BLUE RIDGE | cloudthat | aws

Case Study

Blue Ridge Global

A CloudThat Success Story!

Demand Planning Software
Speeds Up Time-to-Market
& Optimizes Cost Through
Best DevOps Practices

What to expect from this Case Study?

Blue Ridge Global

A Demand Planning Software company with an objective to create Resilient Supply Chains accomplished a better application start-up time (5-6 seconds), reduced downtime (less than 1 minute), and an overall reduction in cost (by 10%) by embracing best-in-class DevOps practices.

CloudThat

CloudThat's DevOps & DevSecOps team assessed the client's requirements to reduce downtime, improve application start-up time and minimize costs, by providing a DevOps solution using AWS EC2, AWS CloudFormation, AWS EKS, Amazon EBS (Elastic Block Store), Amazon ECR (Elastic Container Registry), and AWS ELB (Elastic Load Balancer) services.

ABOUT
COMPANY

About Blue Ridge

Blue Ridge blends the disciplines of supply chain demand planning and pricing under a fully configurable cloud-based platform. The Blue Ridge planning and pricing platform provides business leaders app simplicity that uniquely integrates data science-rich inventory forecasting capabilities with price optimization insights.

Blue Ridge empowers wholesale distributors, specialty retailers, and discrete manufacturers with the capability to adapt to the market, product, and competitive challenges by effectively managing an ever-volatile supply chain.

About CloudThat

CloudThat is a renowned name in the cloud arena with its consulting & training services since 2012. We have a global presence serving clients from 28+ countries. As an AWS Advanced Consulting Partner, and AWS Partner for DevOps Services Competency we have helped small, medium, and big organizations to migrate to the cloud and reap the benefits of cloud adoption. Through our Cloud Data Platform service, we have helped organizations to have efficient Data storage, processing, transformation, and modeling strategies.

The Blue Ridge Challenge

01 Slow-release cycles take weeks together to release new features.

**02** Uncertainty regarding rapid time to market and faster release cycle activities.

03 Reduction required in operational overhead while keeping the release cycle rolling at a minimal cost and lacked support of a dedicated technical team. activities.

