implementing code coverage

with

`-toolexec`

Ehden Sinai

Contrast SECURITY

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Contrast SECURITY

```go
package main

import (
    "fmt"
    "log"
    "os"
    "strconv"
)

func main() {
    n, err := strconv.Atoi(os.Args[1])
    if err != nil {
        log.Fatal("😡")
    }

    for i := 1; i <= n; i++ {
        fmt.Println(fizzbuzz(i))
    }
}

func fizzbuzz(n int) string {
    switch {
    case n%15 == 0:
        return "fizzbuzz"
    case n%5 == 0:
        return "buzz"
    case n%3 == 0:
        return "fizz"
    default:
        return strconv.Itoa(n)
    }
}
```

```go
package main

import (
    "fmt"
    "log"
    "os"
    "strconv"
)

func main() {
    n, err := strconv.Atoi(os.Args[1])
    if err != nil {
        log.Fatal("😡")
    }

    for i := 1; i <= n; i++ {
        fmt.Println(fizzbuzz(i))
    }
}

func fizzbuzz(n int) string {
    switch {
    case n%15 == 0:
        return "fizzbuzz"
    case n%5 == 0:
        return "buzz"
    case n%3 == 0:
        return "fizz"
    default:
        return strconv.Itoa(n)
    }
}
```

```
go build -cover

go run -cover

go test -cover

go list -export -cover
```

```go
package main; import _ "runtime/coverage"

import (
    "fmt"
    "log"
    "os"
    "strconv"
)

func main() {goCover_4bac6d588efe__0[0] = 4 ; goCover_4bac6d588efe__0[1] = goCover_4bac6d588efe_P ; goCover_4bac6d588efe__0[2] = 0 ; goCover_4bac6d588efe__0[3] = 1;
    n, err := strconv.Atoi(os.Args[1])
    if err != nil {goCover_4bac6d588efe__0[5] = 1;
        log.Fatal("😡")
    }

    goCover_4bac6d588efe__0[4] = 1;for i := 1; i <= n; i++ {goCover_4bac6d588efe__0[6] = 1;
        fmt.Println(fizzbuzz(i))
    }
}

func fizzbuzz(n int) string {goCover_4bac6d588efe__1[0] = 5 ; goCover_4bac6d588efe__1[1] = goCover_4bac6d588efe_P ; goCover_4bac6d588efe__1[2] = 1 ; goCover_4bac6d588efe__1[3] = 1;
    switch {
    case n%15 == 0:goCover_4bac6d588efe__1[4] = 1;
        return "fizzbuzz"
    case n%5 == 0:goCover_4bac6d588efe__1[5] = 1;
        return "buzz"
    case n%3 == 0:goCover_4bac6d588efe__1[6] = 1;
        return "fizz"
    default:goCover_4bac6d588efe__1[7] = 1;
        return strconv.Itoa(n)
    }
}
```

```
package main; import _ "runtime/coverage"

import (
    "fmt"
    "log"
    "os"
    "strconv"
)

func main() {goCover_4bac6d588efe__0[0] = 4 ; goCover_4bac6d588efe__0[1] = goCover_4bac6d588efe_P ; goCover_4bac6d588efe__0[2] = 0 ; goCover_4bac6d588efe__0[3] = 1;
