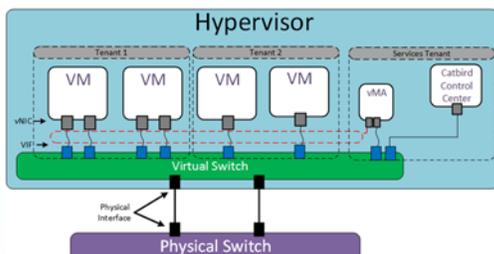


# Securing OpenStack Deployments

Enable the Adoption of DevOps with Confidence



*"Catbird provides a cloud security platform that includes virtual machine appliances that allow for customization of protection across different assets."*

Dr. Edward Amoroso  
SVP & Chief Security Officer  
AT&T

## OpenStack ... Open Source Cloud Platform Here To Stay

Carriers, service providers, government agencies, and enterprises around the globe adopt OpenStack for good reason. OpenStack is open source and avoids license costs. It also brings a number of strong features around multi-tenancy and infrastructure abstraction that allow organizations to develop cloud solutions and deploy them with ease and speed, no matter which type of cloud platform they are using. And last but not least, OpenStack is designed to enable the adoption of DevOps, an approach designed to address the historical challenges associated with sequential hand-offs between development and operations organizations.

## Security Needs to Follow

While OpenStack has proven to produce substantial value in terms of agility and cost reductions, new risks are introduced that traditional perimeter security models are unable to detect and control. As applications move to a virtualized cloud platform, the traditional security perimeter needs to be complemented with security controls wrapped around the application. This approach to security – also known as micro-segmentation – requires the use of software-based, virtualized security controls deployed within the virtual fabric itself.

## Catbird Provides Visibility Into and Protection of OpenStack Deployments

Catbird's software suite of products was designed from the ground up to provide visibility into and protection of virtual Data Centers and hybrid cloud environments, and consists of Catbird Insight and Catbird Secure.

- Catbird Insight automatically and continuously discovers all assets in your virtual fabric, allows the grouping of these assets into logical Catbird TrustZones® and visualizes asset relationships and the East-West traffic flows between them for improved analytics.
- Catbird Secure enables automated enforcement of flexible security policies across Catbird TrustZones. The platform detects and alerts on potential security incidents, initiates corrective enforcement actions and provides instant compliance reporting for major standards and mandates.

Using Catbird Insight's superior visualization and analytics capabilities, network, security and cloud staff alike can access real-time or point-in-time information on all virtual data center assets, events, data flows, alerts, and security policy effectiveness.

Catbird Secure delivers a flexible platform to ensure that all OpenStack assets receive policy-defined protection from inception to retirement, regardless of owner or datacenter location. In addition to innovative advanced network visualization using NetFlow and reporting for top compliance framework criteria (e.g. PCI, HIPAA, FISMA), Catbird delivers vulnerability management and IDS/IPS.

Catbird's suite of products is the first and only solution to enable security policy to move across on- and off-premise infrastructure and across the leading cloud platforms (OpenStack, VMware vSphere and NSX).

**CATBIRD®**

## OpenStack Security Challenges Addressed by Catbird:

Enterprises with perimeter-based security face a number of challenges in an OpenStack deployment, including:

- Ineffective/inefficient means to control East-West network traffic in a timely fashion (i.e. routing tax)
- Control of data/information is not contextualized with its current assessed value (i.e. not data/ application or policy aware)
- Rulesets on perimeter devices are often lengthy and obtuse thereby making application of controls difficult to visualize, manage, and govern.
- Due to high complexity of perimeter management activity, administrative errors (risks) are more common, prompting the introduction of additional process control steps to avoid exposure, a practice that often reduces time to value.

While undoubtedly an enabler technology, OpenStack also introduces a number of additional challenges that the enterprise security and risk management team must account for, including:

- How to ensure tenant network isolation
- How to secure networks with overlapping and non-routable IP space
- How to secure networks with multiple encapsulation methods (NVGRE, VXLAN, STT)
- How to secure assets with very short lifecycles

## How Catbird's Solution for OpenStack Works

Catbird's solution for OpenStack is a 100% software solution built on a two-tier architecture. Catbird's control center runs as a guest, typically in the management space. A guest appliance is placed on each compute node – no guest OS footprint – and provides layer 2 data path integration at the vNIC level allowing Catbird to see all network traffic and correlate to the vNIC, VM, and Tenant without deploying appliances in the Tenant space. Catbird has a fully developed northbound API set and also exports NetFlow and CEF for complete enterprise integration.

## Catbird

Catbird is a pioneer and leader in software-defined security for virtual infrastructure. Catbird's software suite of products was designed from the ground up to provide visibility into and protection of private clouds and virtual Data Centers, and is available for both VMware and OpenStack.

## Catbird Delivers the Following Benefits:

- Perfect real-time inventory of all virtual assets
- Logical segmentation via Catbird TrustZones
- Visualization of East-West data traffic
- Contextualization of security controls with asset risk level (via Catbird TrustZones)
- Improved security and operational efficiency via automated security policy deployment and compliance reporting
- Continuous monitoring through detection and alerting on security and compliance incidents
- Enable smooth migration to micro-segmentation and SDN

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