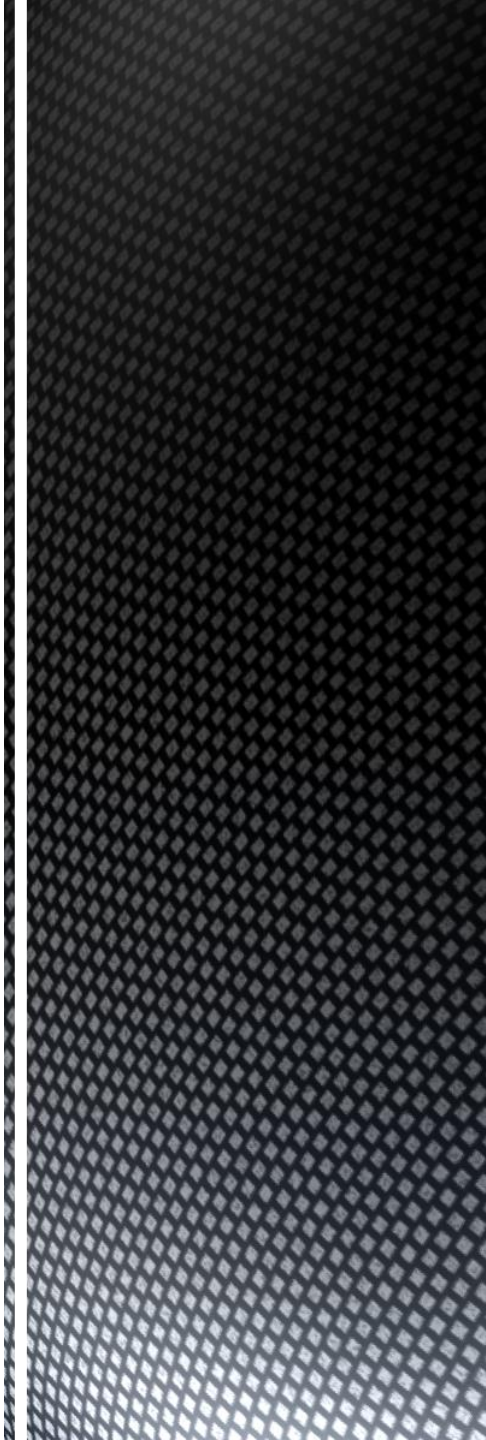
Introducing LAMP components in a practical way

Michael K. MacDonald



The LAMP platform is made up of four components that work together to form a versatile software stack:

- **L**inux: Linux is the operating system on which the other components run. It is not required, as the other programs in LAMP are able to run on different operating systems, but Linux is traditionally associated with LAMP stacks and is often selected when a completely open-source software stack is desirable (Bacon, 2005).

- **A**pache: Apache is the most used web server application on the Internet (Netcraft, 2015; Bacon, 2005). It is responsible for returning web content to user's requests. Apache executes server-side code, like that written using the PHP programming language, by invoking modules or CGI binaries when it encounters such code (Heng, 2014).

- **M**ySQL: MySQL is a database management system that handles the storage responsibilities in the LAMP platform.

- **P**HP: PHP is a popular programming language that can used to write dynamic code to access data stored in MySQL, write data to databases, and interact with the Linux operating system (Bacon, 2005).

Familiarity with LAMP configuration can help someone understand how this development platform works, and how it can be leveraged to start building powerful, dynamic web applications.

This learning package is designed to expose the participant to LAMP components, one-at-a-time, through the use of text and video-based materials.

The materials are constructed to enable the learner to fully participate in the tasks that are documented; activities are included that the participant can complete to solidify an understanding of how LAMP components work together to provide a capable system.

Click the links to access content

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1. Creating a virtual machine

Watch the following video tutorial:

Create a VM (video tutorial)

To do this yourself, download and install the following program for use in this section:

VMware Workstation Player
https://my.vmware.com/web/vmware/free#desktop_end_user_computing/vmware_player/7_0|PLAYER-713|product_downloads

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Read the following document:

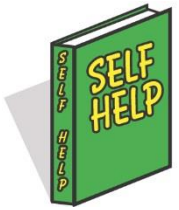
Guided installation steps for Ubuntu Server

2. Installing Ubuntu Linux

To do this yourself, download the following files for use in this section:

Ubuntu Server
http://releases.ubuntu.com/trusty/

Note: Select Ubuntu 14.04.x LTS "PC (Intel x86) SERVER install CD“



Here’s something that might help!
Ubuntu Server Guide
https://help.ubuntu.com/lts/serverguide/index.html

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3. Installing Apache web server and SSH

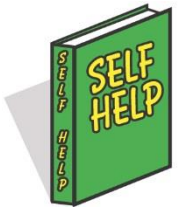
Watch the following video tutorial:

Install Apache and SSH (video tutorial)

To do this yourself, download and install the following program for use in this section:

PuTTY (SSH client for Windows)
http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html

You are now ready to complete Activity 1: Install a web server and use remote terminal!