    n, err := strconv.Atoi(os.Args[1])
    if err != nil {goCover_4bac6d588efe__0[5] = 1;
        log.Fatal("🤬")
    }

    goCover_4bac6d588efe__0[4] = 1;for i := 1; i <= n; i++ {goCover_4bac6d588efe__0[6] = 1;
        fmt.Println(fizzbuzz(i))
    }
}

func fizzbuzz(n int) string {goCover_4bac6d588efe__1[0] = 5 ; goCover_4bac6d588efe__1[1] = goCover_4bac6d588efe_P ; goCover_4bac6d588efe__1[2] = 1 ; goCover_4bac6d588efe__1[3] = 1;
    switch {
    case n%15 == 0:goCover_4bac6d588efe__1[4] = 1;
        return "fizzbuzz"
    case n%5 == 0:goCover_4bac6d588efe__1[5] = 1;
        return "buzz"
    case n%3 == 0:goCover_4bac6d588efe__1[6] = 1;
        return "fizz"
    default:goCover_4bac6d588efe__1[7] = 1;
        return strconv.Itoa(n)
    }
}
```

```
package main

var goCover_4bac6d588efe_P uint32
var goCover_4bac6d588efe__0 [7]uint32
var goCover_4bac6d588efe__1 [8]uint32
var goCover_4bac6d588efe_M = [...]byte{
 0xab, 0x0, 0x0, 0x0, 0x2, 0x0, 0x0, 0x0, 0x1,
 0x0, 0x0, 0x0, 0x1, 0x0, 0x0, 0x0, 0xa6,
 0xab, 0xad, 0xa7, 0xfd, 0x97, 0xae, 0xbb, 0x23,
 0xee, 0x28, 0x5f, 0x36, 0x67, 0x91, 0x7f, 0x0,
 0x0, 0x0, 0x0, 0x5, 0x0, 0x0, 0x0, 0x2,
 0x0, 0x0, 0x0, 0x76, 0x0, 0x0, 0x0, 0x8e,
 0x0, 0x0, 0x0, 0x5, 0x0, 0x12, 0x65, 0x68,
 0x64, 0x65, 0x6e, 0x2e, 0x6e, 0x65, 0x74, 0x2f,
 0x66, 0x69, 0x7a, 0x7a, 0x62, 0x75, 0x7a, 0x7a,
 0x4, 0x6d, 0x61, 0x69, 0x6e, 0x1e, 0x65, 0x68,
 0x64, 0x65, 0x6e, 0x2e, 0x6e, 0x65, 0x74, 0x2f,
 0x66, 0x69, 0x7a, 0x7a, 0x62, 0x75, 0x7a, 0x7a,
 0x2f, 0x66, 0x69, 0x7a, 0x7a, 0x62, 0x75, 0x7a,
 0x7a, 0x2e, 0x67, 0x6f, 0x8, 0x66, 0x69, 0x7a,
 0x7a, 0x62, 0x75, 0x7a, 0x7a, 0x4, 0x2, 0x3,
 0xa, 0xd, 0xc, 0x10, 0x2, 0x10, 0x2, 0x10,
 0x1a, 0x1, 0xc, 0x10, 0xe, 0x3, 0x1, 0x10,
 0x1a, 0x12, 0x3, 0x1, 0x0, 0x5, 0x4, 0x3,
 0x15, 0x1d, 0x16, 0x9, 0x1, 0x17, 0x11, 0x18,
 0x14, 0x1, 0x19, 0x10, 0x1a, 0x10, 0x1, 0x1b,
 0x10, 0x1c, 0x10, 0x1, 0x1d, 0xa, 0x1e, 0x19,
 0x1, 0x0,}
```

```go
package main
import runtime/coverage

func init() {
    coverage.initHook()
}

var goCover_4bac6d588efe_P uint32
var goCover_4bac6d588efe__0 [7]uint32
var goCover_4bac6d588efe__1 [8]uint32
var goCover_4bac6d588efe_M = [...]byte{
 0xab, 0x0, 0x0, 0x0, 0x2, 0x0, 0x0, 0x0, 0x1,
 0x0, 0x0, 0x0, 0x1, 0x0, 0x0, 0x0, 0xa6,
 0xab, 0xad, 0xa7, 0xfd, 0x97, 0xae, 0xbb, 0x23,
 0xee, 0x28, 0x5f, 0x36, 0x67, 0x91, 0x7f, 0x0,
 // ...
```

