



AWS Amplify vs. Firebase

AWS Amplify vs Firebase

What are the differences?

Lukas Förner & Tobias Nitzl on June 5th 2020



AWS Amplify vs Firebase

What are the differences?

1. Overview of both platforms
2. Differences between AWS Amplify and Firebase
3. AWS Amplify Demo
4. Firebase Demo
5. Conclusion



What is AWS Amplify and Firebase?

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AWS Amplify and Firebase are both development platforms designed for building secure and scalable mobile and web applications.

AWS Amplify is the platform from Amazon and Firebase from Google.



AWS Amplify vs. Firebase

AWS Amplify

Agenda:

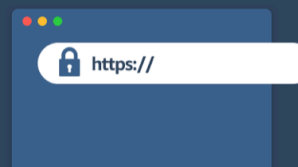
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Scalable Hosting for Fullstack Serverless Web apps



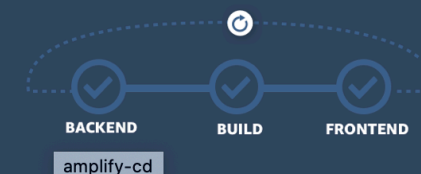
Feature branch deployments

Work on new features without impacting production. Create branch deployments linked to each feature branch.



Easy custom domain setup

Set up custom domains managed in Amazon Route 53 with a single click plus get a free HTTPS certificate.



Simplified continuous workflows

Connect your repository to 'git push' changes to your frontend and backend in a single workflow.



Globally available

Your app is served via Amazon's reliable content delivery network with hundreds of points of presence globally.



Instant+Atomic deployments

All successful deployments are available immediately after an update. Failed deployments do not impact production traffic.



Password protection

Share yet-to-be released features with internal stakeholders by setting a username and password.

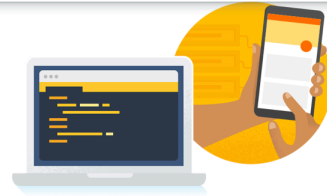
Firebase



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Build better apps



Cloud Firestore

Store and sync app data at global scale



ML Kit BETA

Machine learning for mobile developers



Cloud Functions

Run mobile backend code without managing servers



Authentication

Authenticate users simply and securely



Hosting

Deliver web app assets with speed and security



Cloud Storage

Store and serve files at Google scale



Realtime Database

Store and sync app data in milliseconds

[Learn more](#)



Improve app quality



Crashlytics

Prioritize and fix issues with powerful, realtime crash reporting



Performance Monitoring

Gain insight into your app's performance



Test Lab

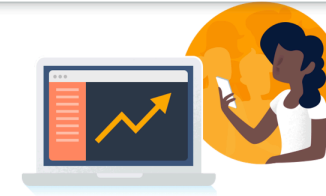
Test your app on devices hosted by Google



App Distribution BETA

Distribute pre-release versions of your app to your trusted testers

[Learn more](#)



Grow your business



In-App Messaging BETA

Engage active app users with contextual messages



Google Analytics

Get free and unlimited app analytics



Predictions

Smart user segmentation based on predicted behavior



A/B Testing BETA

Optimize your app experience through experimentation



Cloud Messaging

Send targeted messages and notifications



Remote Config

Modify your app without deploying a new version



Dynamic Links

Drive growth by using deep links with attribution

[Learn more](#)



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Offer of both platforms

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- Authenticate users
- Store data and user metadata securely
- Authorise access to data selectively
- Integrate machine learning



AWS Amplify vs. Firebase

Features



Realtime App

AWS AppSync (GraphQL)

Collable functions

Amazon DynamoDB

Cloud Firestore

Authentifikation

Amazon Cognito (access standards such as Oauth 2.0, SAML 2.0 and OpenID)

Firebase Authentication (same standards)

Social media (Google, Facebook, Amazon)

More social media (Twitter, Github, Facebook, Google)

Machine Learning

Amazon Machine Learning service

ML Kit for Firebase

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Pros	Cons
Many cloud features	AWS has higher learning curve than AWS Amplify
Use GraphQL	
Good tutorials	
Flexibility and customazation	



Firestore



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Pros	Cons
Easy to use	Not good for “big data“, gets expensive
More features like AWS Amplify	Less flexible
Good tutorials	



AWS Amplify Pricing



AWS Amplify vs. Firebase

Pricing

The AWS Amplify Console is priced for two features – build & deploy, and hosting. For the build & deploy feature the price per build minute is \$0.01. For the hosting feature the price per GB served is \$0.15 and price per GB stored is \$0.023.

