
AWS
re:Invent

ENT308-S

Build your next microservices application with modern AWS services

Nik Jain
Solution Architect
New Relic

Javier Miguez
Director of Technology Operations
Fleet Complete

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Nik Jain

Solutions Architect
Living in Melbourne

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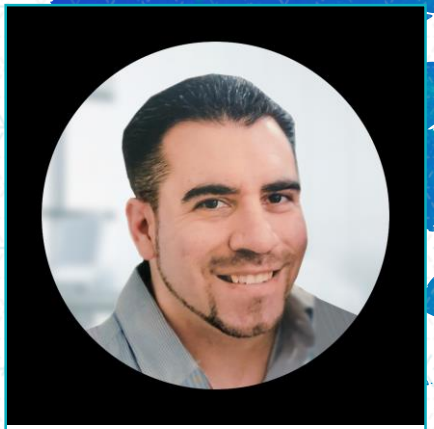

Javier Miguez

Director, TechOps
Living in Toronto

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Agenda

1. Definition of a modern microservice
2. How Fleet Complete achieves its double bottom line
3. Human migration to space app architecture
4. Live demonstration and app interaction
5. Observability strategy to build and manage modern services

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Start with why?!

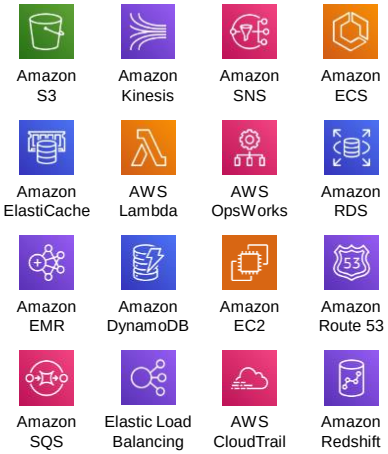
Containers/Virtualization

Enterprise Relational Databases

Queues

Hosts

SaaS Services



Infrastructure Applications

Modern Databases & Storage

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FleetComplete® Transformation

Monolithic

vmware

Microsoft SQL Server

Microservices

kubernetes

Linux

Apache Kafka
A high-throughput distributed messaging system.

redis

PostgreSQL

Spark

mongoDB

elastic

RabbitMQ

HAPROXY

Modern and Managed Technologies

New Relic

Amazon EC2

Amazon IoT Core

Amazon Kinesis

Amazon SNS

Amazon Fargate

Amazon ElastiCache

AWS Lambda

AWS OpsWorks

Amazon RDS

Amazon EMR

Amazon DynamoDB

Amazon Elasticsearch

Amazon Route 53

Amazon SQS

Elastic Load Balancing

AWS CloudTrail

Amazon Redshift

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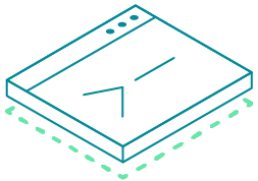
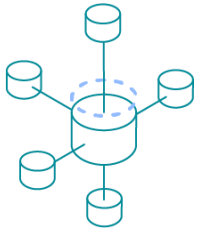
Core ingredients of a modern microservice



DevOps

Leverages a
code pipeline



Autoscaled

Doesn’t require
manual scaling

Cloud-Native

Based on
cloud compute

Orchestrated

Low cost of
operational burden

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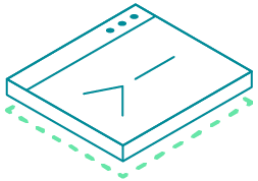
Core ingredients of a modern microservice



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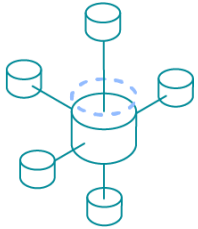

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Amazon
EC2 Auto Scaling

AWS
Lambda

AWS
CloudFront

Amazon
EKS

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Why Amazon EKS + AWS Lambda + AWS Fargate?

