

Deploying High Availability Wordpress Website in AWS

R. Nishanth, Anwar Basha H

ABSTRACT

A highly popular content management system Wordpress is used for over 30% of all sites used in the world. It is most commonly used for blogs but can also be used for running e-commerce sites, message boards and many other popular sites. On web server this has to be installed, moreover a part of an hosting internet or a service like computer running or a WordPress.com through the software package Data maintenance for our WordPress site is critical. Database instance holds all of our important data for our site. If website goes down, we can lose data. Our project is deployment of a high availability WordPress website through Amazon Rds external database to EC2. In Amazon the part of EC2 is a source of cloud-computing platform, Web Services, of Amazon services that allows user's to work on as specific virtual machine to run their application.

INTRODUCTION

Cloud Computing provides an alternatives to the existing datacenter. (AWS) is a subservient that providing on-demand cloud computing platforms of amazon and each individuals from Api, governments, companies, on a pay as you go basis. A multiple basic abstract provided from the cloud web services is used for the technical substructure and were distributed to the building blocks of computing and various tools.

EXISTING SYSTEM

Existing Methodology for this project that has been used is known as IAAS (Infrastructure As A Service). The infrastructure will be provided by AWS and we need to install OS, application and its dependencies. Data maintenance is a crucial part in our WordPress site. Database instance holds all our important data of our site.

DEPENDENCIES

A. Elastic Compute Cloud

A virtual computing environment is delivered through Ec2 instance and it allows the user to launch instances through web services with the various OS and load them with your different environment custom application and is used to run our images as many as we can.

B. Elastic Load Balancing

ELB delivers a automatic distributes through your incoming website trafficking all across a various sources as EC2 instances, Ip addresses, and containers, in one or more Availability Zones. The incoming traffic changes on a late hours of a minimal load balancer from the scale of Elastic load balancing.

C. Simple Storage Service

S3 helps to reserve and recover data, at anytime, anywhere on the network. It delivers us to access the highly scalable, reliable, inexpensive data storage infrastructure for any developer.

D. Identity access management

Amazon website services (identity access management) being a website facility that secures and controls the working of the Amazon website service assets. Using this for controlling the one which authenticates (logged in) and authorizes (is permitted) for using Amazon website service assets/ resources.

E. Cloud Watch

Cloud Watch in amazon aws monitors our resources which we use and sees the application we run on the platform. The use Cloud Watch is to collect data metrics used to measure resources used in our application.

F. Auto scaling

It controls our applications and adjusts automatically if any anomaly is detected that is to maintain steady, expected performance at the low-cost.

G. Relational Database

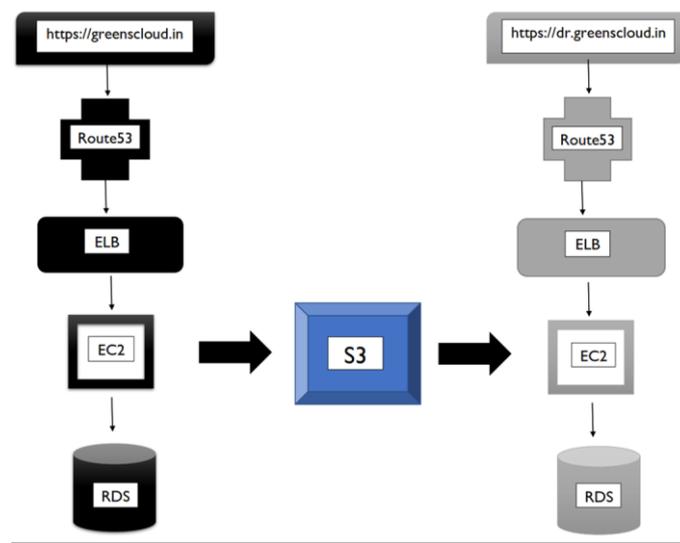
RDS is used to operate and scale a relational database Cloud in the Aws. It has multiple advantages as low cost, resizable capacity that is used on the industry-standard relational database.

