lec11-1-Webinstallation-2017-12-29

CTI One Corporation

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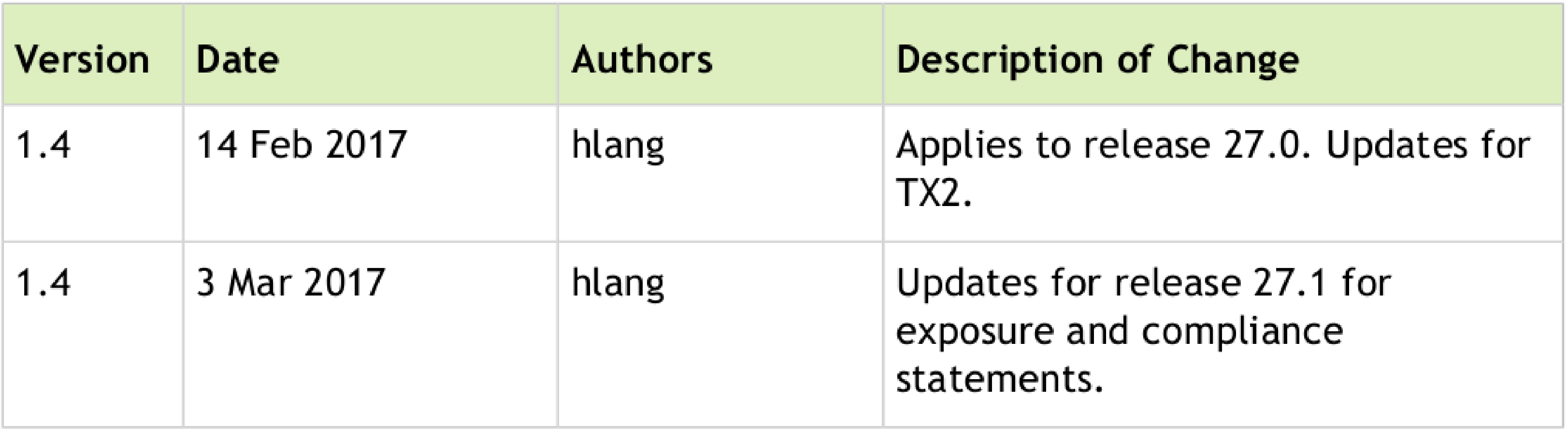
Project Lead: Harry Li, Ph.D.

Group Leaders: Team members:

Document Change History; Document number:



Version	Date	Authors	Description of Change
1.4	14 Feb 2017	hlang	Applies to release 27.0. Updates for TX2.
1.4	3 Mar 2017	hlang	Updates for release 27.1 for exposure and compliance statements.

Procedures to Install Web Server

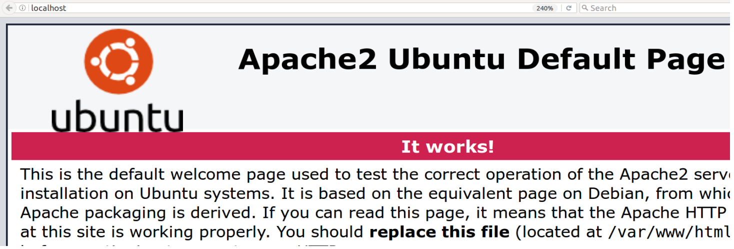
https://www.digitalocean.com/community/tutorials/how-to-install-linux-apache-mysql-php-lamp-stack-on-ubuntu-14-04

1. Have a separate, non-root user account set up on your server. (note I am using Ubuntu 14.04., and created a directory ~/Desktop/harry)

2. Install Apache using Ubuntu's package manager, apt from a repository maintained by Ubuntu.

```
sudo apt-get update
sudo apt-get install apache2
```

Once it is done, check it by using your browser and pointing it to http://localhost your web server will respond as follows:



Apache2 Ubuntu Default Page

It works!

This is the default welcome page used to test the correct operation of the Apache2 serv
installation on Ubuntu systems. It is based on the equivalent page on Debian, from whic
Apache packaging is derived. If you can read this page, it means that the Apache HTTP
at this site is working properly. You should **replace this file** (located at /var/www/html

If you can read this page, it means that the Apache HTTP server is working properly. You can replace this file (located at /var/www/html/index.html) before continuing to operate your HTTP server.

The configuration layout is as follows

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

Install mySQL

http://www.linuxandubuntu.com/home/how-to-setup-a-web-server-and-host-website-on-your-own-linux-computer

Install mySQL database to store and retrieve data in tables. Since we shall be using php, we will also need to install php5-mysql component.

