brks 完整安装指南

感谢：动脑-广州-驰　　的指导手册
作者：动脑-成都-student
说明：开课快 2 月了，看群文件下载记录应该还有很多同学环境没打好。是很打击人的，本人就是个菜鸟，写个菜鸟指南各位多多指点。
建议：为确保不必要的麻烦，请使用和我一样的安装镜像，没有可以找我要

实验环境

IOS：ubuntu-16.04.3-server-amd64.iso
IP：192.168.40.153
虚拟机上网方式：NAT

```
root@ubuntu:~#    lsb_release -a
No LSB modules are available.
Distributor ID:Ubuntu
Description:    Ubuntu 16.04.3 LTS
Release:  16.04
Codename:    xenial
```

替换 sourcelist

```
#163 guangdong
deb http://mirrors.163.com/ubuntu/ trusty main restricted universe multiverse
deb http://mirrors.163.com/ubuntu/ trusty-security main restricted universe multiverse
deb http://mirrors.163.com/ubuntu/ trusty-updates main restricted universe multiverse
deb http://mirrors.163.com/ubuntu/ trusty-proposed main restricted universe multiverse
deb http://mirrors.163.com/ubuntu/ trusty-backports main restricted universe multiverse
deb-src http://mirrors.163.com/ubuntu/ trusty main restricted universe multiverse
deb-src http://mirrors.163.com/ubuntu/ trusty-security main restricted universe multiverse
deb-src http://mirrors.163.com/ubuntu/ trusty-updates main restricted universe multiverse
deb-src http://mirrors.163.com/ubuntu/ trusty-proposed main restricted universe multiverse
deb-src http://mirrors.163.com/ubuntu/ trusty-backports main restricted universe multiverse

#aliyun
deb-src http://archive.ubuntu.com/ubuntu xenial main restricted
deb http://mirrors.aliyun.com/ubuntu/ xenial main restricted
deb-src http://mirrors.aliyun.com/ubuntu/ xenial main restricted multiverse universe
deb http://mirrors.aliyun.com/ubuntu/ xenial-updates main restricted
deb-src http://mirrors.aliyun.com/ubuntu/ xenial-updates main restricted multiverse universe
deb http://mirrors.aliyun.com/ubuntu/ xenial universe
deb http://mirrors.aliyun.com/ubuntu/ xenial-updates universe
deb http://mirrors.aliyun.com/ubuntu/ xenial multiverse
deb http://mirrors.aliyun.com/ubuntu/ xenial-updates multiverse
deb http://mirrors.aliyun.com/ubuntu/ xenial-backports main restricted universe multiverse
deb-src http://mirrors.aliyun.com/ubuntu/ xenial-backports main restricted universe multiverse
deb http://archive.canonical.com/ubuntu xenial partner
deb-src http://archive.canonical.com/ubuntu xenial partner
deb http://mirrors.aliyun.com/ubuntu/ xenial-security main restricted
```

```
deb-src http://mirrors.aliyun.com/ubuntu/ xenial-security main restricted multiverse universe
deb http://mirrors.aliyun.com/ubuntu/ xenial-security universe
deb http://mirrors.aliyun.com/ubuntu/ xenial-security multiverse


#tsinghua.edu
deb http://mirrors.tuna.tsinghua.edu.cn/ubuntu/ xenial main restricted
deb http://mirrors.tuna.tsinghua.edu.cn/ubuntu/ xenial-updates main restricted
deb http://mirrors.tuna.tsinghua.edu.cn/ubuntu/ xenial universe
deb http://mirrors.tuna.tsinghua.edu.cn/ubuntu/ xenial-updates universe
deb http://mirrors.tuna.tsinghua.edu.cn/ubuntu/ xenial multiverse
deb http://mirrors.tuna.tsinghua.edu.cn/ubuntu/ xenial-updates multiverse
deb http://mirrors.tuna.tsinghua.edu.cn/ubuntu/ xenial-backports main restricted universe multiverse
deb http://mirrors.tuna.tsinghua.edu.cn/ubuntu/ xenial-security main restricted
deb http://mirrors.tuna.tsinghua.edu.cn/ubuntu/ xenial-security universe
deb http://mirrors.tuna.tsinghua.edu.cn/ubuntu/ xenial-security multiverse
```

替换完源以后执行 `apt update`

安装常用工具

```
apt-get install build-essential wget tree git vim cmake
```

下载 brks 源码

项目目录构成

```
root@ubuntu:/# tree /DNXY/
/DNXY/
├── download
└── projects
    └── dnxy_bike

3 directories, 0 files
```

download 存放下载的依赖包
dnxy_bike 存放 brks 项目

git init
git clone https://github.com/wzcdbzt/brks.git
删除 third 下面，include 和 lib 下面的所有文件

编译 brks

```
cd src
cmake .
make
```

报错

```
root@ubuntu:/DNXY/projects/dnxy_bike/src# make
Scanning dependencies of target service
[  4%] Building CXX object service/CMakeFiles/service.dir/DispatchMsgService.cpp.o
In file included from /DNXY/projects/dnxy_bike/src/service/DispatchMsgService.cpp:2:0:
/DNXY/projects/dnxy_bike/src/./common/Logger.h:5:31: fatal error: log4cpp/Category.hh: No such file or directory
 #include <log4cpp/Category.hh>
                               ^
compilation terminated.
service/CMakeFiles/service.dir/build.make:62: recipe for target 'service/CMakeFiles/service.dir/DispatchMsgService.cpp.o' failed
make[2]: *** [service/CMakeFiles/service.dir/DispatchMsgService.cpp.o] Error 1
CMakeFiles/Makefile2:290: recipe for target 'service/CMakeFiles/service.dir/all' failed
make[1]: *** [service/CMakeFiles/service.dir/all] Error 2
Makefile:127: recipe for target 'all' failed
make: *** [all] Error 2
```

错误原因

Logger.h 中引用的头文件找不到

```
1: #ifndef DISTRIBUTED_LOGGER_H_
2: #define DISTRIBUTED_LOGGER_H_
3:
4: #include <string>
5: #include <log4cpp/Category.hh>
6:
```

解决办法

下载最新 log4cpp 包，目前最新版本 log4cpp-1.1.3

wget https://nchc.dl.sourceforge.net/project/log4cpp/log4cpp-1.1.x%20%28new%29/log4cpp-1.1/log4cpp-1.1.3.tar.gz

