前言

Battery Historian是谷歌推出的一款专门分析bugreport的开源工具，具体使用事项可以阅读《使用 Battery Historian 分析耗电情况》

前置环境安装

本文是基于代码编译，使用Docker的环境存在三个问题：

1.几乎所有的镜像都是外网的；

2.依赖别人的环境指不定哪天就崩了；

3.别人得环境不一定实时更新，可能不兼容最新版本。

需要安装的环境有：Go、git、python、java。

一、Ubuntu环境下

1.安装Go语言

1）sudo add-apt-repository ppa:gophers/go（用于配置下载源）

2）sudo apt-get update（将下载源部署）

3）sudo apt-get install golang（安装golang）

4）安装完之后配置环境变量 `gedit ~/.bashrc`，如果没有这个文件可以使用`cp /etc/skel/.bashrc ~/`从系统中拷贝一份出来，在文档末尾添加

```
export GOPATH=~/go
export PATH=$GOPATH/bin:$PATH
```

5）source .bashrc

2.安装git

sudo apt-get install git

3.安装python2.7

sudo apt-get install python2.7

4.安装java

1）从官网下载java.tar.gz.;

2）使用`tar -zxvf java.tar.gz -C xxx`

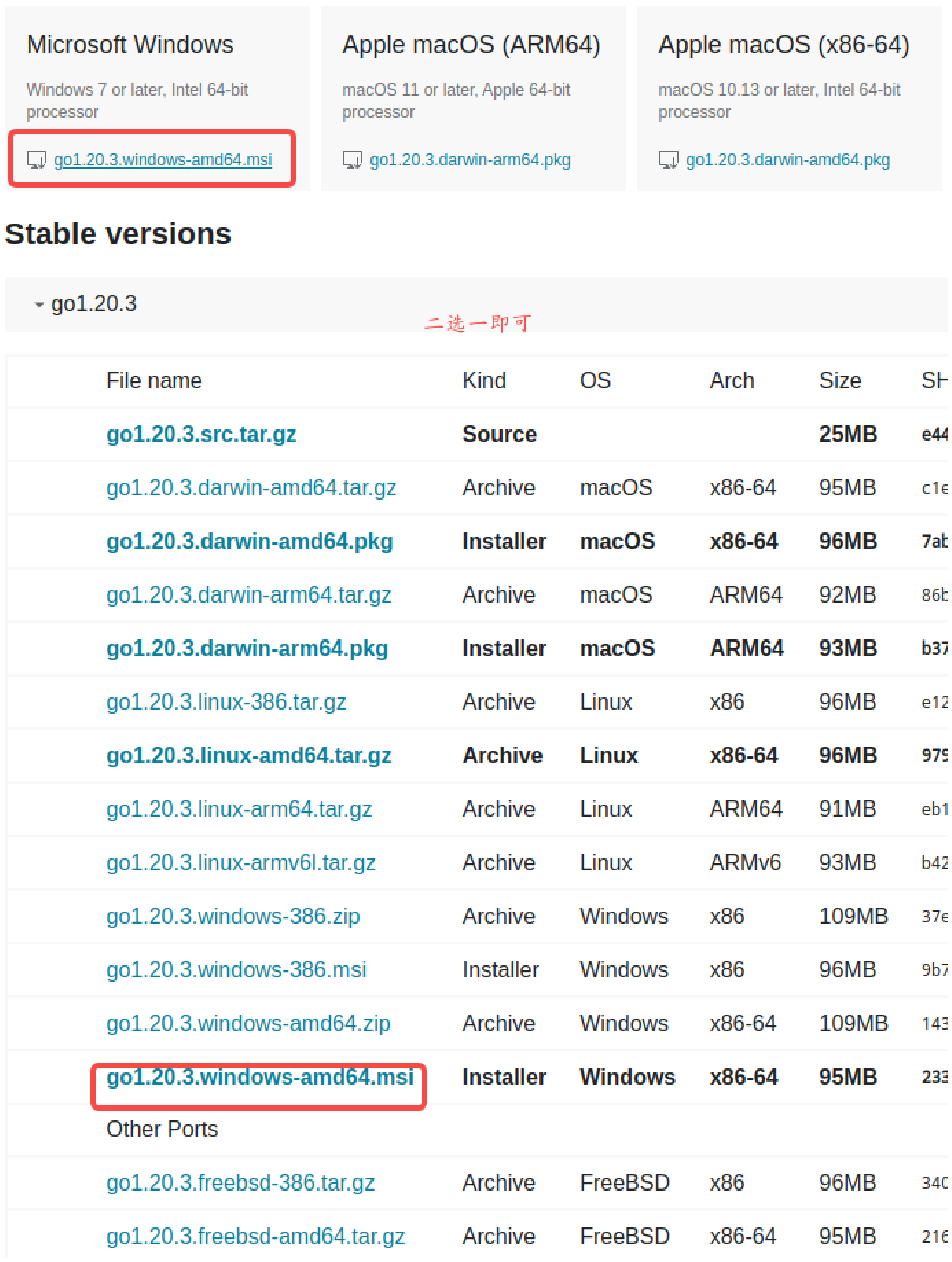
3）

```
xxx就是上一步中的文件路径
sudo update-alternatives --install /usr/bin/java java xxx/bin/java 1000
sudo update-alternatives --install /usr/bin/javac javac xxx/bin/javac 1000
sudo update-alternatives --install /usr/bin/javaws javaws xxx/bin/javaws 1000
```

