

# Deploy remote code to your app

without submitting a new build

bonus: some other ways to add functionality to your app remotely

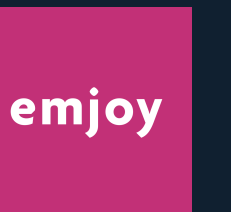
Megan Callenbach



Joan Viladomat  
jobfluent.com

**Job**Fluent

Dan Tamas



Megan Callenbach

<https://www.linkedin.com/in/megancallenbach/>

# Improving Accessibility in ReactNative

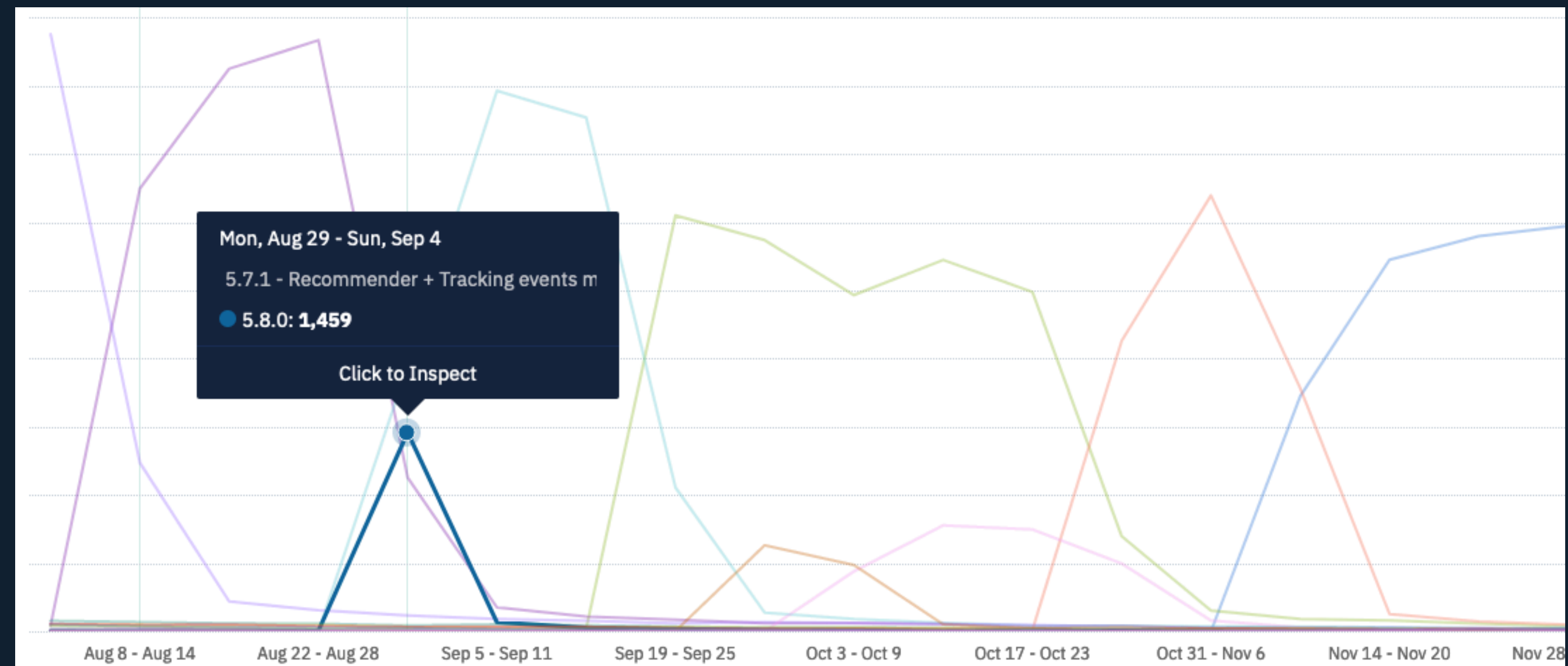
Dan Tamas

<https://www.linkedin.com/in/dantamas/>

# Deploying remote features to your app

# Why?

- Long store review process (between 1 day and 2 weeks)
- Easy to push hot-fixes (Apple allows an expedite review but don't over-react)
- New versions adoption takes time (unless forced, not recommended)
- Deploy “ephemeral” features



# Why not?

- Depends on 3rd party or (complicated) own infrastructure
- The app needs to be prepared to receive this kind of updates
- Sometimes Apple/Google might not be happy about it (don't mess with the app purpose and structure)

# How?

- **Over-The-Air updates (OTA)**

The app is able to download a whole bundle (JS + assets) from a remote server

- **Server hosted components**

Part of the app is hosted on a remote server and it can be downloaded and executed

- **Server Driven UI (SDUI)**

The app only receive some “instructions” about what it shows and how it acts but everything is built on the device.

