

# **2018**

---

# **Global Azure**

# **BOOTCAMP**

# **VERONA**



# Gli sponsor Mondiali



**SERVICEBUS 360**



**Microsoft**

**cerebrata**

**Cloudmonix**



24 / CO

**Platinum Sponsor**



**Gold Sponsor**



digital  
joy



**Basic Sponsor**

# Tweet della giornata



#GlobalAzure

@cloudgen\_verona



2018  
Global Azure  
BOOTCAMP

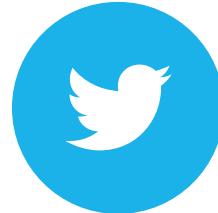
## ARGOMENTO

# Introduzione a Visual Studio App Center

---



MATTEO TUMIATI



@xtumiox



matteotumiati



matteotumiati



# Agenda



What's Visual Studio App Center

Connect your first app and add the Visual Studio App Center SDK

Use continuous builds and continuous distribution

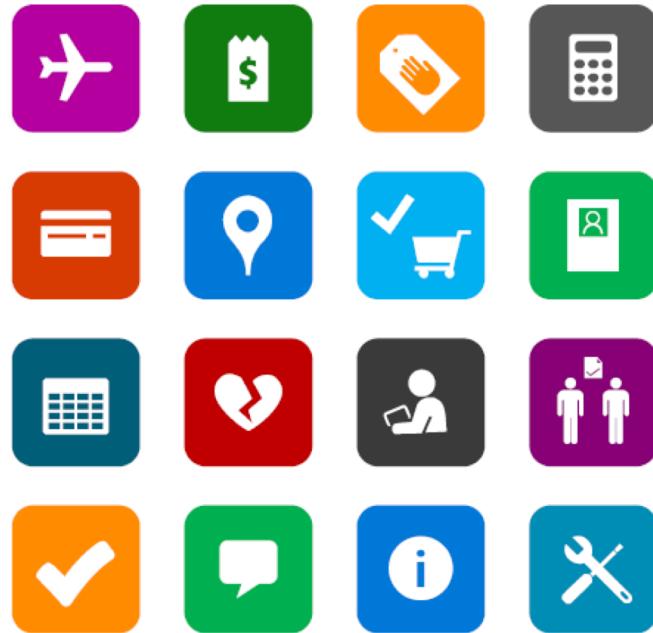
Run automated tests

Distribute to beta testers or app stores

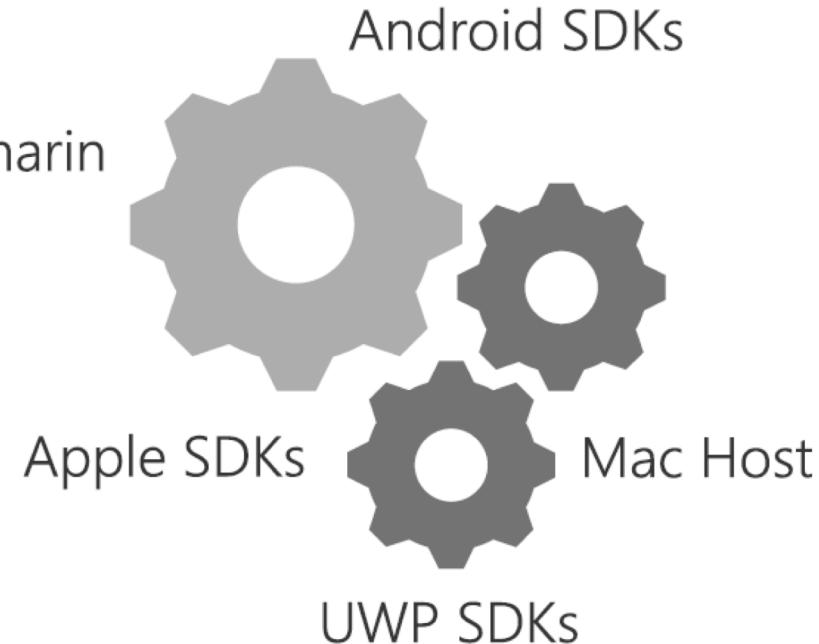
Engage users with targeted push notifications

