



# Building a Mobile App using Firebase without Cloud Server

# Firebase helps mobile app teams succeed

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Build apps fast,  
without managing  
infrastructure



Backed by Google,  
trusted by top apps



One platform, with  
products that work  
better together



iOS

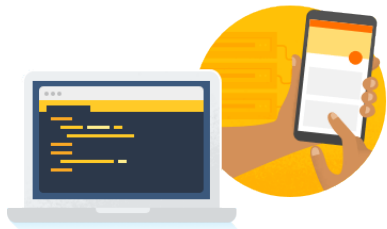


C++

Supported by Firebase

# A comprehensive mobile development platform

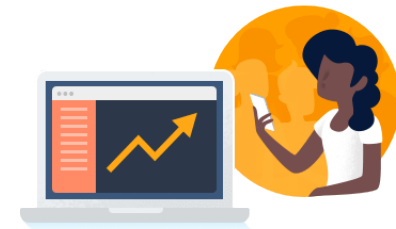
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Build better apps



Improve app quality



Grow your business

# Build better apps

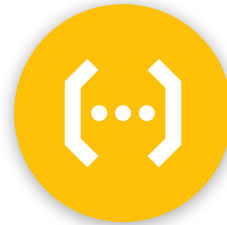
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Cloud Firestore



ML Kit



Cloud Functions



Authentication



Hosting



Cloud Storage

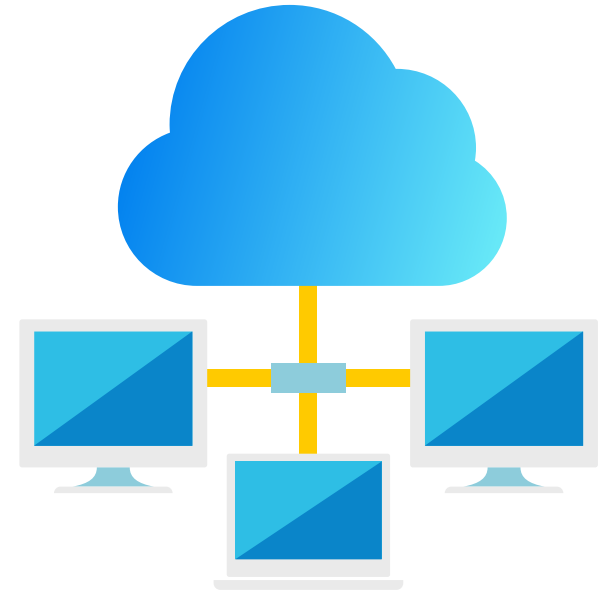


Realtime Database

# Cloud Firestore

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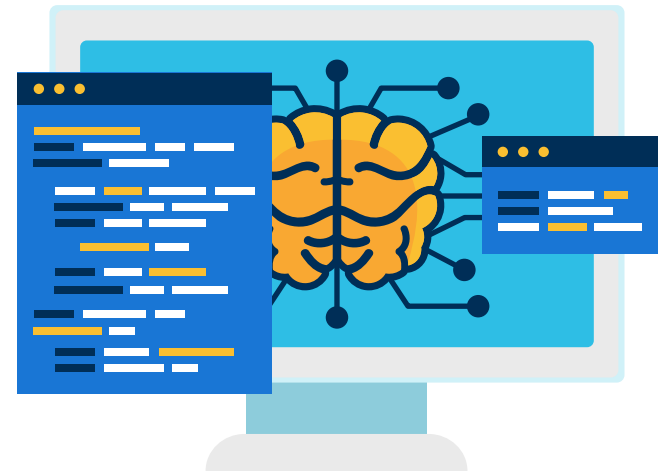
- ▶ NoSQL document database
- ▶ Store and sync app data at global scale
- ▶ Query and structure data easily
- ▶ Live synchronization and offline support along with efficient data queries
- ▶ Built to scale globally with business progress
- ▶ Integration with other Firebase products enables building truly serverless apps



