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Static Website Hosting on Amazon S3 using AWS

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Abstract: ***Nowadays mostly everyone probably knows what Amazon Web Services (AWS) is, right? AWS is a secure cloud services platform offering compute power, database storage, content delivery, and other platform services such as infrastructure as a service, platform as a service, and software as a service functionalities to help fulfill business needs. AWS itself provides a free tier type of access for one year for new users to try different services. They provide almost all types of infrastructure services required for the internet-connected audience and businesses. Amazon S3 is one such service offered by AWS. It is great for storing files and is one of the oldest services on the AWS platform. It's fast, inexpensive, and easy to setup object storage mechanism. Amazon S3 stands for Amazon Simple Storage Service. AWS S3 service is one of the foundational building block for other AWS functionalities and offerings in AWS eco-system. What many people may not realize is that one can also host static websites on this robust platform. Basically, a static website is comprised of only HTML, CSS, and/or JavaScript. Server-side scripts aren't supported, so if you want to host a Rails or PHP, JSP, or ASP.NET. app, you'll need to look elsewhere. As there is no dependency for server-side code to run or be executed, there is no reason left to host them on servers in a traditional manner. It's a web service that enables us to store, access, and retrieve our data securely through API's reachable over HTTPS. The service offers unlimited storage space and stores your data in a highly available and durable and secured manner. In S3, we can store any kind of data, such as images, documents, and binaries, with a limitation of single object size of maximum 5TB. This paper first reviews how static websites are hosted in traditional hosting environments. Then, we explore a simpler and more cost-efficient approach using Amazon Simple Storage Service (Amazon S3). Finally, we show you how you can enhance the AWS architecture by encrypting data in transit and to layer on functionality and improve quality of service by using Amazon CloudFront***

Keywords: SSH, CDN, AWS, Amazon S3, CloudFront, Amazon Route 53, Instance

I. INTRODUCTION

Static websites can be delivered to web browsers on desktops, tablets, or mobile devices. They usually consist of a mix of HTML documents, images, videos, CSS style sheets, and JavaScript files. Static doesn't have to mean boring—static sites can provide client-side interactivity as well. Using HTML5 and client-side JavaScript technologies such as jQuery, AngularJS, React, and Backbone, you can deliver rich user experiences that are engaging and interactive.

Static websites deliver HTML, JavaScript, images, video and other files to your website visitors. Static websites are very low cost, provide high-levels of reliability, require almost no IT administration, and scale to handle enterprise-level traffic with no additional work.Static websites load quickly since content is delivered as-is and can be cached by a content delivery network (CDN). The web

A. Host a static website using AWS Amplify in the AWS console. AWS Amplify provides fully managed hosting for static websites and web apps. Amplify's hosting solution leverages Amazon CloudFront and Amazon S3 to deliver your site assets via the AWS content delivery network (CDN).

B. Set up continuous deployment: Amplify offers a Git-based workflow with continuous deployment, allowing you to automatically deploy updates to your site on every code commit.

II. PROPOSED SYSTEM

To host a static website on Amazon S3, configure an Amazon S3 bucket for website hosting and upload your website content. Using the AWS Management Console, you can configure your Amazon S3 bucket as a static website without writing any code. Depending on your website requirements, you can also use some optional configurations, including redirects, web traffic logging, and custom error documents.. Web hosts can also provide data center space and connectivity to the Internet for other servers located in their data center, called colocation. Far more static website can not be acceseed by people unless given permissions to do so, Static website needed to allow public access than only will be seen publically so the technology is secured .

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III. SCOPE OF THE WORK

As we had already discussed earlier in the article, web development is a continuously evolving field. If you choose a career in web development, you would require to keep yourself updated with the latest trends and technologies. Always remember that a website is the face of a business, and if you are part of the project, make sure you are giving it the best.

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IV. APPLICATIONS

A. Marketing & Sales Websites

As marketing and sales websites require higher flexibility, and more reliable content management, Static websites are the way to go. It requires one time posts for defining the organization's mission, vision, and history. The developers leave dedicated segments for the permanent items to be placed on the website, and also for the contents to be changed whenever required. The website handler can upload and take down any content on these websites, as and when required. The static websites provide a higher level of flexibility while comparing the properties with the dynamic type of websites.

B. Websites Under-Development

For the websites or web applications, still in their beginning level, and expected to be under construction for the upcoming days, static websites are a better option.

It is because these types of websites allow the website owner to concentrate more on their development process while having a fully constructed and functional product already running on the website.

