nClouds | AWS Case Studies

GeoTix

How nClouds helped GeoTix automate and containerize their cloud infrastructure to enhance scalability, improve uptime, and optimize time to market.

GEOTIX

Industry

Events, SaaS, Social Media, Software, Ticketing

Location

Traverse City, MI

Challenge

Fast-growth startup GeoTix needed to deliver new features faster. They wanted an infrastructure that is scalable and highly available. GeoTix sought to speed up their development process, time to market, and operations.

Featured Services

Containerization (Amazon Elastic Container Service, Amazon Elastic Container Registry), infrastructure automation (AWS CloudFormation, Amazon CloudWatch, AWS Application Load Balancer), nClouds 24x7 on-call support

About GeoTix

Founded in 2015, GeoTix is the brainchild of MyNorth Media, a Michigan-based print and online publisher. In 2013 they launched MyNorthTickets, a ticket portal to buy tickets to local events in Northern Michigan instead of using national ticketing sites.

Based on the success of MyNorthTickets, in 2017 they launched GeoTix software-as-a-service (SaaS) for other cities and regions. Disrupting the model of national ticket sales providers, GeoTix provides local and regional media companies with an innovative means to grow both their digital portfolio and non-advertising revenue, while building their brand and role within their communities. To learn more, go to www.geotix.com

Benefits Summary

Enhanced scalability

99% uptime

Optimized time to market

> I'm impressed by how nClouds worked as an extension of our team to help GeoTix turbocharge our infrastructure and support our future growth."
> **— Russell Edens**
> **CTO, GeoTix**

CHALLENGE

GeoTix needed an automated, containerized cloud infrastructure to enhance scalability, improve uptime, and deliver new features faster.

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Why AWS and nClouds

GeoTix selected nClouds, a Premier Consulting Partner in the Amazon Web Services Partner Network (APN), to help automate their infrastructure to enable them to focus on developing new features. nClouds applied their extensive experience in containerization to provide GeoTix with the AWS expertise that is required to automate deployments of applications and infrastructure.

GeoTix leveraged several Amazon Web Services:

- **AWS CloudFormation -** Enables the nDimensional team to run infrastructure as code and deploy AWS services in multiple configurations.
- **Amazon CloudFront -** A large-scale, global, and feature-rich CDN that provides GeoTix with secure, scalable, and intelligently integrated application delivery.
- **Amazon 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 (EC2) -** A web service that provides GeoTix 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 GeoTix to store, manage, and deploy Docker container images.
- **Amazon Elastic Container Service (Amazon ECS) -** Enables GeoTix to run and scale containerized applications on AWS easily.
- **Amazon RDS for PostgreSQL -** Makes it easy for GeoTix to set up, operate, and scale PostgreSQL deployments in the cloud.
- **Amazon Route 53 -** A highly available and scalable cloud Domain Name System (DNS) web service, to provide a reliable and cost-effective way to route GeoTix's end users to Internet applications.
- **Amazon Simple Notification Service (SNS) -** A highly available, durable, secure, fully managed pub/sub messaging service that enables GeoTix to decouple microservices, distributed systems, and serverless applications.
- **Amazon Simple Storage Service (Amazon S3) -** A flexible way to store and retrieve data, providing GeoTix with cost optimization, access control, and compliance.
- **Amazon Virtual Private Cloud (Amazon VPC) -** Enables GeoTix to provision a logically isolated section of the AWS Cloud where they can launch AWS resources in a virtual network that they define.
- **AWS Application Load Balancer -** To support content-based routing and applications that run in containers.
- **AWS Auto Scaling -** Monitors GeoTix's applications and automatically adjusts capacity to maintain steady, predictable performance at the lowest possible cost.
- **AWS CloudFormation -** Allows GeoTix to treat its infrastructure as code, to automate operations and bring up new environments.
- **AWS Lambda -** Enables GeoTix to run code without provisioning or managing servers.
- **AWS Systems Manager Parameter Store -** Provides GeoTix with secure, hierarchical storage for configuration data management and secrets management.

