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How to measure & improve your Mobile DevOps maturity

The world’s first Mobile DevOps industry benchmarks from 1,600+ teams.

Table of Contents

Introduction

If you work, build or code in the DevOps industry you'll have heard of the DORA metrics from Google, but what about DevOps specifically for mobile? Enter MODAS: the Mobile DevOps Assessment created specifically to track and benchmark the mobile app market.

The goal of the Mobile DevOps Assessment? To create a standardized set of metrics that can be used by mobile teams to set benchmarks and mark goals to shape the future of mobile.

What will you get out of the report?

- Clear insight into industry Mobile DevOps benchmarks. What metrics are your competitors focusing on? How is your industry performing? Find out in this report.
- Performance benchmarks right away. Get started with goal-setting with these measurable performance metrics for your team.
- Quick wins. We'll highlight the Mobile DevOps performance metrics that are likely to drive the most business impact for your mobile team, quickly.
- Heaps of resources. We don't just want to show you how to perform like the app greats, we want to arm you with resources that will help you get there.

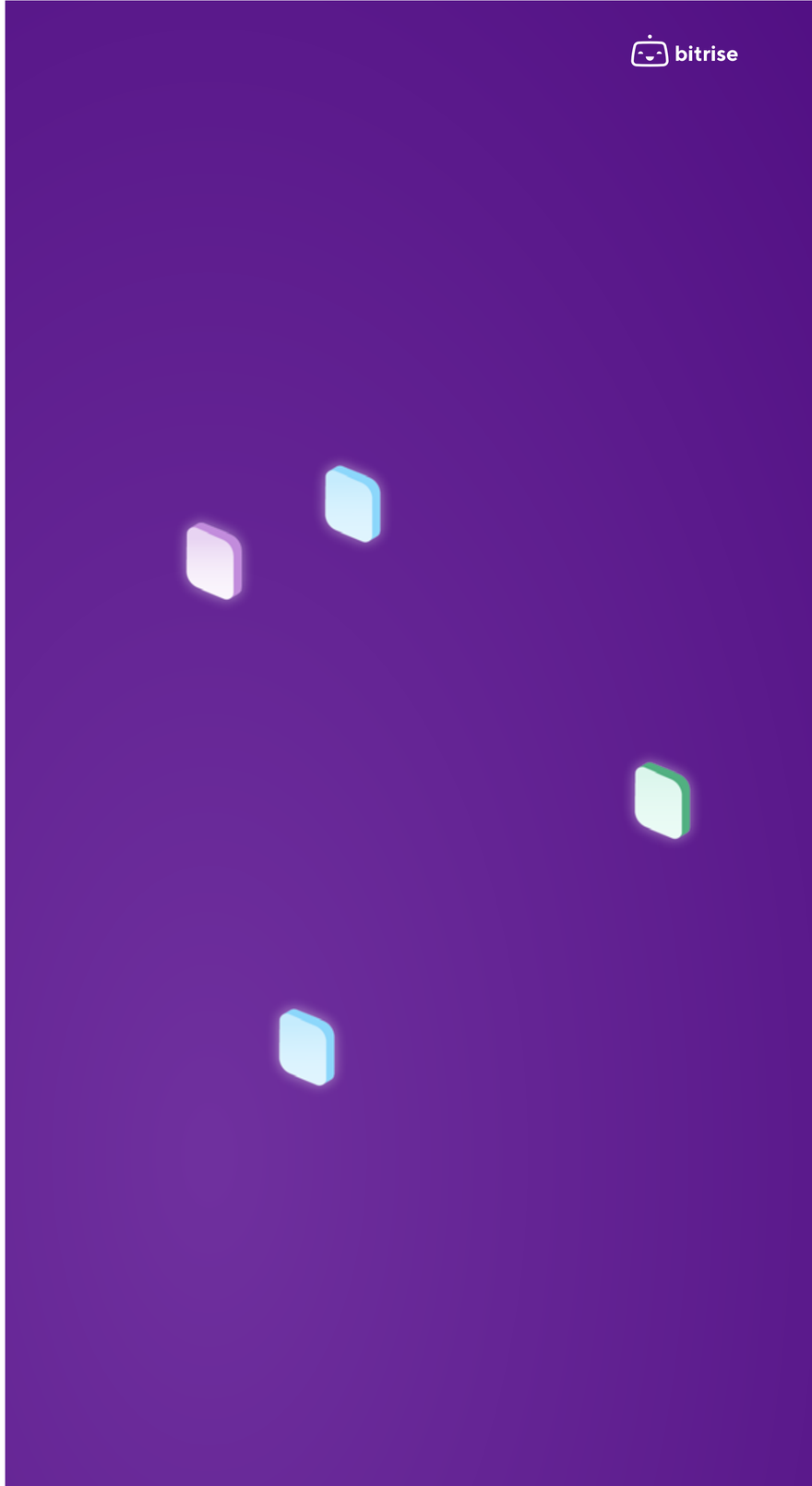
Getting started

1,600+ teams have already taken the survey which has given us a rich data set to provide this guide but we recommend taking the Mobile DevOps Assessment (MODAS) before digging deep into the guide.

Take the Mobile DevOps Assessment (MODAS)

Your results are anonymous and your company name will never be shared - we're not here to judge, we simply want to provide the Mobile DevOps industry with realistic benchmarks so they can compare their own results to other teams.

And if you would prefer to discuss your results and find out how you can improve, you can contact our team - one of our experts would be more than happy to chat.



The state of Mobile DevOps

What is Mobile DevOps and why does it matter?

