
AWS
re:Invent
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BOA314

Decode user requirements to design well-architected applications

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Amazon Web Services

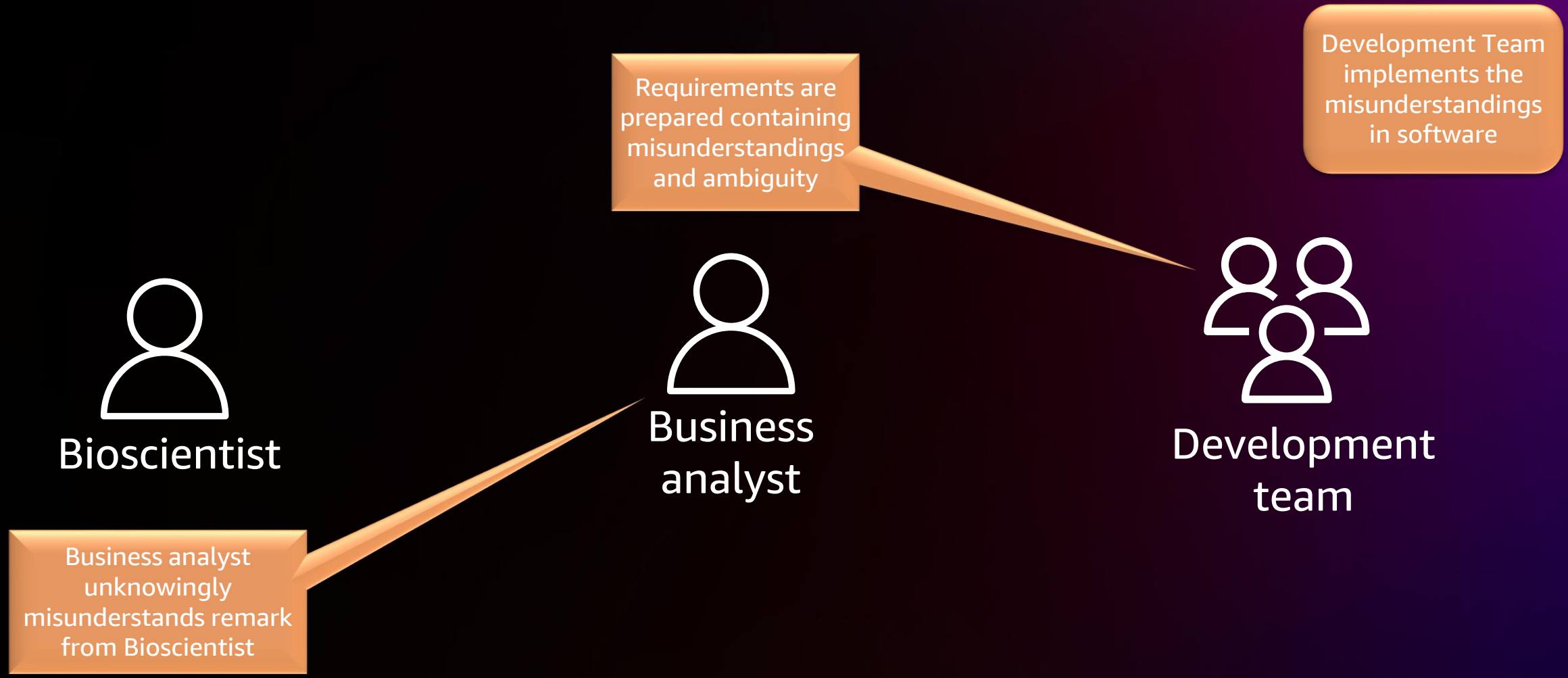
“It’s time for the business–IT wall to come down”

Mark Schwartz

Enterprise Strategist, AWS

“War and Peace and IT: Business Leadership, Technology, and Success in the Digital Age,” by Mark Schwartz
https://a.co/d/elnBIbt

The cost of misunderstood requirements



The cost of misunderstood requirements

Building the wrong product

Wasted time and money

Safety issues

Delivery delays

Unmet expectations

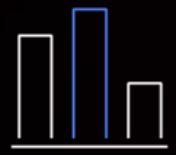
Core expectations of an architect

- Navigate politics
- Interpersonal skills
- Domain experience
- Exposure and experience
- Compliance
- Latest trends
- Analyze the architecture
- Make decision

