



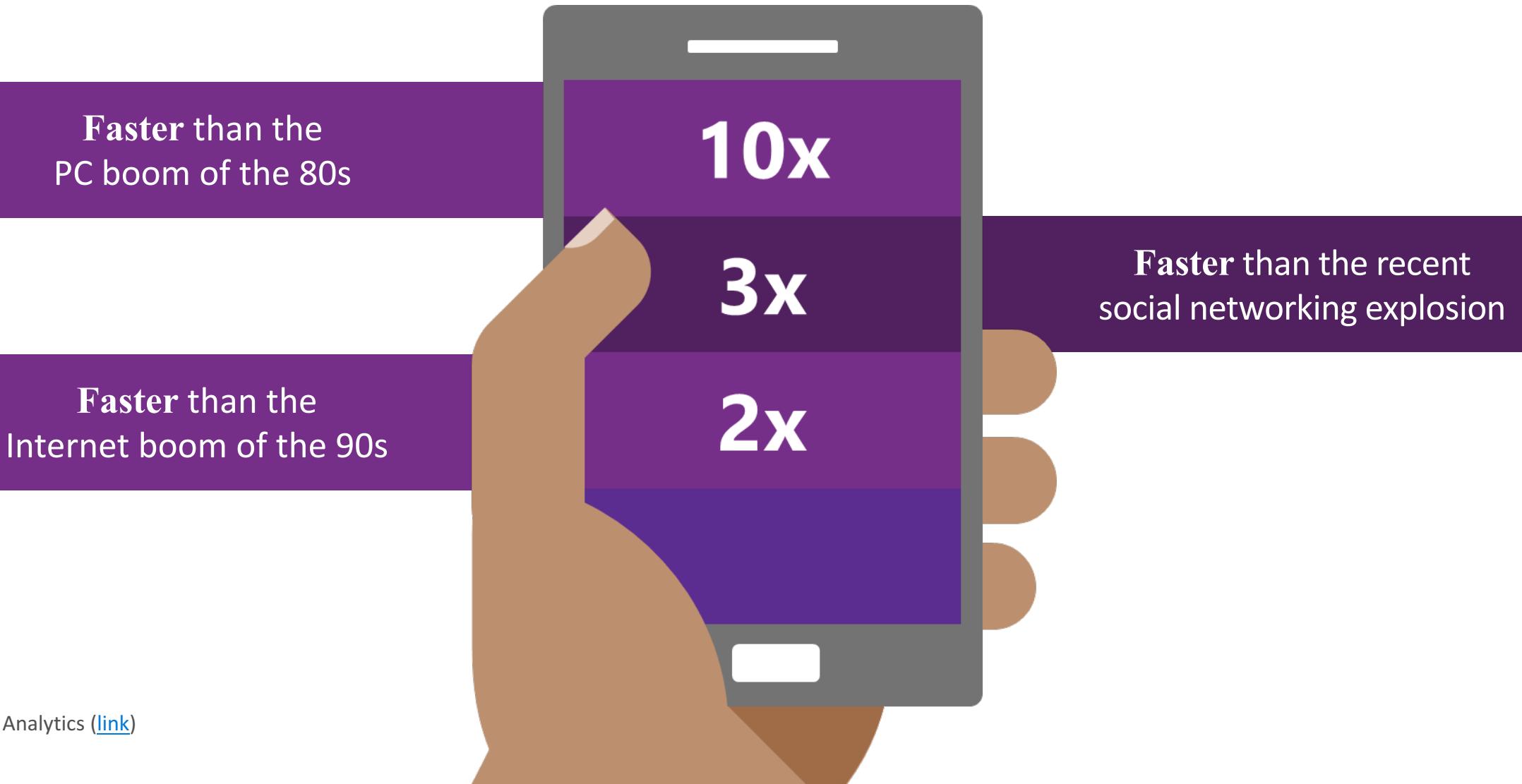
Visual Studio Mobile Center



Building an App with Azure

Wifi: MSFTGUEST Pw: msevent42pz

The Need : Mobile has happened



The Challenge: App development challenges

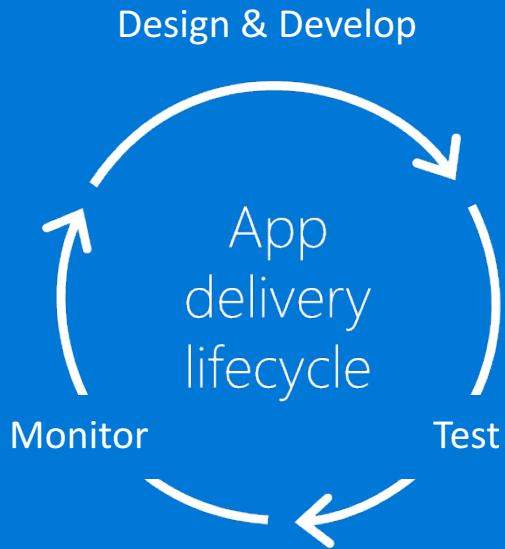
SCALE



100+ apps

Businesses need to rapidly build and deliver high-quality mobile apps

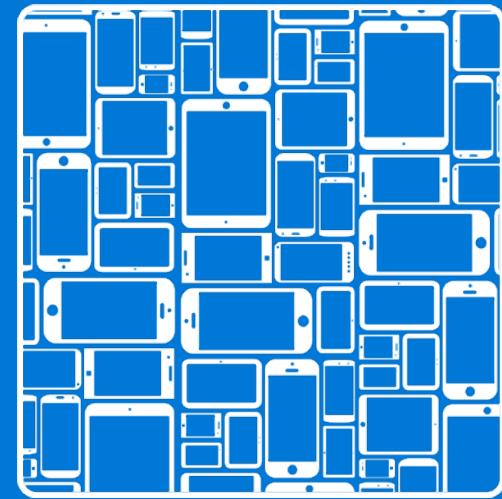
COMPLEXITY



App Delivery

The lifecycle to deliver 'just one' app involves many stages

FRAGMENTATION



1000+ Devices

Mobile ecosystems are complex with many combinations of devices



HockeyApp

Distribution • Crashes • Analytics



Xamarin Test Cloud



Xamarin Insights

Crashes • Analytics



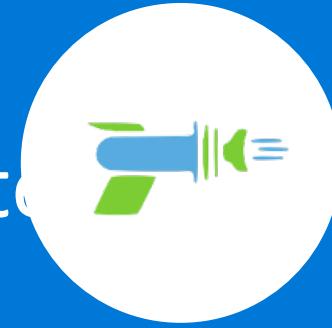
Azure Mobile Engagement

Analytics • Push



Azure App Service

Tables • Auth • Push



CodePush

Distribution

Visual Studio Mobile Center

► Build

✓ Test

↑↗ Distribute

Analytics

Visual Studio Mobile Center

Continuous everything

⚠ Crash Reporting

⟳ Live Update

□ Push Notifications



Visual Studio Mobile Center

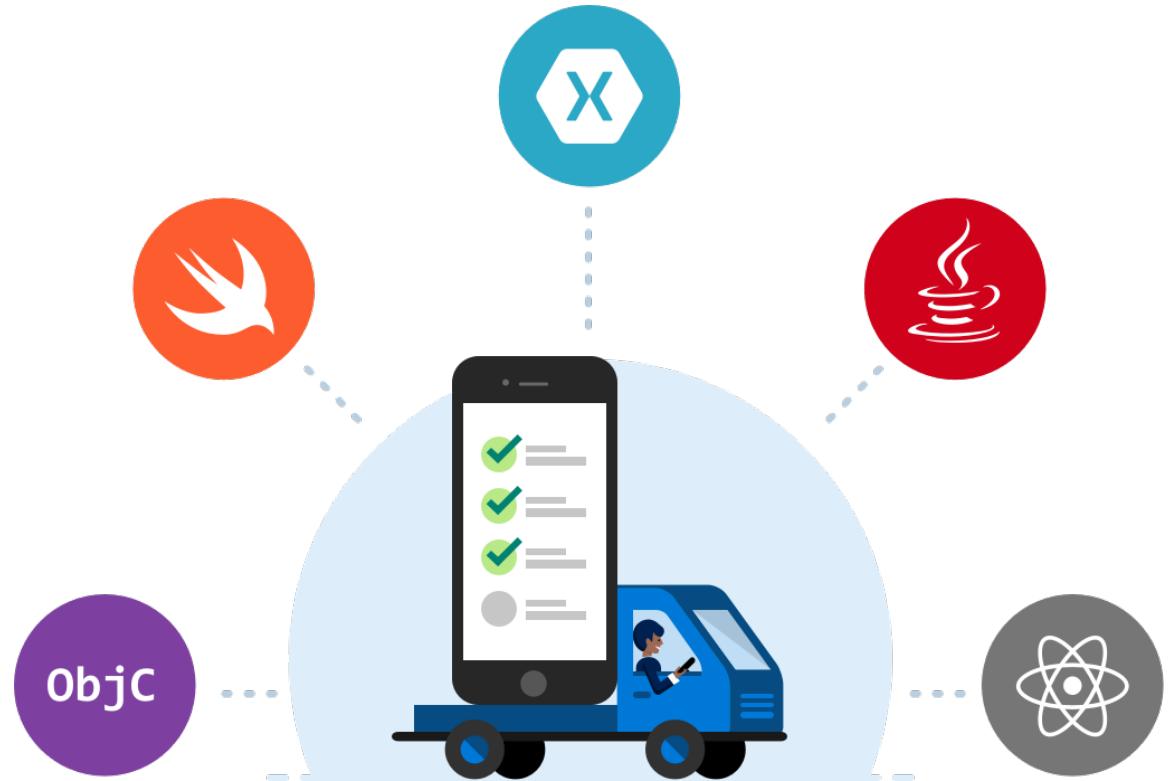
Automate entire app lifecycle

Flexible, open platform and
modular SDKs

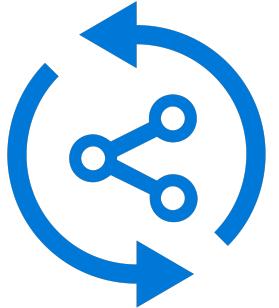
Support for Obj-C, Swift, Java,
React Native, and Xamarin apps

