

Firebase Platform Guide

Analytics, Events, Audiences & Messaging

A complete guide to understanding your app performance, user behavior and campaign management

Introduction

This guide will help you navigate the Firebase platform — from Analytics and Events to Audiences and Messaging campaigns. You do not need any technical background to use this document. We will walk you through every section of Firebase, explain what your current data means, show you exactly what to look for to understand your app's performance and user behavior, and guide you through creating targeted notification campaigns to engage your users at the right time.

What is Firebase Analytics?

Firebase is Google's mobile platform for analytics, messaging, and app performance monitoring. It automatically records user actions inside your app (called "events") and presents them in a visual dashboard. It also allows you to send targeted push notifications to your users directly from the console. Think of it as your app's control panel — showing you who your users are, what they do, how healthy your app is, and giving you the tools to reach them at the right moment.

Section 1: How to Navigate the Firebase Platform

Follow these steps to access your analytics data:

Step 1 — Log In

Go to console.firebase.google.com and sign in with your Google account. Select your app project from the list.

Step 2 — Find the Analytics Section

On the left-hand sidebar, look for the Analytics menu. Click on it to expand the following sub-sections:

Section	What It Shows You
Dashboard	Your main overview — active users, top events, engagement time
Realtime	Live user activity happening right now in the app
Events	The full list of all actions users have performed
Conversions	High-priority events you mark as important goals
Audiences	Groups of users segmented by their behavior
Funnels	Step-by-step journeys — where users go and where they drop off
Retention	Are users coming back after their first visit?
User Properties	Characteristics of your user base

Step 3 — Set Your Date Range

Every screen in Firebase has a date picker in the top-right corner. For monthly reporting, set it to Last 30 days and compare to the previous period using the comparison toggle.

Section 2: Your Current Events — Plain English

Your app currently tracks 12 events. These fall into two categories: automatic events (collected by Firebase without any setup) and custom events (built specifically for your app by your development team).

Automatic Firebase Events

These are collected by Firebase out of the box. You did not need to configure them.

Event Name	What It Means	What It Tells You
first_open	A brand new user opened the app for the first time	Your new user acquisition — how many people are discovering the app
session_start	A user opened the app after 30+ minutes of inactivity	How often users return and engage with the app
app_open	The app was opened (any time, not just the first)	Total app opens across all users — overall activity level
user_engagement	The app was actively in the foreground	Measures time spent — Firebase uses this to calculate engagement duration
app_update	A user updated to a newer version of your app	How quickly users adopt new releases
os_update	A user's phone operating system was updated	Technical signal — low priority for reporting

Custom Events (Built for Your App)

These were created by your development team and are specific to your app's features.

Event Name	What It Means	What It Tells You
app_guide_opened	A user opened the in-app guide or tutorial	Are users reading instructions? High count may mean users need more help navigating
search	A user performed a search inside the app	What are users looking for? A strong signal of user intent
app_redeem_invitation_code	A user entered a referral or invite code	Measures word-of-mouth growth — users who joined through invitations
app_exception	An error or crash occurred in the app	Your app health signal — should be as low as possible
app_clear_data	A user cleared the app's data from device settings	A frustration signal — often means something went wrong or they want a fresh start
app_remove	The app was uninstalled (Android only)	Your churn signal — a spike here means something is pushing users away

Section 3: How to Read Each Event in Detail

When you click on any event in Analytics → Events, you will land on a detail page with three key elements:

What you will see inside each event

1. A line graph showing the event count over time (look for trends, spikes, and drops)
2. Parameter breakdown — extra details attached to the event (e.g. what users searched for)
3. Demographic breakdown — country, device type, and OS version of users who triggered it

Event-by-Event: What to Look For

first_open — New User Acquisition

- Look at the daily trend — is it growing week over week?
- Check the country breakdown — where are new users coming from?
- This is your single most important acquisition metric

session_start — User Return Rate

- Divide event count by unique users to get average sessions per user
- A healthy app typically shows 3–7+ sessions per user per month
- If the number is close to 1, users are opening the app once and not returning

app_open vs user_engagement — Depth of Usage

- app_open tells you how often the app is opened
- user_engagement tells you how long people actually used it
- If app_open is high but user_engagement is low, users open the app but leave quickly

app_guide_opened — Onboarding Health

- Calculate what percentage of new users also opened the guide
- Formula: $\text{app_guide_opened} \div \text{first_open} \times 100 = \% \text{ of new users seeking help}$
- Very low usage may mean the guide is hard to find — not that users don't need it

search — User Intent

- High search volume means users are not finding things through normal navigation
- Check parameter values if available to see what users are searching for
- This tells you what features or zones players are actively hunting for

app_redeem_invitation_code — Viral Growth

- Compare to first_open: what % of new users came through an invite?
- Formula: $\text{app_redeem_invitation_code} \div \text{first_open} \times 100 = \% \text{ viral acquisition}$
- This is an excellent metric to highlight in client-facing reports

app_exception — App Health

- This should be a very small number relative to your total sessions
- Formula: $\text{app_exception} \div \text{session_start} \times 100$ — if above 1–2%, flag to the dev team
- Check if spikes align with app_update dates — that points to a problematic release

app_clear_data — Frustration Signal

- Low numbers are normal — some users clear data as routine device maintenance
- Cross-reference with app_exception spikes — frustrated users often clear data after errors
- Correlates with app_remove — clearing data often precedes an uninstall

app_remove — Churn Signal (Android Only)