二、windows环境下

1.安装Go语言

1）前往官网https://golang.google.cn/dl/ 下载



Microsoft Windows
Windows 7 or later, Intel 64-bit processor
go1.20.3.windows-amd64.msi

Apple macOS (ARM64)
macOS 11 or later, Apple 64-bit processor
go1.20.3.darwin-arm64.pkg

Apple macOS (x86-64)
macOS 10.13 or later, Intel 64-bit processor
go1.20.3.darwin-amd64.pkg

Stable versions

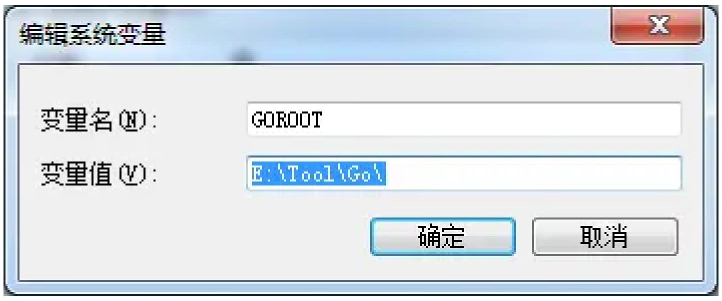
go1.20.3

二选一即可

File name	Kind	OS	Arch	Size	SH
go1.20.3.src.tar.gz	**Source**			**25MB**	**e44**
go1.20.3.darwin-amd64.tar.gz	Archive	macOS	x86-64	95MB	c1e
go1.20.3.darwin-amd64.pkg	**Installer**	**macOS**	**x86-64**	**96MB**	**7ab**
go1.20.3.darwin-arm64.tar.gz	Archive	macOS	ARM64	92MB	86b
go1.20.3.darwin-arm64.pkg	**Installer**	**macOS**	**ARM64**	**93MB**	**b37**
go1.20.3.linux-386.tar.gz	Archive	Linux	x86	96MB	e12
go1.20.3.linux-amd64.tar.gz	**Archive**	**Linux**	**x86-64**	**96MB**	**979**
go1.20.3.linux-arm64.tar.gz	Archive	Linux	ARM64	91MB	eb1
go1.20.3.linux-armv6l.tar.gz	Archive	Linux	ARMv6	93MB	b42
go1.20.3.windows-386.zip	Archive	Windows	x86	109MB	37e
go1.20.3.windows-386.msi	Installer	Windows	x86	96MB	9b7
go1.20.3.windows-amd64.zip	Archive	Windows	x86-64	109MB	143
go1.20.3.windows-amd64.msi	**Installer**	**Windows**	**x86-64**	**95MB**	**233**
Other Ports					
go1.20.3.freebsd-386.tar.gz	Archive	FreeBSD	x86	96MB	340
go1.20.3.freebsd-amd64.tar.gz	Archive	FreeBSD	x86-64	95MB	216