This doesn't technically exist in go code. The compiler has some special casing to inject this into its IR. If it did exist, it would kinda look like this.

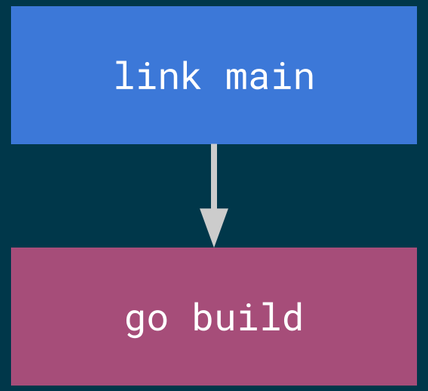
```
mode: set
ehden.net/fizzbuzz/fizzbuzz.go:10.13,12.16 2 0
ehden.net/fizzbuzz/fizzbuzz.go:12.16,14.3 1 0
ehden.net/fizzbuzz/fizzbuzz.go:16.2,16.26 1 0
ehden.net/fizzbuzz/fizzbuzz.go:16.26,18.3 1 0
ehden.net/fizzbuzz/fizzbuzz.go:21.29,22.9 1 1
ehden.net/fizzbuzz/fizzbuzz.go:23.17,24.20 1 0
ehden.net/fizzbuzz/fizzbuzz.go:25.16,26.16 1 1
ehden.net/fizzbuzz/fizzbuzz.go:27.16,28.16 1 0
ehden.net/fizzbuzz/fizzbuzz.go:29.10,30.25 1 1
```

```
mode: set
ehden.net/fizzbuzz/fizzbuzz.go:10.13,12.16 2 0
ehden.net/fizzbuzz/fizzbuzz.go:12.16,14.3 1 0
ehden.net/fizzbuzz/fizzbuzz.go:16.2,16.26 1 0
ehden.net/fizzbuzz/fizzbuzz.go:16.26,18.3 1 0
ehden.net/fizzbuzz/fizzbuzz.go:21.29,22.9 1 1
ehden.net/fizzbuzz/fizzbuzz.go:23.17,24.20 1 0
ehden.net/fizzbuzz/fizzbuzz.go:25.16,26.16 1 1
ehden.net/fizzbuzz/fizzbuzz.go:27.16,28.16 1 0
ehden.net/fizzbuzz/fizzbuzz.go:29.10,30.25 1 1
```

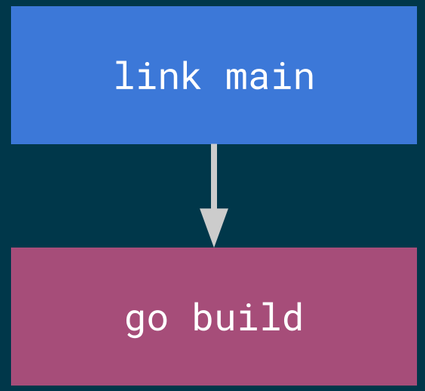
'go tool cover -html=cover.out'

```go
package main

import (
        "fmt"
        "log"
        "os"
        "strconv"
)

func main() {
        n, err := strconv.Atoi(os.Args[1])
        if err != nil {
                log.Fatal("🥵")
        }

        for i := 1; i <= n; i++ {
                fmt.Println(fizzbuzz(i))
        }
}

func fizzbuzz(n int) string {
        switch {
        case n%15 == 0:
                return "fizzbuzz"
        case n%5 == 0:
                return "buzz"
        case n%3 == 0:
                return "fizz"
        default:
                return strconv.Itoa(n)
        }
}
```

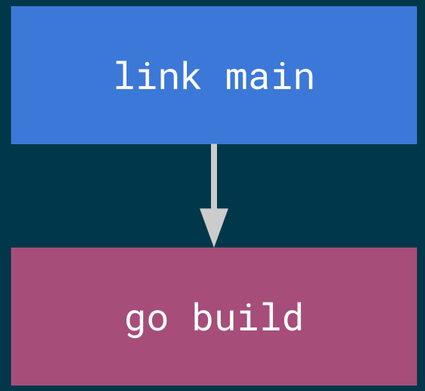
```
go build
```


link main
go build

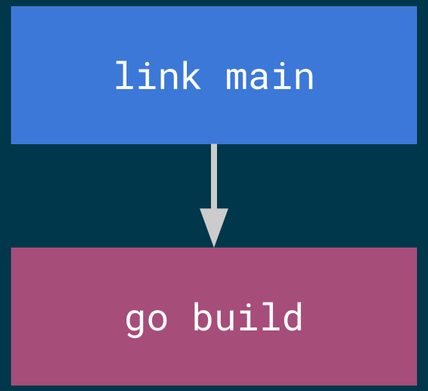
```
link -o $WORK/b001/exe/a.out
     -importcfg $WORK/b001/importcfg.link
     -buildmode=pie -buildid=<...> -extld=clang
     $WORK/b001/_pkg_.a
```