The state of Mobile DevOps

We spend a third of our waking hours on our phones so it's no surprise that a staggering 485,000 apps were downloaded per minute in 2022 and a total of 11.2 Billion hours collectively are spent per day on mobile (Data.ai).

DevOps Vs Mobile DevOps

Mobile is big business and mobile ad spend proves this with its 14%+ year-on-year growth rate totalling $336 billion in 2022, but apps are taking center stage. Smartphone users spend 7x more time on native apps compared to browsers and they load up to six times faster. They're also spending more: $318,000 spent per minute on the App Store in 2022 (Data.ai).

Mobile apps are unique. As such, it deserves and requires an approach that differs from traditional DevOps methods. When it comes to mobile app iterations for example, speed is everything: there is a strong correlation between the frequency of updates and the ranking in the app stores. It's important to ensure that your team is keeping up to date with the latest tools, trends and technologies.

What trends are dominating the Mobile DevOps market

1. DevSecOps

Mobile DevSecOps is a set of processes that integrates security (Sec) best practices into build (Dev) and release processes (Ops) to ensure frequent releases of mobile apps, securely.

2. Cloud

The use of cloud computing continues to accelerate. The percentage of people reporting the use of public cloud, including multiple clouds, is now 76%, up from 56% in 2021. Fully-hosted, Mobile DevOps is the future.

3. Mobile DevOps Engineer

As apps grow in popularity so do your team's effort, and possible size. Suddenly you have an increased level of builds and tests which in turn increases feedback loops. As app dev continues to rise, so does the need for a dedicated, specialized 'Mobile DevOps Engineer'.

4. Increased Automation

Freeing up developer time by eliminating manual toil. By automating labour intensive stages of development cycle like builds, tests and releases*, human error risks to the public facing store presence are eliminated and release frequencies increased.

5. M1 & M1 Max Studio

Apple Silicon's hardware not only strengthens raw computing speed, but it eliminates machine memory constraints so you can ship better apps faster (and Bitrise offers it exclusively, fully managed).

*Listen in at the 22min mark of our Mobile DevOps 2023 Predictions webinar to hear from eBay and Dyson on the importance of automation, but the warnings of pipeline bloat.

What is MODAS?

Understanding the Mobile DevOps Assessment

What is the Mobile DevOps Assessment (MODAS)?

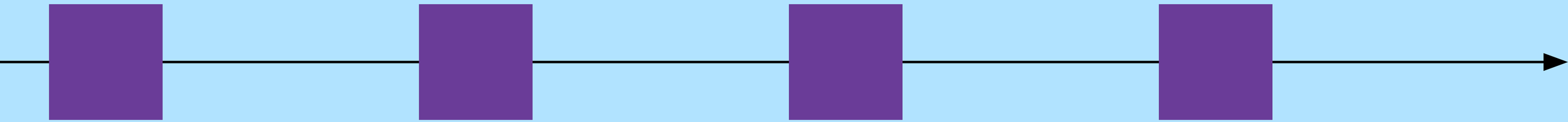
The Mobile DevOps Assessment (MODAS) is the first of its kind, designed specifically to assess the performance, productivity and maturity of your mobile development teams. Its focus is solely mobile apps and the Mobile DevOps industry.

We have split the assessment into four key stages - Creation, Testing, Deployment, and Monitoring as these make up the four key stages of the app delivery process. We have also added a fifth element, Collaboration, which spans the entire process.

The first step for MODAS, the only Mobile-specific assessment in the world, was to release the survey. We did this back in early 2022 and the Mobile DevOps market loved it (not bad for the first intake)!

We've taken these 1,600+ responses and analyzed them to create the five benchmarks stated above. We've then gone one step further and highlighted what marks a high performer from a low performer so we can delve deeper into the specific processes, tools and attitudes that cause high performance.

