



# Top 3 Use Cases for Becoming a Cloud- Connected Enterprise

**AUTOMATED SECURITY AND ROUTING  
PLATFORM FROM AWS AND JUNIPER**

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# Introduction

## OVERCOMING THE HURDLES OF TRADITIONAL CONNECTIVITY SOLUTIONS

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The benefits of cloud computing are well established: businesses are able to provision and de-provision resources on-demand, more easily serve users in new geographies, and operate more cost-effectively than on-premises. Because of this, migrating data and applications has become a question of “when” and not “if”. For those beginning this journey, the logical first step is a hybrid cloud environment, in which you leverage a combination of your existing on-premises infrastructure and new cloud resources. To get the most out of this environment now and as you scale your network on the cloud, IT leaders must:



Establish connectivity from on-premises datacenters, campuses, and branches to the cloud, as well as between disparate regions



Implement a consistent security posture across on-premises and cloud workloads



Deliver optimal end-user experience for all employees



Simplify network and cloud operations to accelerate agility

Unfortunately, traditional connectivity and security solutions often fall short when delivering on these requirements. That's because these solutions can come with cumbersome workflows that make it difficult for IT leaders to keep up with rapidly changing needs. They also fail to deliver the agility required when adding new cloud resources. Physical security solutions become insufficient

as workloads scale beyond their visibility and as attacks evolve.

What organizations need is a simple solution that complements cloud provider gateways, making it easy to manage both routing and next-generation firewall capabilities, enabling secure connectivity at the pace cloud resources are added and ensuring high-performance and reliability throughout your network architecture.

Organizations need to easily manage both routing and firewall capabilities





# Solution

## AMAZON WEB SERVICES: A CLOUD FOR NETWORK TRANSFORMATION

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Amazon Web Services (AWS) delivers the broadest and deepest set of native services among cloud providers. This enables organizations to easily deploy traditional resources, such as compute and storage, and leverage emerging technologies, like IoT and machine learning, without the cost and time traditionally associated with adopting these resources and technologies. Among

these native services, AWS provides on-demand solutions and services to help you rapidly and reliably establish a hybrid cloud architecture. The AWS global footprint enables you to implement a fault tolerant, low latency architecture, while also making it easier to serve customers and employees in new regions around the world.

## JUNIPER NETWORKS: CLOUD-GRADE SECURE CONNECTIVITY WITH AUTOMATION

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Juniper Networks delivers a single platform, providing both cloud-grade routing and next-generation firewall. The platform matches the agility of AWS by providing automated provisioning capabilities, so that you can deploy cloud resources more rapidly and with little chance for human error in configuration or operations. The cloud-grade routing capabilities enable secure connectivity from

on-premises datacenters, campuses, and branches to cloud workloads, as well as from region-to-region. The next-generation firewall capabilities can be elastically scaled, establishing Security in the Cloud, so that your workload protection matches the dynamic nature of the cloud. Deploying one platform to securely connect your environment while securing your cloud workloads simplifies your operations.

All Juniper Networks solutions come equipped with the Junos® operating system, whether you are running on-premises datacenters, campuses, branches, or in the cloud, creating One Junos experience. This consistency further simplifies the cloud adoption process for experienced Juniper Networks users.

