

LEX AND YACC TOOLS INSTALLATION

Compiling and Running Lex Program.

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Outline

- **Setting up the tools:**
 - On Mac.
 - On Windows.
- **Compiling and running Lex program.**

Setting up the Tools On Mac

- If you are on Mac:
 - you only have to Install Xcode.
 - You can jump to slide #22

Setting up the Tools on Windows

- If you are on Mac or Linux, you don't need to do the steps below.
- If you are on Windows, you need to create Linux environment by following the steps below:
 1. Download Ubuntu from <http://www.ubuntu.com/download/desktop>
 2. Download virtual box from <https://www.virtualbox.org/wiki/Downloads>
If *Virtualization Technology (intel VT)* is disabled in your system, you should enable it through BIOS settings.
 3. Set up Lex and Yacc tools via terminal commands.



Download Ubuntu Desktop

Ubuntu 16.04.1 LTS

Download the latest version of Ubuntu, for desktop PCs and laptops. LTS stands for long-term support – which means five years of free security and maintenance updates, guaranteed.

[Ubuntu 16.04 LTS release notes](#)

Recommended system requirements:

- ✓ 2 GHz dual core processor or better
- ✓ 2 GB system memory
- ✓ 25 GB of free hard drive space
- ✓ Either a DVD drive or a USB port for the installer media

2

[Download](#)

[Alternative downloads and torrents](#)

\$

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I support LoCo teams, UbuCons and other events, upstream projects and all the good work the community does.

 \$

Tip to Canonical

Hats off for making Ubuntu possible. Keep it up.

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2. Downloading VirtualBox



VirtualBox

Download VirtualBox

Here, you will find links to VirtualBox binaries and its source code.

VirtualBox binaries

By downloading, you agree to the terms and conditions of the respective license.

- **VirtualBox platform packages.** The binaries are released under the terms of the GPL version 2.
 - **VirtualBox 5.1.6 for Windows hosts** [↪ x86/amd64](#)
 - **VirtualBox 5.1.6 for OS X hosts** [↪ amd64](#)
 - **VirtualBox 5.1.6 for Linux hosts**
 - **VirtualBox 5.1.6 for Solaris hosts** [↪ amd64](#)
- **VirtualBox 5.1.6 Oracle VM VirtualBox Extension Pack** [↪ All supported platforms](#)
 Support for USB 2.0 and USB 3.0 devices, VirtualBox RDP and PXE boot for Intel cards. See [this chapter from the User Manual](#) for an introduction to this Extension Pack. The Extension Pack binaries are released under the [VirtualBox Personal Use and Evaluation License \(PUEL\)](#).
Please install the extension pack with the same version as your installed version of VirtualBox:
 If you are using **VirtualBox 5.0.26**, please download the extension pack [↪ here](#).
- **VirtualBox 5.1.6 Software Developer Kit (SDK)** [↪ All platforms](#)

