Xoriant Corporation

Serverless Computing

May 24, 2016 | Romin Irani | Principal Architect

Agenda

01 | Introduction to Serverless Computing

02 | Serverless Platforms from leading vendors

03 | Practical considerations in going Serverless

04 | Real-world client engagements

Computing Spectrum

IaaS

Infrastructure-as-a-Service

PaaS

Platform-as-a-Service

SaaS

Software-as-a-Service

Cloud Computing Models

Computing Spectrum

01 | Compute, Storage, Network

02 | More control

03 | Pay for allocation

04 | More Management overhead

01 | Fixed Runtimes, API model

02 | Build Apps

03 | Pay for use

04 | Less Management overhead

Expectations

01 | Developer Workflow : Deploy code in seconds

02 | Pricing : Low Cost

03 | Architecture : Simplicity, Scalability, Reliability, Low Latency

04 | Infrastructure Management: No Servers to procure, provision and manage

Serverless Computing addresses the above!

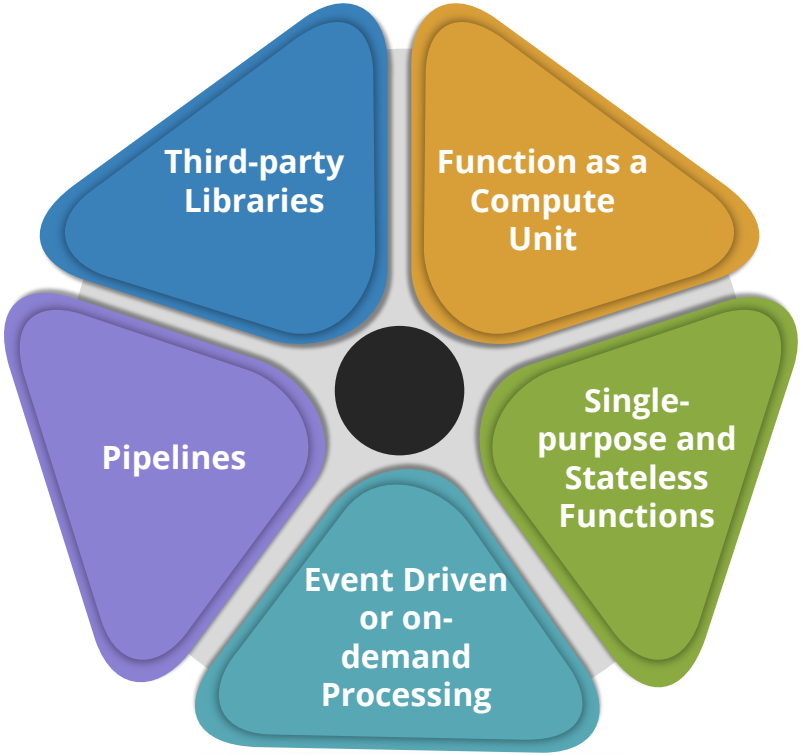
Evolution of Serverless Computing

Apps on Servers

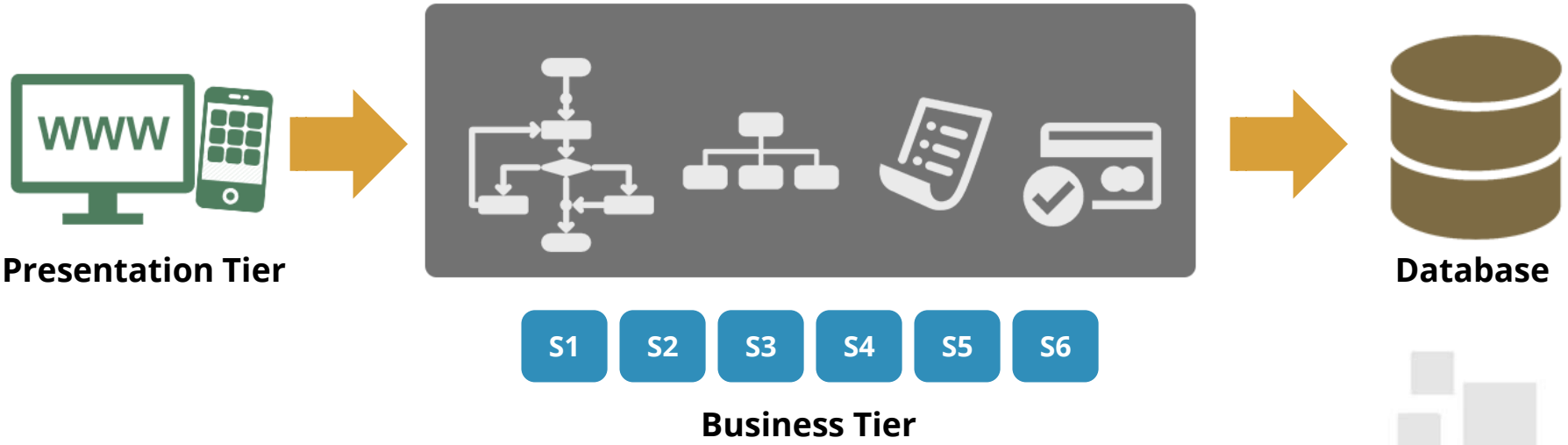
Containers

Functions

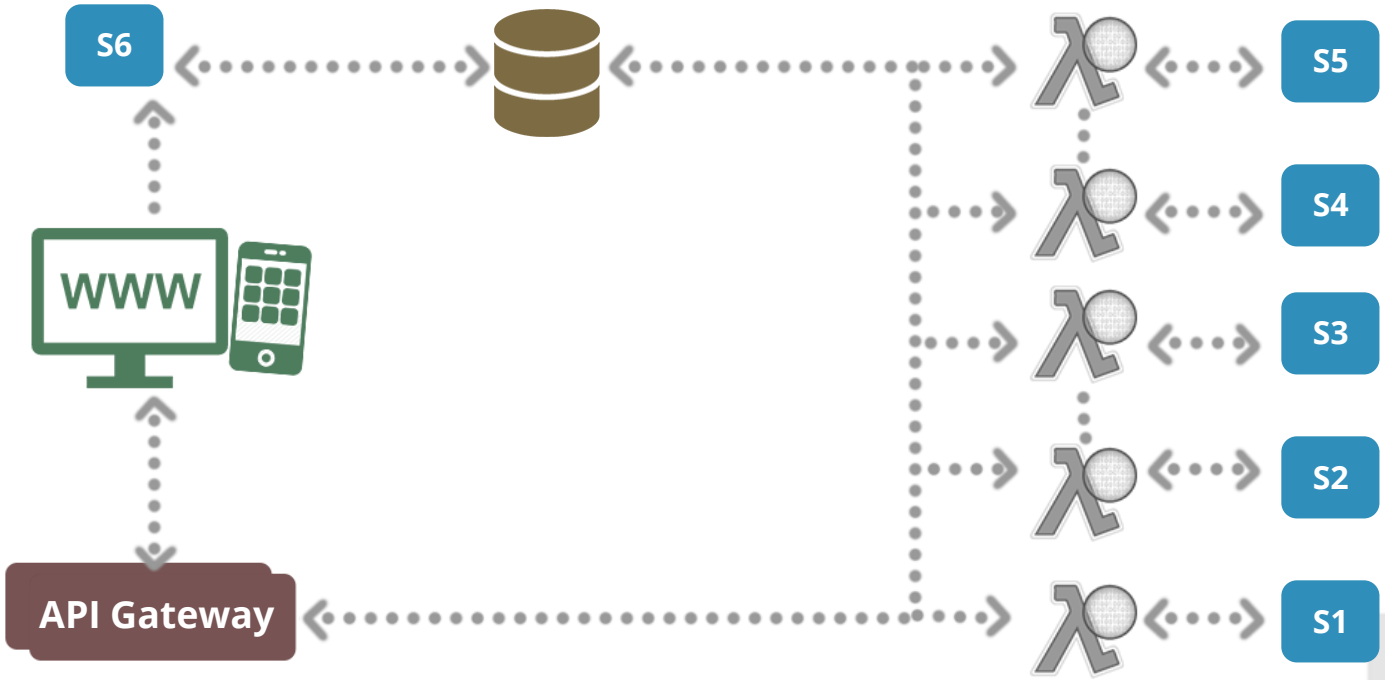
Principles of Serverless Computing



Traditional to Serverless Architectures

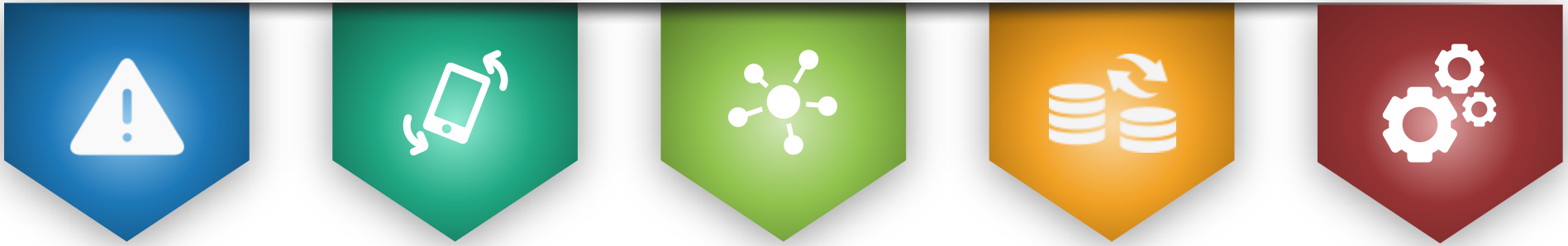


Traditional to Serverless Architecture



Applications of Serverless Computing

Well Suited to



Event Driven Systems

Mobile Backends

IoT Applications

ETL

APIs

Popular Serverless Computing Platforms

AWS Lambda

Azure Functions

Google Cloud Functions

IBM OpenWhisk