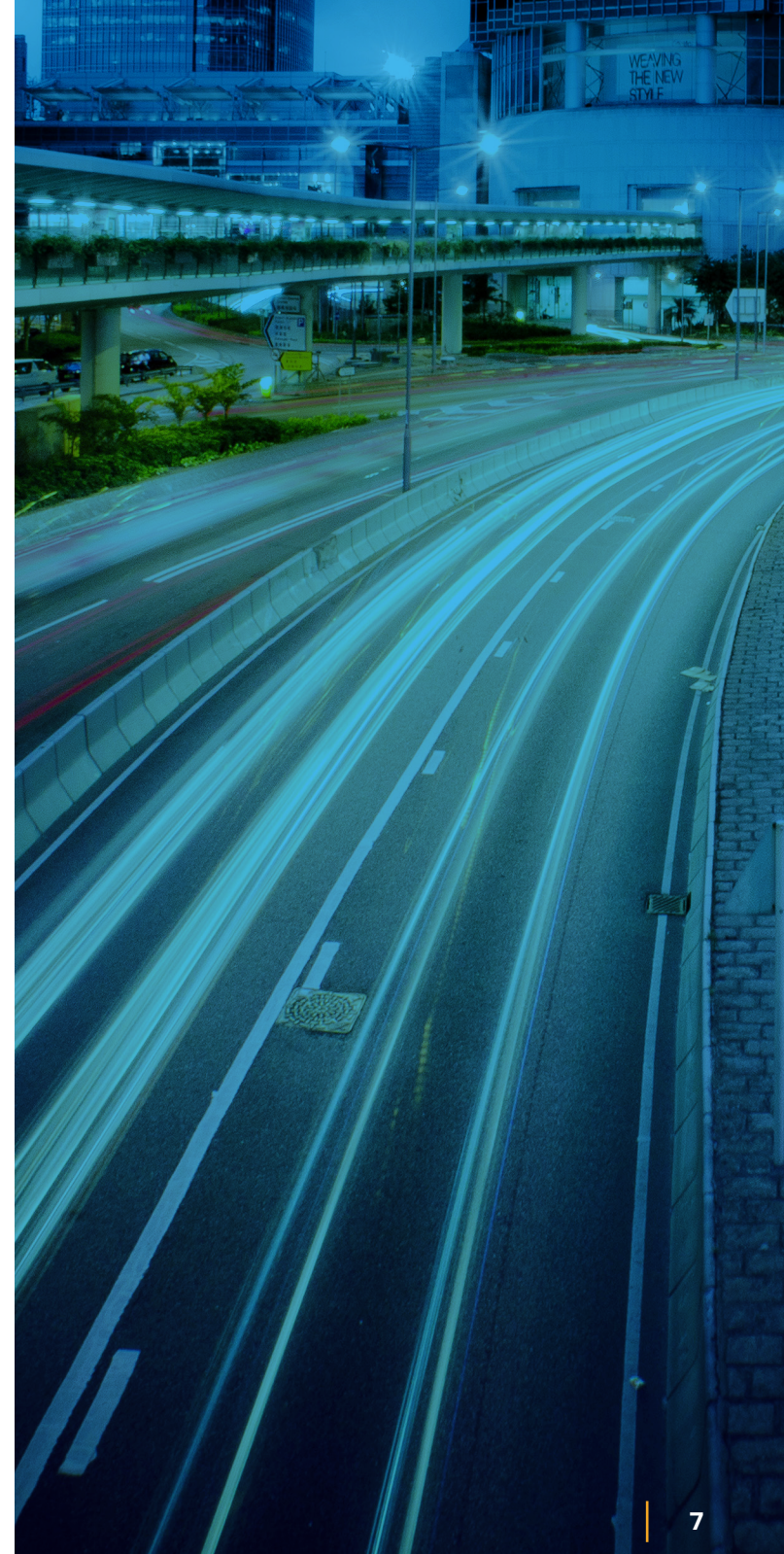


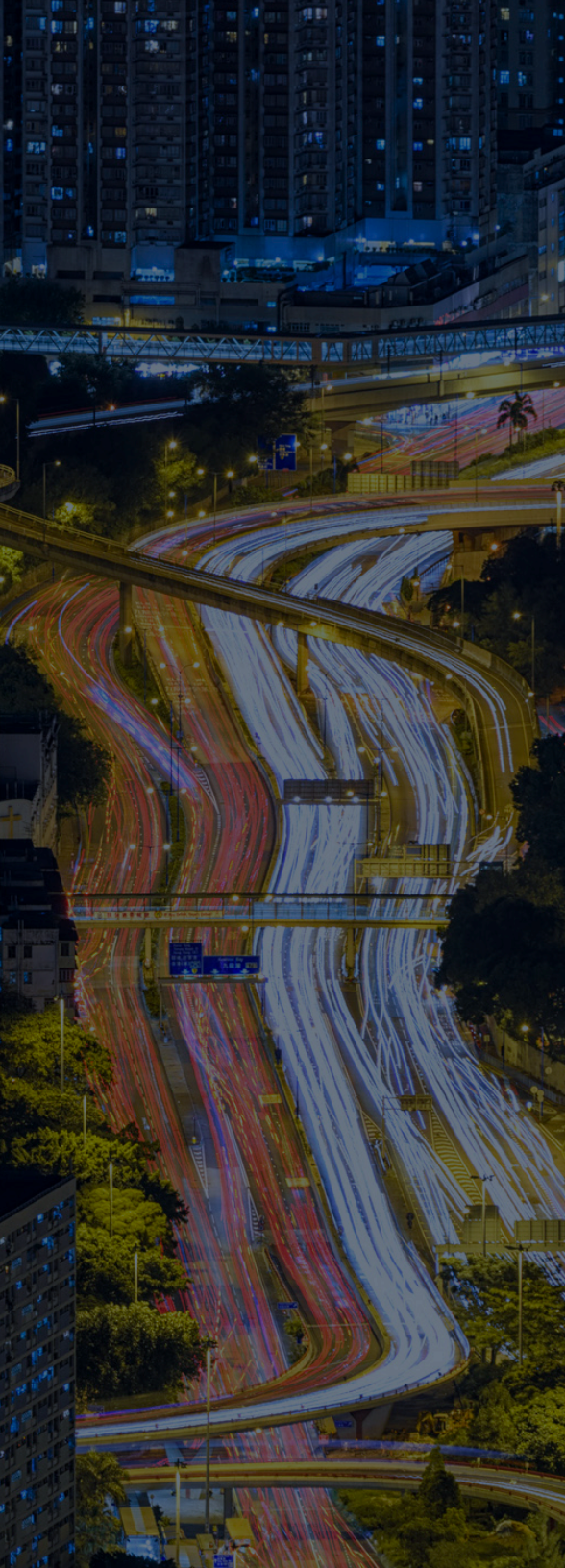
## SOLUTION

### JUNIPER VIRTUAL SRX

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Juniper vSRX Virtual Routing and Firewall consolidates connectivity and security features, enabling customers to secure traffic flows between on-premises and AWS resources while strengthening your security posture. This combination of routing and security capabilities makes it a versatile choice for numerous use cases.





# Use Cases

Juniper Networks vSRX platform address a multitude of connectivity and security use cases in hybrid cloud environments. In this eBook, we'll explore a few of these use cases and provide insight into how AWS and Juniper Networks can help you overcome common challenges.

## **AWS SECURE INTERNET GATEWAY & WORKLOAD PROTECTION IN ONE**

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If your organization runs a single Virtual Private Cloud (VPC) with several Amazon Elastic Cloud Compute (Amazon EC2) instances, chances are that you need a method of enabling secure communication between your Amazon EC2 instances and the Internet, without leaving your traffic unprotected. Additionally, the secure connectivity measures you take must not impact network performance or end-user experience.

Furthermore, security and compliance is a shared responsibility between AWS and their customers: AWS is responsible for protecting the infrastructure that runs all of their services, called Security of the Cloud, while your organization is responsible for securing the workloads ran on the cloud, called Security in the Cloud.