A mobile-optimized front door for
Azure App Service

The next generation of Xamarin
Test Cloud, HockeyApp, and
CodePush

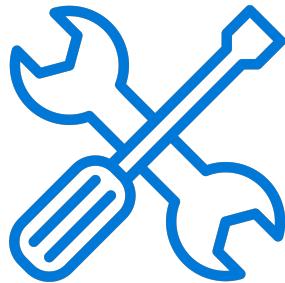


Continuous Everything: Build



Build-on-push

With just a few steps automatically build apps with every commit, and generate packages to test and distribute



Work with existing tools

Connect existing repositories in GitHub, Bitbucket, and Visual Studio Team Services with just a few clicks



Build securely in the cloud

Each build is run on a separate, clean virtual machine hosted on our secure cloud servers

Continuous Everything : Test



Release faster
Shrink release times
significantly and push new apps
out faster

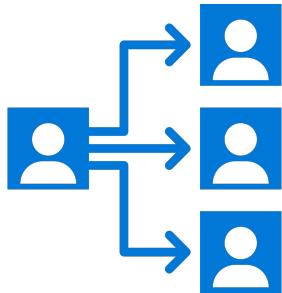


Ship high quality apps
Ensure the highest quality user
experience that keeps users
continuously engaged



Engage a broad audience
Test on a broad range of devices
to make sure apps work on *your*
users' devices

Continuous Everything : Deploy



Instantly distribute apps
Quickly get apps in the hands of
your beta testers on multiple
device platforms

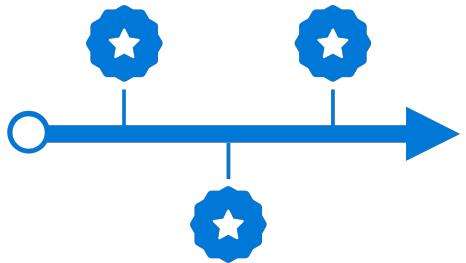


**Create targeted
distribution groups**
With categorized groups of
users, send specific builds
to specific groups and
devices



Send in-app updates
Notify beta testers as soon as
a new build is available, right
inside the app

Continuous Everything : Learn



Ship consistent quality
Diagnose crashes fast for maximum uptime and maintain high quality



Get real-time insights
Monitor your app health with real-time crash reports to diagnose and fix problems quickly

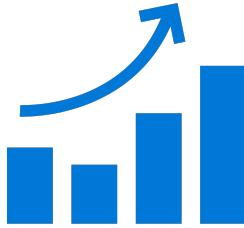


Do smart troubleshooting
Crashes are grouped together by similarities to focus on the most critical groups

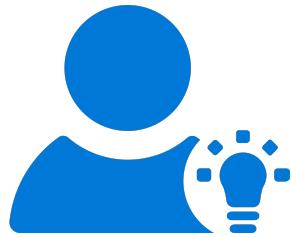


Easily analyze data
Get detailed, easy-to-read stack traces and logs to quickly understand issues

Continuous Everything : Learn



Access instant data
Integrate the analytics SDK
in just two steps to start
instantaneously seeing data
from your app



**Understand
your customers**
Real-time app usage data about
your core audience—devices,
locations, session info, and more



Build what users want
Analyze the data to see how
customers use your app and
accordingly prioritize and
build new features



Learn more faster
Use custom events to
follow users' actions
through your app to
analyze their likes and
dislikes

Continuous Everything : Learn



Application Insights

Custom Analytics

Run your own analysis,
queries and filtering on your
data.

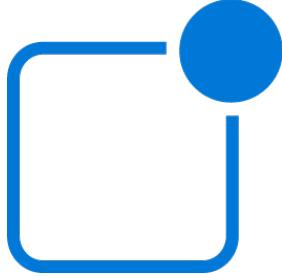


Storage blob

Expanded Storage

Programmatically access the
raw data, store it indefinitely

Continuous Everything : Engage



Focused Messaging

Create and send push notifications from a single portal to all app versions



Create Targeted Audiences

Use your Analytics data to create targeted audiences to help tailor messages to specific customers

Today's Agenda

AM

- 9.30 – 10.30 Setup, Build and Push
- 10.30 – 10.45 Break
- 10.45 - 12.00 Testing, Distribution, Analytics and Crash Reporting

PM

- 12.00 – 1.00 Perficient | Lunch
- 1.00 – 2.00 Azure Functions
- 2.00 – 2.15 Break
- 2.15 – 3.15 Hands on Lab
- 3.15 – 4.00 Digital Transformation with Azure
- 4.00 – 5.00 Networking and Prizes

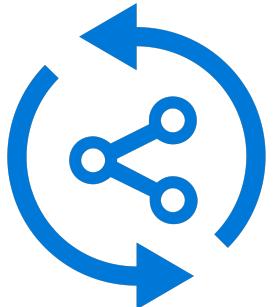


Rob Jewett
App. Innovation Specialist
Global Black Belt

Getting Started

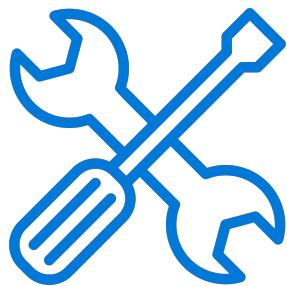
1. Log in to <https://mobile.azure.com/>
2. Connect directly with Github, your Microsoft login or new sign-up
3. Add new App → choose OS/platform
4. Build:
 1. Select a service
 2. Select Branch
 3. Configure and build

Mobile Center: Build



Build-on-push

With just a few steps automatically build apps with every commit, and generate packages to test and distribute



Work with existing tools

Connect existing repositories in GitHub, Bitbucket, and Visual Studio Team Services with just a few clicks



Build securely in the cloud

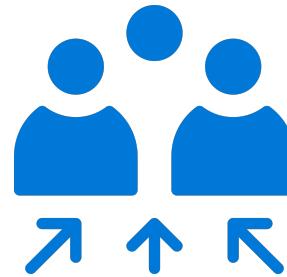
Each build is run on a separate, clean virtual machine hosted on our secure cloud servers

Mobile Center: Push Notifications



Fast and easy to setup

Just a few lines of code in your app. No need to specify format for iOS, Android and Windows.