Resources/Q&A

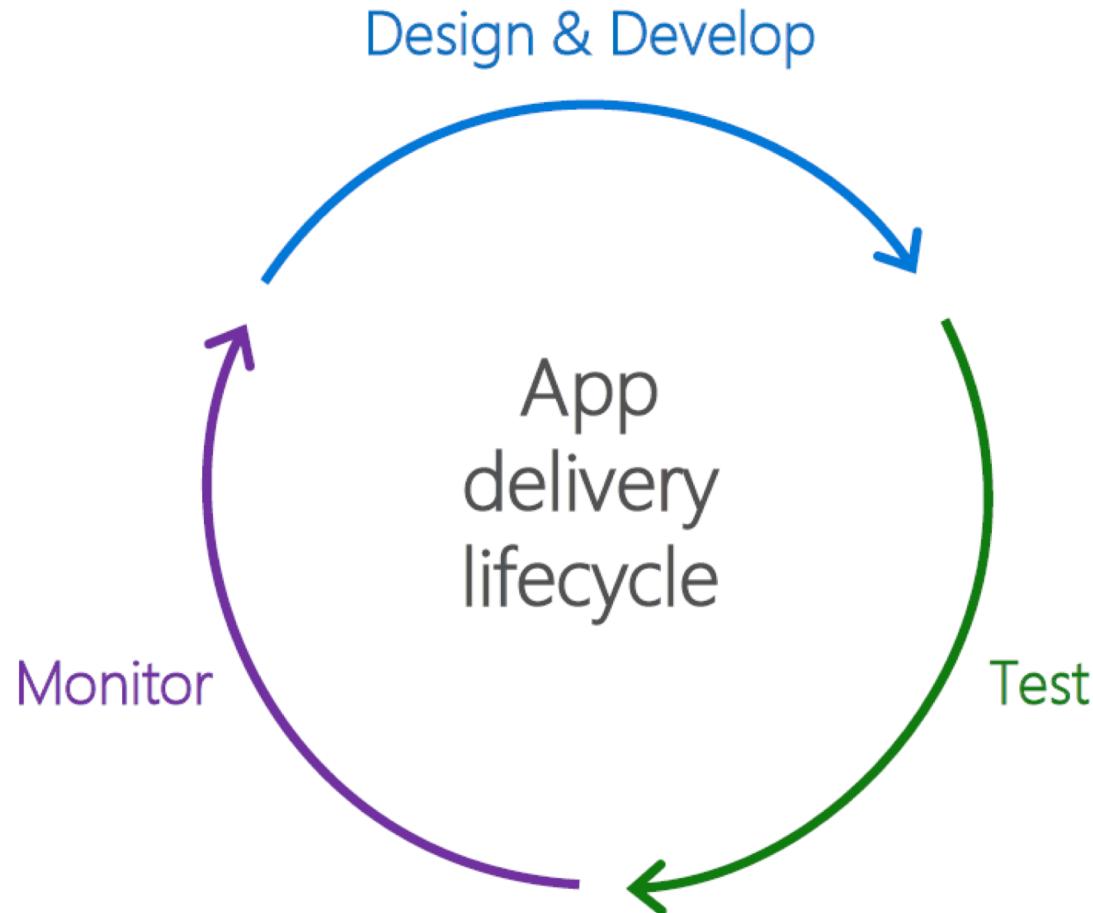
# Apps and tools



Xamarin



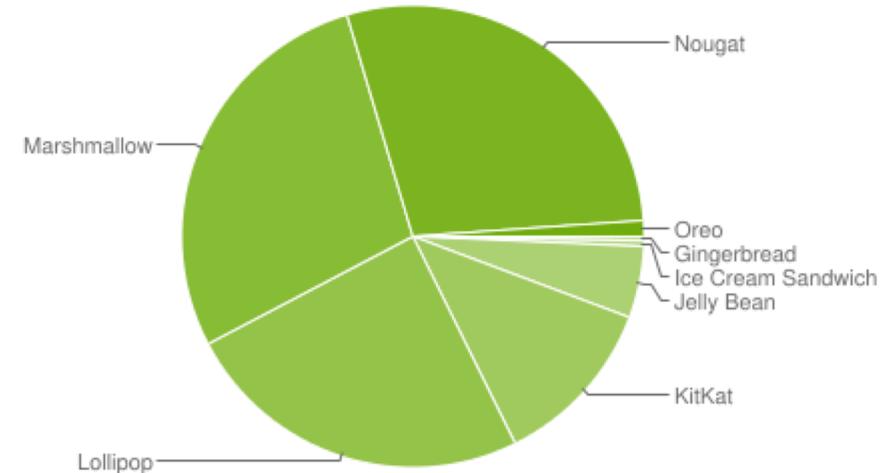
# Rapid development



# Different OS versions - Android



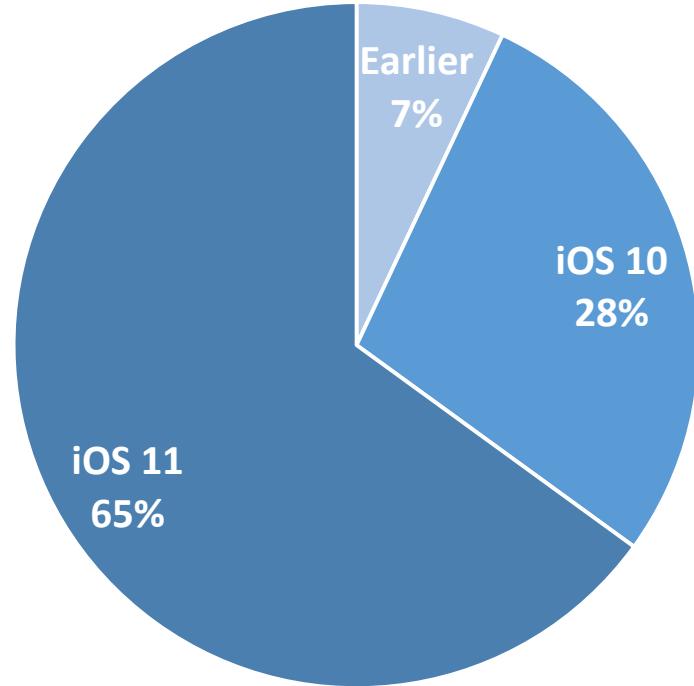
Version	Codename	API	Distribution
2.3.3 – 2.3.7	Gingerbread	10	0.3%
4.0.3 – 4.0.4	Ice Cream Sandwich	15	0.4%
4.1.x	Jelly Bean	16	1.7%
4.2.x		17	2.6%
4.3		18	0.7%
4.4	Kitkat	19	12%
5.0	Lollipop	21	5.4%
5.1		22	19.2%
6.0	Marshmallow	23	28.1%
7.0	Nougat	24	22.3%
7.1		25	6.2%
8.0	Oreo	26	0.8%
8.1		27	0.3%



Data collected during a 7-day period ending on February 5, 2018.  
Any versions with less than 0.1% distribution are not shown