With the AWS Free Usage Tier, you can get started for free. Upon sign up, new AWS customers receive **1,000 build minutes per month** for the build and deploy feature, and **15 GB served per month** and **5 GB data storage per month** for the hosting feature.

Free Tier

BUILD & DEPLOY

1000 build minutes per month

HOSTING

5 GB stored per month

15 GB served per month

The free tier expires at the end of your 12 month AWS Free Tier term.

Pay as you go

BUILD & DEPLOY

\$0.01 per build minute

HOSTING

\$0.023 per GB stored per month

\$0.15 per GB served

Multiple sites per project, public SSL certificates included at no extra cost

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Firestore Pricing



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Products	Free Spark Plan Generous limits to get started	Pay as you go Blaze Plan Calculate pricing for apps at scale ✓ Free usage from Spark plan included*
A/B Testing		Free
Analytics		Free
App Distribution		Free
App Indexing		Free
Authentication		
Phone Auth - US, Canada, and India ?	10k/month	\$0.01/verification
Phone Auth - All other countries ?	10k/month	\$0.06/verification
Other Authentication services	✓	✓
Cloud Firestore		
Stored data	1 GiB total	\$0.18/GiB
Network egress	10GiB/month	Google Cloud pricing
Document writes	20K/day	\$0.18/100K
Document reads	50K/day	\$0.06/100K
Document deletes	20K/day	\$0.02/100K



Firestore Pricing






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Blaze plan calculator

Use our pricing calculator to get an estimate for your monthly costs on the Blaze plan. All unit costs are billed at the rate of the underlying [Google Cloud Platform infrastructure](#).

			Projects are billed monthly
 Realtime Database	GB stored	1 GB about 20 M chat messages	Free
	GB transferred	10 GB about 200 M chat messages	Free
 Cloud Firestore	GiB stored	1 GiB about 20 M chat messages	Free
	Document writes	600,000 writes number of times data is written	Free
	Document reads	1,500,000 reads number of times data is read	Free
	Document deletes	600,000 deletes number of times data is deleted	Free
Don't forget to factor in Egress costs! See Google Cloud pricing			
 Storage	GB stored	5 GB about 2,500 high-res photos	Free
	GB transferred	30 GB	Free



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Demo Apps

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Amplify



Firebase





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Getting Started

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Amplify

- AWS Developer Account
- Amplify CLI

Firebase

- Google Developer Account



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Initialize Amplify

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\$ amplify init

? Enter a name for the project (Demo Project)

? Enter a name for the environment (dev)

? Choose your default editor (IntelliJ IDEA)

? Choose the type of app that you're building (android)

Please tell us about your project

? Where is your Res directory

...



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Login Demo

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Amplify



Firebase





Sign In

Amplify

```
Amplify.Auth.signIn(
    userName.text.toString(),
    password.text.toString(),
    { result -> // Sign in success, update UI with the signed-in user's information
        val user = Amplify.Auth.currentUser
        updateUI(user) },
    { error -> // If sign in fails, display a message to the user.
        Toast.makeText(baseContext, text: "Authentication failed.",
            Toast.LENGTH_SHORT).show()
        updateUI( user: null) }
)
```

Firebase

```
auth.signInWithEmailAndPassword(userName.text.toString(), password.text.toString())
    .addOnCompleteListener(this) { task ->
        if (task.isSuccessful) {
            // Sign in success, update UI with the signed-in user's information
            val user = auth.currentUser
            updateUI(user)
        } else {
            // If sign in fails, display a message to the user.
            Toast.makeText(baseContext, text: "Authentication failed.",
                Toast.LENGTH_SHORT).show()
            updateUI( user: null)
        }
    }
```



Sign Out

Amplify

```
Amplify.Auth.signOut(  
  { },  
  { error -> Toast.makeText(baseContext, text: "SignOut failed.",  
    Toast.LENGTH_SHORT).show() }  
)  
updateUI( user: null)
```

Firebase

```
auth.signOut()  
updateUI( user: null)
```



Sign Up

Amplify

```
Amplify.Auth.signUp(  
    userName.text.toString(),  
    password.text.toString(),  
    AuthSignUpOptions.builder().userAttribute(  
        AuthUserAttributeKey.email(), userName.text.toString()).build(),  
    { result -> updateUI(Amplify.Auth.currentUser)},  
    { error -> // If sign in fails, display a message to the user.  
        Toast.makeText(baseContext, text: "Authentication failed.",  
            Toast.LENGTH_SHORT).show()  
        updateUI( user: null) }  
)
```