Send to specific audiences

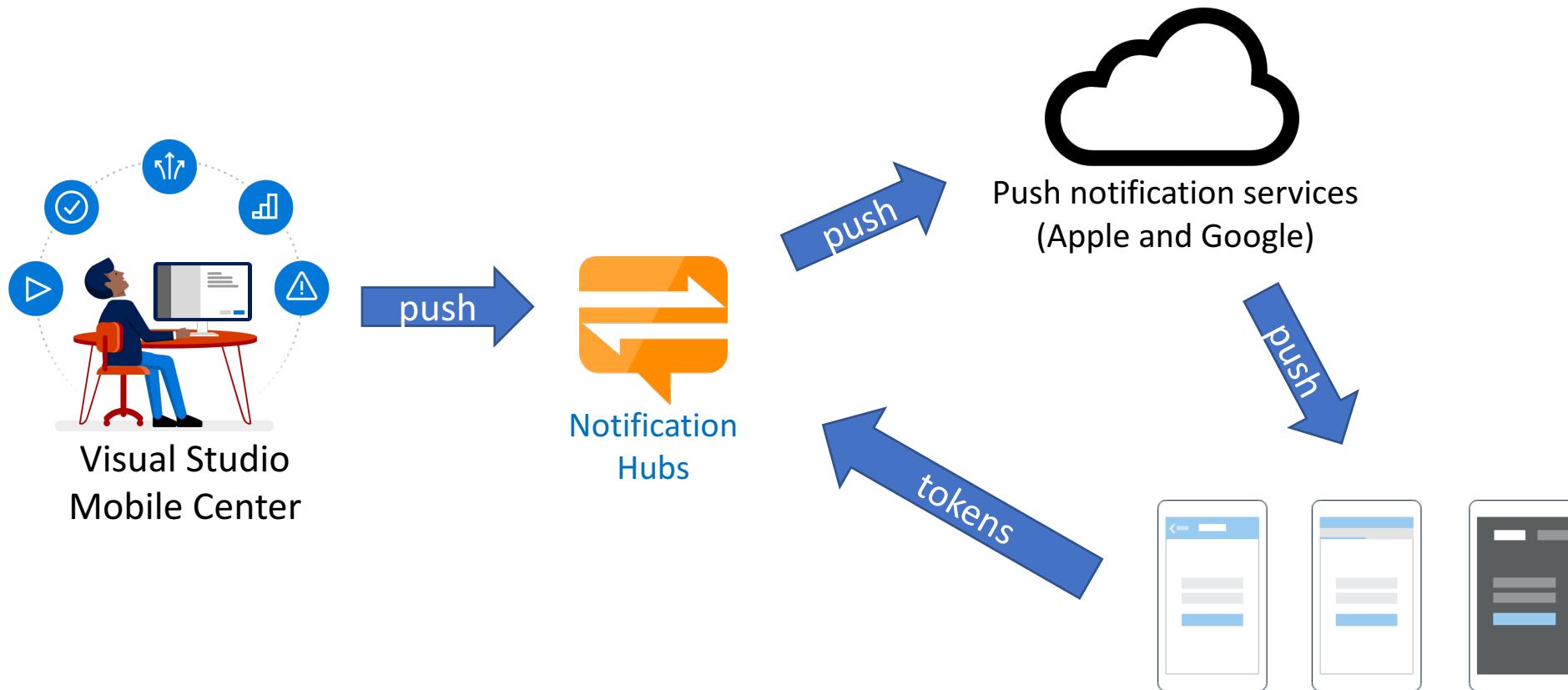
Target push notifications to specific users or devices



Fast and easy to send

Three easy steps: Compose, Target, and Review.
No need for technical skills!

Mobile Center: Push Notifications





June Cho
Enterprise Mobile App Dev
App Innovation | Global Black Belt

Why Test on Real Devices?

- Verify App Integrity
 - UI loads as expected on different sized screen
 - App performs as expected on different CPUs
- Accessible UI
 - Features work as per User Flows
 - Useable Functionality
- Testing as part of CI
 - Reliable Development Cycle

Mobile Center: Test



Release faster

Shrink release times significantly and push new apps out faster

Ship high quality apps

Ensure the highest quality user experience that keeps users continuously engaged

Engage a broad audience

Test on a broad range of devices to make sure apps work on *your* users' devices

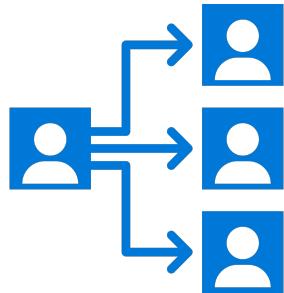
Create new features

Spend less time fixing bugs, and more time creating value

Supported Testing Platforms

- **Xamarin.UITest**
 - Tests written in C#
 - Supports Xamarin apps, Native (Android, iOS) Apps, React Native Apps, Hybrid Apps
- **XCUITest**
 - Tests written in Swift
 - Supports native iOS apps
- **Espresso**
 - Tests written in Java
 - Supports native Android apps
- **Appium**
 - Tests written in Java
 - Supports native (Android and iOS) apps , Xamarin Apps, React Native Apps, Hybrid Apps

Mobile Center: Distribute



Instantly distribute apps
Quickly get apps in the hands of
your beta testers on multiple
device platforms



**Create targeted
distribution groups**
With categorized groups of
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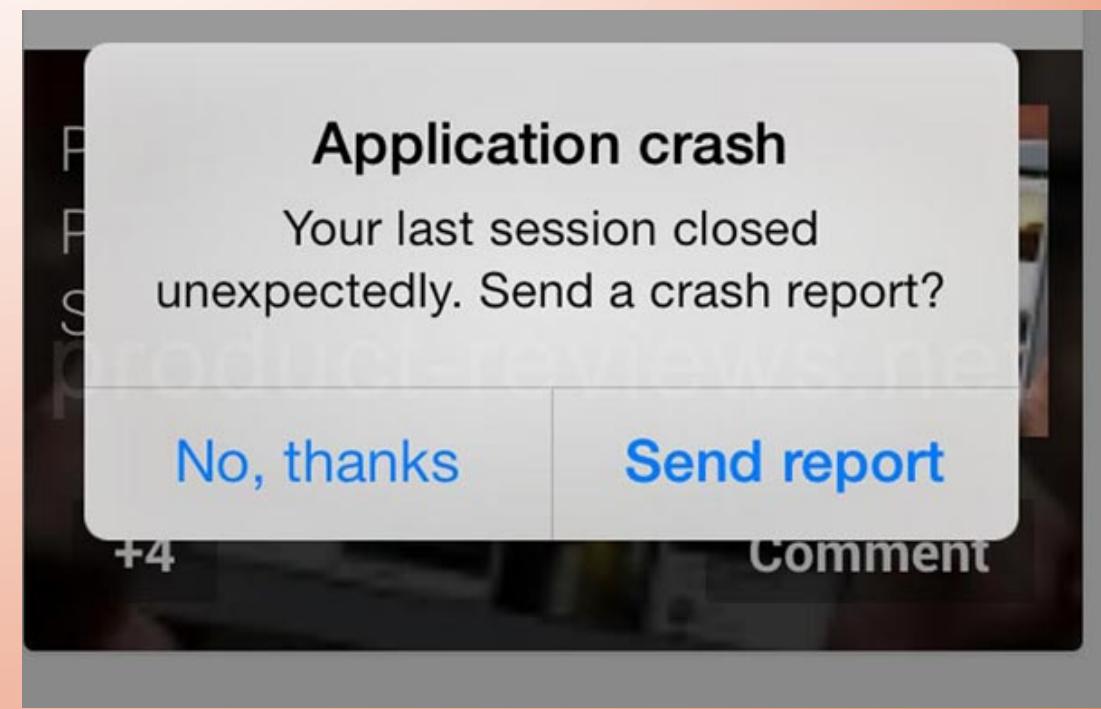
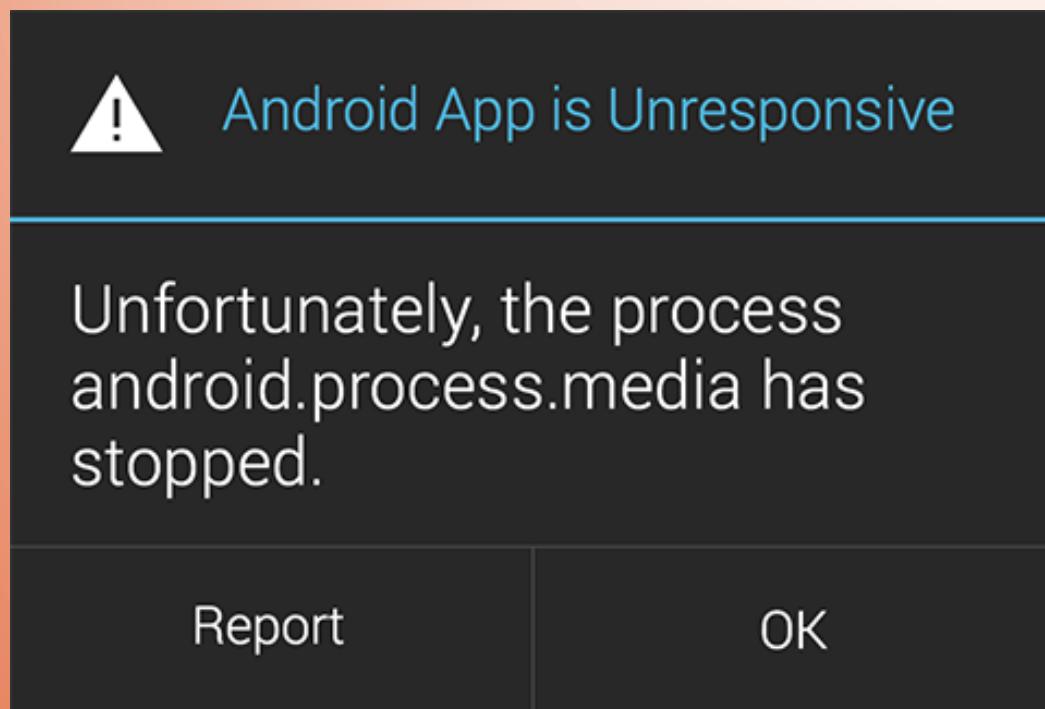


Send in-app updates
Notify beta testers as soon as
a new build is available, right
inside the app

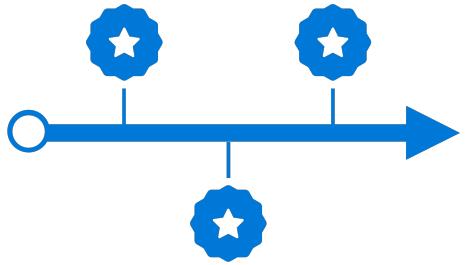
Getting Started

Distributing with Mobile Center is easy, and only requires a few steps:

1. Add users to grant access to all releases.
2. Create Distribution Groups to manage access.
3. Upload a new application release.
4. Install the release onto your device by clicking on the link in the email.
5. Enable In-App Updates to help your users stay always on the latest release.



