nClouds Client Story

Percussion Software

How nClouds helped Percussion Software align the infrastructure of its SaaS CMS platform with AWS Well-Architected Framework best practices to enhance scalability and expand its customer base.

About Percussion Software

Percussion Software was founded in 1994. Its intuitive, user-friendly Content Management System (CMS) allows businesses, higher education, financial services, and state and local governments to personalize the creation of their websites. Percussion Software's CMS 8.0 Cloud Platform delivers a secure, decoupled, open-source, and optionally headless technology stack for digital marketers and developers to jumpstart their organization's content. CMS 8.0 Cloud Platform offers unique features like its patent-pending LiveFirst migration utility, drag-and-drop template editing, and a widget-based page management protocol. Besides saving you time and money, Percussion Software makes creating and publishing web content a "look forward to" experience because Percussion CMS makes it easy to create and manage content-rich, SEO-friendly websites. To learn more, go to percussion.com.

percussion

Industry

Software, Marketing, Public Sector

Location

Burlington, MA

Challenge

Align the infrastructure of its SaaS CMS platform with AWS Well-Architected Framework best practices to enhance scalability and expand its customer base.

Featured Services

Managed DevOps Services, AWS Well-Architected Review

Benefits Summary

- Accelerated time-to-market for new features and innovations
- Reduced costs
- Improved performance efficiency, scalability, reliability, and availability
- Enhanced security and compliance

CHALLENGE

Align the infrastructure of its SaaS CMS platform with AWS Well-Architected Framework best practices to enhance scalability and expand its customer base.

Why AWS and nClouds

Percussion Software wanted to enhance scalability and expand its customer base. Following an AWS Well-Architected Framework Review (WAFR), the company needed a team of AWS DevOps professionals to support its multi-tenant SaaS CMS platform and implement infrastructure remediations based on findings of the WAFR. Percussion Software selected nClouds to provide Managed DevOps Services because of its expertise in AWS and its AWS-certified competencies in DevOps and SaaS.

Percussion Software leveraged several Amazon Web Services:

- **Amazon API Gateway (API Gateway)** - Makes it easy for Percussion Software's developers to create, publish, maintain, monitor, and secure APIs at any scale.
- **Amazon CloudFront (CloudFront)** - A large-scale, global, and feature-rich content delivery network (CDN) that provides Percussion Software with secure, scalable, and intelligently integrated application delivery.
- **Amazon CloudWatch (CloudWatch)** - Monitors applications, responds to system-wide performance changes, optimizes resource utilization, and provides a unified view of operational health.
- **Amazon Cognito** - Lets Percussion Software add user sign-up, sign-in, and access control to its web and mobile apps quickly and easily. It scales to millions of users and supports sign-in with social identity providers such as Facebook, Google, and Amazon, and enterprise identity providers via SAML 2.0.
- **Amazon DynamoDB** - A key-value and document database that delivers single-digit millisecond performance at any scale.
- **Amazon Elastic Compute Cloud (Amazon EC2)** - A web service that provides secure, resizable compute capacity in the cloud. It is designed to make web-scale cloud computing easier for developers. It provides complete control of computing resources and runs on Amazon's proven computing environment.
- **Amazon Elastic File System (Amazon EFS)** - Provides Percussion Software with a simple, scalable, fully managed elastic network file system (NFS) for use with AWS services and on-premises resources.
- **Amazon Route 53** - A highly available and scalable cloud Domain Name System (DNS) web service that provides a reliable and cost-effective way to route Percussion Software's end users to internet applications.
- **Amazon Simple Email Service (Amazon SES)** - A cloud-based email sending service designed to help digital marketers and application developers send marketing, notification, and transactional emails.
- **Amazon Simple Notification Service (Amazon SNS)** - A highly available, durable, secure, fully managed pub/sub messaging service that enables Percussion Software to decouple microservices, distributed systems, and serverless applications.

> "I'm impressed with how nClouds' Managed DevOps Services team responds quickly to our ever-changing requirements and provides us with innovative solutions to our issues. nClouds' automation of our AWS architecture enables us to quickly provision resources for new customers to support our fast-growing business."
>
> **Michael Alden,**
> CEO, Percussion Software