LITERATURE SURVEY

From [1] WordPress related website page is recalled from server, loading main CMS data & also a custom subject data, study connected contents from similar directory and generates a finishing output through HTML, sending it to users website gateway. It remarkably lengthens the processing time of the website, users website gateway can't display any interface of the website portal until server loads the front-end code completely. From [3] Amazon EC2 is very popular in providing good cloud computing services.

Proposed Model

A. Architecture Diagram



B. PROPOSED MODEL

We can use Elastic Beanstalk (PAAS) instead of using EC2 since in Elastic Beanstalk we can give the platform OS, application and dependencies while installation itself. This Elastic Beanstalk is very good alternative for EC2 and we can select the Entire Platform or Environment.

It is very easy to deploy and less prone to human errors. Also, we can Cloud Formation instead of all other above-mentioned services. Since Cloud Formation is an IAAC (Infrastructure as a Code) that is we can write the entire infrastructure as a template or code and we can use for further deployments.

Technical Modules

The technical modules have been split into 3 The Technical Modules has been split into 3 modules where each module has its own set of activities and description.

In Module 1 comprises of selecting the AMI image for the installation of WordPress which is the WordPress Certified by Bit Nami and Automatic and it is available in the AMI Marketplace which can be selected while we go for the launch instance.

In Module 2 we will do the installation part step by step and also we will launch the EC2 instance that has all the necessary requirements like security groups, EBS volume, tags (optional) and memory and CPU selection which we will opt for the t2.micro as it is the only available Free Tier Eligible option for launching the EC2 instance.

In Module 3, we will check whether the EC2 instance is running properly or not by viewing in the dashboard where we can see all the details that regards to the EC2 instance like IP address (both public and private), health checks, security

groups (both inbound and outbound), DNS name, tagging, VPC details if anything that we have given or else it will show for the default. Finally if everything works fine and seem to be ok then we will copy the IP address and we will paste in the browser and then we can see the WordPress blog that we installed using AWS EC2.

CONCLUSION

Thus, a high availability WordPress website created using Elastic Beanstalk (PAAS) instead of using EC2 and Cloud Formation is an IAAC) that is we can write the entire infrastructure as a template or code and we can use for further deployments platform, OS, application and dependencies while installation itself and certified by Bitnami and Automattic with an external Amazon RDS database to EC2 has with efficient data maintenance is deployed on AWS.

REFERENCES

- [1] Mario Tomisa;Marin Milkovic;Marko Cacic. Performance Evaluation of Dynamic and Static WordPress-based Website Paper Presented at ICSEC on October 30 November 1 2019.
- [2] Ionut Cernica; Nirvana Popescu; Bogdan Tiganoaia. Security Evaluation of wordpress backup plugins. Paper Presented at the CSCS on May 28-30, 2019.
- [3] Shivanshi Shokeen; Archana Singh. Deploying an website using AWS Paper Presented at ICCI on 12-14 December 2019
- [4] Patrik Danielsson; Tom Postema; Hussan Munir. Heroku Innovative Platform for Web-based deployment in Product Development at Axis Paper Presented at IEEE Access on 8 January 2021
- [5] Handa Ma; Hui Zhao. Construction of High-Availability Teaching Website Paper Presented at ICMSS on 24-26 August 2010.
- [6] Hussachai Puripunpinyo; M.H. Samadzadeh. Design, Prototype Implementation and Comparison of Scalable Web-Push Architecture on Amazon Web Services using actor model Paper Presented at ICSEng on 22-24 Aug 2017.
- [7] K.Swedha; Tanuja Dubey. Analysis of Web authentication method using Amazon web services Paper Presented at ICCCNT on 10-12 July 2018.
- [8] Sylvian Halle; Roger Villemaire. Constraint based innovation of stateful web services Paper Presented at PESOS on 4 June 2012.
- [9] Saakshi Narula; Arushi Jain; Prachi. Cloud Computing Security : Amazon Web services Paper Presented at ICACCT on 21-22 February 2015.