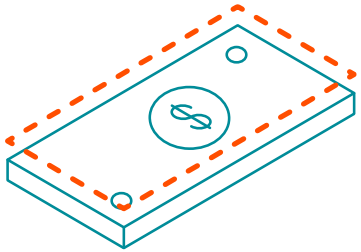
Operations

Don’t worry about underlying servers

Amazon EKS/Fargate helps you
move faster

Cost-efficient

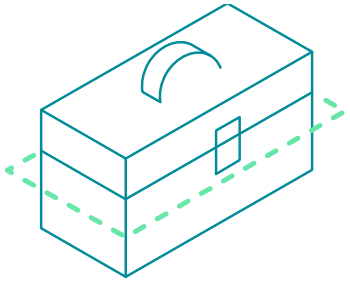
No traffic,
no cost



Amazon EKS/Fargate is
cost efficient

Productivity

Higher abstraction



Amazon EKS/Fargate is
portable

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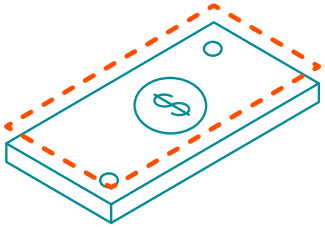

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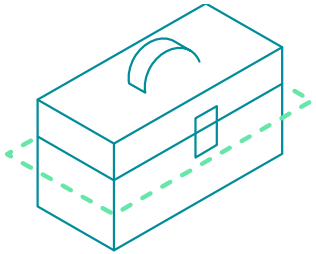

Amazon EKS/Fargate is
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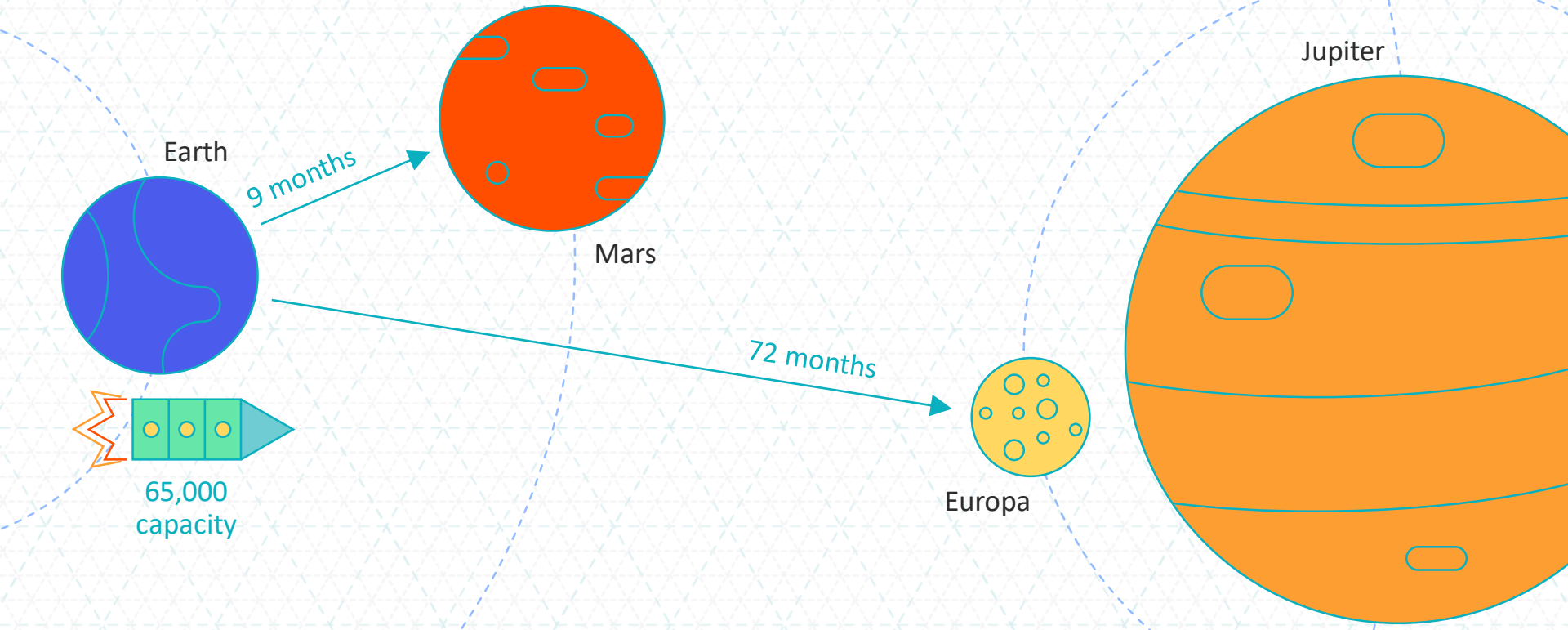
Mass space migration application



