CASE STUDY – Energy Enterprise

Phantom™ Virtual Tap, Phantom HD™ and Director xStream™ Help a Leading Global Energy Provider Optimize Its Current Monitoring Investment and Gain Total Visibility

The Phantom solution enables the provider to transport its virtual traffic from VMware ESX hosts into existing instrumentation layer tools to increase productivity and efficiency without adding staff or training costs

Phantom Solution

Industry:
Energy Enterprise

Objectives:
- Converge virtual and physical networks
- Provide optimized resource utilization and no compromise of CPU
- Save costs by optimizing staff and network
- Gain visibility into ESX virtual network traffic
- Attain enhanced ability to visualize virtual and inter-VM traffic
- Tunnel virtual traffic into existing Compuware configurations

Approach:
- Use Phantom to provide visibility into virtual network traffic—including the unique ability to expose, capture, and monitor inter-VM traffic
- Use Director xStream to filter, regenerate traffic
- Raw data passed to Director xStream and into Agentless Monitoring Devices
- Inspect traffic from virtual networks and the entire ESX infrastructure
- Send traffic from ESX hosts, virtual machines via encapsulated GRE tunnel

Technology Improvements:
- Gained global technical and customer support
- Eliminated need to work with multiple tools
- Provided data and visibility to proactively address concerns and avert problems.
- Reduced time spent resolving issues that did arise
- Retained ability to work with AMDs, raising ROI

Project Outcomes:
- Enabled visibility into virtualized traffic
- Raised IT efficiency through automated analysis
- Increased overall network productivity
- Reinforced business reputation
- Achieved end-user satisfaction
- Preserved, enhanced value of current implementation

As one of the world's largest energy providers, this enterprise, headquartered in South America, is a global leader, whose size and success were driven by its ability to provide energy to a fast-growing hemisphere. A publicly traded corporation, the energy provider produces and distributes petrochemicals and derivatives, electric energy, biofuels and other renewable energy sources; its majority stockholder is the government, and its market value, above $16 billion, makes it one of the largest companies in the world. With a presence in nearly 30 countries, more than a dozen refineries and over 8,000 service stations, the provider wields a powerful influence—driving progress and helping to build a productive, ethical society and respect for diversity. The company's goal is to be among the top five integrated energy companies in the world by 2020.

> "Phantom not only preserves the value of our instrumentation layer, it's helping us save jobs as we virtualize. These economies are enormous."
>
> *—Senior Network Manager, Energy Provider*

The Challenge: Virtualizing While Minimizing Costs, Preserving Value

In one major South American city alone, this energy provider has invested in nearly 100 ESX hosts and over 1400 virtual machines—not to mention other machines spread around the globe in various remote locations. Their previous system's architecture had utilized Net Optics' Taps to feed traffic into the company's Compuware data center monitoring appliances.

However, virtualization had changed that architecture—depriving it of the ability to see virtual and inter-VM traffic. The reason was that the flow of traffic no longer accessed the physical network stack due to the vSwitch in vSphere.

Phantom Virtual Tap and Phantom HD Preserve the Instrumentation Layer

The energy provider had invested substantially in a Compuware instrumentation layer configuration, which was composed of Agentless Monitoring Device (AMD) tools. The provider was committed to maximizing this investment and preserving its value even as it virtualized. Fortunately , the Phantom Virtual Tap™ was able to give the company the visibility in its ESX hosts that it needed. Most importantly, the tool-agnostic Phantom HD™ was able to tunnel virtual traffic into the existing Compuware implementation. This approach provided the value that the company was seeking, since it did not then have to purchase any new monitoring tools for its virtual hypervisors.

In addition, the energy provider was not under pressure to train its IT staff, replace trained employees, or go through a training curve to learn new software. The company was also able to save the effort and cost of a lengthy deployment process.

Another key concern for this energy provider was ensuring that its solution was non-intrusive and would not require agents to be installed on its virtual or physical machines. As a kernel-level implementation on the ESX host, the company did not want its valuable CPU and network resources on the VMs to be downgraded.

Phantom HD Offered the Unique Ability to Tunnel Traffic

Until contacting Net Optics, this energy provider had been unable to transport virtual traffic from out of its VMware ESX hosts into existing instrumentation layer tools. To date, all of the virtual appliances that the company had evaluated had also required purchase of those companies' own proprietary physical tools. This was not acceptable to the energy provider, due to its large standing investment in its Compuware AMD tools and desire to continue benefiting from that investment and implementation. Another concern was that the staff had achieved proficiency with current tools, and a "forklift" change would cause major disruptions in staffing, triggering new training curves, hires and associated costs.

