aws

INNOVATE

MODERN APPLICATIONS EDITION

20 October, 2022

Building a smarter, faster business with modern applications

Arthi Jaganthan

Principal Serverless Specialist
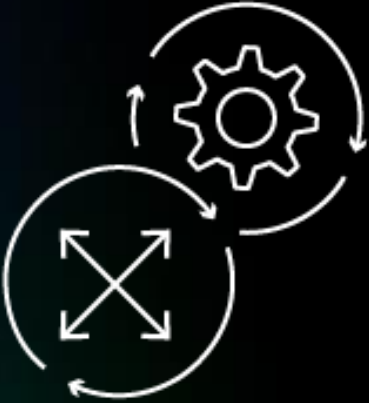Solutions Architect
Amazon Web Services

Fawad Hussain

CTO & Co-founder
Markaz Technologies

Hitesh Bhatia

Head of DevOps
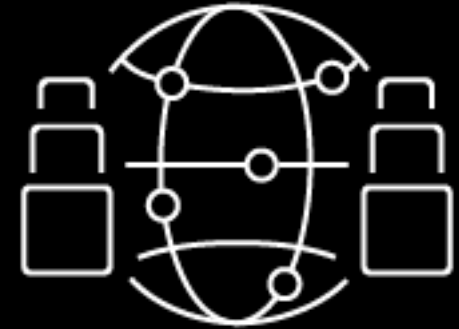Airtel Digital Ltd.

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What is a modern application?

