Ellie Mae & Juniper Networks

About Ellie Mae:

Ellie Mae processes approximately 30 percent of residential U.S. mortgage applications through their Encompass® all-in-one mortgage management solution.Their customers include major lending institutions. By introducing extensive automation to the residential mortgage process, Ellie Mae has streamlined lenders' ability to remain competitive, compliant, and efficient.

The Challenge:

Customer usage of Encompass, combined with the vagaries and complexities of mortgage processing due to customer requirements and regulations, creates a number of traffic peaks and valleys. As a result, Ellie Mae manages highly elastic workloads and was looking for ways to meet demand without over-provisioning on-premises infrastructure. Building sufficient on-premises environments can quickly become time consuming and inefficient.

Other inefficiencies introduced by Ellie Mae's on-premises infrastructure included the inability to predictably serve the highly-distributed nature of their client base, heavy backend management to create secure connectivity between new resources and existing ones, and the difficulty of securing traffic between distributed environments.

Ellie Mae found that migrating to a cloud-based environment would help them overcome many of these issues, however that would force them to also reconsider their security posture. In particular, upon migrating workloads to the cloud, Ellie Mae would need to find a solution that provided a consistent security posture on-premises and in the cloud, without sacrificing agility. The nature of Ellie Mae's geographically distributed and highly elastic workloads made this task even more challenging.

Why Amazon Web Services?

To address sudden peaks in demand, Ellie Mae sought a cloud-based solution that would enable them to quickly respond to spikes in usage with on-demand resource provisioning. Amazon Web Services (AWS) fulfilled this need with a proven infrastructure and native services that enable rapid scalability while ensuring security and greater automation.

By leveraging AWS, Ellie Mae can continue to host the backend of their SaaS application in a private cloud, then spin up new Amazon EC2 instances when demand peaks. Ellie Mae uses AWS CloudFormation and AWS Lambda to automate instance provisioning and to configure Juniper Networks® vSRX Virtual Firewall for secure connectivity.

Combining the AWS Cloud with their on-premises environment and using Juniper Networks security and networking solutions allowed Ellie Mae to meet their elastic workload demands with automated management and resource provisioning.

Ellie Mae's SaaS offering consists of many components, so creating connectivity as new instances are spun up is key to its functionality. The automation provided by AWS CloudFormation and AWS Lambda achieved this without any manual intervention. Leveraging a networking construct called transit VPC helped optimize traffic flow amongst all these moving parts.

Overall, AWS delivered greater flexibility to Ellie Mae and allowed them to shift focus away from infrastructure deployment and onto delivering core business services. As Ellie Mae builds new services, they plan run them on

the AWS Cloud.

Why Juniper Networks?

Ellie Mae and Juniper Networks have a longstanding relationship. Juniper became a preferred networking and security vendor due to the modular configuration of its solutions. This trait simplified security and network management for Ellie Mae.

Ellie Mae leveraged the Juniper Networks SRX Series Services Gateways in their on-premises environment. Upon migrating workloads to AWS, they needed a solution that would enable Ellie Mae to leverage the same firewall capabilities as they did on premises, without hindering the agility the cloud provided. Ellie Mae was able to easily import their firewall configuration to a virtual deployment of SRX (vSRX) on AWS, delivering sufficient protection and streamlining security configuration and management. By extending their firewall configuration to AWS, Ellie Mae was able to leverage consistent security policies throughout their architecture.

Now that they were leveraging a hybrid cloud, Ellie Mae also needed to build secure connections throughout the different infrastructure components that support Encompass®, while also securing user traffic. Juniper Networks vSRX provides secure connectivity with carrier-grade VPN and the aforementioned firewall capabilities.

By integrating the vSRX with their AWS environment, Ellie Mae could automate both the deployment of virtual appliances and the establishment of secure connectivity. This means that as Ellie Mae was spinning up new instances to cater to traffic increases, the vSRX would automatically secure connectivity to the backend of Encompass®, hosted in their private cloud. Prior to leveraging the vSRX on AWS, this could take up to three days. Additionally, if they ever needed to move these instances to the private cloud, the vSRX could help streamline the transition.

This was especially helpful in Ellie Mae's environment, as they leveraged a variable number of Amazon VPCs to host different components of Encompass®. In order for the application to fulfill the entire mortgage process, these components needed to speak to one another. The vSRX enabled secure connectivity

for application traffic, optimized with dynamic routing through transit VPCs without backhauling traffic to their private cloud. This creates optimal traffic flow and helps ensure Encompass® performs at a high level.

Another major benefit, given Ellie Mae's longstanding relationship with Juniper, is that all Juniper platforms run on Junos® operating system and therefore, provide a similar management interface. The familiarity of Junos® operating system reduces operational complexity and streamlines adoption.

Choosing the vSRX made Ellie Mae's migration to the AWS Cloud easier and more automated, while enabling secure connectivity across globally distributed workloads. Juniper enabled Ellie Mae to apply a high performing, consistent security posture for both on-premises and now on the AWS Cloud.

The Benefits

Greater Agility & Efficiency:

When operating on-premises, it would take Ellie Mae two to three days to build secure connectivity and implement firewall rules for new workloads. Now, using Juniper Networks vSRX Virtual Firewall on AWS, Ellie Mae can automate the provisioning of resources and accomplish these tasks in a matter of minutes.

Secure Connectivity:

Juniper Networks vSRX provides carrier-grade VPN and firewall capabilities, so Ellie Mae could secure connectivity between different resources in compliance with managing user traffic. Capabilities provided by AWS and Juniper enabled Ellie Mae to automate the establishment of these secure connections.

Ease of Use:

As a long-standing Juniper customer, Ellie Mae was familiar with the capabilities and operation of Juniper Networks firewalls and routers. Juniper extends many of the same capabilities to AWS with their virtualized solutions. Additionally, the same Juniper Networks Junos® operating system operating system is used across all platforms, eliminating the need to learn new systems and shortening the learning curve for the Ellie Mae team.