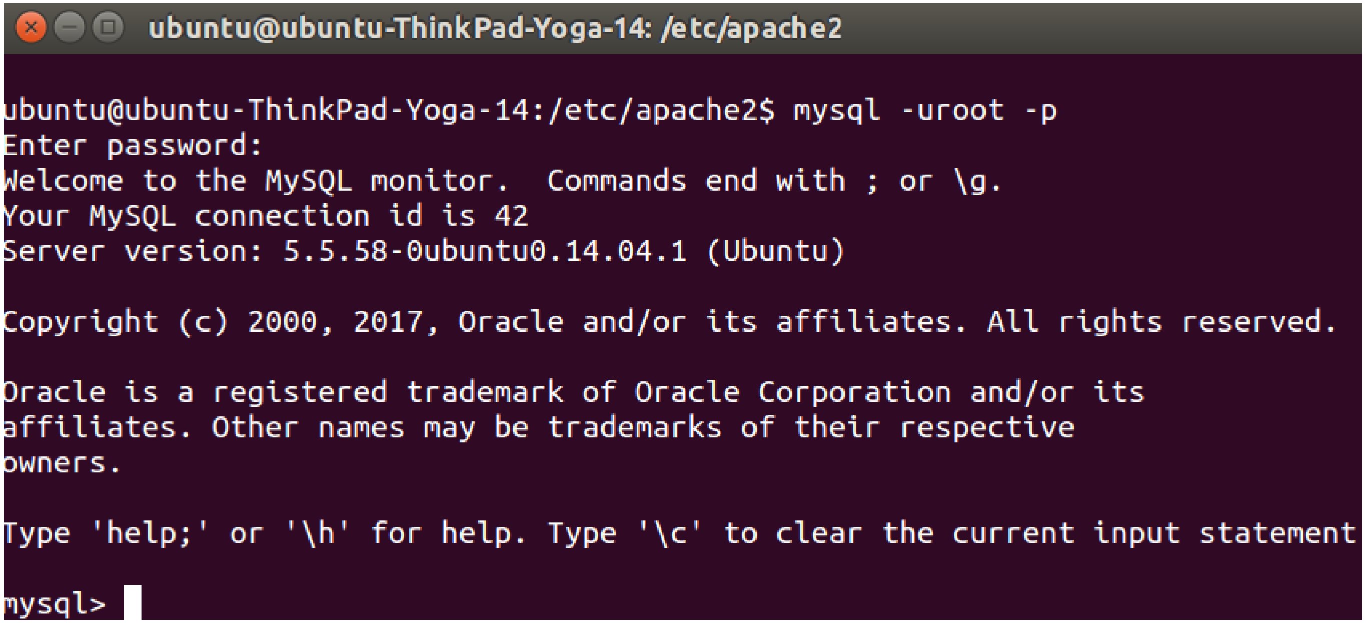
$sudo apt-get install mysql-server php5-mysql

To check if mySQL is installed properly:
$mysql -uroot

If you set the password during installation open with -p parameter:

$mysql -uroot -p

Note: I set password as ubuntu



```
ubuntu@ubuntu-ThinkPad-Yoga-14:/etc/apache2$ mysql -uroot -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 42
Server version: 5.5.58-0ubuntu0.14.04.1 (Ubuntu)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement

mysql>
```
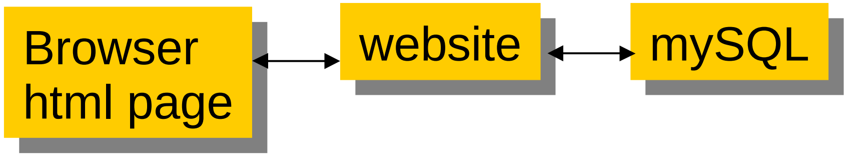

Install php

http://www.linuxandubuntu.com/home/how-to-setup-a-web-server-and-host-website-on-your-own-linux-computer

PHP is open source web server scripting language that will interact with the mySQL database. For example, if you want to show the tabular employee list stored in your mySQL database in your website, with the help of PHP you can interact with mySQL, retrieve the employee list and render in html page. Php5-mysql library helps you with multiple libraries.



