

# Web Application Hosting on Amazon Cloud (EC2) Using (AMP) Stack and Putty Emulator

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## Abstract-

**A** web application (web app) is any application software that runs in a web browser and is created in a browser-supported programming language (such as the combination of JavaScript, HTML and CSS) and relies on a web browser to render the application[1]. The main problem is that when multiple users need to use any type of web applications such as Blogger to watch video or to share post in the same time, they will face difficulties because the high loading on main server. To solve this problem we host this web application on Amazon Cloud to provide special server to this web application. This paper demonstrates how to host WordPress on Amazon Cloud to provided (EC2) service using (AMP) stack and Putty emulator.

**Keywords:** Web application, Wordpress, Amazon Cloud, EC2, (AMP) stack, Putty emulator.

## I. INTRODUCTION

Web applications evolved from Web sites or Web systems. A Web application builds on and extends a Web system to add business functionality. In its simplest terms, a Web application is a Web system that allows its users to execute business logic with a Web browser. This is not a very precise definition, but most people's conception of a Web application is not, either. There is a subtle distinction between a Web application and a Web site. A Web application is a Web site where user input (navigation through the site and data entry) affects the state of the business: beyond, of course, access logs and hit counters. In essence, a Web application uses a Web site as the front end to a business application, see Figure (1).

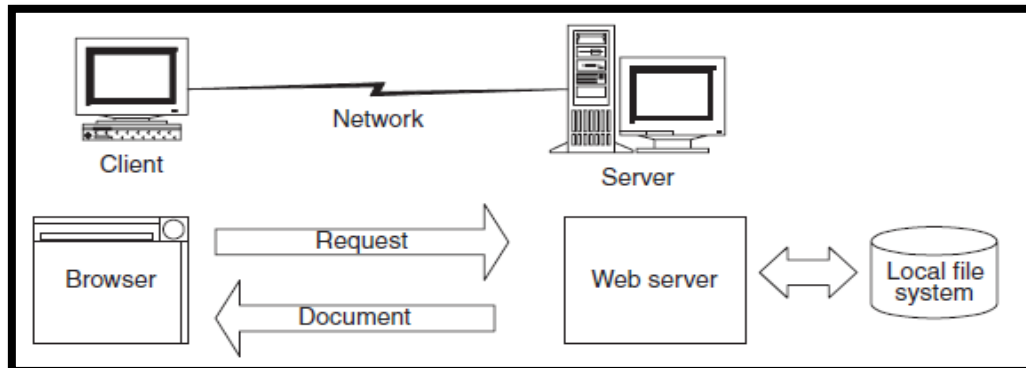


Fig.1 Basic Web system

Example on Web Application is Blogger, it lets you interact with your users. Profiles and comments are constantly evolving, so Blogger uses web app technologies throughout the site to keep the information up-to-date. We can add any media such as video or image when we want to publish posts.

Web apps are becoming more and more integrated with websites, and it may be hard to distinguish between a web application and a "regular" website. In many cases, you may be using a web application without even knowing it![2].

## II. PROPOSED APPLICATION

When user uses a web app, he is working from your computer or mobile device, but much of the actual processing is done by a network of server[2]. We will host Blogger (is type of web applications that can hosting on Amazon Cloud [3] to provide special server to the blogger that make users to use it without face any problem about slow loading .

## III. METHODOLOGY

On November 1<sup>st</sup> 2010, Amazon web services introduced the free usage tier[4] . New customer can use it for free for one year, up to certain limits .It means that he can run his blogger for free on Amazon web, figure (2) shows AWS page.



Fig.2 AWS Page

## 1- Create Account

Creation of an account is the first step to be done, in case the user wants to take cloud service from any company such as Amazon.

- **Contact information**

Customer can sign up in AWS, He must have to provide a credit card and a phone number where he will be called as part of the online registration process for verification purposes. He enters all required contact information such as name, email, address etc ...

- **Payment Information**

Amazon offers 750 hours EC2, Amazon storage S3(5 GB), and Database Amazon RDS. Customer must enter Credit Card number, expiration date, card holder's name.

- **Identity Verification**

In this phase Amazon requests a number, it calls customer, in this time he will see PIN Number on the screen and company wants from him to enter PIN on the phone, he finishes verification.

- **Support Plan**

It contains options, and customer selects option according to his requirements, if he creates basic web application he must choose (Basic (Free)) or he can do more than basic enterprise and he has staff of developers he must choose (Developer(\$ 49/month)). After this he waits 15 minutes and it answers him to finish all phases and the confirmation, figure (3) shows the phases to create an account.