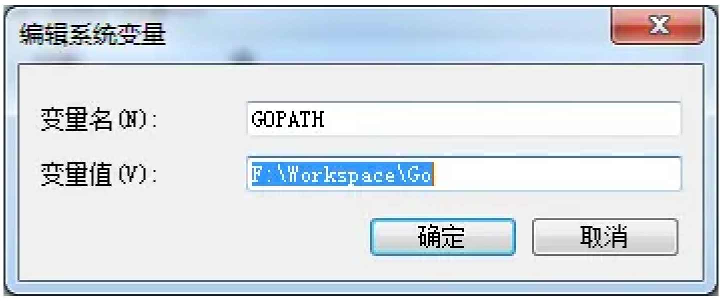
2）配置GOROOT和GOPATH（注意环境变量的配置)

a. GOROOT的作用是告诉Go 命令和其他相关工具，在哪里去找到安装在你系统上的Go包,所以这里配置的是GO的安装目录



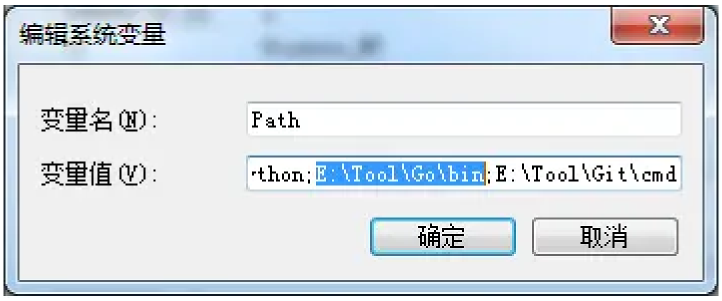
变量名(N): GOROOT
变量值(V): E:\Tool\Go\

b.GOPATH可以简单理解为是工程的目录，所以创建一个GO的工程路径



变量名(N): GOPATH
变量值(V): F:\Workspace\Go

C.最后配置一下环境变量，把Go的bin目录放到path环境变量中



变量名(N): Path
变量值(V): thon;E:\Tool\Go\bin;E:\Tool\Git\cmd

2.安装python2.7

1）去官网下在安装包；

2）剩下得步骤略；

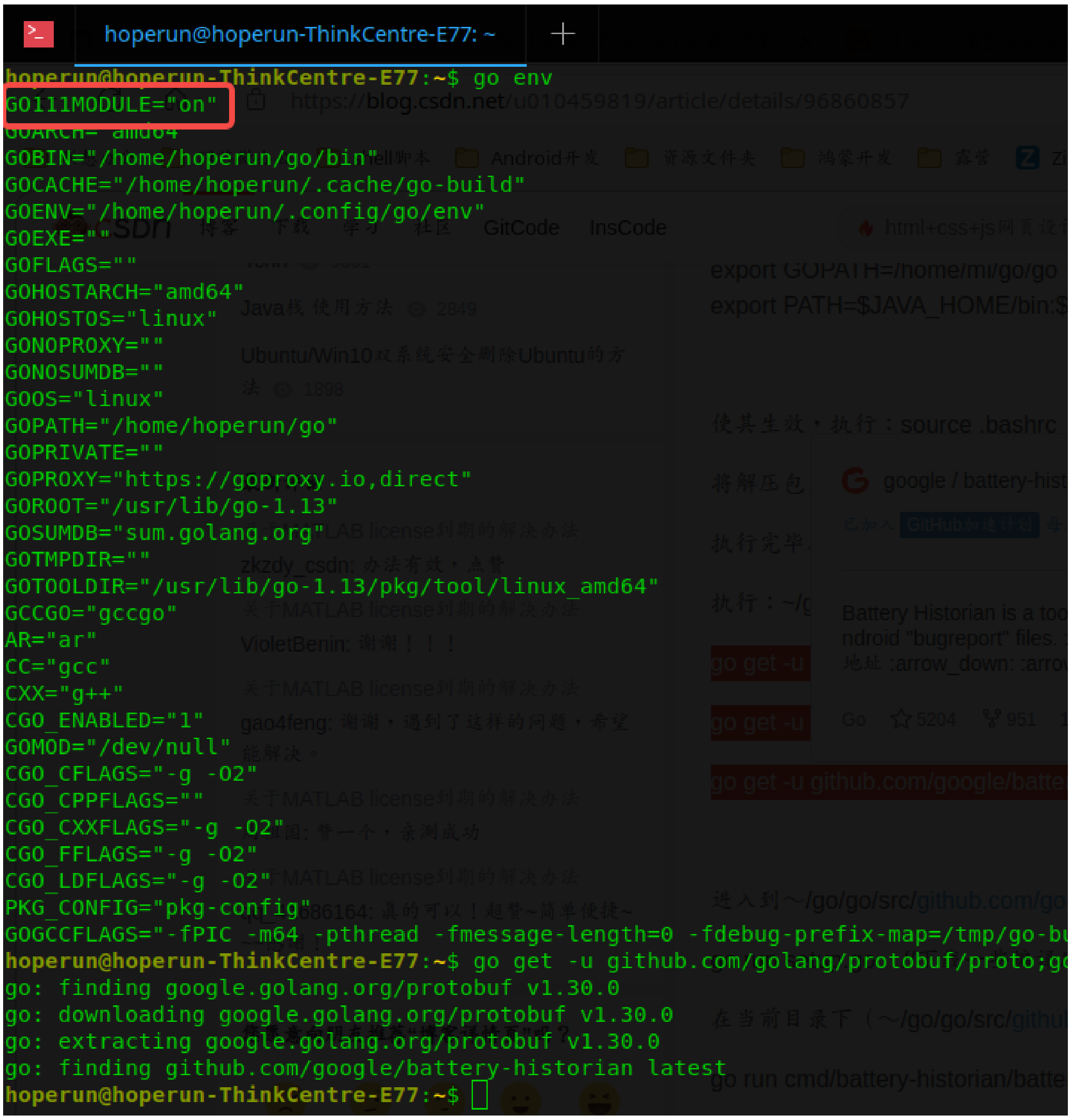
3.安装java

4.安装git

正式安装

在正式开始安装前，最好配备一个VPN，因为下面所有的下载都需要上github，众周之的原因，或者使用`go env -w GOPROXY=https://goproxy.cn,direct`命令改成国内下载源。如果只想使用battery historian，且不需要随时迭代的话，可以直接前往笔者的github下载，将其中的`src`文件夹放入“GOPATH”文件夹下。这个文件夹中是已经全编译的环境，可以直接进入`src/github.com/google/battery-historian/third_party`中使用`go run cmd/battery-historian/battery-historian.go`运行battery historian。

1.使用`go env`查看环境，如果GO111MODULE不为"off"，则使用`go env -w GO111MODULE=off`更改为GO111MODULE="off"，如果没有GO111MODULE变量，则表明go版本较低，是用`go version`查看版本，只要1.10以上就可以不用关注，如果版本过低，可以参考《Ubuntu安装go/升级go版本【转载】》进行版本升级；



```
hoperun@hoperun-ThinkCentre-E77: ~
