

modified date : 5.11.2017

teacher assistant : Sung Hoon Im

How to install cross compiler

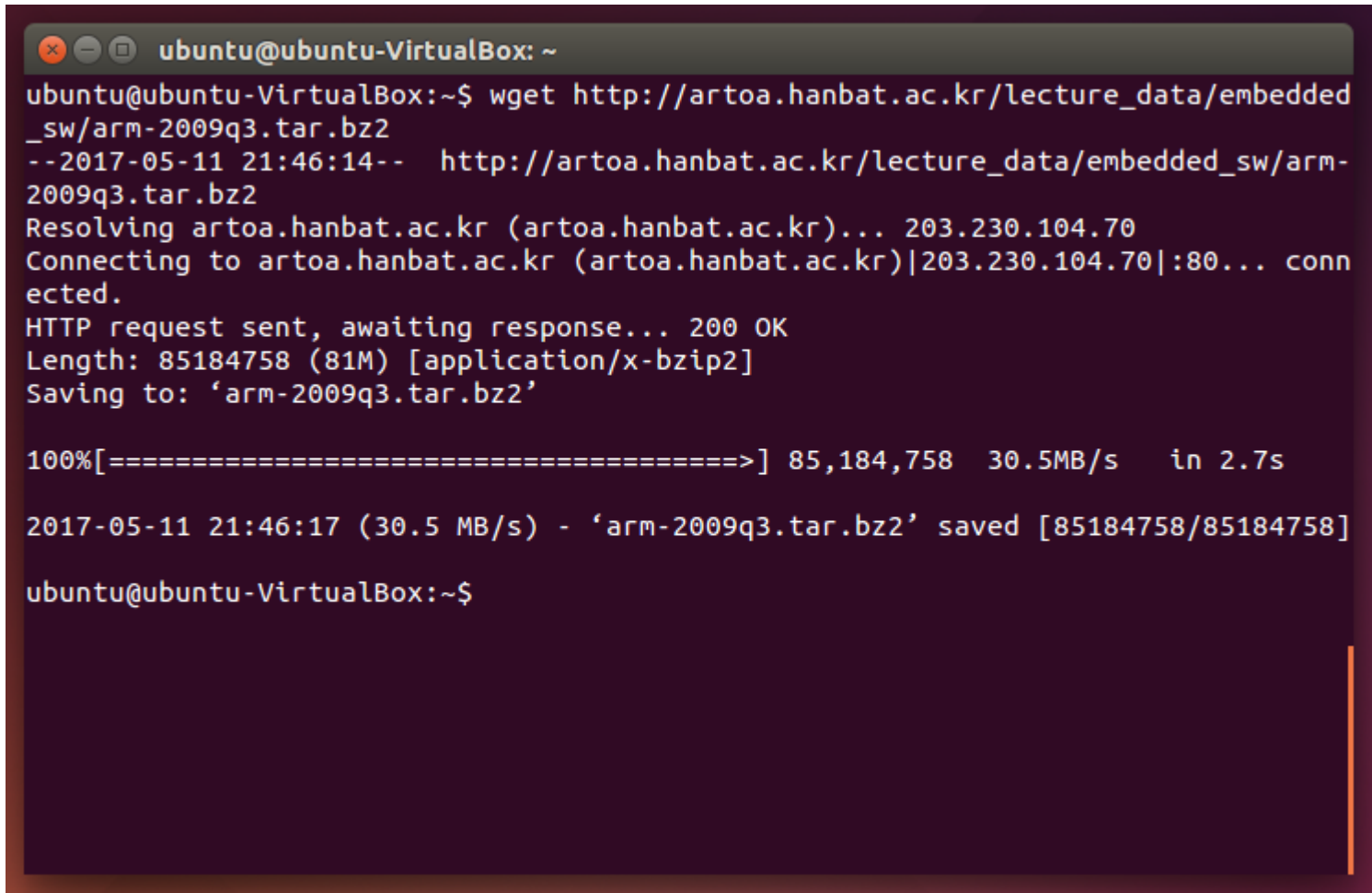
Index

1. Download cross compiler
2. Install cross compiler
3. Verify installation

Download cross compiler

Open Terminal app and do command :

```
wget http://artoa.hanbat.ac.kr/lecture_data/embedded_sw/arm-2009q3.tar.bz2
```

