

环境搭建

实验环境：

VMWare17

Ubuntu16.04.07

在多次尝试PPT方法，和往届报告docker方法之后，依旧无果。结合chat配置成功，详细步骤如下：

(1) 复制文件project2文件夹到~/下

(2) 安装必要的包

```
zzs@zzs-virtual-machine:~$ sudo apt update
[sudo] zzs 的密码：
对不起，请重试。
[sudo] zzs 的密码：
获取:1 http://security.ubuntu.com/ubuntu xenial-security InRelease [106 kB]
获取:2 http://security.ubuntu.com/ubuntu xenial-security/main amd64 DEP-11 Metad
ata [93.7 kB]
命中:3 http://mirrors.tuna.tsinghua.edu.cn/ubuntu xenial InRelease
命中:4 http://mirrors.tuna.tsinghua.edu.cn/ubuntu xenial-updates InRelease
命中:5 http://mirrors.tuna.tsinghua.edu.cn/ubuntu xenial-backports InRelease
获取:6 http://security.ubuntu.com/ubuntu xenial-security/restricted amd64 DEP-11
Metadata [212 B]
获取:7 http://security.ubuntu.com/ubuntu xenial-security/universe amd64 DEP-11 M
etadata [130 kB]
获取:8 http://security.ubuntu.com/ubuntu xenial-security/multiverse amd64 DEP-11
Metadata [2,464 B]
已下载 332 kB，耗时 7秒 (43.7 kB/s)
正在读取软件包列表... 完成
正在分析软件包的依赖关系树
正在读取状态信息... 完成
有 194 个软件包可以升级。请执行 'apt list --upgradable' 来查看它们。
zzs@zzs-virtual-machine:~$ sudo apt install -y curl git-core zlib1g-dev build-es
sential libssl-dev libreadline-dev libyaml-dev libsqlite3-dev sqlite3 libxml2-de
v libxslt1-dev libcurl4-openssl-dev libffi-dev
```

(3) 下载rbenv管理工具（这里连接不上github，直接主机下载然后复制进虚拟机）

```

zss@zss-virtual-machine:~$ git clone https://github.com/rbenv/rbenv.git ~/.rbenv
正克隆到 '/home/zss/.rbenv'...
fatal: unable to access 'https://github.com/rbenv/rbenv.git/': Failed to connect
to github.com port 443: 拒绝连接
zss@zss-virtual-machine:~$ unzip rbenv-master.zip
Archive:  rbenv-master.zip
cd29bcc6e0ef8b04ff0abbc8d27ccf48a720f4f2
  creating: rbenv-master/
  inflating: rbenv-master/.gitattributes
  creating: rbenv-master/.github/
  inflating: rbenv-master/.github/dependabot.yml
  creating: rbenv-master/.github/workflows/
  inflating: rbenv-master/.github/workflows/ci.yml
  inflating: rbenv-master/.github/workflows/lint.yml
  inflating: rbenv-master/.github/workflows/release.yml
  inflating: rbenv-master/.gitignore
  extracting: rbenv-master/.vimrc

```

```

zss@zss-virtual-machine:~/rbenv-master$ ls
bin          completions  LICENSE      rbenv.d      share  test
CODE_OF_CONDUCT.md  libexec      Makefile     README.md    src
zss@zss-virtual-machine:~/rbenv-master$ cd ..
zss@zss-virtual-machine:~$ mv rbenv-master ~/.rbenv

```

(4) 编译

```

zss@zss-virtual-machine:~$ cd ~/.rbenv && src/configure && make -C src
make: Entering directory '/home/zss/.rbenv/src'
Warning: this Makefile is obsolete and kept only for backwards compatibility.
You can remove the 'configure && make ...' step from your rbenv setup.
make: Leaving directory '/home/zss/.rbenv/src'

```

这个warning没有关系，不管他。

(5) 配置环境变量

```

zss@zss-virtual-machine:~/rbenv$ echo 'export PATH="$HOME/.rbenv/bin:$PATH"' >>
~/bashrc
zss@zss-virtual-machine:~/rbenv$ echo 'eval "$(rbenv init -)"' >> ~/bashrc
zss@zss-virtual-machine:~/rbenv$ source ~/bashrc