The 5 key performance measures of MODAS



1. Creation

Planning and building your apps

2. Testing

Testing apps and pushing fixes

3. Deployment

Pushing app to the app stores

4. Monitoring

Measurement health, performance, and user feedback

5. Collaboration

Working together as a successful mobile product organization

Understanding the MODAS metrics

5 key benchmarks from 1,600+ Mobile DevOp teams

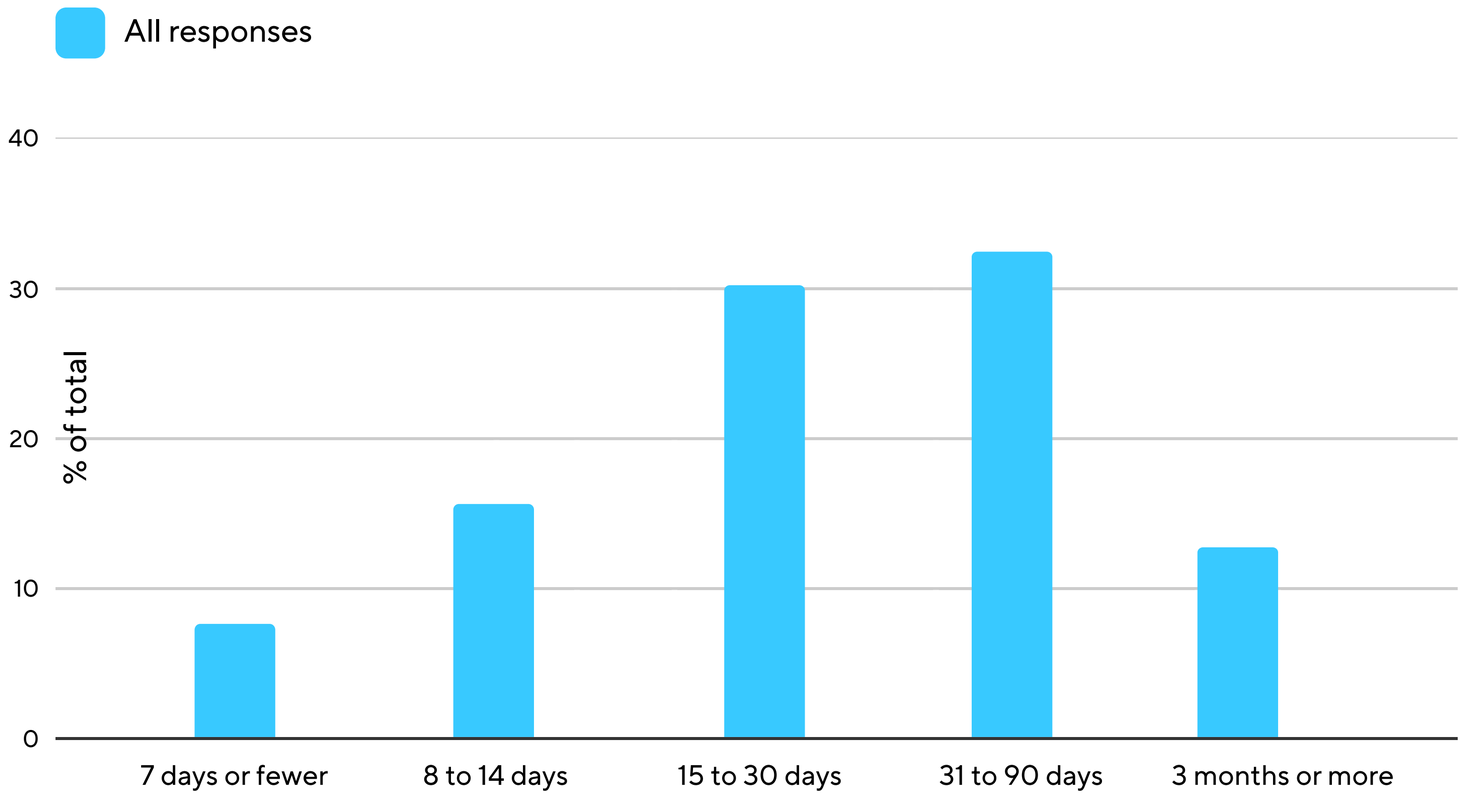
The MODAS benchmarks: The results at a glance

In this table, we focus on the five key performance measures of the Mobile DevOps Assessment (MODAS) then we go into more detail to show you what makes a team an average performer and what makes them a top.

MODAS stage	Key KPI question	Average performance	*High performance*
Creation	How long does it take for a scoped feature to be deployed to the app stores?	31 to 90 days	14 days or fewer
Testing	Approximately what share of your releases are hotfixes?	25%	Less than 10%
Deployment	How frequently do you deploy new versions of your app to the app stores?	Every 15 to 30 days	14 days or fewer
Monitoring	How long does it take, when necessary, to release a bug fix after launching a new version of your app?	2-3 days	Less than 24 hours
Collaboration	On a scale of 1-10, how would you rate the level of collaboration across your Mobile Product Organization?	7	9 or higher

Creation:

How long does it take for a scoped feature to be deployed to the app stores?



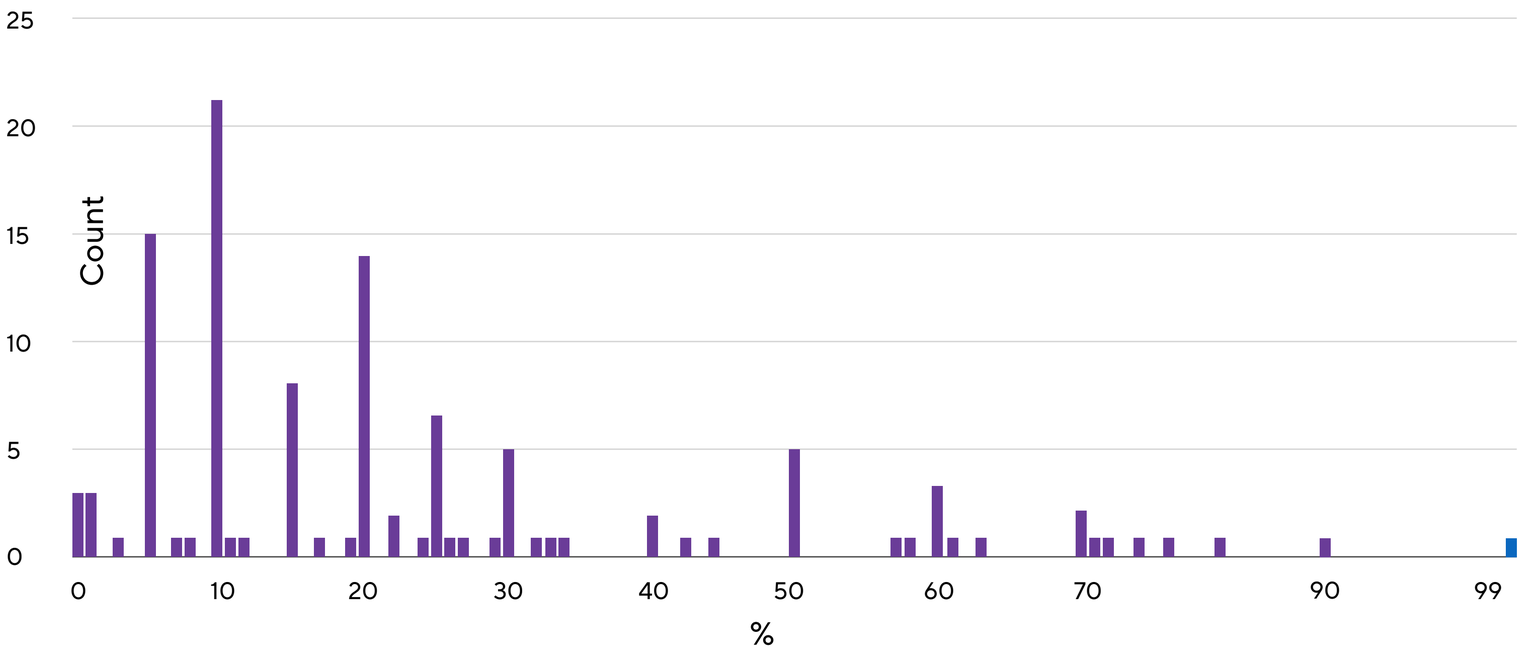
High performance	14 days or fewer
Average performance	31 to 90 days