hoperun@hoperun-ThinkCentre-E77:~$ go env
GO111MODULE="on"
GOARCH="amd64"
GOBIN="/home/hoperun/go/bin"
GOCACHE="/home/hoperun/.cache/go-build"
GOENV="/home/hoperun/.config/go/env"
GOEXE=""
GOFLAGS=""
GOHOSTARCH="amd64"
GOHOSTOS="linux"
GONOPROXY=""
GONOSUMDB=""
GOOS="linux"
GOPATH="/home/hoperun/go"
GOPRIVATE=""
GOPROXY="https://goproxy.io,direct"
GOROOT="/usr/lib/go-1.13"
GOSUMDB="sum.golang.org"
GOTMPDIR=""
GOTOOLDIR="/usr/lib/go-1.13/pkg/tool/linux_amd64"
GCCGO="gccgo"
AR="ar"
CC="gcc"
CXX="g++"
CGO_ENABLED="1"
GOMOD="/dev/null"
CGO_CFLAGS="-g -O2"
CGO_CPPFLAGS=""
CGO_CXXFLAGS="-g -O2"
CGO_FFLAGS="-g -O2"
CGO_LDFLAGS="-g -O2"
PKG_CONFIG="pkg-config"
GOGCCFLAGS="-fPIC -m64 -pthread -fmessage-length=0 -fdebug-prefix-map=/tmp/go-bu
hoperun@hoperun-ThinkCentre-E77:~$ go get -u github.com/golang/protobuf/proto;g
go: finding google.golang.org/protobuf v1.30.0
go: downloading google.golang.org/protobuf v1.30.0
go: extracting google.golang.org/protobuf v1.30.0
go: finding github.com/google/battery-historian latest
hoperun@hoperun-ThinkCentre-E77:~$
```