- **Amazon Simple Storage Service (Amazon S3)** - A flexible way to store and retrieve data, providing Percussion Software with cost optimization, access control, and compliance.
- **Amazon Virtual Private Cloud (Amazon VPC)** - Enables Percussion Software 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 Backup** - A fully managed backup service that makes it easy for Percussion Software to centralize and automate the backup of data across AWS services.
- **AWS CloudFormation (CloudFormation)** - Allows Percussion Software to treat its infrastructure as code, automate operations, and bring up new environments.
- **AWS Elastic Beanstalk** - An easy-to-use service for deploying and scaling web applications and services developed with Java, .NET, PHP, Node.js, Python, Ruby, Go, and Docker on familiar servers such as Apache, NGINX, Passenger, and IIS.
- **AWS Elastic Load Balancing (ELB)** - Automatically distributes incoming application traffic across multiple targets, such as Amazon EC2 instances, containers, IP addresses, and Lambda functions. It can handle the varying load of application traffic in a single Availability Zone or across multiple Availability Zones.
- **AWS Graviton2** - Amazon's second-generation processor based on Arm's 64-bit Neoverse core design and is produced using a 7-nanometer process. However, this isn't simply a rebrand or direct license of an Arm design. Graviton2 features custom silicon designed by AWS for its role in the company's cloud data centers.
- **AWS Identity and Access Management (IAM)** - To control users' access to AWS services.
- **AWS Lambda (Lambda)** - Enables Percussion Software to run code without provisioning or managing servers. Pay only for the compute time consumed — there is no charge when code is not running.
- **AWS Serverless Application Model (SAM)** - An open-source framework for building serverless applications. It provides shorthand syntax to express functions, APIs, databases, and event source mappings. With just a few lines per resource, you can define the application you want and model it using YAML.
- **AWS Systems Manager (formerly known as SSM)** - An AWS service to view and control your infrastructure on AWS.
- **AWS Virtual Private Network (AWS VPN)** - Enables Percussion Software to establish a secure and private encrypted tunnel from its network or device to the AWS global network.
- **AWS Web Application Firewall (AWS WAF)** - Helps protect web applications or APIs against common web exploits that may affect availability, compromise security, or consume excessive resources.

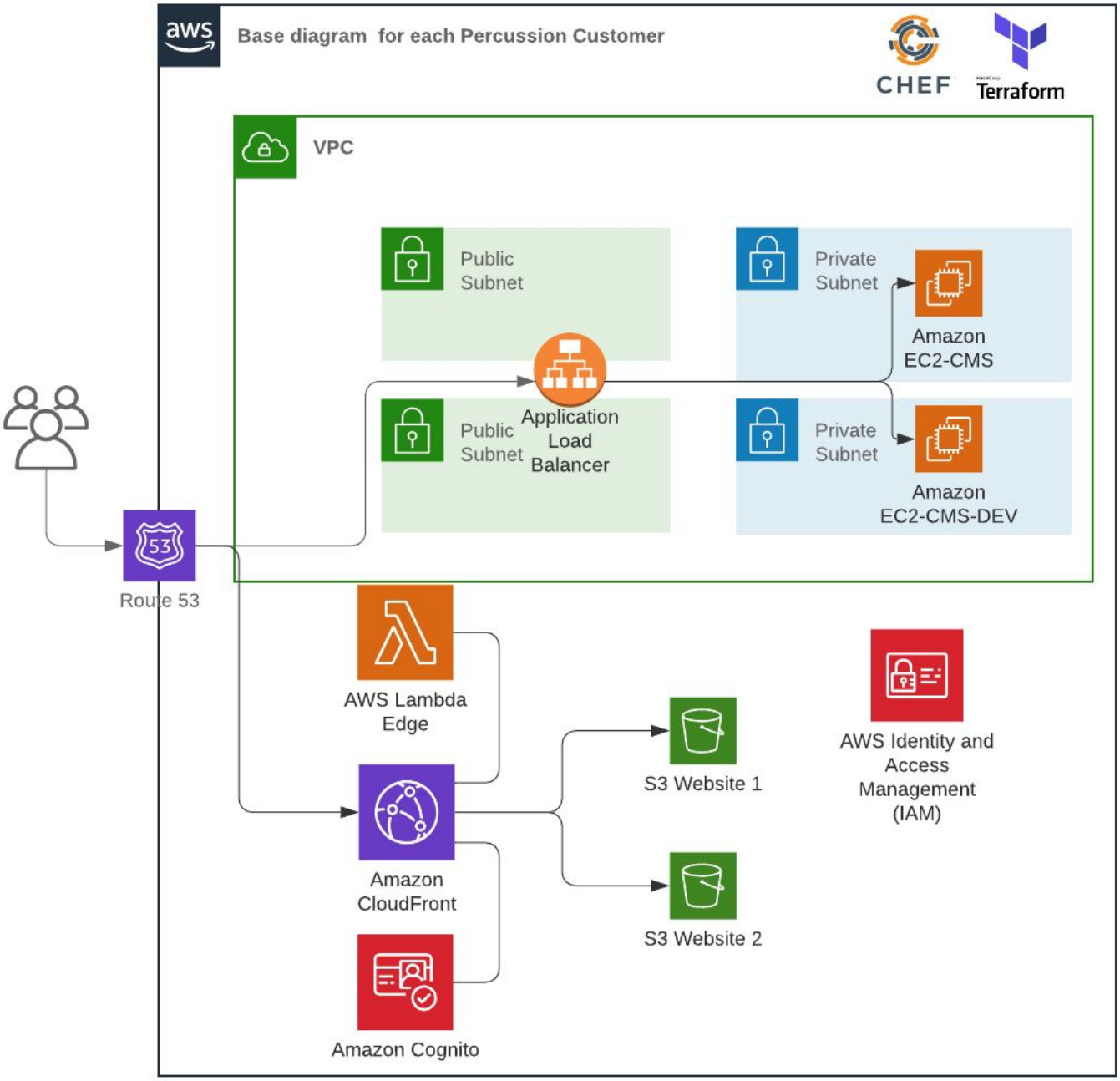
Percussion Software’s solution stack also included additional, essential third-party tools:

