



Blackfin Security (Symantec)

Provides phishing simulation, user awareness training and technical security training through Hacker Academy.

Blackfin Security (acquired by Symantec) is a leading provider of online security training, immersive threat simulation training, security awareness training, and phishing assessments to a large number of companies – ranging from mid-sized to Fortune 500. Blackfin was started with the goal of bringing a “hands-on” approach to online security training. The Hacker Academy, an online, self-paced subscription-based security training portal, combines self-paced technical courses with live, virtual labs to put the skills to practice. Blackfin Security also offers onsite or on-demand threat simulation events – similar to “War-games” style Capture-the-Flag (CTF) – for individuals and organizations looking to safely assess their understanding of live threats in a realistic virtual environment.

Blackfin Security’s environments – The Hacker Academy Lab and Immersive Threat Simulation Environment

The Hacker Academy’s online virtual labs typically comprise 2-4 Virtual Machines (totaling to 4 VCPUs, 8GB RAM), with labs for advanced courses needing more resources. The labs consist of a Kali Linux system (a Debian based Linux distribution that is specifically designed for digital forensics and penetration testing) and one or more purpose-built systems designed and configured for each lab objective. Students can quickly launch their own private lab environment and get right to practicing their web, server, and network attacks.

In order to handle Immersive Threat Simulation events ranging from 10 to 1,500+ participants, Blackfin Security needed to quickly deploy comprehensive distributed environments. The environments consist of 10 to 350 VMs running a range of operating systems, VPNs, firewalls, and intrusion detection systems – with a distributed load to ensure the optimal user experience.

Blackfin Security’s Requirements

To provide live virtual training and immersive threat simulation environments, Blackfin had some very special needs:



“When we provide live, on-demand security training environments to our students, we need them to operate identically to a datacenter environment. By integrating with Ravello, we gained access to the scalable compute resources of the public cloud, software defined networking, direct VMware importing of systems, and predictable, usage-based pricing. We no longer have to worry about the logistics and costs of bursting to handle large capacity events. Ravello is an ideal fit for us.”

BRAD GEESAMAN
CHIEF TECHNOLOGY OFFICER,
BLACKFIN SECURITY

HIGHLIGHTS

Blackfin Security offers self-paced online security training through ‘The Hacker Academy’ and cyber warfare threat simulations as a service. Blackfin uses Ravello to handle its lab environments for Hacker Academy students as well as to host immersive threat simulation events.

Key challenges included having to make significant



No CapEx investments – Blackfin often experienced highly variable workloads depending on the time of day and number of students using the virtual labs. Blackfin sought to avoid maintaining a fixed-capacity datacenter and cost-effectively leverage the utility of the cloud.

Scale on-demand – To accommodate spikes in demand, Blackfin needed a platform that was able to scale high as demand required without impacting the user experience.

Zero change deployment – Blackfin’s courseware library and threat simulation environments are comprised of hundreds of VMware based Virtual Machines (VMs) with unique networking and topology requirements. It was extremely important to be able to deploy these systems in the public cloud without any changes.

Launch environments ‘on-demand’ – Blackfin needed the ability to launch customized virtual training lab and threat simulation environments via an API and control all aspects of the launch, the configuration, duration, and console access.

Consistent user experience – Blackfin wanted to simplify their students’ user experience when interacting with their virtual environments by making them appear as an integrated feature of The Hacker Academy’s course workflow instead of redirecting the student to another website.

Distributed deployment – Blackfin wanted a solution that would help it serve customers in different geographic locations.

Usage-based costs – To reduce the overall operating expense, Blackfin was looking for a strictly usage-based pricing model.

modifications to the VMware based VMs to run natively in the cloud and quota based billing that didn’t align with their usage pattern.

SOLUTION

By leveraging Ravello’s API, Blackfin has been able to provide richer user experience to its students, and scale on-demand as Ravello runs on the public cloud.

With Ravello, Blackfin has also seen an increase in customer engagement. Further, it has reduced the cost of training delivery by 75% in monthly costs relative to the boutique cloud providers.

Challenges Encountered with other Solutions

Before Ravello’s solution was launched, Blackfin leveraged other cloud-based solutions to handle their virtual environment needs. With AWS VPC, they quickly realized that they would need to make significant changes to networking and configuration for their existing VMware VMs to be able to run natively. With other providers, Blackfin found itself losing control of the user experience as the students were redirected to a third-party website with a very different look and feel while the VM was starting up. In addition, they ran into quota-based billing that was not suited for their highly variable usage.

Solution: Ravello, A Perfect Match for Blackfin Security’s Requirements

When Ravello was launched as a public beta, Blackfin Security tried Ravello and found it to be an ideal match for Blackfin’s requirements. Over time, Blackfin has transitioned all its virtual lab environments to Ravello. Here is how Ravello delivered on Blackfin’s requirements:

No CapEx investments – Ravello’s solution allowed Blackfin Security to deploy their virtual training labs on the public cloud, eliminating the need to build their own Data Center.

Scale on-demand – With Ravello, Blackfin was able to spin up as many environments as needed to absorb the peak loads. Since Ravello runs on Tier 1 cloud providers, there is never a shortage of capacity, quota, or overage. Additionally, with Ravello’s blueprint feature,

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Blackfin was able to take a snapshot of each of the virtual lab environments, and deploy new instances of the environment through Ravello's API as needed.

Zero change deployment – Ravello's High performance nested hypervisor (HVX) and Software Defined Networking (SDN) ensured that VMware VMs in Blackfin's environment could run on the public cloud without needing any modifications.

Launch environments 'on-demand' – With Ravello's API support, Blackfin was able to integrate the process of creating new instances of virtual training lab at student's click, and shutting down instances once the training objectives were completed.

Consistent user experience – With Ravello's API integration into Blackfin's environment, Blackfin was able to keep the user on Blackfin's portal until the virtual lab was up and running. Furthermore, Blackfin was able to provide a richer user experience through a progress-bar that indicated the time left before virtual training lab was deployed and available for use.

Distributed deployment – Blackfin was able to deploy to cloud regions all over the world using Ravello supported datacenters.

Usage-based costs – Ravello is Software as a Service (SaaS) offering and Blackfin only gets charged based on actual service usage.

Result with Ravello

Blackfin Security has benefited in several ways after moving to Ravello for its [virtual training labs](#). The tight integration between Hacker Academy and Ravello through APIs has led to a richer user experience for students, resulting in a higher level of student engagement. This is evidenced by an increase in the number of virtual lab launches, and also an increase in average session duration across its user-base.

Deployment of virtual training labs using Ravello has also reduced operational overhead for Blackfin Security. Before deploying on Ravello, Blackfin would spend 6+ hours on an average to 'pack' and 'publish' a new virtual training lab. By switching to Ravello, they have been able to reduce it to less than an hour. Further, cloning through blueprints has made it easier for Blackfin to make incremental changes to the virtual labs and deploy them to production.

Finally, with [Ravello's usage based pricing](#), Blackfin has saved over 75% relative to boutique cloud providers while increasing their ability to scale as needed with consistent pricing. In some cases, because their previous cloud providers charged for fixed capacity and overage rates, Ravello saved them up to 90%.

Encouraged by this success, Blackfin has expanded its immersive threat simulation offering to also be available on Ravello, as Ravello can handle running both small and very large, highly complex, on-demand threat scenarios, while offering same benefits as it did to The Hacker Academy individual training lab environments.

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