Firebase vs AWS Amplify

AWS for Firebasers — An Overview

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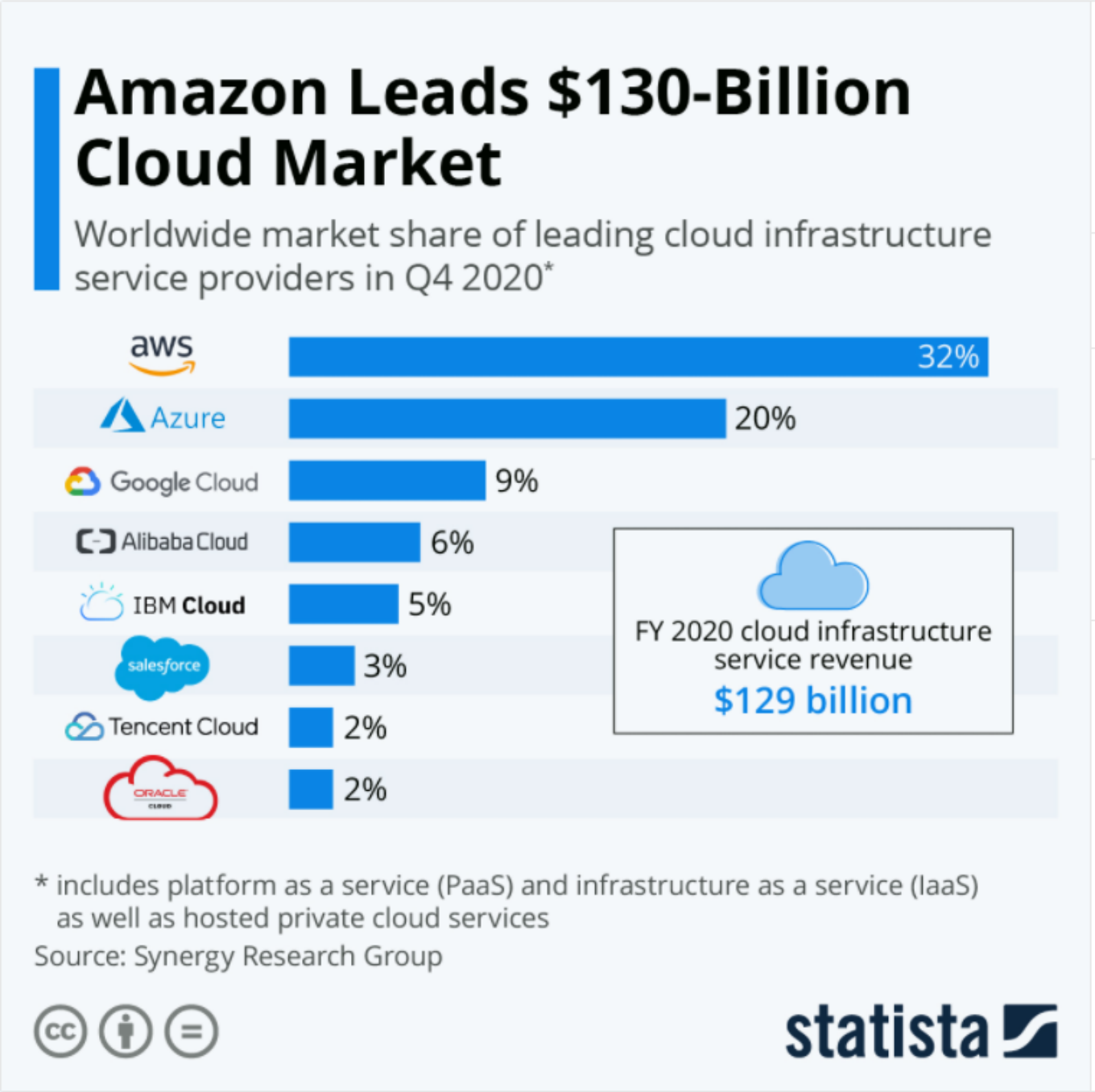


Source Statista

As you can see from the infographic cover picture, AWS is the big player in BAAS. As a Firebase user, I wanted to see if there was anything I was missing out on. This is the first in a series of articles where I will be comparing the two services.

