WEB ENVIRONMENT

PHP TEAM

TRAINER: NGUYENVQ

-
Recoding History

Jun 2017

/ Web Environment

VIRTUAL BOX, VAGRANT

VIRTUAL HOST

APACHE SERVER

.HTACCESS

PHP

HTTP

DATABASE MYSQL

NGINX

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/ *Virtual Box, Vagrant*

WHAT IS VIRTUAL BOX?

HOW TO INSTALL VIRTUAL BOX?

WHAT IS VAGRANT?

HOW TO INSTALL VAGRANT?

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VIRTUAL BOX

WHAT IS VIRTUAL BOX?

INSTALL VIRTUAL BOX FROM UBUNTU SOFTWARE CENTER

HOW TO INSTALL VIRTUALBOX FROM COMMAND LINE?

```
Step 1: Setup Apt Repository

$ sudo vi /etc/apt/sources.list

//Add source list:
deb http://download.virtualbox.org/virtualbox/
debian xenial contrib

Step 2: Setup Oracle public key

$ wget -q https://www.virtualbox.org/download/
oracle_vbox_2016.asc -O- | sudo apt-key add -
$ wget -q https://www.virtualbox.org/download/
oracle_vbox.asc -O- | sudo apt-key add -

Step 3: Install Oracle VirtualBox

$ sudo apt-get update
$ sudo apt-get install virtualbox-5.1
```

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VAGRANT

https://www.vagrantup.com/downloads.html

WHAT IS VAGRANT?

DOWNLOAD AND INSTALL

INSTALL VAGRANT FROM COMMAND

```
Step 1: Download Vagrant
$ wget https://releases.hashicorp.com/vagrant/1.9.5/
vagrant_1.9.5_x86_64.deb

Step 2: Install Vagrant
$ sudo dpkg -i vagrant_1.9.5_x86_64.deb

Step 3: Validate
$ vagrant -v
vagrant 1.9.5
```

Mac OS X
Universal (32 and 64-bit)

fastly

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SETUP UBUNTU 16.04 TO BE USED WITH VAGRANT AND VIRTUALBOX

WHAT IS VAGRANT BOXES?

WHERE IS STORED BOXES?

