



# Cloud Infrastructure Monitoring Drives Holistic View of IT

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**Business Transformation through IT Transformation**

## Summary

Sometimes a problem is really a symptom. Getting at the lowest possible origin of a problem — the root cause — not only optimizes IT performance and the user experience but it also ultimately saves time, money and resources. VMware’s Virtual Network Operations Center (VNOC), the organization that monitors VMware’s virtualized enterprise out of multiple data centers, knew that its various solutions for monitoring availability, capacity and performance had created data silos that sometimes complicated the correct diagnosis of a problem’s root cause.

They also understood that sometimes degradation of an application’s performance could appear to be a capacity issue, but adding another CPU would not resolve the real problem. The VNOC lacked a common view into all data gathered by its myriad monitoring tools. Seeking to reduce as many as eight monitoring solutions into one or two, it sought the counsel of VMware IT architect Kevin Johnson.

## The Solution

The choice was made to implement one of VMware’s own tools — Virtual Operations (vCOPS) — after a Monitoring Summit was conducted that involved stakeholders from throughout the IT and VNOC organizations as well as from product engineering. Other tools were considered but quickly eliminated because of the effort that would have been involved in data migration.

“Most tools do their own data collection and monitoring. We wanted to eliminate these IT silos,” noted Johnson. “vCOPS is unique in its ability to pull from other data collection tools and bring it all into one analytics engine. With vCOPS, we gain a holistic view of the environment and can cross-reference data from different aspects of the enterprise.”

vCOPS offers a centralized analytics engine that consolidates data and centralizes metrics from multiple databases. It allows for the correlation of data from all layers of the enterprise, such as applications management, OS, storage and network.

“With vCOPS, you can accurately see when virtualization is the problem and when it’s not,” said Johnson. “Sometimes you can think an application’s performance has degraded due to capacity limitations so you add another CPU only to find performance is still impacted. We avoid that with vCOPS.”

The result is greater business insight and decision support enabled by a singular analysis performed on data collected from various sources. IT is now able to more quickly and accurately identify the root cause of a problem and deploy the right fix the first time.

“Now we can triage problems by correlating data across different metrics,” said Johnson. “We would have used a third-party tool if it had fit better, but it became clear early on that vCOPS was a phenomenal fit in this space.”

## Fast Implementation

Johnson was tapped to perform an architectural analysis and determine how best to optimize the VNOC's operations. The architectural review, including the Monitoring Summit and stakeholder interviews, took about a month. Because no data had to be migrated from other environments, the team used the vApp application to deploy in several hours.

Initially vCops was deployed to monitor the capacity of ESX hosts, but a rollout is underway to extend it to the applications management, network and operating system levels.

"vCops is a unique product in that it adds value immediately while allowing you to scale incrementally," said Johnson.

Continued use of vCops has conveyed deeper insight into the capacity issue; it is now possible to forecast and predict demand on different resources based on a consolidated view into usage at various times. Thus the VNOC can better avoid having too little capacity. And minimizing the incidence of unused capacity improves performance, user experience and resource ROI.

## Health Benefits

vCops offers a "health dashboard" that allows administrators to see performance metrics across machines at all times. IT is better able to anticipate and forecast capacity through a unified view into resource usage, for each application and for each CPU over different times of day.

## The End Result

"This tool really changes how the VNOC looks at the IT environment. The singular view enabled by vCops means better diagnostic and decision support," said Johnson.