Mobile Center: Crashes



Ship consistent quality

Diagnose crashes fast for maximum uptime and maintain high quality

Get real-time insights

Monitor your app health with real-time crash reports to diagnose and fix problems quickly

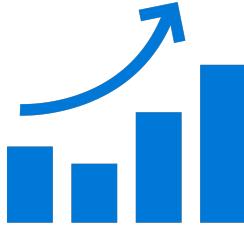
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Crashes are grouped together by similarities to focus on the most critical groups

Easily analyze data

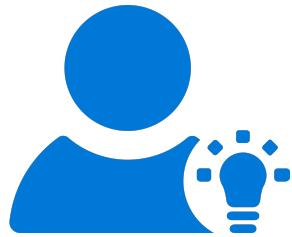
Get detailed, easy-to-read stack traces and logs to quickly understand issues

Mobile Center: Analytics



Access instant data

Integrate the analytics SDK in just two steps to start instantaneously seeing data from your app



Understand your customers

Real-time app usage data about your core audience—devices, locations, session info, and more



Build what users want

Analyze the data to see how customers use your app and accordingly prioritize and build new features



Learn more faster

Use custom events to follow users' actions through your app to analyze their likes and dislikes

Key Features

- Overview
- Custom Events
- Log Flow
- Export to Azure

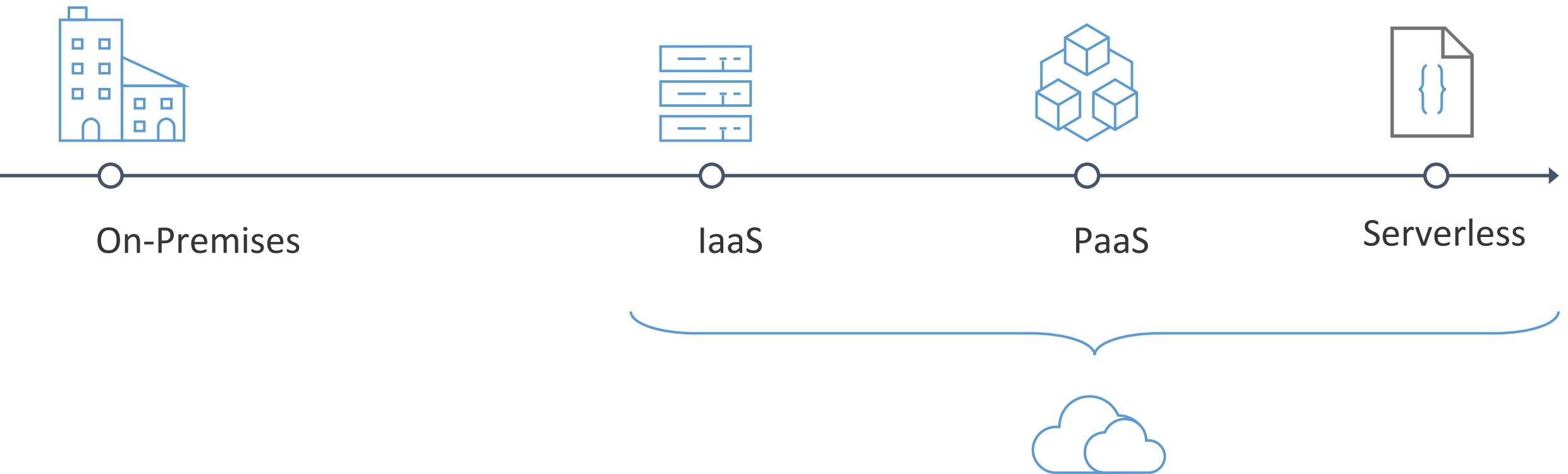
Sign up free today:
mobile.azure.com

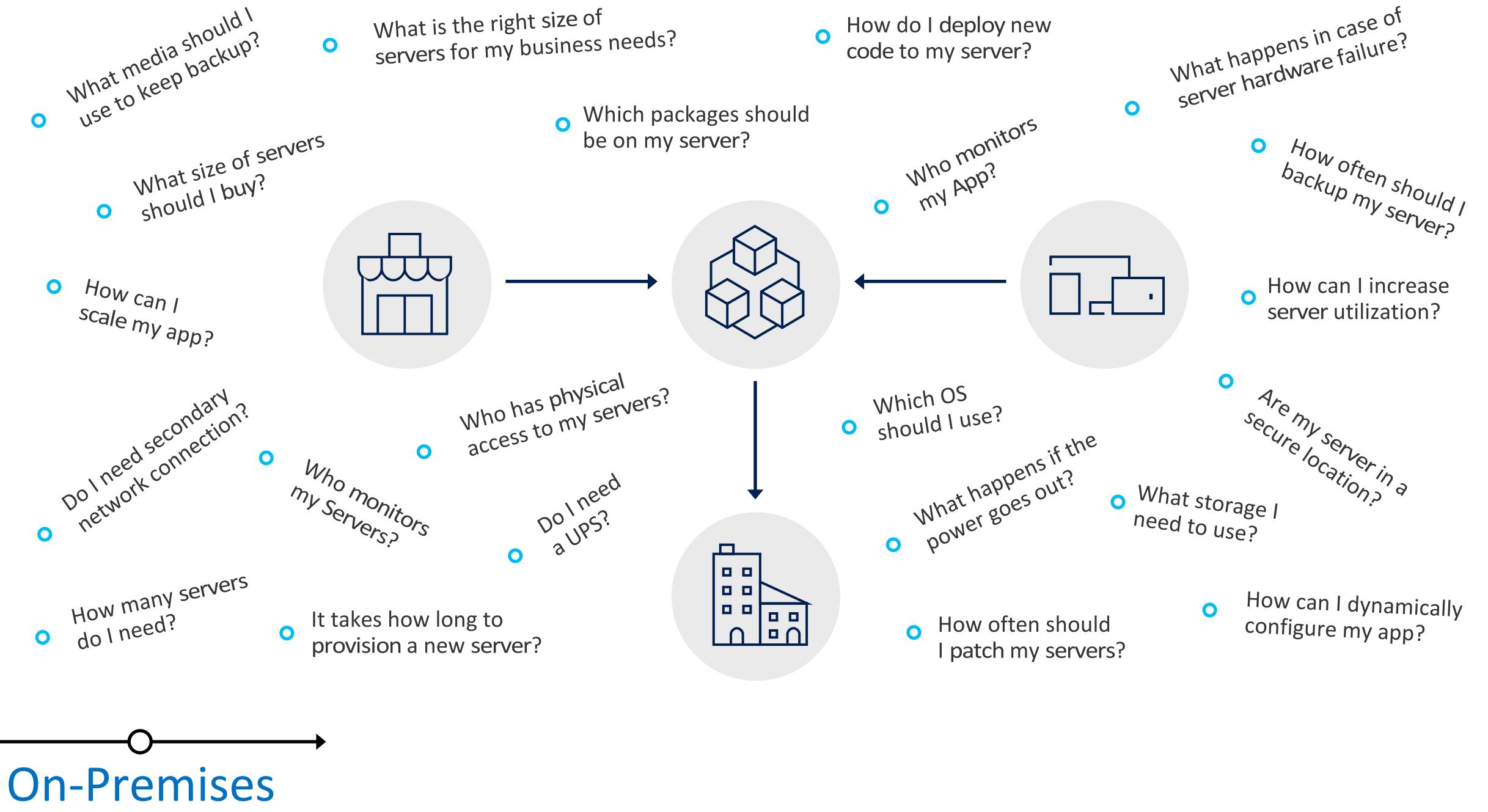
Azure Serverless and Functions Overview

Dan Rigby
Technology Solutions Professional
@DanRigby

Why Serverless?

The evolution of application platforms





What is the right size of servers for my business needs?

How can I increase server utilization?

How many servers do I need?

How can I scale my app?



How often should I patch my servers?

How often should I backup my server?

Which packages should be on my server?

How do I deploy new code to my server?

Which OS should I use?

Who monitors my App?

On-Premises

IaaS

The “evolution” of application platforms

What is the right size of “servers” for my business needs?

How can I increase “server” utilization?

How many “servers” do I need?