https://atlas.hashicorp.com/boxes/search
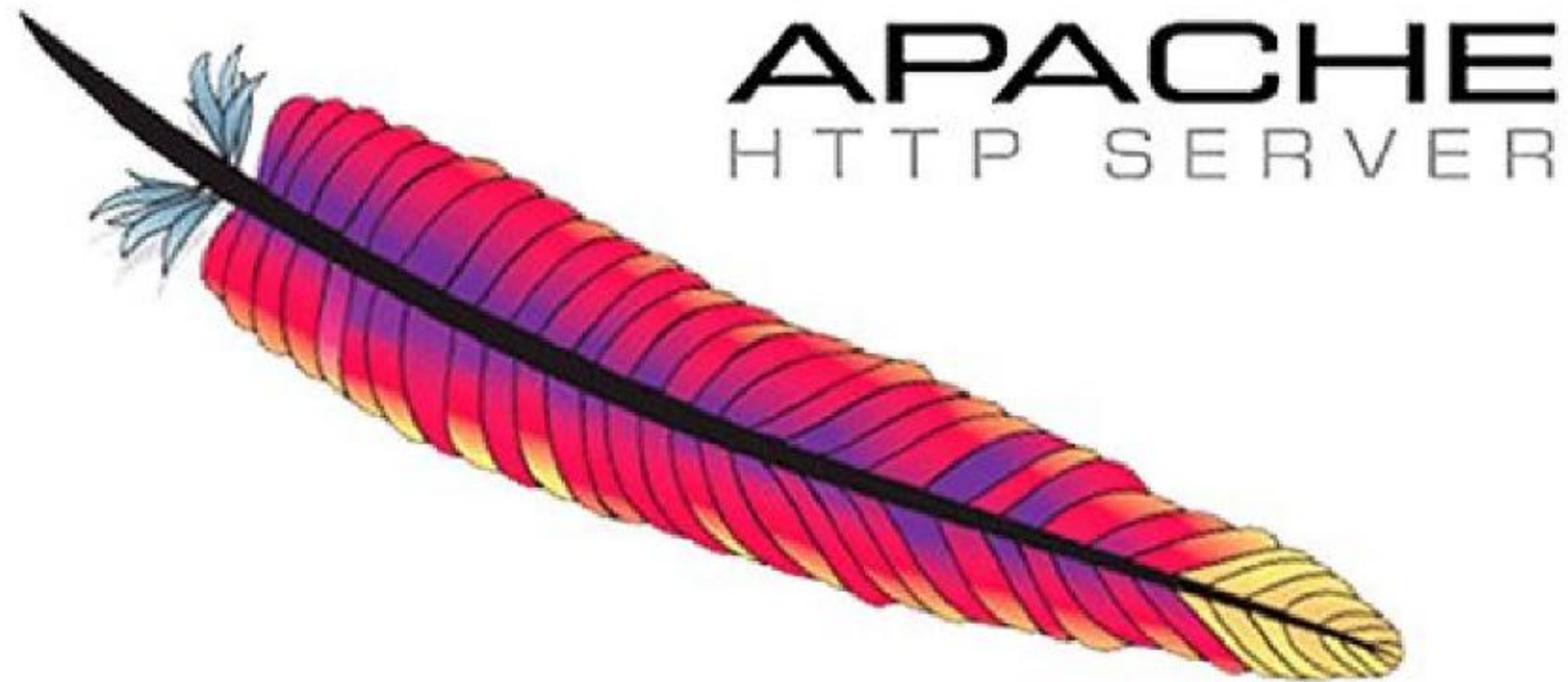
HOW TO SETUP?

```
Step 1: Init box
$ vagrant init ubuntu/xenial64

Step 2: Start box
$ vagrant up

Step 3: SSH into vagrant box
$ vagrant ssh
// Default username/password: vagrant/vagrant
```
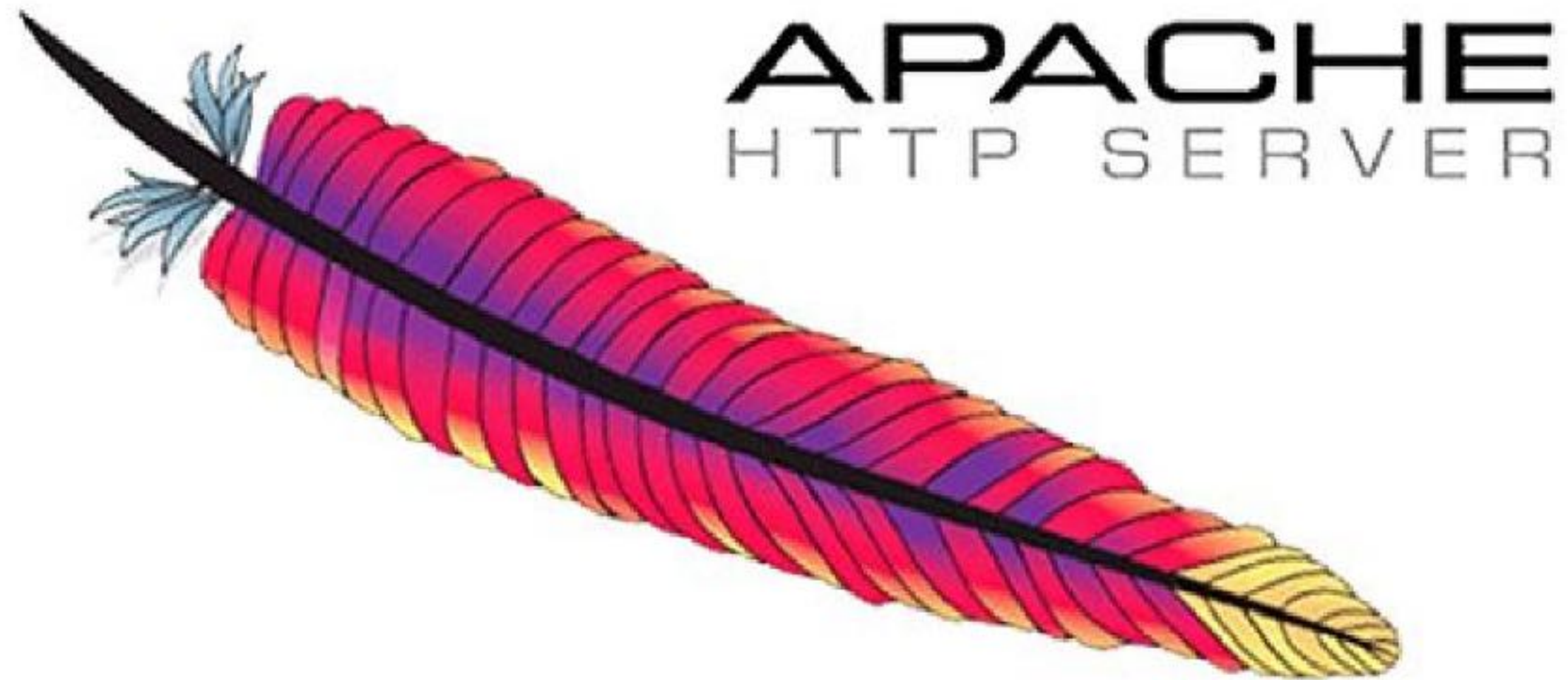
2016

/ Web Environment
APACHE SERVER

WHAT IS APACHE SERVER?