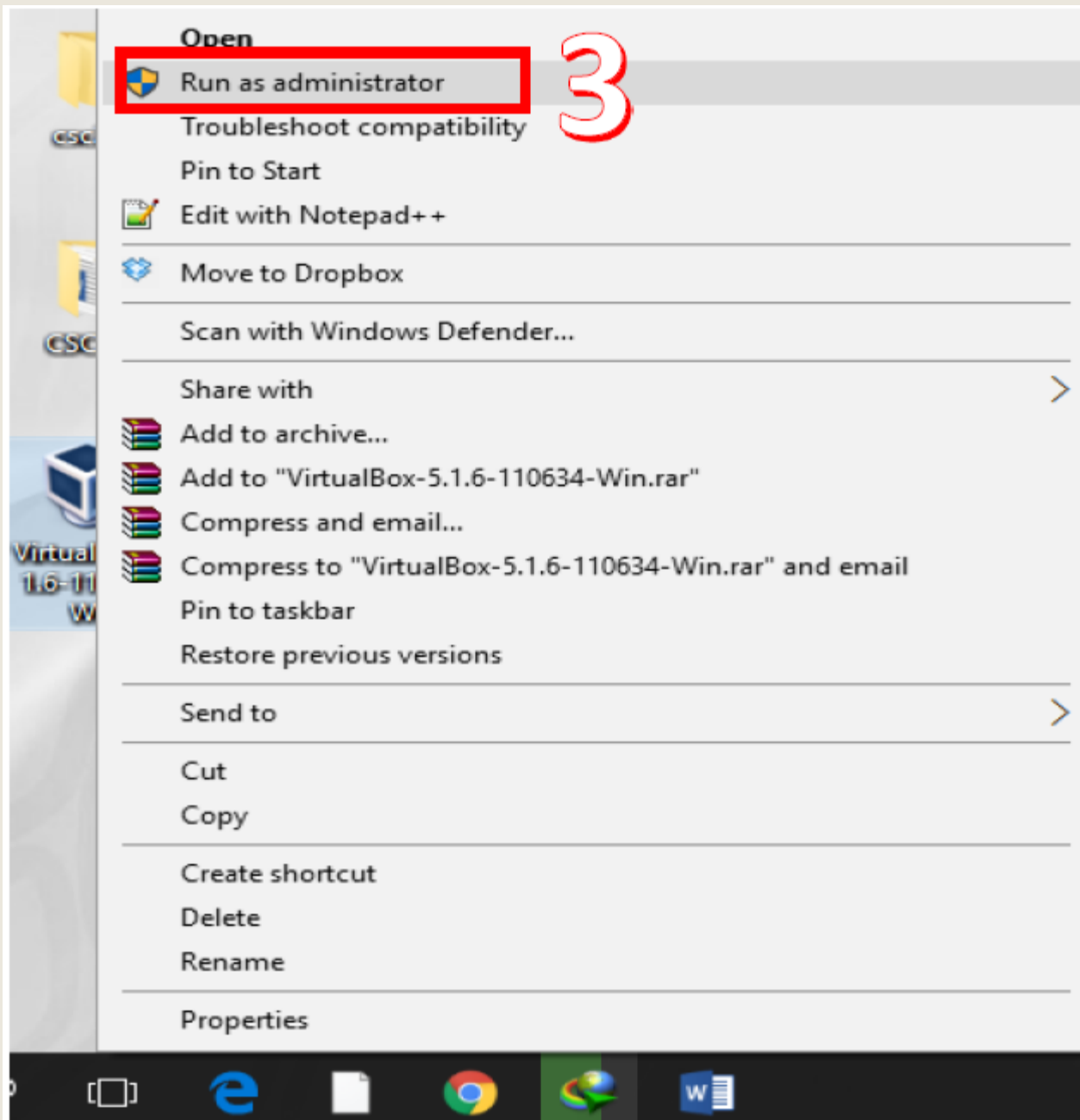
See the [changelog](#) for what has changed.

You might want to compare the [SHA256](#) checksums or the [MD5](#) checksums to verify the integrity of downloaded packages. *The SHA256 checksums should be favored as the MD5 algorithm must be treated as insecure!*

Note: After upgrading VirtualBox it is recommended to upgrade the guest additions as well.

User Manual

- About
- Screenshots
- Downloads
- Documentation
 - End-user docs
 - Technical docs
- Contribute
- Community

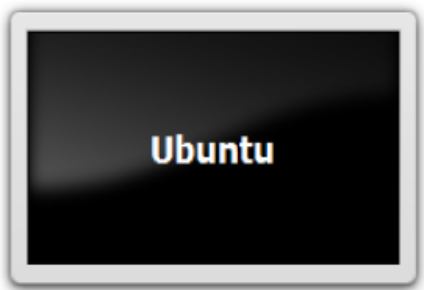


64 **Ubuntu**
 Powered Off

General

Name: Ubuntu
 Operating System: Ubuntu (64-bit)

Preview



Base Boot Accel

Video Remo Video

Cont IDE Cont SAT

Host Cont

Adap

Network Adapter provides wireless local area networking.)

USB
 USB Controller: OHCI
 Device Filters: 0 (0 active)

Shared folders
 None

?

← Create Virtual Machine

Name and operating system

2

Please choose a descriptive name for the new virtual machine and select the type of operating system you intend to install on it. The name you choose will be used throughout VirtualBox to identify this machine.