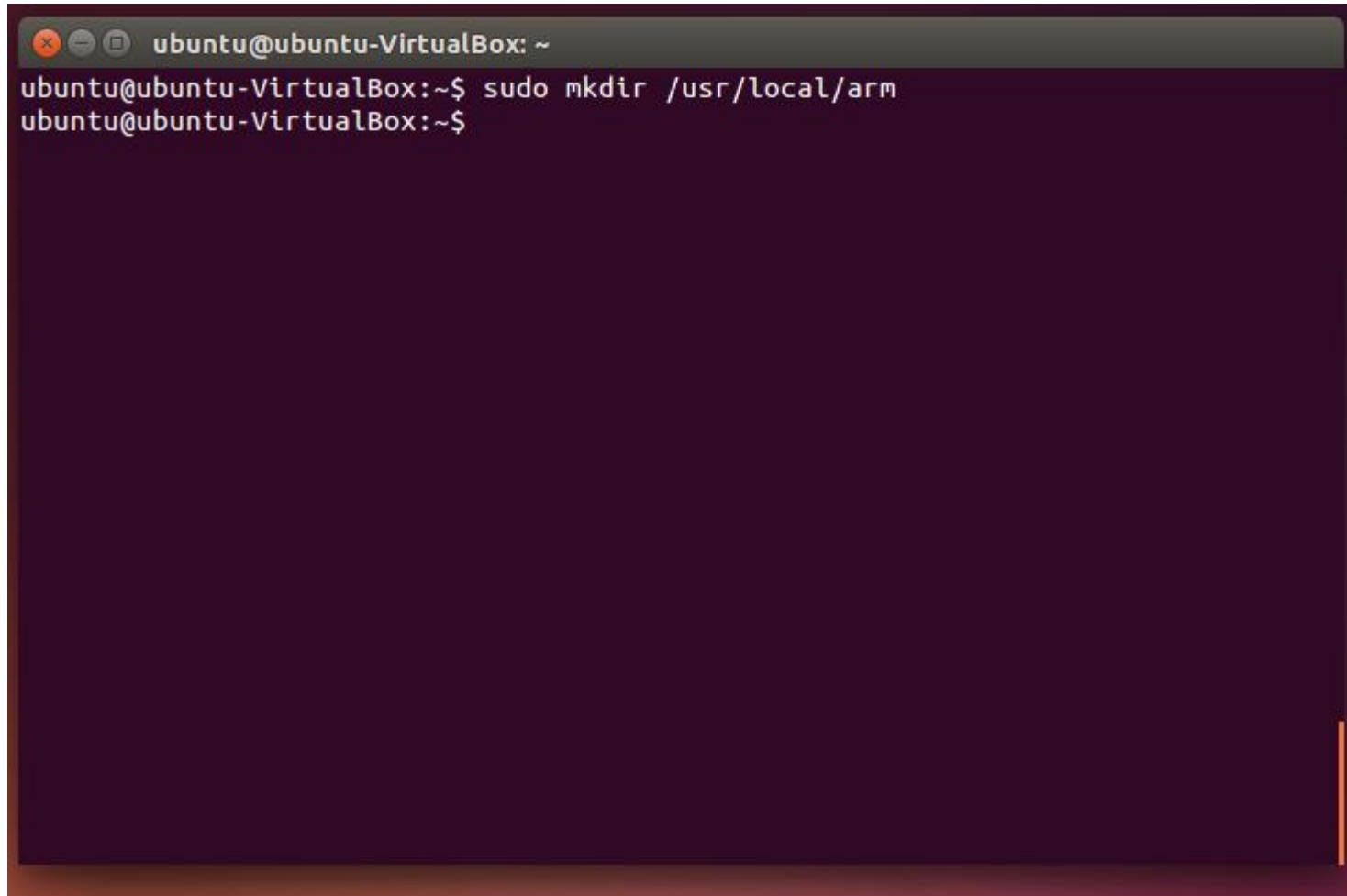


```
ubuntu@ubuntu-VirtualBox: ~  
ubuntu@ubuntu-VirtualBox:~$ wget http://artoa.hanbat.ac.kr/lecture_data/embedded_sw/arm-2009q3.tar.bz2  
--2017-05-11 21:46:14-- http://artoa.hanbat.ac.kr/lecture_data/embedded_sw/arm-2009q3.tar.bz2  
Resolving artoa.hanbat.ac.kr (artoa.hanbat.ac.kr)... 203.230.104.70  
Connecting to artoa.hanbat.ac.kr (artoa.hanbat.ac.kr)|203.230.104.70|:80... connected.  
HTTP request sent, awaiting response... 200 OK  
Length: 85184758 (81M) [application/x-bzip2]  
Saving to: 'arm-2009q3.tar.bz2'  
  
100%[=====>] 85,184,758  30.5MB/s  in 2.7s  
  
2017-05-11 21:46:17 (30.5 MB/s) - 'arm-2009q3.tar.bz2' saved [85184758/85184758]  
ubuntu@ubuntu-VirtualBox:~$
```

