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Firestore vs AWS Amplify

AWS for Firebasers — An Overview



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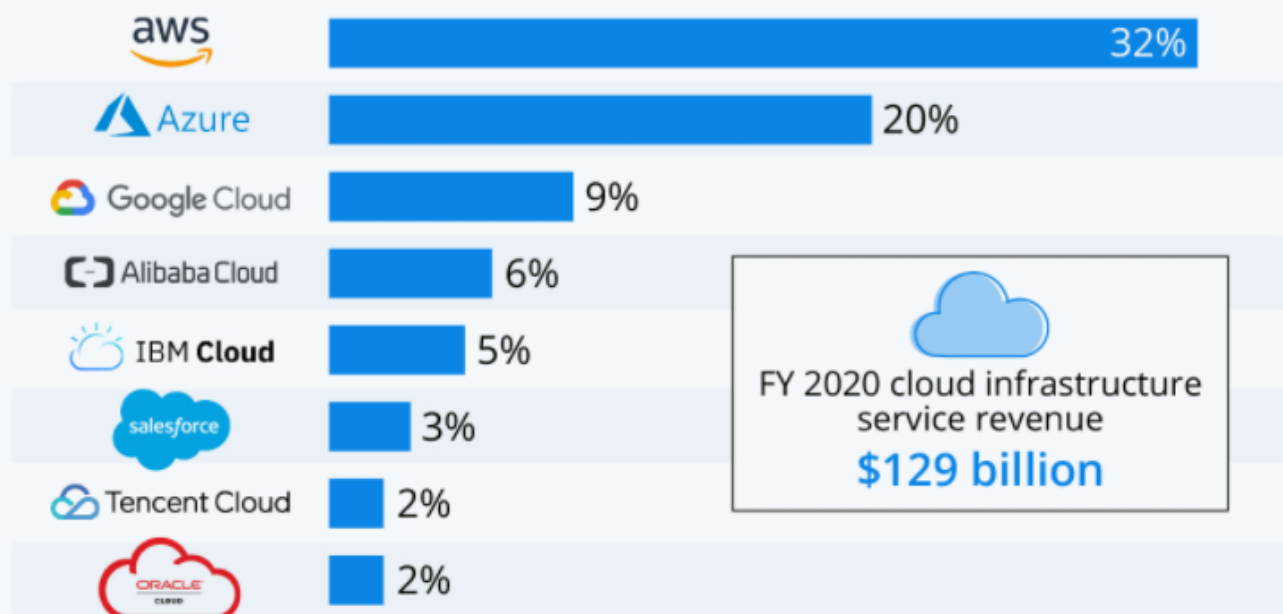
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Amazon Leads \$130-Billion Cloud Market

Worldwide market share of leading cloud infrastructure service providers in Q4 2020*



* includes platform as a service (PaaS) and infrastructure as a service (IaaS) as well as hosted private cloud services

Source: Synergy Research Group



statista

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.

Firestore 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 | Firestore | 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 | |