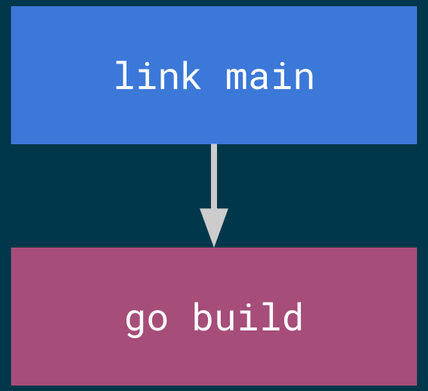
```
link -o $WORK/b001/exe/a.out
     -importcfg $WORK/b001/importcfg.link
     -buildmode=pie -buildid=<...> -extld=clang
     $WORK/b001/_pkg_.a
```



```
link -o $WORK/b001/exe/a.out
     -importcfg $WORK/b001/importcfg.link
     -buildmode=pie -buildid=<...> -extld=clang
     $WORK/b001/_pkg_.a
```

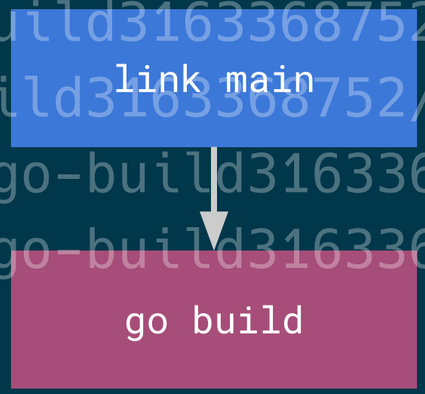


```
link -o $WORK/b001/exe/a.out
     -importcfg $WORK/b001/importcfg.link
     -buildmode=pie -buildid=<...> -extld=clang
     $WORK/b001/_pkg_.a
```



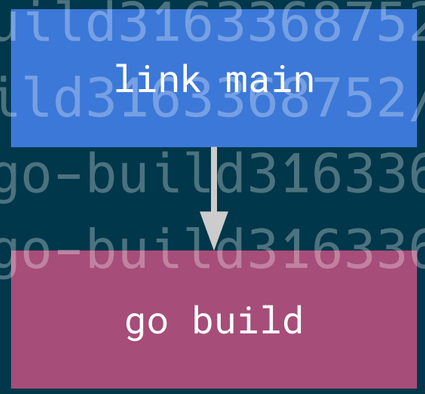
```
link -o $WORK/b001/exe/a.out
     -importcfg $WORK/b001/importcfg.link
     -buildmode=pie -buildid=<...> -extld=clang
     $WORK/b001/_pkg_.a
```

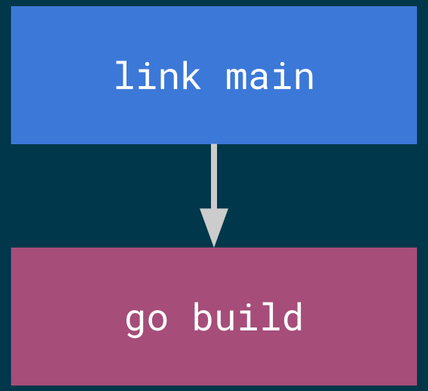
```
packagefile ehden.net/fizzbuzz=$TMPDIR/go-build3163368752/b001/_pkg_.a
packagefile fmt=$TMPDIR/go-build3163368752/b002/_pkg_.a
packagefile log=$TMPDIR/go-build3163368752/b046/_pkg_.a
packagefile os=$TMPDIR/go-build3163368752/b035/_pkg_.a
packagefile strconv=$TMPDIR/go-build3163368752/b025/_pkg_.a
packagefile runtime=$TMPDIR/go-build3163368752/b009/_pkg_.a
...
```

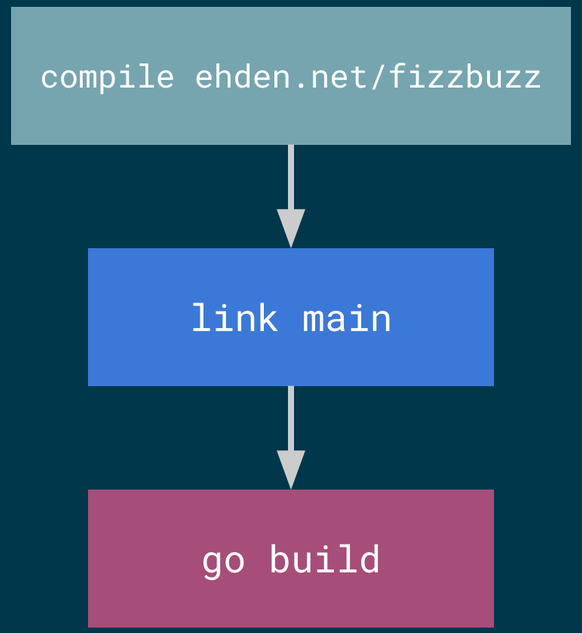


```
link -o $WORK/b001/exe/a.out
     -importcfg $WORK/b001/importcfg.link
     -buildmode=pie -buildid=<...> -extld=clang
     $WORK/b001/_pkg_.a
```