解压 log4cpp-1.1.3.tar.gz

tar -zxf log4cpp-1.1.3.tar.gz

从 0.2.0 开始，log4cpp 支持 autoconf,依次执行。

cd log4cpp

./configure --prefix=/usr

make

make check

sudo make install

#ls -lrt /usr/lib/liblog4cpp*

在 third 下面添加 log4cpp 的 include 和 lib

cd /usr/include

ln -s $(readlink -e log4cpp) /DNXY/projects/dnxy_bike/third/include

cd /usr/
ln -s $(readlink -e lib) /DNXY/projects/dnxy_bike/third/lib/log4cpp

继续编译 brks

make clean
make

报错

```
root@ubuntu:/DNXY/projects/dnxy_bike/src# make
[  4%] Building CXX object service/CMakeFiles/service.dir/DispatchMsgService.cpp.o
/DNXY/projects/dnxy_bike/src/service/DispatchMsgService.cpp: In static member function ‘static void* DispatchMsgService::svc(void*)’:
/DNXY/projects/dnxy_bike/src/service/DispatchMsgService.cpp:124:17: warning: unused variable ‘rsp’ [-Wunused-variable]
             iEvent* rsp = dms->process(ev);
                     ^
[  8%] Building CXX object service/CMakeFiles/service.dir/user_service.cpp.o
In file included from /DNXY/projects/dnxy_bike/src/service/user_service.h:6:0,
                 from /DNXY/projects/dnxy_bike/src/service/user_service.cpp:2:
/DNXY/projects/dnxy_bike/src/service/sqlconnection.h:4:25: fatal error: mysql/mysql.h: No such file or directory
 #include <mysql/mysql.h>
                         ^
compilation terminated.
service/CMakeFiles/service.dir/build.make:86: recipe for target 'service/CMakeFiles/service.dir/user_service.cpp.o' failed
make[2]: *** [service/CMakeFiles/service.dir/user_service.cpp.o] Error 1
CMakeFiles/Makefile2:290: recipe for target 'service/CMakeFiles/service.dir/all' failed
make[1]: *** [service/CMakeFiles/service.dir/all] Error 2
Makefile:127: recipe for target 'all' failed
make: *** [all] Error 2
```

错误原因

sqlconnection.h 中引用的头文件找不到

```
1: #ifndef DATASTORE_MYSQL_CONNECTION_H
2: #define DATASTORE_MYSQL_CONNECTION_H
3:
4: #include <mysql/mysql.h>
5: #include <string>
6: #include <mysql/errmsg.h>
7: #include <assert.h>
8:
9: #include "glo_def.h"
10: #include "Logger.h"
11:
```

解决办法

安装 mysql

安装制定版本 mysql 参考：https://blog.csdn.net/u011060906/article/details/79612408

我是直接安装最新版的

apt-get install mysql-server

apt install mysql-client

apt install libmysqlclient-dev

root@ubuntu:~# mysql --version

mysql Ver 14.14 Distrib 5.7.23, for Linux (x86_64) using EditLine wrapper

在 third 下面添加 mysql 的 include 和 lib

cd /usr/include

ln -s $(readlink -e mysql) /DNXY/projects/dnxy_bike/third/include

cd /usr/lib

ln -s $(readlink -e mysql) /DNXY/projects/dnxy_bike/third/lib/

继续编译 brks

make clean

make

报错

[4%] Building CXX object service/CMakeFiles/service.dir/DispatchMsgService.cpp.o

/DNXY/projects/dnxy_bike/src/service/DispatchMsgService.cpp: In static member function 'static void* DispatchMsgService::svc(void*)':

/DNXY/projects/dnxy_bike/src/service/DispatchMsgService.cpp:124:17: warning: unused variable 'rsp' [-Wunused-variable]

  iEvent* rsp = dms->process(ev);

  ^

[8%] Building CXX object service/CMakeFiles/service.dir/user_service.cpp.o

/DNXY/projects/dnxy_bike/src/service/user_service.cpp: In member function 'bool UserService::list_consume_records(const string&, std::vector<AccountRecord>&)':

/DNXY/projects/dnxy_bike/src/service/user_service.cpp:155:60: warning: invalid

```
conversion from ‘char*’ to ‘u64 {aka long long unsigned int}’ [-fpermissive]
                AccountRecord ar(atoi(row[3]), atoll(row[4]), row[2]);
                                                                                  ^
In file included from /DNXY/projects/dnxy_bike/src/service/user_service.h:7:0,
                                from /DNXY/projects/dnxy_bike/src/service/user_service.cpp:2:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:236:5:    note:            initializing
argument 3 of ‘AccountRecord::AccountRecord(i16, i32, u64)’
        AccountRecord(i16 type, i32 limit, u64 timestamp)
        ^
[ 13%] Building CXX object service/CMakeFiles/service.dir/bike_service.cpp.o
/DNXY/projects/dnxy_bike/src/service/bike_service.cpp:    In    member    function    ‘bool
BikeService::get_bike(int, Bike&)’:
/DNXY/projects/dnxy_bike/src/service/bike_service.cpp:83:25:        warning:        invalid
conversion from ‘int’ to ‘bike_statu’ [-fpermissive]
        bk.st_              = atoi(row[1]);    // »    ´˛ë
                                        ^
/DNXY/projects/dnxy_bike/src/service/bike_service.cpp:89:25:        warning:        invalid
conversion from ‘int’ to ‘bike_type’ [-fpermissive]
        bk.type_           = atoi(row[7]);
                                        ^
[ 17%] Building CXX object service/CMakeFiles/service.dir/MsgQueue.cpp.o
[ 21%] Building CXX object service/CMakeFiles/service.dir/sqlconnection.cpp.o
[ 26%] Linking CXX static library libservice.a
[ 26%] Built target service
Scanning dependencies of target common
[ 30%] Building CXX object common/CMakeFiles/common.dir/Logger.cpp.o
[ 34%] Building CXX object common/CMakeFiles/common.dir/events_def.cpp.o
[ 39%] Building CXX object common/CMakeFiles/common.dir/event.cpp.o
[ 43%] Linking CXX static library libcommon.a
[ 43%] Built target common
Scanning dependencies of target bus
[ 47%] Building CXX object bus/CMakeFiles/bus.dir/runer_bike_handler.cpp.o
[ 52%] Building CXX object bus/CMakeFiles/bus.dir/BusProcessor.cpp.o
In file included from /DNXY/projects/dnxy_bike/src/bus/BusProcessor.h:5:0,
                                from /DNXY/projects/dnxy_bike/src/bus/BusProcessor.cpp:2:
/DNXY/projects/dnxy_bike/src/bus/user_event_handler.h:11:23:  fatal  error:  curl/curl.h:
No such file or directory
  #include <curl/curl.h>
                                        ^
compilation terminated.
bus/CMakeFiles/bus.dir/build.make:86:                recipe                for                target
'bus/CMakeFiles/bus.dir/BusProcessor.cpp.o' failed
make[2]: *** [bus/CMakeFiles/bus.dir/BusProcessor.cpp.o] Error 1
CMakeFiles/Makefile2:125: recipe for target 'bus/CMakeFiles/bus.dir/all' failed
```

make[1]: *** [bus/CMakeFiles/bus.dir/all] Error 2
Makefile:127: recipe for target 'all' failed
make: *** [all] Error 2

错误原因

user_event_handler.h 中引用的头文件找不到

```
 1:
 2: #ifndef BRKS_BUS_USERM_HANDLER_H_
 3: #define BRKS_BUS_USERM_HANDLER_H_
 4:
 5: #include "glo_def.h"
 6: #include "iEventHandler.h"
 7: #include "sqlconnection.h"
 8: #include "events_def.h"
 9: #include "DispatchMsgService.h"
10:
11: #include <curl/curl.h>
12: #include <string>
13: #include <map>
14: #include <memory>
```