Apache Web Server is designed to create Web servers that have the ability to host one or more HTTP-based websites. Notable features include the ability to support multiple programming languages, server side scripting, an authentication mechanism and database support. Apache Web Server can be enhanced by manipulating the code base or adding multiple extensions/add-ons.

APACHE SERVER

HOW TO INSTALL?

```
//Setup apache2
$ sudo apt-get update
$ sudo apt-get install apache2 -y

//Check version apache2
$ apache2 -v
Server version: Apache/2.4.18 (Ubuntu)
Server built:    2017-05-05T16:32:00


//Start apache2
$ sudo service apache2 start


//Stop apache2
$ sudo service apache2 stop
```
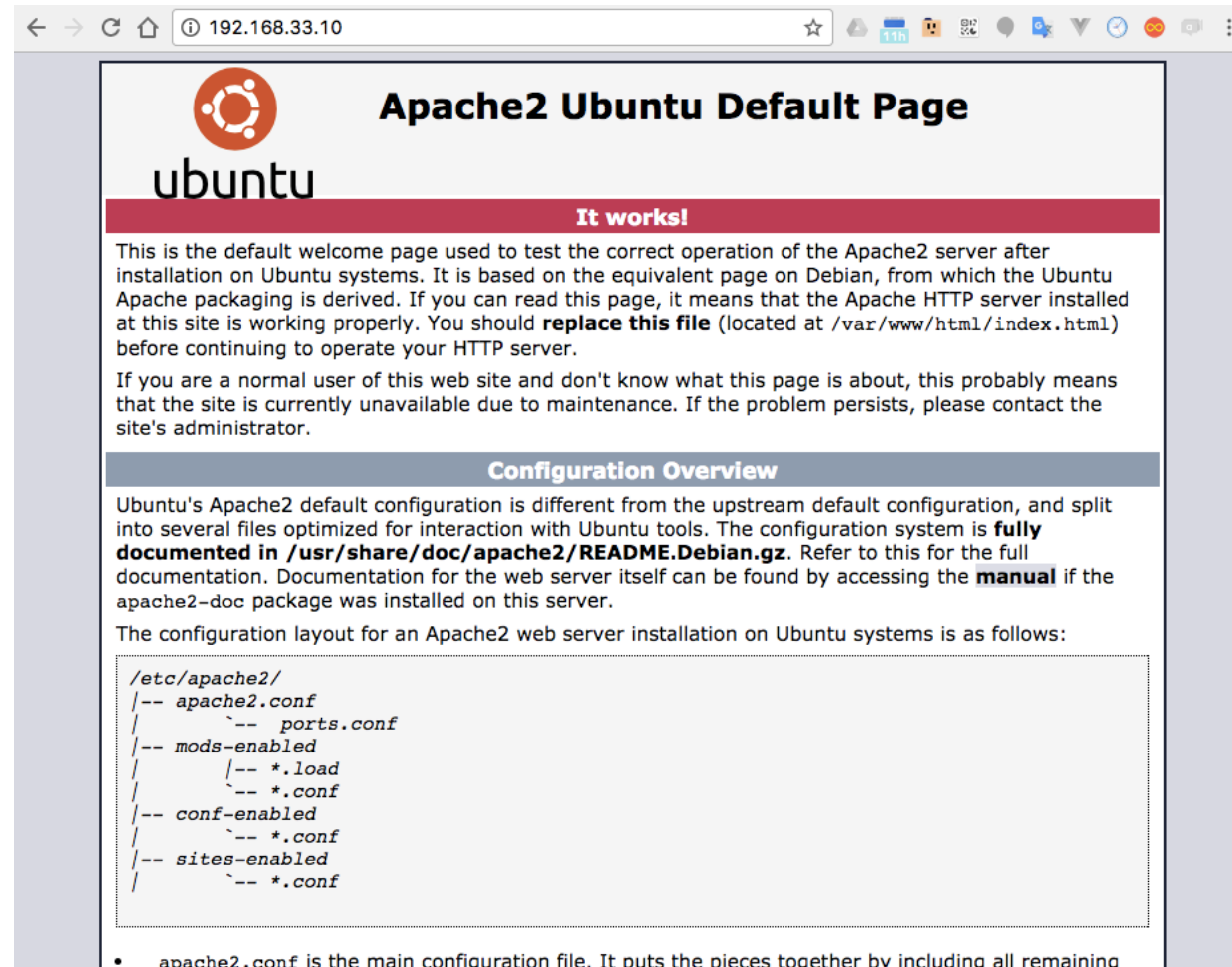
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PHP