# ML Kit

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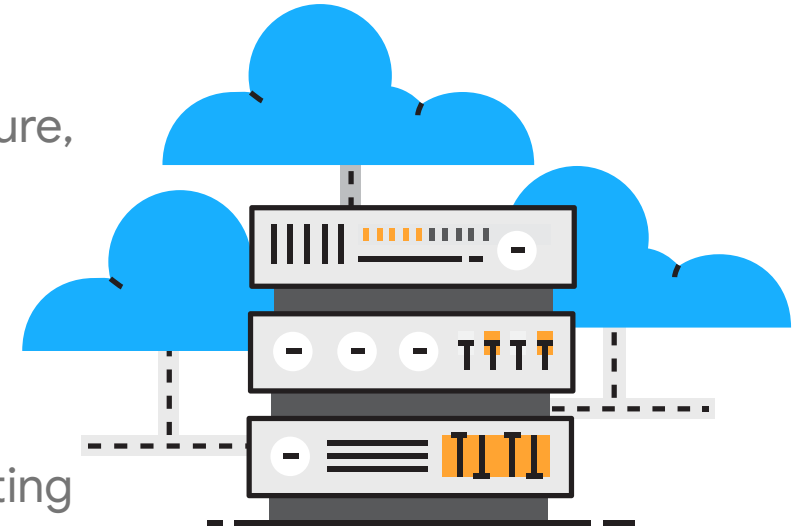
- ▶ Mobile machine learning for mobile developers of all skill levels
- ▶ Brings powerful machine learning features to apps (iOS & Android)
- ▶ Production-ready with a set of ready-to-use APIs for common mobile use cases
- ▶ Pass in data to ML Kit library and receive the required info in a few lines of code
- ▶ Gives both on-device and Cloud APIs, all in a common and simple interface
- ▶ Deploy custom models (TensorFlow Lite) with ML Kit as the API layer



# Cloud Functions

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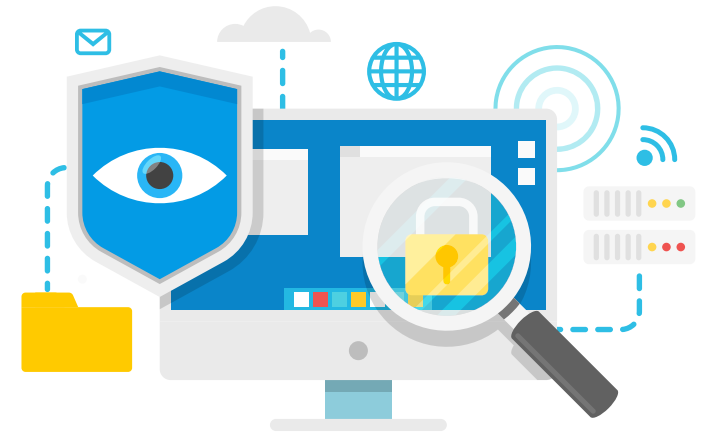
- ▶ Single-purpose JavaScript functions executed in a secure, managed Node.js environment
- ▶ Run mobile backend code without managing servers
- ▶ Low maintenance as it automatically scales up computing resources to match the usage patterns of your app.
- ▶ Keeps your logic private and secure



# Authentication

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- ▶ Easy sign-in with any platform
- ▶ Flexible, customizable, drop-in UI auth solution
- ▶ Implements best practices for authorization
- ▶ Comprehensive security and fast implementation



# Hosting

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- ▶ Fast and secure web hosting
- ▶ Deploy web content fastly
- ▶ SSD-backed hosting around the globe
- ▶ Free SSL certifications for custom domains
- ▶ Deploy with one command