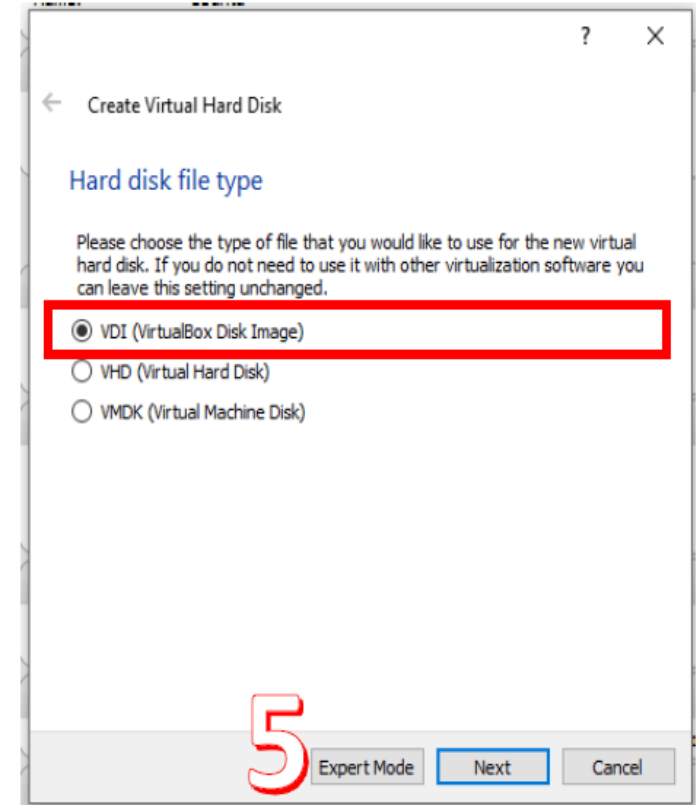
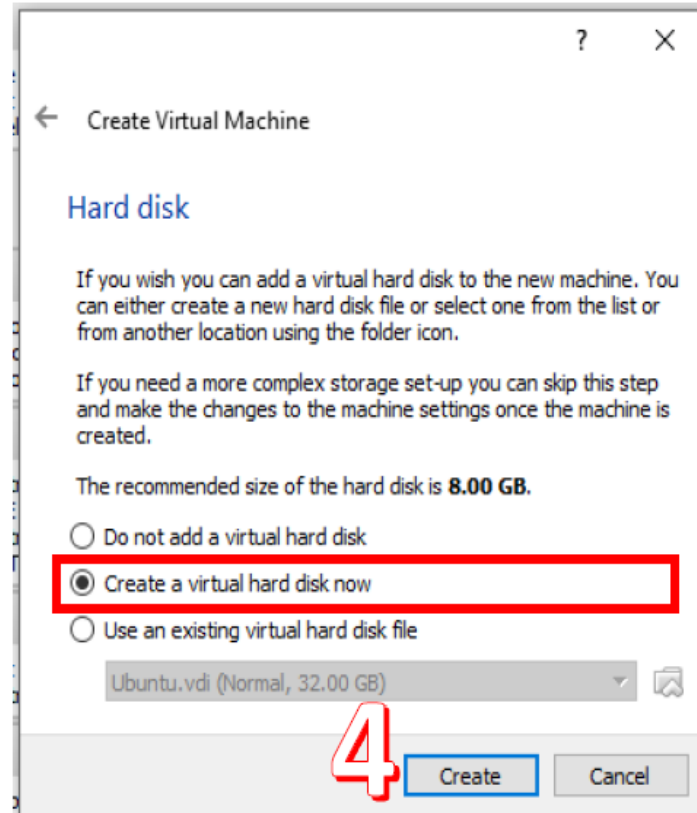
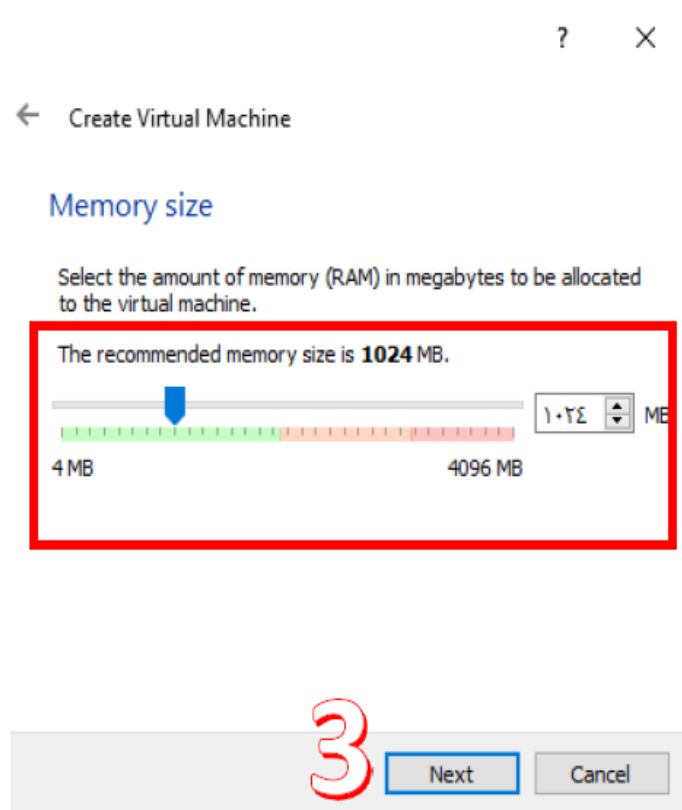
Name: <not selected>