How can I scale my app?



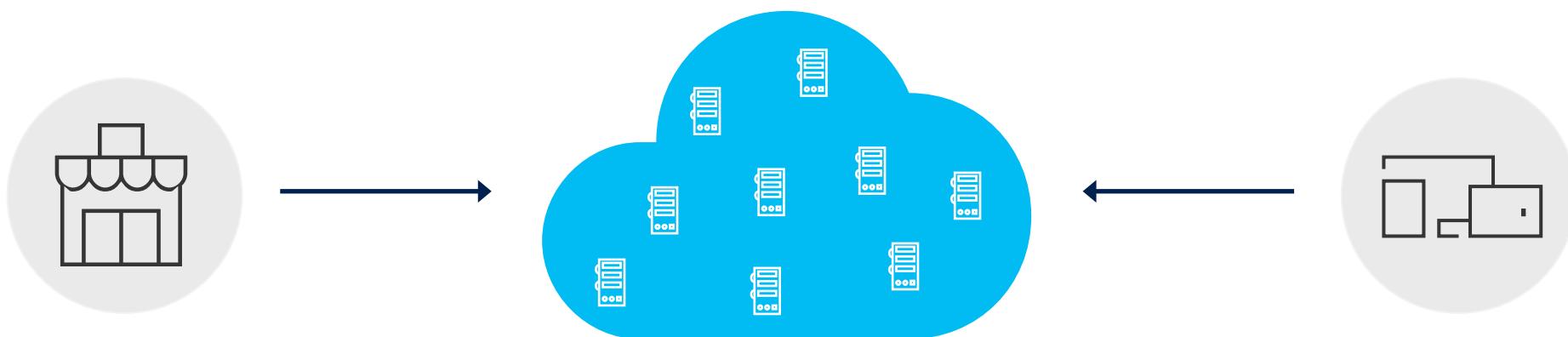
On-Premises

IaaS

PaaS

The “evolution” of application platforms

How do I architect my app?



Serverless, the platform for next gen apps

On-Premises

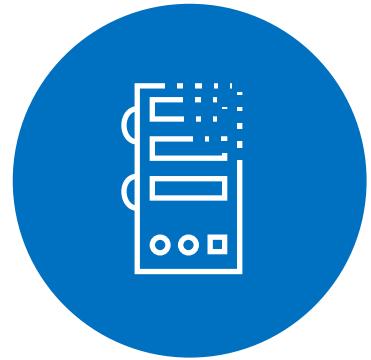
IaaS

PaaS

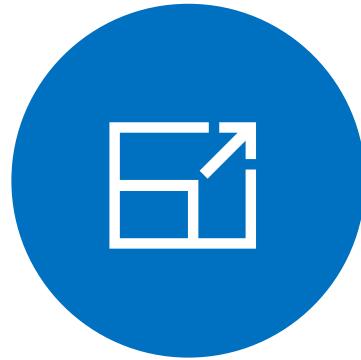
Serverless

The “evolution” of application platforms

What is Serverless?



Abstraction
of servers



Event-driven/
instant scale

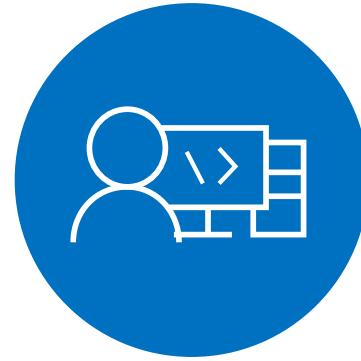


Micro-billing

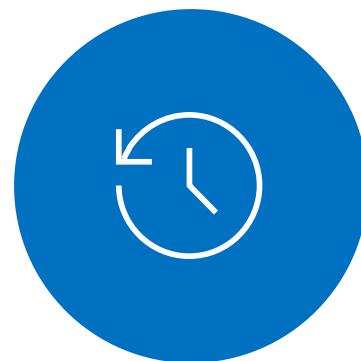
Benefits of Serverless



Manage apps
not servers

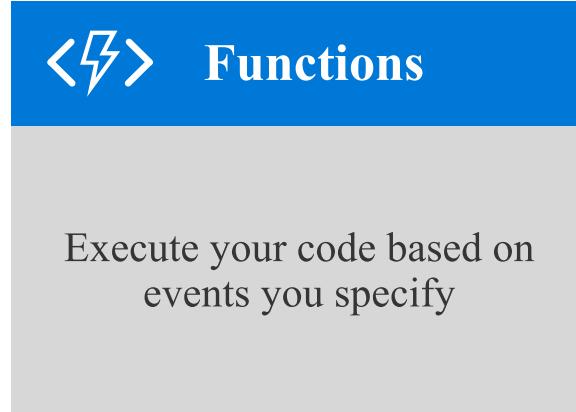


Reduced
DevOps



Faster time
to market

Serverless application platform components



Serverless application platform components

{ } Logic Apps

Design workflows and orchestrate processes

<⚡> Functions

Execute your code based on events you specify

Serverless application platform components



Event Grid

Manage all events that can trigger code or logic



Logic Apps

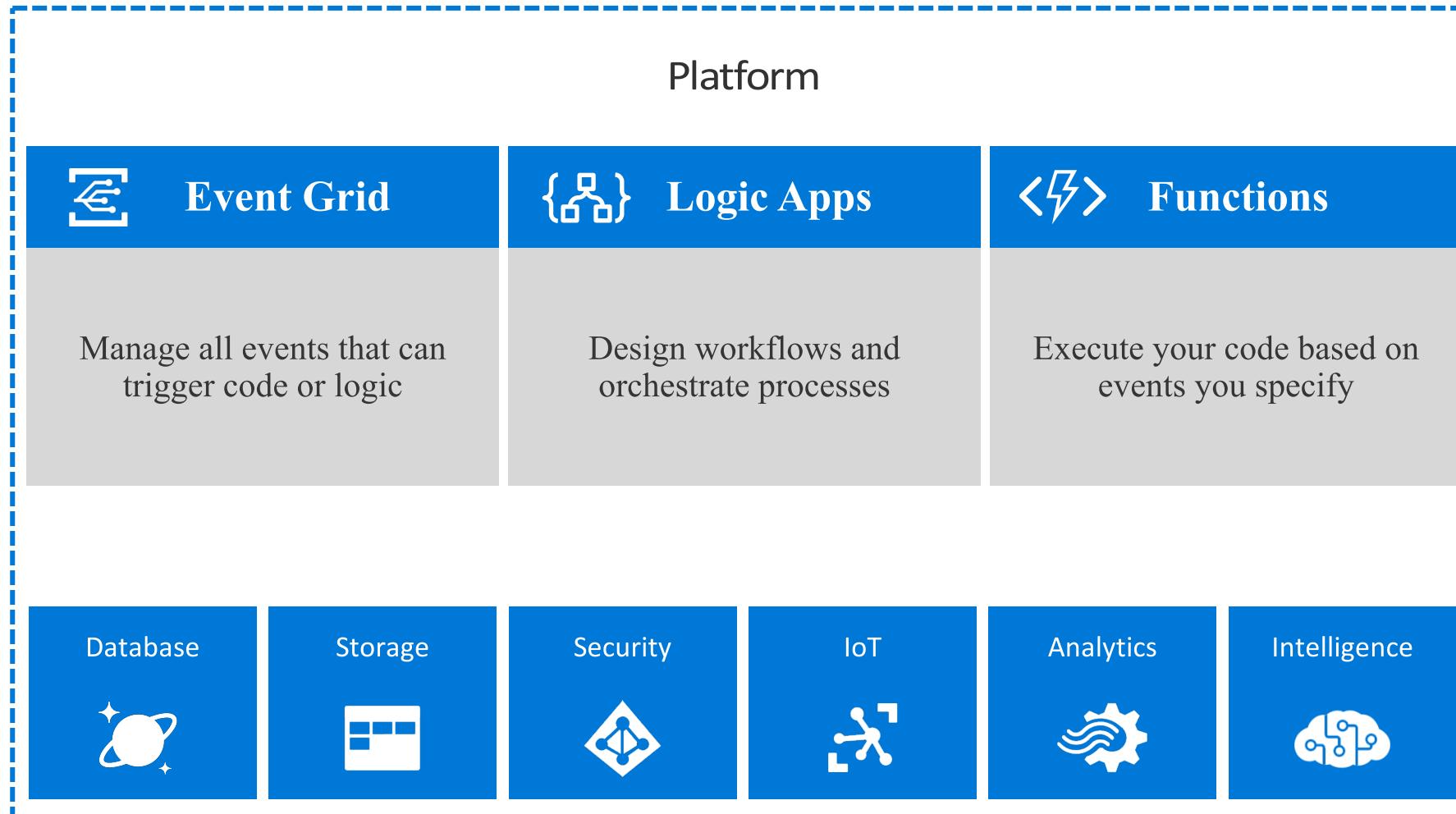
Design workflows and orchestrate processes