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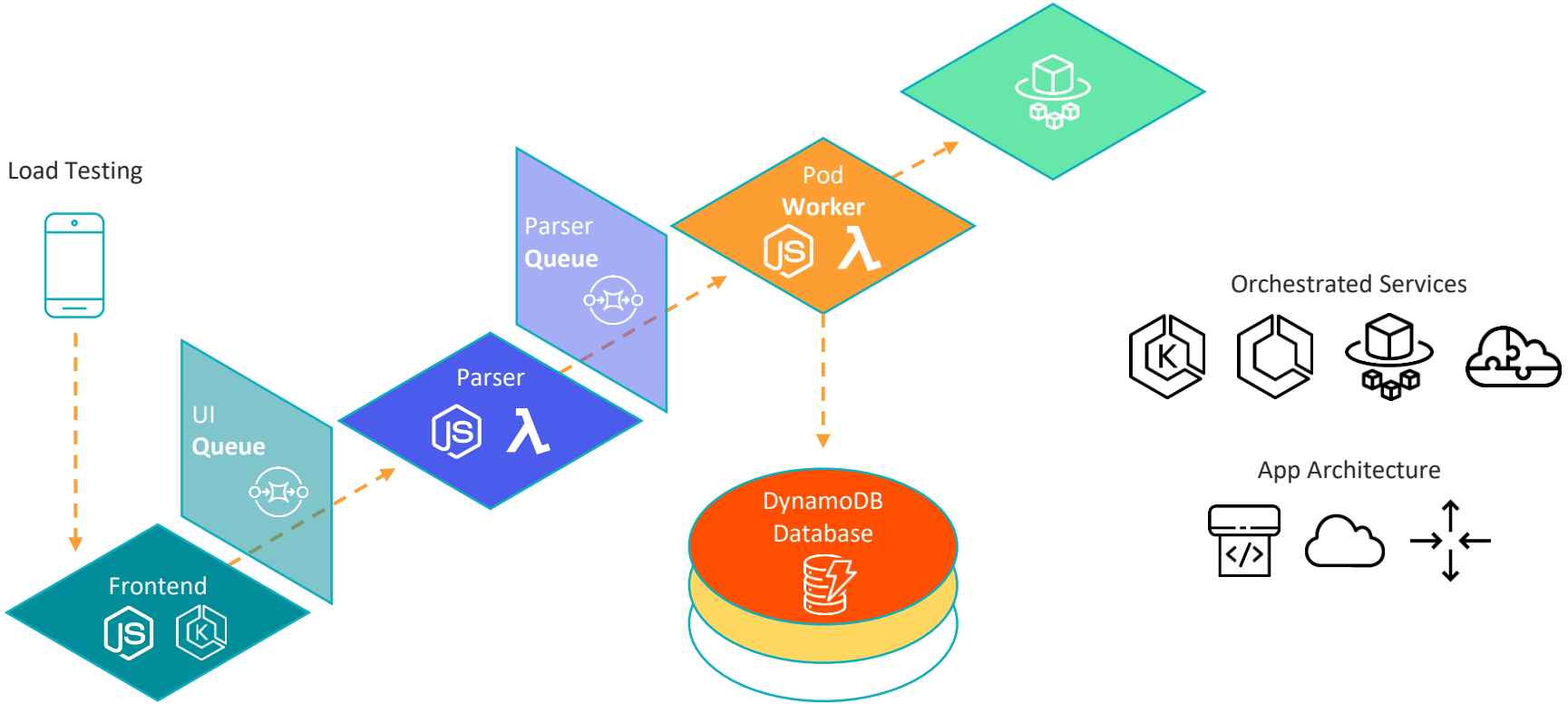
Mass space migration app on AWS