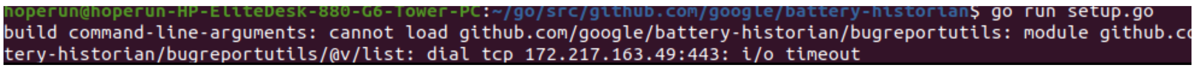
2.使用如下命令下载Battery Historian源码及其编译所需的环境（如果无法正常下载，可以前往笔者的github上手动下载，将其中得`src.zip`文件解压后放入“GOPATH”文件夹下）；

```
go get -u github.com/golang/protobuf/proto
go get -u github.com/golang/protobuf/protoc-gen-go
go get -u github.com/google/battery-historian/...
```

3.进入到前面配置的“GOPATH”文件目录中，并进入其中的`src/github.com/google/battery-historian`；

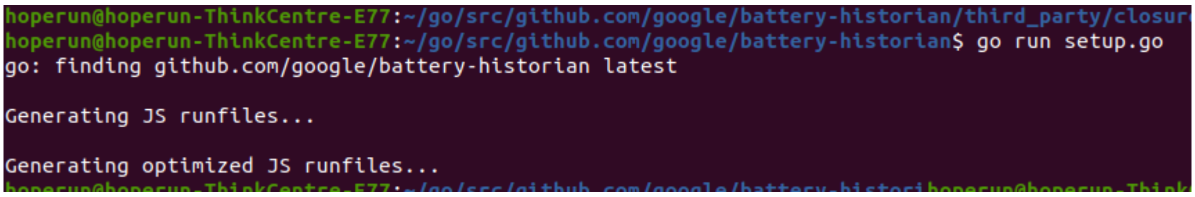
4.使用`go env -w GO111MODULE=on`更改GO111MODULE为on；

5.使用`go run setup.go`开始编译（出现下图中类似得`i/o timeout`表明无法正常下载，可以前往closure-library自行下载，并放入`src/github.com/google/battery-historian/third_party`中，如果还是报相同错误，说明你的电脑环境完全不能上github，还请下载`src`文件夹进行替换）；



```
hoperun@hoperun-HP-EliteDesk-880-G6-Tower-PC:~/go/src/github.com/google/battery-historian$ go run setup.go
build command-line-arguments: cannot load github.com/google/battery-historian/bugreportutils: module github.co
tery-historian/bugreportutils/@v/list: dial tcp 172.217.163.49:443: i/o timeout
```