HOW TO INSTALL?

```
//Setup php7.0
$ sudo apt-get update
$ sudo apt-get install php7.0-mysql php7.0-curl
php7.0-json php7.0-cgi php7.0 -y

//Check version PHP
$ php -v
PHP 7.0.18-0ubuntu0.16.04.1 (cli) ( NTS )
Copyright (c) 1997-2017 The PHP Group
Zend Engine v3.0.0, Copyright (c) 1998-2017 Zend
Technologies
    with Zend OPcache v7.0.18-0ubuntu0.16.04.1,
Copyright (c) 1999-2017, by Zend Technologies


// Install package support run php on apache2
$ sudo apt-get install libapache2-mod-php -y
```

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/ Web Environment

VALIDATE INSTALL PHP

```
// create file index.php in /var/www/html/
$ cd /var/www/html
$ sudo vi index.php
// Enter code php example
<?php
echo phpinfo();
?>
```


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MYSQL DATABASE

WHAT IS MYSQL?

MySQL, the most popular Open Source SQL database management system, is developed, distributed, and supported by Oracle Corporation.

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MYSQL DATABASE

HOW TO INSTALL?

```
//Install mysql
$ sudo apt-get update
$ sudo apt-get install mysql-server -y

//Check version mysql
$ mysql —version
mysql  Ver 14.14 Distrib 5.7.18, for Linux (x86_64)
using  EditLine wrapper

//Start mysql
$ sudo service mysql start


//Stop mysql
$ sudo service mysql stop


//Connect to mysql
$ mysql -uroot -psecret
```

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HOW TO SET UP
APACHE VIRTUAL HOSTS

/ *Web Environment*
VIRTUAL HOST

WHAT IS VIRTUAL HOST?

Virtual hosting is a method for hosting multiple domain names (with separate handling of each name) on a single server (or pool of servers). This allows one server to share its resources, such as memory and processor cycles, without requiring all services provided to use the same host name. The term virtual hosting is usually used in reference to web servers but the principles do carry over to other internet services.