解决办法

安装 libcurl

下载最新 curl 包，目前最新版本 curl-7.61.1.tar.gz

wget https://curl.haxx.se/download/curl-7.61.1.tar.gz

解压 curl-7.61.1.tar.gz

tar -zxf curl-7.61.1.tar.gz

安装指导 https://curl.haxx.se/docs/install.html

./configure --prefix=/usr

make

sudo make install

在 third 下面添加 curl 的 include 和 lib

cd /usr/include

ln -s $(readlink -e curl) /DNXY/projects/dnxy_bike/third/include

cd /usr/

ln -s $(readlink -e lib) /DNXY/projects/dnxy_bike/third/lib/curl

继续编译

make clean

make

报错

[4%] Building CXX object service/CMakeFiles/service.dir/DispatchMsgService.cpp.o
/DNXY/projects/dnxy_bike/src/service/DispatchMsgService.cpp: In static member

```
function ‘static void* DispatchMsgService::svc(void*)’:
/DNXY/projects/dnxy_bike/src/service/DispatchMsgService.cpp:124:17: warning: unused variable ‘rsp’ [-Wunused-variable]
            iEvent* rsp = dms->process(ev);
                    ^
[  8%] Building CXX object service/CMakeFiles/service.dir/user_service.cpp.o
/DNXY/projects/dnxy_bike/src/service/user_service.cpp: In member function ‘bool UserService::list_consume_records(const string&, std::vector<AccountRecord>&)’:
/DNXY/projects/dnxy_bike/src/service/user_service.cpp:155:60: warning: invalid conversion from ‘char*’ to ‘u64 {aka long long unsigned int}’ [-fpermissive]
            AccountRecord ar(atoi(row[3]), atoll(row[4]), row[2]);
                                                          ^
In file included from /DNXY/projects/dnxy_bike/src/service/user_service.h:7:0,
                 from /DNXY/projects/dnxy_bike/src/service/user_service.cpp:2:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:236:5: note: initializing argument 3 of ‘AccountRecord::AccountRecord(i16, i32, u64)’
    AccountRecord(i16 type, i32 limit, u64 timestamp)
    ^
[ 13%] Building CXX object service/CMakeFiles/service.dir/bike_service.cpp.o
/DNXY/projects/dnxy_bike/src/service/bike_service.cpp: In member function ‘bool BikeService::get_bike(int, Bike&)’:
/DNXY/projects/dnxy_bike/src/service/bike_service.cpp:83:25: warning: invalid conversion from ‘int’ to ‘bike_statu’ [-fpermissive]
    bk.st_          = atoi(row[1]);   // »  ´ˬë
                      ^
/DNXY/projects/dnxy_bike/src/service/bike_service.cpp:89:25: warning: invalid conversion from ‘int’ to ‘bike_type’ [-fpermissive]
    bk.type_        = atoi(row[7]);
                      ^
[ 17%] Building CXX object service/CMakeFiles/service.dir/MsgQueue.cpp.o
[ 21%] Building CXX object service/CMakeFiles/service.dir/sqlconnection.cpp.o
[ 26%] Linking CXX static library libservice.a
[ 26%] Built target service
[ 30%] Building CXX object common/CMakeFiles/common.dir/Logger.cpp.o
[ 34%] Building CXX object common/CMakeFiles/common.dir/events_def.cpp.o
[ 39%] Building CXX object common/CMakeFiles/common.dir/event.cpp.o
[ 43%] Linking CXX static library libcommon.a
[ 43%] Built target common
[ 47%] Building CXX object bus/CMakeFiles/bus.dir/runer_bike_handler.cpp.o
[ 52%] Building CXX object bus/CMakeFiles/bus.dir/BusProcessor.cpp.o
[ 56%] Building CXX object bus/CMakeFiles/bus.dir/user_event_handler.cpp.o
/DNXY/projects/dnxy_bike/src/bus/user_event_handler.cpp:18:23: fatal error: json/json.h: No such file or directory
 #include <json/json.h>
```

```
                                ^
compilation terminated.
bus/CMakeFiles/bus.dir/build.make:110: recipe for target
'bus/CMakeFiles/bus.dir/user_event_handler.cpp.o' failed
make[2]: *** [bus/CMakeFiles/bus.dir/user_event_handler.cpp.o] Error 1
CMakeFiles/Makefile2:125: recipe for target 'bus/CMakeFiles/bus.dir/all' failed
make[1]: *** [bus/CMakeFiles/bus.dir/all] Error 2
Makefile:127: recipe for target 'all' failed
make: *** [all] Error 2
```

错误原因

user_event_handler.cpp 中引用的头文件找不到

ser_event_handler.h

```
 1:
 2: #include "user_event_handler.h"
 3: #include "Logger.h"
 4:
 5: #include <arpa/inet.h>
 6: #include <assert.h>
 7: #include <errno.h>
 8: #include <netinet/in.h>
 9: #include <signal.h>
10: #include <stdlib.h>
11: #include <stdio.h>
12: #include <string.h>
13: #include <sys/types.h>
14: #include <sys/socket.h>
15: #include <sys/wait.h>
16: #include <netdb.h>
17: #include <unistd.h>
18: #include <json/json.h>
19:
20:
21: #include "user_service.h"
22:
```

解决办法

安装 [jsoncpp]

wget https://nchc.dl.sourceforge.net/project/jsoncpp/jsoncpp/0.5.0/jsoncpp-src-0.5.0.tar.gz
tar zxf jsoncpp-src-0.5.0.tar.gz
cd jsoncpp-src-0.5.0/
apt-get install scons
scons platform=linux-gcc

cd /DNXY/download/jsoncpp-src-0.5.0/include
cp -a json/ /usr/include/
cd /DNXY/download/jsoncpp-src-0.5.0/libs/linux-gcc-5.4.0

cp * /usr/lib/

在 third 下面添加 json 的 include 和 lib
cd /usr/include
ln -s $(readlink -e json) /DNXY/projects/dnxy_bike/third/include