```

(6) 下载ruby 2.4.0

还是github下载然后复制进虚拟机：

```

zss@zss-virtual-machine:~$ unzip ruby-build-master.zip
Archive:  ruby-build-master.zip
d56e228615e9a149658b675dc1f45b40ae0ed911
  creating: ruby-build-master/
  inflating: ruby-build-master/.gitattributes
  creating: ruby-build-master/.github/
  creating: ruby-build-master/.github/ISSUE_TEMPLATE/
  inflating: ruby-build-master/.github/ISSUE_TEMPLATE/bug.md
  inflating: ruby-build-master/.github/ISSUE_TEMPLATE/config.yml
  inflating: ruby-build-master/.github/ISSUE_TEMPLATE/enhancement.md
  inflating: ruby-build-master/.github/dependabot.yml
  creating: ruby-build-master/.github/workflows/
  inflating: ruby-build-master/.github/workflows/ci.yml
  inflating: ruby-build-master/.github/workflows/differential-shellcheck.yml
  inflating: ruby-build-master/.github/workflows/mirror.yml
  inflating: ruby-build-master/.github/workflows/release.yml
  inflating: ruby-build-master/.github/workflows/update-ruby.yml

```

放到~/目录下, 改名, 下载ruby

```
zsz@zsz-virtual-machine:~$ cd ruby-build-master/
zsz@zsz-virtual-machine:~/ruby-build-master$ ls
bin      CONTRIBUTING.md  LICENSE  README.md  share
CODE_OF_CONDUCT.md  install.sh      Makefile  script     test
zsz@zsz-virtual-machine:~/ruby-build-master$ cd ..
zsz@zsz-virtual-machine:~$ mv ruby-build-master ~/.rbenv/plugins/ruby-build
zsz@zsz-virtual-machine:~$ rbenv install 2.4.0
==> Downloading ruby-2.4.0.tar.bz2...
-> curl -q -fL -o ruby-2.4.0.tar.bz2 https://cache.ruby-lang.org/pub/ruby/2.4/ruby-2.4.0.tar.bz2
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left   Speed
100 11.9M  100 11.9M    0     0  2383k      0  0:00:05  0:00:05 --:--:-- 3376k
==> Installing ruby-2.4.0...
```

```
zsz@zsz-virtual-machine:~$ rbenv global 2.4.0
zsz@zsz-virtual-machine:~$ ruby -v
ruby 2.4.0p0 (2016-12-24 revision 57164) [x86_64-linux]
```

(7) 安装bundler

```
zsz@zsz-virtual-machine:~$ gem install bundler -v 1.17.3
Fetching: bundler-1.17.3.gem (100%)
Successfully installed bundler-1.17.3
Parsing documentation for bundler-1.17.3
Installing ri documentation for bundler-1.17.3
Done installing documentation for bundler after 2 seconds
1 gem installed
```

为了加速, 给gem换源, 下载rails:

```
zsz@zsz-virtual-machine:~$ gem sources --remove https://rubygems.org/
https://rubygems.org/ removed from sources
zsz@zsz-virtual-machine:~$ gem sources -a https://mirrors.tuna.tsinghua.edu.cn/rubygems/
https://mirrors.tuna.tsinghua.edu.cn/rubygems/ added to sources
zsz@zsz-virtual-machine:~$ gem install rails -v 5.0.2
^CERROR: Interrupted
zsz@zsz-virtual-machine:~$ gem install bundler -v 1.17.3
^CERROR: Interrupted
zsz@zsz-virtual-machine:~$ gem install rails -v 5.0.2
Fetching: concurrent-ruby-1.3.5.gem (100%)
Successfully installed concurrent-ruby-1.3.5
Fetching: thread_safe-0.3.6.gem (100%)
Successfully installed thread_safe-0.3.6
Fetching: tzinfo-1.2.11.gem (100%)
```

安装中断, 报错:

```
ERROR: Error installing rails:
  racc requires Ruby version >= 2.5.
```