Type: Linux

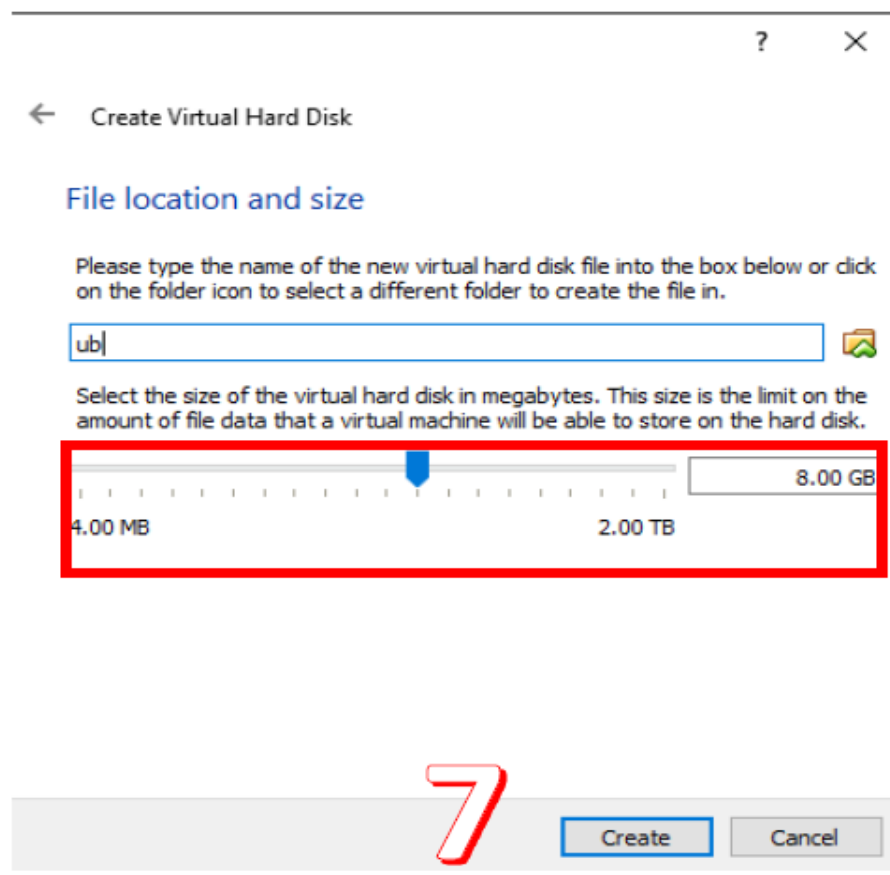
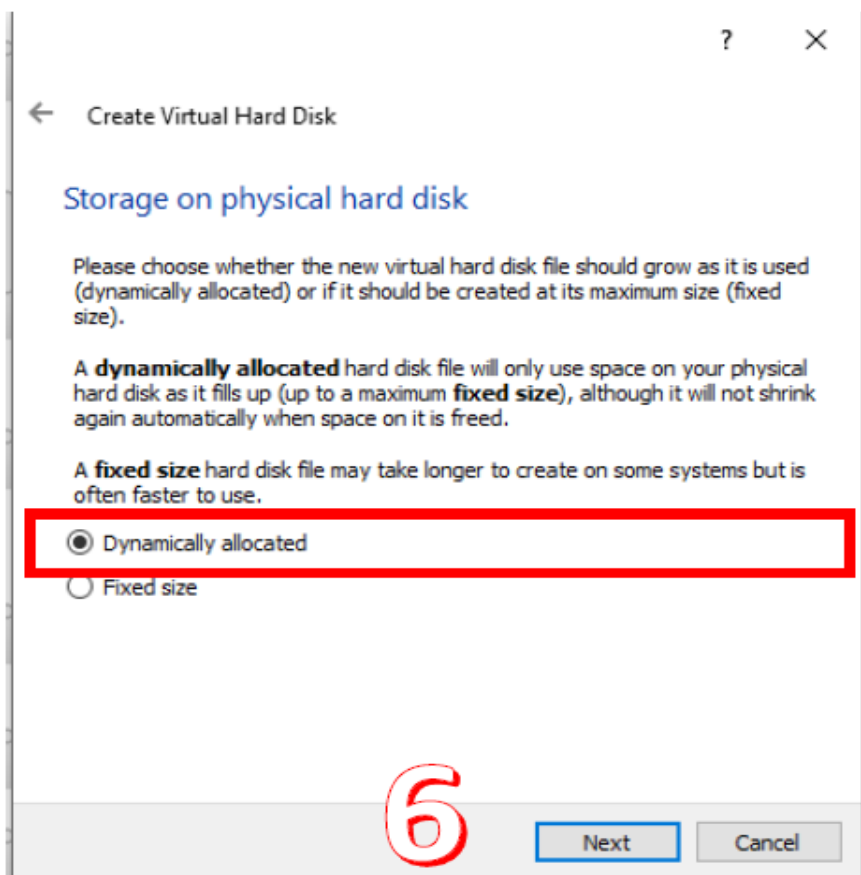
Version: Ubuntu (64-bit)