Key Differentiators

01 | Event sources / Triggers

02 | Language support

03 | API Gateway

04 | Pricing

Timeline

AWS Lambda — 2014

Google Cloud Functions — 2015

AzureFunctions, IBM OpenWhisk — 2016

AWS Lambda - Features

01 | Compute Service

02 | Upload your code – the Service runs it for you

03 | Respond to Events in other AWS Services: S3, DynamoDB, Kinesis, SNS, etc.

04 | Direct Invocation via API Gateway

05 | Multiple run-times supported : Java, Node.js, Python

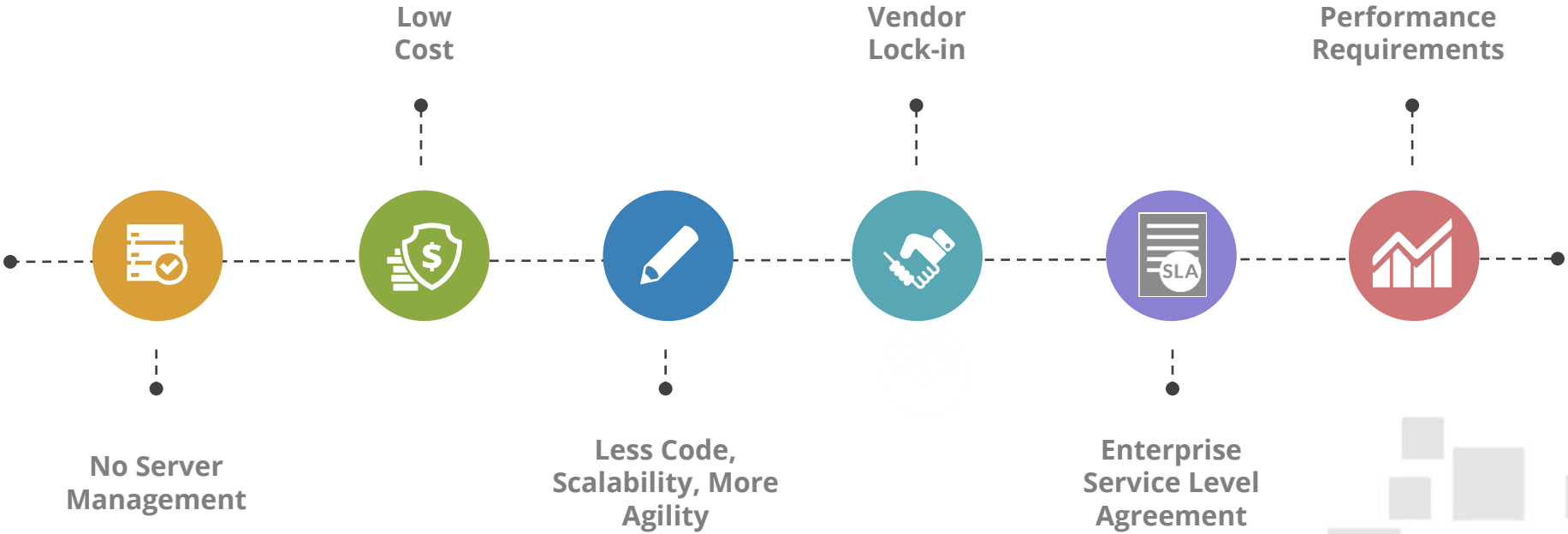
06 | Pricing based on Requests and Time that function executes

AWS Lambda – Functions Node.js

```
exports.myHandler = function(event, context, callback) {
    ...

    // Use callback() and return information to the caller.
}
```

