

Monitoring for Virtualized Computing

The Net Optics Phantom Virtualization Tap™ is a network traffic monitoring and access solution for virtualized computing environments including converged data centers. It captures data passing between virtual machines (VMs) and sends traffic of interest to virtual and physical monitoring tools of choice. This innovative Tap supports all major hypervisors, including vSphere5, Microsoft Hyper-V, Citrix Xen, Oracle VM, and KVM. Unprecedented visibility of packet-level data lets you manage virtual network security, compliance, and performance using your choice of instrumentation layer tools—physical or virtual; local or distributed. Because the Phantom Virtualization Tap bridges virtual-to-physical in converged environments, you can leverage current policies and physical monitoring tools to derive their full value.

The Virtual Monitoring Challenge

Enterprises have been utilizing Tap solutions for network traffic access for many years. Traffic capture, analysis, replay, and logging are now part of every well-managed network environment. In recent years, the significant shift to virtualization—with penetration approaching 50%—is yielding great benefits in efficiency. However, today's virtualization-based deployments create challenges for network security, compliance, and performance monitoring. This is because current physical monitoring tools cannot extend easily into the new environments. Investing in costly new virtualization-specific tools—and in the related processes and training they require—can forfeit some of the economic benefits and cost-savings a company gains by virtualizing.

Virtual infrastructures use hypervisor technology to deploy multiple computing environments on a single physical (hardware) server, or across a group of physical servers. Traditional Taps cannot see the traffic between the VMs that reside on the same hypervisor, nor can they “follow” specific VMs as automation moves them from one hypervisor to another to optimize efficiency and availability.

Visibility is further reduced by the complexity of blade servers: with each blade running multiple VMs on a hypervisor. Traffic between the blades running on a dedicated backplane is also invisible to the the physical network and its attached tools.

The Phantom Virtualization Tap Solution

The Phantom suite of software products provides 100% visibility of virtual network traffic, including previously unseen inter-VM traffic on hypervisor stacks. This milestone solution has now expanded to support the industry's leading hypervisors, including Xen, Oracle VM, vSphere 5, Hyper-V and more.

The Phantom Monitor installs in the hypervisor kernel below the virtual switch. The Monitor is a software implementation of a switching mechanism that manages communications between the various virtual network devices. This function is identical to that of the physical switch. The Phantom Monitor can replicate all traffic within the virtual switch, apply smart TapFlow™ filtering, and send traffic of interest to any monitoring tools of choice. It can even pass the replicated traffic to a physical port so physical tools can monitor the data. Virtual traffic is bridged to the physical world in an encapsulated tunnel that can be terminated by a Net Optics xFilter™, Phantom HD™ and send traffic to Director™ Data Monitoring Switch, or at any capable termination point of your choosing.

At a Glance

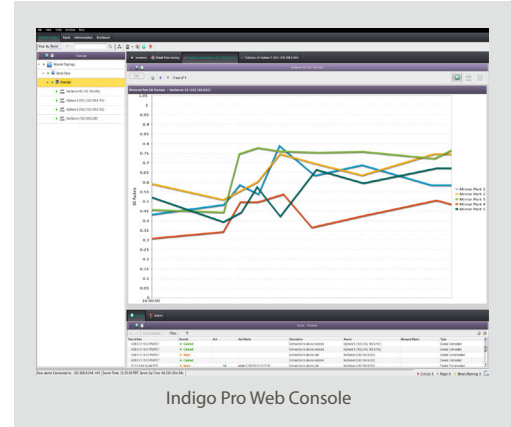
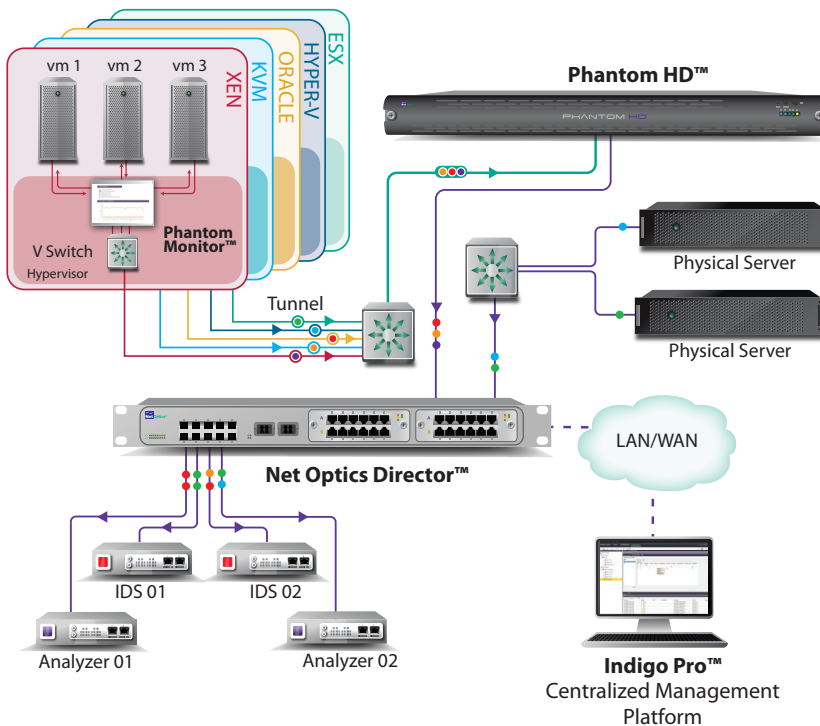
- 100 percent visibility of traffic between Virtual Machines (VMs)
- Installs in hypervisor kernel for full traffic visibility
- Enables visibility and control of network traffic in all best-of-breed hypervisors in the virtual environment: VMware vSphere ESX/ESXi Server 4.X/5.X; Citrix Xen Server 5.6.X; Redhat KVM 2.6.32; Oracle VM 3.0; Microsoft Hyper-V 2012
- Generates Layer 2 and 3 statistics (packet count, utilization, etc.)
- TapFlow™ multi-layer L2-4 filtering engine
- Extends monitoring and access into the Inter-VM networking layer
- Applies existing physical monitoring tools, processes, and procedures to the virtual network
- No interference with the data stream or VMs
- No modifications needed in VMs
- Replicates Inter-VM traffic to virtual and physical monitoring tools of choice
- Sends mirrored traffic out physical NICs in encapsulated tunnels
- xFilter™, Phantom HD™ terminates encapsulated tunnels and sends traffic to Net Optics Director Data Monitoring Switch (sold separately)
- One Phantom Virtualization Tap monitors traffic between VMs (one monitor instance is required to be installed on each physical server)
- Scalable to support and administer high-density environments
- Indigo Pro for Phantom Virtualization Taps VM (included software component) manages multiple Phantom Virtualization Taps and network traffic