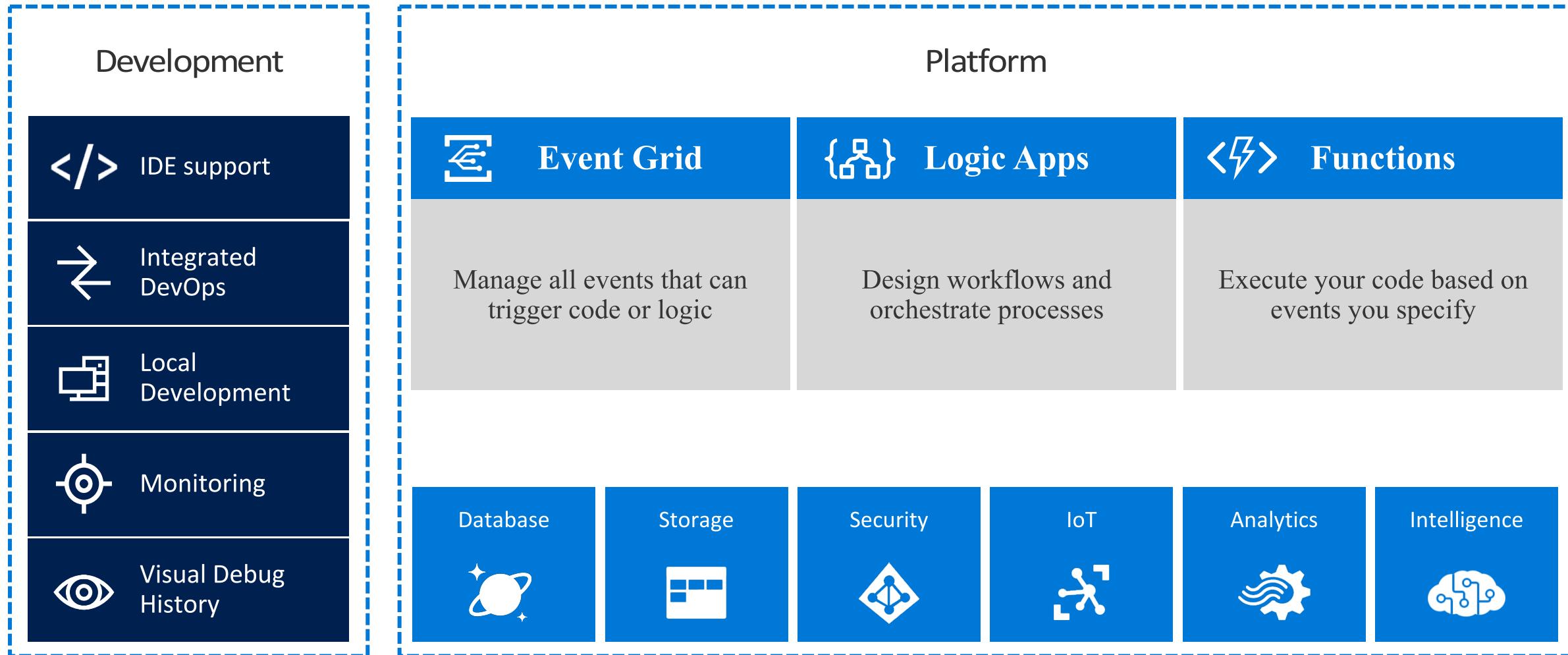
Functions

Execute your code based on events you specify

Serverless application platform components



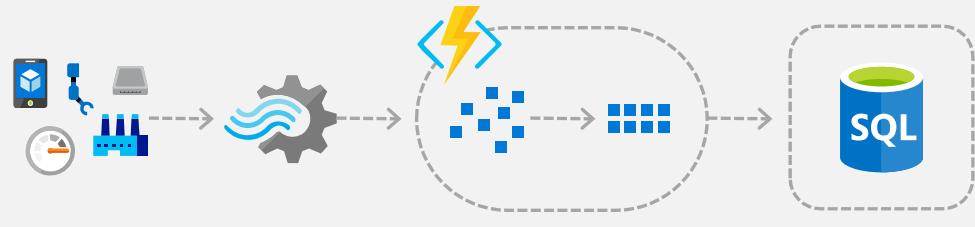
Serverless application platform components



Scenarios for Serverless

Anything that needs to respond to events

Real-time stream processing

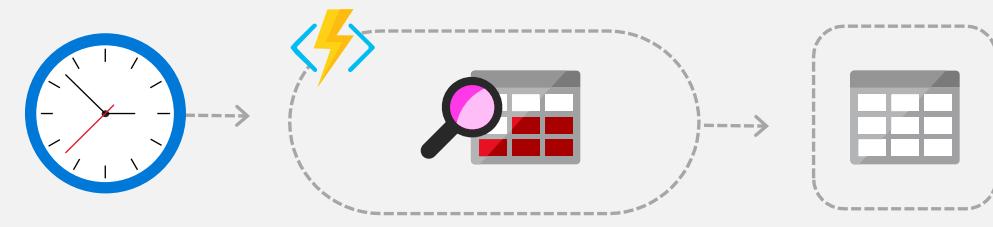


Millions of devices feed into Stream Analytics

Transform to structured data

Store data in SQL DB

Timer-based processing



Every 15 minutes

Find and clean invalid data

Clean table

Backends (Mobile/IoT/Web)



Photo taken and WebHook called

Stores in blob storage

Produces scaled images

Real-time bot messaging



Message sent to Chatbot

Cortana Analytics answers questions

Chatbot sends response

Event Grid

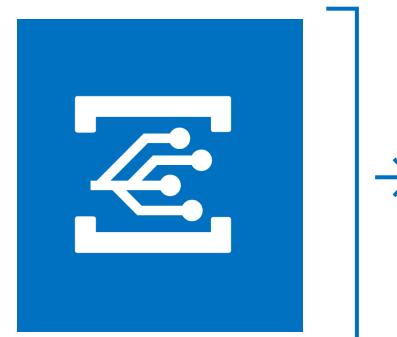
Manage all events in one place

Unlock new scenarios for your apps

Ensure reliability and performance for your apps

Event publishers

-  Blob Storage
-  Resource Groups
-  Azure Subscriptions
-  Event Hubs
-  Custom Events