Install cross compiler

Open Terminal app and do command :

```
sudo mkdir /usr/local/arm
```

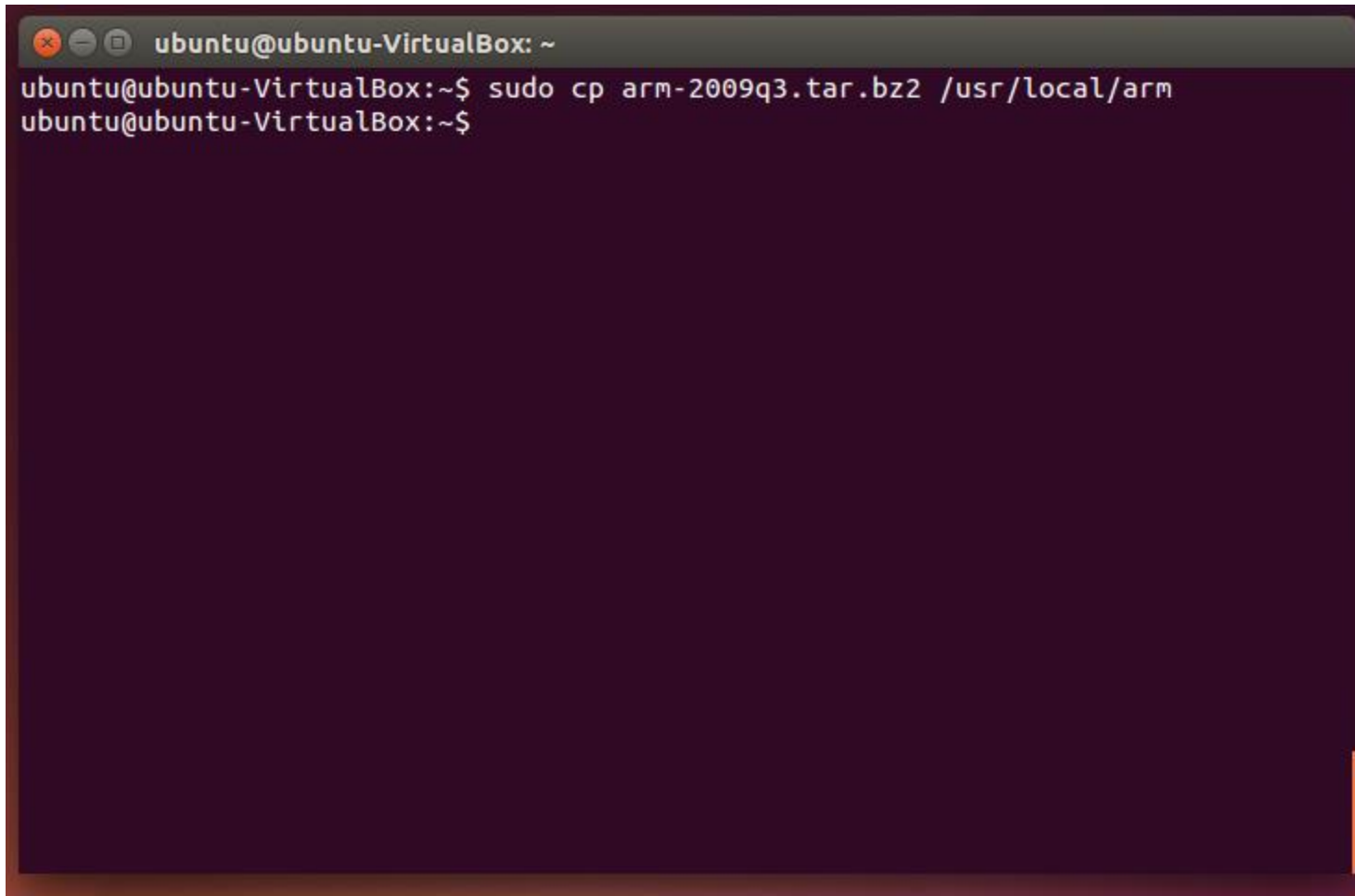
A terminal window with a dark purple background and a light grey title bar. The title bar contains the text 'ubuntu@ubuntu-VirtualBox: ~'. The terminal shows the command 'sudo mkdir /usr/local/arm' being entered and executed, with the prompt changing from 'ubuntu@ubuntu-VirtualBox:~\$' to 'ubuntu@ubuntu-VirtualBox:~\$' after the command is run.

```
ubuntu@ubuntu-VirtualBox: ~  
ubuntu@ubuntu-VirtualBox:~$ sudo mkdir /usr/local/arm  
ubuntu@ubuntu-VirtualBox:~$
```

Install cross compiler

Open Terminal app and do command :

```
sudo cp arm-2009q3.tar.bz2 /usr/local/arm
```