I will go through the product offerings, the pricing, and the developer experience. In later articles, I will try to duplicate Firebase implementations with AWS to see if there are equivalents, and how comparatively easy they are to implement. This article only deals with the big picture.

What is AWS Amplify?

According to Amazon:

> AWS Amplify is a set of tools and services that can be used together or on their own, to help front-end web and mobile developers build scalable full stack applications, powered by AWS. With Amplify, you can configure app backends and connect your app in minutes, deploy static web apps in a few clicks, and easily manage app content outside the AWS console.
>
> Amplify supports popular web frameworks including JavaScript, React, Angular, Vue, Next.js, and mobile platforms including Android, iOS, React Native, Ionic, Flutter. Get to market faster with AWS Amplify.

So AWS Amplify is the equivalent of Firebase. Enough said.

First Impressions of AWS

My first impression right off the bat is that AWS is much more complicated to use. Firebase, on the other hand, makes it BAAS dead simple. You log into the Firebase dashboard, create a new project, and away you go. All products and tools are easily accessible in the side menu, and Firebase user documentation is detailed and user-friendly. AWS also has a central console where you build your project, but there is no side menu with tools, you have to hunt them down.

The same goes for the pricing. AWS pricing is very complicated, maybe because their product range is so vast. I've tried to summarize the pricing for each feature, but it's best to refer to the AWS pricing calculator. Firebase's pricing is straightforward. All the pricing for Firebase is on this one page.

AWS offers Elasticsearch. Firebase does not have a database search facility. This is rather astounding, especially since Google is the king of online search. Doesn't Google know that almost no app can work without a search feature? Why can't Google build a search tool for a user's database? With Firebase, developers must write data to another service that offers search, such as Algolia or Typesense. Both these search services are not cheap, especially Algolia, and their implementation is convoluted, although Typesense offers a simpler and cheaper plan.

Firebase vs AWS Compared In Tables

Below are some tables that give a quick comparison of the two services.

	Google	Amazon Web Services (AWS)
	General	
What it's called	Firebase	Amplify
Released	April 2012	November 2018
	Front end support	
Web (JS)	yes	yes
React Web	yes	yes
Vue	yes	yes
Angular	yes	yes
Next.js	yes	yes
iOS	yes	yes
Android	yes	yes
React Native	yes	yes
Flutter	yes	yes
Ionic	yes	yes

Image by Author

	Google	Amazon Web Services (AWS)
	Features	
User Authentication	yes	yes - Cognito
Push notifications	yes	yes - SNS
Analytics	yes	yes - Athena + others
Hosting	yes	yes
Serverless functions	yes	yes - Lambda
File storage	yes	yes - S3
Database	realtime, firestore	yes - graphQL AppSync
Search	no !!?	yes - Elasticsearch
Phone auth	yes	yes
Performance	crashlytics, performance, test lab	No plug and play tool
Other	predictions, remote config	
Machine learning	ML kit	yes - Deep Learning AMIs, Sage Maker
WordPress	no	yes
	Dev experience	
Test environment	use multiple projects	dedicated environments
Continuous deployment	no	deploy from Github commit
CLI	yes	yes

Image by Author

The pricing for these services can get very complicated. I've tried to summarize them below as best I can. Please see the relevant pricing pages for more details:

- Firebase pricing Calculator (All pricing is on this page)
- AWS Pricing Calculator
- AWS Hosting pricing
- AWS Auth pricing
- AWS SMS Auth pricing
- AWS Database pricing
- AWS Serverless functions pricing
- AWS Push notifications pricing
- AWS File storage pricing

