Installing Your Own Wiki on Ubuntu

Summary: This presentation will involve the installation and configuration of the LAMP stack (Linux, Apache, MySQL and PHP), MediaWiki and dependency software packages. MediaWiki is a free open source wiki program, originally built for Wikipedia, that allows users to create their own personal wiki sites. Other features introduced will be apt-get/yum, Bash Shell Scripting, cron jobs, wget/curl, vi Editor, OpenSSL, and OpenSSH.

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Install Ubuntu 14.04 server and client onto VMware Workstation

- System configurations
    - CPUs = 2
    - Memory = 2 GB
    - Storage = 20 GB

Start Installation

- VERY IMPORTANT
    - <Something> - Change to match your system
    - Path to pscp.exe will be different on your system
    - Your windows home directory will be diferrent on your system
    - Your linux home directory will be diferrent on your system
    - Assumes openssh-server and dos2unix
- To install via script
    - Secure copy script to remote server
    J:\PuTTY\pscp.exe C:\Users\Bryan\Downloads\install_mediawiki.sh [username]@[IP Address]:/home/brock/

    - Logon to a root shell on remote server
    sudo bash

    - Convert script from dos text file format to unix
    dos2unix install_mediawiki.sh

    - Run install script
    /home/brock/install_mediawiki.sh 2> /home/brock/error_log | tee /home/brock/install_log

    - Continue onto Setup MediaWiki
- To install manually
    - Continue onto Setup Host File

Setup Host File

- ❖ The hosts file is a computer file used by an operating system to map hostnames to IP addresses

- Get IP Address
ip addr | grep 'state UP' -A2 | tail -n1 | awk '{print $2}' | cut -f1 -d'/'

- Update the HOST file
sudo vi /etc/hosts
<IP_ADDRESS> <FQDN> <MACHINE_NAME>

Install Screen & Sysv-rc-conf

- ❖ GNU Screen is a software application that can be used to multiplex several virtual consoles, allowing a user to access multiple separate terminal sessions inside a single terminal window or remote terminal session.
- ❖ sysv-rc-conf gives an easy to use interface for managing /etc/rc{runlevel}.d/ symlinks.

sudo apt-get install screen sysv-rc-conf

- Start a new screen session
screen -S mediawiki

- List screen sessions
screen -ls

- Reconnect with previous screen session
screen -r mediawiki

Install Updates

sudo apt-get update

Install Apache

- ❖ The Apache HTTP Server, commonly referred to as Apache, is a web server application notable for playing a key role in the initial growth of the World Wide Web

sudo apt-get install apache2

- Configure apache2 to start on boot
sudo sysv-rc-conf apache2 on

- Edit the apache configuration file
sudo vi /etc/apache2/apache2.conf

ServerName <FQDN>

- Restart Apache

sudo service apache2 restart

Install MySQL

- ❖ MySQL is a popular choice of database for use in web applications, and is a central component of the widely used LAMP open source web application software stack (and other 'AMP' stacks).

sudo apt-get install -y mysql-server libapache2-mod-auth-mysql php5-mysql

- Configure mysql to start on boot

sudo sysv-rc-conf mysql on

- Activate MySQL database

(Not necessary unless installing database in new location)
sudo mysql_install_db

- Secure MySQL database

sudo /usr/bin/mysql_secure_installation

Install PHP

- ❖ PHP is a server-side scripting language designed for web development but also used as a general-purpose programming language.

sudo apt-get install php5 libapache2-mod-php5 php5-mcrypt php5-dev php-pear

- Add .php to the directory index

(Check to ensure index.php has been included)
sudo vi /etc/apache2/mods-enabled/dir.conf

- Setup a PHP Info page

sudo vi /var/www/html/phpinfo.php

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

- Restart Apache

sudo service apache2 restart

Install Memcache

❖ Memcache module provides handy procedural and object oriented interface to memcached, highly effective caching daemon, which was especially designed to decrease database load in dynamic web applications.

❖ Memcached is a high-performance, distributed memory object caching system, generic in nature, but intended for use in speeding up dynamic web applications by alleviating database load.

sudo apt-get install php5-memcached memcached

sudo pecl install memcache

- Reset memcached on a daily basis
sudo crontab -e
00 0 * * * echo 'flush_all' | nc localhost 11211

- Update the following fields
sudo vi /etc/memcached.conf
 -m "64" to –m "512"

- Edit the php.ini file
sudo vi /etc/php5/apache2/php.ini
extension=memcache.so

- Restart Memcached
sudo service memcached restart

Generate self-sign PKI certificates for secure browsing. Install in Apache.