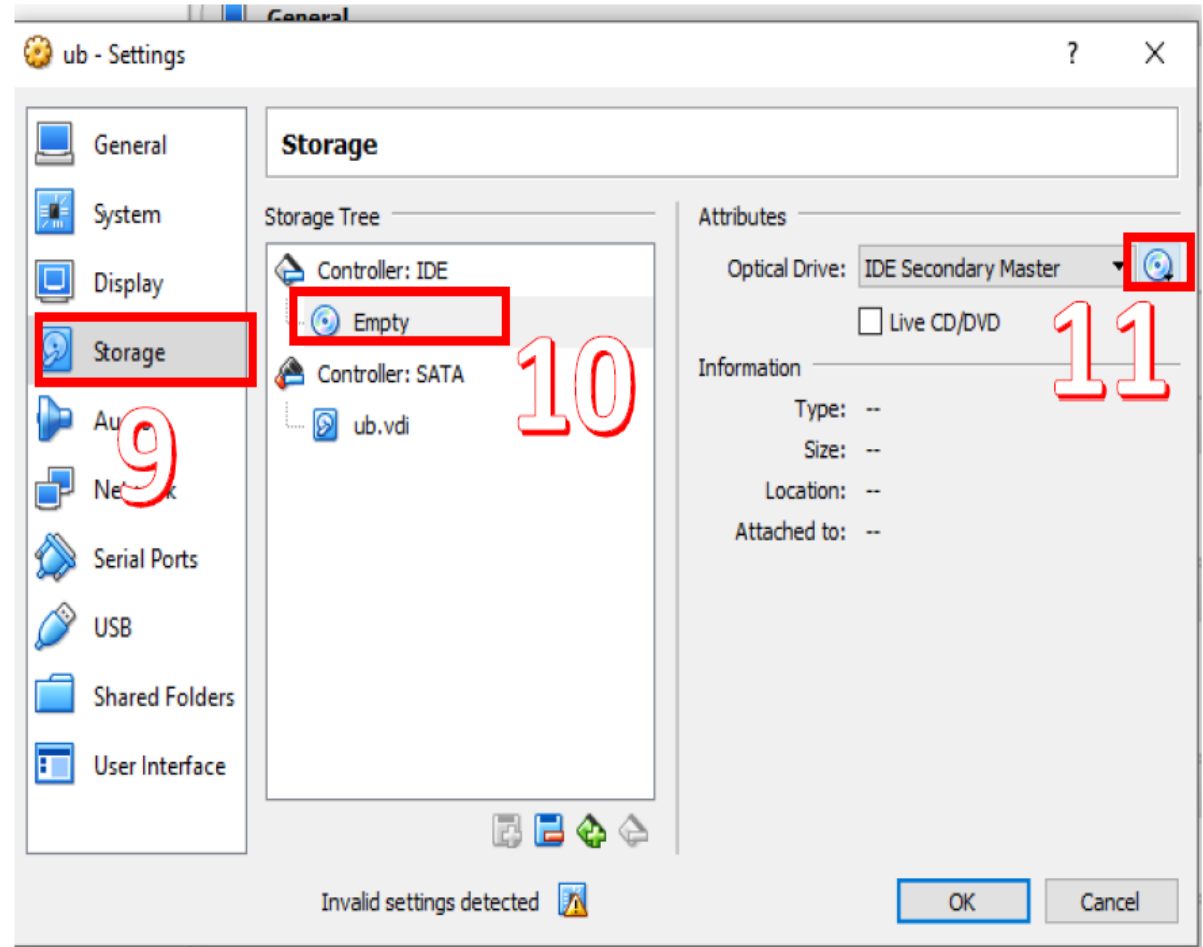
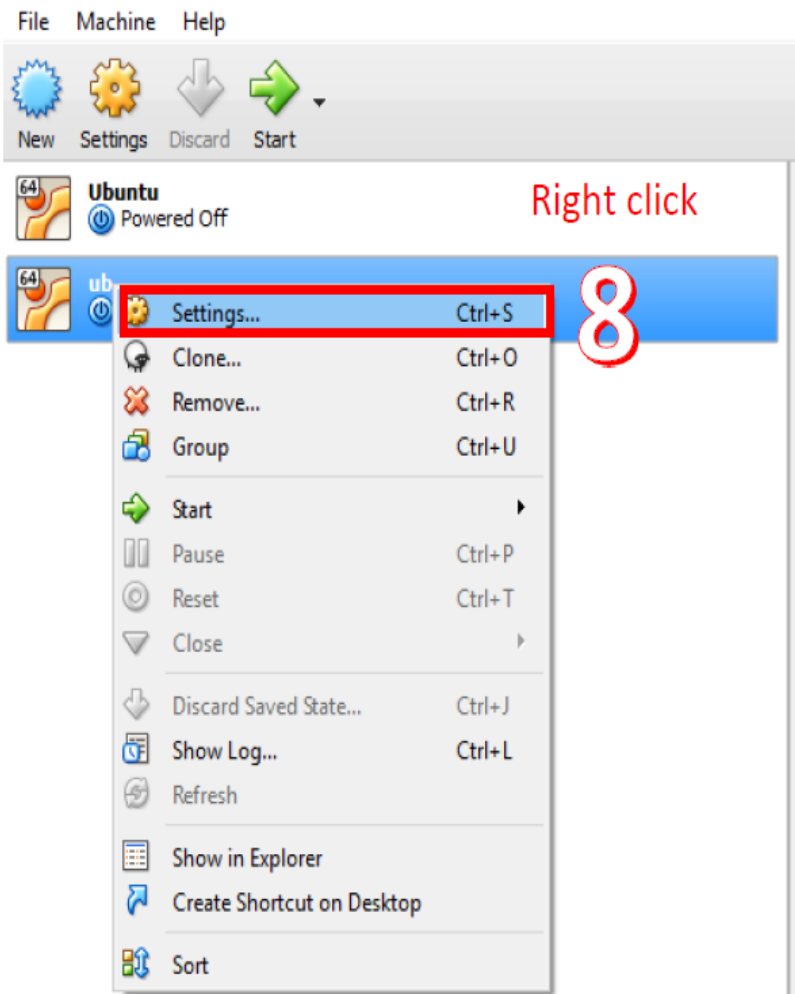
Expert Mode Next Cancel