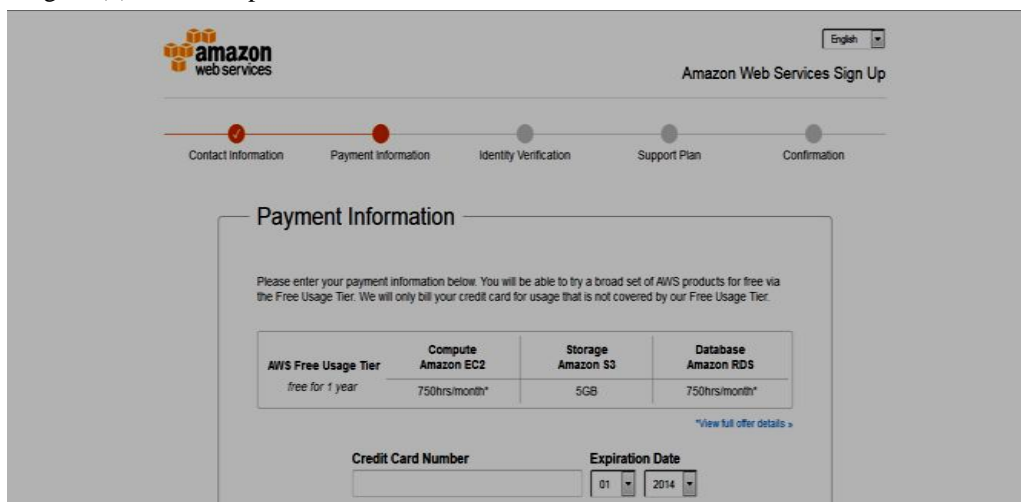


Fig.3 The phases of create account

## 2- Create an Instance

In this step he goes to AWS management console and see all services. He chooses EC2 and selects the zone that he wants to take service from it. After choice EC2, he goes to launch instance, selects Amazon Linux ami - 35072834, the type of instance t2.micro (free tier eligible), adds storage 8 GB, configures security Group and adds rules (SSH,HTTP,HTTPS) to security group. Figure (4) shows the AWS management console.

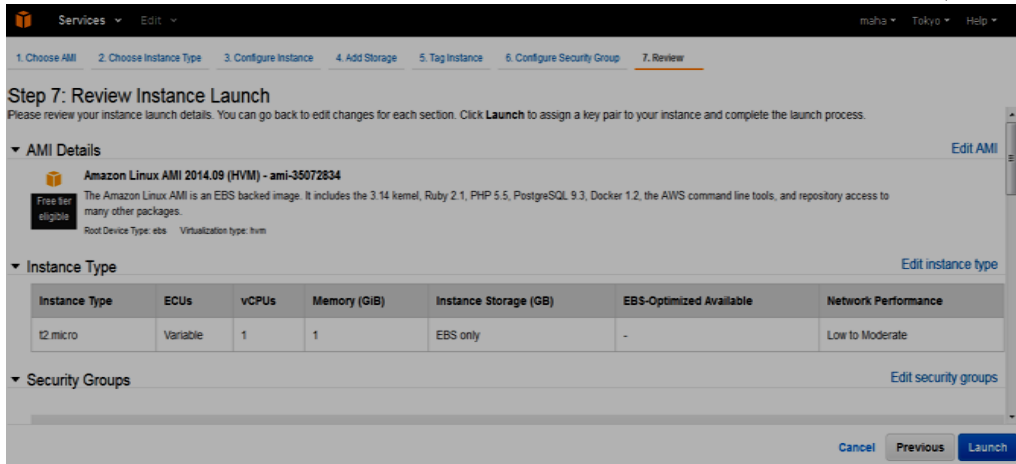


Fig.4 Launch Instance

Create a new key pair by add key pair name. He must have to download private key file (\*.pem file ) before he can continue .Store it in a secure and accessible location . He will not be able to download the file again after it's created .After this he finishes launch instance and he can view it.

Now he converts private key using PuTTY Key Generator (also known as PuTTYgen is a small, yet efficient program that can generate RSA and DSA keys for use with the OpenSSH 'authorized\_keys' file. ) [5] , he selects icon (import key) and puts the private key that he downloaded on our computer in PuTTY Key Generator and saves it , it will save in extension (\*.ppk). In this time the instance state is running.