04 Lack of transparency in resolving errors.

05 Lack of smoother version updates and rollbacks resulting in improper version updates.

06 Inability to access the real-time application logs from their existing monitoring setup using Datadog.

07 Unavailability of continuous application deployment.
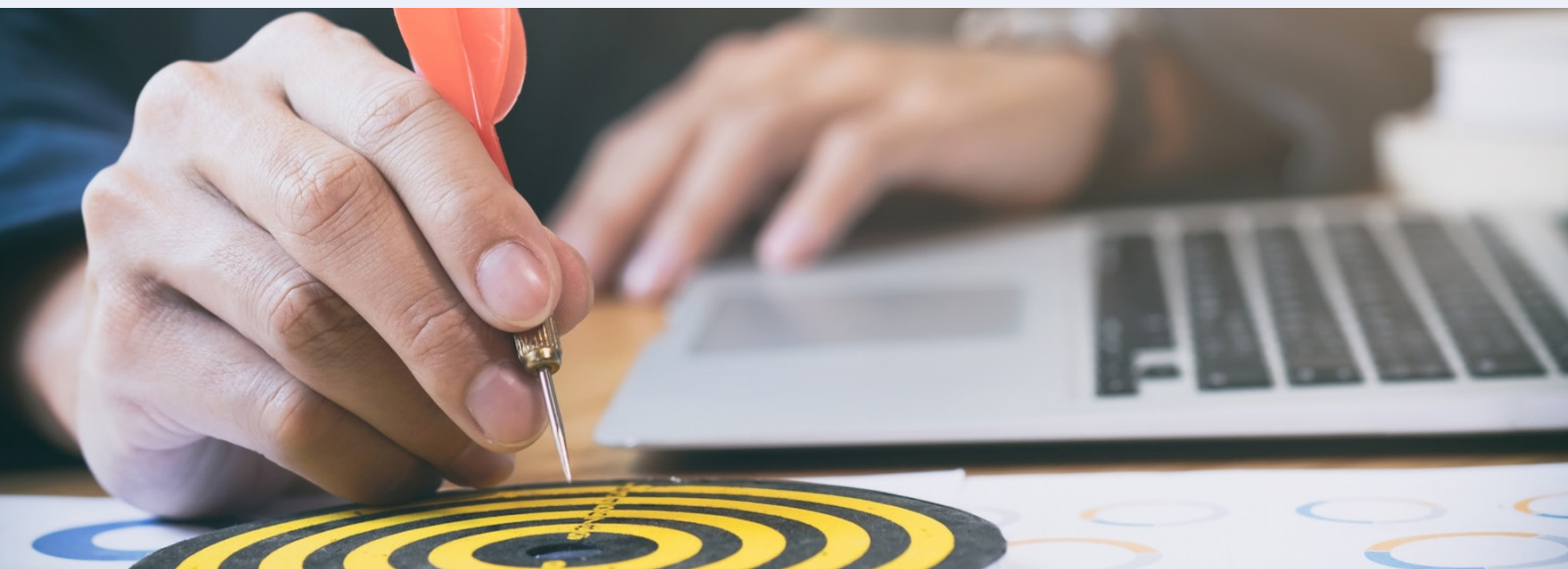
The Business Objectives

Our DevOps team assessed the client's requirements and came up with the following business objectives:

- Migrate applications from server-based deployments to container-based deployments.

- Implement microservices-based architecture for web applications.

- Automate the provisioning of the infrastructure on AWS.

- Configure a container repository.

- Setup single deployment for login application and individual deployment per tenant for all other applications.

- Setup auto-scaling strategies for effective use of resources and to achieve high availability.

- Configure application monitoring and logging.

- Setup an internet-facing load balancer.

- Set up CI/CD pipeline for deployment automation and fast releases.

CloudThat Solution

The DevOps team specifically identified the client's needs to produce the following solution:

- Designed and set up an Elastic Kubernetes Service (EKS) cluster.Configured both Linux and Windows nodes. Enabled cluster autoscaling.

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- Configured AWS Load Balancer Controller and Nginx Ingress controller.

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- Containerized the .NET applications and deployed them to ECR and resolved application-related errors.

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- Deployed Highly available, scalable, fault-tolerant microservices to EKS for the specific namespaces.

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- Setup single deployment for login applications and exposed using an AWS application load balancer.

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- Setup dedicated Kubernetes Deployment resource per tenant for all other applications. Applications are exposed using cluster-IP service type.

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- Implemented highly available Nginx ingress backed by AWS NLB for traffic management. Further, configured host-based routing along with the ingress resource.

- Accomplished HPA enablement based on CPU and memory consumptions.

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- Successfully implemented infrastructure and application monitoring with AWS CloudWatch and Datadog.

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- Integrated Datadog with EKS by ensuring container logs are accessible from Datadog Dashboard.

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- Successfully integrated TeamCity with BitBucket by configuring it with TeamCity project.

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- Integrated TeamCity with ECR by adding ECR connection in TeamCity project configuration and by adding docker support in build configuration.

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- Accomplished integration of Octopus with ECR by adding AWS ECR as an Octopus External Feed.

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- Integrated Octopus Deploy with EKS by adding EKS Cluster as a Kubernetes target. Create service accounts to configure the added Kubernetes target.

Third-Party Applications Used

Nginx Ingress Controller

The NGINX Ingress controller will listen to all the ingress events from all the namespaces and add corresponding directives and rules into the NGINX configuration file.

Log Monitor

Log Monitor is a log tool for Windows Containers. It monitors configured log sources and pipes a formatted output to STDOUT

Datadog

Datadog gives you comprehensive coverage of your dynamic infrastructure and applications with features like auto-discovery to track services across containers.

TeamCity

TeamCity provides powerful continuous integration out of the box. This CI and CD server provides out-of-the-box continuous unit testing, code quality analysis, and early reporting on build problems.

Octopus Deploy

Octopus Deploy is an automated deployment and release management server. It simplifies managing releases, automating complex application deployments, and automating routine and emergency operations tasks.

AWS Services Put-into-Action

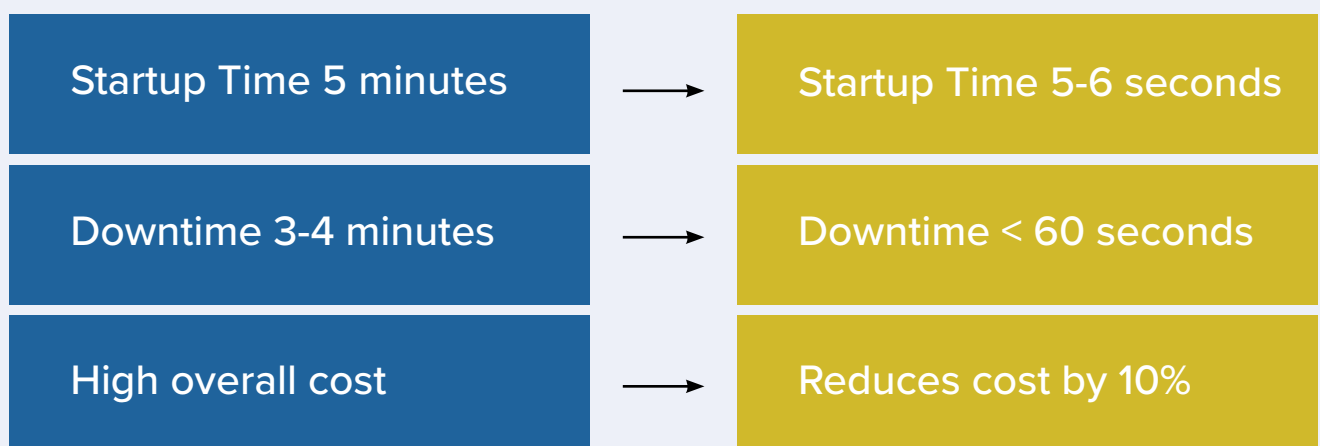|		
AWS CloudFormation	**AWS EKS**	**AWS EC2**
Amazon EBS	**Amazon Elastic Container Registry (ECR)**	**AWS Elastic Load Balancer (ELB)**

A Successful Outcome!

- Performance of applications witnessed a significant improvement by executing on pods in the cluster. Reduction in startup time from 5 mins to 5-6 seconds achieved.

- With the rolling update strategy in Kubernetes, the downtime (tenant onboarding time) was significantly reduced as the Docker image contains the new tenant. Downtime was reduced from 3 to 4 minutes to less than a minute.

- Significantly reduced operational overhead in terms of:

  - Automated infrastructure provisioning using eksctl and CloudFormation.
  - The combination of HPA and cluster Autoscaler facilitated smooth scaling of resources based on defined criteria.

- With CI/CD implementation and related DevOps best practices we facilitated new feature releases and rollbacks with zero downtime and deployments spanning within minutes.

- Minimized resource wastage (over and under-utilization) and reduced the overall cost by making use of microservice-based architecture combined with Horizontal-Pod-Autoscaler (HPA) and Cluster Autoscaler by 10%.

- Provisioned custom features with specific version updates to each tenant by using dedicated deployment design for each tenant.

- Enabled developers to view the application logs from Datadog in real-time and make appropriate code changes to resolve the same.

- Fostered business growth through better implementation of the organizational SLA and internal process framework by setting up the client multi-environment for application deployment.

Graphical Representation of Salient outcomes

Startup Time 5 minutes	→ Startup Time 5-6 seconds
Downtime 3-4 minutes	→ Downtime < 60 seconds
High overall cost	→ Reduces cost by 10%

Our journey

CloudThat pioneers cloud consultancy services with more than a decade of experience. We are an AWS Advanced Services Partner and an AWS Partner in DevOps Services Competency. We facilitate our clients to build an extremely secure network, keeping any fraudulent activities at bay through our Well-Architected Infrastructure expertise.

Led by Bhavesh Goswami, Founder & CEO, with rich experience in implementing challenging projects for Amazon and Microsoft prior to his entrepreneurial journey. We are driven by a 150+ cloud-agnostic and tech-heavy dedicated team facilitating organizations to accelerate cloud adoption.

Why You Should Choose CloudThat Consulting Services

We are an AWS Advanced Consulting Partner and a House of All-Encompassing IT Services on the Cloud. With our decade of experience in consulting services, we have helped organizations to define cloud strategy, build solutions, and manage their infrastructure.

We offer vivid consulting services like Multi-Cloud Security & Compliance, Cloud Enablement Services, Cloud-Native Application Development, OTT-Video Tech Delivery Services, and System Integration Services to 100+ happy clients across the globe.

Cloud
Consultancy and
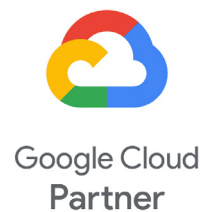Migration

Cloud
DevOps and
DevSecOps

Cloud
Data Platform
Analytics

Cloud
Media Services
Consultation

Cloud
Managed
Services

Cloud
Contract
Engineering

Our Industry Partnerships

Gold
Microsoft
Partner

Microsoft

aws

PARTNER
Advanced Tier
Services

- Public Sector
- DevOps Services Competency
- Well-Architected Partner
  Program

Google Cloud
Partner

Thank you for exploring this Case Study with us.
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