“Fundamentals of Software Architecture: An Engineering Approach,” by Mark Richard and Neal Ford
https://amzn.to/3UGy6Jr

Architecture characteristics

Auditability



Scalability

Availability

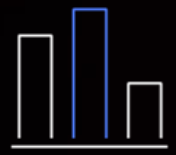
Performance

Security

Legality

Architecture characteristics

Auditability



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ISO 25010
http://bit.ly/3UZZIt7

Architecture characteristics

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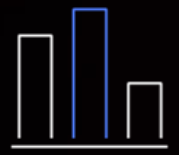

Scalability

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AWS Well-Architected Framework

Translating domain concerns to architecture characteristics

Domain concern	Architecture characteristics
Time to market	Agility, deployability
User satisfaction	Performance, usability
Competitive advantage	Scalability, fault tolerance
Time and budget	Cost optimized, simplicity

“Architects need to practice being architects, just as developers need a chance to practice being developers”

Ted Neward

Architectural Katas, by Ted Neward
http://www.architecturalkatas.com/about.html

Prepare

Discuss

Peer review

Vote

Prepare

Assemble your project team

Prepare

Discuss

Peer review

Vote

Discuss

Figure out what you're building

Prepare

Discuss

Peer review

Vote

Peer review

Present architecture to the group

Prepare

Discuss

Peer review

Vote

Vote

Final feedback on the proposal

Prepare

Discuss

Peer review

Vote

Local copy shop chain

Description

A local copy shop chain wants to offer its customers an "all-in-one" computing experience – document creation, editing, storage and printing

Requirements

- Browser-based
- Word processing
- Presentations
- Document templates (as starting points)
- Versioning
- Print scheduling
- Automatic and manual payment

Users

Initially, thousands in the local city, but potentially millions if the demand grows

Auction company

Description

An auction company wants to take their auctions online to a nationwide scale – Customers choose the auction to participate in, wait until the auction begins, then bid as if they were there in the room with the auctioneer

Requirements

- Auctions must be categorized and “discoverable”
- Auctions must be as real time as possible
- Auctions must be mixed live and online
- Video stream of the action after the fact

Users

Scale up to hundreds of participants (per auction), potentially up to thousands of participants, and as many simultaneous auctions as possible

Auction company

Bidder

View live video stream

View live bid

Place a bid

Auctioneer

Enter live bid into stream

Receive online bids

Mark items as sold

Application

Start auction

Make payment

Track bidder activity

Video streamer

Bid streamer

Bid capture

Auctioneer capture

Auction session

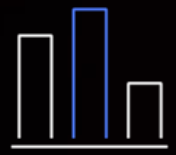
Payment

Bid tracker

Auction company

ARCHITECTURE CHARACTERISTICS

Auditability



Scalability

Availability

Performance

Security

Legality

AWS Well-Architected Framework

“Build secure, high-performing, resilient, and efficient infrastructure for a variety of applications and workloads”

AWS Well-Architected Framework

AWS Well-Architected Framework
https://go.aws/3X654Vf

Operational excellence

Automating changes

Responding to events

Defining standards

Security pillar

Confidentiality and integrity of data

Managing user permissions

Establishing controls

Reliability pillar

Distributed system design

Recovery planning

Adapting to changing environments

Cost optimization pillar

Understand spend

Selecting resources of the right type and quantity

Scaling to meet business needs

Performance efficiency pillar

Select resource type and size for workload requirements

Monitoring performance

Maintaining efficiency

Sustainability pillar

Shared responsibility model

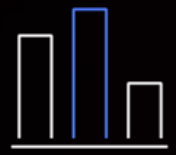
Maximizing utilization

Minimize required resources

Auction company

ARCHITECTURE CHARACTERISTICS

Auditability



Scalability

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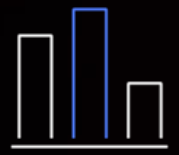
Auction company