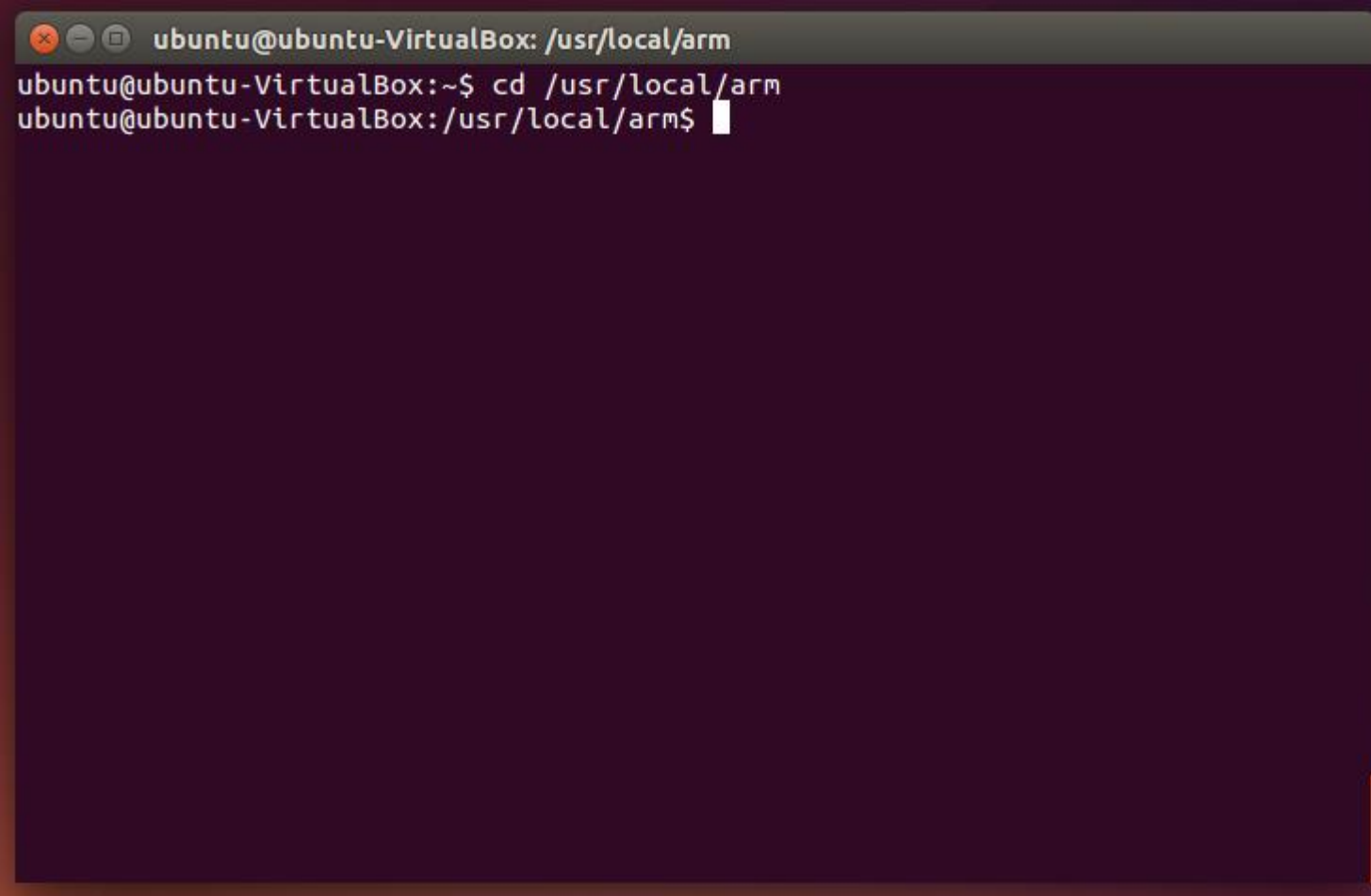
A terminal window with a dark purple background and a grey title bar. The title bar contains the text 'ubuntu@ubuntu-VirtualBox: ~'. The terminal shows the command 'sudo cp arm-2009q3.tar.bz2 /usr/local/arm' being entered and executed. The prompt 'ubuntu@ubuntu-VirtualBox:~\$' is visible before and after the command.

```
ubuntu@ubuntu-VirtualBox: ~  
ubuntu@ubuntu-VirtualBox:~$ sudo cp arm-2009q3.tar.bz2 /usr/local/arm  
ubuntu@ubuntu-VirtualBox:~$
```

Install cross compiler

Open Terminal app and do command :

```
sudo cd /usr/local/arm
```

A terminal window with a dark purple background and a grey title bar. The title bar contains the text 'ubuntu@ubuntu-VirtualBox: /usr/local/arm'. The terminal shows the command 'cd /usr/local/arm' being entered and executed, resulting in a new prompt 'ubuntu@ubuntu-VirtualBox: /usr/local/arm\$'.

```
ubuntu@ubuntu-VirtualBox: /usr/local/arm
ubuntu@ubuntu-VirtualBox:~$ cd /usr/local/arm
ubuntu@ubuntu-VirtualBox: /usr/local/arm$
```

Install cross compiler

Open Terminal app and do command :