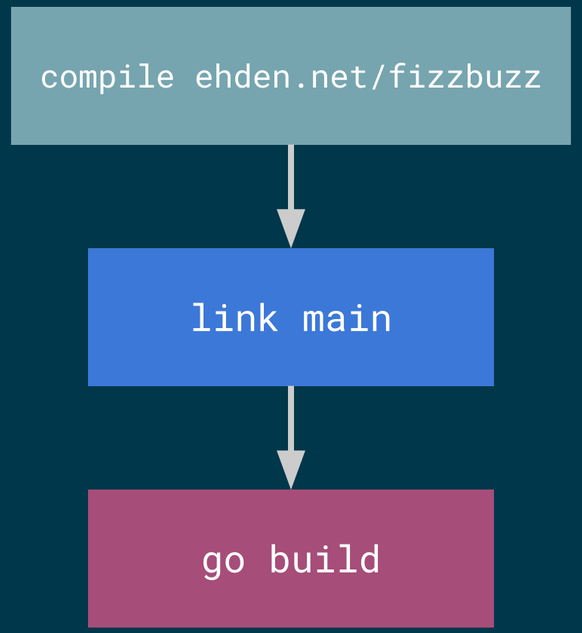
```
packagefile ehden.net/fizzbuzz=$TMPDIR/go-build3163368752/b001/_pkg_.a
packagefile fmt=$TMPDIR/go-build3163368752/b002/_pkg_.a
packagefile log=$TMPDIR/go-build3163368752/b046/_pkg_.a
packagefile os=$TMPDIR/go-build3163368752/b035/_pkg_.a
packagefile strconv=$TMPDIR/go-build3163368752/b025/_pkg_.a
packagefile runtime=$TMPDIR/go-build3163368752/b009/_pkg_.a
...
```

