

Astra

Benefits Summary



Enhanced Security and Compliance



Cost Efficiency



Simplified Management



Increased Scalability

About Astra

Astra is a prominent player in the aerospace and defense industry, committed to leveraging technology to ensure secure, reliable, and efficient operations globally.

Industry

Aerospace and Defense

Location

Global

Featured Services

AWS EC2, AWS Transit Gateway, AWS Firewall Manager, Palo Alto VM-Series Firewall, AWS VPC

CHALLENGE

- Standardizing VPC network connectivity to on-premises and other VPCs
- Ensuring inter-VPC network connectivity
- Centralizing the management of VPC network security policies



SOLUTION

nClouds' Solution for Astra

The VPC hosts Palo Alto firewall instances for network security, and all inter-VPC network traffic is routed through the inspection VPC to effectively monitor, log, and enforce network security best practices between VPCs and the internet.

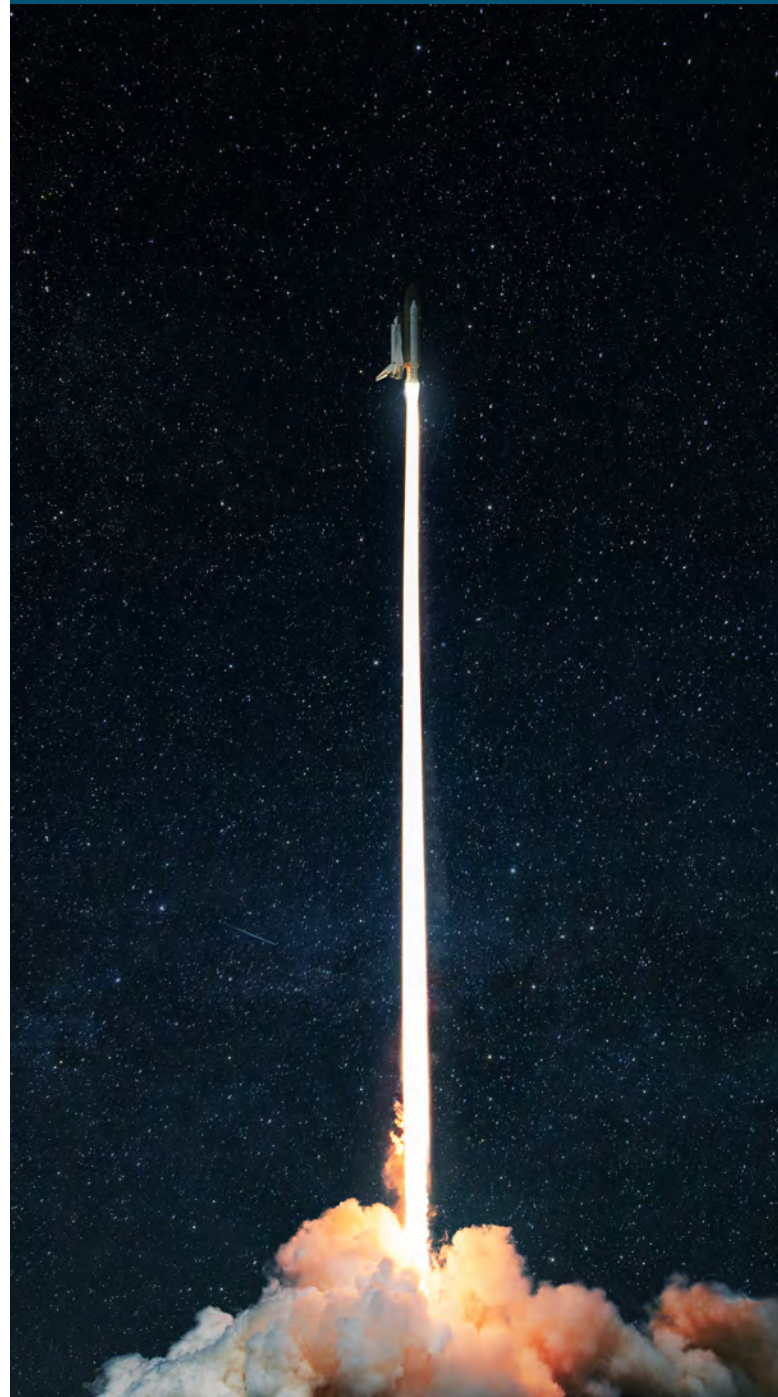
Palo Alto was chosen as the inspection VPC security appliance. Astra already has a Palo Alto presence for its on-premises firewalls and the ability to leverage Palo Alto Panorama for central firewall policy enforcement.

In addition to the inspection VPC, dedicated ingress and egress VPCs were added to the design. The egress VPC would host NAT and internet gateways for all outbound VPC network traffic destined for the internet, while the ingress VPC would host elastic load balancers with public IP addresses for inbound network traffic sourced from the internet, destined for Astra's public-facing applications and services. Centralized ingress/egress points for all VPCs would greatly reduce the number of internet and NAT gateways in each spoke VPC, thus reducing VPC costs and allowing for greater network security.

AWS Firewall Manager is utilized to manage and deploy standardized security group rules and WAF rules. At this time, AWS Firewall Manager in GovCloud doesn't support managing the Palo Alto firewall; however, in commercial environments, it does.