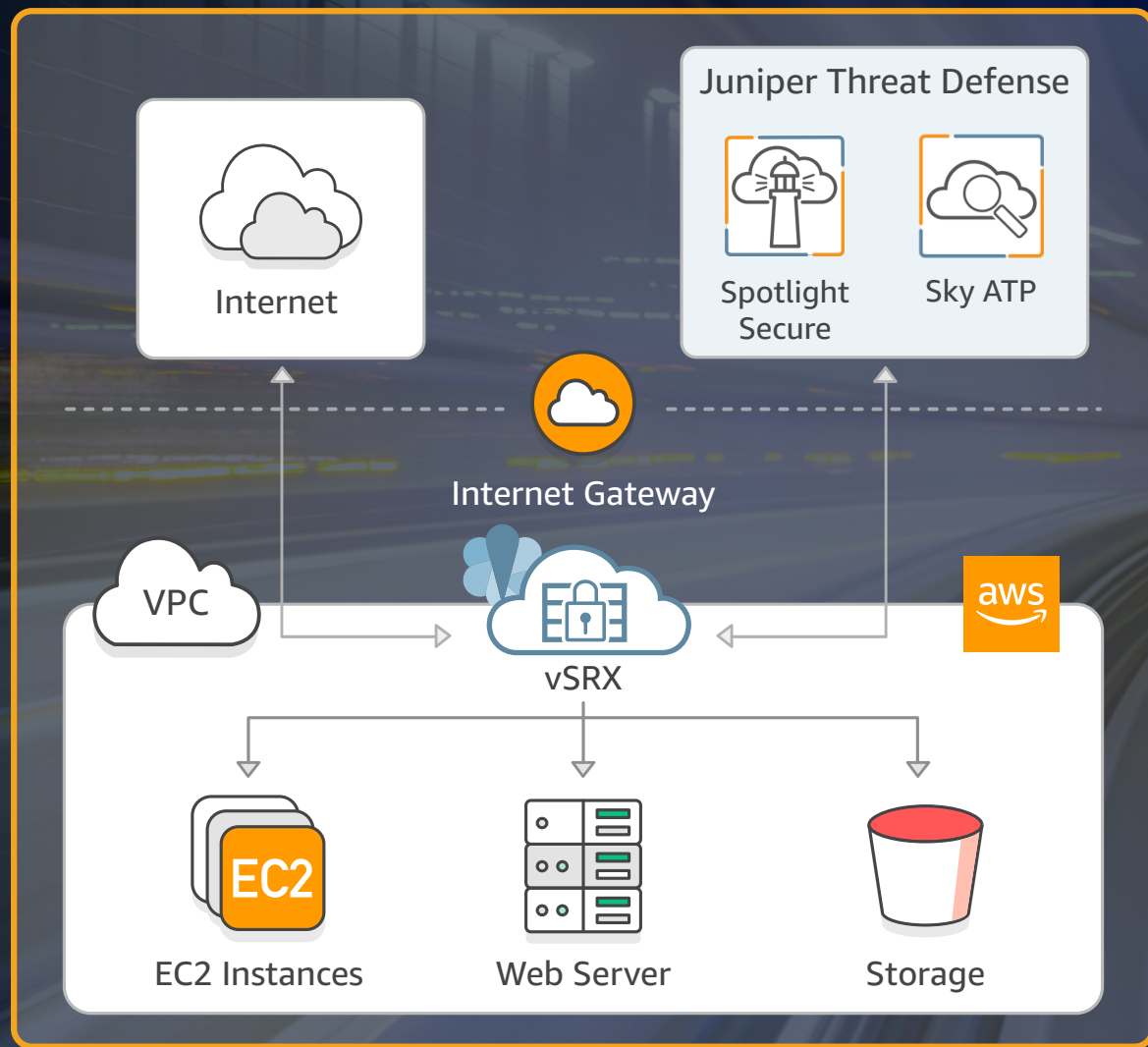


Juniper vSRX enables you to establish a secure Internet gateway to your VPC, so that traffic can flow from your Amazon EC2 instances to the Internet securely. The vSRX consolidates connectivity and security capabilities, providing a multitude of security features while accelerating network performance. Among these features are:

- ✓ User Firewall
- ✓ Intrusion Prevention
- ✓ Unified Threat Management
- ✓ App Secure
- ✓ Advanced Threat Prevention
- ✓ IPSEC VPN Termination
- ✓ Secure and redundant connectivity
- ✓ Full routing capabilities



# AWS SECURE INTERNET GATEWAY & WORKLOAD PROTECTION IN ONE





### TRANSIT VPC

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The Transit VPC use case is designed for larger deployments, in which organizations have multiple VPCs and allows for multi-Region connectivity across the AWS global footprint. In this scenario, each VPC instance is being paid for by the individual owner. The Transit VPC solution helps organizations eliminate backhaul, thus improving performance by serving as a central hub for all internal and external traffic sent to your on-premises datacenter or the Internet.