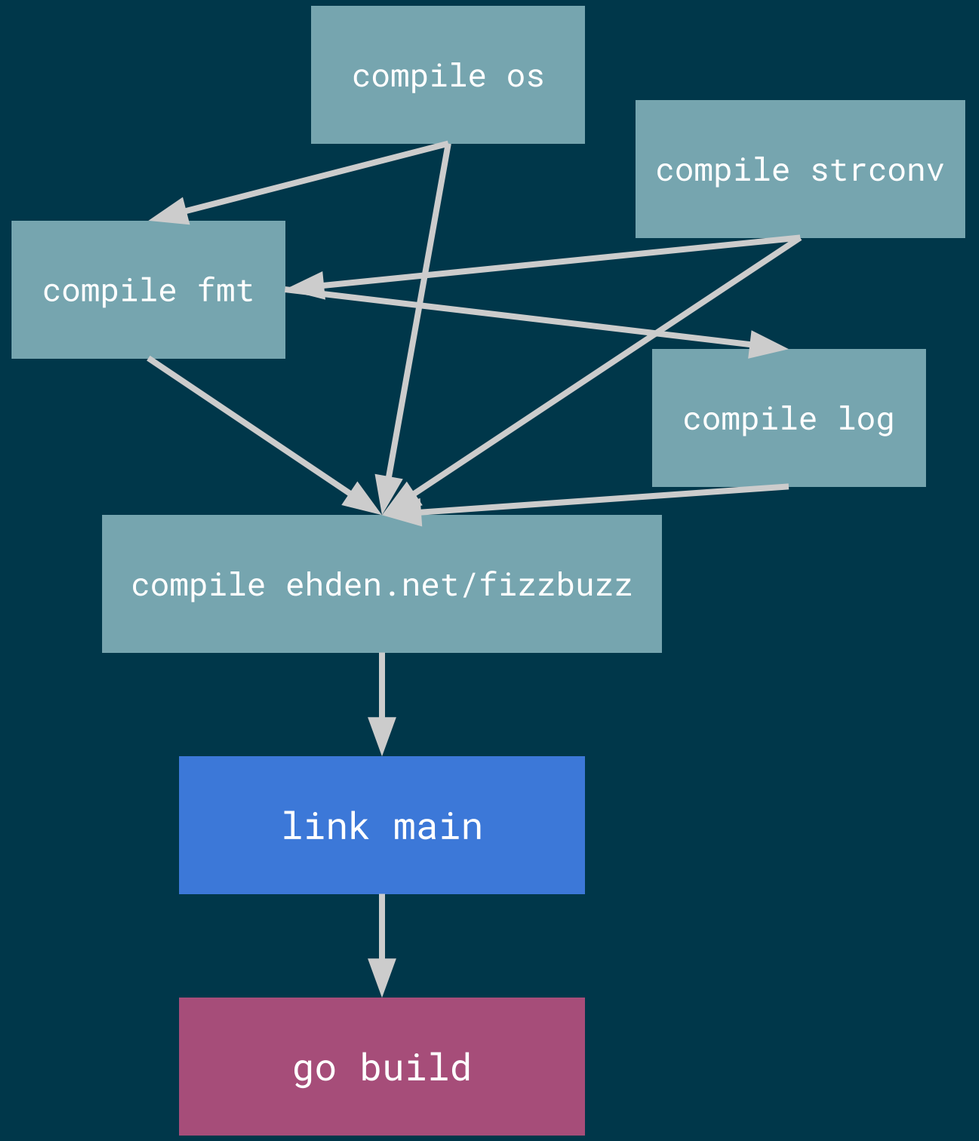


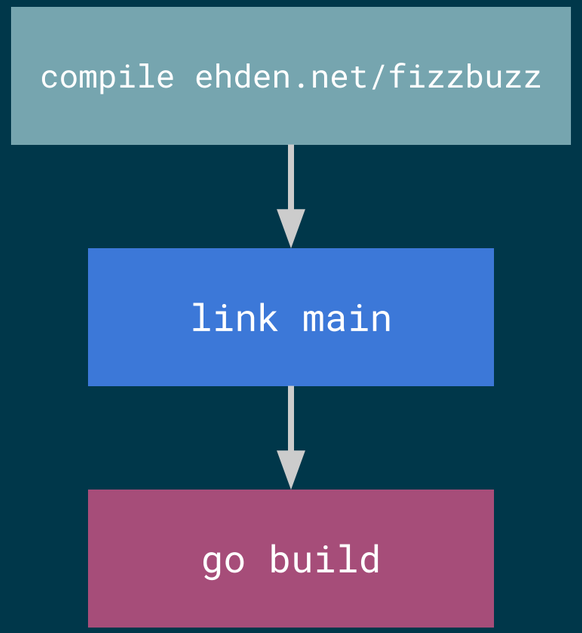

link main
go build

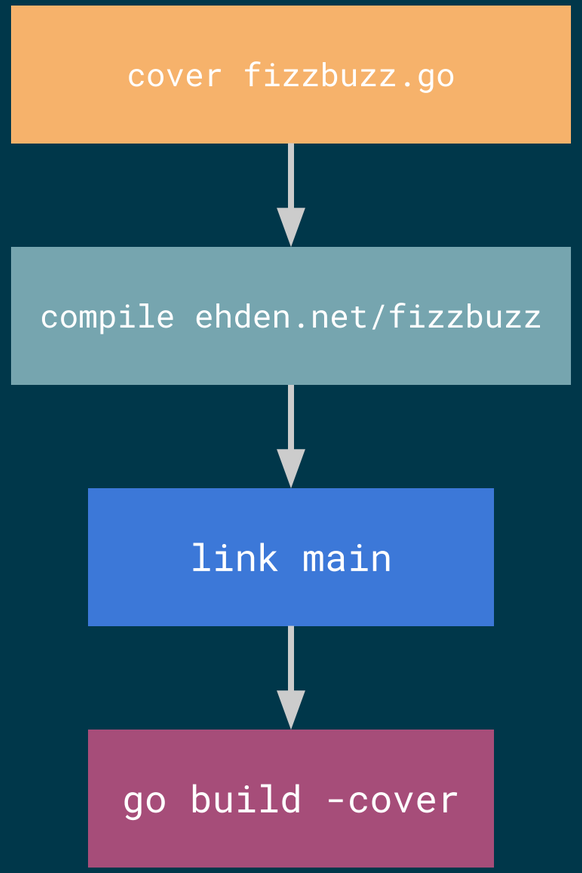

compile ehden.net/fizzbuzz
link main
go build

```
compile -o $WORK/b001/_pkg_.a
    -importcfg $WORK/b001/importcfg
    -trimpath "$WORK/b001=>"