Source: <https://developer.android.com/about/dashboards/index.html>

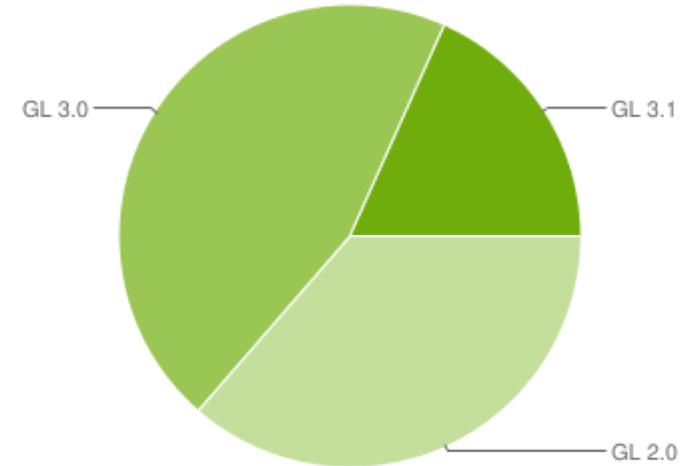
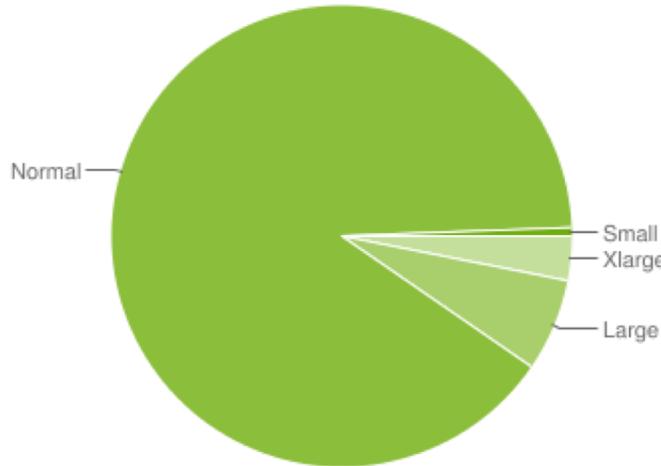
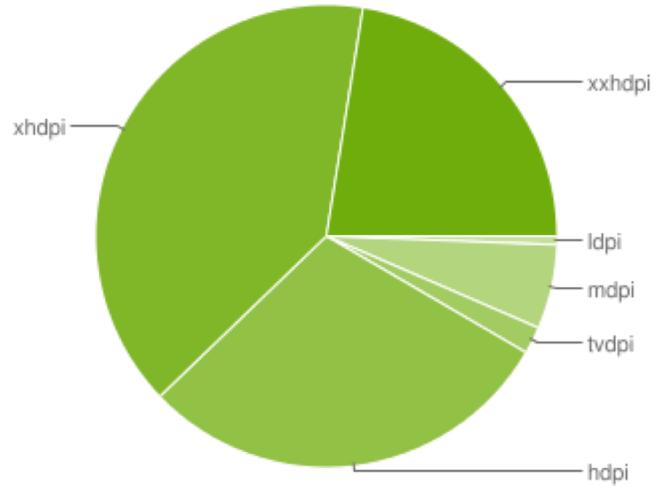
# Different OS versions - Apple



As measured by the App Store on January 18, 2018.

Source: <https://developer.apple.com/support/app-store/>

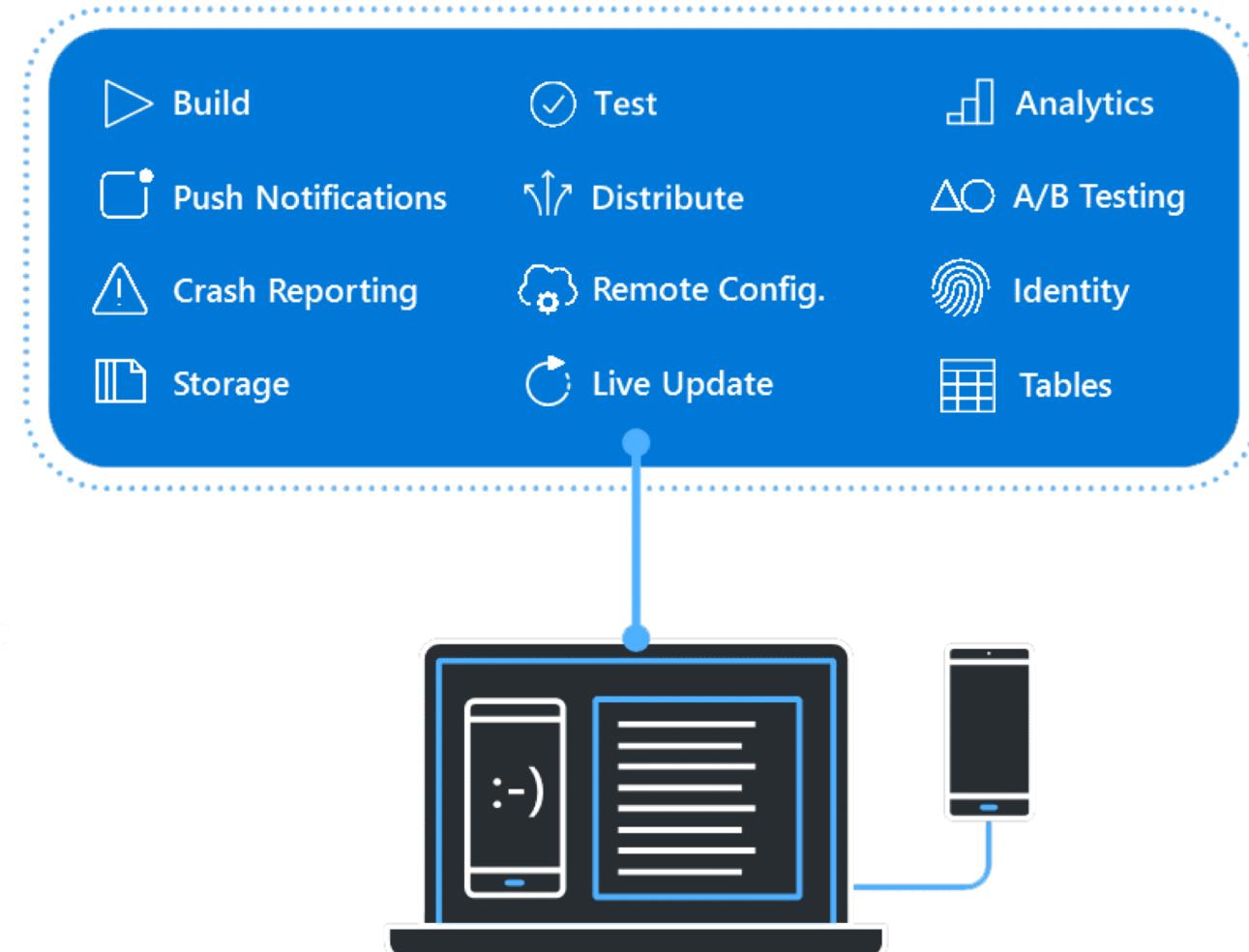
# Screen sizes and features



Data collected during a 7-day period ending on February 5, 2018.  
Any screen configurations with less than 0.1% distribution are not shown

