EBSCO Automates Multicloud Application Strategy with Avi Networks and OpenStack

INDUSTRY

Information Services

ENVIRONMENT

OpenStack

PROBLEM

- Lacked self-service capabilities, leading to long waits for configuration changes and provisioning of new services
- Lacked multitenant features for development teams
- Lacked an enterprise-grade load balancing solution that integrates with OpenStack

WHY AVI

- Single point of control for distributed load balancing resources, providing self-service and automation for development teams
- Native integration with OpenStack
- Deep insights to predict traffic and load balancing needs, reduce troubleshooting time, and deliver continuous innovation
- Elastic autoscaling based on real-time traffic to ensure highly available apps

RESULTS

- Realized substantial time savings when rolling out new applications and updates
- Delivered continuous innovation to millions of readers and researchers
- Handled up to 4.5 million transactions a day without overprovisioning server capacity

EBSCO Information Services is one of the largest divisions of EBSCO Industries, Inc., a 72-year old company that started out as a small subscription agency in 1944 in Birmingham, Alabama and has since grown to a global enterprise with over 5,000 employees. EBSCO is designed to meet the information technology needs of a variety of stakeholders by developing customizable services and strong user experiences that help libraries and other institutions support their end users (researchers, students, faculty members, library patrons, healthcare providers, and others). EBSCO's hundreds of developers and IT personnel deliver services that support a global customer base that submits an average of 4.5 million transactions per day. It is a high-performance environment that demands speed and nimbleness.

Always a technology innovator and an early adopter of OpenStack, EBSCO was seeking to enable automation together with the ability to quickly scale to meet growing demands on its networks. EBSCO was looking for a load balancing solution to enhance its self-service offerings within its OpenStack environment, and achieve performance and availability benchmarks. EBSCO adopted OpenStack for its flexibility and agility and was looking for a solution that extended the promise of self-service to load balancing and application delivery.

THE CHALLENGE

Nate Baechtold, IT Architect at EBSCO Information Services, cites several challenges that led them to search for a modernized load balancing solution:

Application Rollouts: While OpenStack could help with faster provisioning of the compute layer, development teams building applications found that they had to wait for configuration changes and new virtual services to be provisioned. They found the lack of self-service for application services to be constraining. EBSCO aimed to enable self-provisioning of both load balancers and application resources for developers using a cloud-first approach that would simplify and automate application deployment.

Isolation: Providing multiple development teams with their own isolated slices of load balancing resources was a necessary step at EBSCO to enable continuous innovation. However, EBSCO's existing appliance-based load balancing solution did not meet their tenant isolation needs. The IT team needed a true multitenant system so that developers could roll-out application updates without impacting other tenants or users.

Load Balancing-As-A-Service: EBSCO chose OpenStack for agility and flexibility. As they built out their environment, they needed high performance load balancing solutions with seamless integration for OpenStack components such as Horizon, Nova, Keystone, and Neutron.

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"We evaluated traditional and open source load balancers, but they didn't meet our agility, flexibility, and performance expectations. They did not provide a model that was operationally viable. We wanted to provide the same dev/test environment capabilities to the development teams even in a production environment. Avi met all of these capabilities and added analytics on top!"

NATE BAECHTOLD
IT ARCHITECT, EBSCO
INFORMATION SERVICES

THE SOLUTION:

EBSCO was looking for a cloud-first approach when they evaluated load balancing solutions for their OpenStack environment. EBSCO carefully considered a variety of solutions, eventually picking the VMware NSX® Advanced Load Balancer™ for their multicloud application deployment use case. EBSCO chose NSX Advanced Load Balancer to deliver software-defined load balancing solution modern APIs that aligned with their flexibility and agility goals. For Nate, two key capabilities rose to the top about Avi—1) automation and self-service and 2) the platform's rich analytics capabilities.

Self-Service And Automation: EBSCO's primary goal was to provide their development teams with an ability to spin up (or down) infrastructure and application resources on-demand. Unlike traditional appliance-based solutions that were simply not architected to meet self-service goals, NSX Advanced Load Balancer was able to simplify provisioning of application resources with a single point of control for distributed load balancing resources and native integration with OpenStack components. Avi's OpenStack integration meant that administrators were able to manage all load balancing functions directly from the Horizon dashboard.

Analytics And Insights: For application teams to deliver on the continuous innovation promise, EBSCO sought a solution that could provide granular visibility into application performance and traffic flow. Deep insights provided by NSX Advanced Load Balancer enabled developers to define predictive autoscaling requirements to mirror traffic needs. The visual and actionable APM-like insights delivered by NSX Advanced Load Balancer reduced troubleshooting time and enabled EBSCO to deliver on the promise of continuous innovation.

Autoscaling: Enabling self-service for the development team also meant providing them with the ability to self-provision infrastructure resources and automating resource availability to match application needs. Avi's integration with OpenStack components (such as Nova, Neutron, and Horizon) simplified EBSCO's ability to grant permissions for development teams to spin up additional servers in a pool, allocate virtual IPs (VIPs), and configure load balancing pools. The ability to autoscale based on real-time traffic patterns enabled elastic and highly available applications.

THE RESULT

The NSX Advanced Load Balancer solution was quick to deploy and configure. Deployed as a general service offering, NSX Advanced Load Balancer helps EBSCO:

• Realize substantial time savings rolling out new applications and updates

• Deliver continuous innovation to millions of readers and researchers that access EBSCO's services

• Handle as many as 4.5 million transactions per day, without requiring to overprovision server capacity

NEXT STEPS

EBSCO has deployed Avi Networks as a load balancing solution for their OpenStack environment and has clear plans for expanding future deployments to multicloud environments with a uniform application services architecture. Nate envisions expanding Avi's deployment to load balance EBSCO's applications deployed in their AWS public cloud environment as well.