2. Downloading VirtualBox



2. Downloading VirtualBox





Storage

Storage Tree

- Controller: IDE
 - Empty
- Controller: SATA
 - ub.vdi

Attributes

Optical Drive: IDE Secondary Master

Live CD/DVD

Information

Type: --
Size: --
Location: --
Attached to: --

Invalid settings detected

OK Cancel

Choose Virtual Optical Disk File...

Host Drive 'E':
ub.iso

Remove Disk from Virtual Drive

12

Please choose a virtual optical disk file

This PC > Desktop > CSC340

Name	Date modified	Type
Dropbox		
OneDrive		
This PC		
Desktop		
Documents		
Downloads		
Music		
Pictures		
Videos		
WINDOWS (C:)		
Data (D:)		
ub.iso	۳۷/۱۲/۲۰۰۳:۳۰	WinRAR archive

File name: ub.iso

All virtual optical disk files (*.dr

Open Cancel

13

File Machine Help

New Settings Discard Start

64 Ubuntu Powered Off

64 ub Powered Off

14

Install (as superuser)

Welcome

- Asturiano
- Bahasa Indonesia
- Bosanski
- Català
- Čeština
- Cymraeg
- Dansk
- Deutsch
- Eesti
- English**
- Español
- Esperanto
- Euskara
- Français
- Gaeilge
- Galego
- Hrvatski
- Íslenska
- Italiano



Try Ubuntu



Install Ubuntu

You can try Ubuntu without making any changes to your computer, directly from this CD.

Or if you're ready, you can install Ubuntu alongside (or instead of) your current operating system. This shouldn't take too long.

You may wish to read the [release notes](#).

✖ Install (as superuser)

Preparing to install Ubuntu

Download updates while installing Ubuntu

This saves time after installation.

Install third-party software for graphics and Wi-Fi hardware, Flash, MP3 and other media

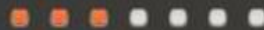
This software is subject to license terms included with its documentation. Some is proprietary.

Fluendo MP3 plugin includes MPEG Layer-3 audio decoding technology licensed from Fraunhofer IIS and Technicolor SA.

Quit

Back

Continue



Right Ctrl



05:16 μ 37/12/17

Install (as superuser)

Installation type

This computer currently has no detected operating systems. What would you like to do?

- Erase disk and install Ubuntu
Warning: This will delete all your programs, documents, photos, music, and any other files in all operating systems.
- Encrypt the new Ubuntu installation for security
You will choose a security key in the next step.
- Use LVM with the new Ubuntu installation
This will set up Logical Volume Management. It allows taking snapshots and easier partition resizing.

- Something else
You can create or resize partitions yourself, or choose multiple partitions for Ubuntu.

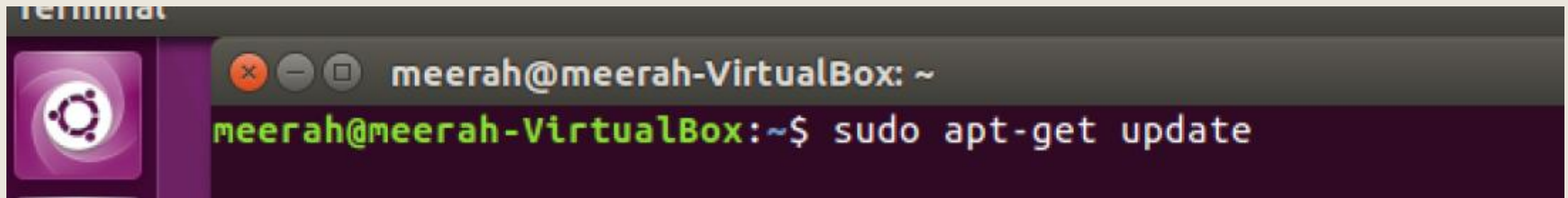
Quit Back **Install Now**



3. Setting up Lex and Yacc Tools via Terminal Commands.

3. Setting up Lex and Yacc Tools via Terminal Commands.

- Connect your Ubuntu to the Internet then open terminal (**Ctrl+Alt+t**)
- Type the following command: **sudo apt-get update**



```
meerah@meerah-VirtualBox: ~$ sudo apt-get update
```

