Golang第三方静态库使用方式

# 示例

## 环境

文件目录结构为：

当前目录为：/root/go/src/github.com/supermanc88/sdrstest

.

├── main.go

└── ttt

└── file2.go

# main.go

package main

import (

"github.com/supermanc88/sdrstest/ttt"

)

func main() {

ttt.Test1()

}

# file2.go

package ttt

import (

"fmt"

)

func Test1() {

fmt.Println("test1")

fmt.Println("file2")

}

## go build 详解

1. [root@localhost sdrstest]# go build -x main.go
2. WORK=/tmp/go-build608501550
3. mkdir -p $WORK/b002/
4. cat >$WORK/b002/importcfg << 'EOF' # internal
5. # import config
6. packagefile fmt=/usr/local/go/pkg/linux\_amd64/fmt.a
7. EOF
8. cd /root/go/src/github.com/supermanc88/sdrstest/ttt
9. /usr/local/go/pkg/tool/linux\_amd64/compile -o $WORK/b002/\_pkg\_.a -trimpath "$WORK/b002=>" -p github.com/supermanc88/sdrstest/ttt -complete -buildid mzxmulL\_Ypgkn2we06Cg/mzxmulL\_Ypgkn2we06Cg -goversion go1.15.6 -D "" -importcfg $WORK/b002/importcfg -pack -c=2 ./file2.go
10. /usr/local/go/pkg/tool/linux\_amd64/buildid -w $WORK/b002/\_pkg\_.a # internal
11. cp $WORK/b002/\_pkg\_.a /root/.cache/go-build/94/941f22f1c6fe75a5ce796605db9be15e4de38728e7ebd45e7c1eb0eef4242871-d # internal
12. mkdir -p $WORK/b001/
13. cat >$WORK/b001/importcfg << 'EOF' # internal
14. # import config
15. packagefile github.com/supermanc88/sdrstest/ttt=$WORK/b002/\_pkg\_.a
16. packagefile runtime=/usr/local/go/pkg/linux\_amd64/runtime.a
17. EOF
18. cd /root/go/src/github.com/supermanc88/sdrstest
19. /usr/local/go/pkg/tool/linux\_amd64/compile -o $WORK/b001/\_pkg\_.a -trimpath "$WORK/b001=>" -p main -complete -buildid Neht4IKvXf5Z5m-\_WWeo/Neht4IKvXf5Z5m-\_WWeo -goversion go1.15.6 -D \_/root/go/src/github.com/supermanc88/sdrstest -importcfg $WORK/b001/importcfg -pack -c=2 ./main.go
20. /usr/local/go/pkg/tool/linux\_amd64/buildid -w $WORK/b001/\_pkg\_.a # internal
21. cp $WORK/b001/\_pkg\_.a /root/.cache/go-build/4c/4c3de9d0c3ef7fb7825798f6d3df91b0fa58ddee8cc07e1e64d7b534d3de1d4c-d # internal
22. cat >$WORK/b001/importcfg.link << 'EOF' # internal
23. packagefile command-line-arguments=$WORK/b001/\_pkg\_.a
24. packagefile github.com/supermanc88/sdrstest/ttt=$WORK/b002/\_pkg\_.a
25. packagefile runtime=/usr/local/go/pkg/linux\_amd64/runtime.a
26. packagefile fmt=/usr/local/go/pkg/linux\_amd64/fmt.a
27. packagefile internal/bytealg=/usr/local/go/pkg/linux\_amd64/internal/bytealg.a
28. packagefile internal/cpu=/usr/local/go/pkg/linux\_amd64/internal/cpu.a
29. packagefile runtime/internal/atomic=/usr/local/go/pkg/linux\_amd64/runtime/internal/atomic.a
30. packagefile runtime/internal/math=/usr/local/go/pkg/linux\_amd64/runtime/internal/math.a
31. packagefile runtime/internal/sys=/usr/local/go/pkg/linux\_amd64/runtime/internal/sys.a
32. packagefile errors=/usr/local/go/pkg/linux\_amd64/errors.a
33. packagefile internal/fmtsort=/usr/local/go/pkg/linux\_amd64/internal/fmtsort.a
34. packagefile io=/usr/local/go/pkg/linux\_amd64/io.a
35. packagefile math=/usr/local/go/pkg/linux\_amd64/math.a
36. packagefile os=/usr/local/go/pkg/linux\_amd64/os.a
37. packagefile reflect=/usr/local/go/pkg/linux\_amd64/reflect.a
38. packagefile strconv=/usr/local/go/pkg/linux\_amd64/strconv.a
39. packagefile sync=/usr/local/go/pkg/linux\_amd64/sync.a
40. packagefile unicode/utf8=/usr/local/go/pkg/linux\_amd64/unicode/utf8.a
41. packagefile internal/reflectlite=/usr/local/go/pkg/linux\_amd64/internal/reflectlite.a
42. packagefile sort=/usr/local/go/pkg/linux\_amd64/sort.a
43. packagefile math/bits=/usr/local/go/pkg/linux\_amd64/math/bits.a
44. packagefile internal/oserror=/usr/local/go/pkg/linux\_amd64/internal/oserror.a
45. packagefile internal/poll=/usr/local/go/pkg/linux\_amd64/internal/poll.a
46. packagefile internal/syscall/execenv=/usr/local/go/pkg/linux\_amd64/internal/syscall/execenv.a
47. packagefile internal/syscall/unix=/usr/local/go/pkg/linux\_amd64/internal/syscall/unix.a
48. packagefile internal/testlog=/usr/local/go/pkg/linux\_amd64/internal/testlog.a
49. packagefile sync/atomic=/usr/local/go/pkg/linux\_amd64/sync/atomic.a
50. packagefile syscall=/usr/local/go/pkg/linux\_amd64/syscall.a
51. packagefile time=/usr/local/go/pkg/linux\_amd64/time.a
52. packagefile internal/unsafeheader=/usr/local/go/pkg/linux\_amd64/internal/unsafeheader.a
53. packagefile unicode=/usr/local/go/pkg/linux\_amd64/unicode.a
54. packagefile internal/race=/usr/local/go/pkg/linux\_amd64/internal/race.a
55. EOF
56. mkdir -p $WORK/b001/exe/
57. cd .
58. /usr/local/go/pkg/tool/linux\_amd64/link -o $WORK/b001/exe/a.out -importcfg $WORK/b001/importcfg.link -buildmode=exe -buildid=\_KTmQXHNfYHLWtdTURjj/Neht4IKvXf5Z5m-\_WWeo/-CN160ccaPI-48vKW54d/\_KTmQXHNfYHLWtdTURjj -extld=gcc $WORK/b001/\_pkg\_.a
59. /usr/local/go/pkg/tool/linux\_amd64/buildid -w $WORK/b001/exe/a.out # internal
60. mv $WORK/b001/exe/a.out main
61. rm -r $WORK/b001/

