

LEARNING Ubuntu

Free unaffiliated eBook created from **Stack Overflow contributors.**

Table of Contents

1
2
2
2
2
2
2
2
3
3
3
3
4
6
6
6
8
8
8
8
9
9
10
11
11
11
12
12
14
14

Compress files and folders using the tar command	15
Chapter 4: Networking	16
Examples	16
Set proxy from CLI	16
Show network interfaces	16
Configure network interface from CLI	16
Chapter 5: Set up SSL	18
Remarks	18
Examples	18
Set up ssl for local testing in apache	18
Chapter 6: Software Installation	20
Syntax	20
Parameters	20
Examples	20
Install software using APT	20
List all installed packages	21
Chapter 7: Support lifespan	22
Remarks	22
Examples	22
Currently supported releases	22
Credits	24

About

You can share this PDF with anyone you feel could benefit from it, downloaded the latest version from: ubuntu

It is an unofficial and free Ubuntu ebook created for educational purposes. All the content is extracted from Stack Overflow Documentation, which is written by many hardworking individuals at Stack Overflow. It is neither affiliated with Stack Overflow nor official Ubuntu.

The content is released under Creative Commons BY-SA, and the list of contributors to each chapter are provided in the credits section at the end of this book. Images may be copyright of their respective owners unless otherwise specified. All trademarks and registered trademarks are the property of their respective company owners.

Use the content presented in this book at your own risk; it is not guaranteed to be correct nor accurate, please send your feedback and corrections to info@zzzprojects.com

Chapter 1: Getting started with Ubuntu

Remarks

What is Ubuntu?

Ubuntu is an open source software platform that runs everywhere from the smartphone, the tablet and the PC to the server and the cloud.

Why use Ubuntu for development?

- The fastest route from development to deployment on desktop, mobile, server or cloud
- · The desktop of choice for developers at some of the world's leading technology companies
- The broadest and best development tools and libraries
- · Lightweight to either run natively or in a VM, on a PC or a Mac
- · Ideal for any resource-intensive environment

Ubuntu is the world's most popular open source OS for development

Ubuntu is used by thousands of development teams around the world because of its versatility, reliability, constantly updated features, and extensive developer libraries.

If you're managing developers, Ubuntu is the best way to increase your team's productivity and guarantee a smooth transition from development all the way to production. Ubuntu is the world's most popular open source OS for both development and deployment, from the data centre to the cloud.

And, as the Ubuntu OS converges, these same applications will be able to run on desktop, tablets, phone and even on the Internet of Things — one application across Ubuntu's full range of devices.

Source: www.ubuntu.com → Ubuntu Desktop for developers

Versions

Version	n Last-Modi	fied Name	
12.04.5	03-Jun-2015 21:11	Ubuntu 12.04.5 LTS (Precise Pa	angolin)
12.04	03-Jun-2015 21:11	Ubuntu 12.04.5 LTS (Precise Pa	angolin)
14.04.4	04-Aug-2016 20:46	Ubuntu 14.04.5 LTS (Trusty Ta	hr)
14.04.5	04-Aug-2016 20:46	Ubuntu 14.04.5 LTS (Trusty Ta	hr)
14.04	04-Aug-2016 20:46	Ubuntu 14.04.5 LTS (Trusty Ta	hr)

15.04	22-Apr-2016 13:55	Ubuntu 15.04 (Vivid Vervet)
16.04.1	04-Aug-2016 23:13	Ubuntu 16.04.1 LTS (Xenial Xerus)
16.04	04-Aug-2016 23:13	Ubuntu 16.04.1 LTS (Xenial Xerus)
16.10	13-Oct-2016 14:54	Ubuntu 16.10 (Yakkety Yak)
precise	03-Jun-2015 21:11	Ubuntu 12.04.5 LTS (Precise Pangolin)
trusty	04-Aug-2016 20:46	Ubuntu 14.04.5 LTS (Trusty Tahr)
vivid	22-Apr-2016 13:55	Ubuntu 15.04 (Vivid Vervet)
xenial	04-Aug-2016 23:13	Ubuntu 16.04.1 LTS (Xenial Xerus)
yakkety	13-Oct-2016 14:54	Ubuntu 16.10 (Yakkety Yak)

Examples

Installation or Setup

What is Ubuntu

Ubuntu is an open source software platform, but colloquially, when Ubuntu is referred to it's mainly toward the Ubuntu operating system. Ubuntu is based on Debian and uses the same package management system (deb and apt).