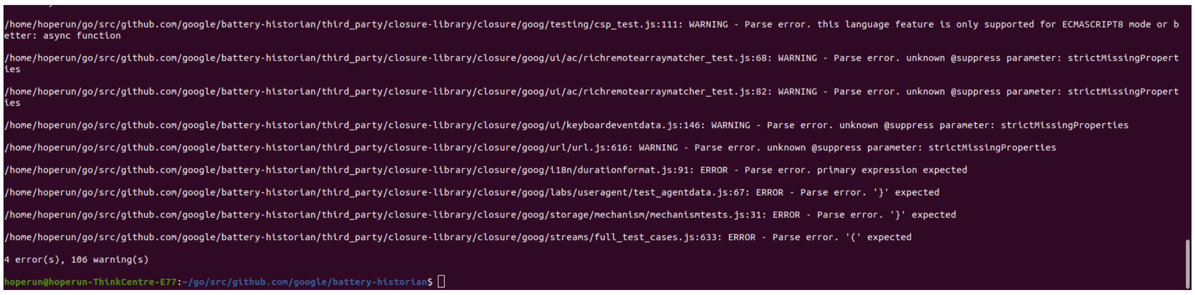
6.出现下图后就表明编译成功，可以使用`go run cmd/battery-historian/battery-historian.go`运行battery historian。



```
hoperun@hoperun-ThinkCentre-E77:~/go/src/github.com/google/battery-historian/third_party/closur
hoperun@hoperun-ThinkCentre-E77:~/go/src/github.com/google/battery-historian$ go run setup.go
go: finding github.com/google/battery-historian latest

Generating JS runfiles...

Generating optimized JS runfiles...
hoperun@hoperun-ThinkCentre-E77:~/go/src/github.com/google/battery-histori hoperun@hoperun-Think
```

可能存在的问题

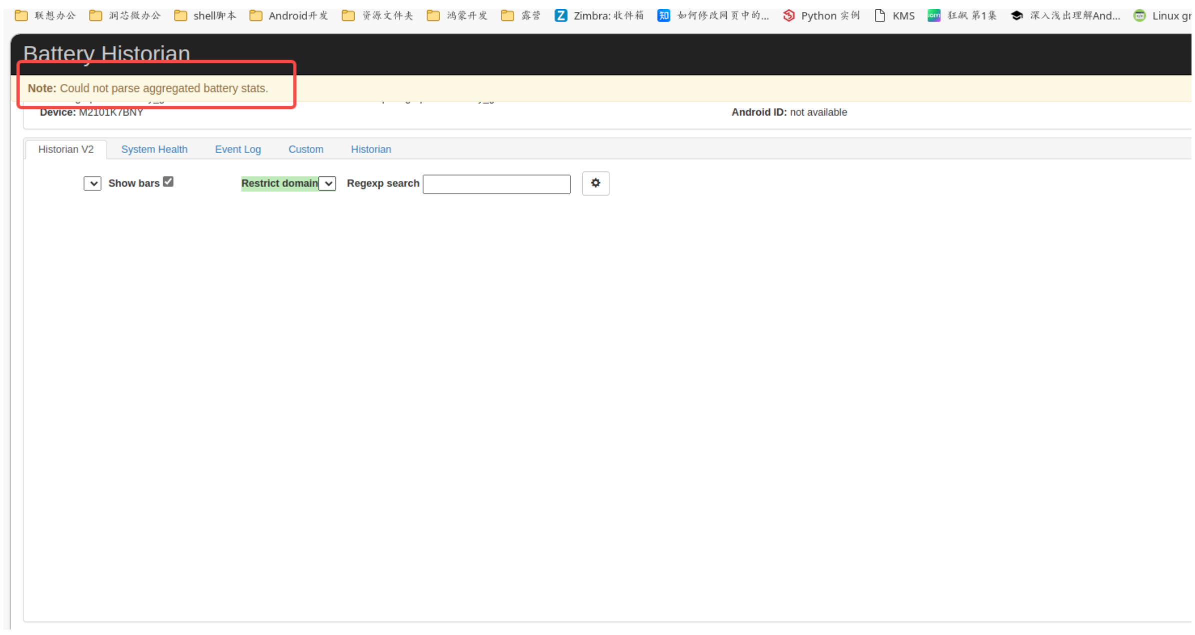
1.使用`go run setup.go`编译battery historian可能报错js error，如下图所示，不一定完全一样：



```
/home/hoperun/go/src/github.com/google/battery-historian/third_party/closure-library/closure/goog/testing/csp_test.js:111: WARNING - Parse error. this language feature is only supported for ECMASCRIPT8 mode or b
etter: async function

/home/hoperun/go/src/github.com/google/battery-historian/third_party/closure-library/closure/goog/ui/ac/richremotearraymatcher_test.js:68: WARNING - Parse error. unknown @suppress parameter: strictMissingPropert
ies

/home/hoperun/go/src/github.com/google/battery-historian/third_party/closure-library/closure/goog/ui/ac/richremotearraymatcher_test.js:82: WARNING - Parse error. unknown @suppress parameter: strictMissingPropert
ies

/home/hoperun/go/src/github.com/google/battery-historian/third_party/closure-library/closure/goog/ui/keyboardeventdata.js:146: WARNING - Parse error. unknown @suppress parameter: strictMissingProperties

/home/hoperun/go/src/github.com/google/battery-historian/third_party/closure-library/closure/goog/url/url.js:616: WARNING - Parse error. unknown @suppress parameter: strictMissingProperties

/home/hoperun/go/src/github.com/google/battery-historian/third_party/closure-library/closure/goog/i18n/durationformat.js:91: ERROR - Parse error. primary expression expected

/home/hoperun/go/src/github.com/google/battery-historian/third_party/closure-library/closure/goog/labs/useragent/test_agentdata.js:67: ERROR - Parse error. '}' expected

/home/hoperun/go/src/github.com/google/battery-historian/third_party/closure-library/closure/goog/storage/mechanism/mechanismtests.js:31: ERROR - Parse error. '}' expected

/home/hoperun/go/src/github.com/google/battery-historian/third_party/closure-library/closure/goog/streams/full_test_cases.js:633: ERROR - Parse error. '(' expected

4 error(s), 106 warning(s)

hoperun@hoperun-ThinkCentre-E77:~/go/src/github.com/google/battery-historian$ 
```