Another advantage is that it is straightforward in updating the websites with the latest codes, without disturbing the existing functionality of the website. One can say that the static websites are easy to synchronize with the various devops applications and hence makes it easy for version controlling processes. Any and all issues can be fixed effortlessly, and if it cannot be fixed immediately, then it can be moved to the previous version of a fully functional website.

C. Autonomous Domestic Websites

Domestic websites are not industry-grade, in terms of technology and in terms of usage, as it is doesn't require for the website owner to have technological insights. It doesn't take a team of software professionals to implement this type of website. In most cases, it is owned by one person or a small group of business owners for handling local business needs. It also doesn't require a directly assigned database, making it a less complicated and fully functional working product of a web application. If at all the website grows in the future and the user traffic increases eventually, keeping the website as a static application can help in accommodating the increasing scalability, as it doesn't require dynamic loading a new user accesses the website.

V. ADVANTAGES

Static Websites are beneficial in many ways, and some of them are given below,

A. Provide improved security over dynamic websites (dynamic websites are at risk to web shell attacks if a vulnerability is present)[7]
B. Improved performance for end users compared to dynamic websites[8]
C. Fewer or no dependencies on systems such as databases or other application servers [9]
D. Cost savings from utilizing cloud storage, as opposed to a hosted environment[10]
E. Coding knowledge required for building a static website is nil.

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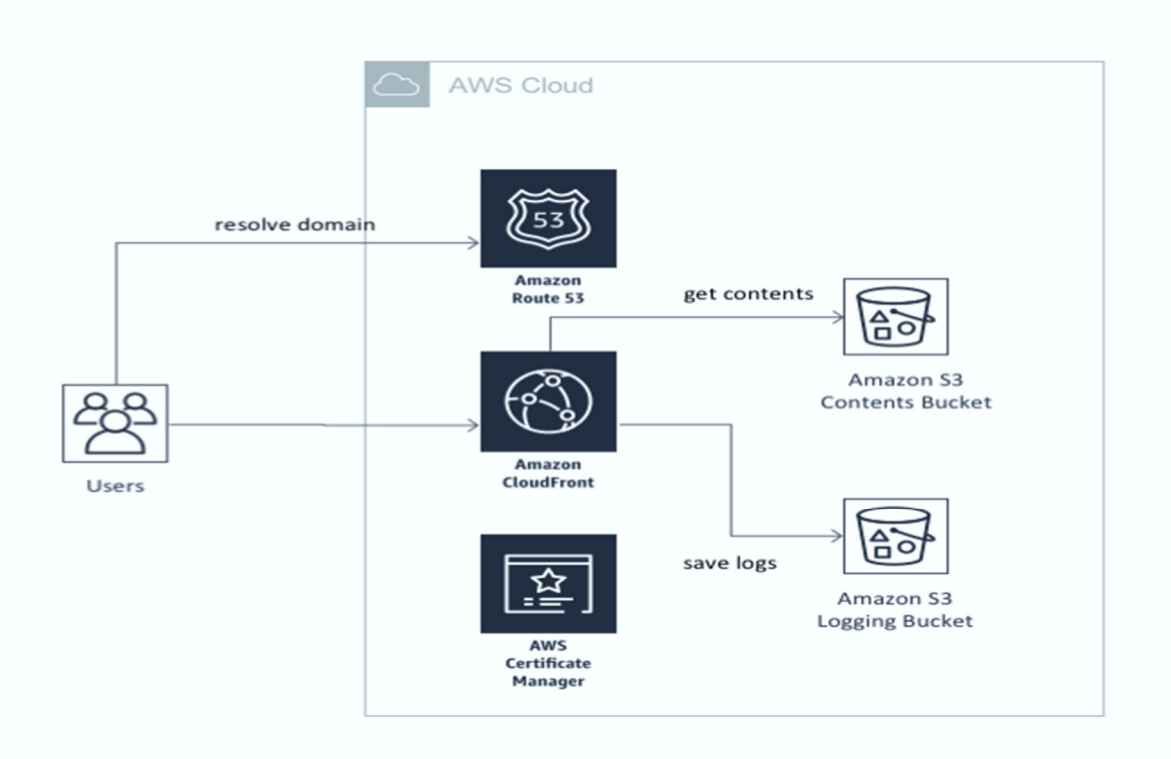
VI. BLOCK DIAGRAM



VII. RESULT

The resulting architecture is highly available and scalable, secure, and provides for a responsive user experience at very low cost. By enabling and analyzing the available logs, you can you understand your visitors and how well the website is performing. Using A/B tests and blue/green deployments will help you iterate and continuously improve the website with little risk. Fewer moving parts means less maintenance is required. In addition, the architecture costs only a few dollars a month to run.