- **Chef** - Provides automated configuration management to enable consistent configurations at scale.
- **GitHub** - A development platform to host and review code, manage projects, and build software.
- **HashiCorp Terraform** - An infrastructure-as-code (IaC) tool that allows Percussion Software to create, update, and version its AWS infrastructure.

nClouds' Solution Architecture for Percussion Software

Percussion Software’s workloads are primarily CMS (content management) systems consisting of AWS services such as Amazon EC2, Amazon S3, AWS IAM, AWS ELB, Amazon VPC, AWS VPN, Amazon DynamoDB, AWS Elastic Beanstalk and CloudFront. They asked nClouds to provide Managed DevOps services. nClouds focused on building a CI/CD pipeline, implementing automation to apply product upgrades, creating new customer sites and subnets to support business growth, and implementing AWS services to provide messaging and notifications.

nClouds' Solution Architecture for Percussion Software



The Benefits

Teaming with nClouds, Percussion Software now has an improved architecture to support its growing customer base. The project has yielded numerous benefits:

Accelerated time-to-market for new features and innovations

With nClouds Managed DevOps Services, Percussion Software's engineers have more time to focus on new features and innovations. Implementing IaC (CloudFormation, Terraform) and automated services (Amazon EC2, Amazon SNS, AWS Backup, AWS ELB, Lambda, Chef) enable Percussion Software to build faster and more efficiently.

Reduced costs

Tenant-specific limits are monitored to scale the infrastructure and optimize costs based on tier-based consumption and volume-based discounts. Migrating the new version of Percussion Software's CMS and instances from Amazon EC2 to Graviton2 saves costs because Graviton2 instances are less expensive. Amazon Route 53 provides a reliable and cost-effective way to route Percussion Software's end users to internet applications. Amazon S3's Intelligent-Tiering optimizes storage costs. Lambda enables Percussion Software to run code and only pay for the compute time consumed — there is no charge when code is not running.

Improved performance efficiency, scalability, reliability, and availability

There are automated processes and policies in place to manage the lifecycle of active and inactive tenants of Percussion Software's SaaS platform and to assess, triage, and escalate tenant-specific issues. CloudWatch monitoring evaluates and optimizes individual tenant performance without requiring this optimization to be applied to all tenants. Amazon DynamoDB delivers single-digit millisecond performance at any scale. Amazon EC2 enables Percussion Software to scale the database and mitigate database performance issues so that a considerable number of tenants can be onboarded and maintained without the risk of performance degradation. Amazon CloudFront securely delivers content with low latency and high transfer speeds. AWS ALB and AWS ELB improve scalability, availability, and fault tolerance by distributing workloads across multiple compute resources and automatically scaling incoming traffic changes over time.

Enhanced security and compliance

In line with SaaS security and compliance best practices, Percussion Software's CMS platform has role-based access control (RBAC), prevents cross-tenant access to system resources, and meets required compliance standards for its tenants. Its APIs have security and mitigation strategies for DDoS attacks. AWS VPN establishes a secure and private encrypted tunnel to the AWS global network from its network or device. AWS WAF protects web applications or APIs against common web exploits that may affect availability, compromise security, or consume excessive resources. Amazon VPC enables Percussion Software to provision a logically isolated section on AWS.

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.

1001 Park Lane, Suite B, Suisun City, CA 94585