    -p main -lang=go1.22 -complete -buildid <...>
    -goversion go1.22.5 -c=4 -shared -nolocalimports -pack
    ./fizzbuzz.go
```

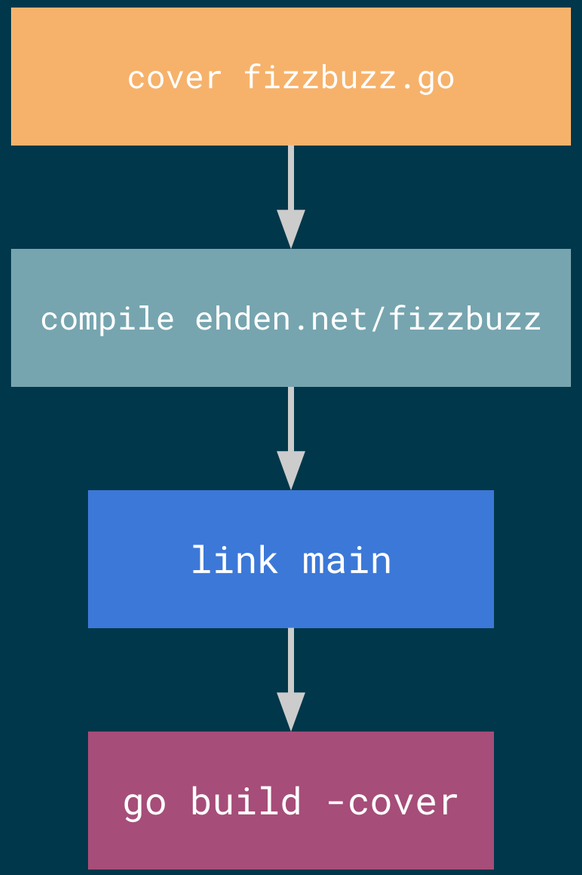



compile os
compile strconv
compile fmt
compile log
compile ehden.net/fizzbuzz
link main
go build