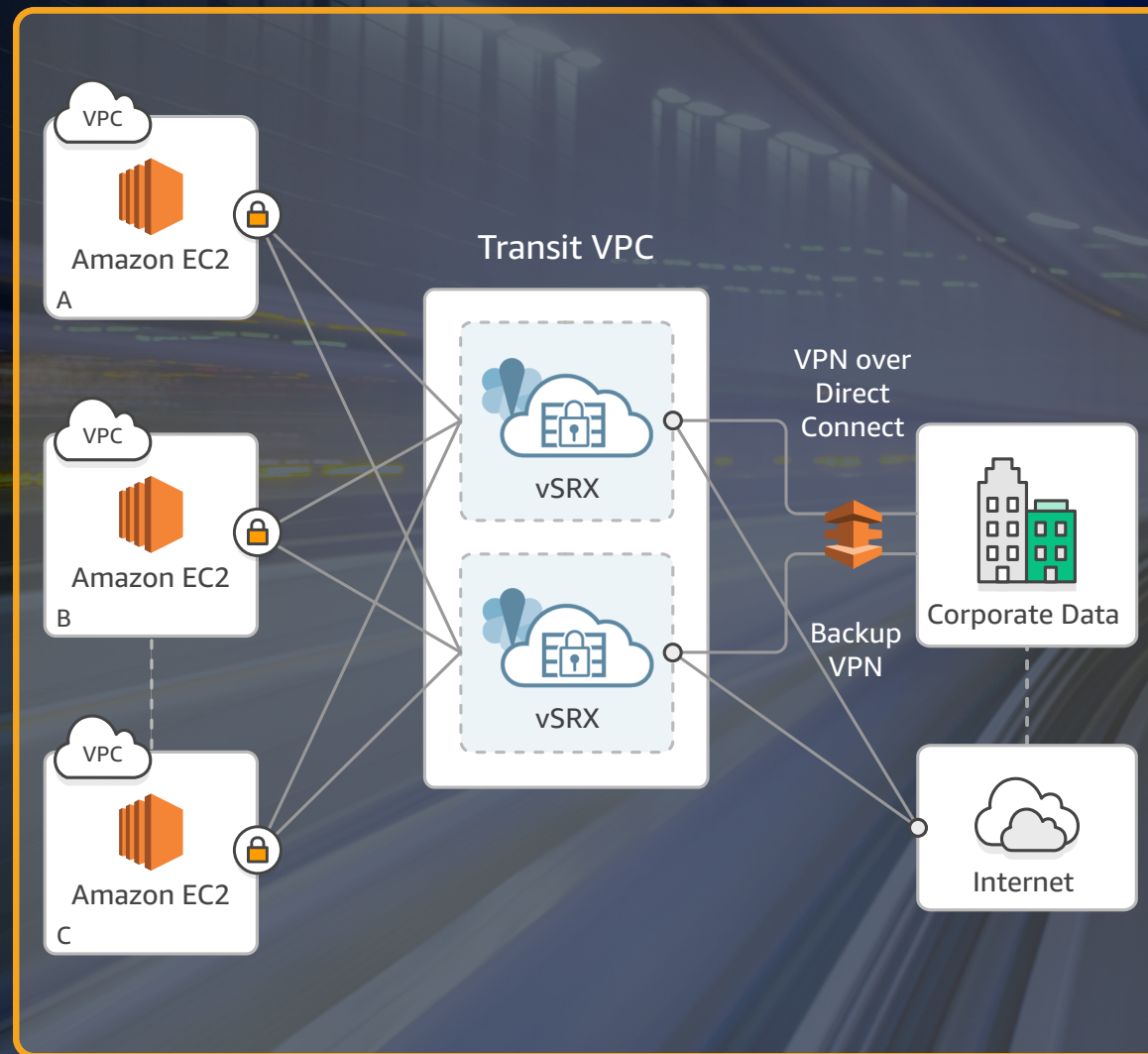
By deploying the Juniper vSRX in the Transit

VPC, businesses can add next generation firewall capabilities to all of their VPCs, as well as secure connectivity between them. The Border Gateway Protocol (BGP) is used over the IPsec VPN service to facilitate dynamic routing between the various VPCs. Leveraging the vSRX in this scenario dramatically simplifies network operations, by minimizing the number of connections needed between different networks across VPCs. It also streamlines payments and helps organizations control costs.