解决办法:

```

zzs@zzs-virtual-machine:~$ gem install rails -v 5.0.2 --no-document
Fetching: nokogiri-1.18.8-x86_64-linux-musl.gem (100%)
ERROR: Error installing rails:
       nokogiri requires Ruby version < 3.5.dev, >= 3.1.
zzs@zzs-virtual-machine:~$ sudo apt-get install -y libxml2-dev libxslt1-dev zlib1g-dev
[sudo] zzs 的密码:
正在读取软件包列表... 完成
正在分析软件包的依赖关系树
正在读取状态信息... 完成
libxml2-dev 已经是最新版 (2.9.3+dfsg1-1ubuntu0.7)。
libxslt1-dev 已经是最新版 (1.1.28-2.1ubuntu0.3)。
zlib1g-dev 已经是最新版 (1:1.2.8.dfsg-2ubuntu4.3)。
升级了 0 个软件包，新安装了 0 个软件包，要卸载 0 个软件包，有 191 个软件包未被升级。
zzs@zzs-virtual-machine:~$ gem install nokogiri -v 1.8.5 --no-document
Fetching: mini_portile2-2.3.0.gem (100%)
Successfully installed mini_portile2-2.3.0
Fetching: nokogiri-1.8.5.gem (100%)

```

这样不行，gem总是安装最新版的包，但是这些包常和ruby2.4冲突。考虑到项目给了Gemfile.lock文件，根据这个文件来下载依赖包。

cd bitbar

```

zzs@zzs-virtual-machine:~/project2/bitbar$ gem install bundler -v 1.17.3
Successfully installed bundler-1.17.3
Parsing documentation for bundler-1.17.3
Done installing documentation for bundler after 2 seconds
1 gem installed
zzs@zzs-virtual-machine:~/project2/bitbar$
zzs@zzs-virtual-machine:~/project2/bitbar$ bundle _1.17.3_ install

Fetching gem metadata from https://rubygems.org/.....
Using rake 12.0.0
Fetching concurrent-ruby 1.0.5
Installing concurrent-ruby 1.0.5
Fetching i18n 0.8.1
Installing i18n 0.8.1
Using minitest 5.10.1
Using thread_safe 0.3.6
Fetching tzinfo 1.2.3
Installing tzinfo 1.2.3
Using activesupport 5.0.2
Fetching builder 3.2.3
Installing builder 3.2.3

```

成功安装：

```

Installing sprockets-rails 3.2.0
Fetching rails 5.0.2
Installing rails 5.0.2
Fetching sqlite3 1.3.13
Installing sqlite3 1.3.13 with native extensions
Bundle complete! 2 Gemfile dependencies, 39 gems now installed.
Use `bundle info [gemname]` to see where a bundled gem is installed.

```

再安装rail 5.0.2就非常顺利了：


```
zss@zss-virtual-machine:~/project2/bitbar$ gem install rails -v 5.0.2
Successfully installed rails-5.0.2
Parsing documentation for rails-5.0.2
Installing ri documentation for rails-5.0.2
Done installing documentation for rails after 0 seconds
1 gem installed
```

此时rails -v又报错如下:

```
zss@zss-virtual-machine:~/project2/bitbar$ rails -v
程序“rails”尚未安装。 您可以使用以下命令安装:
sudo apt install ruby-railties
zss@zss-virtual-machine:~/project2/bitbar$ gem env
```

原因是没有配置好环境变量:

```
zss@zss-virtual-machine:~/project2/bitbar$ echo 'export PATH="$HOME/.rbenv/bin:$HOME/.rbenv/shims:$HOME/.rbenv/versions/2.4.0/bin:$PATH"' >> ~/.bashrc
zss@zss-virtual-machine:~/project2/bitbar$ echo 'eval "$(rbenv init -)"' >> ~/.bashrc
zss@zss-virtual-machine:~/project2/bitbar$ source ~/.bashrc
zss@zss-virtual-machine:~/project2/bitbar$ rbenv rehash
zss@zss-virtual-machine:~/project2/bitbar$ which rails
/home/zss/.rbenv/shims/rails
```