- Type the password for your Linux Account and press Enter, if ask for your password.
- Type “y” and press Enter, ifask for your permissions to update.

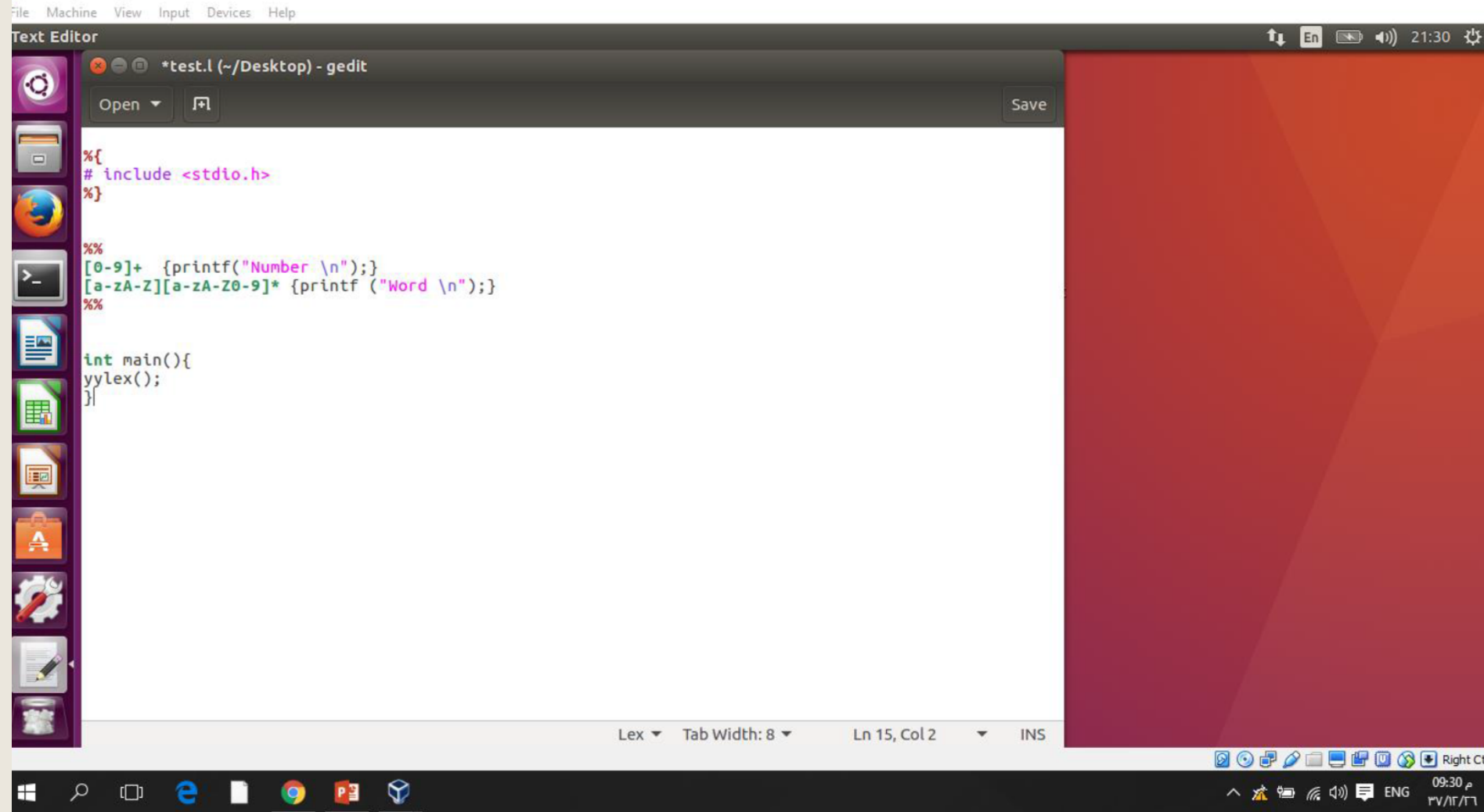
3. Setting up Lex and Ycc Tools via Terminal Commands.