Other insights from Mobile DevOps teams:

- **React Native** is the most popular **cross-platform framework** used by 48.33% of teams, followed by Flutter at 37.5%
- 38.2% of teams manage **backwards compatibility via forced upgrading**, while the majority at 47.9% use graceful degradation
- 16.5% of teams use **code generation tools**

Testing:

Approximately what share of your releases are hotfixes?



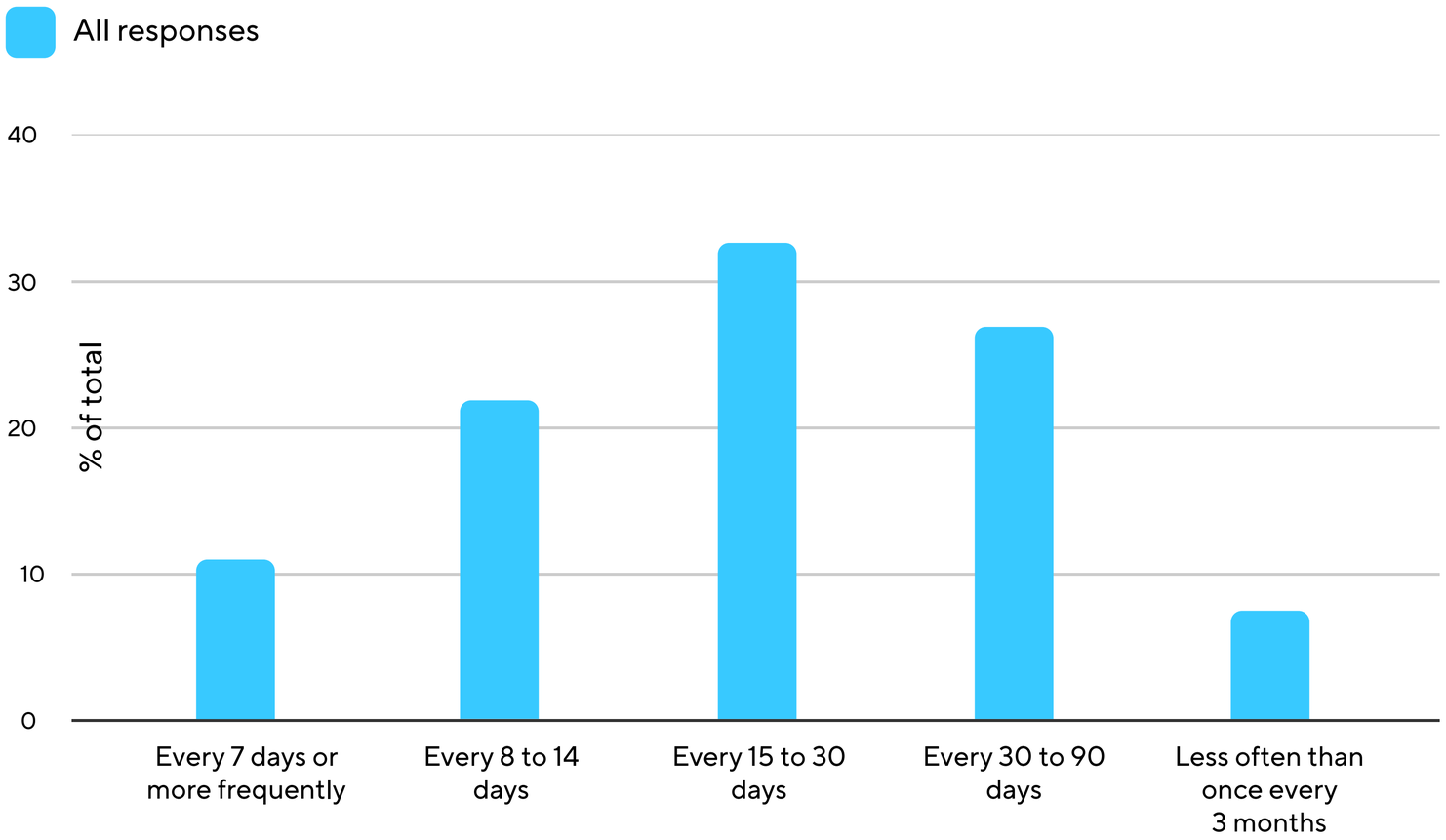
High performance	Less than 10%
Average performance	25%

Other insights from Mobile DevOps teams:

- 58.9% of teams spend **less than 30% of their engineering hours on testing on RC**, while 24.2% devote 30-59% of their hours to testing
- Just 10.4% of teams said they test **as many devices as possible with a device farm**, with 31% saying they test the most commonly used devices in their user base
- While Mobile DevOps teams perform status security analyzes, the number is still small at 17%
- The most common testing framework is XCTest/XCUITest at 46.9%, followed by Espresso (28.2%), Appium (23.9%)
- While 17.5% of teams said **they used no testing framework**

Deployment:

How frequently do you deploy new versions of your app to the app stores?