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4. Installing FTP services

Watch the following video tutorials:

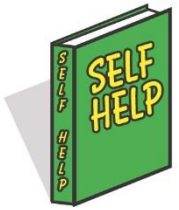
Install ProFTPD (video tutorial)

Create new FTP user (video tutorial)

To do this yourself, download and install the following program for use in this section:

WinSCP (FTP client for Windows)
https://winscp.net/eng/download.php

You are now ready to complete Activity 2: Install and configure FTP services on a server!



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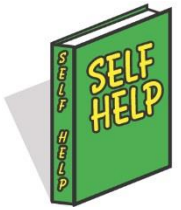
5. Installing MySQL and PHP

Watch the following video tutorial:

Install MySQL and PHP (video tutorial)

You are now ready to complete Activity 3: Install and use database services!



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Ubuntu Server Guide
https://help.ubuntu.com/lts/serverguide/index.html

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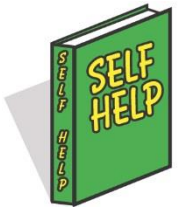
6. Configuring Virtual Hosts in Apache

Read the following document :

Adding Virtual Hosts in Apache

You are now ready to complete Activity 4: Configure HTTP Virtual Hosts!



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Required files:

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  https://my.vmware.com/web/vmware/free#desktop_end_user_computing/vmware_player/7_0|PLAYER-713|product_downloads
- Ubuntu Server (*Note*: Select Ubuntu 14.04.x LTS "PC (Intel x86) SERVER install CD")
  http://releases.ubuntu.com/trusty/
- PuTTY (SSH client for Windows)
  http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html
- WinSCP (FTP client for Windows)
  https://winscp.net/eng/download.php

Supplemental Resource:

- Ubuntu Server Guide
  https://help.ubuntu.com/lts/serverguide/index.html

References

Apache Software Foundation. (2015). *Name-based virtual host support*. Retrieved from https://httpd.apache.org/docs/2.4/vhosts/name-based.html

Apache Software Foundation. (2015). *VirtualHost examples*. Retrieved from http://httpd.apache.org/docs/2.4/vhosts/examples.html

Bacon, J. (2005). *Introduction to LAMP technology: Explore the open source web development platform*. Retrieved from IBM developerWorks: http://www.ibm.com/developerworks/web/tutorials/wa-lamp/wa-lamp-pdf.pdf

Dougherty, D. (2001, January). *LAMP: The open source web platform*. Retrieved from OnLAMP.com: http://www.onlamp.com/pub/a/onlamp/2001/01/25/lamp.html

Garrels, M. (2008). General overview of the Linux file system. In *Introduction to Linux: A hands on guide*. Retrieved from http://tldp.org/LDP/intro-linux/html/sect_03_01.html

Grub2 (n.d.). In *Community Help Wiki*. Retrieved December 5, 2015, from https://help.ubuntu.com/community/Grub2

Gunthorpe, J. (n.d.). Apt-get - APT package handling utility: Command-line interface. In *Ubuntu manuals*. Retrieved December 5, 2015, from http://manpages.ubuntu.com/manpages/saucy/man8/apt-get.8.html

Heng, C. (2014, January). *How to install and configure PHP 5 to run with Apache on Windows*. Retrieved from TheSiteWizard.com: http://www.thesitewizard.com/php/install-php-5-apache-windows.shtml

Netcraft. (2015, January). *January 2015 web server survey.* Retrieved from http://news.netcraft.com/archives/2015/01/15/january-2015-web-server-survey.html

More

Remnant, S. (n.d.). Reboot, halt, poweroff - reboot or stop the system. In *Ubuntu manuals*. Retrieved December 5, 2015, from http://manpages.ubuntu.com/manpages/precise/en/man8/poweroff.8.html

Ubuntu. (n.d.). *Advanced Installation*. Retrieved from https://help.ubuntu.com/lts/serverguide/advanced-installation.html#lvm

Ubuntu. (n.d.). *Apt-Get*. Retrieved from https://help.ubuntu.com/lts/serverguide/apt-get.html

Ubuntu. (n.d.). *HTTPD – Apache2 Web Server*. Retrieved from https://help.ubuntu.com/lts/serverguide/httpd.html

Ubuntu. (n.d.). *MySQL*. Retrieved from https://help.ubuntu.com/lts/serverguide/mysql.html

Ubuntu. (n.d.). *OpenSSH Server*. Retrieved from https://help.ubuntu.com/lts/serverguide/openssh-server.html

Ubuntu. (n.d.). *PHP5 – Scripting language*. Retrieved from https://help.ubuntu.com/lts/serverguide/php5.html

Ubuntu. (n.d.). *ProFTPD*. Retrieved from https://help.ubuntu.com/community/ProFTPD

Ubuntu. (n.d.). *Ubuntu Server Guide*. Retrieved from https://help.ubuntu.com/lts/serverguide/index.html

Ubuntu. (n.d.). *User management*. Retrieved from https://help.ubuntu.com/lts/serverguide/user-management.html

VMware. (2014). *Getting started with VMware Player*. Retrieved from http://www.vmware.com/pdf/desktop/vmware_player70.pdf