- To install Lex tool, type the following command in terminal :
`sudo apt-get install flex`
 - Type “y” and press Enter, if ask for confirmation.
- To install Yacc tool, type the following command in terminal :
`sudo apt-get install bison`
 - If the servers of bison are down and give errors, you can use any of the following alternatives commands:
 - `sudo apt-get install byacc`
 - `sudo apt-get install bison++`
 - `sudo apt-get install byacc-j`

Compiling and Running Lex File

- Right-click on the desktop and open a new document.
- Rename the file with (test.l), the file extension is small L.
- Write the code shown in the next slide.

Compiling and Running Lex File



```
File Machine View Input Devices Help
Text Editor
*test.l (~/Desktop) - gedit
Open Save
%[
# include <stdio.h>
%}

%%
[0-9]+ {printf("Number \n");}
[a-zA-Z][a-zA-Z0-9]* {printf ("Word \n");}
%%

int main(){
yylex();
}
```

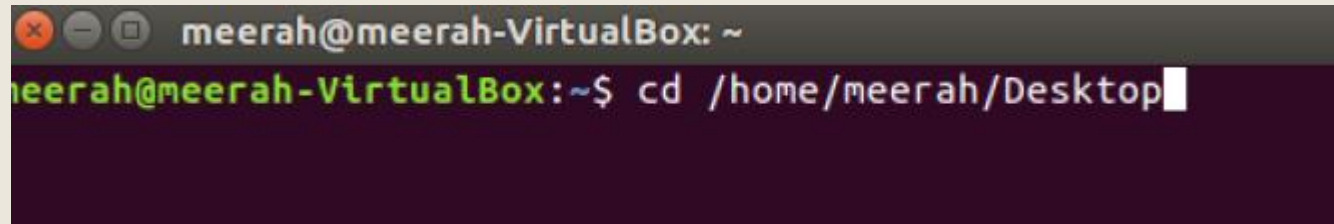
Lex Tab Width: 8 Ln 15, Col 2 INS

09:30 م 13/12/17

Compiling and Running Lex File

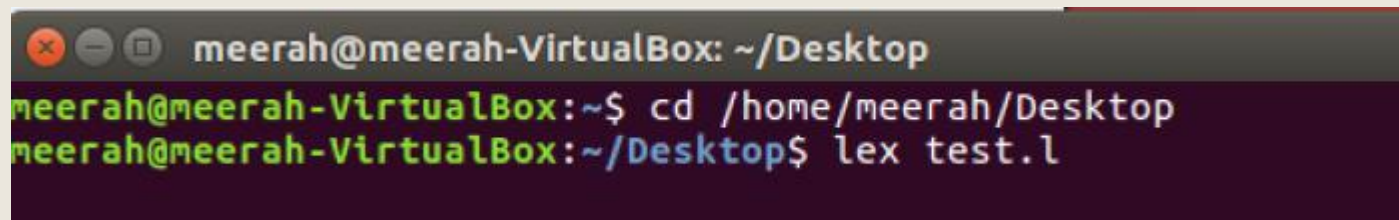
Open the terminal and use CD command to change the current directory of the terminal

Cd /home/YourMachineName/Desktop

A terminal window with a dark background. The title bar shows 'meerah@meerah-VirtualBox: ~'. The prompt is 'meerah@meerah-VirtualBox:~\$' and the command 'cd /home/meerah/Desktop' is entered with a cursor at the end.

```
meerah@meerah-VirtualBox: ~  
meerah@meerah-VirtualBox:~$ cd /home/meerah/Desktop
```

Use lex command as following to run the tool:

A terminal window with a dark background. The title bar shows 'meerah@meerah-VirtualBox: ~/Desktop'. The prompt is 'meerah@meerah-VirtualBox:~\$' and the command 'cd /home/meerah/Desktop' is entered. The next prompt is 'meerah@meerah-VirtualBox:~/Desktop\$' and the command 'lex test.l' is entered.

```
meerah@meerah-VirtualBox: ~/Desktop  
meerah@meerah-VirtualBox:~$ cd /home/meerah/Desktop  
meerah@meerah-VirtualBox:~/Desktop$ lex test.l
```


Compiling and Running Lex File

Compile the generated file (lex.yy.c) using the compilation command as shown below:

```
meerah@meerah-VirtualBox:~/Desktop$ gcc lex.yy.c -ll  
meerah@meerah-VirtualBox:~/Desktop$
```

Run the generated file (a.out) using the Run command as shown below :

```
meerah@meerah-VirtualBox:~/Desktop$ ./a.out
```

Running the Output File

- Enter different inputs and explore the given outputs.

```
meerah@meerah-VirtualBox:~/Desktop$ ./a.out
32313 fsfsfs
Number
Word

a323
Word

232
Number

fsfsfs
Word

3231432 jkh 423 k4
Number
Word
Number
Word
```