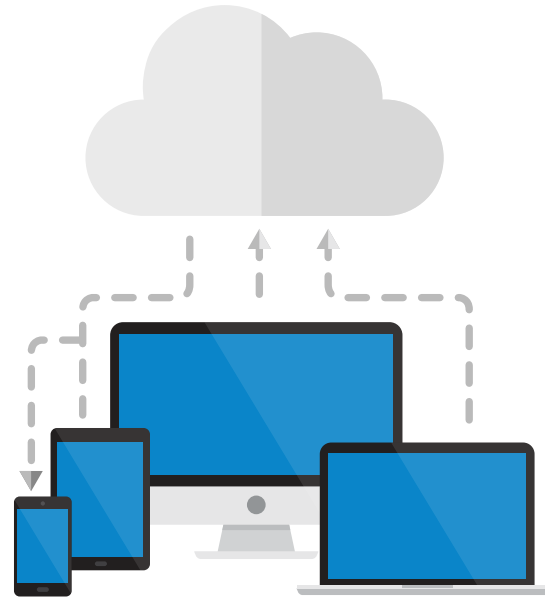




# Cloud Storage

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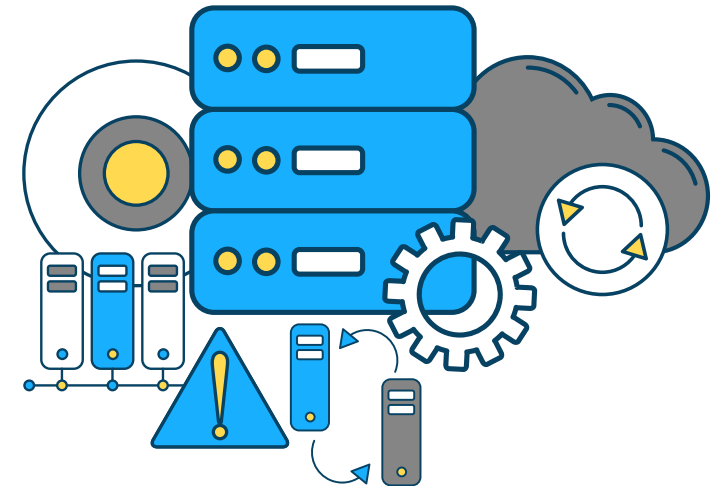
- ▶ Store and serve content with ease
- ▶ Built at Google scale
- ▶ Robust uploads and downloads
- ▶ Store user-based security



# Realtime Database

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- ▶ Cloud-hosted NoSQL database for realtime syncing of JSON data
- ▶ Collaborate across multiple devices with ease
- ▶ Optimized for offline use



# Improve app quality

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Crashlytics



Performance Monitoring



Test Lab

# Crashlytics

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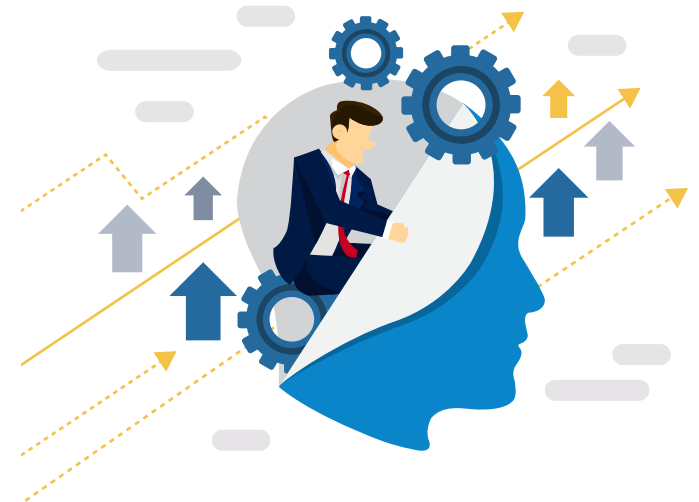
- ▶ Powerful and realtime crash reporting
- ▶ Quickly pinpoint the root cause of crashes
- ▶ Crashes prioritized by the impact on actual users



# Performance Monitoring

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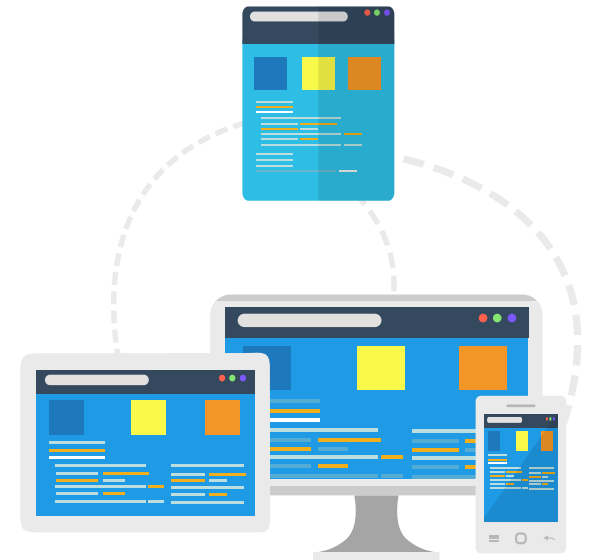
- ▶ Get insights into how your app performs from the users' point of view
- ▶ Automatic and customized performance tracing to get performance context
- ▶ Understand the network latencies affecting users with automated monitoring of HTTP/S requests
- ▶ Pinpoint the origin of issues



