

## nClouds | AWS Case Studies

# Violet Grey

How nClouds helped Violet Grey enhance productivity, security, compliance, and scalability for their ecommerce beauty business.

## About Violet Grey

Founded in 2012, Violet Grey is a venture-backed content and commerce beauty company with a readership base that spans 170 countries and a luxury shopping destination that brings together the best in beauty. Violet Grey's digital shelves are lined with the best beauty products on the market, curated by its community of trusted make-up artists, hair stylists, and stars. The company also has a flagship boutique in Los Angeles where customers can shop expertly-curated beauty products and exclusive offerings. To learn more, go to [www.violetgrey.com](http://www.violetgrey.com)

## Benefits Summary



Improved DevOps productivity



Enhanced security & PCI compliance



Improved scalability for ecommerce

## CHALLENGE

### Improve productivity, enhance security and compliance, and improve scalability.

Violet Grey sells beauty products for women and has a large presence online via their website. Its site, running on AWS, is essential to their ecommerce business. Managing DevOps-related tasks was time-consuming for their engineers, so the infrastructure needed streamlining to improve productivity. They wanted improved scalability to support their fast-growth business. And, in preparation for a PCI assessment to validate compliance with the Payment Card Industry Data Security Standard (PCI DSS), Violet Grey wanted to enhance security and compliance.

## VIOLET GREY

THE INDUSTRY'S BEAUTY EDIT

### Industry

Specialty Retail, Ecommerce, Cosmetics

### Location

Los Angeles, CA

### Challenge

Improve productivity, enhance security & compliance, and improve scalability.

### Featured Services

DevOps (CI/CD), Containers, Migration, Security



With nClouds' expert DevOps and migration help, we've streamlined our infrastructure. Our engineers can now spend more time innovating to support our growing business and less time managing DevOps-related tasks."

— Anis Tayebali,  
CTO, Violet Grey

# Why AWS and nClouds

The CTO at Violet Grey reached out to APN Premier Consulting Partner, nClouds, for help in streamlining their AWS infrastructure and enhancing their security and compliance. After a technical deep-dive discussion, Violet Grey moved forward with nClouds' recommendations and leveraged nClouds' expertise and best practices in DevOps, containers, migration, and security.

## Violet Grey leveraged several Amazon Web Services:

- **Amazon CloudFront (CloudFront)** - A large-scale, global, and feature-rich CDN that provides Violet Grey with secure, scalable, and intelligently integrated application delivery.
- **Amazon CloudWatch (CloudWatch)** - Monitors applications, responds to systemwide performance changes, optimizes resource utilization, and provides a unified view of operational health.
- **Amazon ElastiCache for Redis** - An in-memory data structure service to enhance the ease-of-use and power of Redis, and improve availability, reliability, scalability, security, and performance.
- **Amazon Elastic Compute Cloud (Amazon EC2)** - A web service that provides Violet Grey with secure, resizable compute capacity in the cloud.
- **Amazon Elastic Container Registry (Amazon ECR)** - A fully-managed Docker container registry integrated with Amazon ECS that makes it easy for Violet Grey to store, manage, and deploy Docker container images.
- **Amazon Elastic Container Service (Amazon ECS)** - A highly scalable, high-performance container orchestration service that supports Docker containers and enables Violet Grey to run and scale containerized applications on AWS easily.
- **Amazon Relational Database Service (Amazon RDS)** is a web service that makes it easier to set up, operate, and scale a relational database in the AWS Cloud.
- **Amazon Simple Storage Service (Amazon S3)** - A flexible way to store and retrieve data, providing Violet Grey with cost optimization, access control, and compliance.
- **Amazon Virtual Private Cloud (Amazon VPC)** - Enables Violet Grey to provision a logically isolated section on AWS where they can launch AWS resources in a virtual network that they define.
- **AWS Application Load Balancer (AWS ALB)** - To support content-based routing and applications that run in containers.
- **AWS Auto Scaling** - Monitors Violet Grey's applications and automatically adjusts capacity to maintain steady, predictable performance at the lowest possible cost.
- **AWS Availability Zone (AWS AZ)** - One or more discrete data centers with redundant power, networking, and connectivity in an AWS Region, enabling Violet Grey to operate production applications and databases that are more highly available, fault-tolerant, and scalable than would be possible from a single data center.
- **AWS CloudFormation (CloudFormation)** - Allows Violet Grey to treat its infrastructure as code, automate operations, and bring up new environments.
- **AWS Identity and Access Management (IAM)** - To control Violet Grey's users' access to AWS services.
- **AWS Secrets Manager** - Helps Violet Grey to protect secrets needed to access applications, services, and IT resources. The service enables Violet Grey to easily rotate, manage, and retrieve database credentials, API keys, and other secrets throughout their lifecycle.
- **AWS Systems Manager Parameter Store** - Gives Violet Grey access to central, secure, durable, and highly available storage for application configuration and secrets. Parameter Store also integrates with AWS Identity and Access Management (IAM), allowing fine-grained access control to individual parameters or branches of a hierarchical tree.