To search the libraries that are available.

```
$apt-cache search php5-
```

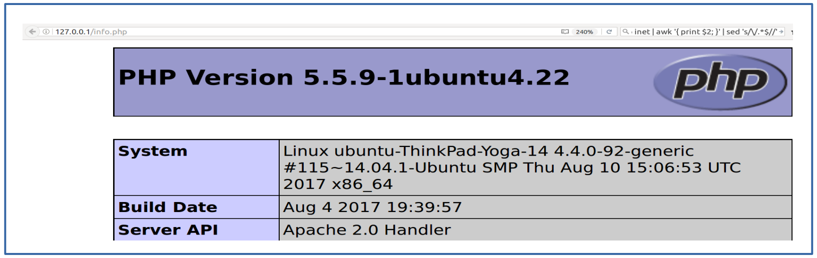
To install PHP and php5-mysql

```
$sudo apt-get install php5 libapache2-mod-php5 php5-mcrypt
$sudo apt-get install php5-sqlite
```

To check if php is installed correctly, make file /var/www/html/info.php and add the following content to this file -

```
<?php
phpinfo();
?>
```

Once it is done, check it by using your browser and pointing it to http://localhost your web server will respond as follows:



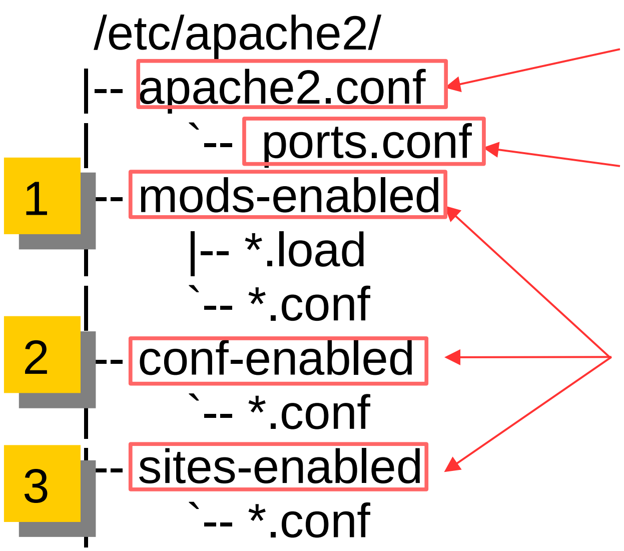
PHP Version 5.5.9-1ubuntu4.22

System	Linux ubuntu-ThinkPad-Yoga-14 4.4.0-92-generic #115~14.04.1-Ubuntu SMP Thu Aug 10 15:06:53 UTC 2017 x86_64
Build Date	Aug 4 2017 19:39:57
Server API	Apache 2.0 Handler

You will see this as php installation is successful.

Apache2 Configuration

https://www.digitalocean.com/community/tutorials/how-to-install-linux-apache-mysql-php-lamp-stack-on-ubuntu-14-04



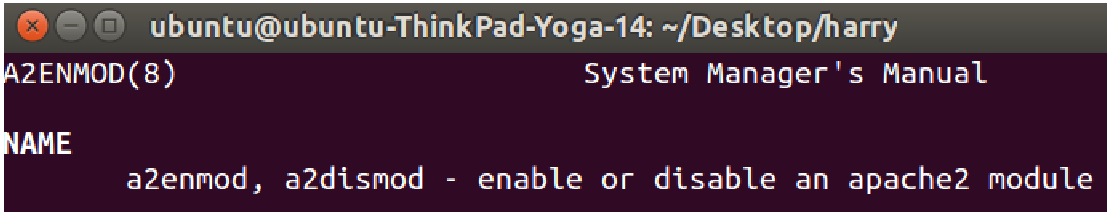
```
  /etc/apache2/
  |-- apache2.conf
  |       `--  ports.conf
1 |-- mods-enabled
  |       |-- *.load
  |       `-- *.conf
2 |-- conf-enabled
  |       `-- *.conf
3 |-- sites-enabled
          `-- *.conf
```

the main configuration file, includes all remaining configuration files when starting up the web server. Read and browse this file.

ports.conf is always included from the main configuration file. It defines the listening ports for incoming connections, and this file can be customized anytime.

Configuration files in these 3 directories: mods-enabled/, conf-enabled/ and sites-enabled/ contain configuration snippets to manage modules, global configuration fragments, or virtual host configurations, respectively.

Configuration files are activated by symlinking available configuration files from their respective *-available/ counterparts. These should be managed by using helpers (See the man pages)
a2enmod,
a2dismod,
a2ensite,
a2dissite, and
a2enconf,
a2disconf .



