

## 1. linux 安装和配置

(i) 安装 linux 过程略

(ii) 打印版本截图如下

```
--version Print version information and exit.

ON-LINE HELP
Type ":help" in Vim to get started. Type ":help subject" to get help
on a specific subject. For example: ":help ZZ" to get help for the
"ZZ" command. Use <Tab> and CTRL-D to complete subjects (":help cmd-
line-completion"). Tags are present to jump from one place to another
(sort of hypertext links, see ":help"). All documentation files can be
viewed in this way, for example ":help syntax.txt".

FILES
/usr/share/vim/vim74/doc/*.txt
The Vim documentation files. Use ":help doc-file-list"
to get the complete list.

/usr/share/vim/vim74/doc/tags
The tags file used for finding information in the docu-
mentation files.

/usr/share/vim/vim74/syntax/syntax.vim
System wide syntax initializations.

/usr/share/vim/vim74/syntax/*.vim

yaaaome@yaaaome-virtual-machine:~$ vim --version
VIM - Vi IMproved 7.4 (2013 Aug 10, compiled Nov 24 2016 16:44:48)
包含补丁: 1-1689
另外的补丁: 8.0.0056
修改者 pkg-vim-maintainers@lists.aliases.debian.org
编译器 pkg-vim-maintainers@lists.aliases.debian.org
```

```
--version
Prints the Git suite version that the git program came from.
```

```
yaaaome@yaaaome-virtual-machine:~$ git --version
git version 2.7.4
```

```
--version
Print out GNU CPP's version number. With one dash, proceed to preprocess as normal. With two dashes, exit immediately.
```

```
compilation terminated.

yaaaome@yaaaome-virtual-machine:~$ gcc --version
gcc (Ubuntu 5.4.0-6ubuntu1-16.04.10) 5.4.0 20160609
Copyright (C) 2015 Free Software Foundation, Inc.
This is free software; see the source for copying conditions. There is NO
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.
```

```
--version
Print the as version and exit.
```

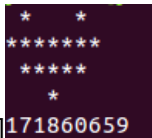
```
yaaaome@yaaaome-virtual-machine:~$ as --version
GNU 汇编器 (GNU Binutils for Ubuntu) 2.26.1
Copyright (C) 2015 Free Software Foundation, Inc.
本软件是自由软件; 您可以使用 GNU General Public License 版本 3 或更新版本重新发放。
本软件完全不带有任何保证。
为目标"i686-linux-gnu"配置汇编程序。
```

```
--version
Print the version number of objdump and exit.
```

```
GNU objdump (GNU Binutils for Ubuntu) 2.26.1
Copyright (C) 2015 Free Software Foundation, Inc.
```

```
yaaaome@yaaaome-virtual-machine:~$ gdb --version
GNU gdb (Ubuntu 7.11.1-0ubuntu1-16.04) 7.11.1
Copyright (C) 2016 Free Software Foundation, Inc.
License GPLv3+: GNU GPL version 3 or later <http://gnu.org/licenses/gpl.html>
This is free software: you are free to change and redistribute it.
There is NO WARRANTY, to the extent permitted by law. Type "show copying"
and "show warranty" for details.
This GDB was configured as "i686-linux-gnu".
Type "show configuration" for configuration details.
For bug reporting instructions, please see:
<http://www.gnu.org/software/gdb/bugs/>.
Find the GDB manual and other documentation resources online at:
<http://www.gnu.org/software/gdb/documentation/>.
For help, type "help".
Type "apropos word" to search for commands related to "word".
```

(iii) 遇到的问题: 选择应用商店的站点的时候网络发生错误, 解决方案是换一个站点



2. 心心截图171860659

3.

(i) 截图为

```
Disassembly of section .data:
00000000 <msg>:
0: 20 2a                and    %ch, (%edx)
2: 20 20                and    %ah, (%eax)
4: 20 2a                and    %ch, (%edx)
6: 0a 2a                or     (%edx), %ch
8: 2a 2a                sub    (%edx), %ch
a: 2a 2a                sub    (%edx), %ch
c: 2a 2a                sub    (%edx), %ch
e: 0a 20                or     (%eax), %ah
10: 2a 2a                sub    (%edx), %ch
12: 2a 2a                sub    (%edx), %ch
14: 2a 0a                sub    (%edx), %cl
16: 20 20                and    %ah, (%eax)
18: 20 2a                and    %ch, (%edx)
1a: 0a 31                or     (%ecx), %dh
1c: 37                  aaa
1d: 31 38                xor    %edi, (%eax)
1f: 36 30 36             xor    %dh, %ss: (%esi)
22: 35                  .byte 0x35
23: 39 0a                cmp    %ecx, (%edx)
```

```
0a 31
37
31 38
36 30 36
35
39 0a
```

学号截图为:

(0a 是换行符)

```
yaaaome@yaaaome-virtual-machine:~/workspace/lab01/171860659$ vim hello.c
yaaaome@yaaaome-virtual-machine:~/workspace/lab01/171860659$ vim hello.c
yaaaome@yaaaome-virtual-machine:~/workspace/lab01/171860659$ gcc -E hello.c -o hello.i
yaaaome@yaaaome-virtual-machine:~/workspace/lab01/171860659$ gcc -S hello.i -o hello.s
yaaaome@yaaaome-virtual-machine:~/workspace/lab01/171860659$ ls
dog heart heart.o heart.s hello.c hello.i hello.s
yaaaome@yaaaome-virtual-machine:~/workspace/lab01/171860659$ gcc -c hello.s -o hello.o
yaaaome@yaaaome-virtual-machine:~/workspace/lab01/171860659$ ls
(ii) dog heart heart.o heart.s hello.c hello.i hello.o hello.s
```

```
yaaaome@yaaaome-virtual-machine:~/workspace/lab01/171860659$ gcc -o hello hello.o
yaaaome@yaaaome-virtual-machine:~/workspace/lab01/171860659$ ls
dog heart heart.o heart.s hello hello.c hello.i hello.o hello.s
yaaaome@yaaaome-virtual-machine:~/workspace/lab01/171860659$ ./hello
hello world!
```

4.

(i) 结果如下, 产生原因是 50000\*50000 超过了 int 的最大取值范围, 数据发生了溢出

```
yaaaome@yaaaome-virtual-machine:~/workspace/lab01/171860659$ ./sqr
the 40000*40000 is 1600000000
the 50000*50000 is -1794967296
```

(ii) 保证结果正确的最大整数是 46340

(iii) 将 int 改为 unsigned int; 将 %d 改为 %u

5.

```
yaaaome@yaaaome-virtual-machine:~/workspace/lab01/171860659$ vim matrix.c
yaaaome@yaaaome-virtual-machine:~/workspace/lab01/171860659$ gcc -o matrix matrix.c
yaaaome@yaaaome-virtual-machine:~/workspace/lab01/171860659$ ./matrix
copyij 0.036635 s
copyji 0.169980 s
```

(i) 结果如下

(ii) Copyij 是对 copyji 的内存优化, 有更大的读取吞吐量, 因为 copyij 中的循环每次在地址上移动的长度小于 copyji 每次循环移动的长度, 所以更高效