Firebase

```
auth.createUserWithEmailAndPassword(userName.text.toString(), password.text.toString())  
    .addOnCompleteListener(this) { task ->  
        if (task.isSuccessful) {  
            // Sign in success, update UI with the signed-in user's information  
            val user = auth.currentUser  
            updateUI(user)  
        } else {  
            // If sign in fails, display a message to the user.  
            Log.e( tag: "Signup failed", task.exception.toString())  
            Toast.makeText(baseContext, text: "Signup failed.",  
                Toast.LENGTH_SHORT).show()  
            updateUI( user: null)  
        }  
    }
```



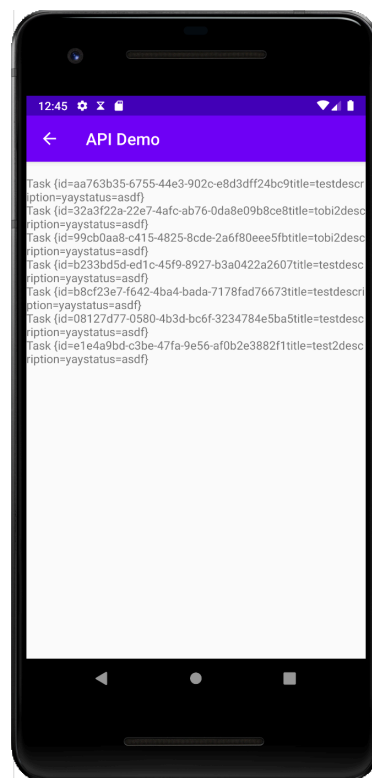
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API Demo

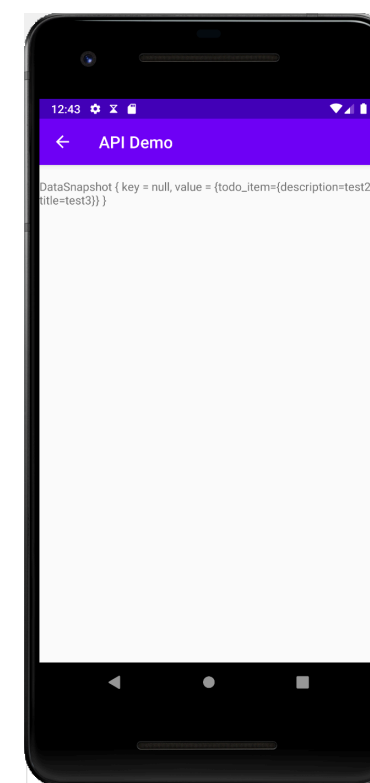
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Amplify



Firebase





Receive new changes

Amplify

```
Amplify.Hub.subscribe(
  HubChannel.DATASTORE,
  { event -> event.getName() == DataStoreChannelEventName.RECEIVED_FROM_CLOUD.toString() },
  { event ->
    val modelWithMetadata = event.getData() as ModelWithMetadata<*>?
    val todo: Task = modelWithMetadata!!.model as Task

    todoLog.append("\n" + todo.toString())
  }
)
```

Firebase

```
val database = Firebase.database
val myRef = database.reference

// Read from the database
myRef.addValueEventListener(object : ValueEventListener {
    override fun onDataChange(dataSnapshot: DataSnapshot) {
        // This method is called once with the initial value and again
        // whenever data at this location is updated.

        val value = dataSnapshot.toString()
        todoLog.append("\n$value")
    }

    override fun onCancelled(p0: DatabaseError) {
        // Failed to read value
        Log.w( tag: "API Demo", msg: "Failed to read value.", p0.toException())
    }
})
```



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Conclusion

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The decision which platform is better can only be done by the developer 😊.

Quellen:

<https://www.mitrais.com/news-updates/aws-amplify-vs-google-firebase-which-is-better/>

<https://aws.amazon.com/de/amplify/console/pricing/?nc=sn&loc=2>

<https://firebase.google.com/pricing?authuser=0>

<https://aws.amazon.com/de/s3/pricing/>

<https://medium.com/@hasangalakdinu/google-firebase-and-aws-amplify-781457bf882>