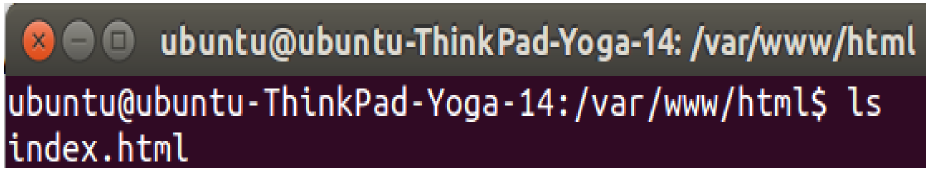
```
A2ENMOD(8)                    System Manager's Manual

NAME
       a2enmod, a2dismod - enable or disable an apache2 module
```

Apache2 Document Root

https://www.digitalocean.com/community/tutorials/how-to-install-linux-apache-mysql-php-lamp-stack-on-ubuntu-14-04

Due to the use of environment variables, in the default configuration, apache2 needs to be started/stopped with /etc/init.d/apache2 or apache2ctl. Calling /usr/bin/apache2 directly will not work with the default configuration.

By default, Ubuntu does not allow access through the web browser to any file apart of those located in /var/www, public_html directories (when enabled) and /usr/share (for web applications). If your site is using a web document root located elsewhere (such as in /srv) you may need to whitelist your document root directory in /etc/apache2/apache2.conf.



```
ubuntu@ubuntu-ThinkPad-Yoga-14:/var/www/html$ ls
index.html
```

The default Ubuntu document root is /var/www/html. You can make your own virtual hosts under /var/www. This is different to previous releases which provides better security out of the box.

Start/Stop Apache2

https://www.digitalocean.com/community/tutorials/how-to-install-linux-apache-mysql-php-lamp-stack-on-ubuntu-14-04

Find Apache2 Public IP Address

https://www.digitalocean.com/community/tutorials/how-to-install-linux-apache-mysql-php-lamp-stack-on-ubuntu-14-04

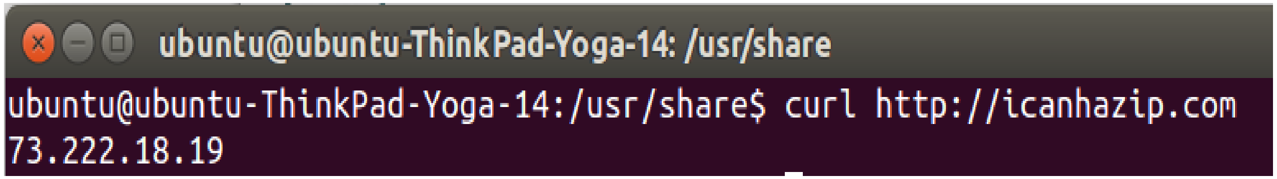
Your server's public IP address is usually the address to connect to your server through SSH. Use the iproute2 tools to get your address as:

ip addr show eth0 | grep inet | awk '{ print $2; }' | sed 's/\/.*$//'

This will give you one or two lines back. They are both correct addresses, but your computer may only be able to use one of them, try each one.

An alternative method is:

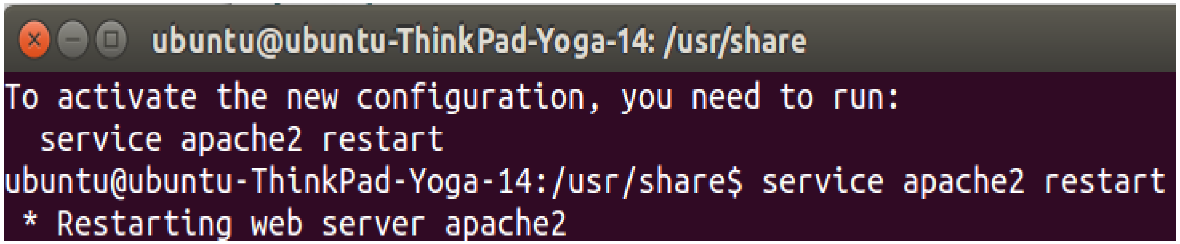
curl http://icanhazip.com



ubuntu@ubuntu-ThinkPad-Yoga-14: /usr/share

```
ubuntu@ubuntu-ThinkPad-Yoga-14:/usr/share$ curl http://icanhazip.com
73.222.18.19
```

Use $service apache2 restart
to restart your apache2 server



ubuntu@ubuntu-ThinkPad-Yoga-14: /usr/share

```
To activate the new configuration, you need to run:
  service apache2 restart
ubuntu@ubuntu-ThinkPad-Yoga-14:/usr/share$ service apache2 restart
 * Restarting web server apache2
```