第8行和第9行：由于main.go中依赖file2这个包，编译器会先将file2这个包编译成.a pkg中间文件。

第4 – 7行，编译file2.go时，这个包又依赖fmt包，所以生成了一个配置文件importcfg，其中的内容是fmt.a所在的位置，供第9行在编译时使用，通过命令行参数-importcfg进行引用配置文件。

第6行中明确的声明了fmt.a的位置

第12 – 17行，这是在编译main.go文件做准备，它导入了ttt包，所以在它的importcfg文件中有第15行，它指出了ttt包的位置

第19行，开始结main.go进行编译，通过命令行参数-importcfg进行引用配置文件

第22 – 55行，为链接生成配置文件，其中是生成这个二进制文件所需的包

第58行进行链接

第60行将二进制文件移动到当前目录

# 解决方案

通过go build 流程可以引申出使用第三方库的方法

假设第三方库的包路径为：github.com/supermanc88/sdrsbtc

## 再次封装第三方库

如使用file2.go对sdrsbtc进行再次封装，如下：

package ttt

import (

"fmt"

"github.com/supermanc88/sdrsbtc"

)

func Test1() {

ppp := []byte{82, 90, 94, 93, 91, 80, 88, 75}

// sm3摘要测试

data := sdrsbtc.Sm3Sum256("10.20.88.223", "20002", ppp, []byte("teststring"))

fmt.Println(data)

}

## 修改go build 文件

此时需要在第6行和第7行之间加入sdrsbtc的所在路径，原因是package ttt依赖了sdrsbtc包：

packagefile github.com/supermanc88/sdrsbtc= /root/go/pkg/linux\_amd64/github.com/supermanc88/sdrsbtc.a

在链接时，golang需要把所有用到的包列出来，那么需要在54行和55行之间加入sdrsbtc包的路径及sdrsbtc所用到的所有包：

packagefile internal/unsafeheader=/usr/local/go/pkg/linux\_amd64/internal/unsafeheader.a

packagefile internal/cpu=/usr/local/go/pkg/linux\_amd64/internal/cpu.a

packagefile runtime/internal/atomic=/usr/local/go/pkg/linux\_amd64/runtime/internal/atomic.a

packagefile internal/bytealg=/usr/local/go/pkg/linux\_amd64/internal/bytealg.a

packagefile runtime/internal/sys=/usr/local/go/pkg/linux\_amd64/runtime/internal/sys.a

packagefile runtime/internal/math=/usr/local/go/pkg/linux\_amd64/runtime/internal/math.a