Modular
loose coupling

Highly scalable

Highly available

Full visibility

Secure & compliant

Automated

Architecture choices

Running containers on AWS
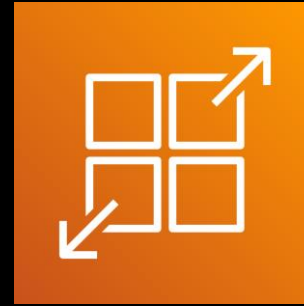

Amazon ECS

Amazon EKS

Running containers on AWS
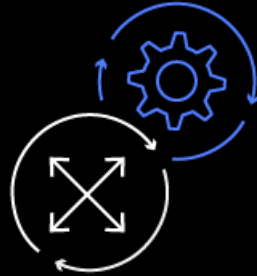
Amazon ECS

Amazon EKS

AWS App Runner

Think serverless first
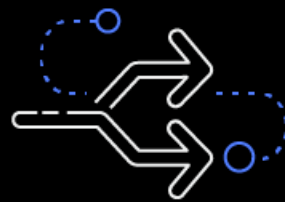
Features first

Avoid monolithic thinking

Focus on events

Events are triggers that cause action

Stateless

The key to scaling effectively

Data flow

Make data decisions early on

Use the services

Don't reinvent the wheel

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AWS Fargate

AWS Fargate

Zero server management, maintenance, scaling

Scale independently

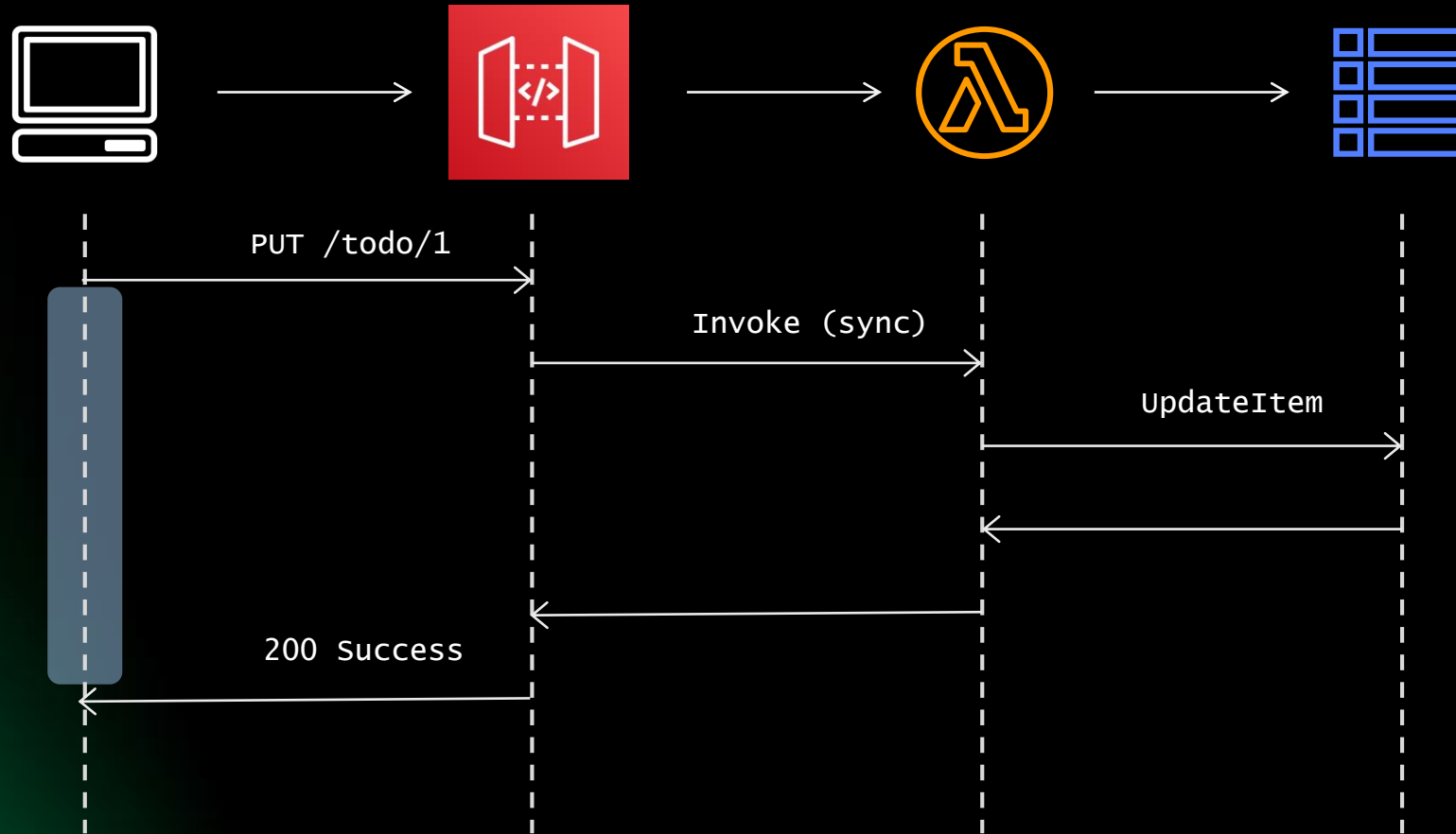Improved security through workload isolation