- Compare to first_open over the same period for a rough churn estimate
- Formula: $\text{app_remove} \div \text{first_open} \times 100 = \text{rough churn rate \%}$
- A spike after an update is a red flag — investigate immediately

Section 4: Audiences — Who Are Your Users?

Go to Analytics → Audiences. Firebase automatically creates pre-built audience segments with no extra setup required. These are groups of users defined by their behavior.

Audience	Who It Includes	Why It Matters
All Users	Every user who has ever opened your app	Your baseline — total reach
7-day active users	Users who opened the app in the last 7 days	Your currently engaged audience
Churned users	Users who have not opened the app in 7+ days	Users at risk of uninstalling

How to Use Audiences for Trend Observation

Watch the size of each audience over time. If your "7-day active users" audience is growing while "Churned users" is shrinking, your app is healthy. If it is the opposite, users are engaging less and you may need to investigate why.

Section 5: Retention — Are Users Coming Back?

Go to Analytics → Retention. This is one of the most powerful screens in Firebase. It shows you how many users return to your app over time after their first visit, without requiring any custom setup.

The retention chart works as follows:

- Day 0 is the day a user first opened the app (always 100%)
- Day 1 shows what % came back the very next day
- Day 7 shows what % came back a week later
- Day 30 shows what % came back a month later

What good retention looks like for a game

Day 1 retention of 20–40% is considered strong for mobile games. Day 7 retention of 10–20% is healthy. Day 30 retention above 5% indicates a loyal user base. If your numbers are significantly below these benchmarks, new user onboarding or early game experience may need improvement.

Section 6: Your Monthly Reporting Framework

Below is a structured framework you can follow every month to track your app's performance using your current events.

Section A — App Growth

Metric	Firebase Event	What to Record
New Users	first_open	Total count this month vs. last month + % change
Viral Growth	app_redeem_invitation_code	Count + % of new users from invites
Total App Opens	app_open	Overall activity level — compare month over month

Section B — User Engagement

Metric	Firebase Event	What to Record
Total Sessions	session_start	Total sessions + average sessions per user
Avg Time in App	user_engagement	Firebase shows avg engagement time — report this number
Guide Usage	app_guide_opened	Count + % of users who needed the guide
Search Activity	search	Total searches — shows exploration behavior

Section C — App Health

Metric	Firebase Event	What to Record
Errors	app_exception	Count — flag if unusually high relative to sessions
Data Clears	app_clear_data	Count — flag if correlated with errors
Uninstalls (Android)	app_remove	Count + rough churn rate %

Section D — User Retention

Metric	Where to Find It	What to Record
Day 1 Retention	Analytics → Retention chart	% of users who returned the next day
Day 7 Retention	Analytics → Retention chart	% of users who returned after one week
Update Adoption	app_update event	% of users on the latest app version

Section 7: Warning Signs to Watch For

These patterns in your data indicate something may need attention:

Warning Sign	What to Look For	Event to Check
App is crashing	Spike in error count — especially after an update	app_exception
Users are frustrated	High app_clear_data that coincides with error spikes	app_clear_data + app_exception
Users not returning	Low session_start to first_open ratio; flat retention curve	session_start, Retention tab
Bad update released	app_remove spike immediately after an app_update date	app_remove + app_update
Onboarding failing	High guide usage but low Day 7 retention	app_guide_opened, Retention

Section 8: Firebase Messaging — Creating Notification Campaigns

Send push notifications to your users directly from the Firebase Console — no code required

What Is Firebase Messaging?

Firebase Cloud Messaging (FCM) is Firebase's built-in tool for sending push notifications directly to your app's users. You access it from the Firebase Console under Messaging, then Create your first campaign.

Think of it as your direct line to users — you can send a message that appears on their phone screen even when the app is completely closed.

For a location-based game, this is especially powerful. You can re-engage players who have not opened the app in a while, alert users when a new game is available in their city, or reward active players with a special message.

Types of Campaigns You Can Create

When you click Create campaign, Firebase gives you two options:

Campaign Type	What It Is	Best For
Firebase Notification messages	Visual push notifications with title, body text, image, and optional link. No coding required to send.	Re-engagement, announcements, new game launches — recommended starting point
Firebase In-App Messaging	Messages that appear inside the app while the user is actively using it (banners, modals, image cards). Requires SDK setup by developer.	Onboarding flows, in-session prompts, contextual tips

This section focuses on Notification messages

Notification messages are the out-of-the-box campaign tool that requires zero code to use once FCM is set up in the app. This is what is available for your app, this is where the focus will be.