❖ OpenSSL is an open-source implementation of the SSL and TLS protocols.

- Enable SSL on Apache
sudo a2enmod ssl

- Restart Apache
sudo service apache2 restart

- Make SSL directory
sudo mkdir /etc/apache2/ssl

- Create private key and csr request (send to CA)

- openssl req -nodes -newkey rsa:2048 -keyout example.key -out example.csr -subj "/C=US/ST=MD/L=Catonsville/O=Ubuntu-Maryland Local Community/CN=mediawiki.example.com"

- Create private key and certificate (self-sign)

sudo openssl req -x509 -nodes -days 365 -newkey rsa:2048 -keyout /etc/apache2/ssl/mediawiki.key -out /etc/apache2/ssl/mediawiki.crt -subj "/C=US/ST=MD/L=Catonsville/O=Ubuntu-Maryland Local Community/CN=mediawiki.example.com"

- Configure Apache to Use SSL

sudo vi /etc/apache2/sites-available/default-ssl.conf

SSLCertificateFile   /etc/apache2/ssl/mediawiki.crt
SSLCertificateKeyFile   /etc/apache2/ssl/mediawiki.key

- Activate the SSL Virtual Host

sudo a2ensite default-ssl.conf

- Restart Apache

sudo service apache2 restart

Install MediaWiki on Ubuntu

❖ MediaWiki is a free and open source wiki software, used to power wiki websites such as Wikipedia, Wiktionary and Commons, developed by the Wikimedia Foundation and others.

- Download MediaWiki software

sudo wget http://dumps.wikimedia.org/mediawiki/1.23/mediawiki-1.23.0.tar.gz

- Unzip and untar the MediaWiki package

sudo mkdir -p /data/
sudo tar -xvzf ~/mediawiki-*.tar.gz -C /data/

- Set group and permissions

sudo groupadd developers
sudo usermod -a -G developers brock
sudo chown -R www-data:developers /data/mediawiki-1.23.0
sudo chmod 2775 /data/mediawiki-1.23.0

- Create symbolic link to Apache document root

sudo ln -s /data/mediawiki-1.23.0/ /var/www/mediawiki

- Add directive to alias.conf file

  sudo vi /etc/apache2/mods-enabled/alias.conf

  Alias /wiki "/var/www/mediawiki/"
  <Directory "/var/www/mediawiki">
      Options FollowSymlinks
      AllowOverride None
      Require all granted
  </Directory>

- Restart Apache

  sudo service apache2 restart

Create MySQL User and Databases

- Login to MySQL

  mysql -u root -p

- Create database

  create database my_wiki;

- Create user and grant permissions

  grant index, create, select, insert, update, delete, alter, lock tables on my_wiki.* to 'wikiuser'@'localhost' identified by '<ENTER PASSWORD>';

- Implement changes and quit

  FLUSH PRIVILEGES;

  exit;

Setup MediaWiki

- Go to… http://mediawiki.example.com/wiki/
  1. Click "set up the wiki" link
  2. Continue
  3. Continue
  4. Database password and Continue
  5. Continue
  6. On the final page
     a. Name of wiki: "Ubuntu Maryland Wiki",
     b. Your username: admin
     c. Password: <PASSWORD>
     d. Choose "I'm bored already, just install the wiki"
     e. Continue
  7. Continue
  8. Continue
  9. Save file locally to your Download directory

- This will generate a LocalSettings file. Upload it to server
- (Linux client)
  /usr/bin/scp /home/brock/Downloads/LocalSettings.php [username]@[IP Address]:/data/mediawiki-1.23.0/
- (Windows client)
  J:\PuTTY\pscp.exe U:\Users\Bryan\Downloads\LocalSettings.php [username]@[IP Address]:/data/mediawiki-1.23.0/
- Update permissions on LocalSettings
  sudo chown www-data /data/mediawiki-1.23.0/LocalSettings.php
- Update LocalSettings with Memcache
  sudo vi /data/mediawiki-1.23.0/LocalSettings.php
  $wgMainCacheType = CACHE_MEMCACHED;
  $wgMemCachedServers = array("127.0.0.1:11211");
- Now you can access your personal wiki
  https:// mediawiki.example.com/wiki/
- Check PHP Information Page
  https://mediawiki.example.com/phpinfo.php