Source: <https://developer.android.com/about/dashboards/index.html>

# Too many tools, not a real solution

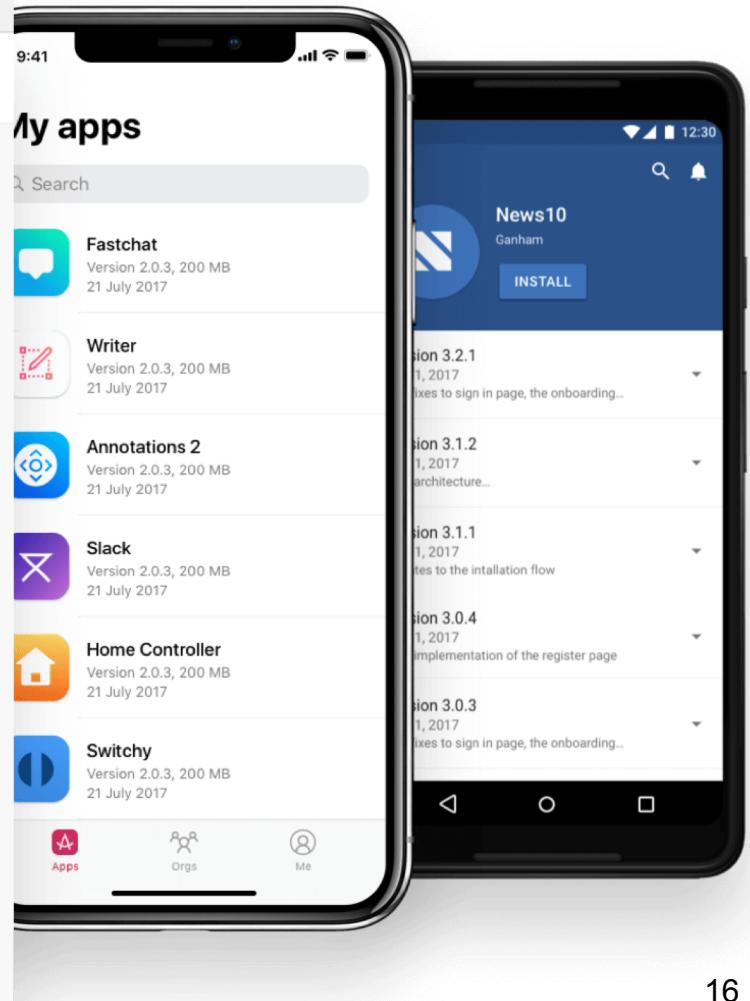


# Visual Studio App Center

The screenshot shows the Visual Studio App Center web interface. On the left is a sidebar with user profiles: Antonio, AA Studio, Fast Technologies, Ganham, Lazzo, and Zattoed. The main area is titled "My apps" and shows a grid of app icons. The grid includes:

- Row 1: Fastchat (iOS), Writer (iOS), Annotations 2 (iOS), News10 (Windows), News10 (Android)
- Row 2: Locator (Android), Lazzo (iOS), Home controller (iOS), RemotePlay (Android), Switchy (Fast Technologies)
- Row 3: Doodle (Windows), Mailman (Android), Wallpapers (Android), MeetSpot (Windows), Traffic (iOS)
- Row 4: iOS, iOS, iOS, iOS, Windows

At the top right of the grid are buttons for "OS: All", "Add new", and a grid view icon.



# Happy customers



**Quora**



**Highrise**



# Not so happy customers



## Hockeyapp

Apps are available to use in Visual Studio App Center with the 'Side-by-Side' mode

Less features compared to App Center

Not developed and maintained by Microsoft

SDK migration is easy!

## Xamarin Test Cloud

Active paid Xamarin Test Cloud subscriptions will migrate to Visual Studio App Center

## Xamarin Insight

No migrations paths

# One tool for everyone



The platform you need  
with the frameworks  
you know better



iOS apps  
Swift and Objective-C



Android apps  
Java and Kotlin



Windows apps  
UWP



React Native apps  
iOS and Android



Xamarin apps  
iOS and Android



Even more!  
macOS, tvOS and Cordova

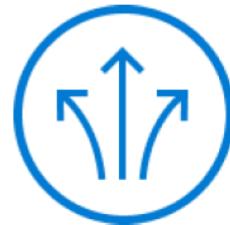
# Multiple services



Build



Test



Distribute



Crashes



Analytics



Push

Each service is based in Azure  
Services can be used together or independently

# OpenAPI



## App Center Client preview

[ Base URL: [api.appcenter.ms/](https://api.appcenter.ms/) ]  
<https://api.appcenter.ms/preview/swagger.json>