High performance	14 days or fewer
Average performance	Every 15 to 30 days

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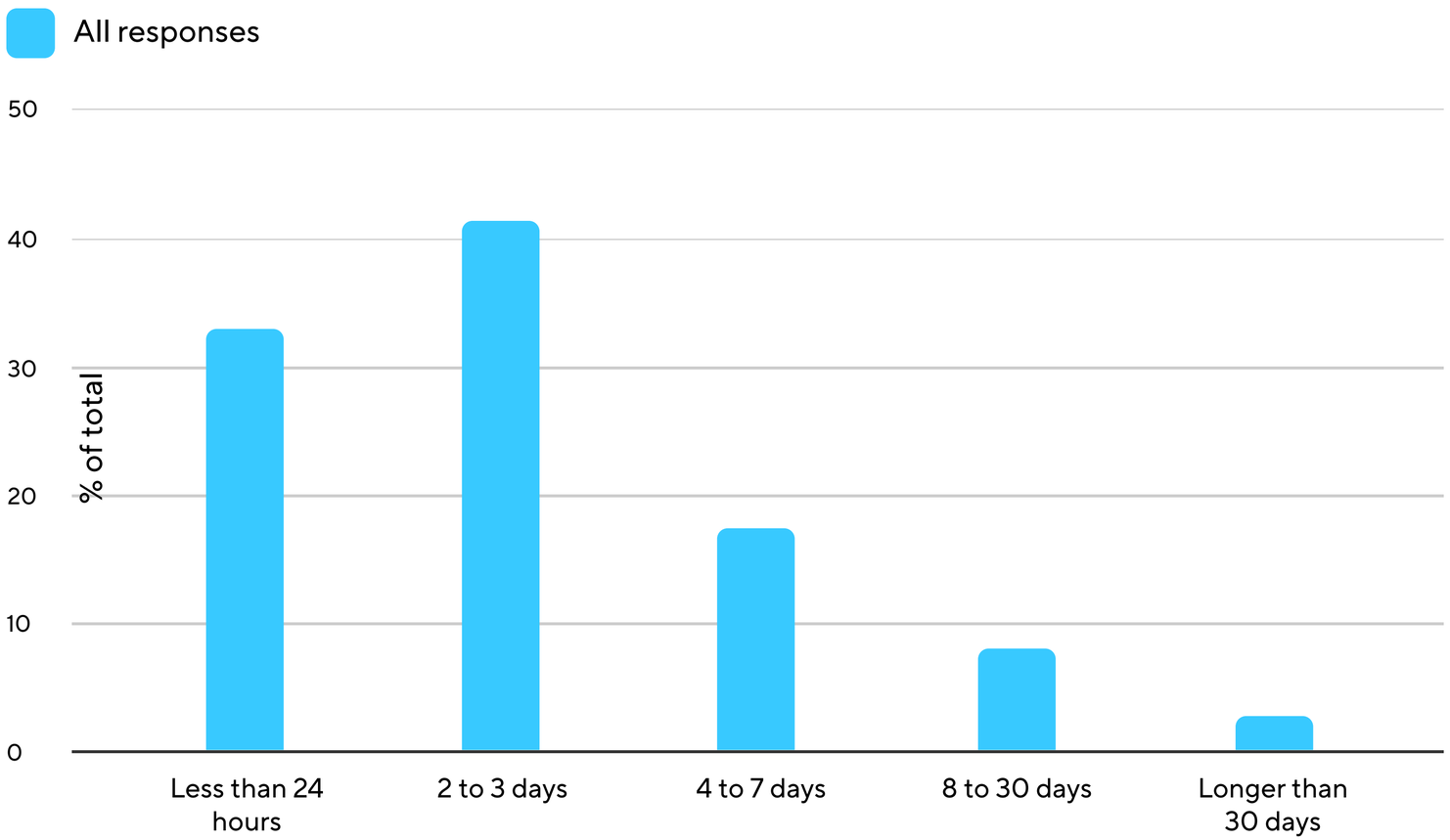
Other insights from Mobile DevOps teams:

- 44.5% of teams said that their **release approval process was mostly or entirely manual** (and only 9.3% have it fully automated)
- 39% of teams say it takes several days to go through their **internal release validation process** (while 22.1% have got it down to less than an hour)
- Just 26.15% of teams use the **release train model**
- 62.2% of teams think that their **release frequency is unsatisfactory**

Monitoring:

How long does it take, when necessary, to release a bug fix after launching a new version of your app?



