

# Exposing the Pipes at Pump: Managing Networking in a Virtual Environment

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**Enterprise Networking Planet**  
June 30, 2010

Virtualization is great for “hiding the plumbing” — if you don’t want to see the underlying infrastructure, the abstraction layer provided by VMware or other virtualization software does a good job of masking it. But when you do want to see what is happening underneath, the same old tools won’t do the trick.

“Monitoring is the key to knowing what is going on,” says Jeff Rountree, Global Network Manager for Pump Solutions Group (PSG) in Redlands, California. “It is a lot easier to figure out before the fact what is happening, rather than trying to look for something after the fact.”

PSG is a multi-billion dollar unit of Dover Corporation comprised of seven pump companies in the U.S., Germany, China, India and France. As part of its actions to consolidate the IT infrastructure among its companies, including bringing all the companies into a common Exchange forest and replicating between VMware farms in different data centers, PSG started using SolarWinds’ Orion network management software to gain visibility.

“Previously we only had voice going over the WAN, no real file or data sharing,” says Rountree. “Once we started consolidating networks and sharing more resources between sites, we wanted to know what was going over the WAN.”

For Rountree, as with many others these days, a big problem is how to gain visibility into devices and networks that may not be under one’s direct oversight and control. In some cases, these

managed by an outside vendor whereas others are automatically managed by virtualization software.

“The biggest challenge for network managers is the loss of visibility into the infrastructure when server virtualization is deployed or cloud services are employed,” says Jim Frey, Research Director for Enterprise Management Associates, Inc. in Portsmouth, NH. “Tools must be extended to recognize virtual systems and elements, as well as their topological relationships. Similarly, they must be extended with new capabilities for managing change and configurations.”

Rountree found this out the hard way when the company decided to implement VMware’s vSphere4 which is characterized as a cloud operating system. The earlier version of SolarWinds Orion Network Performance Monitor (NPM) had been working as expected, but the vSphere upgrade resulted in some challenges with NPM.

“When we moved to vSphere, it broke a lot of the monitoring we had in place because of the changes that VMware made when it moved from SNMP to its own protocol,” he says. “We had to use the vSphere console for monitoring which did not give as good of a trend view.”

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“The great thing about Orion is it ties in with Systems Center Operations Manager, so I can go to one console and see everything in one location,” he says. “Instead of getting the Cisco tool to monitor the Cisco hardware and other tools for other vendors, we went with one that is universal and that has worked extremely well for us.”



**Orion NPM provides PSG with global IT infrastructure visibility across virtual servers.**



**Orion NTA tracks network traffic, identifying data bottlenecks.**



**Orion NCM backs up and monitors the configuration and status of PSG's routers, the core network and the firewalls.**

Earlier this year, SolarWinds issued Orion NPM v. 10 which restored the ability to see all the virtual and physical systems, through a single graphical interface.

"There are some good reports in the vSphere interface, but you can only see the CPU and memory usage on a per host or per client basis, while Orion gives you a consolidated view," says Rountree. "With Orion, I can look at one view and see the overall usage of all those guest machines on the host."

PSG now uses several tools to monitor its network. Microsoft Systems Center Operations Manager tracks the Windows applications and servers. For the rest of the hardware — switches, routers, WAN links, he uses Orion products. This started with the Network Performance Monitor, then after that came the release of NetFlow for Orion to track traffic going through its Riverbed WAN acceleration appliances.

"NetFlow has come in really handy in tracking down what is happening on the network," says Rountree. "I can see that this person has gone to this site or connected to this file server and is downloading a huge file. If there is a bottleneck, I can see exactly where the huge spike in data is coming from."

The most recent addition is the Network Configuration Manager to backup and monitor the configuration and status of routers, the core network and the firewalls.

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Originally published on June 30, 2010 on [enterprisenetworkingplanet.com](http://enterprisenetworkingplanet.com).

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