	Google	Amazon Web Services (AWS)
	Pricing	
	Firebase pricing calculator	AWS pricing calculator
Free tier	Free Tier forever	Free Tier expires after 12 months
Hosting		$0,01/build minute
	$0,026/GB stored/month	$0,023/GB stored/month
	$0,15/GB served	$0,15/GB served
Auth	Free	From $5,50/1000 users
SMS Auth	from $0,01/verification	from $0,00581 each + $0,00266 in US
Database	Firestore - $0,18/GiB stored	$4.00/mill Operations
	Firestore writes- $0,18/100k	$2.00/mill Real-time Updates
	Firestore reads- $0,06/100k	$0.08/mill minutes of connection
	Firestore deletes- $0,02/100k	$0.09/GB Data Transfer
	Firestore egress from $0,01/GiB	Caching from $0.044
	Realtime - $5/GB stored	
	Realtime - $1/GB downloaded	
Serverless functions	from $0,40/mill	$0,02/mill requests
	plus CPU usage - see pricing page	$0,06/GB hour
Push notifications	Free	from $0,50/mill
File storage	$0.026/GB stored	from $0.023/GB
	$0.12/GB downloaded	
	$0.05/10k upload operations	

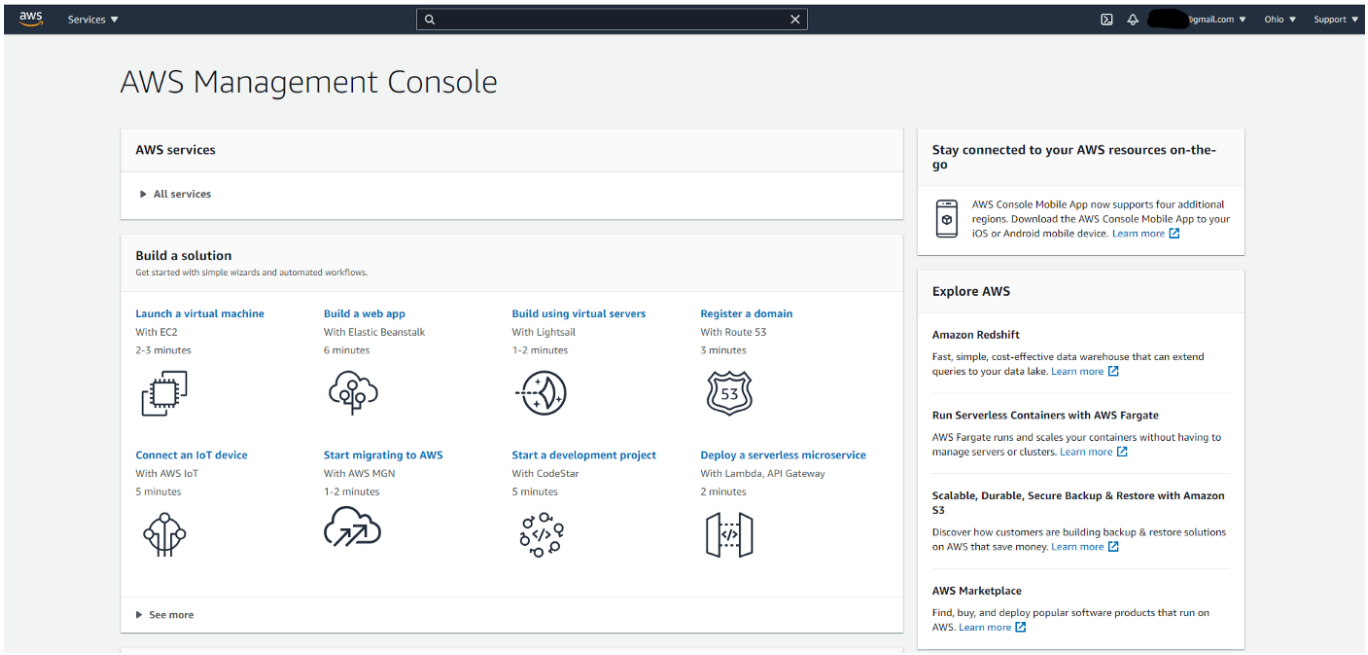
	$0.004/10k download operations

Image by Author

That's it for the overview, next is just a quick run-through of your first set-up and registration with AWS.