Microsoft Visual Studio App Center API

Schemes

HTTPS

Authorize



### account ▾

POST

/v0.1/user/invitations/orgs/{invitation\_token}/reject



POST

/v0.1/user/invitations/orgs/{invitation\_token}/accept



POST

/v0.1/user/invitations/distribution\_groups/accept



POST

/v0.1/user/invitations/apps/{invitation\_token}/reject



POST

/v0.1/user/invitations/apps/{invitation\_token}/accept



GET

/v0.1/user/export/serviceConnections



GET

/v0.1/user



# Make the command line great again!



## Install via NPM

*npm install -g appcenter-cli*

Node.js v8+

## Contribute

[github.com/microsoft/appcenter-cli](https://github.com/microsoft/appcenter-cli)

```
1. bash
Patricks-MacBook-Pro:~ patrick$ appcenter --help

Visual Studio App Center helps you build, test, distribute, and monitor mobile apps.
Version 1.0.8

Usage: appcenter <command>

Commands:
  analytics          View events, audience info, sessions, and other analytics for apps
  apps              View and manage apps
  build             Start builds, get their status, and download artifacts
  codepush          View and manage CodePush deployments and releases
  crashes           Upload symbols for better crash reports
  distribute        Send builds to testers and manage distribution groups
  orgs              Manage organizations
  profile           Manage your profile
  telemetry         Manage telemetry preferences
  test              Start test runs and get their status
  tokens            Manage API tokens
  help              Get help using appcenter commands
  login             Log in
  logout            Log out
  setup-autocomplete Setup tab completion for your shell

Patricks-MacBook-Pro:~ patrick$
```

# Build

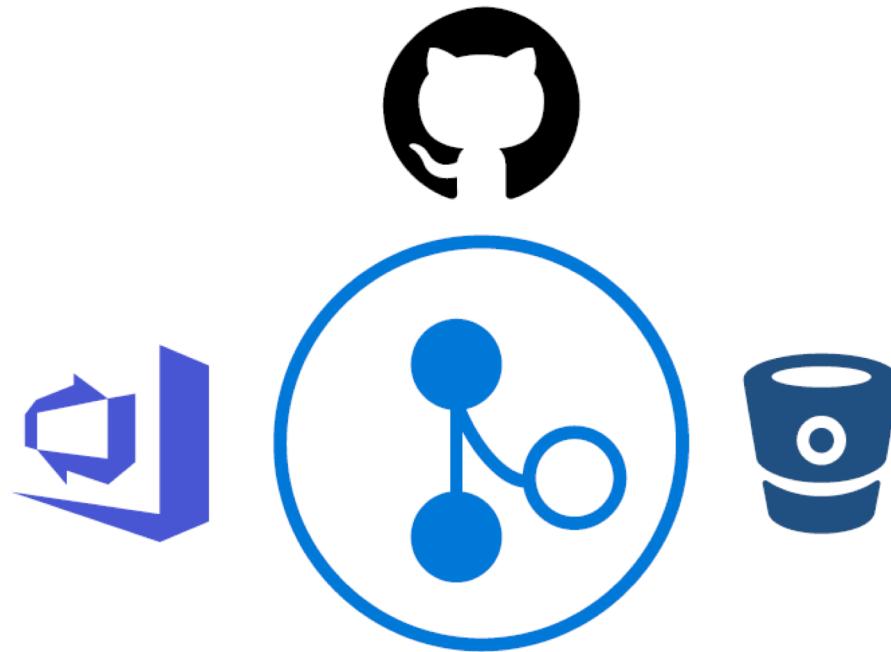


Connect the source code repository and start building.

(Almost) configuration-free  
Project, branch, frequency

No TFVC, we live in the future!

240 min free  
40\$/month per build concurrency



# Customize your build



Up to 3 scripts that run at predefined stages

**appcenter-post-clone:** runs immediately after the repository was cloned

**appcenter-pre-build:** runs before the build starts, but after dependencies install

**appcenter-post-build:** runs after the build has finished and the necessary artifacts are copied to the output dir

Support for Bash (on macOS agents) and PowerShell (on Windows agents)

Can use predefined App Center variables

APPCENTER\_BUILD\_ID, APPCENTER\_BRANCH...

<https://docs.microsoft.com/en-us/appcenter/build/custom/scripts/#app-center-variables>

# Build machines



macOS agents (High Sierra 10.13.4)

iOS and Android apps (including Xamarin and React Native platforms)

Windows agents

UWP applications

Not "included" in App Center, VSTS Hosted Windows Agent

Each build is run on a separate and clean agent

No other user has access to this virtual machine

Once the build is completed, the agent is discarded and all files removed

The files resulting from the build (log files, application files, symbol files) are stored on App Center servers.

# Commit, build and release



## Branches

microsoft/outlook-ios

master

feature-header-design

release-2.48.0

development-calendar

feature-4788

release-2.49.0

feature-all-accounts-932

## feature-header-design

branch

### Builds

Last commit	Build	Status	Date
 Trying to get entitlements to work with Test... Joshua Pearson	356	<span>● RUNNING</span>	Today at 1
 Simplify header UINavigationController Tais Morales	355	<span>✓ BUILT</span>	Yesterday
 Consider events soon if they are at most tw... Tais Morales	348	<span>✓ BUILT</span>	Yesterday
 Bump version Joshua Brown	347	<span>✗ FAILED</span>	28 Feb 20

# Distribute – ship it!



Branch      Last commit      Build

<b>beta</b>	Enable new animations in the login sectio... Tais Morales committed on July 1	1.28 (270)
-------------	--	------------

↓ ↓ ↓

Distribution group

Outlook beta testers

230 testers

## Release to the store

Release at your own pace, when you're ready

Google Play, iTunes Connect are supported

Intune (MDM)