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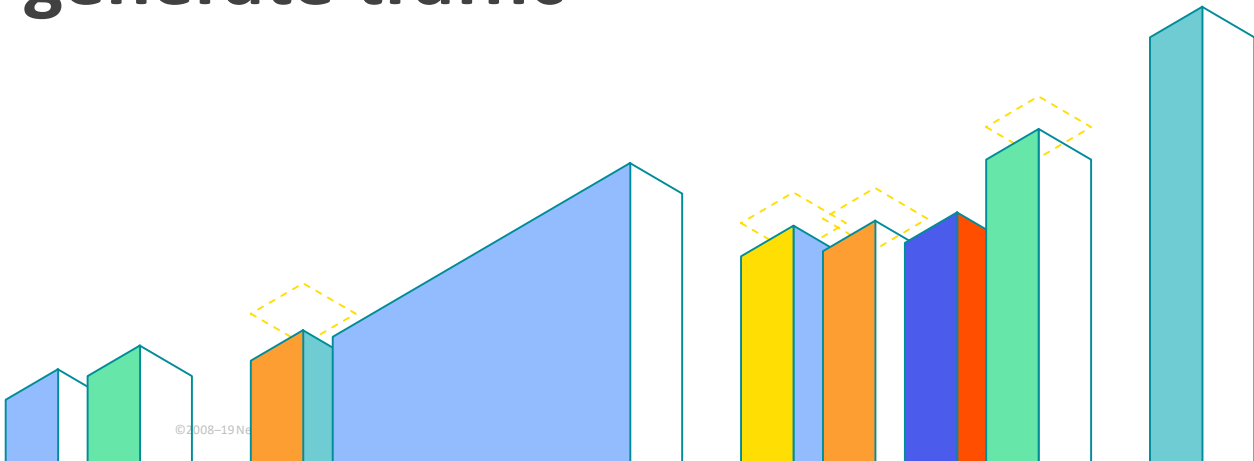
v1.0 Demo

Goal: Interact with the app and generate traffic



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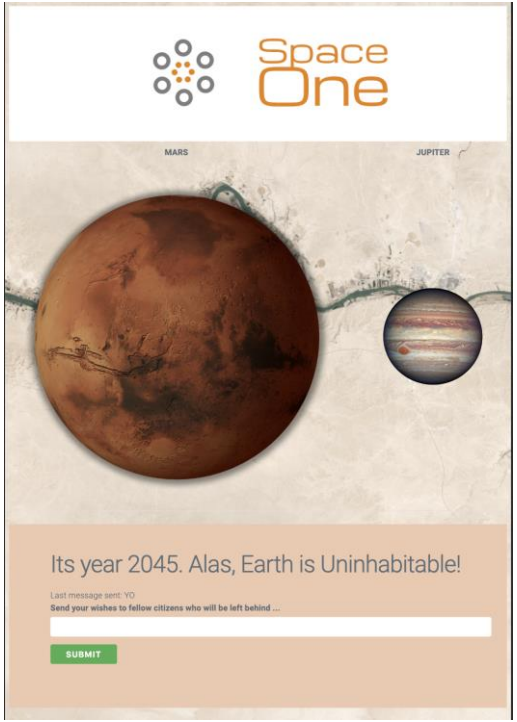
Pull out your phones …



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Key takeaway

- Modern AWS services allow for the least possible operational burden
- AWS CloudFormation templates are easy (automate the deployment of resources)
- Understand cloud cost to namespace level (Amazon EKS)

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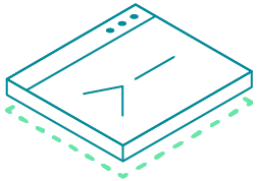
Core ingredients of a modern microservice



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Leverages a
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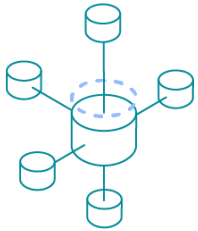