Auditability



Scalability

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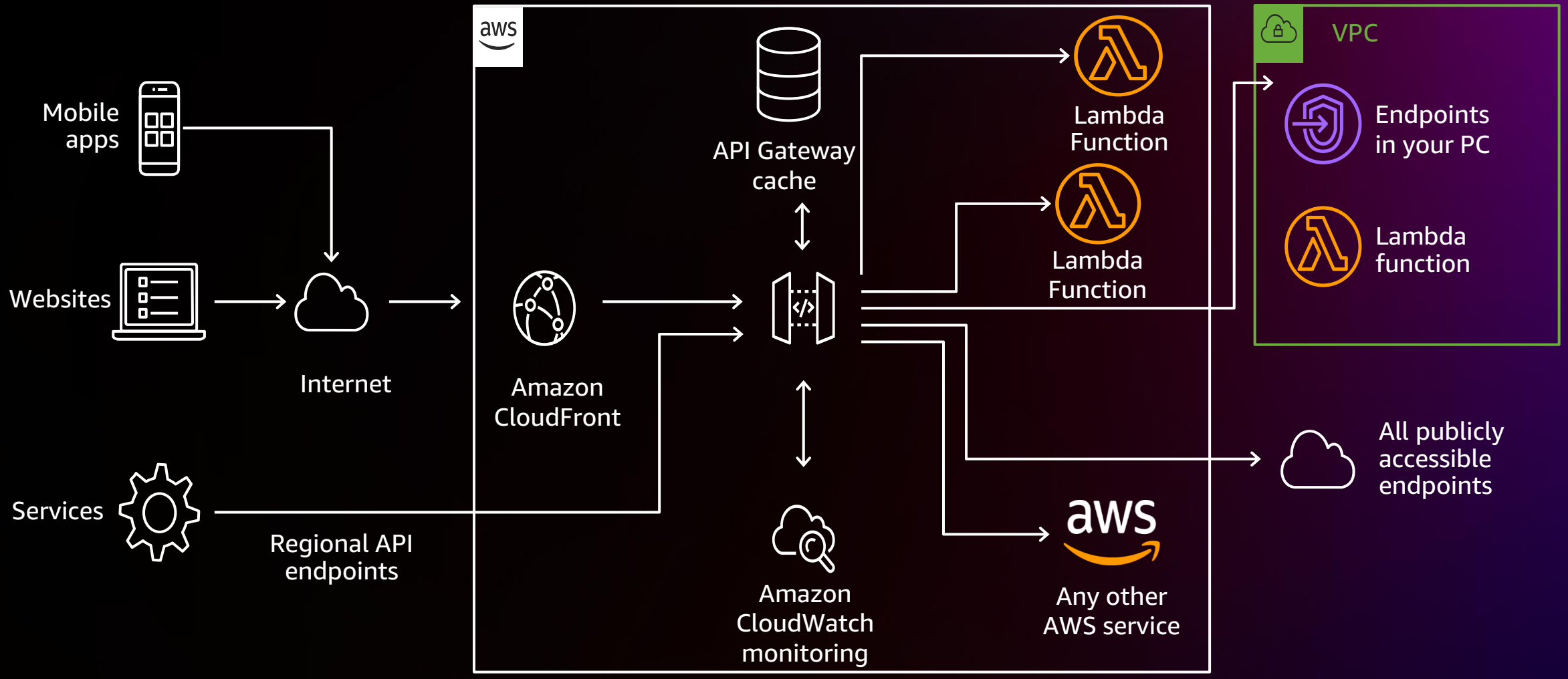
Auction company: Architecture



AWS Architecture Center | Technology Categories | Video Series | AWS Well-Architected | Libraries

Architecture Best Practices for Serverless

Browse best practices for building modern applications with increased agility and lower total cost of ownership using serverless architectures.

Learn how to evaluate your serverless workloads against best practices and identify areas for improvement with the Serverless Applications Lens - AWS Well-Architected Framework.

Featured Content

Getting Started with Serverless

Training and tutorials to help you shift to a serverless architecture.

- **Documentation:** Getting Started with AWS Lambda
- **Training:** Architecting Serverless Solutions
- **Tutorial:** Build a Serverless Web Application

Why AWS Serverless

Guidance to help you navigate your serverless environments.