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Flexible Installation Options

The Phantom Virtualization Tap is engineered to integrate seamlessly with, and forward traffic to Net Optics family of Director switches. To offer optimal flexibility and further extend your installation options, the Phantom Virtualization Tap is available in various bundles of Net Optics software and Director-series hardware. The Tap is offered both as an add-on to the existing Net Optics monitoring infrastructure, and as a software-only standalone solution.



Unique Capabilities

The Phantom Virtualization Tap provides these unique capabilities to the virtual computing environment:

- A multi-hypervisor solution that performs network monitoring at the hypervisor kernel level providing full view of the traffic flowing between VMs, regardless of their current physical locations
- Implemented at the kernel; delivers the ability to differentiate between specific VM instances in replicated environments, and keep monitoring and logging the VMs even as they are moved between hypervisors (different physical servers or locations)
- The industry's only integrated solution for converged (virtual and physical) environments. Fully hypervisor-agnostic and virtual switch-agnostic, the Phantom Virtualization Tap works seamlessly with Net Optics' Director series of data monitoring switches
- Net Optics Indigo Pro™—a unified network management tool—provides an easy-to-use, Web-based GUI interface

System Requirements

VMware vSphere ESX/ESXi Server 4.X/5.X; Microsoft Hyper-V 8.X; Citrix Xen Server 5.6.X; Redhat KVM 2.6.32, Oracle VM 3.0

Indigo Pro for Phantom Virtualization Taps VM: Management and reporting engine that runs in a VM.

Phantom Monitor: A Phantom Monitor is installed in each hypervisor. The Phantom monitor has two components: a Phantom Monitor Control VM and a Phantom Monitor Module, which is a hypervisor kernel.

Network Connectivity

The Indigo Pro for Phantom Virtualization Taps VM virtual appliance must be accessible via HTTPS to access the application interface.

DNS and NTP services should be available for all components.

TCP 443 and 8443 must be available between the Indigo Pro for Phantom Virtualization Taps and Phantom Monitor Control VMs.

TCP 902 must be available between Indigo Pro for Phantom Virtualization Taps and the Hypervisor hosts.

Disk Storage

10 GB free space (minimum)

Web Browser

Internet Explorer 6 or later, Firefox 2 or later, Safari 4.x or later

Virtual Appliance System Requirements

Compressed size of Virtual Appliances:

Indigo Pro for Phantom Virtualization Taps VM:

Approximately 1.2 GB

Phantom Monitor Control VM:

Approximately 1.3 GB

Uncompressed size of system:

Indigo Pro for Phantom Virtualization Taps VM: 16.0 GB

Phantom Monitor Control VM: 4.0 GB

Memory Size:

Indigo Pro for Phantom Virtualization Taps VM:

256 MB (No more than 2GB)

Phantom Monitor Control VM: 385 MB

(No more than 385 MB)

Part Numbers

PT-DC-25 Phantom DC Starter

Phantom Tap software and license:

2 Indigo Pro + 25 Monitors perpetual license

PT-DC-50 Phantom DC Standard

Phantom Tap software and license:

5 Indigo Pro + 50 Monitors perpetual license

PT-DC-100 Phantom DC Extreme

Phantom Tap software and license: Unlimited number

of Indigo Pro + 100 Monitors perpetual license

PT-01-Custom Phantom Virtualization Tap

1 Indigo Pro + 1 Monitor, One Year License



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