Event handlers

-  Azure Functions
-  Logic Apps
-  Azure Automation
-  WebHooks

Event Grid delivers at massive scale



Sub-second
end-to-end latency in
the 99th percentile

Near real-time

10,000,000 events
per second per region

Massive scale-out

24-hour retry with
exponential back off for
events not delivered

High reliability

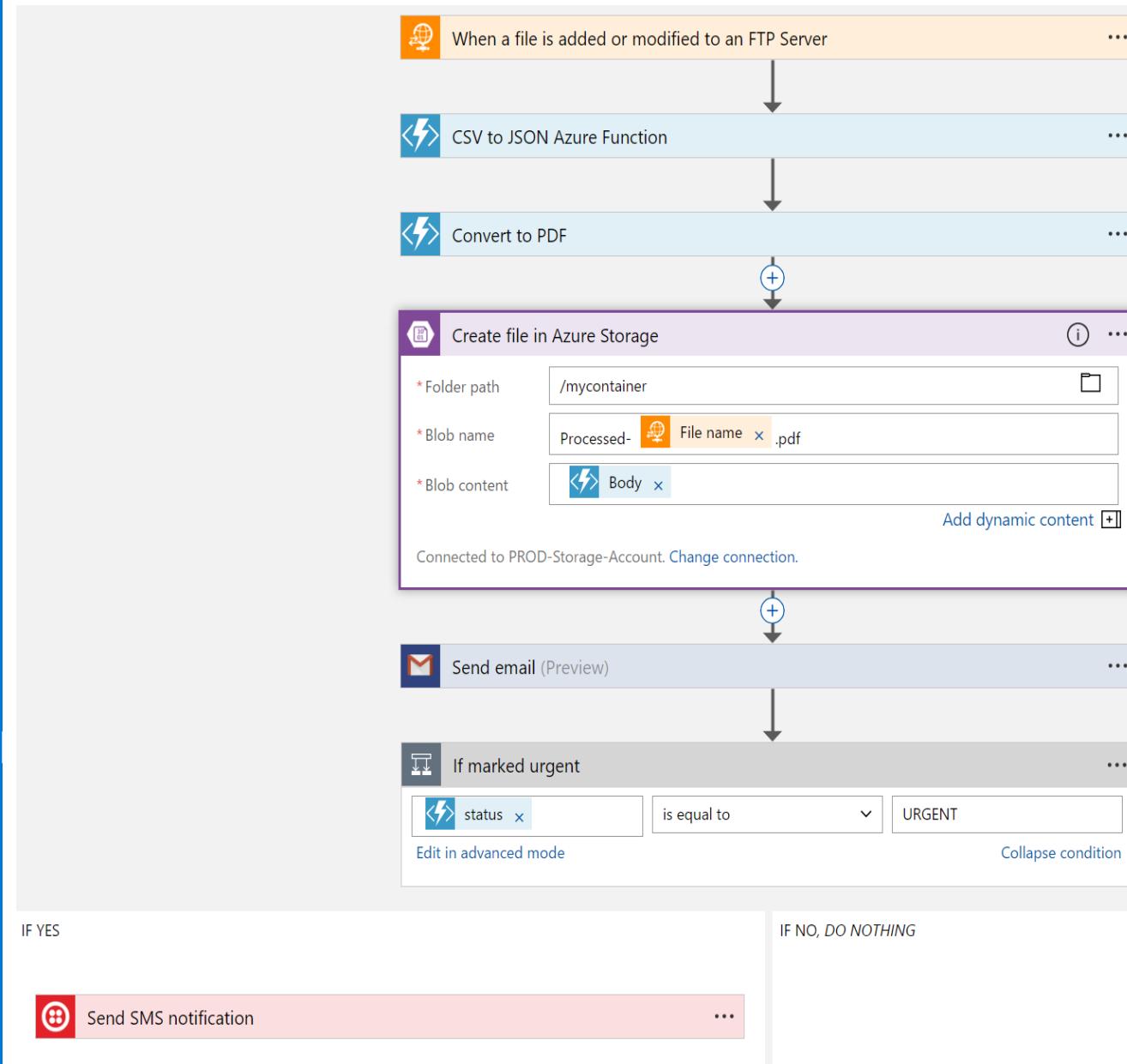
Logic Apps

Visually design workflows in the cloud

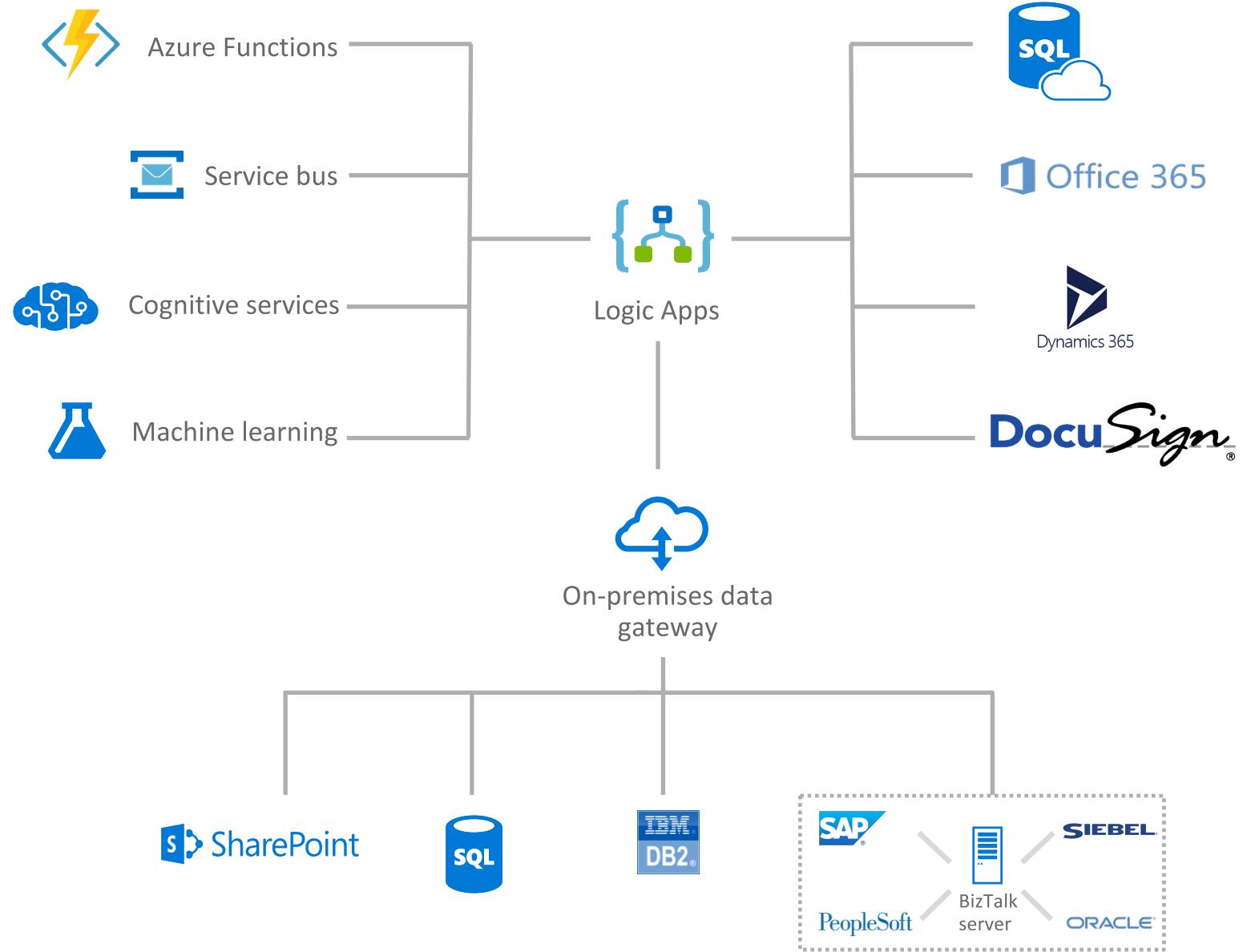
Express logic through powerful control flow

Connect disparate functions and APIs

Utilize declarative definition to work with CI/CD



Logic Apps connects everything



Logic Apps
connectors—
Over 170 and
growing



facebook®

box

twitter



WORDPRESS



....and more!

Functions

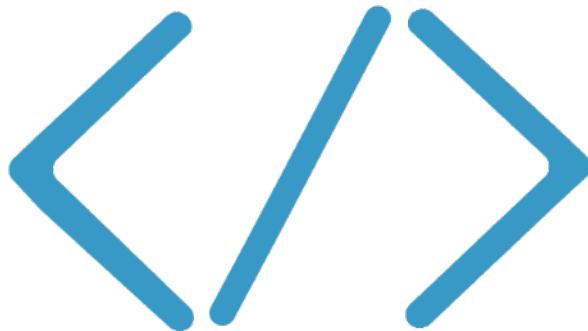
Develop locally using best of class developer tools

