Comparative Analysis of Firebase vs AWS

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Abstract – *This research paper tries to distinguish between two major cloud platforms i.e. Google Firebase and Amazon Web Services. Here we have distinguished various services provided by both of these cloud platforms.*

Key Words: Google Firebase, Amazon Web Services, services.

1. INTRODUCTION

It is very critical decision to choose between Firebase and AWS because this will result in succeeding or failing of the project. Here we have compared the differences between these two cloud platforms. Here we have compared few basic services, which are required for creating applications such as authentication, database management, server less function, push notifications and cloud storage.

1.1 Overview of Firebase

Firebase is a Ba-aS i.e. Backend as a Service which is owned by google. These services and tools will help to create application from scratch this leads to build a high-quality mobile or web application at a faster pace.

Benefits:

- Firebase Analytics:-It provides insight of our product about how the product is being used .It has about 500 events this SDK automatically captures certain key events even someone can create their own custom events which are required for their business.

- Real-Time Database:-Firebase provides services like real time database and back-end. An API is provided by Firebase that allows. storing data in a synchronized manner and stored in Firebase Storage this integration can be done in Android IOS and Web Application.

- Firebase Crash Reporting: - Developers can get detailed report of errors created in applications. The errors are grouped in to clusters .Developers can create their own crash logs which will help them to create sustainable apps.

1.1 Overview of AWS

AWS stands for Amazon Web Services this service is available through the globe. It offers more than 170 services.

It is a secure and flexible platform which offers a more comprehensive and affordable cloud solutions.

Benefits:-

- Less Expensive:-Since AWS is not a managed service it is way more cheaper in some services as compared with Firebase.

- Self-Hosting:- It delivers more flexibility as compared to Firebase. Data migration to another service is much easier.

- Highly secure services: - AWS is backed by in-depth and robust security tools, which can support security standards with ease.

2. WHEN TO USE WHICH SERVICE

2.1 When to use AWS

- AWS is basically used to handle complex instructions.

- Developers need security and stability.

- Developers may need services and custom logic's to use AWS.

- Developers will need custom back-end services.

- Those services should operate at AWS scale.

2.2 When to use Firebase

- Firebase should be used when there is sharing of data between two ends.

- Beginners mostly use firebase, which has less than one million connections.

- Firebase is used to build simple applications.

- Most used features of Firebase is real-time database to implement these features Firebase should be used.

- Firebase helps to deliver product faster because it provides various tools.

3. WHEN NOT TO USE WHICH SERVICE

3.1 When not to use AWS

- It is not appropriate to use AWS software packages when rely on calling windows RPCs.

- It is used for custom software applications with license agreement like MS Office, document processing, oracle database, etc.

- It should not be used for custom hardware processes.

3.2 When not to use Firebase

- It is not recommended to use Firebase to solve complex instructions

- Not to use when sharing data with third party.

- It is not recommended to use Firebase when working with micro-services.

4. PLATFORM PERFORMANCE

Firebase differs from AWS in that many of its services are free such as user authentication and the ability to enable push notifications. In building real-time applications, Firebase is is a boost with its cheaper side than AWS updates real-time db without any delay.

AWS has very user-friendly pricing, and over the course, have reduced their price point nearly up to 80% of its original market price. Anyhow, its strongest area is how it uses a pay per-use model, so you are billed at the end of the month based on the type of traffic and usage you received. AWS is basically cheaper than many other types of similar platforms. It is supreme in the low cost of its cloud-based functions however; building real time applications through AWS is surprisingly expensive.

5. PLATFORM PRICING

According to google over 900000 websites are using firebase database from which approx. 300000 are live with firebase.

Similarly approx. 20000000 websites are using Amazon services.

Here as we compare Amazon and Firebase we have to understand firebase is an emerging cloud system, which is new and equipped with latest technologies.

So far, we can understand both these services are good at their point. Now it is a real issue when to use which service which could help us to create sustainable and useful.

Discussing about the pricing most of the services both these companies provide are free for beginners to learn and understand those services. They provide free tiers along with minimal charges per service usage.

6. COMPARISON

6.1 Firebase

- **Authentication**

  Firebase Authentication has free tier for up to 10k SMS authentication per year and for 10k > charges are approx 1.55 rupees per SMS verification in INDIA,USA,CANADA and around 4.66 per verification in other countries where else all other authentication services are free.

- **Database Services**

  Firebase provides two types of databases i.e. firestore and real-time database

  FireStore – They provide 1GB of free data and charges approx. 14 rupees per GB usage. There are various rates for Document read, write and delete per 100000 documents, which in total is approx. 22 rupees in total per month.

  Firebase Real-time Database- In free tier firebase provides 1GB of data for free and charges 389 rupees per month for 1GB Stored.

- **Cloud Storage**

  Cloud Storage charges approx. 2 rupees per 5GB Storage this really helps to develop applications for beginners.

6.2 AWS

- **Authentication**

  AWS Cognito provides up to 50k monthly active users free authentication and approx. 0.43 rupee per user >50k.

- **Database Service**

  AWS provides a DynomoDB, which provides 25GB free data 5million read requests free and 1 GB data transfer out.

- **Cloud Services**

  AWS has cloud storage named as s3, which is pretty cheap as compared with other cloud storage providers AWS provides 1GB data at rate of 2 rupees per month.

7. FINAL THOUGHTS

7.1 AWS

- AWS is more flexible

- It is very useful for complex applications

- AWS might not be the right choice for small applications or basic applications.

- As compared with Firebase it is a bit at expensive side for building small applications

7.2 Firebase

- Firebase is easy to setup and maintain since it provides various tools to build applications.

- Firebase is at cheaper side as compared with AWS and even at simpler side.

- It requires developers to make fewer decisions. It acts as a great fit for building simpler applications.

8. CONCLUSIONS

AWS is an IaaS – Infrastructure as a Service provider, a pioneer in providing cloud services, and the most used service worldwide. It provides virtual machines, storage, server-level access, and in most cases, is a more affordable option vs. Firebase.

Firebase is a Ba-aS from Google. It provides a service, scalable hosting, and end-to-end development platform.

The ideal choice will depend on your project requirements. AWS is usually a better choice for more established projects that require server-level access and lots of customized coding. On the other hand, Firebase is a great option to reduce the time to market, accelerate app development, and have hassle-free hosting.

9. REFERENCES

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