cd /usr/
ln -s $(readlink -e lib) /DNXY/projects/dnxy_bike/third/lib/json

继续编译

make clean
make

报错

```
[  4%] Building CXX object service/CMakeFiles/service.dir/DispatchMsgService.cpp.o
/DNXY/projects/dnxy_bike/src/service/DispatchMsgService.cpp: In static member function 'static void* DispatchMsgService::svc(void*)':
/DNXY/projects/dnxy_bike/src/service/DispatchMsgService.cpp:124:17: warning: unused variable 'rsp' [-Wunused-variable]
            iEvent* rsp = dms->process(ev);
                    ^
[  8%] Building CXX object service/CMakeFiles/service.dir/user_service.cpp.o
/DNXY/projects/dnxy_bike/src/service/user_service.cpp: In member function 'bool UserService::list_consume_records(const string&, std::vector<AccountRecord>&)':
/DNXY/projects/dnxy_bike/src/service/user_service.cpp:155:60: warning: invalid conversion from 'char*' to 'u64 {aka long long unsigned int}' [-fpermissive]
            AccountRecord ar(atoi(row[3]), atoll(row[4]), row[2]);
                                                          ^
In file included from /DNXY/projects/dnxy_bike/src/service/user_service.h:7:0,
                 from /DNXY/projects/dnxy_bike/src/service/user_service.cpp:2:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:236:5: note: initializing argument 3 of 'AccountRecord::AccountRecord(i16, i32, u64)'
    AccountRecord(i16 type, i32 limit, u64 timestamp)
    ^
[ 13%] Building CXX object service/CMakeFiles/service.dir/bike_service.cpp.o
/DNXY/projects/dnxy_bike/src/service/bike_service.cpp: In member function 'bool BikeService::get_bike(int, Bike&)':
/DNXY/projects/dnxy_bike/src/service/bike_service.cpp:83:25: warning: invalid conversion from 'int' to 'bike_status' [-fpermissive]
    bk.st_          = atoi(row[1]);   // »  ´ˬë
                    ^
/DNXY/projects/dnxy_bike/src/service/bike_service.cpp:89:25: warning: invalid conversion from 'int' to 'bike_type' [-fpermissive]
    bk.type_        = atoi(row[7]);
```

```
                                    ^
[ 17%] Building CXX object service/CMakeFiles/service.dir/MsgQueue.cpp.o
[ 21%] Building CXX object service/CMakeFiles/service.dir/sqlconnection.cpp.o
[ 26%] Linking CXX static library libservice.a
[ 26%] Built target service
[ 30%] Building CXX object common/CMakeFiles/common.dir/Logger.cpp.o
[ 34%] Building CXX object common/CMakeFiles/common.dir/events_def.cpp.o
[ 39%] Building CXX object common/CMakeFiles/common.dir/event.cpp.o
[ 43%] Linking CXX static library libcommon.a
[ 43%] Built target common
[ 47%] Building CXX object bus/CMakeFiles/bus.dir/runer_bike_handler.cpp.o
[ 52%] Building CXX object bus/CMakeFiles/bus.dir/BusProcessor.cpp.o
[ 56%] Building CXX object bus/CMakeFiles/bus.dir/user_event_handler.cpp.o
/DNXY/projects/dnxy_bike/src/bus/user_event_handler.cpp: In member function 'ListAccountRecordsRspEv*
UserEventHandler::handle_list_account_records_req(ListAccountRecordsReqEv*)':
/DNXY/projects/dnxy_bike/src/bus/user_event_handler.cpp:89:5: warning: label 'std' defined but not used [-Wunused-label]
     std:string mobile = ev->get_mobile();
     ^
/DNXY/projects/dnxy_bike/src/bus/user_event_handler.cpp: In member function 'std::__cxx11::string UserEventHandler::send_sms(const char*, const char*, const char*)':
/DNXY/projects/dnxy_bike/src/bus/user_event_handler.cpp:210:17: warning: ISO C++ forbids converting a string constant to 'char*' [-Wwrite-strings]
     char *url = "https://sms.yunpian.com/v2/sms/single_send.json";
                 ^
/DNXY/projects/dnxy_bike/src/bus/user_event_handler.cpp:223:14: warning: unused variable 'res' [-Wunused-variable]
     CURLcode res = curl_easy_perform(curl_);
              ^
/DNXY/projects/dnxy_bike/src/bus/user_event_handler.cpp: In member function 'std::__cxx11::string UserEventHandler::get_sms_code()':
/DNXY/projects/dnxy_bike/src/bus/user_event_handler.cpp:250:20: warning: ISO C++ forbids converting a string constant to 'char*' [-Wwrite-strings]
     char* apikey = "9ac068166011ccef83d9882c112810ac";
                    ^
[ 60%] Linking CXX static library libbus.a
[ 60%] Built target bus
Scanning dependencies of target intf
[ 65%] Building CXX object intf/CMakeFiles/intf.dir/interface_constants.cpp.o
In file included from /DNXY/projects/dnxy_bike/src/intf/interface_constants.h:10:0,
                 from /DNXY/projects/dnxy_bike/src/intf/interface_constants.cpp:7:
/DNXY/projects/dnxy_bike/src/intf/interface_types.h:12:27: fatal error: thrift/Thrift.h: No such file or directory
```

compilation terminated.
intf/CMakeFiles/intf.dir/build.make:62: recipe for target 'intf/CMakeFiles/intf.dir/interface_constants.cpp.o' failed
make[2]: *** [intf/CMakeFiles/intf.dir/interface_constants.cpp.o] Error 1
CMakeFiles/Makefile2:235: recipe for target 'intf/CMakeFiles/intf.dir/all' failed
make[1]: *** [intf/CMakeFiles/intf.dir/all] Error 2
Makefile:127: recipe for target 'all' failed
make: *** [all] Error 2

错误原因

interface_types.h 中引用的头文件找不到

```
1:  /**
2:   * Autogenerated by Thrift Compiler (0.11.0)
3:   *
4:   * DO NOT EDIT UNLESS YOU ARE SURE THAT YOU KNOW WHAT
5:   *  @generated
6:   */
7:  #ifndef interface_TYPES_H
8:  #define interface_TYPES_H
9:
10: #include <iosfwd>
11:
12: #include <thrift/Thrift.h>
13: #include <thrift/TApplicationException.h>
14: #include <thrift/TBase.h>
15: #include <thrift/protocol/TProtocol.h>
16: #include <thrift/transport/TTransport.h>
17:
18: #include <thrift/stdcxx.h>
19: #include "struct_types.h"
20:
21:
22: namespace brkservice {
```

解决办法

安装 thrift

wget http://mirrors.shu.edu.cn/apache/thrift/0.11.0/thrift-0.11.0.tar.gz

tar zxf thrift-0.11.0.tar.gz

cd thrift-0.11.0/

安装依赖

sudo apt-get install automake bison flex g++ git libboost-all-dev libevent-dev libssl-dev libtool make pkg-config **libglib2.0-dev**

安装 lua

wget http://www.lua.org/ftp/lua-5.3.5.tar.gz

tar zxf lua-5.3.5.tar.gz

cd lua-5.3.5/

apt-get install libreadline-dev

make linux

cd thrift-0.11.0/
./configure --with-cpp --with-boost --with-python --without-csharp --with-java --without-erlang --without-perl --with-php --without-php_extension --without-ruby --without-haskell --without-go
输出

```
thrift 0.11.0

Building C (GLib) Library .... : yes
Building C# (Mono) Library ... : no
Building C++ Library ......... : yes
Building D Library ........... : no
Building Dart Library ........ : no
Building dotnetcore Library .. : no
Building Erlang Library ...... : no
Building Go Library .......... : no
Building Haskell Library ..... : no
Building Haxe Library ........ : no
Building Java Library ........ : no
Building Lua Library ......... : no
Building NodeJS Library ...... : no
Building Perl Library ........ : no
Building PHP Library ......... : no
Building Plugin Support ...... : no
Building Python Library ...... : yes
Building Py3 Library ......... : yes
Building Ruby Library ........ : no
Building Rust Library ........ : no

C++ Library:
   C++ compiler ............. : g++ -std=c++11
   Build TZlibTransport ..... : yes
   Build TNonblockingServer .. : yes
   Build TQTcpServer (Qt4) ... : no
   Build TQTcpServer (Qt5) ... : no
   C++ compiler version ..... : g++ (Ubuntu 5.4.0-6ubuntu1~16.04.10) 5.4.0 20160609

Python Library:
   Using Python ............. : /usr/bin/python
   Using Python version ..... : Python 2.7.12
   Using Python3 ............ : /usr/bin/python3
   Using Python3 version .... : Python 3.5.2

If something is missing that you think should be present,
please skim the output of configure to find the missing
component.  Details are present in config.log.
```

