

# nClouds | AWS Case Studies

## CloudCar

**Industry**

Automotive, connected car technology, machine learning

**Location**

Palo Alto, CA

**Challenge**

Deliver cloud scale and security.

**Featured Services**

DevOps, cloud infrastructure, security, 24x7 support

## About CloudCar

CloudCar delivers cloud-based machine learning solutions to leading automotive original equipment manufacturers (OEMs) that enhance the driving experience. Their platform uses natural language voice technology, combined with innovations in machine learning, to deliver unique and intuitive driver experiences, while providing OEMs valuable business opportunities and monetization. For more information, visit: [cloudcar.com](https://cloudcar.com).

## CHALLENGE

### Deliver cloud scale and security

CloudCar has been delivering cloud-based solutions to automotive OEMs since 2011. Their services and content give OEMs the ability to gather and manage data, create unique driver-centric intuitive experiences, and rapidly deploy services to new geographic regions without requiring firmware updates.

In 2014, CloudCar began to experience exponential growth when their product made waves in the press and within elite automotive circles. As the organization scaled and they began to train new employees, it became apparent they lacked an infrastructure that could securely manage user data from multiple sources. The lack of a secure infrastructure presented various issues:

- Everyone had unrestricted access to the company's network security groups.
- Servers were running on classic EC2 without VPCs or any kind of restrictions.
- All the ports were publicly open for each service on the server.
- IAM roles were used in a very limited manner, and keys were shared for SSH access instead of using individual users.

CloudCar wanted to implement a new, secure solution that would enable them to process large amounts of data without impacting their existing infrastructure. To meet the requirements of a major client review, the team set a 15-day project deadline to deliver an updated infrastructure.

## Why AWS and nClouds

AWS Partner CloudCar worked with nClouds, an Advanced Consulting Partner of the AWS Partner Network (APN), to update their infrastructure using cloud best practices and procedures. The proposed solution would allow CloudCar to scale up and down on demand or based on parameters such as load, memory usage, and traffic.

To improve security, nClouds helped CloudCar implement IAM based roles to manage access to services and launched their infrastructure in a VPC, enabling private and public subnets based on which servers needed to be public facing.

nClouds also used nested templates in AWS CloudFormation to launch CloudCar's entire infrastructure as code and AWS OpsWorks and Chef to maintain an automated deployment pipeline.

## In building its new deployment pipeline, CloudCar leveraged several Amazon Web Services:

- **AWS CloudFormation** - Enables the CloudCar team to run infrastructure as code and deploy AWS services in multiple configurations.
- **AWS CloudTrail** - Provides the CloudCar team with event history of AWS account activity to simplify security analysis, resource change tracking, and troubleshooting.
- **AWS OpsWorks** - A fully managed service providing managed instances of Chef to automate the deployment pipeline.

## The solution stack includes additional essential tools and services:

- **Chef** - A configuration management tool that integrates with OpsWorks to turn infrastructure into code.
- **Apache Kafka** - A distributed platform for building real-time streaming data pipelines.
- **Apache Zookeeper** - An open source server that reliably coordinates distributed processes.
- **Apache Storm** - A distributed framework providing real-time data processing capabilities.
- **Solr** - An open source enterprise search platform written in Java.
- **Solr Cloud** - Provides a highly available, fault tolerant environment for distributing indexed content and query requests across multiple servers.
- **mongoDB** - An open-source cross-platform document-oriented database program.
- **Icinga** - An open-source computer system and network monitoring application.