Going Serverless – Factors to consider



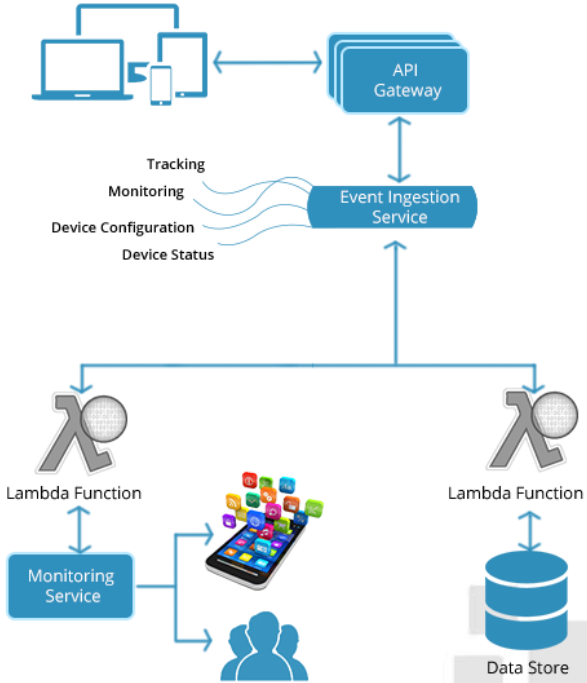
Case Study 1

01 | **Application Overview:**
Enterprise Class Mobile Field Sales Application

02 | **Key Feature Set Requirements:**
Monitors Multiple actions performed on the Device
Complex Rules for translating interactions into Alerts

03 | **Serverless Application:**
Lambda Functions : Storage of Event Actions + Data and pushing to Monitoring Service

04 | **Benefits:**
- Flexibility in processing actions for multiple purposes
- Cost reduction by 30%



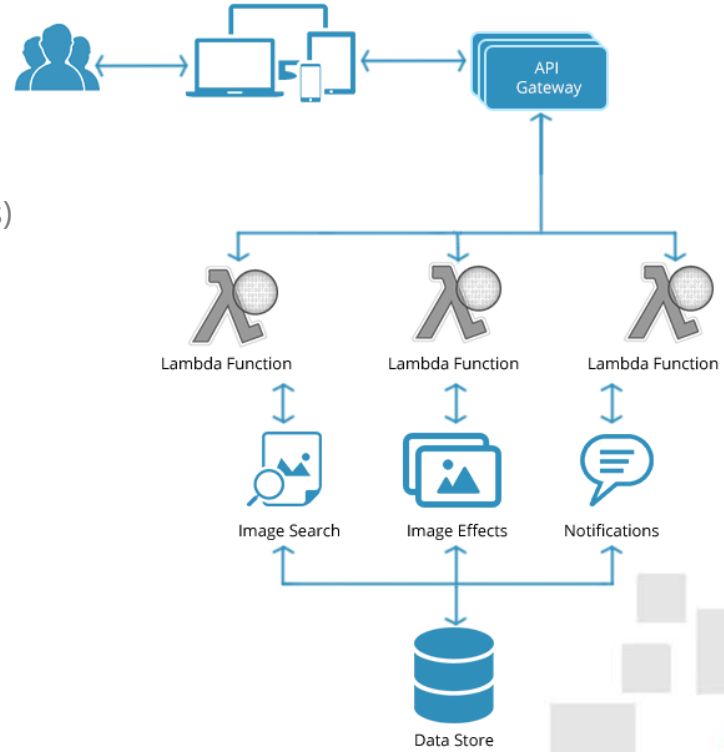
Case Study 2

01 | **Application Overview:**
Photo Sharing Mobile App with social Interactions

02 | **Key Feature Set Requirements:**
Multiple Services (Search, Notifications, Image Effects) architected as Microservices

03 | **Serverless Application:**
Lambda Functions that invoke the Microservices and front-ended by API Gateway

04 | **Benefits:**
- Separation allowed agility in developing individual modules
- Scaling managed by AWS Lambda



About Xoriant

- Xoriant is a Silicon valley based company with a focus to enable organizations to build complex software engineering products
- Xoriant through its Innovation Lab works on cutting edge technologies creating Proof of Concepts
- Xoriant has been evaluating and implementing applications based on Serverless Computing through the software architecture arm of the Innovation Lab
- Xoriant has been working with several enterprises in re-architecting their products to benefit from Serverless and Microservices concept

THANK YOU !

Do you have any Questions?

XORIANT

Email: webinars@Xoriant.com

For **FREE** consultation, please contact us on this email address.