To further simplify not only the operations, but also the creation of your Transit VPC, Juniper Networks offers an AWS CloudFormation template. Using this template enables you to get up and running in a matter of minutes, while also introducing extensive automation to your deployments. Within this CloudFormation template, AWS is leveraged to automatically trigger functions, such as enabling access to your network, or initiating VPN connections from the vSRX to virtual gateways.



## TRANSIT VPC





## HYBRID CLOUD EXPANSION

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The Hybrid Cloud Expansion use case is intended to help organizations establish remote branch offices in addition to their existing on-premises environment. As of 2017, AWS operates in 44 Availability Zones within 16 geographic Regions around the world, with announced plans for 17 more Availability Zones and six more Regions. While this makes it seamless for organizations to serve customers and employees around the world, your organization should consider the following before expansion:



Ensuring that all remote employees have secure access to internal services (email, File Transfer Protocol, Microsoft SharePoint, etc.)



Maintaining the same security policies across all locations



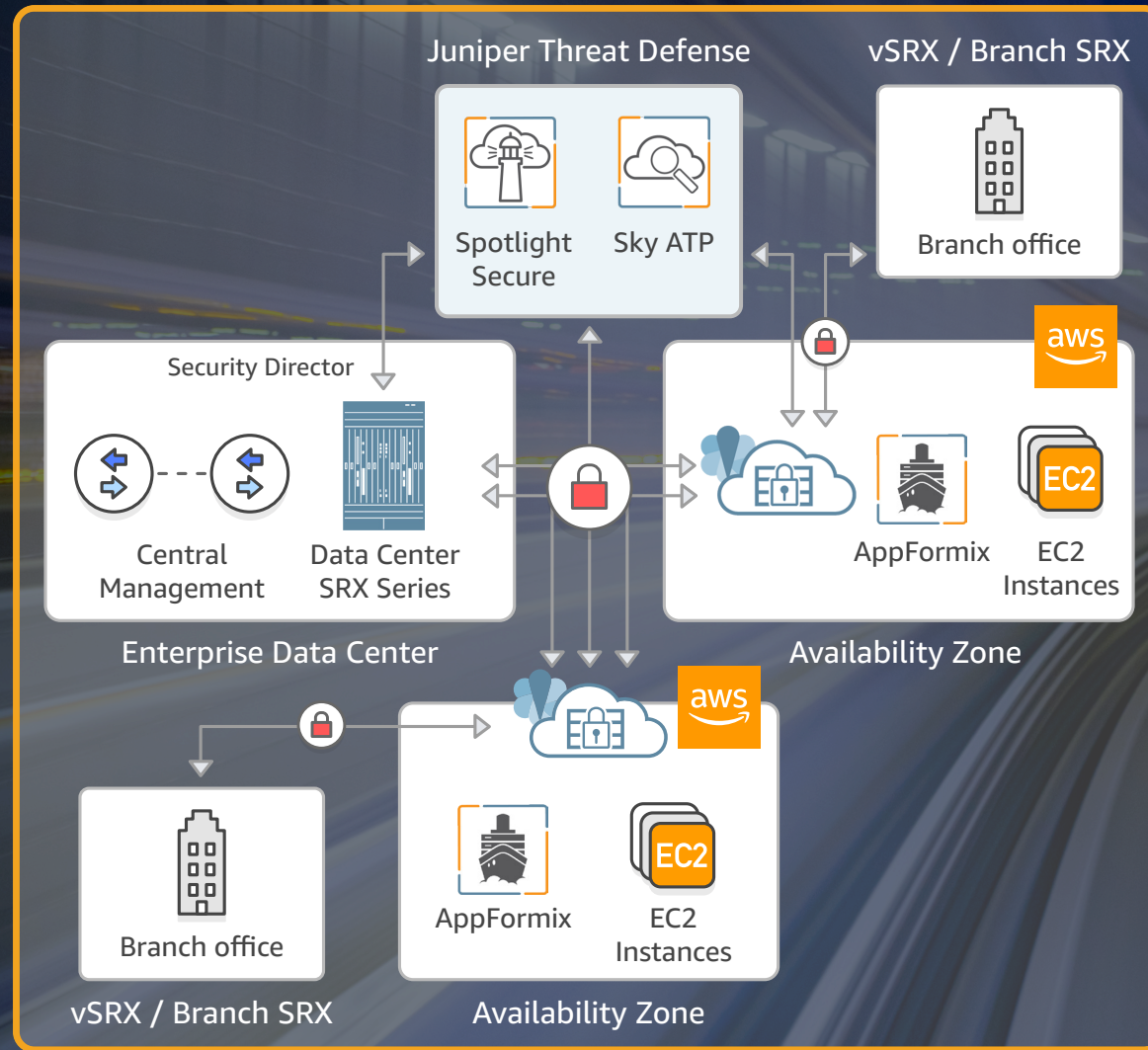
Pushing the latest security updates and features to all remote locations