Installation

So you want to give Ubuntu a try! That's great. First off, let's grab the Ubuntu .iso file that you'll be needing to install the operating system on your system. Note, an .iso file is an image file that we can burn to a USB/CD. Think of it as a snapshot of the Ubuntu Operating System that we'll burn onto some media disk.

- Head over to Ubuntu's download page Here
- · Grab an .iso to USB burner.
 - Pendrivelinux is a popular choice
 - Rufus is another popular alternative
- Load up whichever program and load in the .iso file.
- Burn the image to the USB (be careful you choose the correct USB!)
- Once the burn is complete, eject safely
- Plug the USB into the system that you wan't to install Ubuntu on, flip the switch and follow the on screen instructions

Keeping Ubuntu and your packages up to date

Once you installed Ubuntu, you might want to get the latest patches and updates. Using Ubuntu's easy to use package manager Aptitude, the OS along with all future packages that is installed using this manner can be kept up to date.

1. Download the latest package lists by refreshing information from the repositories: sudo apt-

get update No mail. Last login: Sun Jul 24 23:31:08 2016 from 101.78.144.226 root@edm1:~# root@edm1:~# root@edm1:~# sudo apt-get update Ign http://mirrors.digitalocean.com trusty InRelease Get:1 http://mirrors.digitalocean.com trusty-updates InRelease [65.9 kB] Hit http://mirrors.digitalocean.com trusty-backports InRelease Hit http://mirrors.digitalocean.com trusty Release.gpg Hit http://mirrors.digitalocean.com trusty Release Get:2 http://mirrors.digitalocean.com trusty-updates/main Sources [279 kB Get:3 http://mirrors.digitalocean.com trusty-updates/restricted Sources Get:4 http://mirrors.digitalocean.com trusty-updates/universe Sources [15 Get:5 http://mirrors.digitalocean.com trusty-updates/multiverse Sources Get:6 http://mirrors.digitalocean.com trusty-updates/main amd64 Packages Get:7 http://mirrors.digitalocean.com trusty-updates/restricted amd64 Pac

http://mirrors.digitalocean.com trusty-updates/universe amd64

2. Then proceed to run the following command to review which packages can upgraded: sudo

apt-get upgrade

```
Reading package lists... Done
Building dependency tree
Reading state information... Done
Calculating upgrade... Done
The following packages have been kept back:
   linux-headers-generic-lts-xenial linux-image-generic-lts-xenial
The following packages will be upgraded:
   cloud-init curl grub-common grub-pc grub-pc-bin grub2-common libcurl3
   libcurl3-gnutls libgd3 libldap-2.4-2 libmysqlclient18 libnspr4 libnss3
   libnss3-nssdb linux-libc-dev mysql-common gemu-utils tzdata
18 upgraded, 0 newly installed, 0 to remove and 2 not upgraded.
Need to get 7,363 kB of archives.
After this operation, 28.7 kB of additional disk space will be used.
Do you want to continue? [Y/n]
```

3. Assuming you are satisfied with the lists of packages that can be upgraded, enter y to start the installation process.

Also you could just hit enter, when presented with a choice the capitalized choice is the default, and is selected if you hit enter and type nothing.

```
Do you want to continue? [Y/n] y

Get:1 http://mirrors.digitalocean.com/ubuntu/ trusty-updates/main libldap

Get:2 http://mirrors.digitalocean.com/ubuntu/ trusty-updates/main libcurl

Get:3 http://mirrors.digitalocean.com/ubuntu/ trusty-updates/main curl am

Get:4 http://mirrors.digitalocean.com/ubuntu/ trusty-updates/main libcurl

Get:5 http://mirrors.digitalocean.com/ubuntu/ trusty-updates/main libgd3

Get:6 http://mirrors.digitalocean.com/ubuntu/ trusty-updates/main mysql-c

Get:7 http://mirrors.digitalocean.com/ubuntu/ trusty-updates/main libmysc

Get:8 http://mirrors.digitalocean.com/ubuntu/ trusty-updates/main libnss

Get:10 http://mirrors.digitalocean.com/ubuntu/ trusty-updates/main libnss

Get:11 http://mirrors.digitalocean.com/ubuntu/ trusty-updates/main tzdata

Get:12 http://mirrors.digitalocean.com/ubuntu/ trusty-updates/main grub-p

Get:13 http://mirrors.digitalocean.com/ubuntu/ trusty-updates/main grub-p

Get:14 http://mirrors.digitalocean.com/ubuntu/ trusty-updates/main grub-p

Get:15 http://mirrors.digitalocean.com/ubuntu/ trusty-updates/main grub-c

Get:16 http://mirrors.digitalocean.com/ubuntu/ trusty-updates/main grub-c

Get:16 http://mirrors.digitalocean.com/ubuntu/ trusty-updates/main grub-c
```