### 3-Buliding Blogger on EC2 Instance

The first thing to in this step ,he goes to Elastic IP and clicks on Allocate New Address button to allocate first elastic IP ,he selects the instance ID that he wishes to allocate this elastic IP Address. After he finishes from IP. He must install PuTTY configuration is free open source terminal emulator that emulates terminal within some other display architecture [5] ,it supports several network protocols such as SSH (Secure Shell is a cryptographic network protocol for secure data communication ) [ 6].

He specifies the destination he wants to connect, he enters the public IP Address of the instance, he goes to (SSH) and selects (Auth), it requests to upload private key file for authentication after finishing he clicks on (open) button , figure (5)shows this interface .

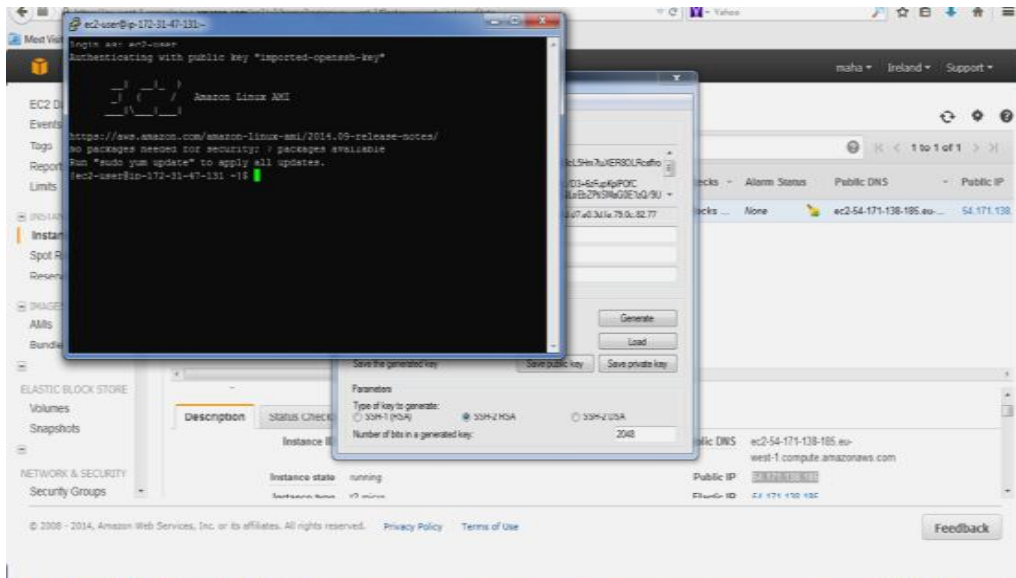


Fig.5 Terminal Emulator for EC2 user

When he wants to login to instance he must type the name of service in terminal , in this case he types( ec2-user), now he is connecting to the instance and emulator requests to run (sudo yum update) to apply all update and instructions.

Yum is an open source command –line package – management utility for Linux operating system [7] . Now he is typing the instructions:  
 sudo yum update

The packages is upgraded. Many of the shell commands below require root access. Let's just switch user once and for all: sudo su

**a. Install Apache server**

To install the Apache Web Server, type: yum install httpd

To start the Apache Web Server: service httpd start

To test Web Server, open a browser and access web site: <http://54.171.138.185> (Use public IP for our instance).

You should see a standard Amazon place holder page, see figure (6).