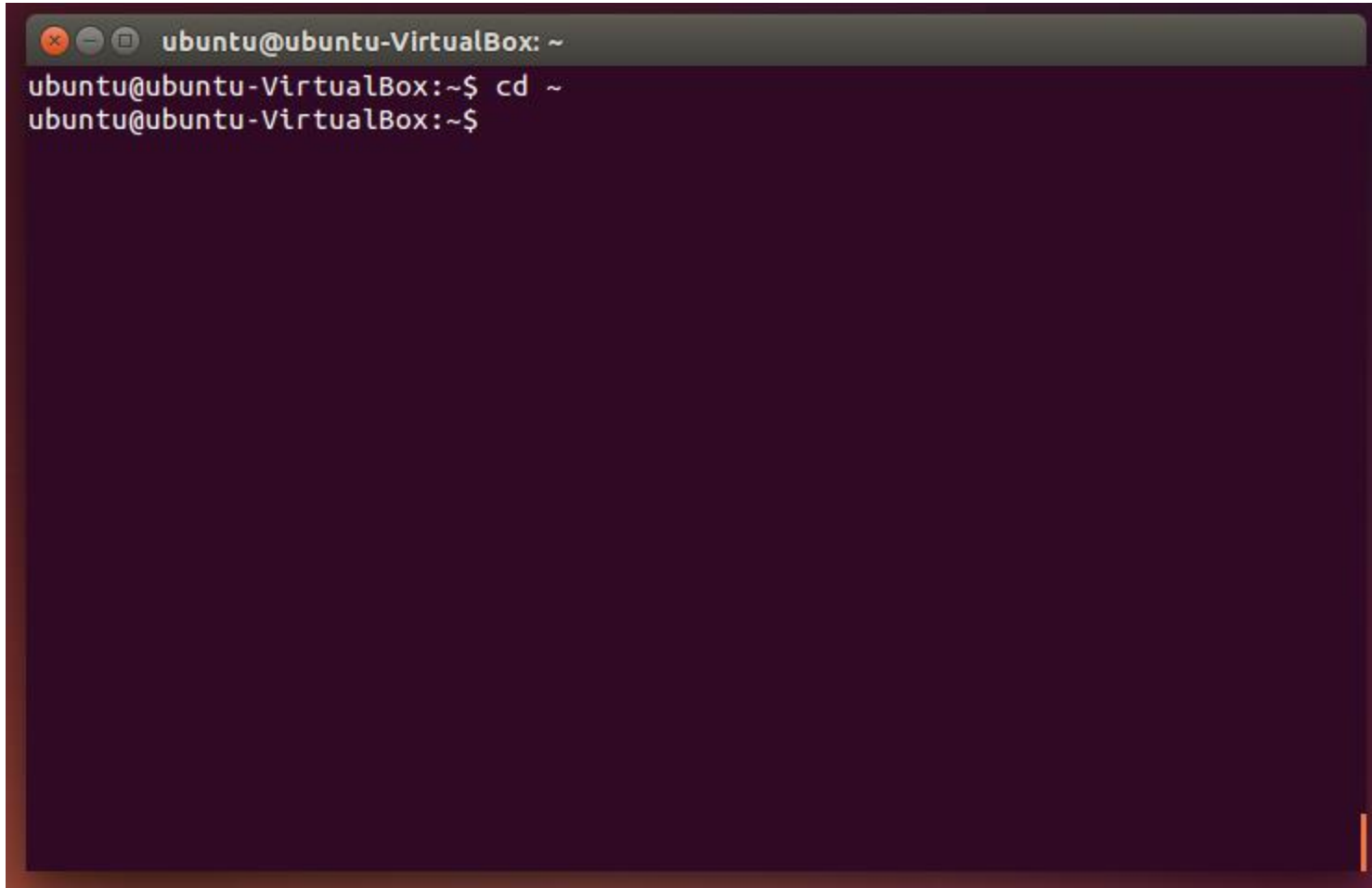
```
sudo tar -xvf arm-2009q3.tar.bz2
```

```
ubuntu@ubuntu-VirtualBox: /usr/local/arm
arm-2009q3/bin/arm-linux-gdb
arm-2009q3/bin/arm-none-linux-gnueabi-ar
arm-2009q3/bin/arm-none-linux-gnueabi-gprof
arm-2009q3/bin/arm-linux-objcopy
arm-2009q3/bin/arm-none-linux-gnueabi-gcc
arm-2009q3/bin/arm-linux-ar
arm-2009q3/bin/arm-none-linux-gnueabi-gcc-4.4.1
arm-2009q3/bin/arm-linux-objdump
arm-2009q3/bin/arm-none-linux-gnueabi-nm
arm-2009q3/libexec/
arm-2009q3/libexec/arm-none-linux-gnueabi-post-install/
arm-2009q3/libexec/arm-none-linux-gnueabi-post-install/sprite-drivers/
arm-2009q3/libexec/gcc/
arm-2009q3/libexec/gcc/arm-none-linux-gnueabi/
arm-2009q3/libexec/gcc/arm-none-linux-gnueabi/4.4.1/
arm-2009q3/libexec/gcc/arm-none-linux-gnueabi/4.4.1/collect2
arm-2009q3/libexec/gcc/arm-none-linux-gnueabi/4.4.1/cc1plus
arm-2009q3/libexec/gcc/arm-none-linux-gnueabi/4.4.1/install-tools/
arm-2009q3/libexec/gcc/arm-none-linux-gnueabi/4.4.1/install-tools/mkinstalldirs
arm-2009q3/libexec/gcc/arm-none-linux-gnueabi/4.4.1/install-tools/fixincl
arm-2009q3/libexec/gcc/arm-none-linux-gnueabi/4.4.1/install-tools/fixinc.sh
arm-2009q3/libexec/gcc/arm-none-linux-gnueabi/4.4.1/install-tools/mkheaders
arm-2009q3/libexec/gcc/arm-none-linux-gnueabi/4.4.1/cc1
ubuntu@ubuntu-VirtualBox: /usr/local/arm$
```