Read Getting started with Ubuntu online: https://riptutorial.com/ubuntu/topic/848/getting-started-with-ubuntu

Chapter 2: Apache Server

Examples

Php 5.6 with Apache 2 Server on Ubuntu 16.04

This tutorial will guide you through the process from scratch. Please note some preliminary notes about this particular setup, useful in case that you already have some requested package:

- Is needed a version of php >=5.0 (I had troubles with php 7.0)
- Is requested any version of perl
- Is needed a version of Apache that supports php scripting

```
sudo apt-get update
sudo apt-get install perl apache2 zip gzip tar
sudo add-apt-repository ppa:ondrej/php
sudo apt update
sudo apt install php5.6 libapache2-mod-php5.6 php5.6-curl php5.6-gd php5.6-mbstring php5.6-
mcrypt php5.6-mysql php5.6-xml php5.6-xmlrpc
```

If you need to disable php 7.0 (or any different version) before proceeding, do the following:

```
a2dismod php7.0
```

Then proceed with:

```
a2enmod php5.6
```

That last command should give 'enabled' or 'already enabled' as output!

If you are installing it under a virtual machine on VMware, please do the following:

```
sudo apt-get install open-vm-tools
```

Now restart Apache:

```
service apache2 restart
```

Now Apache is installed and configured for php. Try to open a Browser and type <code>localhost</code>, it should display the test page for Apache.

To change the timezone for php, open the following file

```
sudo vim /etc/php/5.6/apache2/php.ini
```

And edit as following, uncommenting and editing with the timezone that you prefer:

```
date.timezone = Europe/Rome
```

Extra step 1

If you are installing a tarball (tar.gz) on Apache, unzip it into /var/www/html (it's the default root location)

```
sudo cp tarball.tar.gz /var/www/html/
cd /var/www/html/
sudo tar -zxf tarball.tar.gz
```

Extra step 2

Please note that you may also need to change permissions to www-data, because default permissions are to root and this can give some writing issues.

```
sudo chown -R www-data:www-data /var/www/
```

Read Apache Server online: https://riptutorial.com/ubuntu/topic/5194/apache-server

Chapter 3: Basic Terminal commands

Remarks

How to exract tar.gz/bz2/tbz files:

If Your File Extension is .tar.gz (or .tgz) use this command

```
tar xvzf file.tar.gz
```

- x: This tells tar to extract the files.
- v: This option will list all of the files one by one in the archive. The "v" stands for "verbose."
- z: The z option is very important and tells the tar command to uncompress the file (gzip).
- f: This options tells tar that you are going to give it a file name to work with.

The major difference between these two is that the z option has been replaced by the j option.

• j: This will decompress a bzip2 file.

Examples

Changing password of current user

To change password of current user just type:

```
sudo passwd
```

It will ask you to enter your current password:

```
[sudo] password for <user>:
```

And then you will be asked to enter new password:

```
Enter new UNIX password:
```

And finally you will be asked to re-enter your password:

```
Retype new UNIX password:
```

Note: By default, the keys you press at a command-line password prompt are not displayed at all. They are, however, still registered.

^{**} If Your File Extension is .tar.bz2 (or .tbz)**

Adding new user

adduser command adds a user to the system. In order to add a new user type:

```
sudo adduser <user_name>
```

example:

```
sudo adduser tom
```

After typing the above command, you will be prompted to enter details about the new user, such as new password, user Full name, etc.