Enabling the analysis of all data incoming and within branches

Juniper vSRX provides secure connectivity between various AWS Availability Zones and your on-premises datacenters, campuses, or branches. They are used for IPsec VPN termination, multisite VPN, and network address translation (NAT) gateway functionality to further secure and enhance your AWS deployments. When you deploy the vSRX for security purposes, you are able to centrally manage security policies through the Junos Space Security Director. Here you can add or update security policies and push them to devices located in remote branches. From there, application data is synchronized across your AWS environment, branch offices, and on-premises data center.

# HYBRID CLOUD EXPANSION







# Customer Success Story

## **ABOUT ELLIE MAE**

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Ellie Mae processes roughly 30% of residential mortgage applications in the U.S. through their SaaS offering, Encompass®.

## **CHALLENGE**

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Ellie Mae manages highly elastic workloads due to the volatile customer usage of Encompass, as well as the vagaries and complexities of mortgage process. This led Ellie Mae to look for ways to meet demand without over-provisioning on-premises infrastructure. They also needed to predictably serve their highly-distributed client base, simplify the backend operations of creating secure connectivity, and secure traffic between distributed environments.

### SOLUTION

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To address sudden peaks in demand, Ellie Mae sought a cloud solution that would enable them to respond to spikes in usage. AWS enabled Ellie Mae to provision new resources on-demand, while paying only for what they used. This allowed them to continue to host the backend of Encompass in their private cloud, then spin up new resources when demand peaked. This AWS solution proved to be a cost-effective way to manage infrastructure.

Using the Juniper vSRX on AWS, Ellie Mae was able to easily extend their on-premises firewall configurations to the cloud. Additionally, they were able to establish secure connectivity throughout the different infrastructure components that support Encompass. By integrating the vSRX with their AWS environment, Ellie Mae can automate both the deployment of virtual appliances and the establishment of secure connectivity. This means that as Ellie

Mae spins up new instances to cater to traffic increases, the vSRX automatically secures connectivity to the backend of Encompass, hosted in their private cloud. Prior to leveraging the vSRX on AWS, this took up to three days. Since Ellie Mae leveraged a number of Amazon VPCs to host different components of Encompass, it was key to not only establish secure connectivity but also enable dynamic routing through transit VPCs to eliminate backhaul.





# Conclusion

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Adopting Juniper Networks and AWS solutions are proven methods to transform your network as you become more dependent on the cloud. With these resources, you can:

- Deliver secure connectivity and high-performance throughout your network architecture
- Streamline network administration to drive efficiency and agility
- Maintain consistent security throughout your cloud and hybrid environments
- Reliably serve users around the world with high-performance application access

Together, Juniper Networks and AWS deliver cloud without compromise.



# Learn More

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- [Secure Cloud Connectivity](#)
- [Free Trial of Juniper vSRX Next-Generation Firewall](#)
- [Free Trial of Juniper vSRX Premium-Next Generation Firewall with Anti-Virus Protection](#)
- [Juniper Networks solutions in AWS Marketplace](#)
- [Networking Products with AWS](#)
- [Juniper Networks Solutions Page](#)