make
make install

继续编译

make clean
make

报错

[4%] Building CXX object service/CMakeFiles/service.dir/DispatchMsgService.cpp.o
/DNXY/projects/dnxy_bike/src/service/DispatchMsgService.cpp: In static member

```
function 'static void* DispatchMsgService::svc(void*)':
/DNXY/projects/dnxy_bike/src/service/DispatchMsgService.cpp:124:17: warning: unused variable 'rsp' [-Wunused-variable]
            iEvent* rsp = dms->process(ev);
                    ^
[  8%] Building CXX object service/CMakeFiles/service.dir/user_service.cpp.o
/DNXY/projects/dnxy_bike/src/service/user_service.cpp: In member function 'bool UserService::list_consume_records(const string&, std::vector<AccountRecord>&)':
/DNXY/projects/dnxy_bike/src/service/user_service.cpp:155:60: warning: invalid conversion from 'char*' to 'u64 {aka long long unsigned int}' [-fpermissive]
            AccountRecord ar(atoi(row[3]), atoll(row[4]), row[2]);
                                                                ^
In file included from /DNXY/projects/dnxy_bike/src/service/user_service.h:7:0,
                    from /DNXY/projects/dnxy_bike/src/service/user_service.cpp:2:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:236:5: note: initializing argument 3 of 'AccountRecord::AccountRecord(i16, i32, u64)'
    AccountRecord(i16 type, i32 limit, u64 timestamp)
    ^
[ 13%] Building CXX object service/CMakeFiles/service.dir/bike_service.cpp.o
/DNXY/projects/dnxy_bike/src/service/bike_service.cpp: In member function 'bool BikeService::get_bike(int, Bike&)':
/DNXY/projects/dnxy_bike/src/service/bike_service.cpp:83:25: warning: invalid conversion from 'int' to 'bike_status' [-fpermissive]
    bk.st_          = atoi(row[1]);   // »   ´˛ë
                            ^
/DNXY/projects/dnxy_bike/src/service/bike_service.cpp:89:25: warning: invalid conversion from 'int' to 'bike_type' [-fpermissive]
    bk.type_        = atoi(row[7]);
                            ^
[ 17%] Building CXX object service/CMakeFiles/service.dir/MsgQueue.cpp.o
[ 21%] Building CXX object service/CMakeFiles/service.dir/sqlconnection.cpp.o
[ 26%] Linking CXX static library libservice.a
[ 26%] Built target service
[ 30%] Building CXX object common/CMakeFiles/common.dir/Logger.cpp.o
[ 34%] Building CXX object common/CMakeFiles/common.dir/events_def.cpp.o
[ 39%] Building CXX object common/CMakeFiles/common.dir/event.cpp.o
[ 43%] Linking CXX static library libcommon.a
[ 43%] Built target common
[ 47%] Building CXX object bus/CMakeFiles/bus.dir/runer_bike_handler.cpp.o
[ 52%] Building CXX object bus/CMakeFiles/bus.dir/BusProcessor.cpp.o
[ 56%] Building CXX object bus/CMakeFiles/bus.dir/user_event_handler.cpp.o
/DNXY/projects/dnxy_bike/src/bus/user_event_handler.cpp: In member function 'ListAccountRecordsRspEv* UserEventHandler::handle_list_account_records_req(ListAccountRecordsReqEv*)':
```

```
/DNXY/projects/dnxy_bike/src/bus/user_event_handler.cpp:89:5: warning: label ‘std’ defined but not used [-Wunused-label]
     std:string mobile = ev->get_mobile();
     ^
/DNXY/projects/dnxy_bike/src/bus/user_event_handler.cpp: In member function ‘std::__cxx11::string UserEventHandler::send_sms(const char*, const char*, const char*)’:
/DNXY/projects/dnxy_bike/src/bus/user_event_handler.cpp:210:17: warning: ISO C++ forbids converting a string constant to ‘char*’ [-Wwrite-strings]
     char *url = "https://sms.yunpian.com/v2/sms/single_send.json";
                 ^
/DNXY/projects/dnxy_bike/src/bus/user_event_handler.cpp:223:14: warning: unused variable ‘res’ [-Wunused-variable]
     CURLcode res = curl_easy_perform(curl_);
              ^
/DNXY/projects/dnxy_bike/src/bus/user_event_handler.cpp: In member function ‘std::__cxx11::string UserEventHandler::get_sms_code()’:
/DNXY/projects/dnxy_bike/src/bus/user_event_handler.cpp:250:20: warning: ISO C++ forbids converting a string constant to ‘char*’ [-Wwrite-strings]
     char* apikey = "9ac068166011ccef83d9882c112810ac";
                    ^
[ 60%] Linking CXX static library libbus.a
[ 60%] Built target bus
[ 65%] Building CXX object intf/CMakeFiles/intf.dir/interface_constants.cpp.o
[ 69%] Building CXX object intf/CMakeFiles/intf.dir/interface.cpp.o
In file included from /usr/include/event2/event_compat.h:58:0,
                 from /usr/local/include/thrift/server/TNonblockingServer.h:43,
                 from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:4:
/usr/local/include/thrift/server/TNonblockingServer.h:76:23: error: multiple types in one declaration
  typedef THRIFT_SOCKET evutil_socket_t;
                        ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp: In member function ‘void BRKServiceHandler::common_response_msg_2_result(brkservice::ApiResult&, const CommonRspEv*)’:
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:186:47: warning: passing ‘const CommonRspEv’ as ‘this’ argument discards qualifiers [-fpermissive]
     result.__set_resultCode(rsp->get_code());
                                               ^
In file included from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:15:0:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:47:9: note:   in call to ‘i32 CommonRspEv::get_code()’
     i32 get_code(){return code_;};
         ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:187:45: warning: passing ‘const
```

```
CommonRspEv' as 'this' argument discards qualifiers [-fpermissive]
        result.__set_resultMsg(rsp->get_msg());
                                                ^
In file included from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:15:0:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:48:24: note:   in call to 'const string& CommonRspEv::get_msg('
    const std::string& get_msg(){return msg_;};
                        ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:188:41: warning: passing 'const CommonRspEv' as 'this' argument discards qualifiers [-fpermissive]
        result.__set_data(rsp->get_data());
                                            ^
In file included from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:15:0:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:49:24: note:   in call to 'const string& CommonRspEv::get_data()'
    const std::string& get_data(){ return data_;};
                        ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp: In member function 'void BRKServiceHandler::balance_response_msg_2_result(brkservice::BalanceResult&, const GetAccountBalanceRspEv*)':
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:201:47: warning: passing 'const GetAccountBalanceRspEv' as 'this' argument discards qualifiers [-fpermissive]
        result.__set_resultCode(rsp->get_code());
                                                ^
In file included from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:15:0:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:47:9: note:   in call to 'i32 CommonRspEv::get_code()'
    i32 get_code(){return code_;};
        ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:202:45: warning: passing 'const GetAccountBalanceRspEv' as 'this' argument discards qualifiers [-fpermissive]
        result.__set_resultMsg(rsp->get_msg());
                                                ^
In file included from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:15:0:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:48:24: note:   in call to 'const string& CommonRspEv::get_msg('
    const std::string& get_msg(){return msg_;};
                        ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:203:47: warning: passing 'const GetAccountBalanceRspEv' as 'this' argument discards qualifiers [-fpermissive]
        result.__set_balance(rsp->get_balance());
                                                ^
In file included from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:15:0:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:95:10: note:   in call to 'i32&
```

```
GetAccountBalanceRspEv::get_balance()'
        i32& get_balance(){return balance_;};
                ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:206:12: warning: return-statement with a value, in function returning 'void' [-fpermissive]
        return result;
                ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp: In member function 'void BRKServiceHandler::lock_response_msg_2_result(brkservice::TravelResult&, const LockResultRspEv*)':
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:222:48: warning: passing 'const LockResultRspEv' as 'this' argument discards qualifiers [-fpermissive]
                TravelInfo info = rsp->get_travel_info();
                                                ^
In file included from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:15:0:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:195:23: note:    in call to 'const TravelInfo& LockResultRspEv::get_travel_info()'
        const TravelInfo& get_travel_info(){ return ti_;};
                                ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:223:47: warning: passing 'const LockResultRspEv' as 'this' argument discards qualifiers [-fpermissive]
                result.__set_resultCode(rsp->get_code());
                                                ^
In file included from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:15:0:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:47:9: note:      in call to 'i32 CommonRspEv::get_code()'
        i32 get_code(){return code_;};
                ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:224:45: warning: passing 'const LockResultRspEv' as 'this' argument discards qualifiers [-fpermissive]
                result.__set_resultMsg(rsp->get_msg());
                                                ^
In file included from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:15:0:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:48:24: note:    in call to 'const string& CommonRspEv::get_msg('
        const std::string& get_msg(){return msg_;};
                                ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:225:41: warning: passing 'const LockResultRspEv' as 'this' argument discards qualifiers [-fpermissive]
                result.__set_data(rsp->get_data());
                                                ^
In file included from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:15:0:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:49:24: note:    in call to 'const string& CommonRspEv::get_data()'
```

```
    const std::string& get_data(){ return data_;};
                                ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:240:12: warning: return-statement with a value, in function returning 'void' [-fpermissive]
    return result;
           ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp: In member function 'void BRKServiceHandler::account_records_response_msg_2_result(brkservice::RecordsResult &, const ListAccountRecordsRspEv*)':
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:252:47: warning: passing 'const ListAccountRecordsRspEv' as 'this' argument discards qualifiers [-fpermissive]
        result.__set_resultCode(rsp->get_code());
                                                 ^
In file included from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:15:0:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:47:9: note:   in call to 'i32 CommonRspEv::get_code()'
    i32 get_code(){return code_;};
        ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:253:45: warning: passing 'const ListAccountRecordsRspEv' as 'this' argument discards qualifiers [-fpermissive]
        result.__set_resultMsg(rsp->get_msg());
                                               ^
In file included from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:15:0:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:48:24: note:   in call to 'const string& CommonRspEv::get_msg('
    const std::string& get_msg(){return msg_;};
                               ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:255:58: warning: passing 'const ListAccountRecordsRspEv' as 'this' argument discards qualifiers [-fpermissive]
        std::vector<AccountRecord> rs = rsp->get_records();
                                                         ^
In file included from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:15:0:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:267:39: note:   in call to 'const std::vector<AccountRecord>& ListAccountRecordsRspEv::get_records()'
    const std::vector<AccountRecord>& get_records(){ return records_;};
                                                   ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:266:12: warning: return-statement with a value, in function returning 'void' [-fpermissive]
    return result;
           ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp: In member function 'void BRKServiceHandler::trave_result_response_msg_2_result(brkservice::TravelResult&, const ListTravelRecordsRspEv*)':
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:281:48: warning: passing 'const
```

```
ListTravelRecordsRspEv' as 'this' argument discards qualifiers [-fpermissive]
        TravelInfo info = rsp->get_travel_info();
                                                 ^
In file included from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:15:0:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:285:23: note:   in call to 'const TravelInfo& ListTravelRecordsRspEv::get_travel_info()'
    const TravelInfo& get_travel_info(){ return ti_;};
                      ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:282:47: warning: passing 'const ListTravelRecordsRspEv' as 'this' argument discards qualifiers [-fpermissive]
        result.__set_resultCode(rsp->get_code());
                                                 ^
In file included from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:15:0:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:47:9: note:   in call to 'i32 CommonRspEv::get_code()'
    i32 get_code(){return code_;};
        ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:283:45: warning: passing 'const ListTravelRecordsRspEv' as 'this' argument discards qualifiers [-fpermissive]
        result.__set_resultMsg(rsp->get_msg());
                                               ^
In file included from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:15:0:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:48:24: note:   in call to 'const string& CommonRspEv::get_msg('
    const std::string& get_msg(){return msg_;};
                       ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:299:12: warning: return-statement with a value, in function returning 'void' [-fpermissive]
    return result;
           ^
intf/CMakeFiles/intf.dir/build.make:86: recipe for target 'intf/CMakeFiles/intf.dir/interface.cpp.o' failed
make[2]: *** [intf/CMakeFiles/intf.dir/interface.cpp.o] Error 1
CMakeFiles/Makefile2:235: recipe for target 'intf/CMakeFiles/intf.dir/all' failed
make[1]: *** [intf/CMakeFiles/intf.dir/all] Error 2
Makefile:127: recipe for target 'all' failed
make: *** [all] Error 2
```