High performance	Less than 24 hours
Average performance	2 to 3 days

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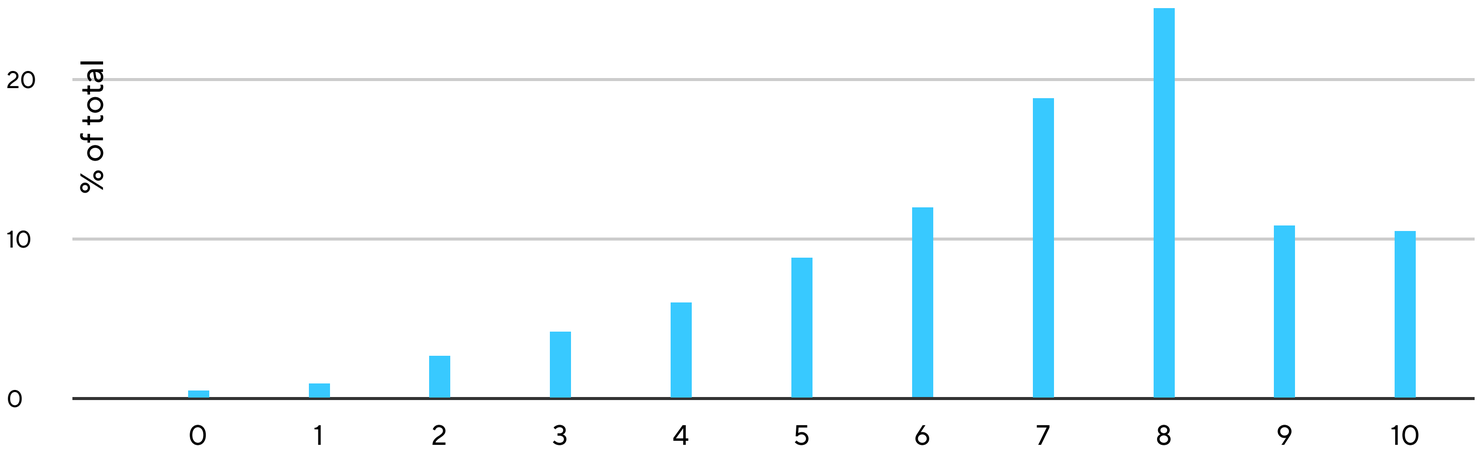
Other insights from Mobile DevOps teams:

- Only 34% of teams have their **app cold startup time under 2 seconds**
- Only 21.5% of teams do some form of **app performance monitoring**
- Only 14.4% of teams **monitor their app size**
- It therefore comes as a little surprise that **62.2% of teams said that their monitoring processes** were insufficient

Collaboration:

How well does your Mobile Product Organization collaborate on a scale of 1-10?

All responses



High performance	9 or higher
Average performance	7

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Other insights from Mobile DevOps teams:

- 25.7% of teams don't have the features and functionality of their **iOS and Android apps in sync**
- Only 71% of teams say they have **cross-functional teams** working together on projects spanning multiple teams
- Only **27.2%** have a **formalized planning process**

How to reach ‘high performance’ status

This section includes resources for each benchmark to help your team improve.

#1 Creation

- **Success story:** How Sixt uses Bitrise to increase builds to 1,000 per week running across 7 apps giving them an all-time high rating of 4.8 on iOS and 4.6 on Android. Read the story.
- **Blog:** "How Uber deals with large iOS App Size". Read their blog.
- **Bitrise Blog**: Flutter vs. React Native: What's the best cross-platform framework? Read the blog.
- **Bitrise Blog**: What was the force upgrade process at **Uber**? Read the blog.
- **Video:** Top 7 takeaways for Android App Bundles.
  Watch the Android Dev Summit video.
- **Mobile DevOps is a thing**! What does a move from Jenkins and Travis to Bitrise look like at **WeTransfer**? Find out in this podcast with Antoine van der Leer, MyTransfer's iOS Engineer. Listen to the podcast.

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#2 Testing

- **Success Story**: How **Compass** uses Bitrise to cut their testing times dramatically and optimize their releases. Read the story.
- **Bitrise blog:** How to quickly release high-quality mobile apps while simultaneously building in the necessary security and privacy. Read the blog.
- **Bitrise blog:** ‘Mastering the testing pyramid’, a set of guiding principles that help establish a strategy for unit testing, integration testing, and end-to-end testing for mobile apps. Read the blog.
- **Video:** Top advantages of automated testing. Watch the video with Bitrise’s Moataz Nabil.
- **Mobile DevOps is a thing!** All about test automation: best practices with Angie Jones from Applitools. Listen to the podcast.

The role of parallel testing, automation and nightly builds - how Cabify saw a 35% drop in build times to improve their build success rate to 95%

Cabify is a Spanish multi-mobility company specializing in ride hailing and asset sharing. Their super-app provides users with quick access to geo-tracked journeys with professional drivers.

The Cabify app was built from scratch using BuddyBuild for CI. Back then, the system proved to be somewhat chaotic with builds taking over an hour and many of them failing. They wanted to provide their users with a great mobile experience whilst their developers got to build with a cloud-based solution that had a stable Gitlab integration and mobile-specific features.

Since then, Bitrise has enabled them to:

- Cut their build times by 35% to 18 minutes
- Increase their build success rate to an impressive 95%
- Automate close to 100% of their processes
- Run parallel testing and nightly builds
- Move to Bitrise’s fully-managed M1 machines for iOS builds

Read the full success story

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#3 Deployment

- **Success Story:** How **Reddit** uses Bitrise to decrease their build times by 45-50% by fully automating their release process and switching over to M1 machines. Read the story.
- **Blog:** Monzo "Our mobile release process: An illustrated story" Read their story.
- **Bitrise Blog:** From development to production: seven tips to optimize mobile app deployments. Read the blog.
- **Event Video:** "From Development to Production: Tips to Optimise Android App Deployments". Watch Moataz Nabil's talk from droidcon Italy.
- **Mobile DevOps is a thing!** Mastering continuous deployment with Keegan Rush. Listen to the podcast.

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#4 Monitoring

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- **Blog**: leveraging Mobile Infrastructure with Data-Driven Decisions. Read Spotify’s engineering blog.
- **Bitrise Blog**: Take your mobile monitoring to the next level. Read the blog.
- **Bitrise Blog**: How to boost app engagement with mobile application performance monitoring (APM). Read the blog.