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/ Virtual Host Overview

http://domain1.com

http://domain2.com

http://domain3.com

Internet

WEB SERVER

folder domain1

folder domain2

folder domain3

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/ Virtual Host Overview

http://domain1.com

http://domain2.com

http://domain3.com

Internet

APACHE
HTTP SERVER

folder domain1

folder domain2

folder domain3

WEB SERVER

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HOW TO SET UP
APACHE VIRTUAL HOSTS
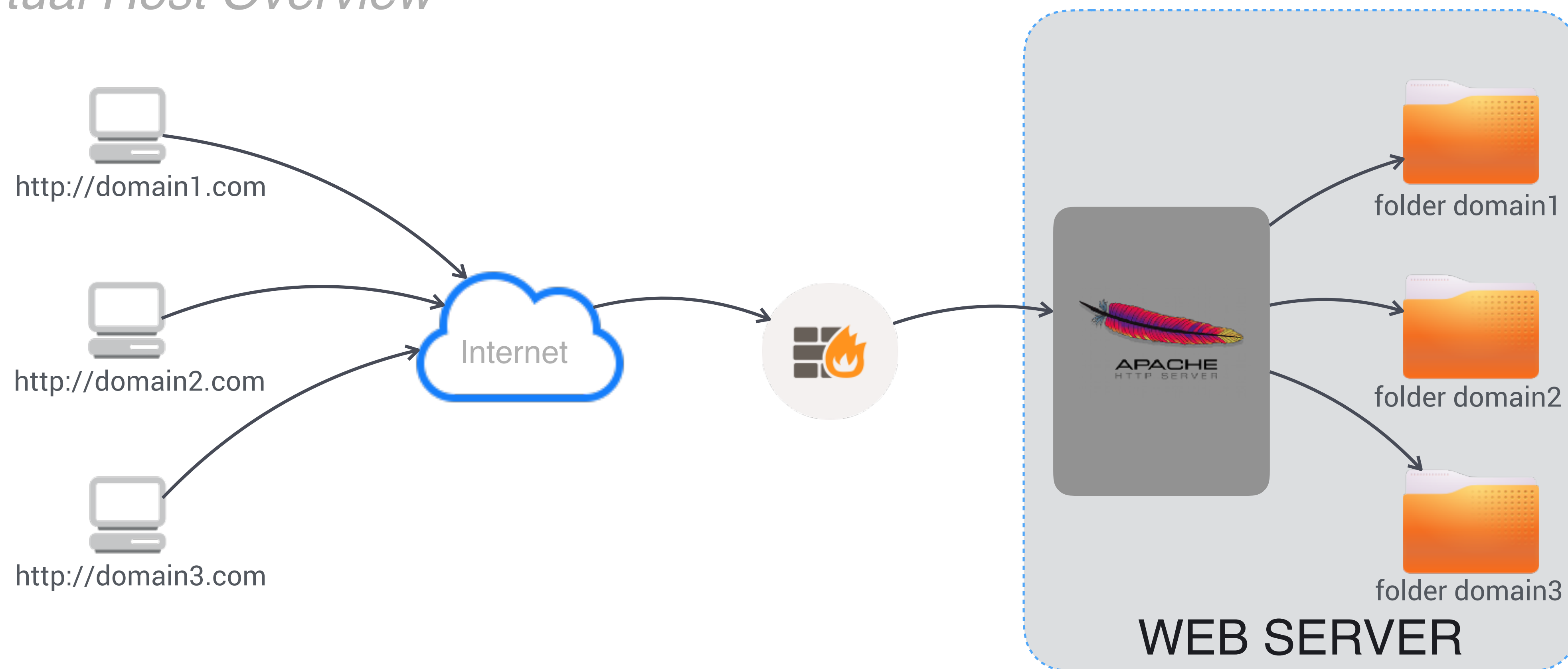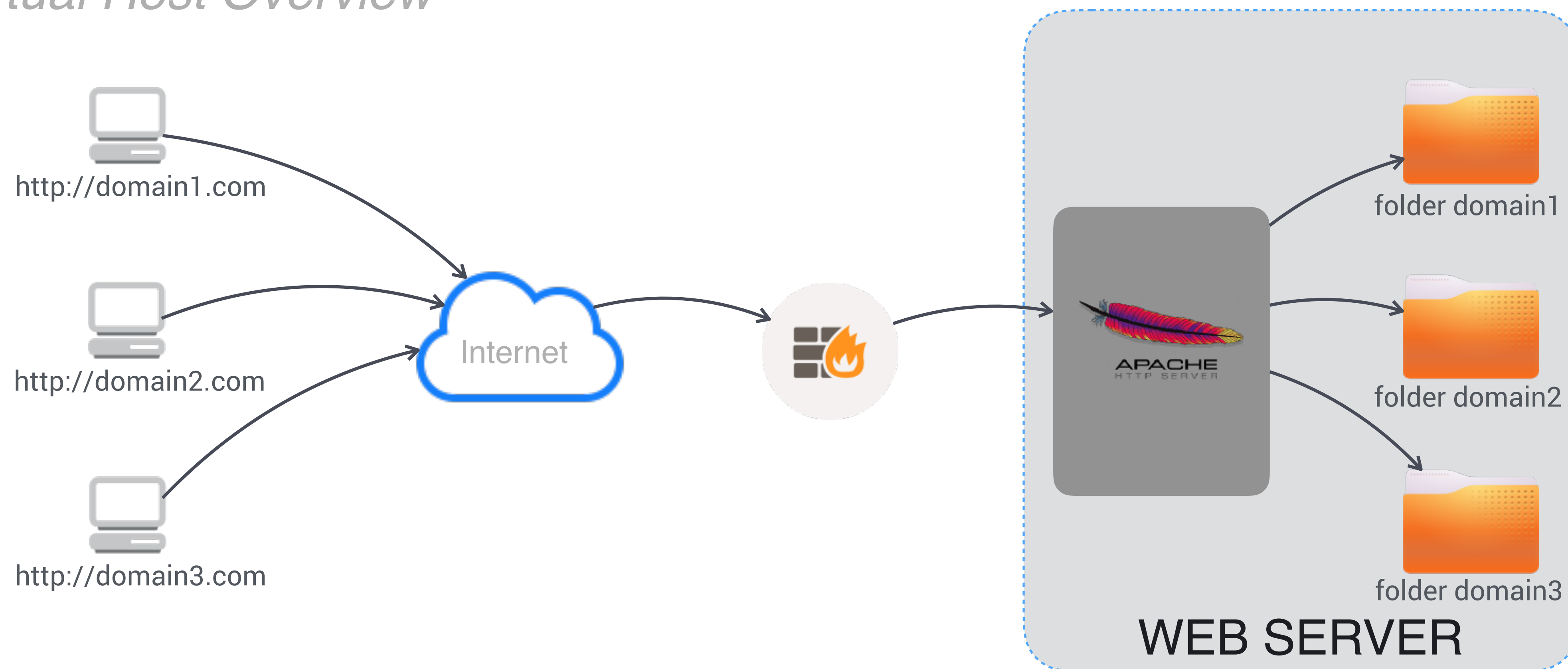
VIRTUAL HOST

HOW TO CONFIG VIRTUAL HOST?

```
/etc/apache2/

    |-- apache2.conf
    |         `--  ports.conf
    |-- mods-enabled
    |         |-- *.load
    |         `-- *.conf
    |-- conf-enabled
    |         `-- *.conf
    |-- sites-enabled
    |         `-- *.conf
```

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/ Web Environment
.HTACCESS

WHAT IS .HTACCESS?