其实就一条 error

```
[ 69%] Building CXX object intf/CMakeFiles/intf.dir/interface.cpp.o
In file included from /usr/include/event2/event_compat.h:58:0,
                 from /usr/local/include/thrift/server/TNonblockingServer.h:43,
                 from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:4:
/usr/local/include/thrift/server/TNonblockingServer.h:76:23: error: multiple types in one declaration
```

typedef THRIFT_SOCKET evutil_socket_t;

错误原因

TNonblockingServer.h 有这个代码

/*

#if LIBEVENT_VERSION_NUMBER < 0x02000000

typedef THRIFT_SOCKET evutil_socket_t;

#endif

*/

解决办法

下载 libevent

wget https://github.com/libevent/libevent/releases/download/release-2.1.8-stable/libevent-2.1.8-stable.tar.gz

tar zxf libevent-2.1.8-stable.tar.gz

cd libevent-2.1.8-stable/

./configure --prefix=/usr

make

sudo make install

brks 工程的 CMakefilelist.txt，增加一个宏定义（定义 libevent 的版本，根据自己的版本而定）

cd /DNXY/projects/dnxy_bike/src

sed -i "31a ADD_DEFINITIONS(-DLIBEVENT_VERSION_NUMBER=0x02010800)\r" CMakeLists.txt

cmake .