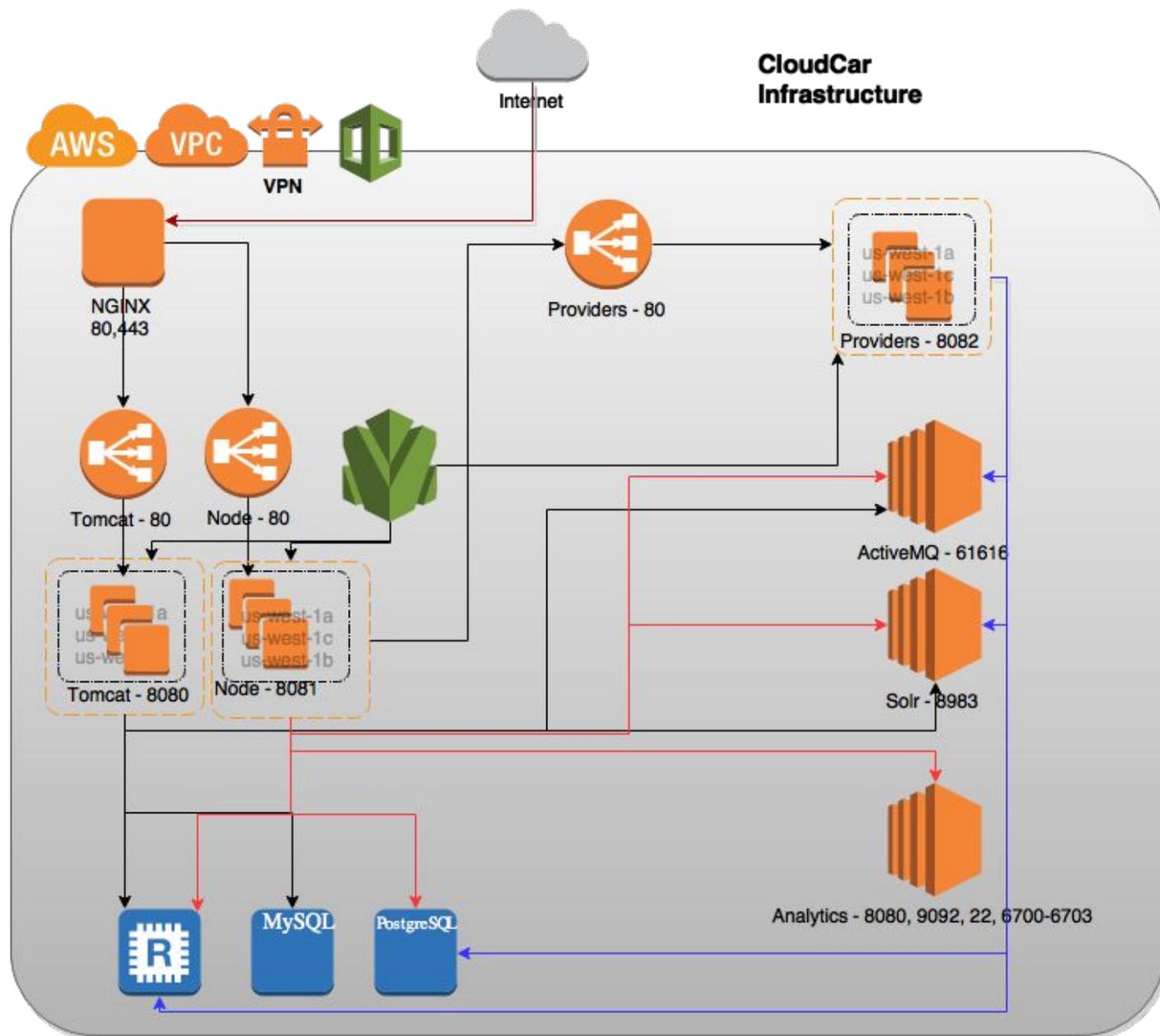


“ Starting with our first engagement, a 15-day sprint to meet strict compliance and infrastructure requirements of our biggest client, it was clear the nClouds team takes our partnership seriously, and have the skills to help us win. They are an essential partner.”

**Avi Baytel,**  
**Operations & Customer**  
**Support Manager,**  
**CloudCar**

# nClouds Solution Architecture for CloudCar

nClouds was able to meet CloudCar’s initial, challenging 15-day deadline and move their entire environment over to a virtual private cloud (VPC), where it was then only accessible via a secure connection to the virtual private network (VPN). Apache Kafka, Apache Storm, and Apache Zookeeper were also used as big data solutions, allowing CloudCar to process terabytes of data.



# The Benefits



## Better security.

With everything on a VPC, CloudCar is able to provide vastly improved security that scales.



## Improved responsiveness.

CloudCar engages nClouds to provide 24/7 365 days-a-year, SLA-level support for its infrastructure for any issues that may arise. Also, CloudCar's use of AWS CloudTrail and Icinga provides monitoring and actionable insights into system performance, cost, and security.



## Better products.

CloudCar now has an infrastructure that reflects the quality of its brand, products, and driving experiences enabled by its OEM customers. Its flexible infrastructure facilitates innovation, and automated deployment capabilities help deliver new products faster.

### 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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