Below is the information that user will be asked to fill in order to add a new user:

```
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
Changing the user information for tom
Enter the new value, or press ENTER for the default
    Full Name []: Test User
    Room Number []:
    Work Phone []:
    Home Phone []:
    Other []:
Is the information correct? [Y/n] y
```

11

(read as bangbang) is a shortcut to repeat the last command entered in console. It is especially useful to run previous command with some changes

```
adduser tom
```

adduser: Only root may add a user or group to the system.

Oh snap, what now? Well you could retype the command with sudo in front or you could try

```
sudo !!
```

equivalent to sudo "previous command entered"

This is especially useful if the command you just typed is especially long.

It can also be used to change a part of previous commands

```
cd path/to/wrong/directory
```

With

```
!!:s/wrong/right/
```

Will do

```
cd path/to/right/directory
```

List files and folders

To list files and folders inside current directory, we use 1s command:

```
user@host:/$ ls
bin boot cdrom dev etc home initrd.img lib lib64 lost+found
media mnt opt proc root run sbin srv sys tmp usr var vmlinuz
```

1s prints folder structure in simple view, color coded by type. The Ubuntu default colors for 1s are:

blue for directories, green for executable files, sky blue for linked files, yellow with a black background for devices, pink for image files, and red for archive files.

1s -la will print folder structure with additional info:

```
user@host:/$ ls -la
total 104
drwxr-xr-x 23 root root 4096 јул 25 12:40 .
drwxr-xr-x 23 root root 4096 јул 25 12:40 ..
drwxr-xr-x 2 root root 4096 јул 25 12:42 bin
drwxr-xr-x 4 root root 4096 jyπ 25 12:42 boot
drwxrwxr-x 2 root root 4096 јул 25 12:38 cdrom
drwxr-xr-x 16 root root 4300 јул 30 12:18 dev
drwxr-xr-x 134 root root 12288 јул 30 12:18 etc
drwxr-xr-x 5 root root 4096 јул 25 12:50 home
                         33 јул 25 12:40 initrd.img -> boot/initrd.img-3.19.0-39-generic
lrwxrwxrwx
           1 root root
drwxr-xr-x 23 root root 4096 јул 25 12:42 lib
drwxr-xr-x 2 root root 4096 дец 9 2015 lib64
drwx---- 2 root root 16384 јул 25 12:32 lost+found
drwxr-xr-x 3 root root 4096 јул 25 14:56 media
drwxr-xr-x 2 root root 4096 amp 11 2014 mnt
          3 root root 4096 јул 25 13:37 opt
drwxr-xr-x
dr-xr-xr-x 227 root root
                         0 јул 30 12:18 proc
drwx----- 2 root root 4096 јул 25 13:06 root
drwxr-xr-x 23 root root 780 јул 31 14:30 run
drwxr-xr-x 2 root root 12288 јул 25 12:46 sbin
drwxr-xr-x 2 root root 4096 дец 8 2015 srv
dr-xr-xr-x 13 root root
                          0 јул 30 12:18 sys
drwxrwxrwt 8 root root 4096 јул 31 16:05 tmp
drwxr-xr-x 10 root root 4096 дец 8 2015 usr
drwxr-xr-x 13 root root 4096 дец 9 2015 var
lrwxrwxrwx 1 root root 30 jyπ 25 12:40 vmlinuz -> boot/vmlinuz-3.19.0-39-generic
```

Another shortcut for ls -la is ll. However, this is not a builtin command. Rather its an alias common in ubuntu systems, in full its ls -laF. The alias will give you the same output as ls -la, but with additional slash (/) at the end of each folder, to help you with easier folder identification.

The 11 alias can be viewed in full by typing alias 11. As illustrated below. If the alias is not set then

the command will give an error.

```
vagrant@host ~ ->>
08:05 AM Mon Sep 12$ alias 11
alias 11='ls -alf'
```

Restart Ubuntu

You can restart ubuntu from command line. Below is example of restarting ubuntu immediately.

```
sudo reboot
```

You need to have sudo privilege in order to use this command.

Another commands with same results are sudo shutdown -r now and sudo init 6.

Install new software

APT and APT-GET

Easiest and fastest way is with apt-get command. This command may be considered as lower-level and "back-end", and support other APT-based tools. There are no fancy loaders, only basic progress info. This is fastest way for installing apps.