make clean

make

报错

```
[  4%] Building CXX object service/CMakeFiles/service.dir/DispatchMsgService.cpp.o
/DNXY/projects/dnxy_bike/src/service/DispatchMsgService.cpp: In static member function 'static void* DispatchMsgService::svc(void*)':
/DNXY/projects/dnxy_bike/src/service/DispatchMsgService.cpp:124:17: warning: unused variable 'rsp' [-Wunused-variable]
            iEvent* rsp = dms->process(ev);
                    ^
[  8%] Building CXX object service/CMakeFiles/service.dir/user_service.cpp.o
/DNXY/projects/dnxy_bike/src/service/user_service.cpp: In member function 'bool UserService::list_consume_records(const string&, std::vector<AccountRecord>&)':
/DNXY/projects/dnxy_bike/src/service/user_service.cpp:155:60: warning: invalid conversion from 'char*' to 'u64 {aka long long unsigned int}' [-fpermissive]
            AccountRecord ar(atoi(row[3]), atoll(row[4]), row[2]);
                                                          ^
```

```
In file included from /DNXY/projects/dnxy_bike/src/service/user_service.h:7:0,
                 from /DNXY/projects/dnxy_bike/src/service/user_service.cpp:2:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:236:5: note: initializing argument 3 of 'AccountRecord::AccountRecord(i16, i32, u64)'
    AccountRecord(i16 type, i32 limit, u64 timestamp)
    ^
[ 13%] Building CXX object service/CMakeFiles/service.dir/bike_service.cpp.o
/DNXY/projects/dnxy_bike/src/service/bike_service.cpp: In member function 'bool BikeService::get_bike(int, Bike&)':
/DNXY/projects/dnxy_bike/src/service/bike_service.cpp:83:25: warning: invalid conversion from 'int' to 'bike_status' [-fpermissive]
    bk.st_          = atoi(row[1]);    // ??????
                      ^
/DNXY/projects/dnxy_bike/src/service/bike_service.cpp:89:25: warning: invalid conversion from 'int' to 'bike_type' [-fpermissive]
    bk.type_        = atoi(row[7]);
                      ^
[ 17%] Building CXX object service/CMakeFiles/service.dir/MsgQueue.cpp.o
[ 21%] Building CXX object service/CMakeFiles/service.dir/sqlconnection.cpp.o
[ 26%] Linking CXX static library libservice.a
[ 26%] Built target service
[ 30%] Building CXX object common/CMakeFiles/common.dir/Logger.cpp.o
[ 34%] Building CXX object common/CMakeFiles/common.dir/events_def.cpp.o
[ 39%] Building CXX object common/CMakeFiles/common.dir/event.cpp.o
[ 43%] Linking CXX static library libcommon.a
[ 43%] Built target common
[ 47%] Building CXX object bus/CMakeFiles/bus.dir/runer_bike_handler.cpp.o
[ 52%] Building CXX object bus/CMakeFiles/bus.dir/BusProcessor.cpp.o
[ 56%] Building CXX object bus/CMakeFiles/bus.dir/user_event_handler.cpp.o
/DNXY/projects/dnxy_bike/src/bus/user_event_handler.cpp: In member function 'ListAccountRecordsRspEv* UserEventHandler::handle_list_account_records_req(ListAccountRecordsReqEv*)':
/DNXY/projects/dnxy_bike/src/bus/user_event_handler.cpp:89:5: warning: label 'std' defined but not used [-Wunused-label]
    std:string mobile = ev->get_mobile();
    ^
/DNXY/projects/dnxy_bike/src/bus/user_event_handler.cpp: In member function 'std::__cxx11::string UserEventHandler::send_sms(const char*, const char*, const char*)':
/DNXY/projects/dnxy_bike/src/bus/user_event_handler.cpp:210:17: warning: ISO C++ forbids converting a string constant to 'char*' [-Wwrite-strings]
    char *url = "https://sms.yunpian.com/v2/sms/single_send.json";
                ^
/DNXY/projects/dnxy_bike/src/bus/user_event_handler.cpp:223:14: warning: unused variable 'res' [-Wunused-variable]
```

```
    CURLcode res = curl_easy_perform(curl_);
                   ^
/DNXY/projects/dnxy_bike/src/bus/user_event_handler.cpp: In member function 'std::__cxx11::string UserEventHandler::get_sms_code()':
/DNXY/projects/dnxy_bike/src/bus/user_event_handler.cpp:250:20: warning: ISO C++ forbids converting a string constant to 'char*' [-Wwrite-strings]
    char* apikey = "9ac068166011ccef83d9882c112810ac";
                   ^
[ 60%] Linking CXX static library libbus.a
[ 60%] Built target bus
[ 65%] Building CXX object intf/CMakeFiles/intf.dir/interface_constants.cpp.o
[ 69%] Building CXX object intf/CMakeFiles/intf.dir/interface.cpp.o
/DNXY/projects/dnxy_bike/src/intf/interface.cpp: In member function 'void BRKServiceHandler::common_response_msg_2_result(brkservice::ApiResult&, const CommonRspEv*)':
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:186:47: warning: passing 'const CommonRspEv' as 'this' argument discards qualifiers [-fpermissive]
        result.__set_resultCode(rsp->get_code());
                                                ^
In file included from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:15:0:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:47:9: note:   in call to 'i32 CommonRspEv::get_code()'
    i32 get_code(){return code_;};
        ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:187:45: warning: passing 'const CommonRspEv' as 'this' argument discards qualifiers [-fpermissive]
        result.__set_resultMsg(rsp->get_msg());
                                              ^
In file included from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:15:0:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:48:24: note:   in call to 'const string& CommonRspEv::get_msg('
    const std::string& get_msg(){return msg_;};
                       ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:188:41: warning: passing 'const CommonRspEv' as 'this' argument discards qualifiers [-fpermissive]
        result.__set_data(rsp->get_data());
                                         ^
In file included from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:15:0:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:49:24: note:   in call to 'const string& CommonRspEv::get_data()'
    const std::string& get_data(){ return data_;};
                       ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp: In member function 'void BRKServiceHandler::balance_response_msg_2_result(brkservice::BalanceResult&, const
```

```
GetAccountBalanceRspEv*)':
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:201:47: warning: passing ‘const GetAccountBalanceRspEv’ as ‘this’ argument discards qualifiers [-fpermissive]
        result.__set_resultCode(rsp->get_code());
                                                ^
In file included from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:15:0:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:47:9: note:  in call to ‘i32 CommonRspEv::get_code()’
    i32 get_code(){return code_;};
        ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:202:45: warning: passing ‘const GetAccountBalanceRspEv’ as ‘this’ argument discards qualifiers [-fpermissive]
        result.__set_resultMsg(rsp->get_msg());
                                              ^
In file included from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:15:0:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:48:24: note:  in call to ‘const string& CommonRspEv::get_msg(’
    const std::string& get_msg(){return msg_;};
                        ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:203:47: warning: passing ‘const GetAccountBalanceRspEv’ as ‘this’ argument discards qualifiers [-fpermissive]
        result.__set_balance(rsp->get_balance());
                                                ^
In file included from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:15:0:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:95:10: note:  in call to ‘i32& GetAccountBalanceRspEv::get_balance()’
    i32& get_balance(){return balance_;};
         ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:206:12: warning: return-statement with a value, in function returning 'void' [-fpermissive]
    return result;
           ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp: In member function ‘void BRKServiceHandler::lock_response_msg_2_result(brkservice::TravelResult&, const LockResultRspEv*)’:
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:222:48: warning: passing ‘const LockResultRspEv’ as ‘this’ argument discards qualifiers [-fpermissive]
        TravelInfo info = rsp->get_travel_info();
                                                ^
In file included from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:15:0:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:195:23: note:  in call to ‘const TravelInfo& LockResultRspEv::get_travel_info()’
    const TravelInfo& get_travel_info(){ return ti_;};
                       ^
```

```
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:223:47: warning: passing ‘const LockResultRspEv’ as ‘this’ argument discards qualifiers [-fpermissive]
        result.__set_resultCode(rsp->get_code());
                                                ^
In file included from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:15:0:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:47:9: note:  in call to ‘i32 CommonRspEv::get_code()’
    i32 get_code(){return code_;};
        ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:224:45: warning: passing ‘const LockResultRspEv’ as ‘this’ argument discards qualifiers [-fpermissive]
        result.__set_resultMsg(rsp->get_msg());
                                              ^
In file included from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:15:0:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:48:24: note:  in call to ‘const string& CommonRspEv::get_msg(’
    const std::string& get_msg(){return msg_;};
                       ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:225:41: warning: passing ‘const LockResultRspEv’ as ‘this’ argument discards qualifiers [-fpermissive]
        result.__set_data(rsp->get_data());
                                         ^
In file included from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:15:0:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:49:24: note:  in call to ‘const string& CommonRspEv::get_data()’
    const std::string& get_data(){ return data_;};
                       ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:240:12: warning: return-statement with a value, in function returning 'void' [-fpermissive]
    return result;
           ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp: In member function ‘void BRKServiceHandler::account_records_response_msg_2_result(brkservice::RecordsResult &, const ListAccountRecordsRspEv*)’:
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:252:47: warning: passing ‘const ListAccountRecordsRspEv’ as ‘this’ argument discards qualifiers [-fpermissive]
        result.__set_resultCode(rsp->get_code());
                                                ^
In file included from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:15:0:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:47:9: note:  in call to ‘i32 CommonRspEv::get_code()’
    i32 get_code(){return code_;};
        ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:253:45: warning: passing ‘const
```

```
ListAccountRecordsRspEv' as 'this' argument discards qualifiers [-fpermissive]
        result.__set_resultMsg(rsp->get_msg());
                                                    ^
In file included from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:15:0:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:48:24: note:    in call to 'const string& CommonRspEv::get_msg('
    const std::string& get_msg(){return msg_;};
                       ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:255:58:    warning:    passing    'const ListAccountRecordsRspEv' as 'this' argument discards qualifiers [-fpermissive]
        std::vector<AccountRecord> rs = rsp->get_records();
                                                                ^
In file included from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:15:0:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:267:39: note:    in call to 'const std::vector<AccountRecord>& ListAccountRecordsRspEv::get_records()'
    const std::vector<AccountRecord>& get_records(){ return records_;};
                                      ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:266:12: warning: return-statement with a value, in function returning 'void' [-fpermissive]
    return result;
           ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:    In    member    function    'void BRKServiceHandler::trave_result_response_msg_2_result(brkservice::TravelResult&, const ListTravelRecordsRspEv*)':
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:281:48:    warning:    passing    'const ListTravelRecordsRspEv' as 'this' argument discards qualifiers [-fpermissive]
        TravelInfo info = rsp->get_travel_info();
                                                ^
In file included from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:15:0:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:285:23: note:    in call to 'const TravelInfo& ListTravelRecordsRspEv::get_travel_info()'
    const TravelInfo& get_travel_info(){ return ti_;};
                      ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:282:47:    warning:    passing    'const ListTravelRecordsRspEv' as 'this' argument discards qualifiers [-fpermissive]
        result.__set_resultCode(rsp->get_code());
                                                  ^
In file included from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:15:0:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:47:9: note:    in call to 'i32 CommonRspEv::get_code()'
    i32 get_code(){return code_;};
        ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:283:45:    warning:    passing    'const ListTravelRecordsRspEv' as 'this' argument discards qualifiers [-fpermissive]
```

```
        result.__set_resultMsg(rsp->get_msg());
                                                    ^
In file included from /DNXY/projects/dnxy_bike/src/intf/interface.cpp:15:0:
/DNXY/projects/dnxy_bike/src/./common/events_def.h:48:24: note:   in call to 'const string& CommonRspEv::get_msg('
    const std::string& get_msg(){return msg_;};
                       ^
/DNXY/projects/dnxy_bike/src/intf/interface.cpp:299:12: warning: return-statement with a value, in function returning 'void' [-fpermissive]
    return result;
           ^
[ 73%] Building CXX object intf/CMakeFiles/intf.dir/interface_types.cpp.o
[ 78%] Building CXX object intf/CMakeFiles/intf.dir/struct_types.cpp.o
[ 82%] Building CXX object intf/CMakeFiles/intf.dir/BRKService.cpp.o
[ 86%] Building CXX object intf/CMakeFiles/intf.dir/struct_constants.cpp.o
[ 91%] Linking CXX static library libintf.a
[ 91%] Built target intf
[ 95%] Building CXX object CMakeFiles/brks.dir/main.cpp.o
[100%] Linking CXX executable brks
/usr/bin/ld: cannot find -ljsoncpp
/usr/bin/ld: cannot find -ltinyxml
collect2: error: ld returned 1 exit status
CMakeFiles/brks.dir/build.make:98: recipe for target 'brks' failed
make[2]: *** [brks] Error 1
CMakeFiles/Makefile2:70: recipe for target 'CMakeFiles/brks.dir/all' failed
make[1]: *** [CMakeFiles/brks.dir/all] Error 2
Makefile:127: recipe for target 'all' failed
make: *** [all] Error 2
```