可以前往no-ssr-battery-historian下载必要的环境（如果下载的是笔者的代码，no-ssr-battery-historian存放在`src/github.com/google/`中），将其中的cdn文件夹放入`src/github.com/google/battery-historian/third_party`中，将其中的`base.html`替换掉`src/github.com/google/battery-historian/templates`中的`base.html`，如果进行完以上操作后仍然报js编译异常，可使用`go env`查看GO111MODULE是否为on，若为on，则使用`go env -w GO111MODULE=off`改为off。

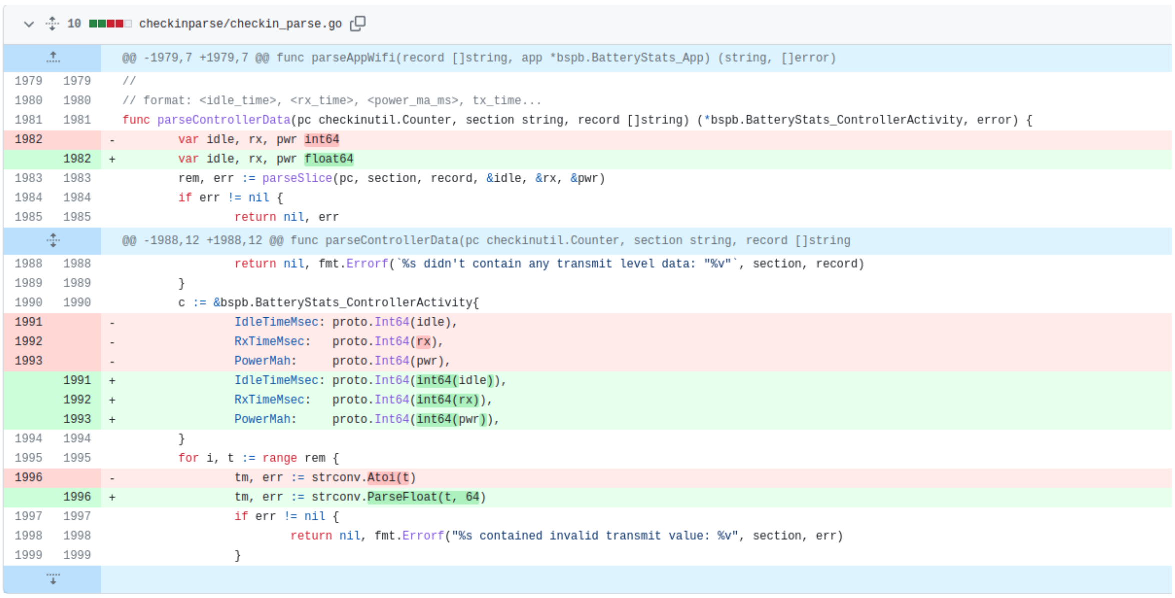
2.打开bugreport后，没有折线图，并且网页弹窗提醒`Note: Could not parse aggregated battery stats.`，可以参考lilydjwg/battery-historian的提交：