VIII. CONCLUSION

The guide shows how easy it actually is to set up a static hosting site. It can be done in a few hours and provides a lot of features. This first tutorial already demonstrates the power of AWS. Every beginner can easily publish his first website without complex knowledge of how to set up a hosting structure.

This paper began with a look at traditional architectures for static websites. We then showed you an AWS Cloud-native architecture based on Amazon S3, Amazon CloudFront, and Amazon Route 53.

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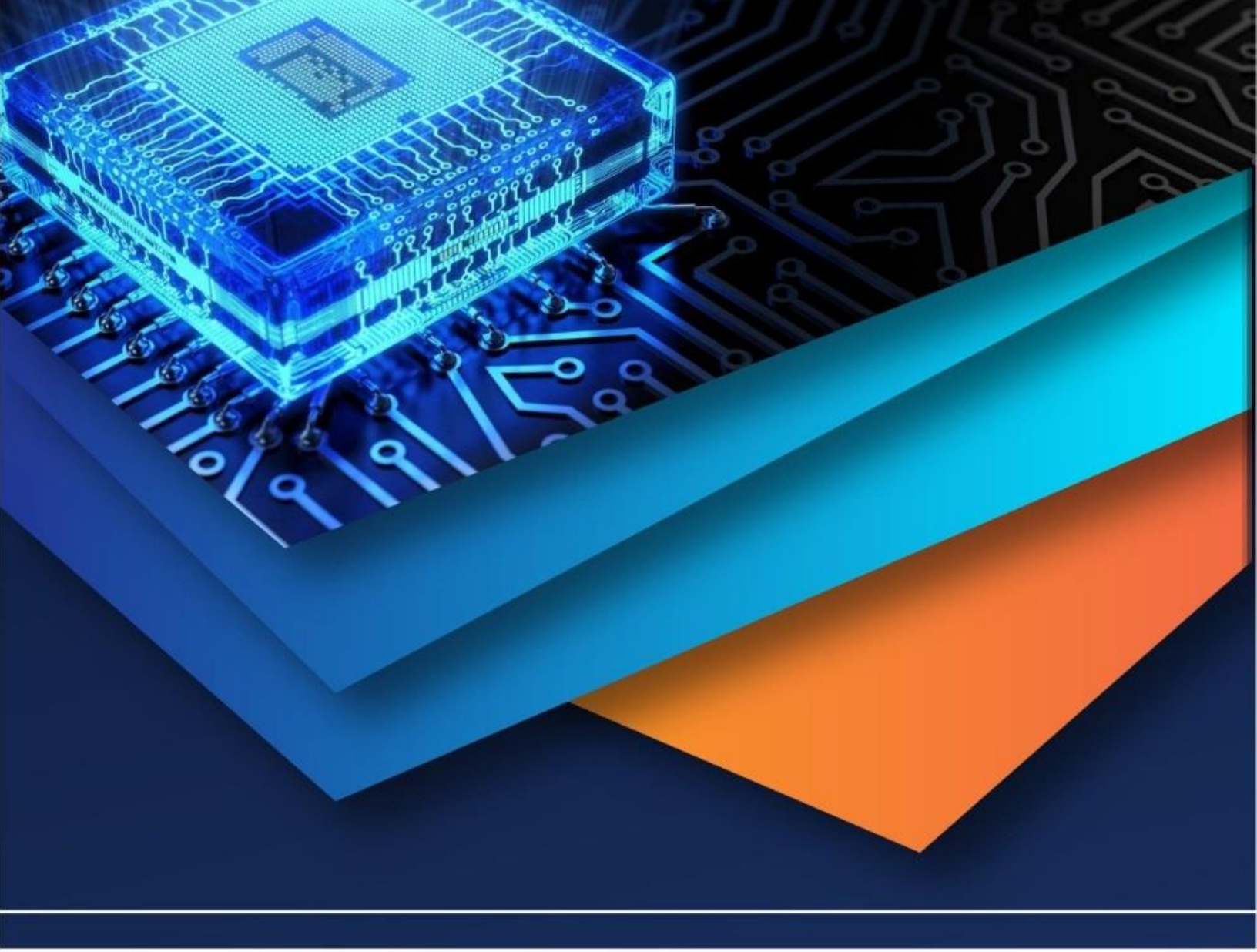

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