Usage:

sudo apt-get install deluge openssh-server

This command will install two new apps: deluge and openssh-server. You can install as many apps as you want in only one line of commands.

"Fancy" way of the same process is wits apt:

sudo apt install deluge openssh-server

Result is the same, but interaction with users is different from previous command. apt is designed for end-users (human) and it's output may be changed between versions.

Both commands will handle dependencies automatically.

```
user@host:~$ sudo apt install vlc
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
   libtimezonemap1 sbsigntool
Use 'apt-get autoremove' to remove them.
The following extra packages will be installed:
   libbasicusageenvironment0 libcddb2 libcrystalhd3 libdvbpsi8 libebm14
   libfreerdp1 libgnutls28 libgroupsock1 libhogweed2 libiso9660-8
   liblivemedia23 libmatroska6 libproxy-tools libresid-builder0c2a libsidplay2
```

```
libssh2-1 libtar0 libupnp6 libusageenvironment1 libva-x11-1 libvcdinfo0
 libvlc5 libvlccore7 libxcb-composite0 libxcb-keysyms1 libxcb-randr0
 libxcb-xv0 vlc-data vlc-nox vlc-plugin-notify vlc-plugin-pulse
Suggested packages:
 firmware-crystalhd freerdp-x11 gnutls-bin videolan-doc
Recommended packages:
 libdvdcss2
The following NEW packages will be installed:
 libbasicusageenvironment0 libcddb2 libcrystalhd3 libdvbpsi8 libebm14
 libfreerdp1 libgnutls28 libgroupsock1 libhogweed2 libiso9660-8
 liblivemedia23 libmatroska6 libproxy-tools libresid-builder0c2a libsidplay2
 libssh2-1 libtar0 libupnp6 libusageenvironment1 libva-x11-1 libvcdinfo0
 libvlc5 libvlccore7 libxcb-composite0 libxcb-keysyms1 libxcb-randr0
 libxcb-xv0 vlc vlc-data vlc-nox vlc-plugin-notify vlc-plugin-pulse
0 upgraded, 32 newly installed, 0 to remove and 308 not upgraded.
Need to get 10,5 MB of archives.
After this operation, 51,7 MB of additional disk space will be used.
Do you want to continue? [Y/n]
```

DPKG

dpkg stands for Debian Package. This is basic, low-level package installer for Debian and other Debian derivatives. dpkg have many options, but we are interested in -i, which stands for install.

sudo dpkg -i google-chrome-stable.deb

You can install .deb packages with dpkg.

If you get an error while installing <code>.deb</code> package, in most cases you don't have some dependencies. To get rid of this error and install app correctly, run <code>sudo apt-get -f install</code> without any other parameter. This will search for dependencies and install them before <code>.deb</code>. Installation will continue and app will be installed.

Reading a text file

Using Ubuntu you have different ways to read a text file, all similar but useful in different context.

cat

This is the simplest way to read a text file; it simply output the file content inside the terminal. Be careful: if the file is huge, it could take some time to complete the printing process! If you need to stop it, you can always press CTRL+C. Note that if you need to navigate through the document, you need to scroll the terminal output.

```
cat file_name.txt
```

more

An improved version of cat. If your file is longer than the display of the terminal, you can simply type

```
more file_name.txt
```

and you'll have a downwards scrolling display of text, in which you can move down by pressing ENTER.

less

This is the more command with some enhancements, and is typically a better choice than cat for reading medium to big documents. It opens file showing them from the beginning, allowing to scroll up/down/right/left using arrows.

```
less file_name.txt
```

Once the document is open, you can type some commands to enable some useful features, such as:

- q: close immediately the opened file.
- /word: search 'word' inside the document. Pressing n you can go to the following occurrence
 of 'word'.
- ENTER: scrolls down of a single line.
- r: repaints the file content, if it's changing while reading.