Note: Could not parse aggregated battery stats.

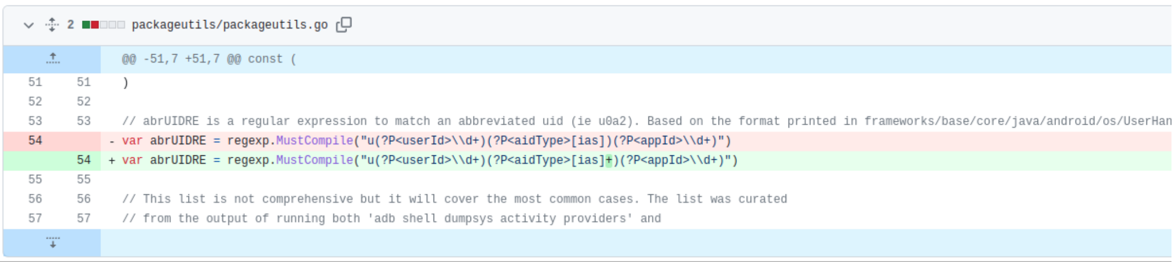
Device: M2101K7BNY

Android ID: not available



10 checkinparse/checkin_parse.go

```diff
@@ -1979,7 +1979,7 @@ func parseAppWifi(record []string, app *bspb.BatteryStats_App) (string, []error)
 //
 // format: <idle_time>, <rx_time>, <power_ma_ms>, tx_time...
 func parseControllerData(pc checkinutil.Counter, section string, record []string) (*bspb.BatteryStats_ControllerActivity, error) {
-	var idle, rx, pwr int64
+	var idle, rx, pwr float64
 	rem, err := parseSlice(pc, section, record, &idle, &rx, &pwr)
 	if err != nil {
 		return nil, err
@@ -1988,12 +1988,12 @@ func parseControllerData(pc checkinutil.Counter, section string, record []string
 		return nil, fmt.Errorf(`%s didn't contain any transmit level data: "%v"`, section, record)
 	}
 	c := &bspb.BatteryStats_ControllerActivity{
-		IdleTimeMsec: proto.Int64(idle),
-		RxTimeMsec:   proto.Int64(rx),
-		PowerMah:     proto.Int64(pwr),
+		IdleTimeMsec: proto.Int64(int64(idle)),
+		RxTimeMsec:   proto.Int64(int64(rx)),
+		PowerMah:     proto.Int64(int64(pwr)),
 	}
 	for i, t := range rem {
-		tm, err := strconv.Atoi(t)
+		tm, err := strconv.ParseFloat(t, 64)
 		if err != nil {
 			return nil, fmt.Errorf("%s contained invalid transmit value: %v", section, err)
 		}
```



2 packageutils/packageutils.go

```diff
@@ -51,7 +51,7 @@ const (
 )
 
 // abrUIDRE is a regular expression to match an abbreviated uid (ie u0a2). Based on the format printed in frameworks/base/core/java/android/os/UserHan
-var abrUIDRE = regexp.MustCompile("u(?P<userId>\\d+)(?P<aidType>[ias])(?P<appId>\\d+)")
+var abrUIDRE = regexp.MustCompile("u(?P<userId>\\d+)(?P<aidType>[ias]+)(?P<appId>\\d+)")
 
 // This list is not comprehensive but it will cover the most common cases. The list was curated
 // from the output of running both 'adb shell dumpsys activity providers' and
```