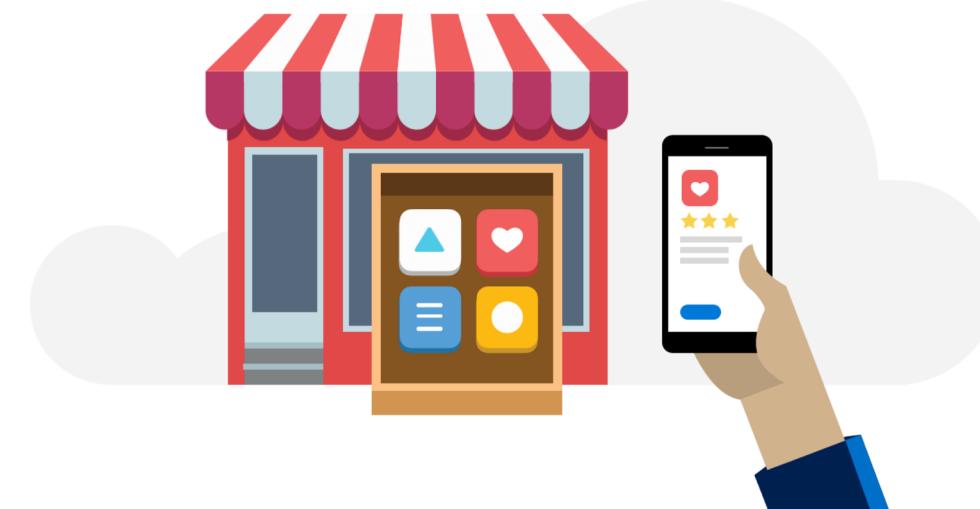
Unlimited number of distributions and users

## Automate the release process

Release as soon as possible

Manual = time consuming + errors

Create groups of testers, QA, fans...





# Not so working stuff...



Multiple script at undefined stages with other languages (i.e. .NET Core)

Build agents with custom software/versions installed

On-premise build agents (even for Windows)

App Center builds might be slower than local builds

Need to disable «Generate one package(.apk) per selected ABI» in Android options

Android apps without internet permissions cannot be tested with App Center Test



We don't test the app, it works.

Do we really need tests? We have try-catches for exceptions.

“

- *Real customers I can't cit.*

Always code as if the guy who ends up maintaining your code will be a violent psychopath who knows where you live.

- *Martin Golding*

# Test



Code validation is important!

Find bugs on any device before release.

Release better apps

Verify the app works on every device

Use the framework you love  
appium, espresso, Xamarin TC

The more you test the more you pay (99\$ per month per current device)

The screenshot shows a mobile testing application interface. On the left, there's a sidebar with various icons for different test types like calendar, mail, files, and search. The main area displays a 'Test run – July 15th, 9:28 AM' with '18 tests'. A specific test case, 'Calendar view / Navigate between events', is highlighted with a red error icon and the instruction 'Tap first calendar item'. Below this, a grid of 18 iPhone models (iPhone 7, 5C, SE, 6S, 7, 4S, 6S Plus, 6, 6S, 7 Plus, 6, 6S, 7 Plus, 6) is shown, each with a status indicator (red for errors, green for success). The devices are grouped by iOS version: iOS 11.0.3 (iPhone 7, 6S, 7, 6S, 7 Plus), iOS 11.1 (iPhone 4S, 6S Plus, 6, 6S, 7 Plus), iOS 10.0.2 (iPhone 6), iOS 9.0 (iPhone SE), and iOS 9.0.2 (iPhone 5C).

# Security



Devices in Test Cloud are part of a shared public cloud (read Azure)

- Any apps installed during a test run are uninstalled

- All local storage is cleared from the device

- Devices are restored to their default settings

Test Cloud prohibits uploading personally identifiable information

One who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person.



# Not so working stuff...



Manual testing

Network condition simulation

Cellular network connections

VPN

Load testing

# Crashes



Identify, prioritize and triage issues with grouped crash reports

Uses an internal symbol server to help fix problems quickly

"Crash reports so nice, you'll almost want your app to crash"

Free

The screenshot displays a crash reporting interface with the following sections:

- Crash group #834:** Impact 33, Version 2.1 (1), Last crash Aug 25, 8:35 AM. Includes a "SplitViewController.swift:204" link.
- Crash details:** A stack trace showing errors from CrashLibiOS, CrashProbeiOS, and UIKit, and a main.m:16 entry.
- Crashes per day:** A line chart showing the number of crashes per day from April 23 to May 23, with a total of 351 in the last 30 days.
- Most affected devices:** iPod touch (5th gen) 72%, iPhone 6 15%, iPad mini 5%, Others 8%.
- Most affected OS:** 9.3.x 80%, 9.2.x 14%, 11.0.x 3%, Others 3%.
- Reports:** A table listing device, model number, OS, and date for two entries: iPhone 5s (A1433/A1453, 10.0.2, 4 days ago) and iPhone X (A1901, 11.0, 4 days ago).