## Violet Grey's solution stack also includes additional, essential third-party tools and services:

- **Alert Logic Web Application Firewall (WAF) as a Service** - Fully managed critical web application protection with features such as end-to-end encryption, rate limiting, data masking, and connection throttling.

- **CircleCI** - A continuous integration and delivery platform that makes it easy for Violet Grey to rapidly build and release quality software at scale.
- **Docker** - An open-source container platform to build, ship, and run distributed applications.
- **Kibana** - An open-source front-end application that sits on top of the ELK Stack,, providing search and data visualization capabilities for data indexed in Elasticsearch.
- **OpenVPN Access Server** - A full-featured SSL VPN software solution to provide fine-grained access control of the infrastructure.

## nClouds Solution Architecture for Violet Grey

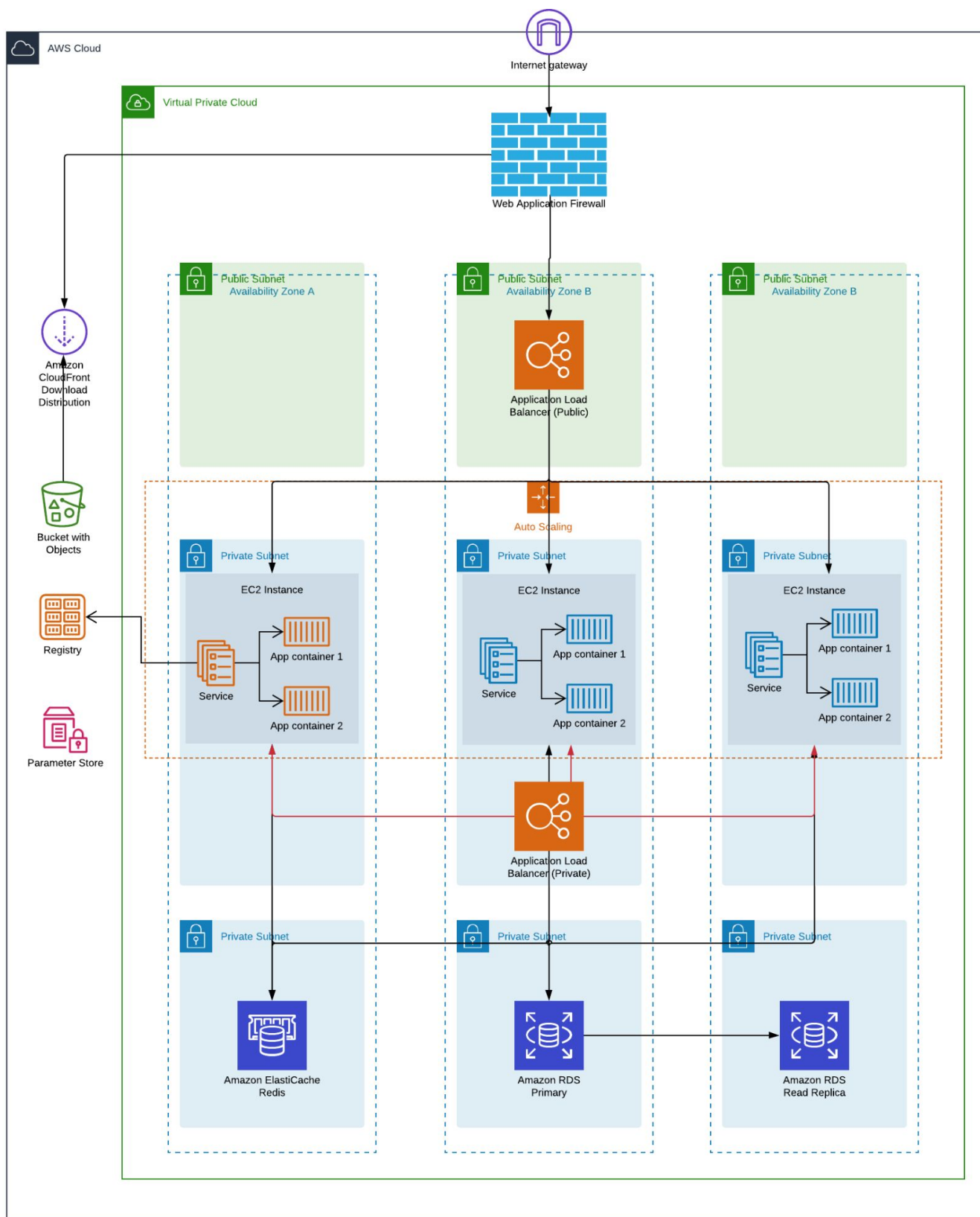
After in-depth discussions and infrastructure analysis, nClouds recommended that Violet Grey switch their Content Delivery Network (CDN) from Instart Logic to Amazon CloudFront to save money, reduce latency, and improve performance on their website. To optimize performance and security and effectively manage cost, CloudFront works with Amazon S3 to serve and protect the content.