# Test Lab

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- ▶ Physical and virtual devices to run tests that simulate actual usage environments
- ▶ Fits with your workflow and makes it easy to start the tests
- ▶ An intelligent crawler, Robo, navigates app automatically
- ▶ Reports crashes and provides screenshots to spot errors.
- ▶ Actionable results at your fingertips in the form of comprehensive test reports
- ▶ Includes logs, screenshots, and videos to fix any issues with the app and take it back to a more stable state
- ▶ Reduced American Express app test costs by 50%



# Grow your business

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In-App Messaging



Google Analytics



Predictions



A/B Testing



Cloud Messaging



Remote Config



Dynamic Links



App Indexing

# In-App Messaging

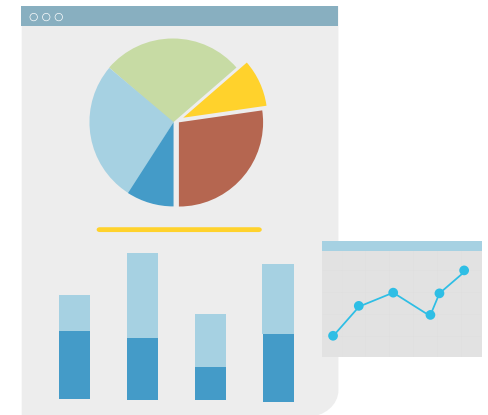
- ▶ Engage active app users with contextual messages
- ▶ Trigger messages based on behavior and interests
- ▶ Customize the design for a variety of use cases
- ▶ Get insight into the performance



# Google Analytics

- ▶ Get free and unlimited app analytics
- ▶ User insights from acquisition to app usage
- ▶ Seamless integration with AdMob
- ▶ KCB Group lowers cost per install 24% with Google

Analytics for Firebase



# Predictions

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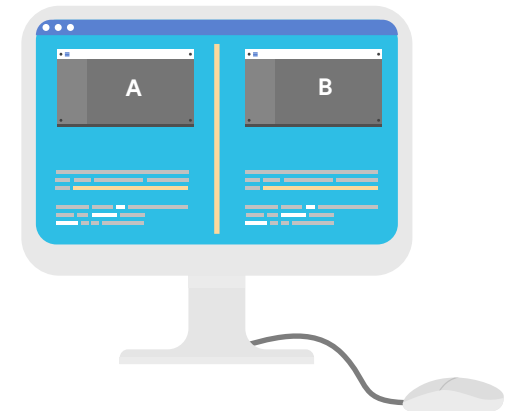
- ▶ Smart user segmentation based on predicted behavior
- ▶ Personalize app experience to boost revenue and retention
- ▶ Run more sophisticated messaging campaigns
- ▶ Export your predictions to BigQuery



# A/B Testing

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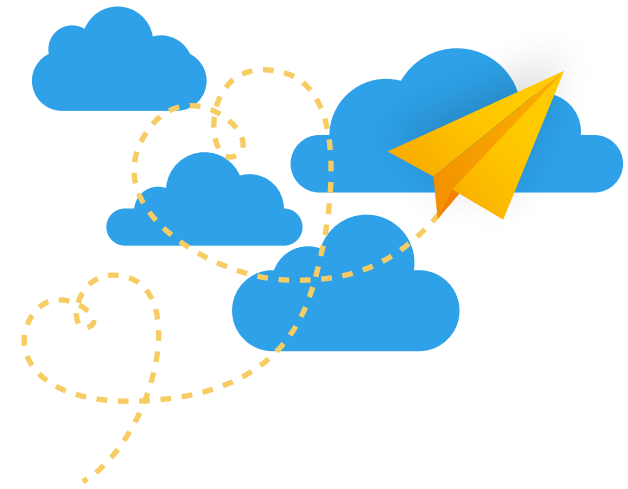
- ▶ Optimize your app experience through experimentation
- ▶ Customize experiments to test a variety of updates
- ▶ Roll out changes with confidence
- ▶ Empower your team without eating up engineering time