RESULTS

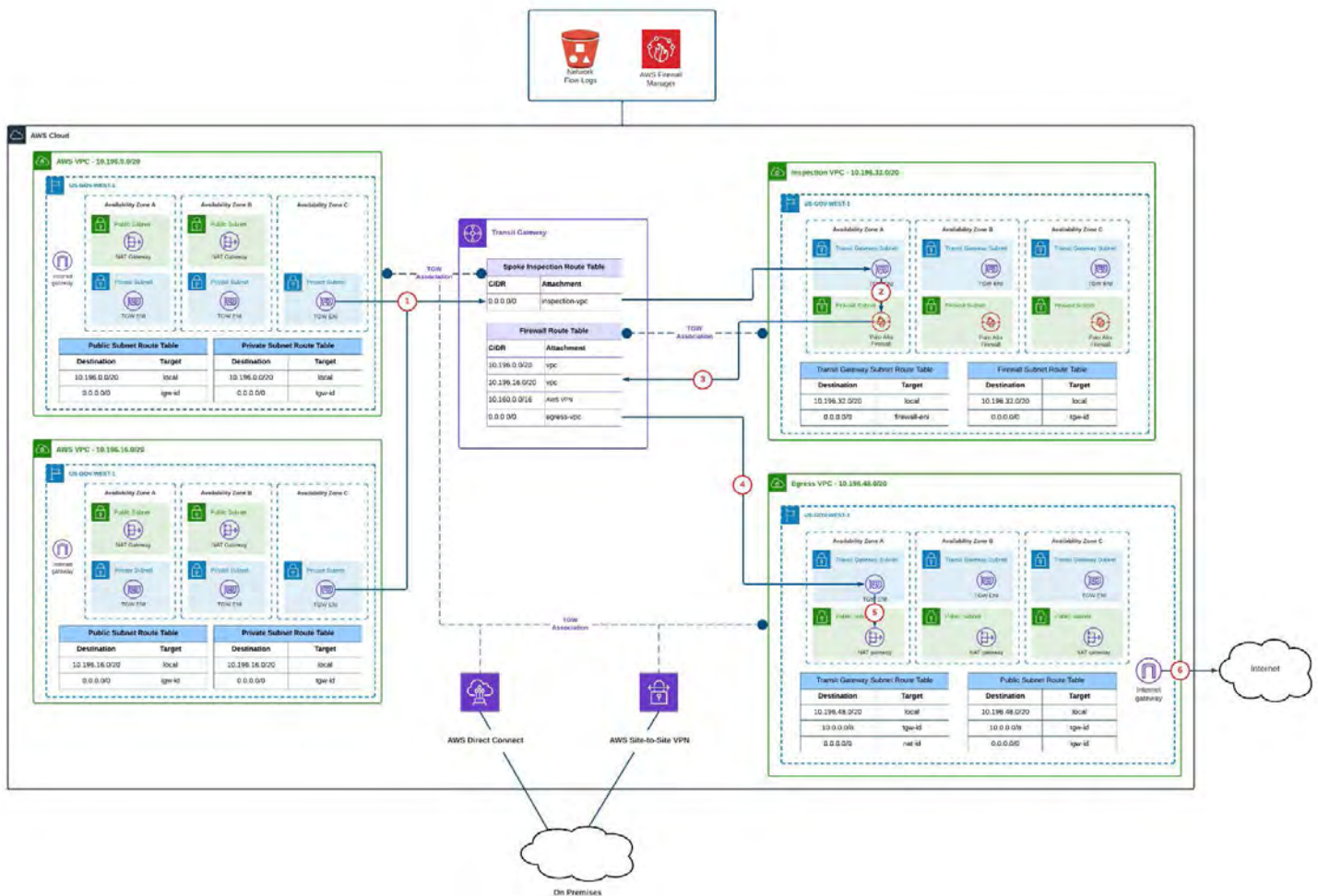
The project was successfully completed, helping Astra's network architecture to be compliant with federal aerospace and defense regulations. The new network structure provided a more secure, scalable, and cost-effective solution for managing VPC connectivity and security.



The Company Leverages AWS Services

- **AWS EC2** – Hosted the Palo Alto firewall appliances
- **AWS Transit Gateway** – Provided inter-VPC network connectivity solutions
- **AWS Firewall Manager** – Managed standard security groups and core AWS VPC networking
- **Third-Party Tools** – Palo Alto VM-Series next-gen firewall

High-Level Architecture Diagram



Interested in an AWS Well-Architected Framework Review?

Schedule a [free AWS Well-Architected Framework Review with nClouds](#) to see how you can apply architectural best practices to drive better business outcomes.

BENEFITS

Increased Business Efficiency

Teaming with Astra, nClouds was able to bring several key benefits through AWS that increased business efficiency and solved technical challenges.



Enhanced Security and Compliance

The use of AWS and Palo Alto solutions increased Astra's defense against cyber threats and ensured compliance with federal regulations.



Cost Efficiency

By centralizing ingress and egress points and reducing the number of required gateways, Astra significantly lowered infrastructure costs.



Simplified Management

The integration of AWS Firewall Manager and Palo Alto Panorama centralized the control and visibility of network security policies, simplifying administrative tasks.



Increased Scalability

The adoption of cloud-based solutions enabled Astra to easily scale its network and security infrastructure to meet growing demands without compromising on performance or security.

ABOUT nClouds

nClouds is a certified, award-winning provider of AWS and DevOps consulting and implementation services. We partner with our customers as extensions of their teams to build and manage modern infrastructure solutions that deliver innovation faster. We leap beyond the status quo.