packagefile internal/race=/usr/local/go/pkg/linux\_amd64/internal/race.a

packagefile sync/atomic=/usr/local/go/pkg/linux\_amd64/sync/atomic.a

packagefile runtime=/usr/local/go/pkg/linux\_amd64/runtime.a

packagefile unicode=/usr/local/go/pkg/linux\_amd64/unicode.a

packagefile unicode/utf8=/usr/local/go/pkg/linux\_amd64/unicode/utf8.a

packagefile math/bits=/usr/local/go/pkg/linux\_amd64/math/bits.a

packagefile math=/usr/local/go/pkg/linux\_amd64/math.a

packagefile internal/testlog=/usr/local/go/pkg/linux\_amd64/internal/testlog.a

packagefile crypto/internal/subtle=/usr/local/go/pkg/linux\_amd64/crypto/internal/subtle.a

packagefile crypto/subtle=/usr/local/go/pkg/linux\_amd64/crypto/subtle.a

packagefile unicode/utf16=/usr/local/go/pkg/linux\_amd64/unicode/utf16.a

packagefile encoding=/usr/local/go/pkg/linux\_amd64/encoding.a

packagefile internal/nettrace=/usr/local/go/pkg/linux\_amd64/internal/nettrace.a

packagefile runtime/cgo=/usr/local/go/pkg/linux\_amd64/runtime/cgo.a

packagefile internal/reflectlite=/usr/local/go/pkg/linux\_amd64/internal/reflectlite.a

packagefile errors=/usr/local/go/pkg/linux\_amd64/errors.a

packagefile sync=/usr/local/go/pkg/linux\_amd64/sync.a

packagefile io=/usr/local/go/pkg/linux\_amd64/io.a

packagefile bytes=/usr/local/go/pkg/linux\_amd64/bytes.a

packagefile hash=/usr/local/go/pkg/linux\_amd64/hash.a

packagefile strconv=/usr/local/go/pkg/linux\_amd64/strconv.a

packagefile crypto=/usr/local/go/pkg/linux\_amd64/crypto.a

packagefile reflect=/usr/local/go/pkg/linux\_amd64/reflect.a

packagefile encoding/binary=/usr/local/go/pkg/linux\_amd64/encoding/binary.a

packagefile sort=/usr/local/go/pkg/linux\_amd64/sort.a

packagefile internal/fmtsort=/usr/local/go/pkg/linux\_amd64/internal/fmtsort.a

packagefile internal/oserror=/usr/local/go/pkg/linux\_amd64/internal/oserror.a

packagefile math/rand=/usr/local/go/pkg/linux\_amd64/math/rand.a

packagefile syscall=/usr/local/go/pkg/linux\_amd64/syscall.a

packagefile strings=/usr/local/go/pkg/linux\_amd64/strings.a

packagefile bufio=/usr/local/go/pkg/linux\_amd64/bufio.a

packagefile internal/syscall/unix=/usr/local/go/pkg/linux\_amd64/internal/syscall/unix.a

packagefile time=/usr/local/go/pkg/linux\_amd64/time.a

packagefile internal/syscall/execenv=/usr/local/go/pkg/linux\_amd64/internal/syscall/execenv.a

packagefile crypto/cipher=/usr/local/go/pkg/linux\_amd64/crypto/cipher.a

packagefile internal/poll=/usr/local/go/pkg/linux\_amd64/internal/poll.a

packagefile crypto/aes=/usr/local/go/pkg/linux\_amd64/crypto/aes.a

packagefile os=/usr/local/go/pkg/linux\_amd64/os.a

packagefile crypto/sha1=/usr/local/go/pkg/linux\_amd64/crypto/sha1.a

packagefile encoding/base64=/usr/local/go/pkg/linux\_amd64/encoding/base64.a

packagefile fmt=/usr/local/go/pkg/linux\_amd64/fmt.a

packagefile context=/usr/local/go/pkg/linux\_amd64/context.a

packagefile vendor/golang.org/x/net/dns/dnsmessage=/usr/local/go/pkg/linux\_amd64/vendor/golang.org/x/net/dns/dnsmessage.a

packagefile math/big=/usr/local/go/pkg/linux\_amd64/math/big.a

packagefile encoding/json=/usr/local/go/pkg/linux\_amd64/encoding/json.a

packagefile crypto/elliptic=/usr/local/go/pkg/linux\_amd64/crypto/elliptic.a

packagefile crypto/rand=/usr/local/go/pkg/linux\_amd64/crypto/rand.a

packagefile internal/singleflight=/usr/local/go/pkg/linux\_amd64/internal/singleflight.a

packagefile encoding/asn1=/usr/local/go/pkg/linux\_amd64/encoding/asn1.a

packagefile net=/usr/local/go/pkg/linux\_amd64/net.a

packagefile github.com/supermanc88/sdrsbtc=/root/go/pkg/linux\_amd64/github.com/supermanc88/sdrsbtc.a

# 附录

## 如何列出一个.a依赖的包

在go install时加入参数 -a -v -work