6/29/2020

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Assignment 3

Cloud Computing and Software as a Service (42904)

**Abstract:**

This report is all about delivering solution to the start-up company who is using LAMP Stack, Apache and PHP replacing it with the AWS architecture which is quite comfortable and efficient now-a-days. Amazon Web Services (AWS) involves more than one hundred administrations, every one of which uncovered a zone of usefulness. While the variety of administrations offers adaptability for how you need to deal with your AWS foundation, it tends to be trying to make sense of which administrations to utilize and how to organize them.

I have developed SeemaAssignemnt3 web application in which I have completed the basic settings of running an application on AWS console.

AWS Educate

Id: [Seema.S.Malkani@student.uts.edu.au](mailto:Seema.S.Malkani@student.uts.edu.au)

Password: HappyMe@123

Application Name: SeemaAssignment3

**AWS Elastic Beanstalk**

* In AWS, with Elastic Beanstalk we can easily deploy and manage the application in AWS Cloud without learning much about the infrastructure.
* It also reduces the management complexity without restricting choice/control.
* We just have to upload the application and Elastic beanstalk will take care of all other things such as instances, load balancing, scaling and health monitoring.
* It supports several platforms like Go, Java, Node.js, PHP, Python, Ruby etc.
* You can cooperate with Elastic Beanstalk by utilizing the Elastic Beanstalk support, the AWS Command Line Interface (AWS CLI), or eb, an elevated level CLI planned explicitly for Elastic Beanstalk.
* One can also perform the deployment task such as changing the size of fleet of Amazon EC2 Instances directly from the Elastic Beanstalk web console.

**Web Server Environment**

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Above Diagram shows the example of Elastic Beanstalk Architecture for a web server environment tier.

I started my application from creating a “Custom Virtual Private Cloud” which allows to launch AWS resources into a virtual Private Network. This network resembles the private data centre with the benefits of using scalable infrastructure of AWS. Below is the Image of CVPC created named “Assignment3 VPC”

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Figure: 2 Custom VPC “Assignment3 VPC”

Amazon VPC is the networking layer of EC2. There are several concepts included in VPC such as

* Subnet: Range of IP address in the VPC
* Route table: which is used to determine where the network traffic is directed.
* Internet Gateway: attached to VPC to allow the communication between resources in VPC and the Internet.

I have created all of them to have better VPC network communication which are shown below:

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Figure:3 Subnets

As shown in the figure I have created 3 subnets named “Assignment3 Subnet1” “Assignment3 Subnet2” “Assignment3 Subnet3”

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Figure: 4 Route tables

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Figure: 5 Configuration of Route table

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Figure 6: Internet Gateway

Amazon Elastic Compute cloud: It provides resizable compute capacity in a cloud.  It is designed to make web-scale computing easier for developers. It just enables storage in the cloud. The instances can be custom and automatically generated. By the environment configuration. It delivers you with complete control of your computing resources and lets you run on Amazon’s proven computing environment. Amazon EC2 decreases the time required to obtain and boot new server instances to minutes, allowing you to quickly scale capacity, both up and down, as your computing requirements change.

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Figure 7: Custom Instance with SSH and HTTP

Further I started creating the application named “SeemaAssignment3” in AWS beanstalk to launch and deploy the application. After adding all the details about application, I started Configuring more options Like adding Instances, Capacity, Load balancing and email notifications for the application. It is as shown in the below figure.

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Figure 8: Application created for Node.js

When I select the button Create app after including all the configuration it automatically created the environment as well by loading 2 instances as mentioned above. Below is the diagram of applied configuration.

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Figure 9: Successfully created an environment

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Figure 10: Configuration applied Load Balancing and instances.

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Figure 11: Setting RDS and Email Notifications

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Figure 12: Successfully launched the application

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Figure 13: Email Notification