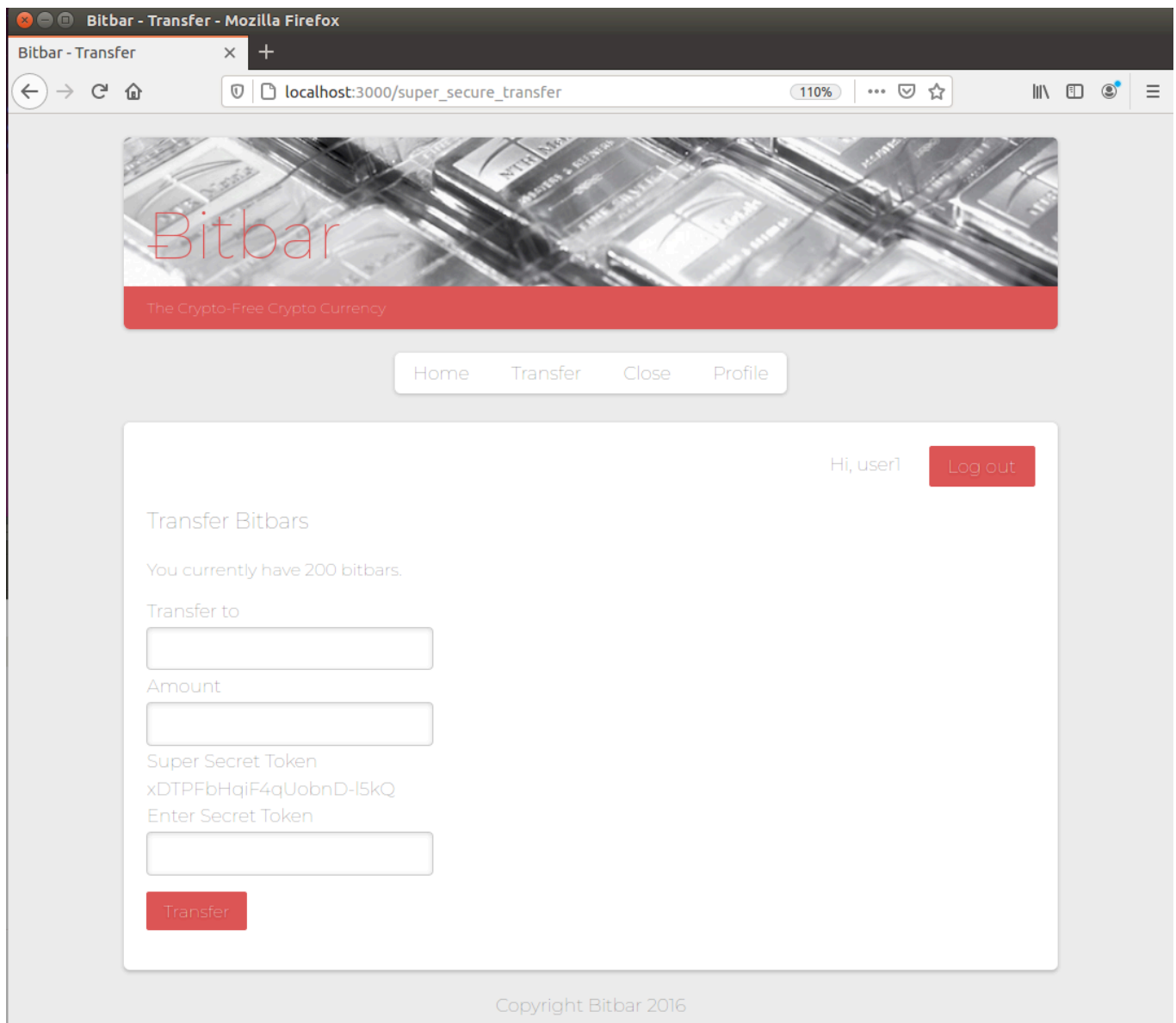
成功安装ruby2.4和rails5.0.2:

```
zss@zss-virtual-machine:~/project2/bitbar$ rails -v
Rails 5.0.2
zss@zss-virtual-machine:~/project2/bitbar$ ruby -v
ruby 2.4.0p0 (2016-12-24 revision 57164) [x86_64-linux]
```

(8) 测试

```
zss@zss-virtual-machine:~/project2/bitbar$ rails server
=> Booting WEBrick
=> Rails 5.0.2 application starting in development on http://localhost:3000
=> Run `rails server -h` for more startup options
[2025-05-21 01:21:28] INFO WEBrick 1.3.1
[2025-05-21 01:21:28] INFO ruby 2.4.0 (2016-12-24) [x86_64-linux]
[2025-05-21 01:21:28] INFO WEBrick::HTTPServer#start: pid=49810 port=3000
```

以能打开/super_secure_transfer页面为主, 因为cs155的课程代码是不能打开这个页面的(故不能直接用docker去安装cs155的代码, 不适配我们的作业环境)。



至此环境已经搭建完毕。