Boost productivity through triggers and bindings

Choose from a variety of programming languages

Integrate with existing DevOps processes

Code



Azure Functions



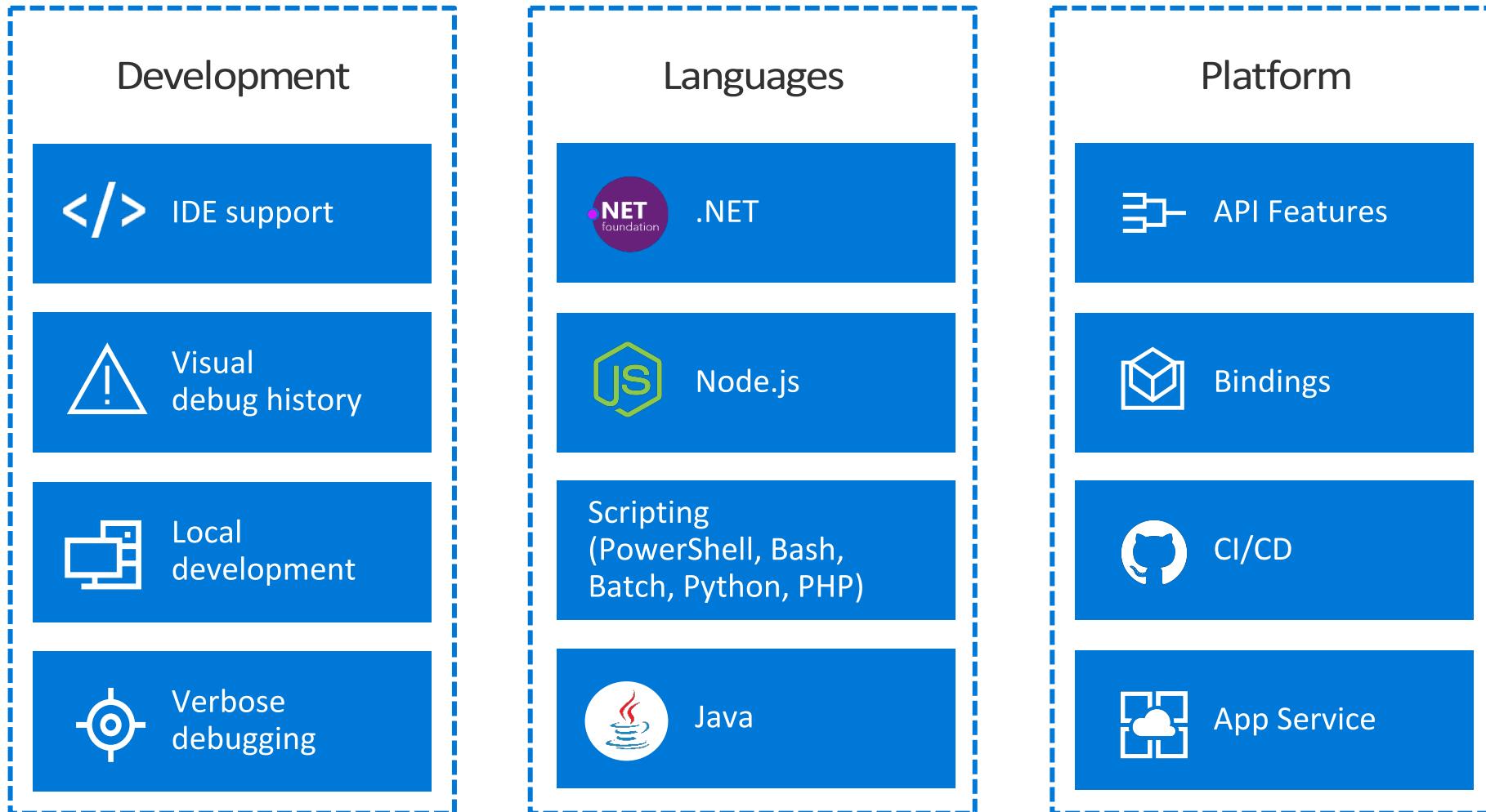
Events & Data



Functions triggers and bindings

Type	Service	Trigger*	Input	Output
Schedule	Azure Functions	✓		
HTTP (REST or webhook)	Azure Functions	✓		✓ **
Blob Storage	Azure Storage	✓	✓	✓
Events	Azure Event Hubs	✓		✓
Queues	Azure Storage	✓		✓
Queues and topics	Azure Service Bus	✓		✓
Storage tables	Azure Storage		✓	✓
SQL tables	Azure Mobile Apps		✓	✓
NoSQL DB	Azure Cosmos DB	✓	✓	✓
Push Notifications	Azure Notification Hubs			✓
Twilio SMS Text	Twilio			✓
SendGrid email	SendGrid			✓

Azure Functions platform features



What's new in Azure Functions



Develop functions
locally on Linux,
MacOS, Windows

⚡ Functions

Execute your code based on events you specify



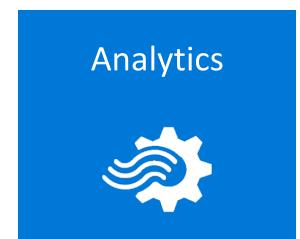
Monitor serverless applications using Application Insights



Trigger a function based on changes in Cosmos DB

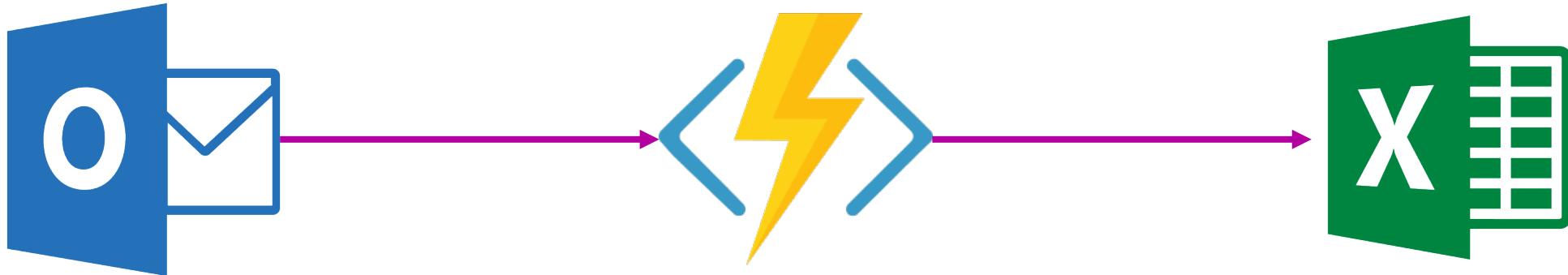


Securely provide access to information in Microsoft Graph through a function



Trigger a function from a real-time analytics pipeline in Stream Analytics

Microsoft Graph bindings for Functions



React to:

- Mail messages
- Calendar events
- Personal contacts
- OneDrive items

Read from:

- Excel
- OneDrive

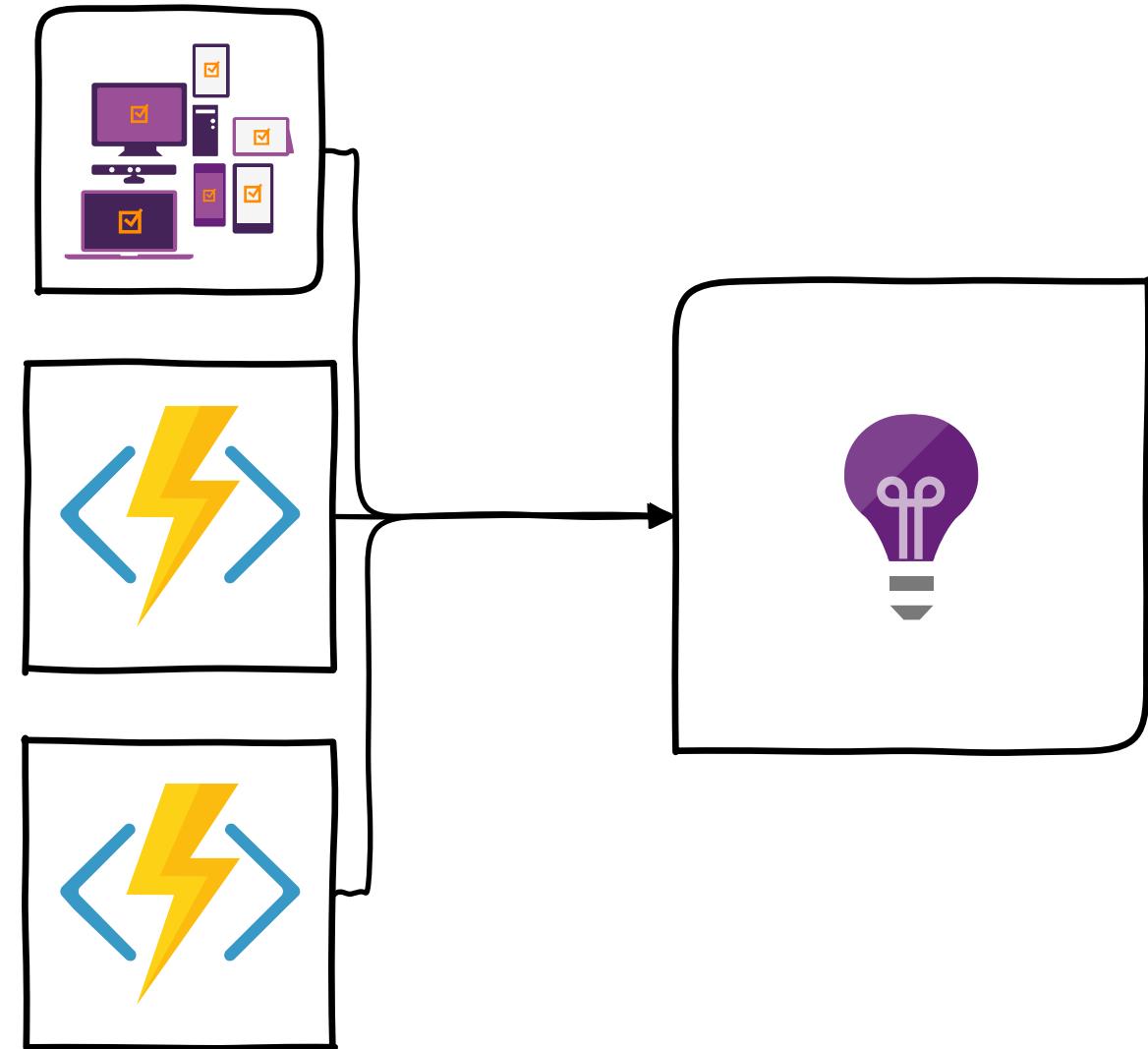
Write to:

- Excel
- OneDrive
- Outlook messages

+ more with identity support for API calls

Functions + Application Insights

- Extensible Application Performance Management (APM)
- Rich data: Metrics, Traces, Exception tracking, Dependencies, Page Views, User data, custom events
- Easy to use graph/alerts, powerful analytics portal, integration with PowerBI and other analytics services



Demo

In review...

Serverless = focus on your business logic not infrastructure

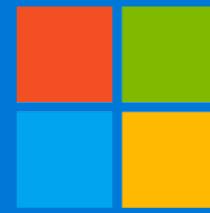
Event Grid – manage all events in one place

Logic Apps – compose serverless workflows

Azure Functions – author serverless code

- ✓ Secure access
- ✓ Work with your data
- ✓ Integrate with existing business apps
- ✓ Manage no servers





Microsoft