报错关键信息

```
[100%] Linking CXX executable brks
/usr/bin/ld: cannot find -ljsoncpp
/usr/bin/ld: cannot find -ltinyxml
```

错误原因

找不到 ljsoncpp 和 ltinyxml

解决 ljsoncpp

~~cd /DNXY/projects/dnxy_bike/third/lib/~~

~~rm -rf json~~

~~mkdir json~~

~~cd json~~

~~ln -s /usr/lib/libjson_linux-gcc-5.4.0_libmt.a libjsoncpp.a~~

~~ln -s /usr/lib/libjson_linux-gcc-5.4.0_libmt.so libjsoncpp.so~~

```
cd /usr/lib
ln -s libjson_linux-gcc-5.4.0_libmt.a libjsoncpp.a
```

ln -s libjson_linux-gcc-5.4.0_libmt.so libjsoncpp.so

继续编译
cd /DNXY/projects/dnxy_bike/src
make clean
make

这回提示
[100%] Linking CXX executable brks
/usr/bin/ld: cannot find -ltinyxml

解决 ltinyxml
下载 tinyxml
wget https://launchpadlibrarian.net/290269646/tinyxml_2.6.2.orig.tar.gz
tar zxf tinyxml_2.6.2.orig.tar.gz
cd tinyxml/
cp Makefile Makefile.bak
sed 's/OUTPUT := xmltest/OUTPUT := libtinyxml.a/g' Makefile > Makefile.tmp
mv Makefile.tmp Makefile
sed 's/ xmltest.cpp//g' Makefile > Makefile.tmp
mv Makefile.tmp Makefile
sed 's/\t${LD} -o $@ ${LDFLAGS} ${OBJS} ${LIBS} ${EXTRA_LIBS}/#${LD} -o $@ ${LDFLAGS} ${OBJS} ${LIBS} ${EXTRA_LIBS}\n\t${AR} $@ ${LDFLAGS} ${OBJS} ${LIBS} ${EXTRA_LIBS}/g' Makefile > Makefile.tmp
mv Makefile.tmp Makefile
sed 's/xmltest.o/#xmltest.o/g' Makefile > Makefile.tmp
mv Makefile.tmp Makefile
make
rm tiny*.o
cp libtinyxml.a /usr/lib/

继续编译
cd /DNXY/projects/dnxy_bike/src
make clean
make

```
[ 73%] Building CXX object intf/CMakeFiles/intf.dir/interface_types.cpp.o
[ 78%] Building CXX object intf/CMakeFiles/intf.dir/struct_types.cpp.o
[ 82%] Building CXX object intf/CMakeFiles/intf.dir/BRKService.cpp.o
[ 86%] Building CXX object intf/CMakeFiles/intf.dir/struct_constants.cpp.o
[ 91%] Linking CXX static library libintf.a
[ 91%] Built target intf
[ 95%] Building CXX object CMakeFiles/brks.dir/main.cpp.o
[100%] Linking CXX executable brks
[100%] Built target brks
```

编译成功