.htaccess is a configuration file for use on web servers running the Apache Web Server software. When a .htaccess file is placed in a directory which is in turn 'loaded via the Apache Web Server', then the .htaccess file is detected and executed by the Apache Web Server software.

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/ Web Environment

.HTACCESS

HOW TO USE .HTACCESS

```
Edit file: /etc/apache2/apache2.conf
<Directory /var/www/>
    Options Indexes FollowSymLinks
    AllowOverride All
    Require all granted
</Directory>
```

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/ Web Environment
.HTACCESS

EXAMPLE .HTACCESS

```
AuthName "For Internship Summer 2017"
AuthUserFile .htpasswd
AuthType Basic
Require valid-user
ErrorDocument 401 /error_pages/401.html
AddHandler server-parsed .html
```

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/ Http

WHAT IS HTTP?

The Hypertext Transfer Protocol (HTTP) is an application protocol for distributed, collaborative, and hypermedia information systems. HTTP is the foundation of data communication for the World Wide Web.

HTTP Protocol
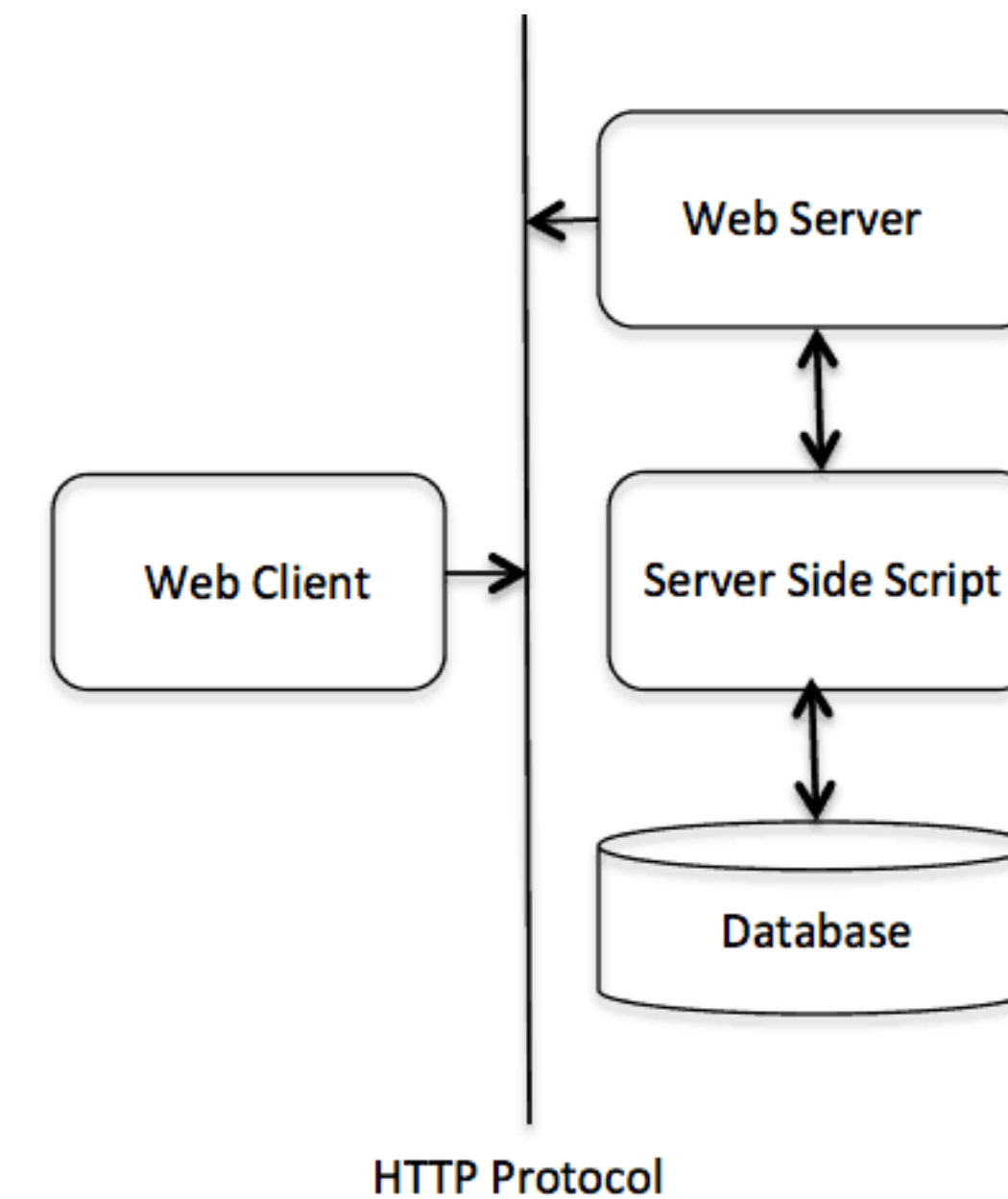
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MESSAGE IN HTTP?