📺 **Watch**

- **Video**: Bitrise Insights is our CI/CD monitoring and analytics tool that tracks and reports mobile app build, test, and credit data. Watch the video by Co-Founder and CTO Viktor Benei.

🎧 **Listen**

- **Mobile DevOps is a thing!** App Performance Monitoring with Rasmus Larsson from Pulselive. Listen to the podcast.

#5 Collaboration

- **Success Story:** How Tag Heuer uses Bitrise to onboard new engineers, scale their team, and continue to offer innovative features to their users. Read the story.
- **Bitrise Blog**: How to improve team collaboration among mobile engineers. Read the blog.
- **Bitrise Blog:** At which point do you need a platform team? Read the blog.
- **Video**: Why do you need a mobile platform team? Watch the video with Bitrise's Moataz Nabil.
- **Mobile DevOps is a thing!** Remote work and Mobile DevOps with Joe Birch Listen to the podcast.

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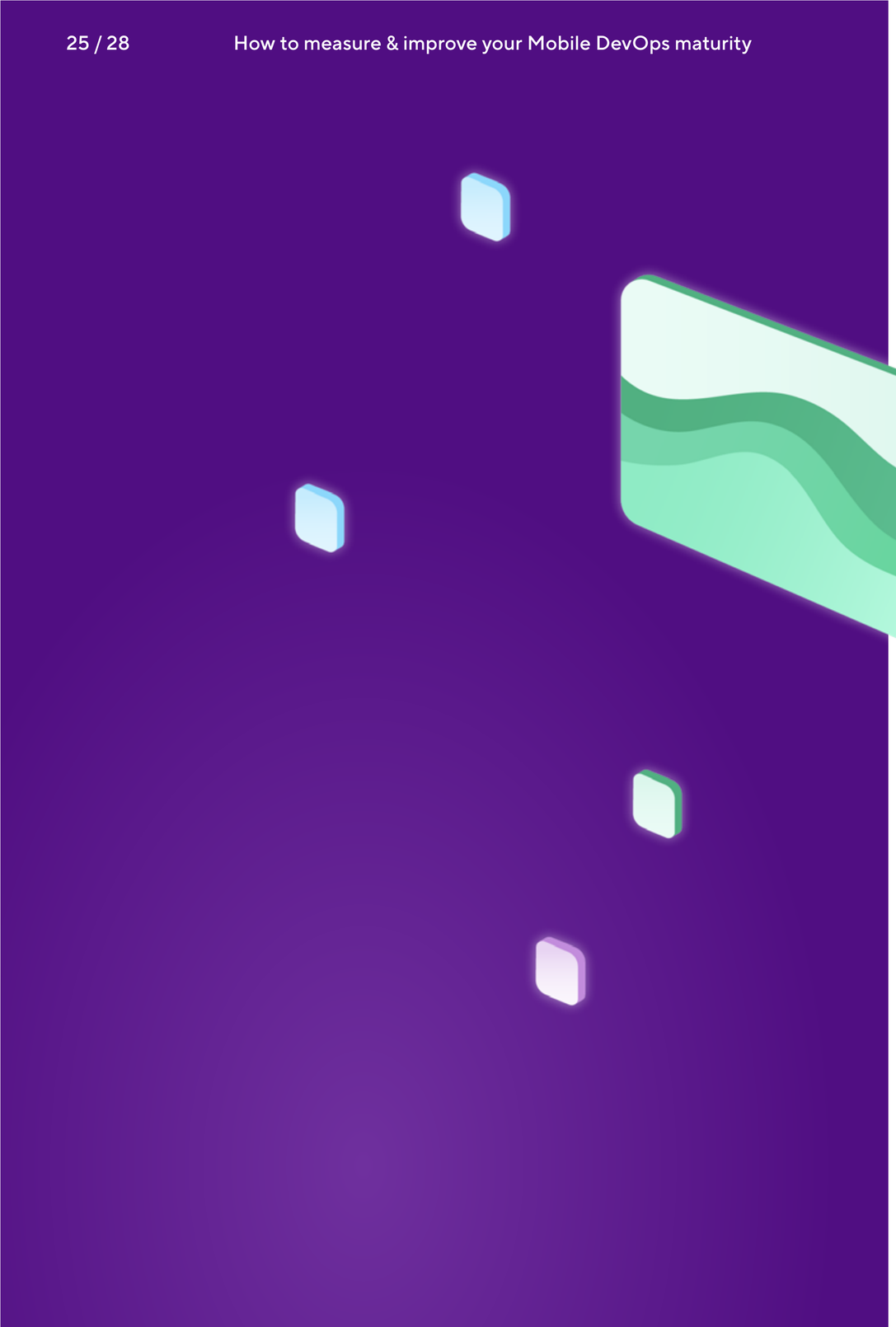


What next?

With these benchmarks, we aim to create a standardized set of metrics that can be used by mobile teams in order to improve. The metrics aim to show that the length of time it takes to deploy to app stores or how frequently you do so can affect how your team performs and how your app is rated.

The resources we've offered throughout this guide are just the start. While not intended to be comprehensive, they should provide you with inspiration and a comparison in order to nudge you further towards the 'high performer' status.

Why not sign-up for a free trial of Bitrise to start improving and measuring your teams Mobile DevOps maturity.

How Affirm uses today's technology to create an engaging mobile SuperApp

Affirm is a publicly traded financial technology company based in San Francisco, with partners including Walmart, Target, Amazon, Expedia, and many more. They have recently launched their SuperApp — a one stop shop offering the best of their shopping, payments, and financial services.