- **Blog:** Developing Evolutionary Architecture with AWS Lambda
- **Whitepaper:** AWS Serverless Multi-Tier Architectures with Amazon API Gateway and AWS Lambda
- **Documentation:** AWS Lambda Operator Guide

AWS Serverless
https://go.aws/3UXggBI

AWS Well-Architected Lenses

Financial Services

Data Analytics

Custom

HPC

SAP

Healthcare Industry

Container Build

SaaS

Serverless Applications

FTR

Games Industry

IoT

Machine Learning

Streaming Media

Hybrid Networking

AWS Well-Architected Lenses
https://go.aws/3AldxKs

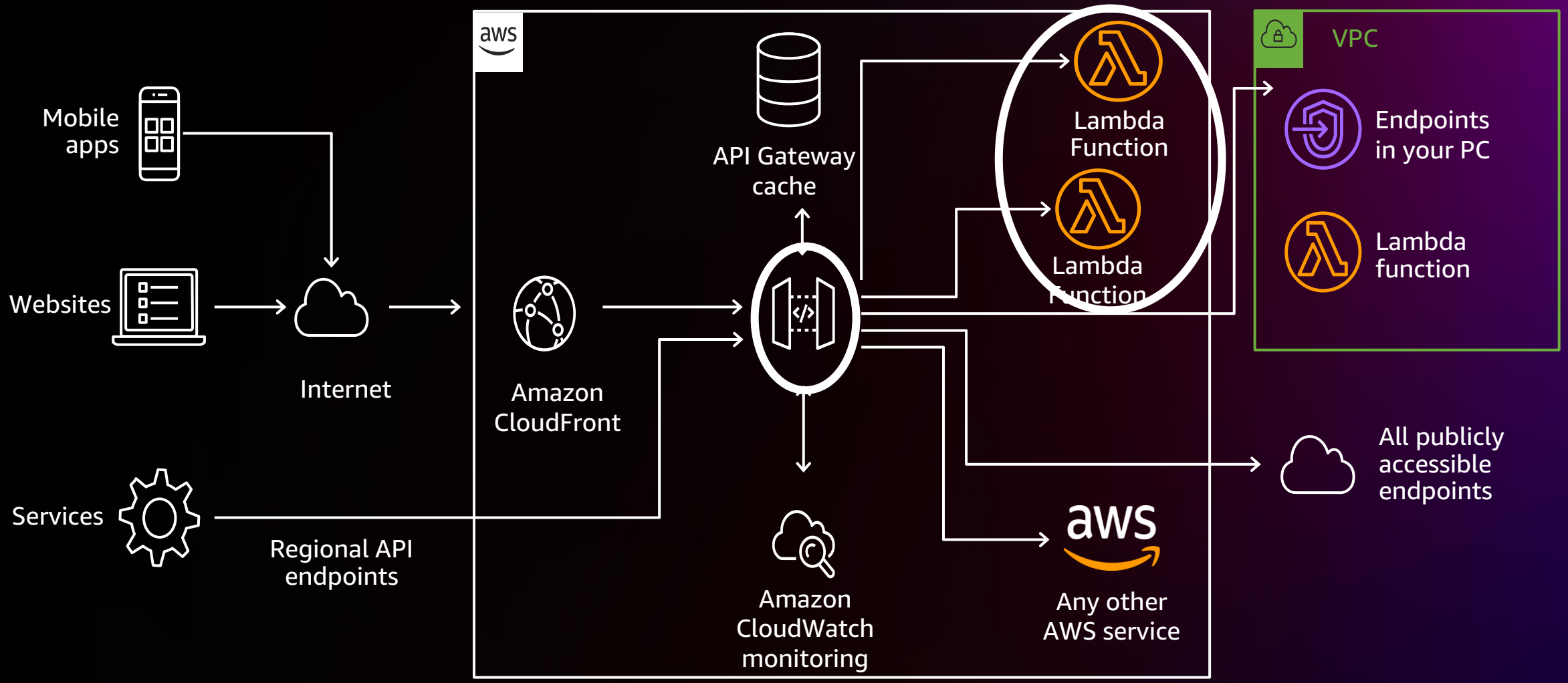
Serverless Application Lens

AWS WELL-ARCHITECTED FRAMEWORK

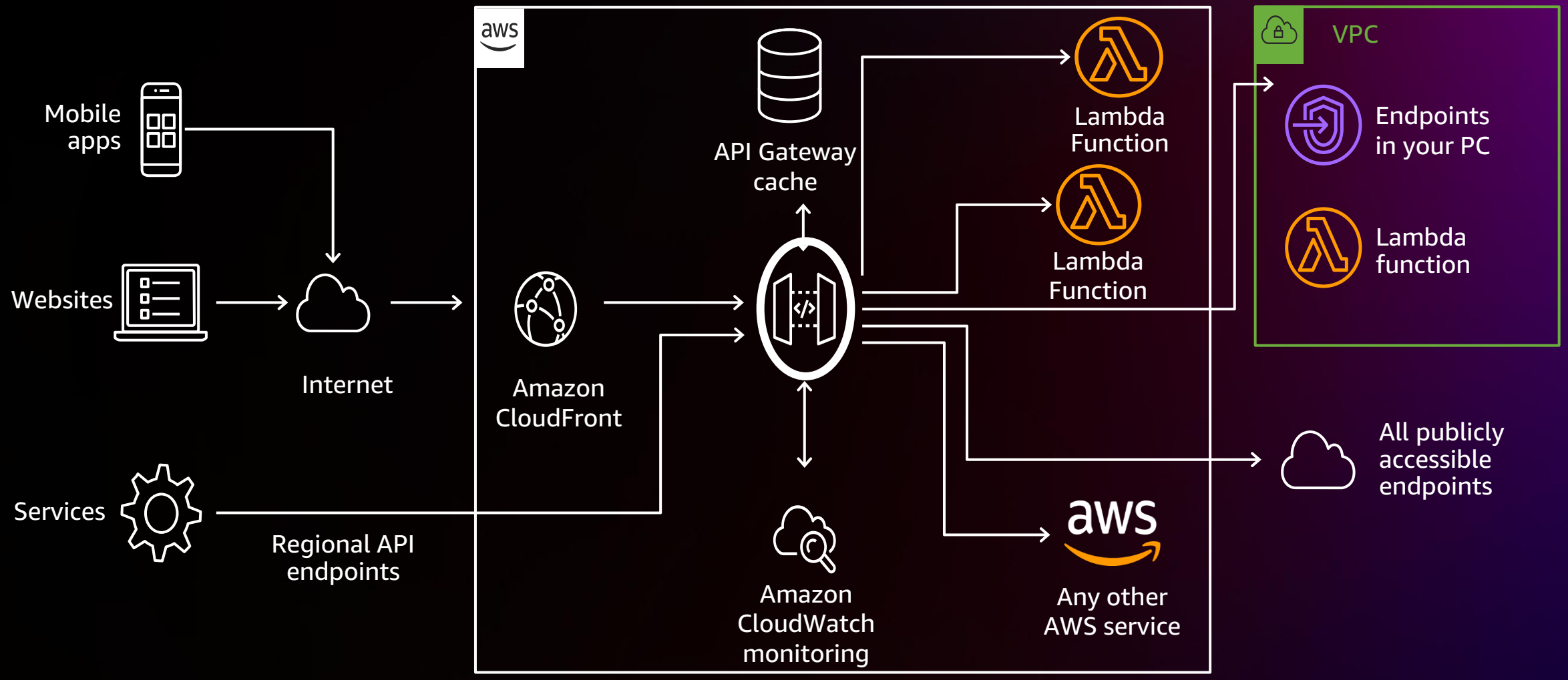
- Compute layer
- Data layer
- Messaging and streaming layer
- User management and identity layer
- Edge layer
- Systems monitoring and deployment
- Deployment approaches
- Lambda version control