AWS Lambda

AWS Lambda

Zero server management, maintenance, scaling

Integration with over 200 AWS services and SaaS applications

API-driven architectures

Event-driven architectures

Asynchronous Events

```
Client          Service A        Service B
  |                 |                |
  |---------------->|                |
  |               [   ]------------->|
  |               [   ]            [   ]
  |<--------------[   ]            [   ]
  |                 |              [   ]
  |                 |              [   ]
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```
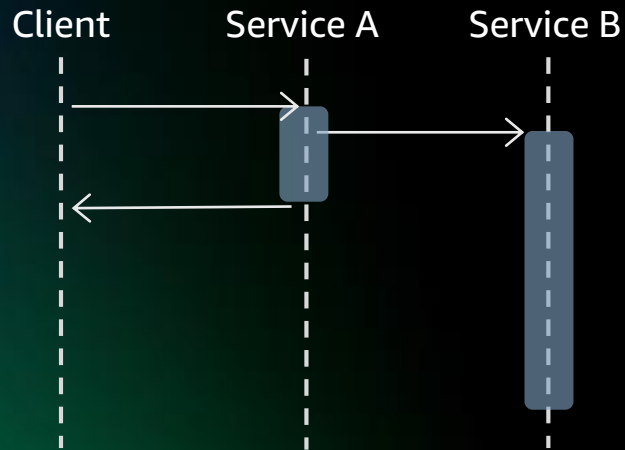
*Improve responsiveness and
reduce dependencies*

Event-driven architectures

Asynchronous Events

Improve responsiveness and reduce dependencies
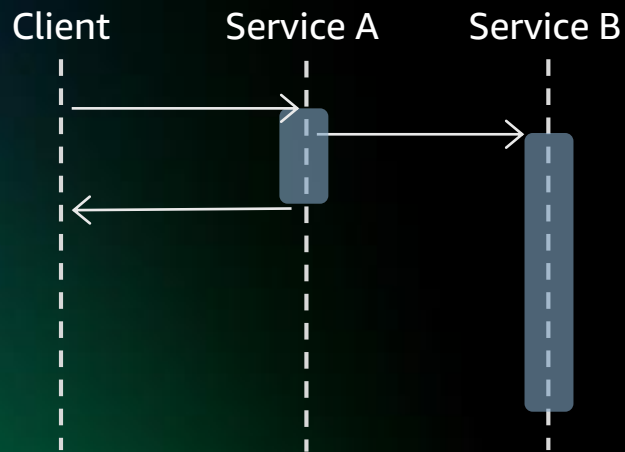
Event Routers
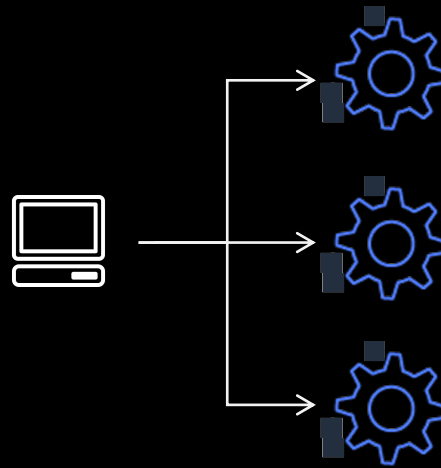
Abstract producers and consumers from each other

Event Stores
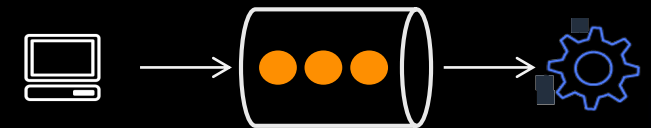
Buffer messages until services are available to process

Business benefits

- **Speed** to innovation
- **Agility** to change what matters
- Reduced **risk**
- Improved **operational efficiency**
- **Cost and value** control

Voice of the customer #1

Markaz Technologies

Markaz Technologies builds MVP in 6 weeks to launch a new e-commerce marketplace

Markaz

Challenge

Capitalize on an unmet need to connect small businesses with suppliers.

Need to move fast with limited resources.

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Solution and results

Serverless architecture

AWS Serverless Application Model (AWS SAM) to automate

Launched MVP in 6 weeks. 1 person managing entire backend.

"We are growing at a pace of 50-55% month over month, which means more orders every day. From processing 1–2 orders daily to now more than 1,200 orders daily, using AWS means we never have to even think about scaling."

Fawad Hussain
CTO & Co-founder
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Modular architecture

serverless

AWS SAM

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Fawad Hussain
Co-founder, Markaz

Modular architecture   serverless   AWS SAM   6 weeks for MVP   Highly scalable   1 person Pay for value
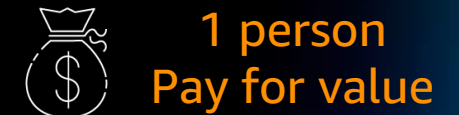
Voice of the customer #2

MindTickle

Mindtickle expands to new regions in one day with platform automation on AWS

mindtickle

Challenge

Expand Sales Readiness Platform into new markets quickly.

Needed more automation in its deployment processes to meet that goal.

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Solution and results

Microservices architecture and containers-based deployment on Amazon EKS.

AWS Lambda and AWS Step Functions for IT automation.

Automated more than 95% of its core deployment pieces.

"We've reduced deployment to new regions to about a day instead of the 6–8 months it would normally take, because of the automation we have on AWS."

Vivek Jain
Lead CloudOps and DevOps Architect, Mindtickle

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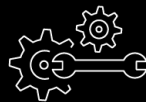
Vivek Jain
Lead CloudOps and DevOps Architect, Mindtickle

Modular architecture

Containers
AWS Lambda
AWS Step Functions

Automation

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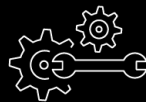
Vivek Jain
Lead CloudOps and DevOps Architect, Mindtickle

Modular architecture

Containers
AWS Lambda
AWS Step Functions

Automation

Data sovereignty