Install cross compiler

Open Terminal app and do command :

`cd ~`

A terminal window with a dark purple background and a grey title bar. The title bar contains the text 'ubuntu@ubuntu-VirtualBox: ~' and three window control icons (close, minimize, maximize). The terminal shows the command 'cd ~' being entered and executed, with the prompt changing from 'ubuntu@ubuntu-VirtualBox:~\$' to 'ubuntu@ubuntu-VirtualBox:~\$' again.

```
ubuntu@ubuntu-VirtualBox: ~
ubuntu@ubuntu-VirtualBox:~$ cd ~
ubuntu@ubuntu-VirtualBox:~$
```


Install cross compiler

Open Terminal app and do command :

vi .bashrc

```
ubuntu@ubuntu-VirtualBox: ~
# ~/.bashrc: executed by bash(1) for non-login shells.
# see /usr/share/doc/bash/examples/startup-files (in the package bash-doc)
# for examples

# If not running interactively, don't do anything
case $- in
  *i*) ;;
  *) return;;
esac

# don't put duplicate lines or lines starting with space in the history.
# See bash(1) for more options
HISTCONTROL=ignoreboth

# append to the history file, don't overwrite it
shopt -s histappend

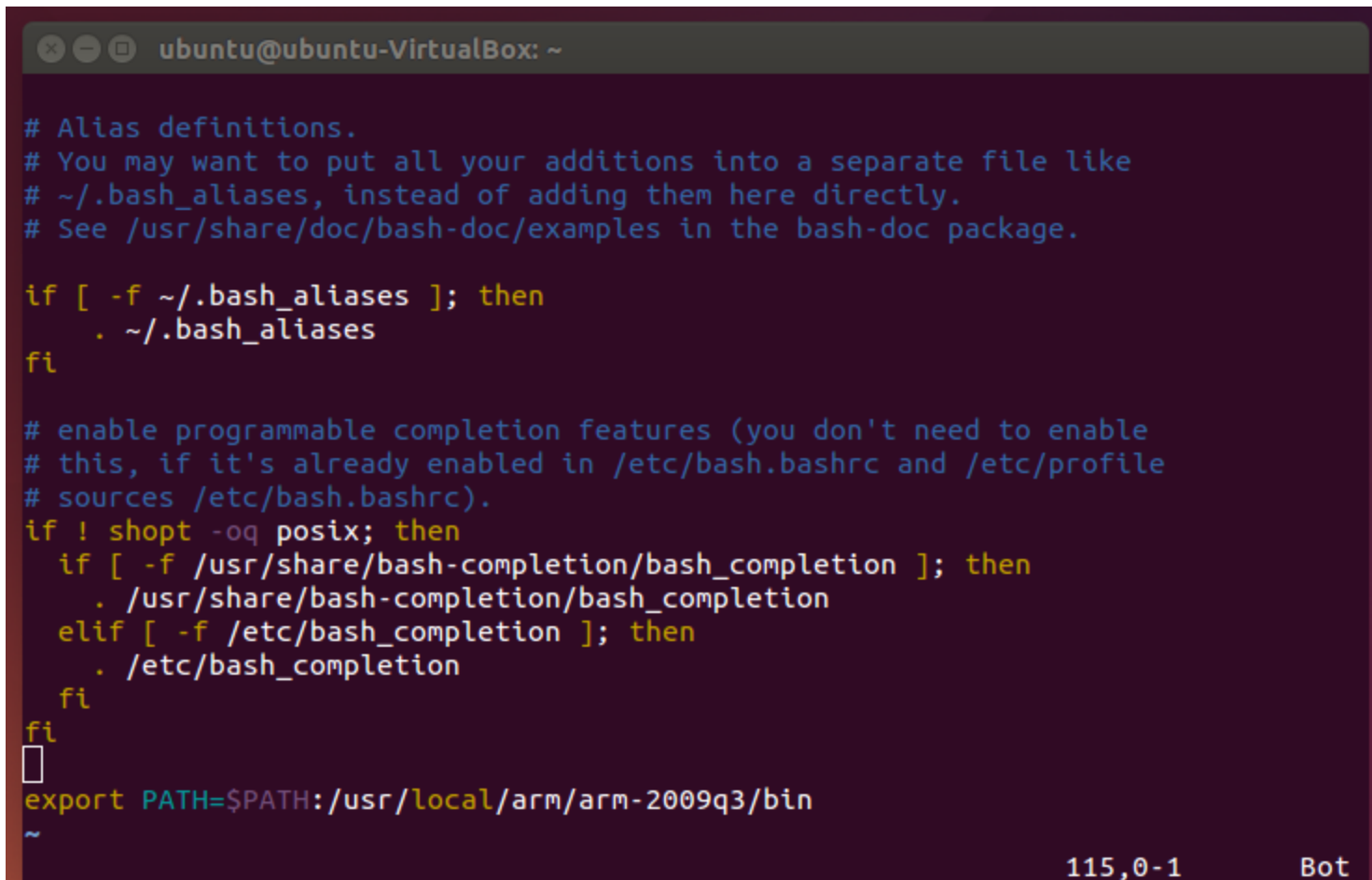
# for setting history length see HISTSIZE and HISTFILESIZE in bash(1)
HISTSIZE=1000
HISTFILESIZE=2000

# check the window size after each command and, if necessary,
# update the values of LINES and COLUMNS.
".bashrc" 114L, 3637C                                     1,1                                     Top
```