Serverless Application Lens
https://go.aws/3X78A1A

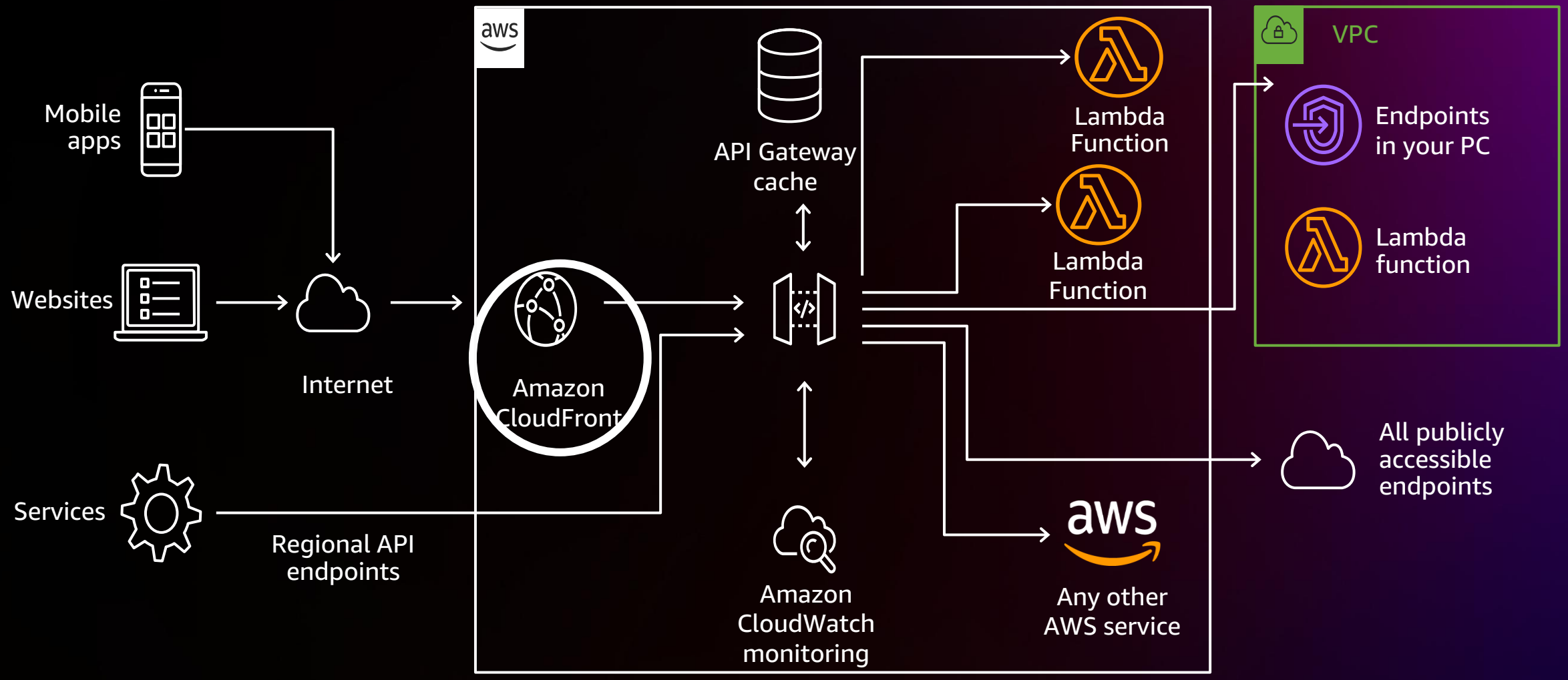
Compute layer



User management and identity layer



Edge layer



AWS Architecture Center

Reference architecture examples and diagrams

Build resilient architectures | **Explore architecture foundations** | **Stay up to date**

Operational Resiliency

Learn how to keep your system running during times of disruption or stress with these resources.

Reliability Pillar - AWS Well-Architected Framework

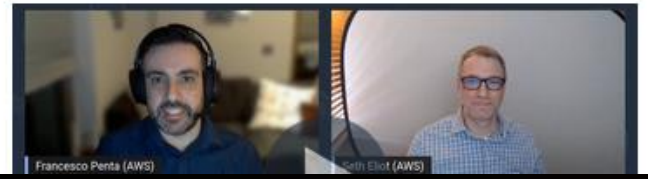
The reliability pillar focuses on workloads performing their intended functions and how to recover quickly from failure to meet demands.

Explore the pillar

Building Resilient Well-Architected Workloads Using AWS Resilience Hub

Learn how to use AWS Resilience Hub to assess and improve the resiliency of your architecture based on its actionable recommendations.

Read the blog



AWS Architecture Center
https://go.aws/3AkSAzA

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Additional resources

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