This is the best choice for reading medium to big documents.

tail

This software shows only the last part of the file. It's useful if you need to read just a few lines in the end of a very big document.

```
tail file_name.txt
```

The above command will show last 10 lines(default) of the file. To read last 3 lines, we need to write:

```
tail -3 file_name.txt
```

There's another use case where this command is extremely useful. Imagine to have a empty document, that is filled while you are watching it; if you want to see new lines in real time while they are written to the file without reopening it, just open the file with the <code>-f</code> option. It's really useful if you are watching some logs, for example.

```
tail -f file_name.txt
```

This is the best choice for reading growing documents.

head

This command does the opposite task of tail. For example the following command will show the

first 15 lines of the file file_name.txt.

```
head -15 file_name.txt
```

tailf

This is an alternative for tail of filename .It follows the file changes as they occur and shows you the output.

vim

Some of us like vi, some others like vim. This is not just for reading files, you can also edit them! Now let's see only some features that regards reading documents. Please note that vim offers syntax highlighting.

```
vim file_name.txt
```

Once the file is opened, be careful! Don't start typing, or you will mess everything up! In fact, even if you can see the cursor, you have to press i to start typing and ESC after you finished typing. By the way, now I'm going to showing you some useful commands that concern reading (not writing):

- : : you need to type colon before inserting each of the following commands!
- q!: exit from the file without asking a confirm. It's the same as q if you didn't edit the text.
- /word : search for 'word' inside the document.
- 230 : goes to line '230'.

Tip: a shortcut to insert a colon and then type $_{\rm wq}!$ for writing edits to file and quit without asking a confirm, you can hold down <code>SHIFT</code> and press twice $_{\rm z}.$

This is the best choice for reading code files.

Search the exact name of a packet for apt-get

If you know you need a packet <packet>, but you don't know the exact name <packet-exact-name>, instead of searching with Google try with the following:

```
sudo apt-get update
apt-cache search <packet>
```

This will return you a list of packets name with a description. Once you have identified the exact packet name <packet-exact-name> install it normally:

```
sudo apt-get install <packet-exact-name>
```

Limit output to lines with the desired string

If you are running a command that returns hundreds of lines, but your interest is just on the lines that contains the word <word>, you should definitely use grep! For example try running:

```
ifconfig -a
```

Check the output, that could be only a few lines or quite long, if you have a server with multiple network interfaces. To show (for example purpose) only the lines that contain 'HWaddr', try using grep:

```
ifconfig -a | grep HWaddr
```

Now the output should be much shorter! Generally speaking, you could use grep in the following way:

```
<command-with-output> | grep <word>
```

Compress files and folders using the tar command

Use the tar (tape archive) command to compress your files and folders. It is similar to creating .ZIP files in Windows environment.

```
Syntax: tar -zcvf <output tar file> <source file>
Example: tar -zcvf outputfile.tar.gz source file
```

Here's what those switches actually mean:

- -c: Create an archive.
- -z: Compress the archive with gzip.
- -v: Display progress in the terminal while creating the archive, also known as "verbose" mode. The v is always optional in these commands, but it's helpful.
- **-f**: Allows you to specify the filename of the archive.

Read Basic Terminal commands online: https://riptutorial.com/ubuntu/topic/3179/basic-terminal-commands

Chapter 4: Networking

Examples

Set proxy from CLI

If you need to add proxy of your network in a reboot-persistent way, edit:

```
sudo vim /etc/environment
```

Press i and after the row with PATH variable insert:

```
http_proxy=http://<proxy_server>:<port>/
https_proxy=http://<proxy_server>:<port>/
ftp_proxy=http://<proxy_server>:<port>/
```

Then press ESC, enter: and write wq! for save and exit from vim.

If you need to use wget, add the same three rows to (eventually uncommenting them inside the file):

```
sudo vim /etc/wgetrc
```

Show network interfaces

If you want to show active network interfaces, type:

```
ifconfig
```

If you want to show also network interfaces that are down, type:

```
ifconfig -a
```

Configure network interface from CLI

You could use ethtool, but they are not going to be reboot persistent. If you want to achieve this, edit the following file:

```
sudo vim /etc/network/interfaces
```

And edit the file with needed informations:

```
auto <interface_name>
iface <interface_name> inet static
address <ip_address>
netmask <netmask>
```

```
network <network>
gateway <gateway>
dns_nameservers <server_1> <server_2> <server_n>
dns_naesearch <server_name>
```

Then restart interface to make changes running:

```
sudo ifdown <interface_name> && sudo ifup <interface_name>
```

Read Networking online: https://riptutorial.com/ubuntu/topic/4972/networking

Chapter 5: Set up SSL

Remarks

a2ensite - a script that enables the specified site (which contains a block) within the apache2 configuration by creating symlinks within /etc/apache2/sites-enabled

apache2 - popular web server. Alternative web servers are tomcat, nginx, etc.