Install cross compiler

Add the line at the end of file and save and exit from vim.

```
export PATH=$PATH:/usr/local/arm/arm-2009q3/bin
```

A terminal window titled 'ubuntu@ubuntu-VirtualBox: ~' showing the contents of a bashrc file. The text is color-coded: blue for comments, yellow for keywords, and green for variable assignments. The code includes alias definitions, completion setup, and the export statement for the cross-compiler path.

```
ubuntu@ubuntu-VirtualBox: ~
# Alias definitions.
# You may want to put all your additions into a separate file like
# ~/.bash_aliases, instead of adding them here directly.
# See /usr/share/doc/bash-doc/examples in the bash-doc package.

if [ -f ~/.bash_aliases ]; then
    . ~/.bash_aliases
fi

# enable programmable completion features (you don't need to enable
# this, if it's already enabled in /etc/bash.bashrc and /etc/profile
# sources /etc/bash.bashrc).
if ! shopt -oq posix; then
    if [ -f /usr/share/bash-completion/bash_completion ]; then
        . /usr/share/bash-completion/bash_completion
    elif [ -f /etc/bash_completion ]; then
        . /etc/bash_completion
    fi
fi

export PATH=$PATH:/usr/local/arm/arm-2009q3/bin
~
```

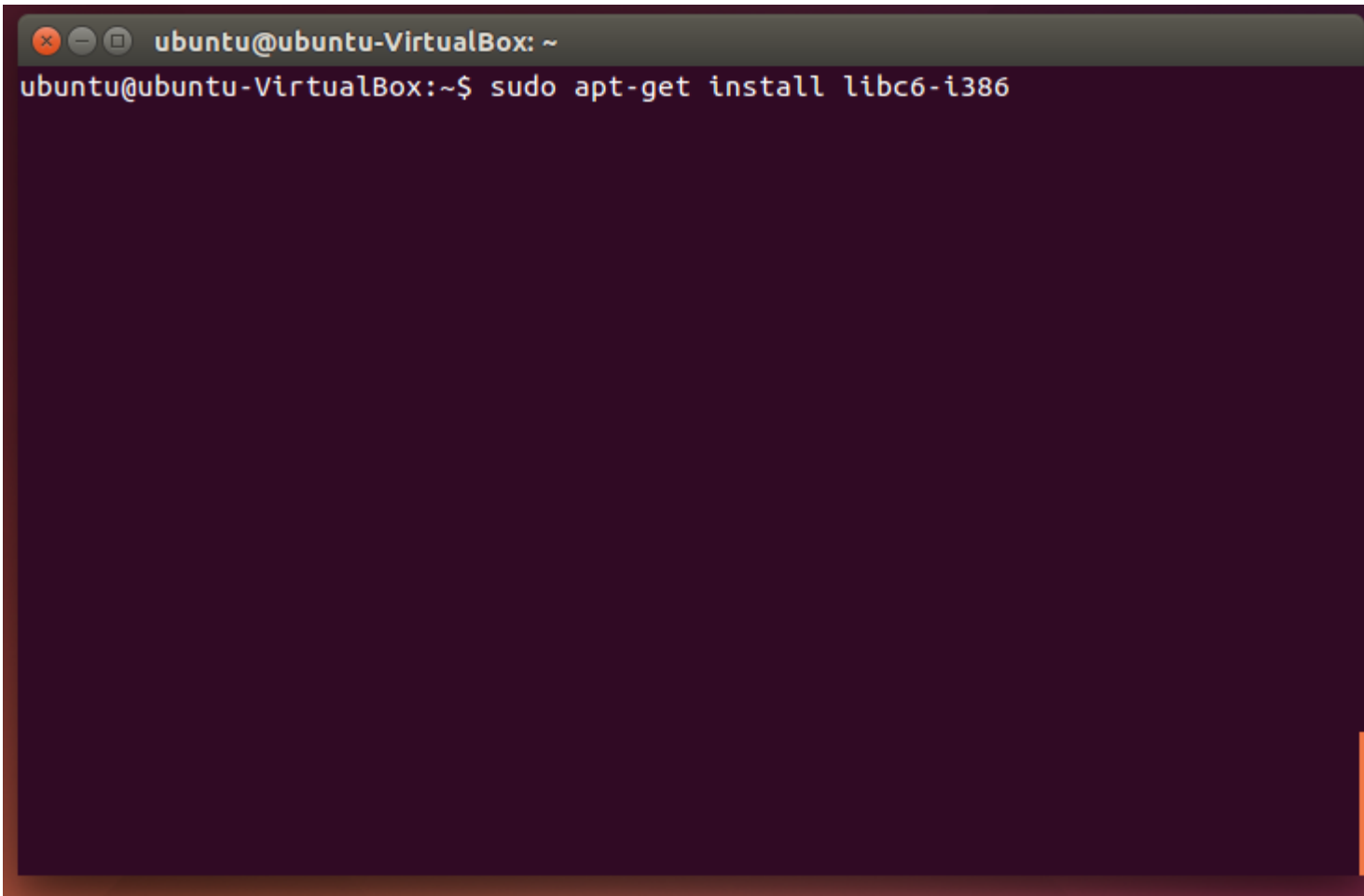
115,0-1 Bot

If Your Ubuntu is not 64bit system, skip this page.

Install cross compiler

If Your Ubuntu is 64bit system, you must install the following package.

```
sudo apt-get install libc6-i386
```

A terminal window with a dark purple background. The title bar at the top reads "ubuntu@ubuntu-VirtualBox: ~". The terminal prompt is "ubuntu@ubuntu-VirtualBox:~\$" followed by the command "sudo apt-get install libc6-i386".

```
ubuntu@ubuntu-VirtualBox: ~  
ubuntu@ubuntu-VirtualBox:~$ sudo apt-get install libc6-i386
```

Verify installation

Must Reopen the Terminal App.

arm-linux-gcc -v