aws partner network

Premier
Consulting Partner

- AWS CloudFormation
- Data & Analytics Competency
- DevOps Competency
- Immersion Day Partner
- Marketplace Seller

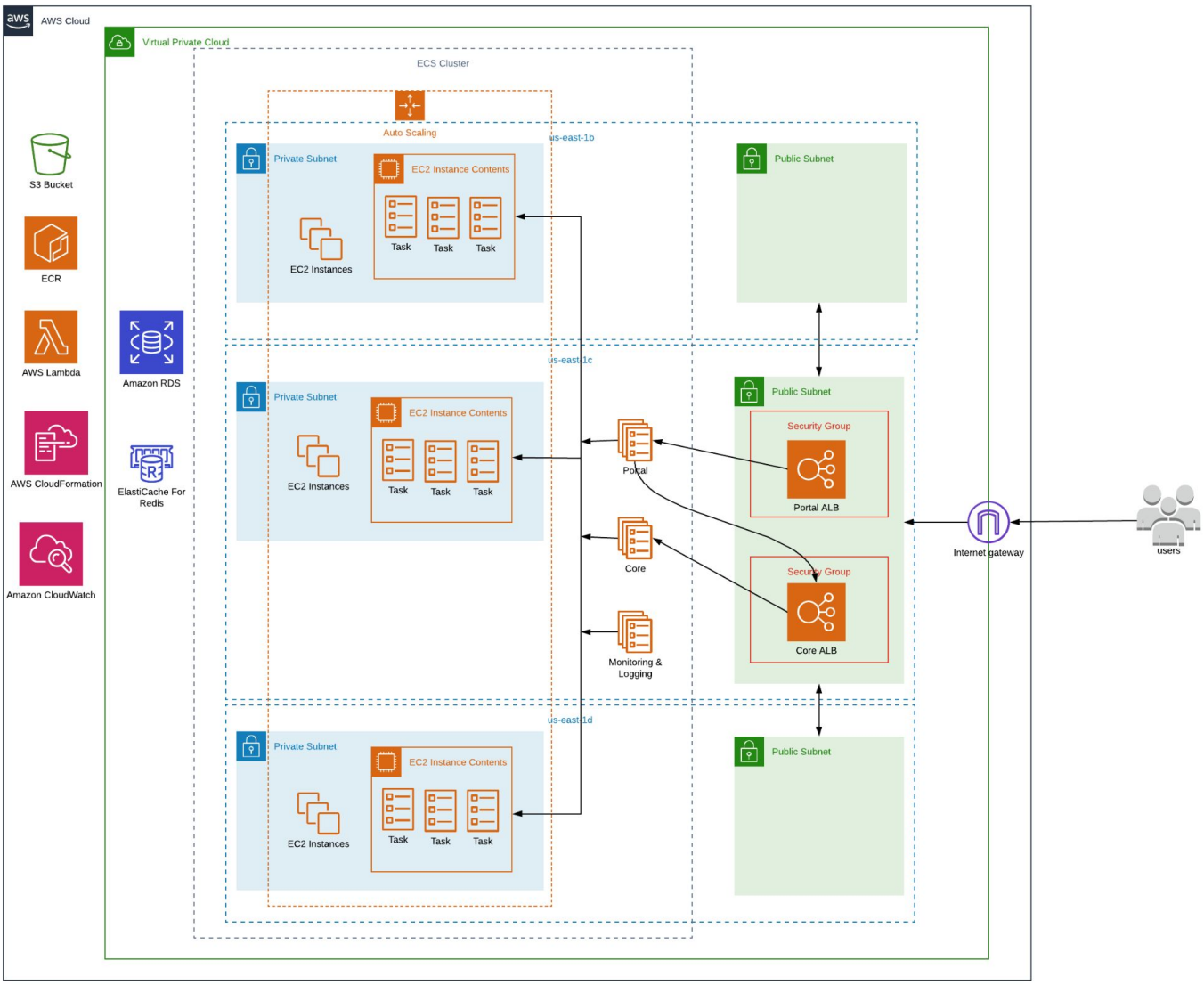
aws partner network

Premier
Consulting Partner

- Migration Competency
- MSP Partner
- Public Sector Partner
- SaaS Competency
- Well-Architected Partner Program