openssl - SSL works by using a private key to encrypt data transferred over an SSL-enabled connection, thus thwarting eavesdropping of information. Use openssl to generate keys and certificates.

vim - a popular text editor

Examples

Set up ssl for local testing in apache

Enable the module by typing:

```
sudo a2enmod ssl
```

Restart the web server (apache2) so the change is recognized:

```
sudo service apache2 restart
```

Optional (but a good idea): Create a directory that will contain our new certificate files:

```
sudo mkdir /etc/apache2/ssl
```

Create the key and self-signed certificate in that directory:

```
sudo openssl req -x509 -nodes -days 365 -newkey rsa:2048 -keyout
/etc/apache2/ssl/your_domain.key -out /etc/apache2/ssl/your_domain.crt
```

You will be asked a series of questions for your security certificate. Answer each one as you are prompted, but with your own company's information. Here is an example:

```
Country Name (2 letter code) [AU]:US
State or Province Name (full name) [Some-State]:Pennsylvania
Locality Name (eg, city) []:Philadelphia
```

```
Organization Name (eg, company) [Internet Widgits Pty Ltd]:Cool Company Organizational Unit Name (eg, section) []:IT Common Name (e.g. server FQDN or YOUR name) []:test_domain.com Email Address []:my_email@test_domain.com
```

Open the file with root privileges:

```
sudo vim /etc/apache2/sites-available/default-ssl.conf
```

Configure your virtual host by adding your server details and certificate locations to the defaultssl.conf file:

```
<IfModule mod ssl.c>
    <VirtualHost _default_:443>
        ServerAdmin admin@example.com
        ServerName your_domain.com
        ServerAlias www.your_domain.com
        DocumentRoot /var/www/html
        ErrorLog ${APACHE_LOG_DIR}/error.log
        CustomLog ${APACHE_LOG_DIR}/access.log combined
        SSLEngine on
        SSLCertificateFile /etc/apache2/ssl/your_domain.crt
        SSLCertificateKeyFile /etc/apache2/ssl/your_domain.key
        <FilesMatch "\.(cgi|shtml|phtml|php)$">
            SSLOptions +StdEnvVars
        </FilesMatch>
        <Directory /var/www/html>
           SSLOptions +StdEnvVars
           DirectoryIndex index.php
           AllowOverride All
            Order allow, deny
            Allow from all
        </Directory>
        BrowserMatch "MSIE [2-6]" \
                       nokeepalive ssl-unclean-shutdown \
                        downgrade-1.0 force-response-1.0
        BrowserMatch "MSIE [17-9]" ssl-unclean-shutdown
    </VirtualHost>
</TfModule>
```

Save your changes and enter the following to enable your new ssl configuration:

```
sudo a2ensite default-ssl.conf
```

To activate the new configuration, run:

```
service apache2 reload
```

Now, attempt to access your site locally using https!

Read Set up SSL online: https://riptutorial.com/ubuntu/topic/6823/set-up-ssl

Chapter 6: Software Installation

Syntax

- sudo apt-get install <package_name>
- sudo apt-get install <package1_name> <package2_name> <package3_name>
- apt-get [options] [-o config=string] [-c=cfgfile] command [pkg]

Parameters

Command	Description
update	Used to re-synchronize the package index files from their sources. An update should always be performed before an upgrade or dist-upgrade.
upgrade	Used to install the newest versions of all packages currently installed on the system.
install	This option is followed by one or more packages desired for installation.
remove	Identical to install except that packages are removed instead of installed.
Options	Description
-y,yes, assume-yes	Automatic yes to prompts. Assume "yes" as answer to all prompts and run non-interactively.
-h,help	Show a short usage summary.

Examples

Install software using APT

Installing software via APT (Advanced Package Tool) also know as 'apt-get'. To install Mozilla Firefox:

- 1. Open a Terminal (Ctrl+Alt+T)
- 2. Type sudo apt-get install firefox
- 3. Hit Enter
- 4. When it asks to install type 'Y' to confirm.

Software will be downloaded and installed.