Speed
1 day

10-12 weeks
manual efforts

Voice of the customer #3

Koala

Koala integrates developer tools with AWS to improve customer experience

Challenge

New solution with more frequent product updates and shipping information.

Changes required an entire site rebuild. Rollouts not timely.

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Challenge

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Solution and results

Built a new ecommerce web platform on AWS Fargate.

New product launch in 7 hours instead of three weeks.

Cut development time by half.

"It was very easy for our DevOps team to code one pipeline that ran the main instance and another for deployment. Our platform is incredibly stable on AWS. We launched without a hitch, with no outages or downtime. Customers were able to purchase products from day one."

Andrew Sladen
Director of Engineering, Koala

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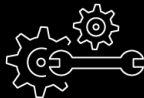
Andrew Sladen
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Rich integrations

Containers AWS Fargate

CI/CD

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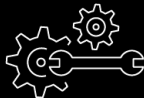
Andrew Sladen
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Rich integrations   Containers AWS Fargate   CI/CD   Customer experience   Speed 7 hours   Cut dev time in half

https://aws.amazon.com/solutions/case-studies/koala-case-study/

Voice of the customer #4

Airtel Digital Ltd.

Airtel improves team productivity to release features faster

Challenge

High traffic, 90 M active users, 1TB/min streamed

Reliability issues, hard to scale further, slow feature release cycles.

Airtel improves team productivity to release features faster

Challenge

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Reliability issues, hard to scale further, slow feature release cycles.

Solution and results

Refactored to single-responsibility components.

In-depth observability

Stable, resilient, and elastic services

"The application modernization decisions we took with AWS services allowed us to focus on business requirements. Team became more productive as it was easier to manage infrastructure."

Hitesh Bhatia
Head of DevOps, Airtel

Airtel improves team productivity to release features faster

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Team structures

Managed Services Amazon ECS

Observability

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Hitesh Bhatia
Head of DevOps, Airtel

Team structures

Managed Services Amazon ECS

Observability

Scale reliability

Time to market

Productivity

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Visit the Modern Applications resource hub

Dive deeper with these resources to help you develop an effective plan for your modernization journey.

- Build modern applications on AWS

- Business value of cloud modernization

- An introduction to event-driven architectures

- Accelerate full-stack web and mobile app development

- Determining the total cost of ownership: Comparing serverless and server-based technologies

- Building event-driven architectures with AWS

- Continuous learning, continuous modernization

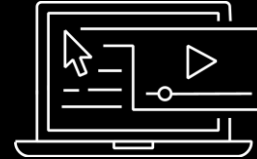https://tinyurl.com/modern-apps-aws

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AWS ramp-up guide - DevOps

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Thank you!

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