The Compuware solution was a very important part of the energy provider's network infrastructure. This installation passively monitors all users and transactions all the time and identifies problems with the infrastructure, such as client or network congestion, application design issues, data center processing delays (Web services, message queuing), and databases. It helps the energy provider understand key performance shifts and usage patterns as well; so naturally the provider wanted to preserve the substantial value of this solution, as well as continue benefiting from the trained staff that kept it in service.

The Energy Provider Turns to Net Optics for Its Phantom Solution and Global Support Capabilities

"We sought out Net Optics to optimize our ongoing solution for a number of reasons, including ease of Implementation and the versatility of the Phantom Virtual Tap and Phantom HD solutions," said the energy provider's chief network architect. "Only Net Optics offered us a way to bridge the physical and virtual aspects of our evolving network while saving the value of our Compuserve investment."

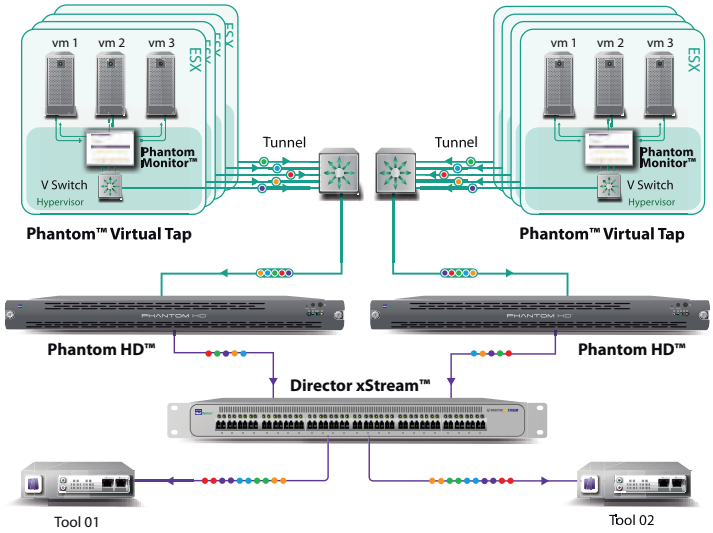
Another key factor influencing this energy provider's decision was Net Optics' excellent global support organization. "We took all of the Net Optics engineers' suggestions on how to improve the quality of our day-to-day administration with our products, said the provider's chief network architect. "As technology changes, Net Optics was always willing to adapt to market trends to simplify the user experience."

Enabling the Current Network to Do More for a Cost-Effective Investment

The Net Optics Phantom implementation was readily embraced by the energy provider's team. The solution integrated smoothly with the provider's current network, which was appreciated by end users. The Phantom Tap is able to tap traffic between VMs and physical servers, delivering total visibility into traffic passing between VMs on hypervisor stacks. The Tap requires no changes and creates no single point of failure. It aggregates traffic from multiple VMs and performs smart filtering, while offering the high capacity needed to match port density and traffic volumes.

Another key point is that Net Optics Director xStream™ is already filtering traffic from the energy provider's physical infrastructure. The ability to converge the physical and virtual network adds value as they meet at one common point. After the tools see the traffic from the ESX servers, the provider's IT team is able to continue using its Compuware interface to audit and inspect.

The Phantom solutions integrated substantial monitoring improvements into the energy provider's network and enabled automation of analysis, with resulting efficiencies and increased productivity. The energy provider uses the Net Optics Director xStream appliances to filter and regenerate production network traffic at a 10GB capacity. They also have deployed a large number of Taps across their network, which they use to feed the traffic into their integrated solution architecture. For even greater efficiency, this architecture was designed and provided via Net Optics' Indigo Pro™ integrated management platform, which delivered a familiar, easy-to-use interface across the entire environment. Having the same vendor provide network Taps for visibility in both the physical and virtual architectures was a key advantage—eliminating the complexity of dealing with multiple vendors and ultimately reducing the time spent to resolve any potential issues.



The diagram shows a simple design of traffic flowing from the ESX hosts (and virtual machines) via encapsulated GRE tunnel with a 1/10GB capacity network switch. The Phantom HD appliance (where the GRE tunnel is decapsulated) takes raw data (layer 2-4) and passes it to Director xStream, wherefrom it is regenerated to multiple ports and ultimately fed into the energy provider's AMD instrumentation layer tools.

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