nClouds streamlined the infrastructure by using CloudFormation to automate resource creation, and by migrating microservices (that were running on Cloud66 and Ruby services on AWS Elastic Beanstalk) to a single Amazon ECS platform.

The CloudFormation core infrastructure buildout includes an Amazon VPC with three AWS AZs to enhance availability, fault-tolerance, and scalability. In each AZ is a public subnet and two private subnets. AWS Auto Scaling between the public subnets and private subnets monitors Violet Grey's applications and automatically adjusts capacity to maintain steady, predictable performance at the lowest possible cost. Three of the private subnets each include an Amazon EC2 instance. Amazon ElastiCache for Redis, Amazon RDS Primary, and Amazon RDS Read Replica reside individually in the other three private subnets. AWS ALB supports content-based routing between the public and private subnets, and between the private subnets.

In preparation for Violet Grey's PCI assessment, nClouds installed Alert Logic WAF as a Service on CloudFront in front of the application. Security groups in the Amazon VPC act as a virtual firewall at the instance level to control inbound and outbound traffic. IAM roles manage access to the Amazon VPC via temporary security credentials. AWS Systems Manager Parameter Store integrates with IAM to provide fine-grained access control to individual parameters or branches of a hierarchical tree. AWS Secrets Manager protects the secrets needed to access applications, services, and IT resources.

# High-level architecture diagram:



# The Benefits

Teaming with nClouds, Violet Grey now has a streamlined infrastructure for their fast-growth business. The project has yielded numerous benefits:



## Improved DevOps productivity

Violet Grey's engineers have improved productivity and can spend more time on innovation. Streamlining the infrastructure — with CloudFormation's automation of resource creation and the migration of microservices to a single Amazon ECS platform — has significantly decreased the time the engineers spend on DevOps-related tasks.



## Enhanced security & PCI compliance

Violet Grey's enhanced security has prepared them for a PCI assessment to validate compliance with PCI DSS. Security and compliance are supported by Amazon S3, Amazon VPC, Amazon EC2, IAM, AWS Secrets Manager, AWS Systems Manager Parameter Store, and Alert Logic WAF as a Service.



## Improved scalability for ecommerce

Violet Grey's infrastructure now has three AWS AZs to enhance availability, fault-tolerance, and scalability. CloudFront, working with Amazon S3, optimizes their application's scalability, performance, and security while effectively managing cost. Improved scalability is also supported by Amazon ElastiCache for Redis, Amazon EC2, Amazon ECS, AWS Auto Scaling.

## 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.

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