List all installed packages

To list all the packages installed in ubuntu, type below command

```
$ apt list --installed
```

Output will show all the installed packages.

```
Listing... Done
accountsservice/trusty-updates, now 0.6.35-0ubuntu7.3 i386 [installed]
acl/trusty, now 2.2.52-1 i386 [installed, automatic]
acpid/trusty, now 1:2.0.21-1ubuntu2 i386 [installed]
adduser/trusty, now 3.113+nmu3ubuntu3 all [installed]
apparmor/trusty-updates, trusty-security, now 2.10.95-0ubuntu2.6~14.04.1 i386 [installed]
apport/trusty-security, now 2.14.1-0ubuntu3.23 all [installed, upgradable to: 2.14.1-
0ubuntu3.24]
apport-symptoms/trusty, now 0.20 all [installed]
apt/trusty-updates, trusty-security, now 1.0.1ubuntu2.17 i386 [installed]
apt-transport-https/trusty-updates, trusty-security, now 1.0.1ubuntu2.17 i386 [installed]
apt-utils/trusty-updates, trusty-security, now 1.0.1ubuntu2.17 i386 [installed]
apt-xapian-index/trusty, now 0.45ubuntu4 all [installed]
aptitude/trusty, now 0.6.8.2-1ubuntu4 i386 [installed]
```

Read Software Installation online: https://riptutorial.com/ubuntu/topic/5973/software-installation

Chapter 7: Support lifespan

Remarks

New versions of Ubuntu are released by Canonical every 6 months. Every two years, the release is a Long Term Support version.

Support lifespan

- Normal release supported for 9 months
- Long Term Support (LTS) release
 - LTS releases for Ubuntu Desktop, Ubuntu Server, Ubuntu Core, and Ubuntu Kylin are supported for 5 years.
 - LTS releases for Kubuntu, Xubuntu, Ubuntu MATE and Lubuntu are supported for 3 years.

What support means

- Updates for potential security problems and bugs (not new versions of software)
- Availability of commercial support contracts from Canonical
- Support by Landscape, Canonical's enterprise oriented server management tool set.

Examples

Currently supported releases

The table shows a list of currently supported release showing both original distribution releases (e.g. Ubuntu 14.04) and point releases (e.g. 14.04.3). The Ubuntu versions which are still supported will be delivered security updates.

Point releases include support for new hardware as well as rolling up all the updates published in that series to date. So a fresh install of a point release will work on newer hardware and will also not require a big download of additional updates.

Version	Code name	Release date	End of life date
Ubuntu 16.04 LTS	Xenial Xerus	April 21, 2016	April 2021
Ubuntu 14.04.3 LTS	Trusty Tahr	August 6, 2015	August 2016
Ubuntu 14.04.2 LTS	Trusty Tahr	February 20, 2015	August 2016
Ubuntu 14.04.1 LTS	Trusty Tahr	July 24, 2014	April 2019
Ubuntu 14.04 LTS	Trusty Tahr	April 17, 2014	
Ubuntu 12.04.5 LTS	Precise Pangolin	August 7, 2014	April 2017

Version	Code name	Release date	End of life date
Ubuntu 12.04.4 LTS	Precise Pangolin	February 6, 2014	
Ubuntu 12.04.3 LTS	Precise Pangolin	August 23, 2013	
Ubuntu 12.04.2 LTS	Precise Pangolin	February 14, 2013	
Ubuntu 12.04.1 LTS	Precise Pangolin	August 24, 2012	
Ubuntu 12.04 LTS	Precise Pangolin	April 26, 2012	

Read Support lifespan online: https://riptutorial.com/ubuntu/topic/3794/support-lifespan

Credits

S. No	Chapters	Contributors
1	Getting started with Ubuntu	Anagh Hegde, Community, edwinksl, hellyale, James Wong, karel, kelvinelove, kzh, Nicholas Qiao
2	Apache Server	Andrea Romagnoli
3	Basic Terminal commands	Aleksandar, Anagh Hegde, Andrea Romagnoli, fitojb, Gideon Maina, hellyale, johnao, karel, Reboot, roottraveller, Snehasish Karmakar, sudo bangbang, Utpal Bhatt
4	Networking	Andrea Romagnoli, GAD3R, RamenChef
5	Set up SSL	Mateusz Piotrowski, Rebecca Close
6	Software Installation	Ralph Bisschops, Reboot
7	Support lifespan	karel