VKernel Case Study: County of Sacramento, California

Industry: State and County Government

Challenge
As the County of Sacramento started introducing VMware ESX Server platforms into its production environment, it needed visibility into resource utilization and capacity constraints to ensure optimal performance.

Solution
Using the VKernel Capacity Analyzer, the County of Sacramento is able to continuously monitor shared CPU, memory, and storage usage to properly plan its environment and allocate the required resources among all of its deployed virtual machines.

VKernel at Work
The VKernel Capacity Analyzer continuously monitors CPU, memory, and storage utilization trends in VMware ESX environments across hosts, clusters, and resource pools to identify and eliminate current and future capacity bottlenecks. It also provides detailed capacity information to properly plan for the addition of new virtual machines.

Deployment Environment
- VKernel Capacity Analyzer Virtual Appliance
- VMware ESX Server 3.5 on HP ProLiant DL385 servers
- Guest operating systems: Windows Server and virtual appliances
- Applications: Help desk and ticketing system, change management, databases, and other custom applications

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Daryl Junnila, Senior IT Analyst, County of Sacramento

County of Sacramento, California
Sacramento County was incorporated in 1850 as one of the original 27 counties of the State of California. The County's largest city, the City of Sacramento, is the seat of government for the State of California and also serves as the county seat. Sacramento became the State Capital in 1854. With almost three million residents, the County is the major component of the Sacramento Metropolitan Statistical Area ("SMSA") which includes Sacramento, El Dorado, and Placer Counties.

For the county of Sacramento, the impetus to move to a VMware virtual infrastructure was based on three factors: 1) savings based on consolidating servers coming off of maintenance; 2) a green initiative to reduce power consumption; 3) passing on savings to taxpayers. As Daryl Junnila, Senior IT Analyst, transitions more production servers to the virtual environment, new challenges of monitoring and managing shared resources capacity began to arise. "We need to see where our capacity constraints are so that we won't be blindsided by performance issues," said Junnila.

Based on this need, Junnila deployed the VKernel Capacity Analyzer virtual appliance to continually monitor shared resource (CPU, memory, and storage) consumption and ensure proper resource allocation. "Capacity Analyzer delivers a level of analytical knowledge about resource utilization that VMware's VirtualCenter does not provide," stated Junnila. "With a simple single-screen dashboard view, Vkernel enables us to quickly see our capacity constraints, especially our storage resources, and proactively address them to eliminate the possibility of performance degradations."

The product's Capacity Availability Map feature is also providing Junnila with the detailed information he needs to properly plan the VMware environment. "The key question I need to answer is always, how many virtual machines (VMs) can I add in the existing environment," added Junnila. "Vkernel allows us to immediately answer that question, so that we know exactly where we can add new VMs and if we need to bring another host on to handle the load.'

With alerting when capacity trends exceed set thresholds, Capacity Analyzer alerts Junnila when problems may be occurring in the future to take the appropriate preventative actions. "This level of proactive monitoring gives us the 'ah ha' we may have a problem alert so that we can address it immediately to ensure we continually meet optimal performance levels," said Junnila.

Results
- Gained immediate visibility into capacity utilization trends throughout its VMware environment for proper planning and resource allocation
- Making better decisions and constantly improving the performance of its VMware ESX servers by having actual resource (CPU, memory, and storage) utilization data
- Taking a more proactive approach to monitoring shared resource consumption to eliminate service degradation and ensure optimal performance levels