```
ubuntu@ubuntu-VirtualBox: ~  
bi --enable-threads --disable-libmudflap --disable-libssp --disable-libstdcxx-pc  
h --enable-extra-sgxxlite-multilibs --with-arch=armv5te --with-gnu-as --with-gnu  
-ld --with-specs='%{funwind-tables|fno-unwind-tables|mabi=*|ffreestanding|nostd  
lib;:-funwind-tables} %{O2:%{!fno-remove-local-statics: -fremove-local-statics}}  
%{O*:%{O|O0|O1|O2|Os;:;%{!fno-remove-local-statics: -fremove-local-statics}}}'  
--enable-languages=c,c++ --enable-shared --disable-lto --enable-symvers=gnu --en  
able-__cxa_atexit --with-pkgversion='Sourcery G++ Lite 2009q3-67' --with-bugurl=  
https://support.codesourcery.com/GNUToolchain/ --disable-nls --prefix=/opt/codes  
ourcery --with-sysroot=/opt/codesourcery/arm-none-linux-gnueabi/libc --with-buil  
d-sysroot=/scratch/julian/2009q3-respin-linux-lite/install/arm-none-linux-gnueab  
i/libc --with-gmp=/scratch/julian/2009q3-respin-linux-lite/obj/host-libs-2009q3-  
67-arm-none-linux-gnueabi-i686-pc-linux-gnu/usr --with-mpfr=/scratch/julian/2009  
q3-respin-linux-lite/obj/host-libs-2009q3-67-arm-none-linux-gnueabi-i686-pc-linu  
x-gnu/usr --with-ppl=/scratch/julian/2009q3-respin-linux-lite/obj/host-libs-2009  
q3-67-arm-none-linux-gnueabi-i686-pc-linux-gnu/usr --with-host-libstdcxx='-stati  
c-libgcc -Wl,-Bstatic,-lstdc++,-Bdynamic -lm' --with-cloog=/scratch/julian/2009q  
3-respin-linux-lite/obj/host-libs-2009q3-67-arm-none-linux-gnueabi-i686-pc-linux  
-gnu/usr --disable-libgomp --enable-poison-system-directories --with-build-time-  
tools=/scratch/julian/2009q3-respin-linux-lite/install/arm-none-linux-gnueabi/bi  
n --with-build-time-tools=/scratch/julian/2009q3-respin-linux-lite/install/arm-n  
one-linux-gnueabi/bin  
Thread model: posix  
gcc version 4.4.1 (Sourcery G++ Lite 2009q3-67)  
ubuntu@ubuntu-VirtualBox:~$
```