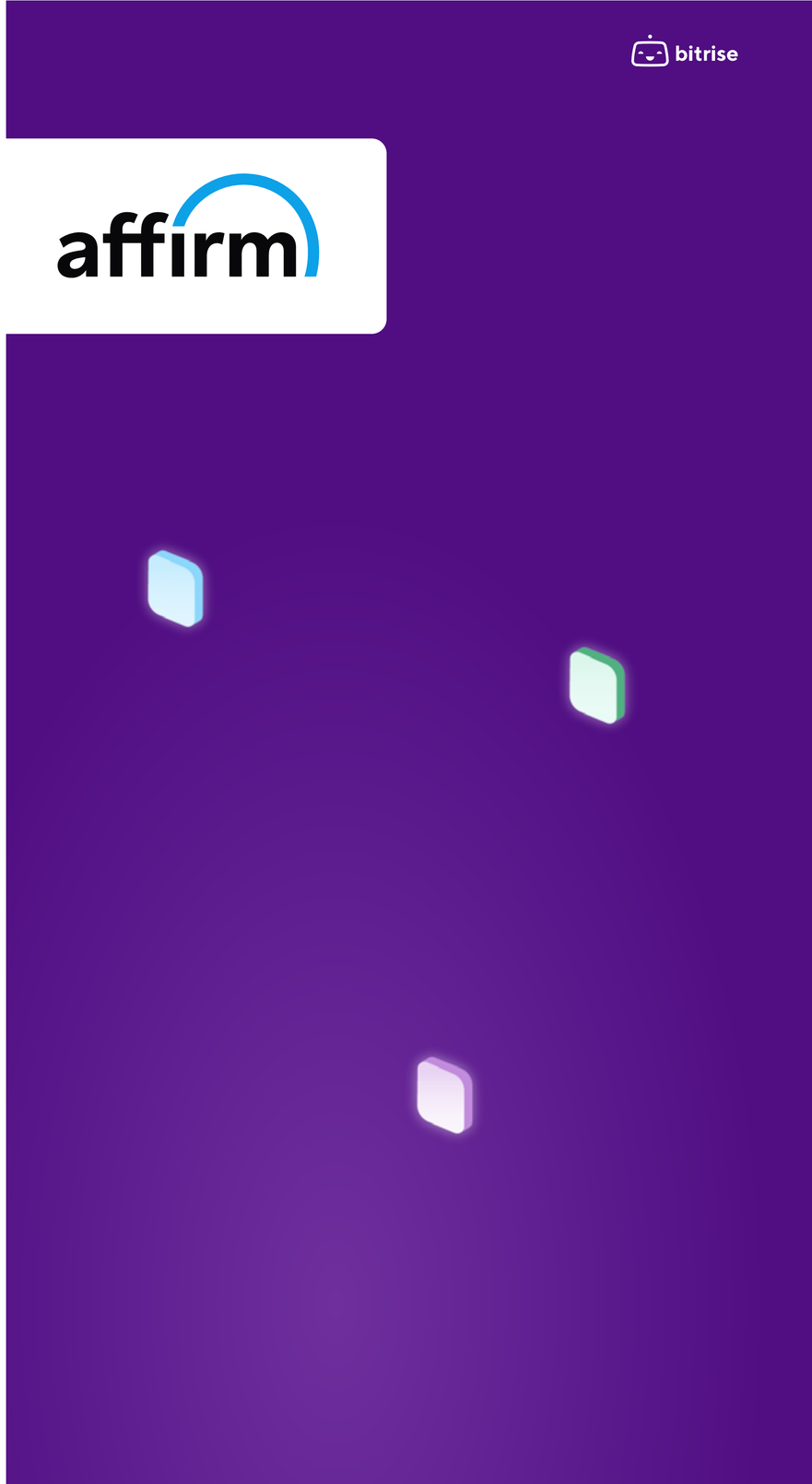
Having a stable and engaging mobile app is at the core of their business: if the app works well, it builds trust and legitimizes the brand in the eyes of customers. Since their mobile app generates the majority of their revenue, its performance can make or break their business.

Keeping the quality of their app high is their main focus. To ensure they have a strong CI/CD solution that covers all of their mobile-specific needs, they build their app on Bitrise's Gen2 machines.

The results: since they started using Bitrise, the team has:

- Shortened their build times from over 60 minutes to 12-18 minutes,
- Saved many hours a day by leveraging parallel builds,
- Raised their app success rate to above 90%,
- Achieved higher ratings in the app stores, 4.9 on iOS and 4.5 on Android

Read the full success story



Bitrise is a Mobile DevOps platform built around industry-leading mobile CI/CD and DevOps tooling. Bitrise ensures confidence, velocity, and continuous improvement across the entire cycle of app value creation, delivery, and realization.

On Bitrise, teams easily release and maintain high-quality apps through automation, rapid iteration, and improvement in the development process. **As a result, apps deliver more impact for the business, while teams scale quickly and efficiently**.

Founded by mobile developers, Bitrise is trusted by more than 6,000 mobile product organizations worldwide, including Rakuten, WISE, Bose, Virgin Mobile, Grindr, Compass, Mozilla, Philips Hue, and Marks & Spencer. Bitrise now counts 200+ people across continents, and has raised close to $100M in funding to date from investors like Insights Partners, Partech, Y Combinator, and more.

www.bitrise.io

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Mobile engineers behind some of the most popular apps rely on Bitrise to streamline their build, test, and deployment processes. By eliminating manual tasks like maintenance, fixing errors, and performance upgrades, we help customers iterate faster, release with confidence, and build apps that are used and loved by millions of users around the world.

Trusted by the world's most sophisticated mobile teams

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