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

- **Datadog -** A monitoring service providing visibility into GeoTix's entire environment.
- **Docker -** An open-source container platform to build, ship, and run distributed applications.
- **Honeybadger -** Provides DevOps monitoring of GeoTix's production stack by combining exception monitoring, uptime monitoring, and check-in monitoring.
- **Jenkins -** An open source automation server written in Java, to support CI/CD.
- **Logz.io -** Provides Elasticsearch, Logstash, and Kibana (ELK) on the cloud with alerts, unlimited scalability, and free ELK apps to index, search & visualize GeoTix's data.
- **nClouds 24x7 on-call support -** World-class, SLA-level support by nClouds lets GeoTix focus on new feature development.
- **New Relic -** A web and mobile application performance service designed to monitor applications in real time. It provides GeoTix with alerts on application downtime before their users encounter problems.
- **Status.io -** Provides hosted system status pages with incident tracking, subscriber notifications during outages and planned maintenance, and metrics.



High-level architecture diagram

nClouds' Solution Architecture for GeoTix

GeoTix engaged with nClouds to help them test and build a deployment pipeline, create an automated, containerized infrastructure on AWS, and provide 24x7 on-call support.

Running in the AWS Cloud is AWS CloudFormation (to automate operations and bring up new environments), Amazon CloudWatch (to monitor applications and optimize resource utilization), Amazon ECR (to store, manage, and deploy Docker container images), AWS Lambda (to automate their IT processes), and Amazon S3 (to store and retrieve data).

An Amazon Virtual Private Cloud (Amazon VPC) was provisioned in a logically isolated section of the AWS Cloud. The Amazon VPC includes AWS Auto Scaling at the service and cluster levels (to monitor applications and automatically adjust capacity), Amazon RDS for PostgreSQL (for PostgreSQL deployments in the cloud) and Amazon ElastiCache for Redis (an in-memory data structure service for Redis). To enable GeoTix's public-facing web application while maintaining backend servers that aren't publicly accessible, the VPC includes:

To enable GeoTix's public-facing web application while maintaining backend servers that aren't publicly accessible, the VPC includes:

- An Amazon ECS cluster of three private subnets with EC2 instances running tasks (each in a separate Availability Zone)
- Three public subnets (each in the same respective Availability Zone as one of the private subnets).
- An internet-facing AWS Application Load Balancer in one of the public subnets attached to the backend Amazon EC2 instances that are in the private subnets.

The architecture includes Datadog (for monitoring and log management) and New Relic (for monitoring and alerting).

The Benefits

Teaming with nClouds, GeoTix implemented a modernized, reliable, and scalable environment on AWS cloud. The project has yielded numerous benefits:

Enhanced scalability

GeoTix's architecture now has best-practices scalability to handle changes in demand or requirements to support their fast-growing business. Scalability is supported by AWS Application Load Balancer, AWS Auto Scaling, Amazon CloudFront, Amazon ECS, and Amazon RDS for PostgreSQL.

99% uptime

GeoTix now has 99% uptime and enhanced reliability (supported by Amazon ElastiCache for Redis, and Amazon Route 53), monitoring and instant alerts (provided by Logz.io, New Relic, Datadog, and Honeybadger), and a Blue-Green deployment process to minimize risk when deploying new releases by running two identical production environments.

Optimized time to market

With containerization and automation, GeoTix has more flexible deployment. They can build new environments and deliver new features faster. It takes just seconds to create, replicate, or destroy containers, resulting in a faster development process and time to market. GeoTix can now quickly go from ideating new features to creating, testing, and merging them into their code, to ultimately delivering new features into production.

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.