# Cloud Messaging

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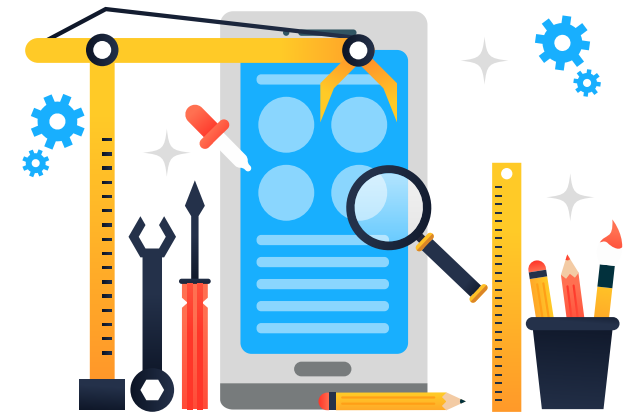
- ▶ Send targeted messages and notifications
- ▶ Easily target messages using predefined segments or create your own
- ▶ No coding required for sending notifications
- ▶ A/B test notifications



# Remote Config

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- ▶ Modify your app without deploying a new version
- ▶ Make changes to app's default behavior and appearance by changing server-side parameter values.
- ▶ Tailor your app to different audiences

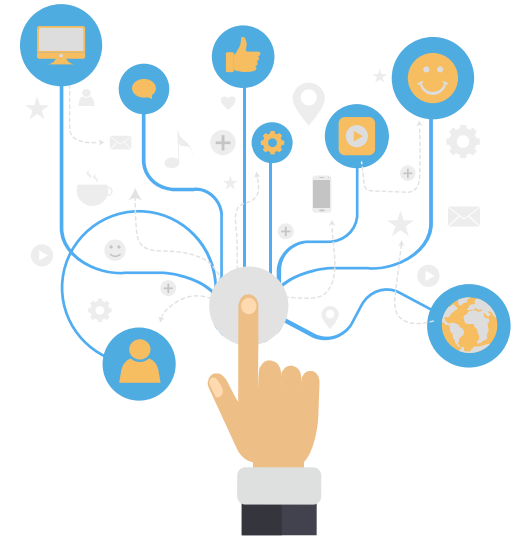




# Dynamic Links

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- ▶ Deep link potential users to the right place inside your app
- ▶ Drive more installs with social, email, and SMS marketing campaigns
- ▶ Turn desktop users into mobile app users



# App Indexing

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- ▶ Drive search traffic to your mobile app
- ▶ Re-engage your users from Google Search
- ▶ Increase revenue with better in-app ad targeting



# Make the most of Firebase with key integrations

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Google Ads



AdMob



Google Marketing Platform



Play Store



Data Studio



BigQuery



Slack

# Solutions to common challenges



## Progressively roll out new features

Before releasing a new feature, test it on a subset of your user base to see how it works and how they respond.



Crash reporting



Remote Config



Cloud Messaging



Google Analytics



## Create a great onboarding flow

Give users a simple, secure way to sign into your app, then monitor the onboarding process and find ways to improve it.



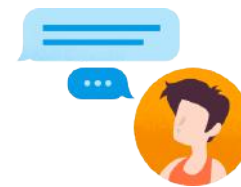
Realtime DB



Authentication



Cloud storage



## Add chat to your app

Implement a user-friendly chat feature so that your users can chat with each other in realtime without leaving your app.



Realtime DB



Authentication



Cloud storage

# Use cases

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## Results

**2x** higher retention

**1 day** to implement custom onboarding screens



## Results

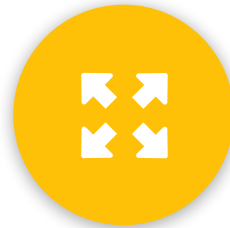
Increased user engagement by showing content that better mapped to listener interests and behaviours.

# Easy to integrate on iOS, Android, and the Web

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Firestore APIs packaged into a single SDK



Easy to expand to more platforms and languages



Works easily on C++ and Unity with Firestore backend

# Trusted by the largest apps

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The New York Times



npr one<sup>SM</sup>



duolingo



venmo

The Economist

trivago<sup>®</sup>



wattpad



# Conclusion

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Backend-as-a-service



Integrate into  
your app easily



Solve the most demanding  
app development and  
scalability challenges

# Thank You



Fuelling success for our clients and happiness for our stakeholders



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