



Blackhawk Technology Consulting LLC

Blackhawk and Vkernel Compacity Bottleneck Solution Datasheet

Overview:

In today's ever-changing IT world, organizations are taking the plunge and virtualizing their data centers. These organizations are migrating and consolidating their servers from physical to virtual environments. While the inherent savings of this virtualized data center are extremely worthwhile, there is a new set of issues which, network administrators did not have to deal with in the physical data center. One of these new challenges is getting used to the fact that all of your hardware resources, including, but not limited to, CPU, memory, storage and network utilization are being shared between virtual machines. What this means, is that, applications and their associated users can and will impact each other and as a result, resource monitoring becomes crucial. In other words, if you don't closely monitor your resource consumption by each virtual machine and simply keep adding more virtual machines without doing some type of analysis on how this change will impact all of the resources, then the result will be bad performance and in some cases, system downtime. What this translates to is unhappy users and unhappy managers.

Now, IT managers and system administrators need to have a well-documented plan and response for these types of capacity and bottleneck issues and the right toolset to combat it. Learn how Blackhawk Technology Consulting LLC and Vkernel can help alleviate virtualization capacity and bottleneck issues in your virtual environment.

VMware ESX Server Management Concepts:

When you are dealing with a VMware eSX environment, you will need to have an understanding of a few concepts, in order to make your journey a little less hectic. The following concepts are highlighted and will help you better understand your VMware ESX environment and help you to predict future capacity and bottleneck issues.

Clusters

Clusters consist of two or more VMware ESX hosts which are working together as one to provide high availability/redundancy. These clusters allow the sum of all of the resources from the hosts in the cluster to be spread out among the virtual machines on those hosts. This is the usual way to deploy VMware ESX hosts in all but the smallest environments.

Resource Pools

Resource Pools basically allow the administrator to allocate and divide resources among virtual machines in clusters and other resource pools. These resource pools work by using reservations (guaranteed resources), shares (for when resources are overcommitted), and limits. Resource pools can be nested and organized in a hierarchical fashion to match the organizations structure . Reservations are used for the more critical virtual machines, enabling the administrator to guarantee a virtual machine gets a specific amount of memory or CPU time. Shares are used to divide the remaining resources among the rest of the virtual machines the more shares a virtual machine has, the higher percentage of resources the virtual machine can use. Resource pools can have a “fixed” amount of resource or be linked into sharing resources with other resource pools.

As these virtualized data centers struggle with server consolidation and server virtualization initiatives, capacity planning becomes the key to maintaining and improving service level agreements while containing costs.

Distributed Resource Scheduling (DRS)

Distributed Resource Scheduling (DRS) is designed to balance the load across the cluster by migrating virtual machines among the hosts in the cluster. DRS can be set to manual, partially- automated, or fully automated. The mode that an administrator sets determines how involved the administrator will be in deciding those migrations.

VMware High Availability (HA)

VMware High Availability (HA) allows organizations to provide high availability to any application running in a virtual machine. It continuously monitors and automatically restarts virtual machines in the event of a host failure. VMware HA does not provide zero downtime and it is dependant on having enough available resources among the hosts in the cluster. For example, if an administrator has three hosts, any one of the hosts must have available resources to run the virtual machines from either of the other two hosts in the event of a failure.

With the above concepts, it is not enough to just make up and set a cluster, turn on VMware HA, set DRS to automatic and walk away. As you will quickly realize, this is a complex organization of resources that requires constant monitoring, the

right framework and the right toolset to continue functioning properly. Allow Blackhawk Technology Consulting LLC and Vkernel help you navigate through this complex and daunting framework with the Blackhawk and Vkernel Capacity Bottleneck Solution.

Blackhawk Virtualization Compacity and Bottleneck Best-practices:

The new “Virtualized Data Center” is experiencing and going through a constant change, a change that is slowly getting out of hand. Here at Blackhawk Technology Consulting LLC, we have worked with a number of organizations that are adding hundreds of virtual machines every week, and in some cases, every day. Virtual machine sprawl is quickly becoming a real issue for many organizations. Even if you are not adding hundreds of virtual machines per week, every virtual machine that you do add can tip the scales in the wrong direction.

As changes happen, you will need to be aware of the impact that they will have on your virtualized data center. Some of these changes can include, but are not limited to, adding new virtual machines, removing hosts from clusters, enabling VMware HA, increasing reservations in virtual machines, changing resource pool configurations and natural growth rates in storage, memory CPU and network resources. How will your system administrators deal with these changes? Do your system administrators have an effective plan for these eventualities? Are best-practices being utilized? Do you have the right toolset in place to monitor these conditions?

Blackhawk Technology Consulting LLC has developed a set of best-practices and a solid framework for dealing with compacity and bottleneck issues in your virtualized data center. It is imperative that a trusted and reliable framework and set of best-practices be implemented to ensure that these compacity and bottleneck issues don't bring down your virtualized data center. Learn how the Blackhawk and Vkernel Compacity and Bottleneck Solution can help you head off your compacity and bottleneck issues at the pass!

Effectively implementing and managing a strong virtualization compacity and bottleneck solution can be tricky and time-consuming and having a steady and strong set of best-practices and a solid framework in place can be critical to ensuring that your virtualized data center runs smoothly. Blackhawk Technology Consulting LLC has developed a compacity and bottleneck solution and set of industry proven set of best-practices to ensure that your virtualized data center gets off to a good start. With companies like The Taubman Company, Lane Community College, Les Schwab Tire Centers, The University of Oregon, Qualcom, Motorola and Expedia, the Blackhawk and Vkernel Compacity and Bottleneck Framework and Best-Practices have ensured that these companies virtualization initiative has succeeded and that the compacity and bottleneck pitfalls that are associated with managing a virtualized environment have been

mitigated. Learn today how the Blackhawk and Insystek Vkernel Compacity and Bottleneck Solution can help your business realize the awesome power of virtualization.

The Blackhawk Difference: