



# DecompileD

## Seamless Transition to Serverless: A Step-by-Step Guide for Migrating from Kubernetes

08.03.2024

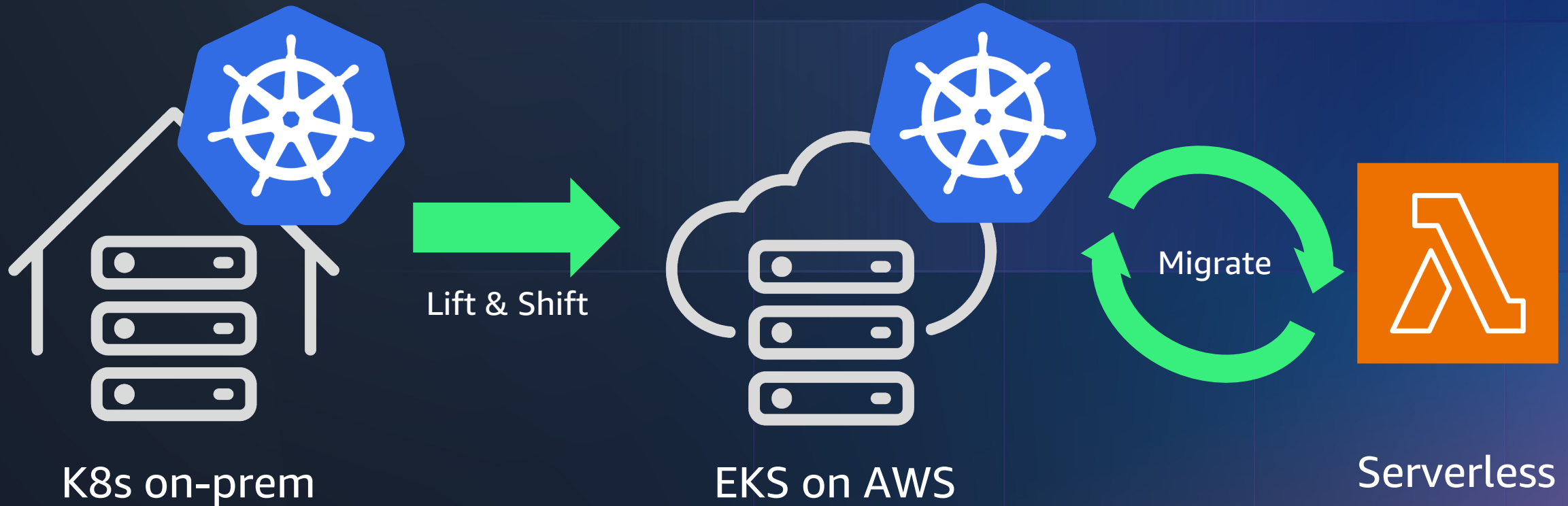
René Penkert

AWS - Senior Cloud Architect

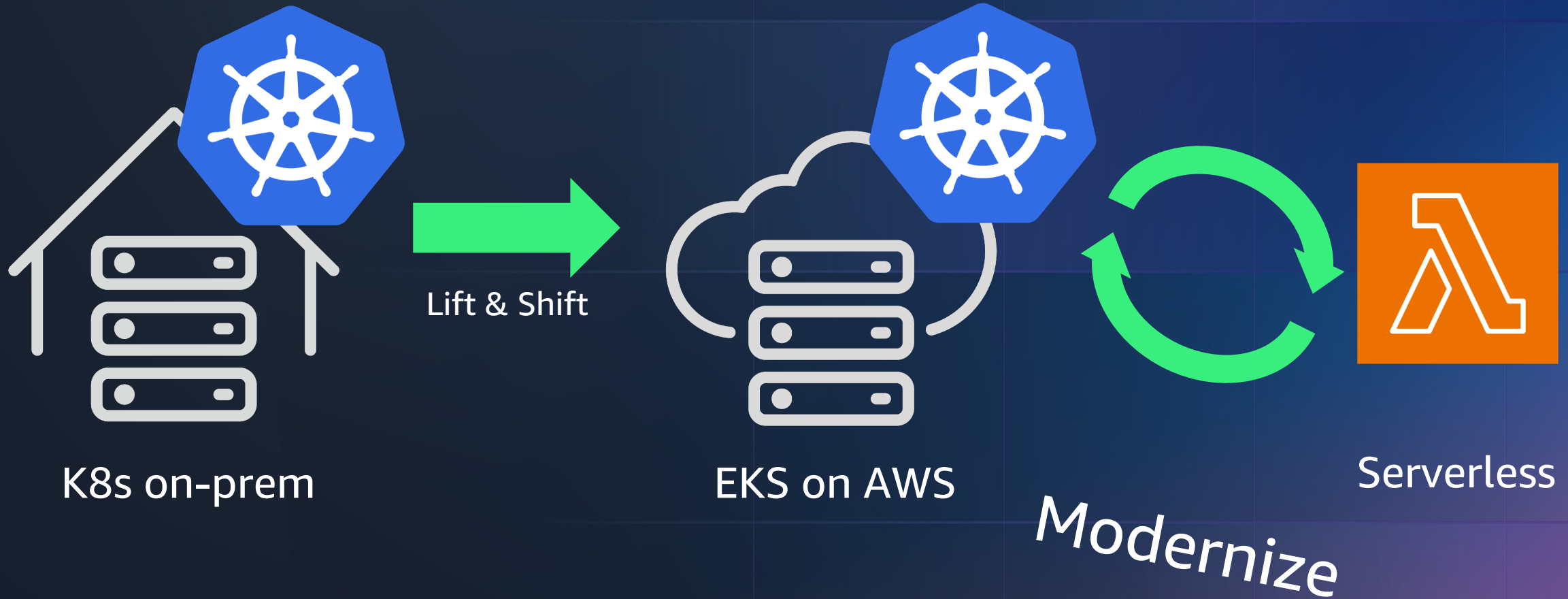
# Agenda

- On-prem Kubernetes -> Serverless
- Chronas.org
  - Demo
  - Challenges of the current solution
  - The benefits of the new solution
  - Cost overview and future cost improvements
- Your way to production

# On-prem Kubernetes -> Serverless



# On-prem Kubernetes -> Serverless



# On-prem Kubernetes -> Serverless



Application



Serverless

Computing

Logging

Orchestration

Security

Storage



# Chronas.org

- Chronas is a history map application with over 50 million data points which users can curate and contribute to (similar to Wikipedia).
- Completely open source
- Two-man team
- 30.000 monthly users



# Demo



# Some social media attention ...



635.6k Views &  
2k reposts



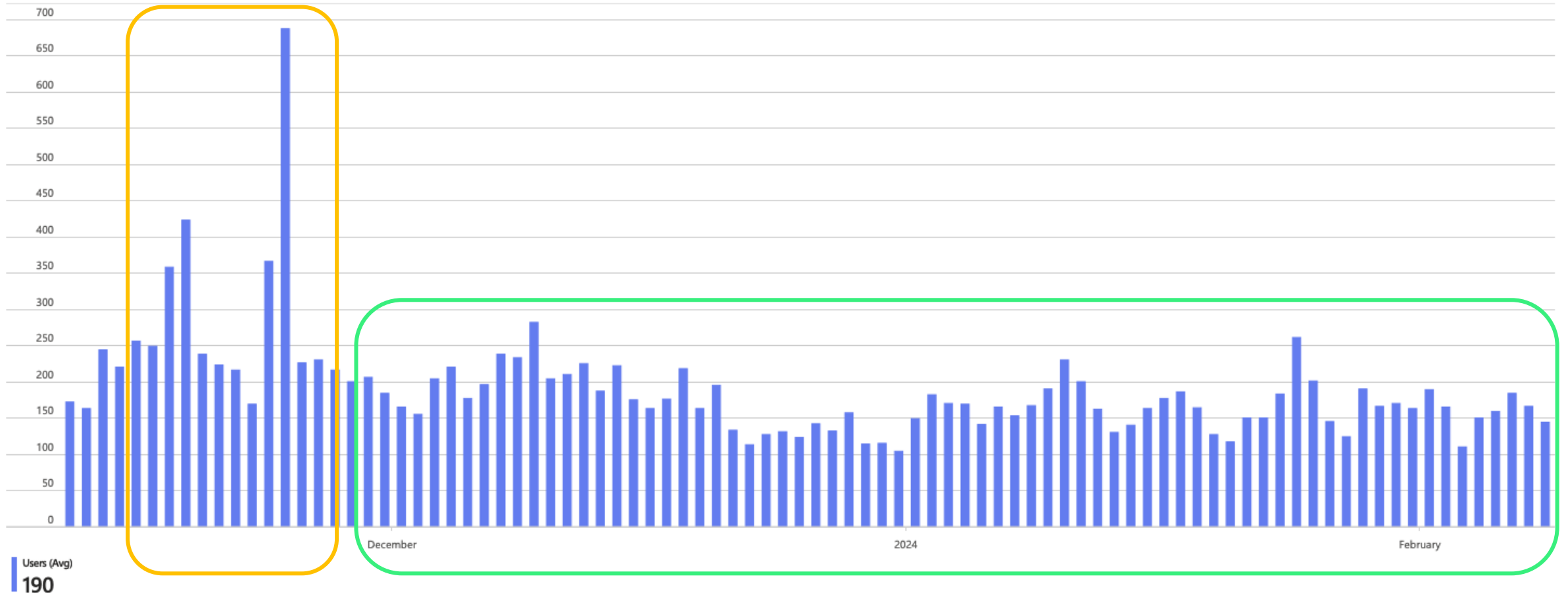


# ... results in massive global scaling needs

13.27<sub>k</sub> users

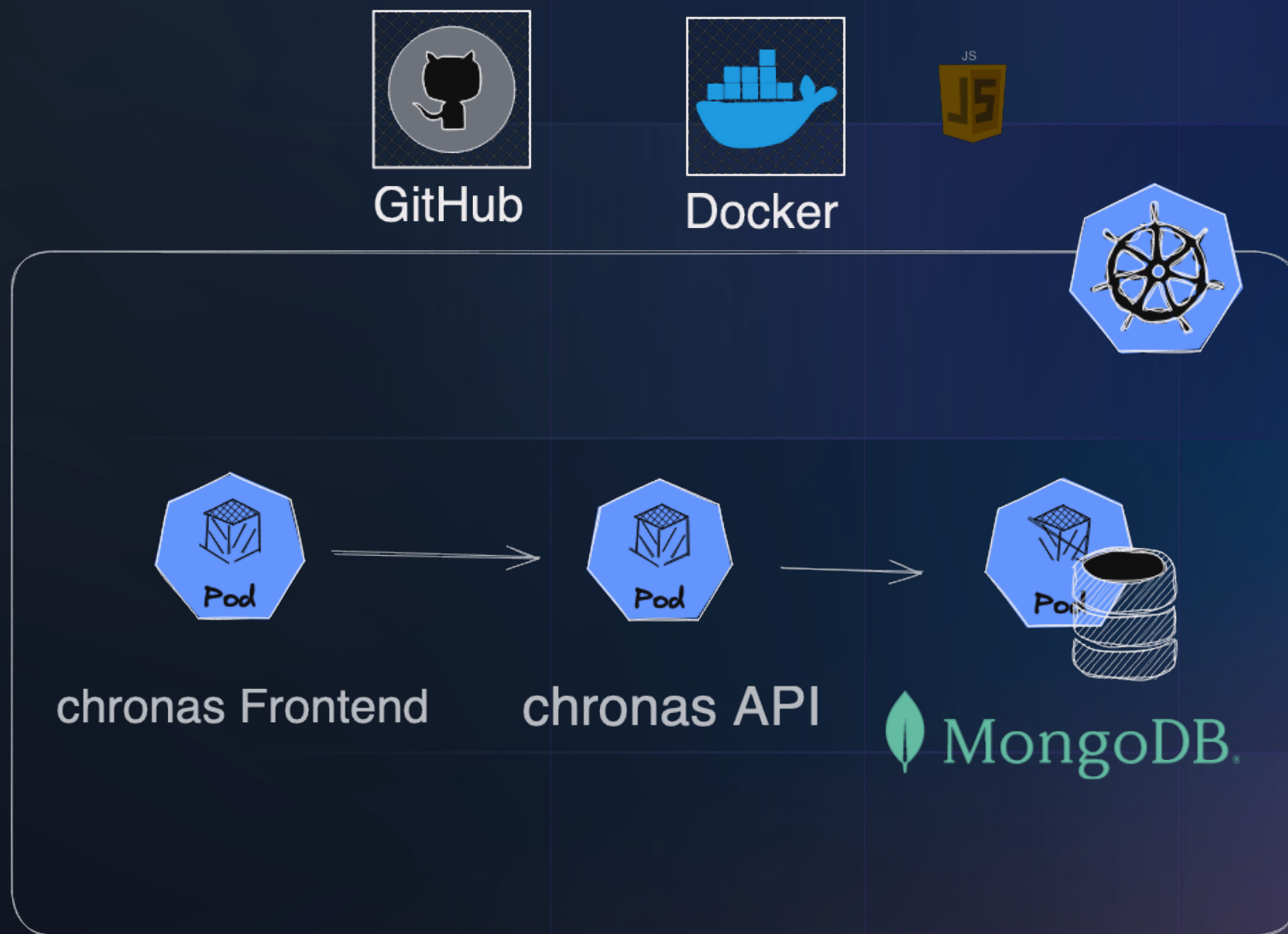
Chart Type

Bar chart



Users (Avg)  
190

# Previous Solution Architecture – on-prem K8s



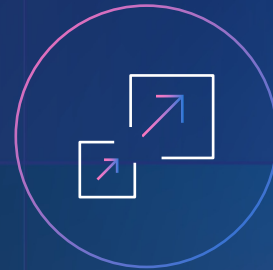
# Challenges of the previous solution



Cost Optimization



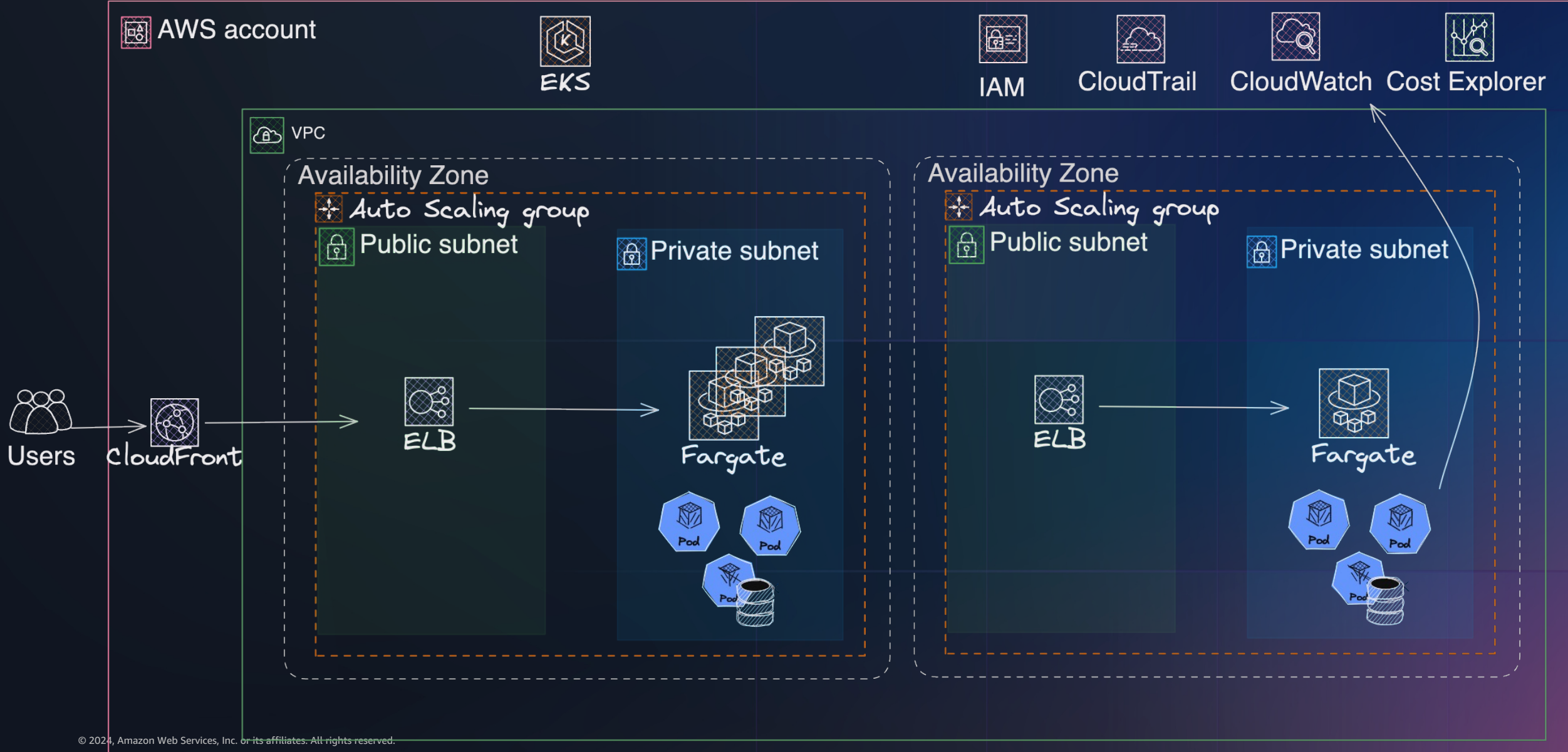
High operational  
work and slow  
time to “market”



Global scale and  
reach



# Lift & Shift - In AWS with e.g. EKS



# Amazon EKS or Amazon ECS?



**ECS**

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**Powerful simplicity**

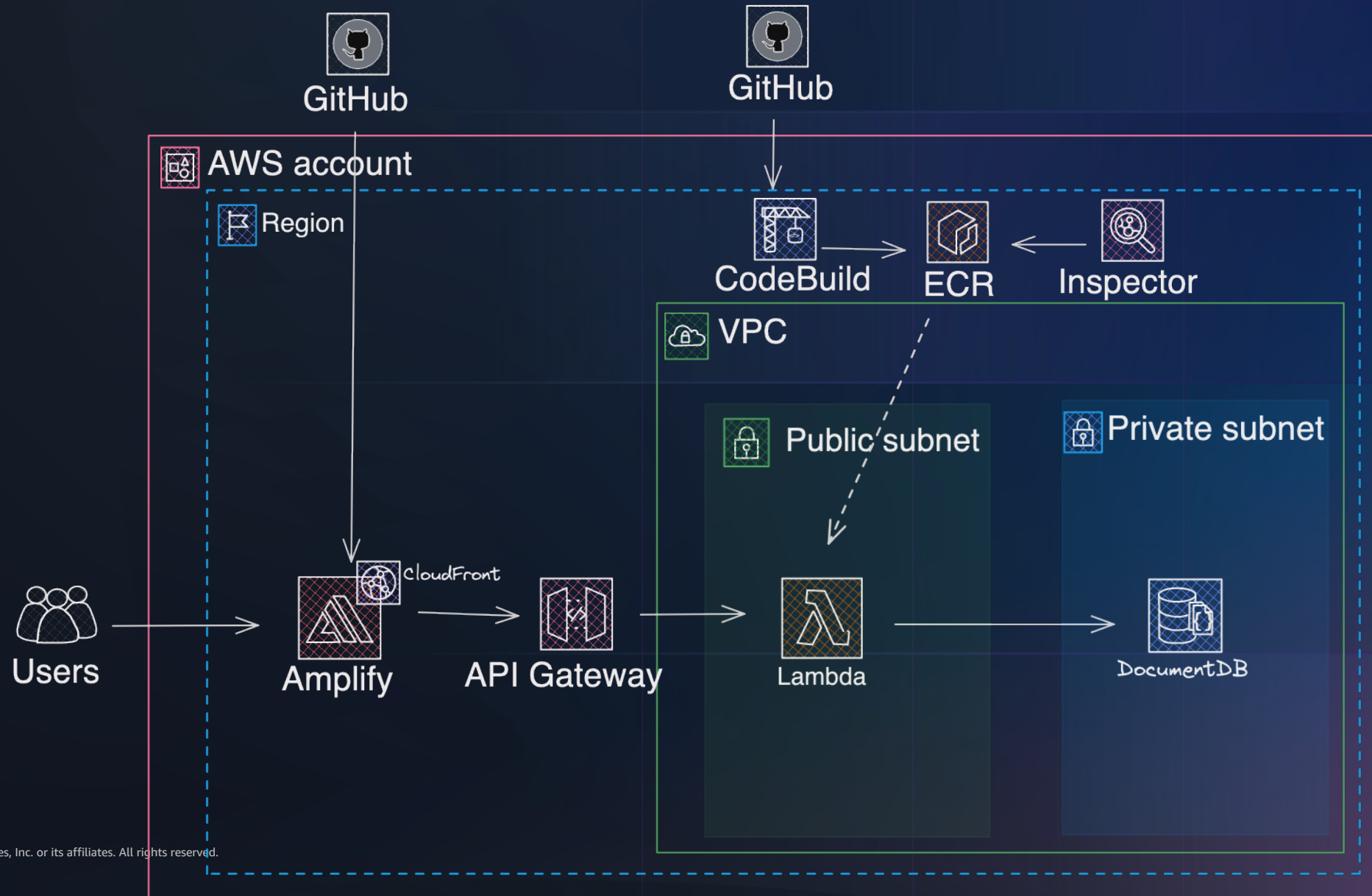


**EKS**

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**Open flexibility**

# Current solution - serverless





# Cost of previous solution – Cloud lift & shift

**Montly Cost:** \$267 – Managed Control plane+ 2 Application Nodes

Virtual machines	224
SSD Storage	30
Data Transfer	8
Misc	5
Maintenance / staffing costs	Medium

Cost directly used from Cloud provider report

# Cost of current solution – serverless on AWS

Montly Cost: \$213 - region: eu-west-1

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AWS Amplify	21
Amazon API Gateway	3
AWS Lambda	55
Amazon DocumentDB	123
Amazon Inspector	4
AWS CodeBuild	4
Amazon Elastic Container Registry	3
Maintance/staffing effort	low

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20% saved



Reduced maintance effort  
from days/month to  
hours/month

[AWS Pricing Calculator](#)

# Cost of current solution – future improvements

Montly Cost: \$167 - region: eu-west-1

AWS Amplify	21
Amazon API Gateway	3
AWS Lambda	55
Amazon DynamoDB	77
Amazon Inspector	4
AWS CodeBuild	4
Amazon Elastic Container Registry	3
Maintance/staffing effort	low

[AWS Pricing Calculator](#)



37% saved



Reduced maintance effort  
from days/month to  
hours/month



Most costs are covered  
by 1-year free tier for Chronas 😊



# The Benefits of the New Solution



Achieve cost-efficiency with a serverless architecture using AWS Lambda and AWS Amplify. No more paying for idle resources.



Deploy your applications quickly and easily with AWS Amplify, AWS Lambda/AWS Code Build and reduce operational work from days/month to hours/month.



Deliver your content to users around the world with zero infrastructure management using Amazon CloudFront and AWS Amplify.

# Your Path to Production Success



Identify what you optimize for



Build small PoC



Gradual transition of a small user percentage

# There is not one solution to rule them all



Video Streaming

## Scaling up the Prime Video audio/video monitoring service and reducing costs by 90%

The move from a distributed microservices architecture to a monolith application helped achieve higher scale, resilience, and reduce costs.

<https://www.primevideotech.com/video-streaming/scaling-up-the-prime-video-audio-video-monitoring-service-and-reducing-costs-by-90>





# Some homework



Do modern  
cloud applications  
lock you in?

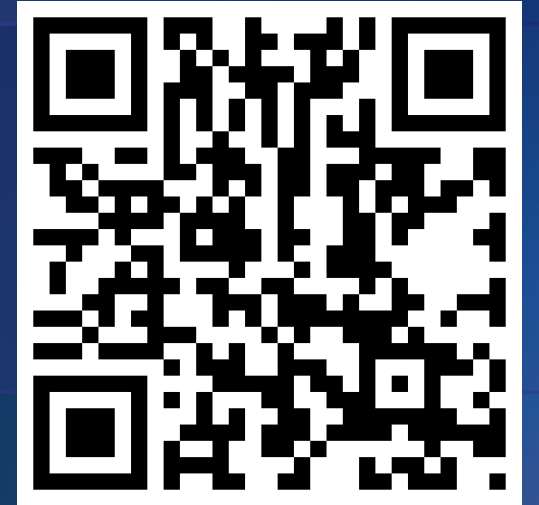


<https://www.youtube.com/watch?v=jykSBmnAM2I>

# Not sure where to start your serverless journey?



Numerous Blog-Posts and  
Workshops available  
e.g. [serverlessland.com](https://serverlessland.com)



Review and Adopt AWS Well-  
Architected Framework.



# Thank you!

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