VKernel Case Study:
Virgin Islands Water and Power Authority

"Our VM infrastructure is so stable, I normally need to spend only a few minutes a day checking the reports. And if I spot a trend or a potential problem, I'm now able to address it before the users are affected."

– Julius Aubain, *Network Specialist*, Virgin Islands WAPA

Industry
Public Utility

Challenge
Eliminate virtual machine sprawl and "rightsize" resource allocation to optimize performance and stabilize the infrastructure

Solution
VKernel vOperations Suite

Results
- Solved over-allocation problems to optimize application performance
- Gained the visibility needed to understand the virtual environment
- Responsive VKernel support quickly resolves any problems
- Daily email reports now adequate for monitoring the virtual infrastructure

Virgin Islands Water and Power Authority
The Virgin Islands Water and Power Authority (www.viwapa.vi) is a public utility whose core purpose is to enhance the economic development and the quality of life for people living in the U.S. Virgin Islands and the surrounding areas. WAPA is an autonomous governmental instrumentality of the Government of the Virgin Islands that produces and distributes electricity and potable water to approximately 55,000 electrical customers and 13,000 water customers. The utility operates electrical generation, as well as water desalination and reverse osmosis units on St. Croix, St. John and St. Thomas islands. Electrical service is provided to St. John, Water Island and Hassel Island through submarine cables. On St. John, WAPA operates a diesel standby generator and a desalination unit.

Aggressive Adoption of Server Virtualization
WAPA has a fairly traditional set of applications to handle both internal and customer-facing needs. The company set a goal in 2009 to virtualize all of its file servers, as well as those used for Microsoft Exchange, Web and eCommerce. Julius Aubain, Network Specialist at WAPA, found that creating virtual machines was easy; perhaps too easy. "We found that we lacked the visibility we needed into the configurations because the VM management tools were immature at the time," Aubain recalls. "With our aggressive goal, we began to experience VM sprawl, and trying to manage that without the right tools can be really rough."

A common tendency is to over-allocate resources in new virtual machines in order to prevent VM performance problems. But as the number of VMs grows, it becomes increasingly difficult and time-consuming to manage the virtual infrastructure.

Full Visibility into the Virtualized Environment
Lacking the tools he needed, Aubain decided to try the vOperations Suite (vOPS) from VKernel. The vOPS Capacity Manager application proved particularly useful in giving Aubain both the comprehensive overview and the detailed insight he needed to understand the virtualized environment. "For the first time since beginning the server virtualization project, we could finally understand what was going on in the infrastructure," says Aubain.

Aubain continues to rely on Capacity Manager and other vOPS applications to monitor and manage WAPA's virtualized environment. He particularly values the ability to get summarized information in automated, regularly scheduled reports.

Rightsizing Resources

With a full understanding of how the virtual machines were functioning, Aubain could then focus on optimizing the environment. The vOperations Suite has enabled Aubain to gain sufficient confidence in the virtual infrastructure to overcome the next problem, "VM stall", which was preventing WAPA from fully achieving its aggressive virtualization goal.

Using the vOPS' Optimizer application, Aubain was able to find and fix several performance bottlenecks. "We had previously allocated four processors for all applications," Aubain notes. "The VKernel suite gave us the information we needed to 'rightsize' the allocation of CPU and memory, and now many of the applications perform far better with fewer resources."

"For the first time since beginning the server virtualization project, we could finally understand what was going on in the infrastructure"

Such changes to resource allocation often seem counter-intuitive, which is why most IT managers are reluctant to make them. But the benefit in doing so can be profound. Rightsizing the CPU allocation has not only allowed WAPA to reclaim costly CPU resources, it has also improved performance significantly, which enabled the existing physical resources to handle the total load. "Avoiding a costly investment in new servers is just one way that the VKernel suite pays for itself," Aubain claims.

Ease of Use

Aubain was quite pleased he was able to get good results using the vOperations Suite immediately and without any training: "I just plugged it in and it worked. For such a powerful tool, the ease-of-use is greatly appreciated." This is especially important for WAPA's small IT staff, which has many other responsibilities and ongoing projects constantly demanding their attention. Aubain is also pleased that VKernel's technical support is able to solve any problems quickly.

Achieving Stability

The Virgin Islands Water and Power Authority's virtualization project has overcome VM sprawl and VM stall, and has now evolved to VM stability with VKernel's vOperations Suite. vOPS has also helped enable WAPA to meet its aggressive objective of virtualizing all of the utility's file, Exchange, Web and eCommerce servers. In all, Aubain estimates that about 90% of WAPA's servers are virtualized.

Achieving stability in an environment that is 90% virtualized is a significant accomplishment. Just as significant is that Aubain can now maintain that stability by merely monitoring the virtual environment using daily reports. Aubain finds the Resource Graphs particularly useful for monitoring the environment "Our VM infrastructure is so stable, I normally need to spend only a few minutes a day checking the reports. And if I spot a trend or a potential problem, I'm now able to address it before the users are affected."

VKERNEL

Call (866) 370-2733 | www.vkernel.com

Microsoft System Center Alliance Partner

vmware PARTNER TECHNOLOGY ALLIANCE

VKernel
300 Brickstone Square, Suite 503
Andover, MA 01810 USA
+1 (978) 289-6300 tel
+1 (978) 239-6301 fax