issue could also be brought on by a failing component, running diagnostics of the infrastructure may give better insight into the cause of the diminishment of the infrastructure.

Stress testing, capacity testing, performance testing, and laitance testing may offer insight to what is the root cause of the diminishment and possible clues in how to address and rehabilitation of the systems infrastructure. (Belatrixs, 2012)

In summation, we have explored the resounding issue of a system base performance issue of 35% below the projected access to data. We have visited the concepts of usage patterns in order to possibly render a solution to the problem. We have addressed the technique of Cloud Busting in order to possibly render a solution to the problem. We have addressed the concept of Application Life Cycle and how it should be properly managed in order to possibly alleviate situations such as this that can come about if devices and/or applications are utilized beyond their projected shelf life.   We have addressed the use of hybrid clouds a well as virtual machines that can be possibly used to alleviate the situation. And finally, we have address how business changes can in turn help to possibly alleviate the situation especially with the consideration for short term solutions.

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