# Recognize your users

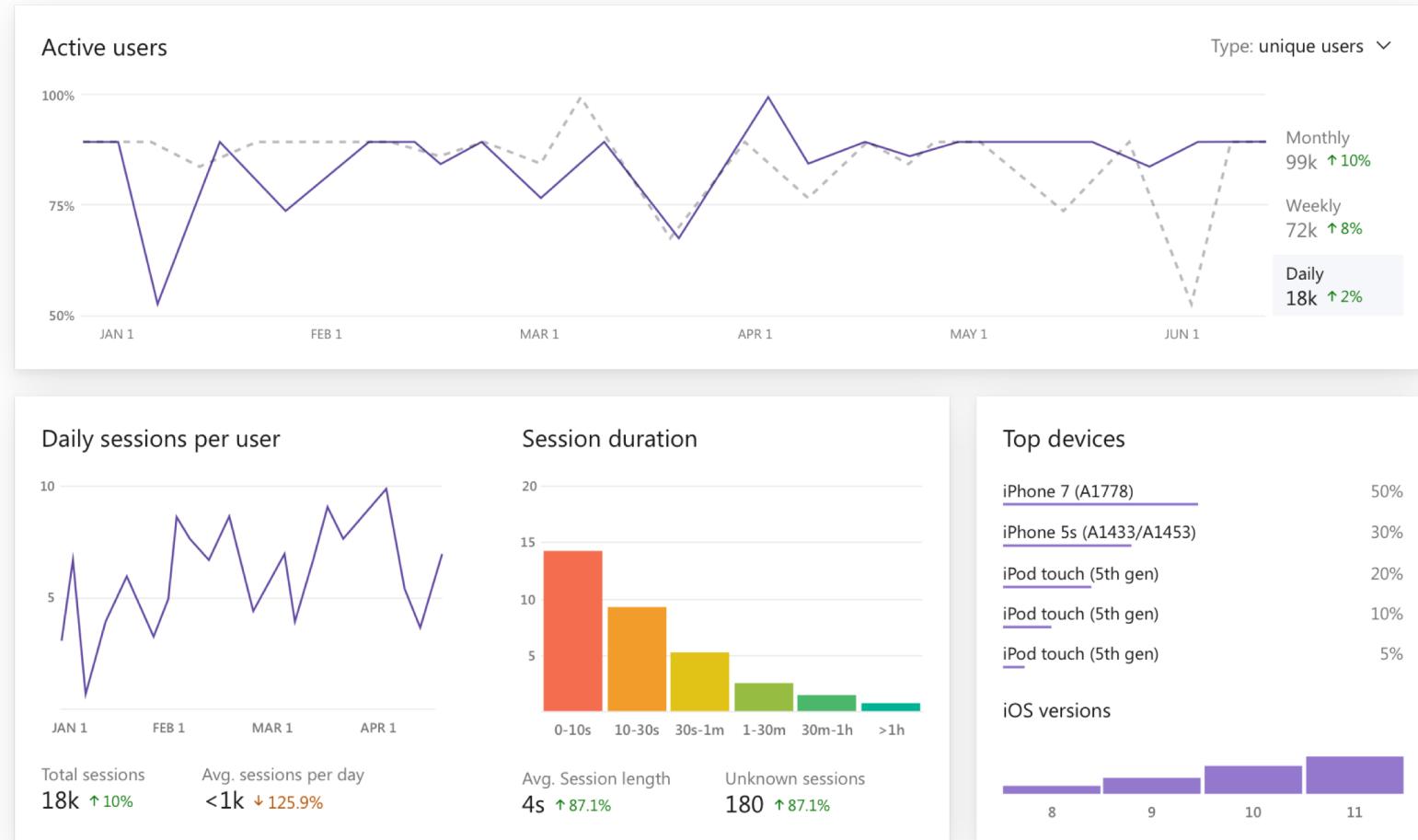


Live analytics for sessions, events and crashes

Custom events will help dive deeper into the app and improve the UI

Move budget and team effort in the most used and requested features

Free



# What I learned

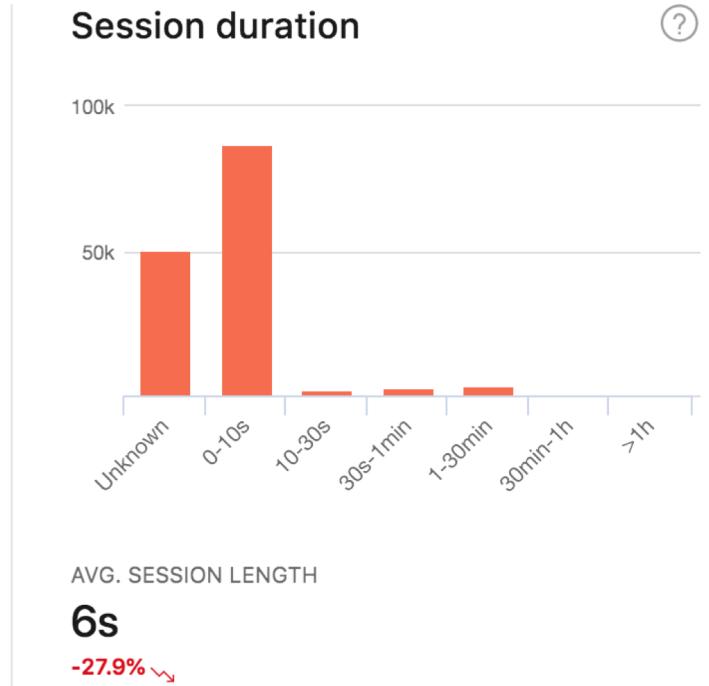
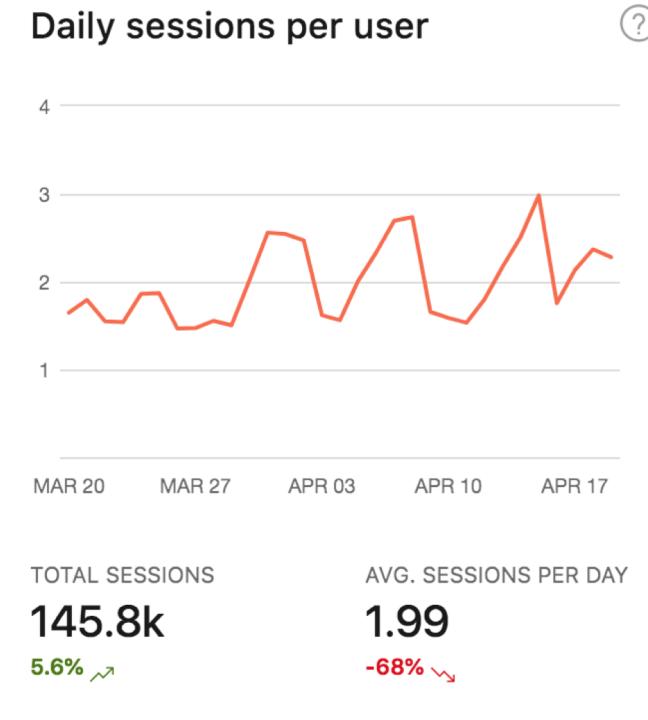


The average session length is higher in Android

iOS users open the app 2x more

iOS is as fragmented as Android

Almost a third of the users do not update to the latest version even after 2 weeks from the release



# Analyze data continuously



Unlimited retention by keeping your data as long as you need to and access to it when needed

Get answers by querying your raw data

Customize your own analytics dashboards

New feature set within Application Insights such as filtering and funnels



## Blob Storage

Store your data in a blob format for extended retention.