REQUEST MESSAGE

```
GET /index.html HTTP/1.1
Host: www.example.com
```

RESPONSE MESSAGE

```
HTTP/1.1 200 OK
Date: Mon, 23 May 2005 22:38:34 GMT
Content-Type: text/html; charset=UTF-8
Content-Encoding: UTF-8
Content-Length: 138
Last-Modified: Wed, 08 Jan 2003 23:11:55 GMT
Server: Apache/1.3.3.7 (Unix) (Red-Hat/Linux)
ETag: "3f80f-1b6-3e1cb03b"
Accept-Ranges: bytes
Connection: close
```

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/ Http

RESPONSE CODE IN HTTP HEADER

CODE	Meaning	
1xx	Infomation	100 = Server agree to handle client's request
2xx	Success	200 = Request succeed; 204 = No content present
3xx	Redirection	301 = Page moved
4xx	Client error	403 = Forbidden; 404 = Page not found
5xx	Server error	500 = Internal server error
408	Request Timeout	

CODE	Meaning
200	OK - The request succeeded
204	No Content
301	Moved Permanently
401	Not Authorize
403	Forbidden
404	Not Found
408	Request Timeout
500	Server Error

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HTTP

METHOD IN HTTP?

1. GET
2. HEAD
3. POST
4. PUT
5. DELETE
6. CONNECT
7. OPTIONS
8. TRACE

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/ Method

GET

REQUEST MESSAGE

```
GET /index.php HTTP/1.1
User-Agent: Mozilla/4.0 (compatible; MSIE5.01; Windows NT)
Host: 192.168.33.12
Accept-Language: en-us
Accept-Encoding: gzip, deflate
Connection: Keep-Alive
```

RESPONSE MESSAGE

```
HTTP/1.1 200 OK
Date: Mon, 27 Jul 2009 12:28:53 GMT
Server: Apache/2.2.14 (Win32)
Last-Modified: Wed, 22 Jul 2009 19:15:56 GMT
ETag: "34aa387-d-1568eb00"
Vary: Authorization,Accept
Accept-Ranges: bytes
Content-Length: 88
Content-Type: text/html
Connection: Closed
```

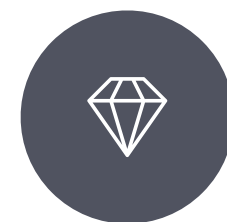*Jun 2017*

/ Method

◈ HEAD

REQUEST MESSAGE

```
HEAD /index.php HTTP/1.1
User-Agent: Mozilla/4.0 (compatible; MSIE5.01; Windows NT)
Host: 192.168.33.12
Accept-Language: en-us
Accept-Encoding: gzip, deflate
Connection: Keep-Alive
```

RESPONSE MESSAGE

```
HTTP/1.1 200 OK
Date: Mon, 27 Jul 2009 12:28:53 GMT
Server: Apache/2.2.14 (Win32)
Last-Modified: Wed, 22 Jul 2009 19:15:56 GMT
ETag: "34aa387-d-1568eb00"
Vary: Authorization,Accept
Accept-Ranges: bytes
Content-Length: 88
Content-Type: text/html
Connection: Closed
```

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/ Method

POST

REQUEST MESSAGE

```
POST /index.php HTTP/1.1
User-Agent: Mozilla/4.0 (compatible; MSIE5.01; Windows NT)
Host: 192.168.33.12
Content-Type: text/xml; charset=utf-8
Content-Length: 88
Accept-Language: en-us
```

RESPONSE MESSAGE

```
HTTP/1.1 200 OK
Date: Mon, 27 Jul 2009 12:28:53 GMT
Server: Apache/2.2.14 (Win32)
Last-Modified: Wed, 22 Jul 2009 19:15:56 GMT
ETag: "34aa387-d-1568eb00"
Vary: Authorization,Accept
Accept-Ranges: bytes
Content-Length: 88
Content-Type: text/html
Connection: Closed
```
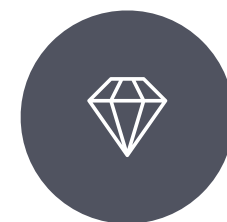
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/ Method