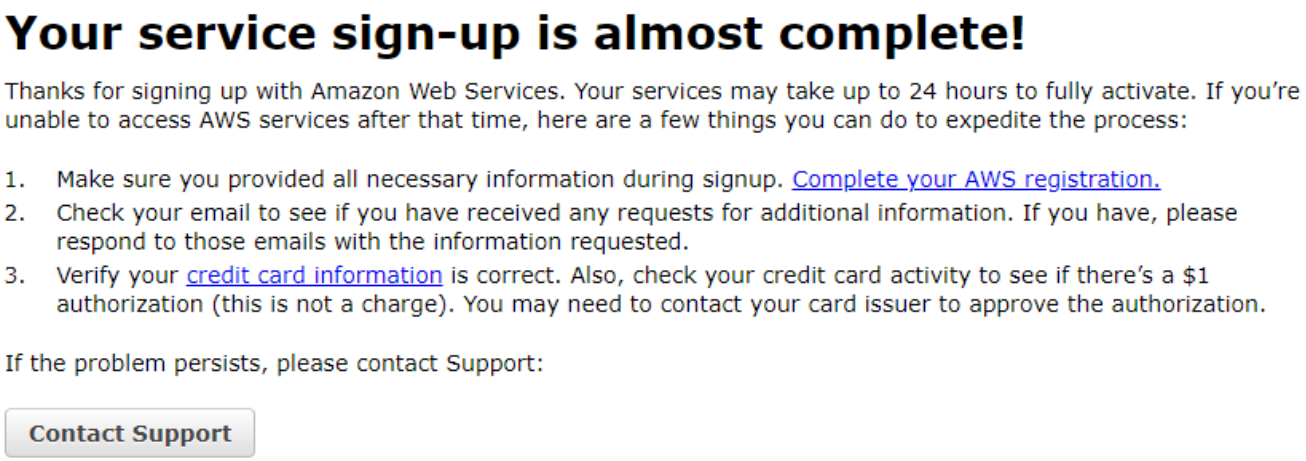
AWS Initial Set-Up

When you first log in to the AWS Management Console, it looks like this:



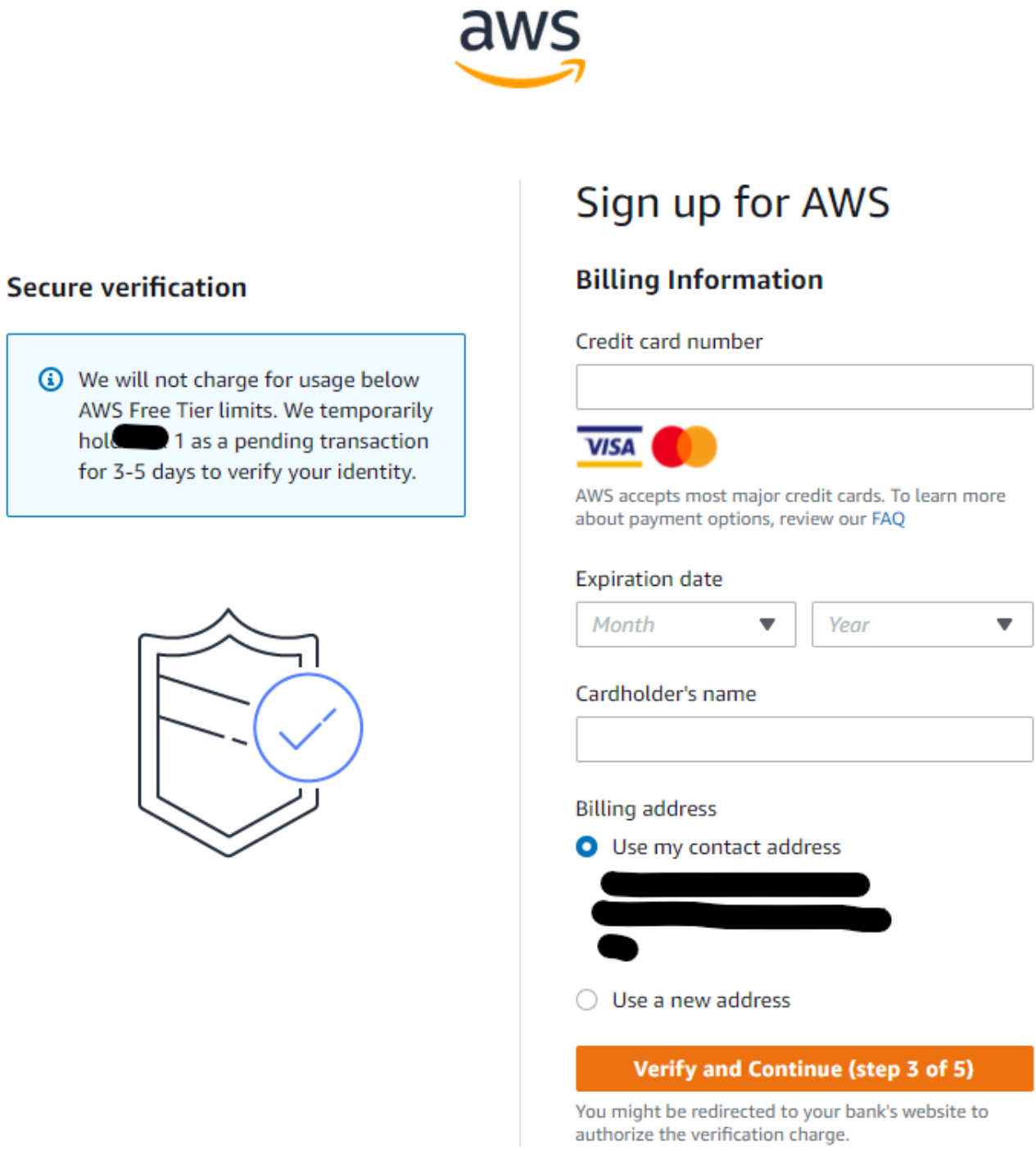
Screenshot by Author, from AWS console.

If you click "Build a web app", you might get this screen:



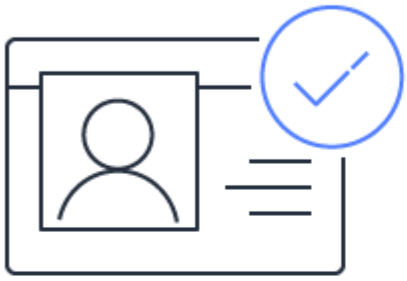
Screenshot by Author, from AWS console.

I selected “Complete your AWS registration” and was taken to the credit card screen — what else could it be!



Screenshot by Author, from AWS console.

The next step is this:



Sign up for AWS

Confirm your identity

Before you can use your AWS account, you must verify your phone number. When you continue, the AWS automated system will contact you with a verification code.

Country or region code

United States (+1)

Phone number

Ext

Security check

m3mf6n

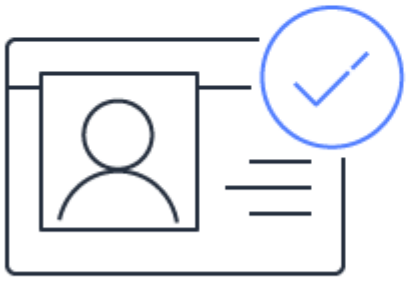
Type the characters as shown above

Call me now (step 4 of 5)

Screenshot by Author, from AWS console.

After clicking “Call me now”, I got a call within 10 seconds and entered the provided code into my phone keypad.