What a Notification Message Looks Like

A basic notification has the following fields:

Field	What It Is	Example
Notification title	The bold headline — first thing the user reads	"New game in your city! 🎮"
Notification text	The body copy below the title	"A brand new City Hunt just launched near you. Tap to explore."
Notification image	Optional banner image shown on Android	Your app's game cover art

How to Create a Campaign — Step by Step

Step 1 — Open Messaging

Firebase Console → left sidebar → DevOps & Engagement → Messaging → click Create campaign → select Firebase Notification messages.

Step 2 — Write Your Notification (Notification Tab)

Fill in the Notification title and Notification text. Keep the title under 50 characters and the body under 100 characters — anything longer gets cut off on most phones.

Character limits matter

Android shows approximately 65 characters for the title and 240 for the body.

iOS shows approximately 50 characters for the title and 100 for the body before truncating.

Always write for the shorter iOS limit to ensure your full message is visible on all devices.

Step 3 — Set Your Target (Target Tab)

This is where you choose who receives the notification. The Target tab works in two layers:

Layer 1 — Platform

First you select the platform: iOS, Android, or both. This is always the starting point and is always visible.

Layer 2 — Audience or User Segment

Below the platform selector, look for a section labelled "And also if..." or a blue + Add filter button. This is where you narrow your target using Audiences you have created.

Filter Option	What It Targets	Example Use
Firebase Audience	A saved audience you created in Analytics → Audiences	Target only users in Poland, or only churned users
Country / Region	Users located in a specific country	Send only to users in Poland

App version	Users on a specific version of the app	Notify users who have not updated yet
Language	Users whose device is set to a specific language	Send a French message only to French-speaking devices
User property	A custom property set by your developer	Target users who set their age group during onboarding

How to target by country using an Audience

You cannot type a country directly in the Messaging target filter. You must first create an Audience in Analytics → Audiences (see Section 10 of this document), then select that Audience here under the 'And also if...' filter.

Example workflow: Create audience 'Users - France' in Section 10 → wait 24-48 hours → return to Messaging → select that audience as your target.

Combining Filters

You can stack multiple filters together. For example:

1. Platform: iOS AND Audience: Users - France → reaches only iPhone users in France
2. Platform: All AND Audience: Churned Users AND App version: latest → re-engages lapsed users on the newest version
3. Platform: Android AND Country: Belgium AND Language: French → very specific geo + language targeting

Minimum audience size

Firebase requires at least approximately 100 users in an audience before it becomes available as a target in Messaging.

If your audience appears in Analytics but is greyed out in the Messaging target selector, it means the audience has not yet reached this threshold.

Step 4 — Schedule Your Campaign (Scheduling Tab)

Option	What It Does	When to Use
Now	Sends immediately after you click Publish	Urgent announcements or time-sensitive launches
Scheduled	Pick a specific date and time	Planned campaigns — new game launches, events
Recurring	Repeats on a set schedule (weekly, monthly)	Regular re-engagement nudges

Always use User local time when scheduling

Firebase has a 'User local time' toggle on the Scheduling tab. Always enable this.

Without it, a 9am send in your timezone lands at 3am for users in another country — the worst possible time for a push notification.

With it enabled, Firebase delivers the notification at 9am in each user's own timezone.

Step 5 — Attach a Conversion Event (Additional Options Tab)

This optional but highly recommended step lets Firebase measure whether your campaign actually worked. You attach one of your existing events as the goal, and Firebase reports how many notification recipients completed that action.

Goal event to attach	What it measures
session_start	Did recipients open the app after receiving the notification?
purchase	Did recipients buy a game after receiving the notification? (once purchase tracking is live)
search	Did recipients search for something after tapping through?

Step 6 — Review and Publish

Firebase shows you a full preview of the notification before sending.

- View and click Publish

Best Practices for Location-Based Games

Practice	Why It Matters
Keep it location-relevant	"There is a new game 5 minutes from you" always outperforms "Check out our new game." Use country or city audiences to make messages feel local.
Limit to 2-3 campaigns/month	Too many notifications train users to ignore them or uninstall the app. Watch your app_remove event after every campaign.
Attach a conversion event	Without a conversion event you cannot measure success. Always attach session_start as a minimum goal.
Time it well	For games, evenings 6pm-9pm local time and weekend mornings have the highest open rates. Avoid early mornings and late nights.

Where to See Your Campaign Results

After sending, go to Messaging in the Firebase Console and click on your campaign name. Results update within 24-48 hours.

Metric	What It Means	Benchmark for Games
Notifications sent	How many devices Firebase attempted to deliver to	Your total reachable audience
Notifications opened	How many users tapped the notification	-
Open rate %	$\text{Opened} \div \text{Sent}$ — your primary success metric	5-15% is typical for games
Conversions	Users who completed the goal event you attached to the campaign	Compare across campaigns to find what works