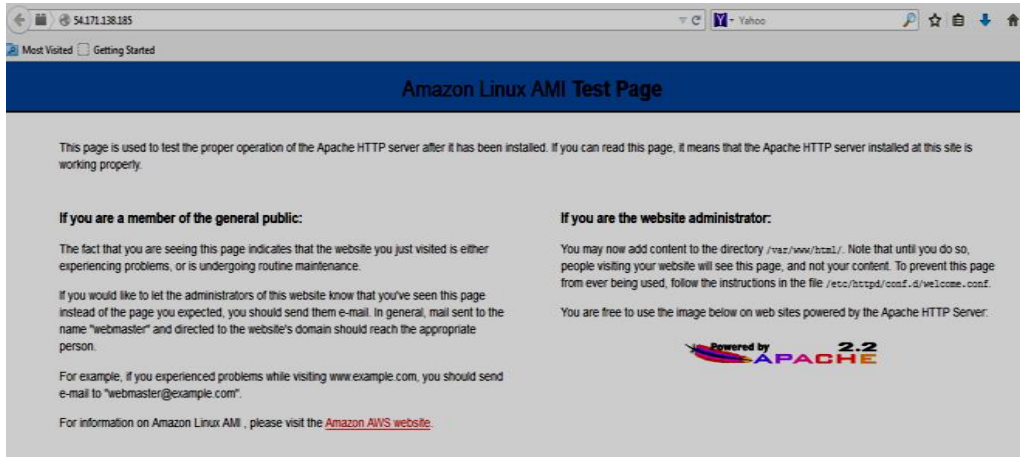


Fig.6 Amazon Linux AMI Test Page

**b. Install PHP**

To install php, type: yum install php php-mysql

**c. Install MySQL**

To install MySQL, type: yum install mysql-server

Start MySQL: service mysqld start

Secure database: mysql\_secure\_installation

After he has completed all of above steps , MySQL installation should now be secure .

**d. Uploading Web application (Blogger) to Amazon EC2**

To upload blogger, follow the instructions: Ls Sudo su -

cd /var/www/html

In the first, type “ls” to see empty home directory . Connect as a root user with “sudo su “ and “cd” to the directory , /var/www/html/.

wget <http://univ2maha.blogspot.com/>

Using “wget” to download the file containing web site ,if the file is zip then unzip the file in the same folder ,by typing:

Unzip [univ2maha.blogspot.com.zip](http://univ2maha.blogspot.com.zip)

Now type “ls” ,customer will see the name of web application . To make the web application visible ,move it from that sub directory to the main one , the “index.html“ file should be here. mv univ2maha.blogspot.com.zip/\*.

Figure(7) illustrates all steps in one flowchart .

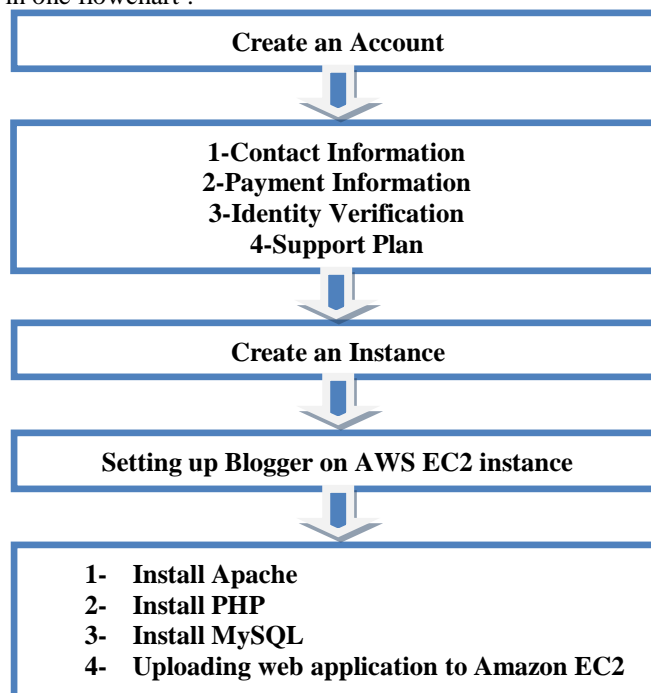


Fig.7 Steps to host Blogger on Amazon Cloud

#### IV. RESULT- 1

Now it's time to check if everything works, go to AWS, copy the public IP of EC2 instance and past it into new browser window. Customer will see web application, up and running, see figure (8)



Fig.8 Web application host in Amazon cloud

#### Results-2

To show the improving in performance, compare between blogger hosting free and Blogger hosting on Amazon cloud by viewing the same video ones on the blogger and another on the hosted blogger, we observe the consuming time to see video(4.42 s) is 5.40 s when it's seen on blogger hosting free.

While, when it's seen on blogger hosting on Amazon cloud, the consuming time becomes 4.43 s.

Table 1: Compare between blogger hosting free and Blogger hosting on Amazon cloud

Number of Test	Consuming Time (Blogger hosting free)	Consuming Time (Blogger hosting on Amazon Cloud)
1	5.40 s	4.43 s
2	5.00 s	4.42 s
3	4.82 s	4.42 s

#### V. CONCLUSION

This paper has shown how to host a web application on Amazon web services in short time, and creating a new AWS account and running it for free, for one year. Also the paper has demonstrated that the hosted blogger improve the performance of blogger. When the loading on main server is high the consuming time of seeing video(4.42 s) is 5.40 s (seeing on blogger hosting free), while seeing the same video on blogger using EC2 is 4.43 s, this is very efficient compare with the real time for video (4.42 s).

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