Autoscaled

Doesn't require
manual scaling

Cloud-Native

Based on
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Orchestrated

Low cost of
operational burden

Bedrock of true observability

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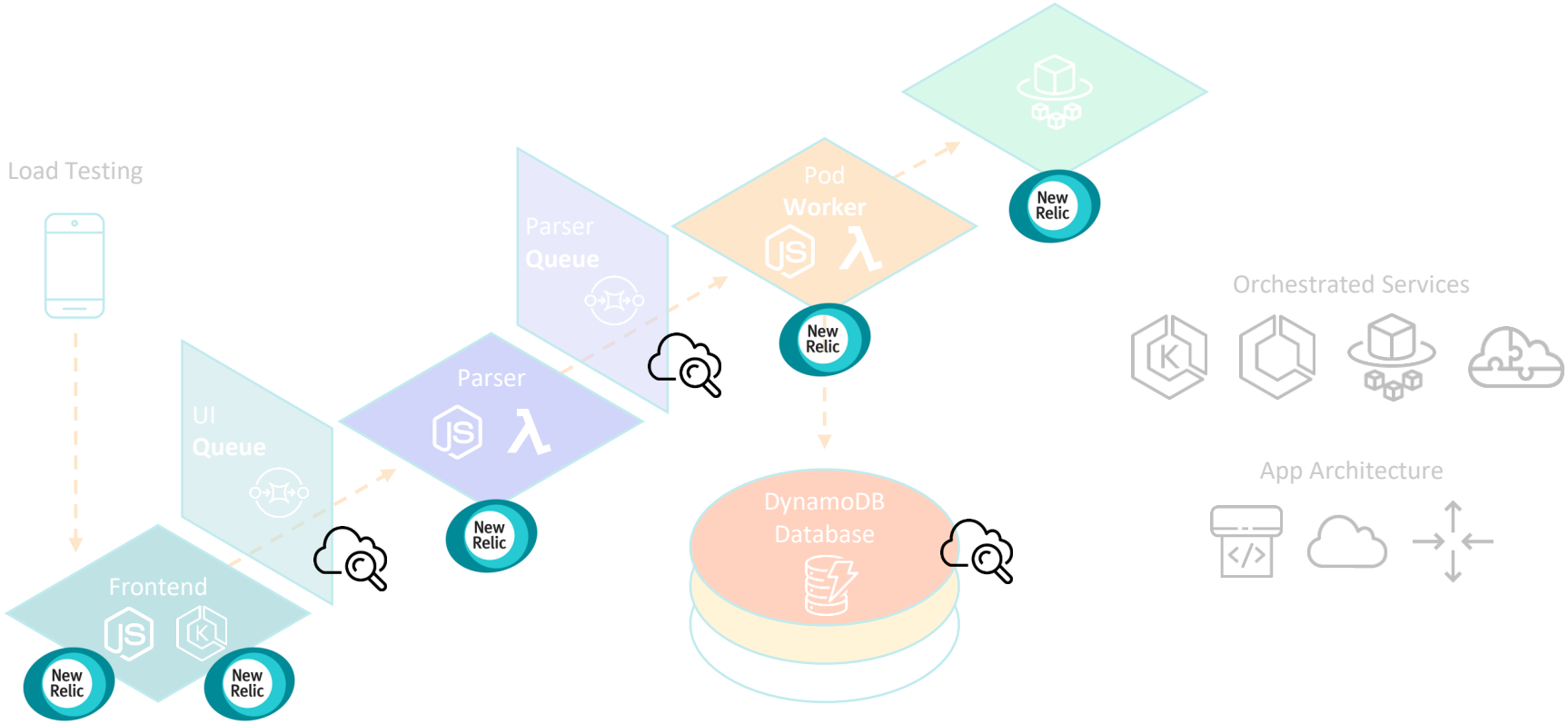
Mass space migration app on AWS



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v2.0 Demo

Goal: Use telescopic and microscopic observability patterns for quick resolution

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Key takeaway

- Easy-to-use wizard and tools for full observability
- Codify your monitoring, and monitor your code pipeline
- Keep the compute lean, keep the planet green (Cloud Optimize)

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An effective observability reliability model

Failure modes	SLIs	SLOs	SLAs
Slow page views (RRN: 900)	95th percentile page view time	99% of page views <7 seconds	99.99% operational (functional uptime)
Business errors (RRN: 1000)	Value streams ($$) error rate	Error rate by client journey <0.05% (error budgets)	99.95% error free experience
Microservices latency (RRN: 800)	95th percentile response time	Min 3 release a day Zero 5xx errors <1 second response time	...
...	...	...	...

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The best way to speed up a website is almost always to add cache and more cache!

(+ AWS + New Relic)

- highscalability.com

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Let’s talk

Join us:

Venetian Suites 3221 and 3222

Level 2 – Grand Canal Shoppe Level

Wednesday, December 4

4:30pm to 6:00pm

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Thank you!

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