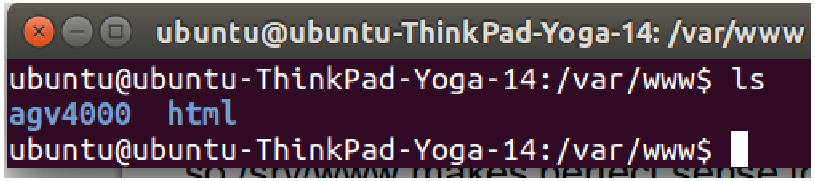
Create Web Content at /srv/www/html

https://www.linux.com/blog/configuring-apache2-run-python-scripts

As sudo make the following directory for my cgi

/srv/www/agv4000/public_html/cgi-bin

1. Put your web files based on filesystem hierarchy standard (FHS) in the "/srv" directory, also a lot of people put web files in "/var/www". Note the "/var" directory is full of logs and print spoolers etc.



```
ubuntu@ubuntu-ThinkPad-Yoga-14:/var/www$ ls
agv4000  html
ubuntu@ubuntu-ThinkPad-Yoga-14:/var/www$ 
```

2. Put network files in /srv/files as well.

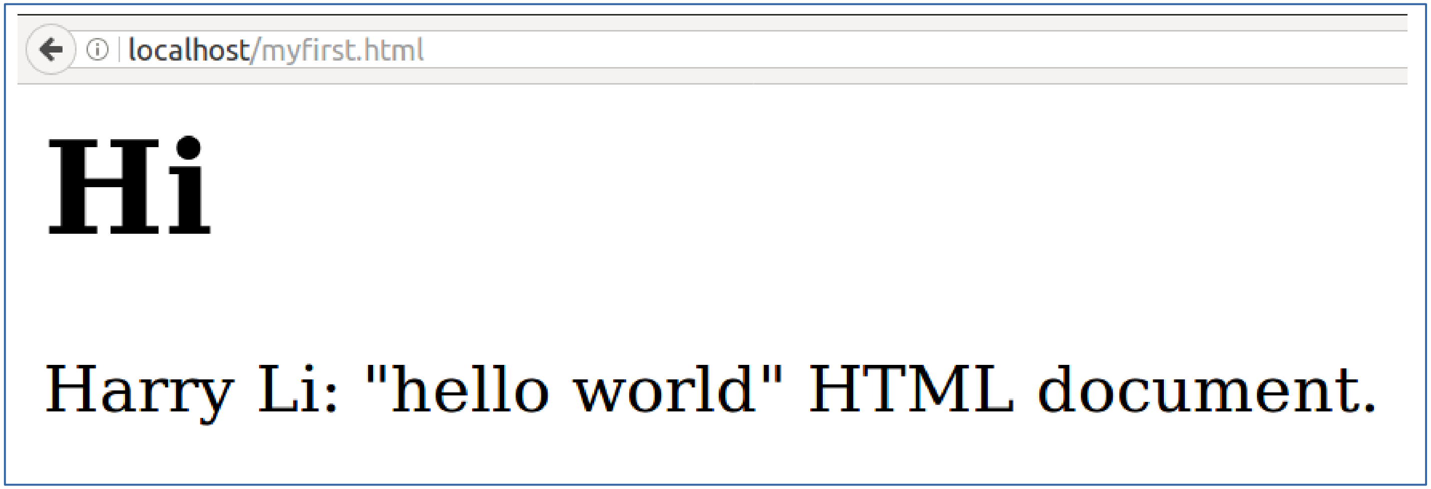
3. Put the web root in /var/www, Arch, for example uses /srv/http by default. Its not difficult to change it to serve the files from any directory in the file system. All the contents of your server, including mysql databases, a bunch of SVN repositories and a few virtual websites are stored in various subdirectories of /srv

4. /srv is relatively new. According to the FHS, "/srv contains data served by this system" so /srv/www makes perfect sense for a webserver.   /var is an older convention. It was meant for data that changes over time ("variable data") such as caches, spool, logs, all sorts of housekeeping and administration files, while "user data" would be in home directories

Visit Your Local Web Content at /srv/www/html

1. place your html web page in /srv/www/html directory, for example, /svr/www/html/myfirst.html

2. use browser point to http:/localhost/myfirst.html or http://127.0.0.1/myfirst.html



localhost/myfirst.html

Hi

Harry Li: "hello world" HTML document.

To change port address, you need to edit the configuration file at /etc/apache2/ports.conf and change the Listen 80 to your desired port number. After edit you need to restart the apache2 server.