# OTA - How does this work?

- An external service that takes care of hosting/versioning/etc for the bundles
- The app has some modules that check with the service for new updates
- A local (as in local computer or CI) deployment tool that bundles the updated code and assets and uploads them to the service

Expo Application Services (EAS) - <https://expo.dev/eas>

Microsoft App center CodePush - <https://appcenter.ms/>

PS. Only JS and assets can be updated this way, any native change ( new module, upgrades) will require a new build



# Expo Applications Services

<https://docs.expo.dev/eas-update/getting-started/>

← Dashboard

Overview

Deploy

Deployments

Builds

Submissions

Channels

Branches

Updates

Updates > 8233bfe2

Update: "Updating the app"

Group ID	Time version	Commit	Created at	Updated at	Created by			
8233bfe2-88f3-4033-95ee-be18180eb6c5	<div>📄</div>	<div>preview</div>	exposdk:47.0.0	e27e9f9*	<div>📄</div>	Jan 18, 2023 2:04 PM	Jan 18, 2023 2:04 PM	<div>👤</div> rborn

Platform-specific updates

Platform	ID
iOS	656

Preview

# App Center Codepush

<https://learn.microsoft.com/en-us/appcenter/distribution/codepush/rn-overview>

R

RNBCN

ios

Overview

Build

Test

Distribute

Releases

Groups

Stores

**CodePush**

Diagnostics

CodePush

Staging

Releases

Release	Target Versions	Status	Mandatory	Rollbacks	Active Devices	Date
<div><div></div><div>v10</div><div>dan.tamas@gmail.com</div></div>	1.0	Enabled	No	0	1	Jan 18, 12:44 PM
<div><div></div><div>v9</div><div>dan.tamas@gmail.com</div></div>	1.0	Enabled	No	0	0	Jan 18, 12:42 PM
<div><div></div><div>v8</div><div>dan.tamas@gmail.com</div></div>	1.0	Enabled	No	0	0	Jan 18, 12:41 PM
<div><div></div><div>v7</div><div>dan.tamas@gmail.com</div></div>	1.0	Enabled	No	0	0	Jan 18, 12:34 PM

# Server hosted components

React-native-wormhole is a tiny module(pure JS) which allows you to host your components on the server and let the app consume it as they were bundled with the app. It also have some utilities, like preloading and verifying the downloads to be sure they are legit. It doesn't support assets currently.

Working with this module is pretty easy, you would develop normally and when ready to hot the app, you'd need to transpile them (the js engine in the app doesn't really know about JSX, TS, etc) and upload to the server.

```
[serverPageId].js

const ServerPage = ({ route }) => {
  return (
    <Wormhole
      source={{
        uri: `${serverBaseUrl}/${route.params?.serverPageId}.js`
      }}
      color={"lime"}
    />
  );
};
```

# SDUI

The app has pre-defined components ready in the bundle, and they are used and configured based on the information received from the server. ( read more - even if it's not RN <https://medium.com/airbnb-engineering/a-deep-dive-into-airbnbs-server-driven-ui-system-842244c5f5>)

Today Screen

Order Widgets

New Widget

Active widgets

	Name & Component	Options
	Hey stranger - TodayHeader	
	Search Today - SearchGlobal	
	Getting Started - TodayGettingStarted	
	SpotLight Anal - StoriesCarousel	
	Latest collections - CollectionsCarrousel	
	AskExpert - ExpertChatCard	

Edit Widget

Component: CollectionsCarrousel

\* Name :

Hot Right Now Collections

Active :

Title :

Hot Right Now in Wellbeing

Subtitle :

TOP

Collections :

Eliminate Fat Phobia ×

Heal from Body Shame ×

Dating 101 ×

Birth Control Basics ×

Order

Last Item Card

CTA :

View all collections

Text :

There's more out there! Check all the wellbeing collections

Save

A mobile app screenshot showing the 'Hot Right Now in Wellbeing' section. At the top, there's a heart icon and three red heart icons. Below, the section title 'Hot Right Now in Wellbeing' is followed by two featured cards. The first card, 'Eliminate Fat Phobia', features an illustration of a woman in a red swimsuit and mentions 'Body Acceptance • 6 sessions' by Vinny Welsby. The second card, 'Heal from Body Shame', features an illustration of a man and a woman and mentions 'Body Acceptance' by Summer Intention. Below these, the 'Hot Right Now in Stories' section shows two story cards: 'Open Wide I' and 'Take Us', each with an illustration of a person in a medical setting. The bottom navigation bar includes icons for 'Today', 'Wellbeing', 'Stories', and 'Journey'.

A mobile app screenshot showing the 'Hot Right Now in Wellbeing' section. At the top, there's a heart icon and three red heart icons. Below, the section title 'Hot Right Now in Wellbeing' is followed by a featured card titled 'There's more out there! Check all the wellbeing collections' with a link 'View all collections >' and an illustration of a hand holding a laurel wreath. Below this, the 'Hot Right Now in Stories' section shows two story cards: 'Open Wide I' and 'Take Us', each with an illustration of a person in a medical setting. The bottom navigation bar includes icons for 'Today', 'Wellbeing', 'Stories', and 'Journey'.

@dan\_tamas

# A word of caution

Both Apple and Google are extremely cautious with what your app is doing so use this techniques only to enrich the user's experience and stick 100% to the purpose of your app. Doing otherwise will probably get you banned.

Another aspect to be aware is that you can only update the JS part of your app, a new native module would still need you to upload a new version in the stores.



Q/A



# Links

Expo Application Services (EAS) - <https://expo.dev/eas>

Microsoft App center CodePush - <https://appcenter.ms/>

react-native-wormhole - <https://github.com/cawfree/react-native-wormhole>

SDUI at Airbnb - <https://medium.com/airbnb-engineering/a-deep-dive-into-airbnbs-server-driven-ui-system-842244c5f5>

XML driven UI - <https://hyperview.org/>

Megan Callenbach (Elements) - <https://www.linkedin.com/in/megancallenbach/>

Joan Viladomat (JobFluent) - [joan@jobfluent.com](mailto:joan@jobfluent.com)

Dan Tamas (Emjoy) - <https://www.linkedin.com/in/dantamas/>