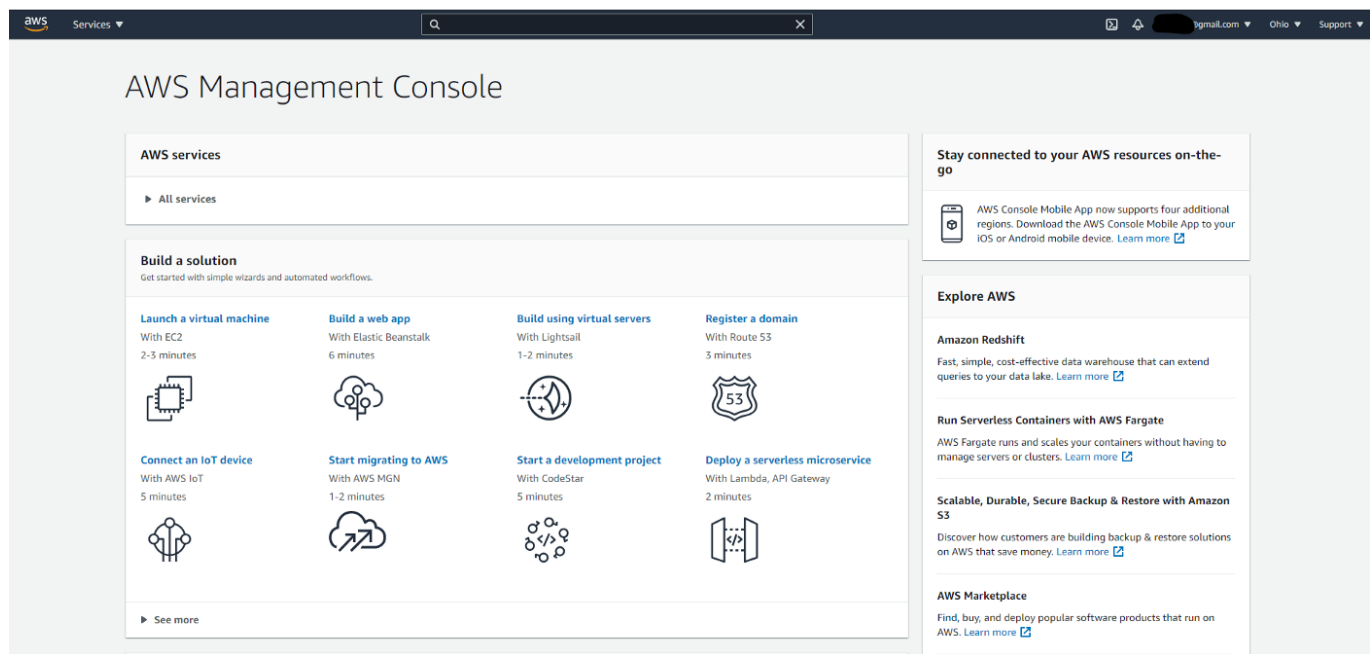
\$0.004/10k download operations

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:

Your service sign-up is almost complete!

Thanks for signing up with Amazon Web Services. Your services may take up to 24 hours to fully activate. If you're unable to access AWS services after that time, here are a few things you can do to expedite the process:

1. Make sure you provided all necessary information during signup. [Complete your AWS registration](#).
2. Check your email to see if you have received any requests for additional information. If you have, please respond to those emails with the information requested.
3. Verify your [credit card information](#) is correct. Also, check your credit card activity to see if there's a \$1 authorization (this is not a charge). You may need to contact your card issuer to approve the authorization.

If the problem persists, please contact Support:



[Contact Support](#)

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!



Secure verification

 We will not charge for usage below AWS Free Tier limits. We temporarily hold  1 as a pending transaction for 3-5 days to verify your identity.



Sign up for AWS

Billing Information

Credit card number



AWS accepts most major credit cards. To learn more about payment options, review our [FAQ](#)

Expiration date

Cardholder's name

Billing address

☒ Use my contact address

Redacted billing address information, consisting of three lines of blacked-out text.

☐ Use a new address

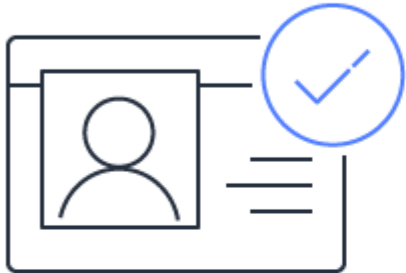
Verify and Continue (step 3 of 5)

You might be redirected to your bank's website to authorize the verification charge.

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

| | |
|---|---|
|  |  |
| |  |

Type the characters as shown above

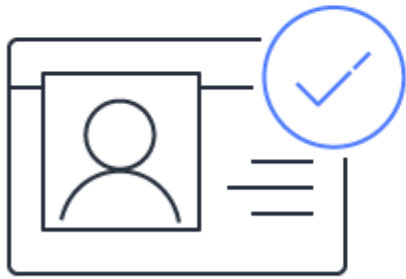
Call me now (step 4 of 5)

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



Sign up for AWS

Confirm your identity

C We are calling you...

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

7 7 3 4


Screenshot by Author, from [AWS console](#).

The code screen above then changed to the one below:



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





Need Enterprise level support?

From \$15,000 a month you will receive 15-minute response times and concierge-style experience with an assigned Technical Account Manager. [Learn more](#) 

Complete sign up

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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