## Application Insights

Analyze all your data with powerful queries and further analysis.

\* An Azure subscription is required.

\*\* Free in VSAP, pricing may vary in Azure.

15:00 – 15:45: Monitor and diagnose your app with Application insights – Cristian Civera



# Not so working stuff...



The maximum number of distinct custom events that can be tracked daily is 200

This count will be reset at 12am UTC.

There is no limit on the maximum number of events instances sent per device.

The maximum number of event properties that can be defined per event is 5.

Other properties are automatically rejected.

The portal will show up the 10 property values with highest count.

# Reach your audience



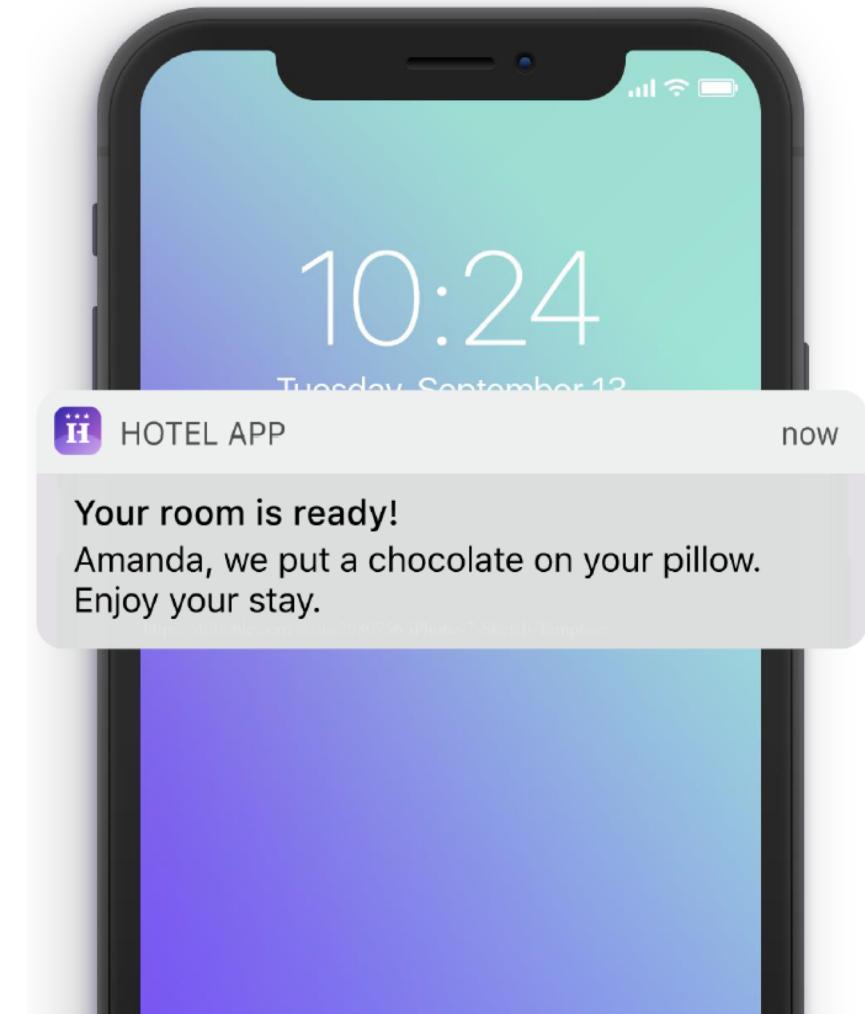
Engage with your users with custom messages

Target the perfect audience by language, device, geography and much more

Based on Azure Notification Hub

Free up to 5 audience segments

Pricing will not take effect until second half of 2018





Demo

A large white icon of a laptop computer is positioned above the word "Demo". The icon shows a dark grey screen and a white keyboard bezel with a small horizontal trackpad or volume slider in the center.

# Not so working stuff...



There is a maximum of 60 properties that you can define per app

Limit of 1000 devices per audience

Audiences match only devices that have a valid push registration

Testing audiences on iOS simulator is thus not supported.

# Roadmap (3-6 months)



## General

Manual bug tracker support - Integrate crash groups with your bug trackers directly to follow actionable work items.

## Distribution service

Native Apps – View and install apps via a dedicated native app experience available for iOS and Android.

Automatic iOS device provisioning.

Azure Active Directory (AAD) support – Reuse your existing Active Directory Groups to grant access in App Center.

User metrics for distribution groups.

Support for Build-publish directly to store workflow.

## Crashes service

ProGuard, NDK support.

# More than App Center



VSTS/TFS is the way

16:45-17:30: Continuous Deployment to Azure App Service with Visual Studio Team Services .  
Marcello Piazzì

The screenshot shows the VSTS/TFS task catalog interface. At the top left are "Add tasks" and "Refresh" buttons. At the top right is a search bar labeled "App Center" with a close button. Below the search bar, two tasks are listed:

- App Center Test**: Test app packages with Visual Studio App Center. It features a red icon with a white asterisk and three vertical dots.
- App Center Distribute**: Distribute app builds to testers and users via App Center. It also features a red icon with a white asterisk and three vertical dots.

# Resources



Get started for free

<https://appcenter.ms>

Docs

[docs.microsoft.com/en-us/appcenter/](https://docs.microsoft.com/en-us/appcenter/)

Microsoft Blog

[blogs.msdn.com/vsappcenter](https://blogs.msdn.com/vsappcenter)

Demo code

[github.com/matteotumiati/gab-verona-2018-app-center](https://github.com/matteotumiati/gab-verona-2018-app-center)



# Grazie

Domande?



matteotumiati



@xtumiox



matteotumiati