PUT

REQUEST MESSAGE

```
PUT /index.php HTTP/1.1
User-Agent: Mozilla/4.0 (compatible; MSIE5.01; Windows NT)
Host: 192.168.33.12
Accept-Language: en-us
Connection: Keep-Alive
Content-type: text/html
Content-Length: 182Accept-Encoding: gzip, deflate
Connection: Keep-Alive
```

RESPONSE MESSAGE

```
HTTP/1.1 201 Created
Date: Mon, 27 Jul 2009 12:28:53 GMT
Server: Apache/2.2.14 (Win32)
Content-type: text/html
Content-length: 30
Connection: Closed
```

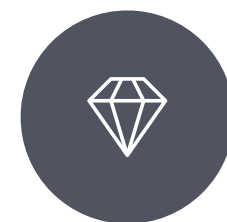*Jun 2017*

/ Method

◆ DELETE

REQUEST MESSAGE

```
DELETE /index.php HTTP/1.1
User-Agent: Mozilla/4.0 (compatible; MSIE5.01; Windows NT)
Host: 192.168.33.12
Accept-Language: en-us
Connection: Keep-Alive
```

RESPONSE MESSAGE

```
HTTP/1.1 201 Created
Date: Mon, 27 Jul 2009 12:28:53 GMT
Server: Apache/2.2.14 (Win32)
Content-type: text/html
Content-length: 30
Connection: Closed
```
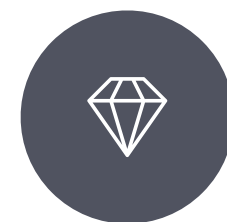
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/ Method

CONNECT

REQUEST MESSAGE

```
CONNECT 192.168.33.12 HTTP/1.1
User-Agent: Mozilla/4.0 (compatible; MSIE5.01; Windows NT)
```

RESPONSE MESSAGE

```
HTTP/1.1 200 Connection established
Date: Mon, 27 Jul 2009 12:28:53 GMT
Server: Apache/2.2.14 (Win32)
```

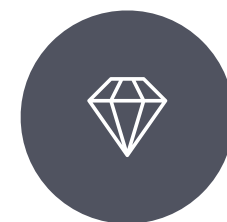*Jun 2017*

/ Method

OPTIONS

REQUEST MESSAGE

```
OPTIONS * HTTP/1.1
User-Agent: Mozilla/4.0 (compatible; MSIE5.01; Windows NT)
```

RESPONSE MESSAGE

```
HTTP/1.1 200 OK
Date: Mon, 27 Jul 2009 12:28:53 GMT
Server: Apache/2.2.14 (Win32)
Allow: GET,HEAD,POST,OPTIONS,TRACE
Content-Type: httpd/unix-directory
```

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/ Method

TRACE

REQUEST MESSAGE

```
TRACE / HTTP/1.1
Host: 192.168.33.12
User-Agent: Mozilla/4.0 (compatible; MSIE5.01; Windows NT)
```

RESPONSE MESSAGE

```
HTTP/1.1 200 OK
Date: Mon, 27 Jul 2009 12:28:53 GMT
Server: Apache/2.2.14 (Win32)
Connection: close
Content-Type: message/http
Content-Length: 39

TRACE / HTTP/1.1
Host: 192.168.33.12
User-Agent: Mozilla/4.0 (compatible; MSIE5.01; Windows NT)
```

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SUMMARY METHOD

HTTP Method ⬍	RFC ⬍	Request Has Body ⬍	Response Has Body ⬍	Safe ⬍	Idempotent ⬍	Cacheable ⬍
GET	RFC 7231 ⧉	No	Yes	Yes	Yes	Yes
HEAD	RFC 7231 ⧉	No	No	Yes	Yes	Yes
POST	RFC 7231 ⧉	Yes	Yes	No	No	Yes
PUT	RFC 7231 ⧉	Yes	Yes	No	Yes	No
DELETE	RFC 7231 ⧉	No	Yes	No	Yes	No
CONNECT	RFC 7231 ⧉	Yes	Yes	No	No	No
OPTIONS	RFC 7231 ⧉	Optional	Yes	Yes	Yes	No
TRACE	RFC 7231 ⧉	No	Yes	Yes	Yes	No
PATCH	RFC 5789 ⧉	Yes	Yes	No	No	Yes

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/ *Web Environment*

NGINX

WHAT IS NGINX?

Nginx is an HTTP and reverse proxy server, a mail proxy server, and a generic TCP/UDP proxy server, originally written by Igor Sysoev.

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/ *Web Environment*
NGINX

INSTALL NGINX

```
$ sudo apt-get update
$ sudo apt-get install nginx
```

START/STOP NGINX

```
$ sudo service nginx start
$ sudo service nginx stop
```

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QUESTION TIME

THANK YOU

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