Sign up for AWS



Confirm your identity

We are calling you...

Please answer the call from AWS and, when prompted, enter the 4-digit number on your phone keypad.

7734

Screenshot by Author, from AWS console.

The code screen above then changed to the one below:

aws

Sign up for AWS

Select a support plan

Choose a support plan for your business or personal account. Compare plans and pricing examples. You can change your plan anytime in the AWS Management Console.

Basic support - Free

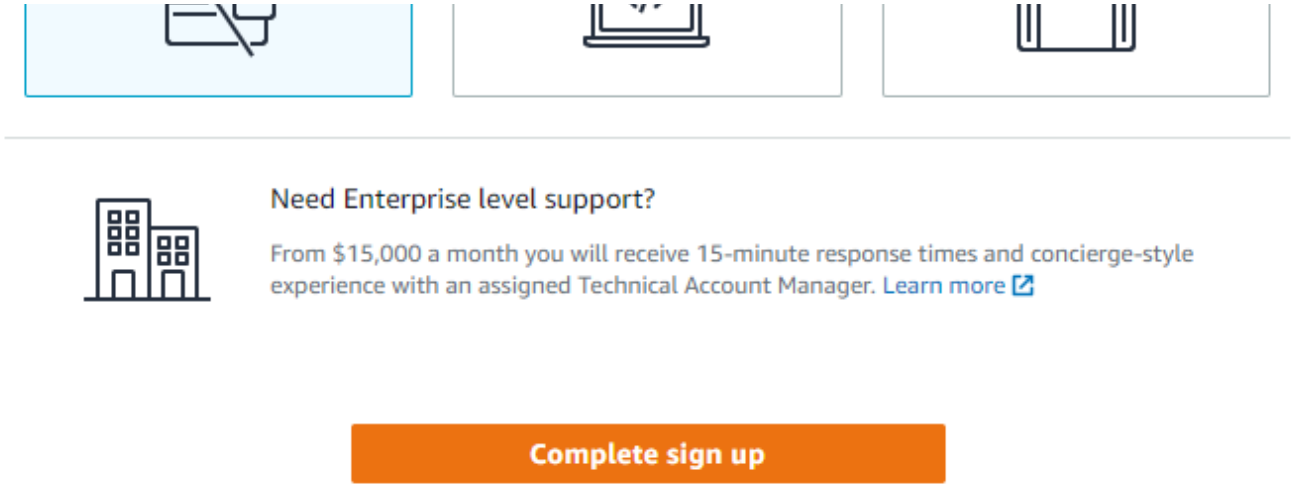
- Recommended for new users just getting started with AWS
- 24x7 self-service access to AWS resources
- For account and billing issues only
- Access to Personal Health Dashboard & Trusted Advisor

Developer support - From $29/month

- Recommended for developers experimenting with AWS
- Email access to AWS Support during business hours
- 12 (business)-hour response times

Business support - From $100/month

- Recommended for running production workloads on AWS
- 24x7 tech support via email, phone, and chat
- 1-hour response times
- Full set of Trusted Advisor best-practice recommendations



Screenshot by Author, from AWS console.

I selected “Complete sign up” and got to this screen:

Screenshot by Author, from AWS console.

I clicked “Go to the AWS Management Console” and was back at the AWS Management Console I showed earlier, only this time it allowed me to navigate to the individual wizard tools.

Conclusions

This is just an overview of the two services, but already it is becoming apparent that for a solo beginner or first-time user of a BAAS, Firebase is the simpler (and cheaper?) option. AWS seems more suited for teams of developers.

Also, if costs are a concern, e.g. if you are just building a little side project, then take note that Firebase has a free tier that doesn’t expire, whereas AWS’s free tier only runs for 12 months. AWS also charges for Auth per active user, while Firebase Auth is free for millions of users. The same goes for push notifications to iOS, Android, and web — Firebase is free, while AWS charges.

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