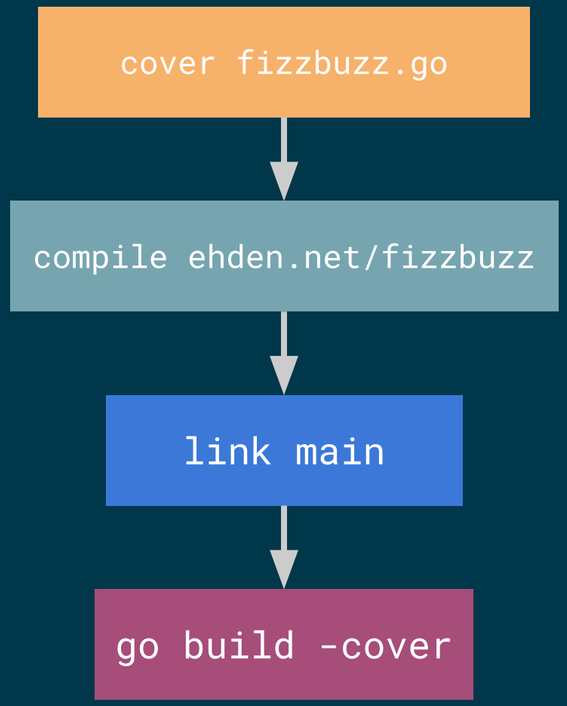

compile ehden.net/fizzbuzz
link main
go build

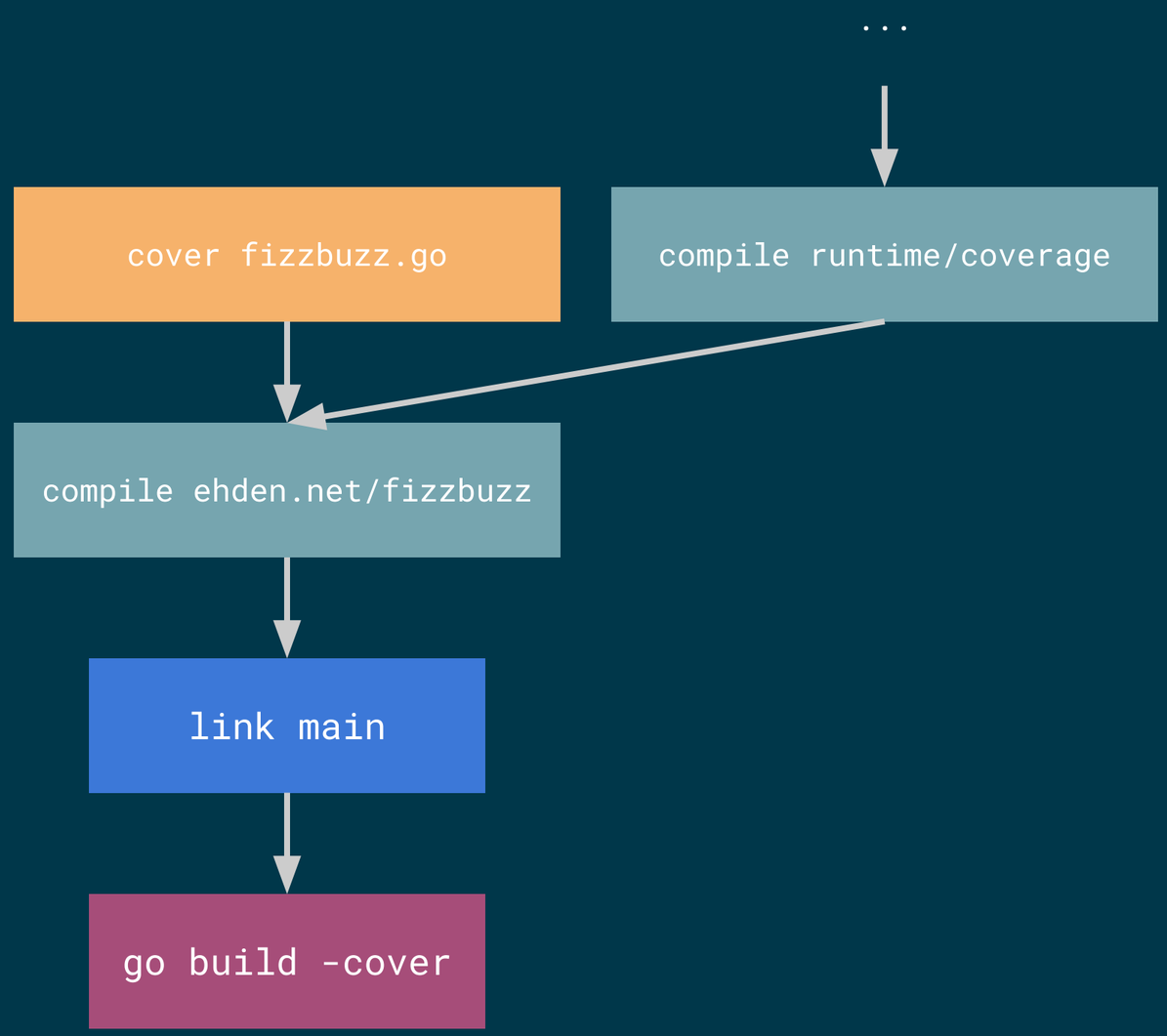

cover fizzbuzz.go
compile ehden.net/fizzbuzz
link main
go build -cover

```
cover -outfilelist $WORK/b001/coveroutfiles.txt
    -pkgcfg $WORK/b001/pkgcfg.txt -mode set
    -var goCover_4bac6d588efe_
    ./fizzbuzz.go
```



```
compile -o $WORK/b001/_pkg_.a
    -importcfg $WORK/b001/importcfg
    -coveragecfg=$WORK/b001/coveragecfg
    -trimpath "$WORK/b001=>"
    -p main -lang=go1.22 -complete -buildid <...>
    -goversion go1.22.5 -c=4 -shared -nolocalimports -pack
    $WORK/b001/fizzbuzz.cover.go $WORK/b001/covervars.go
```

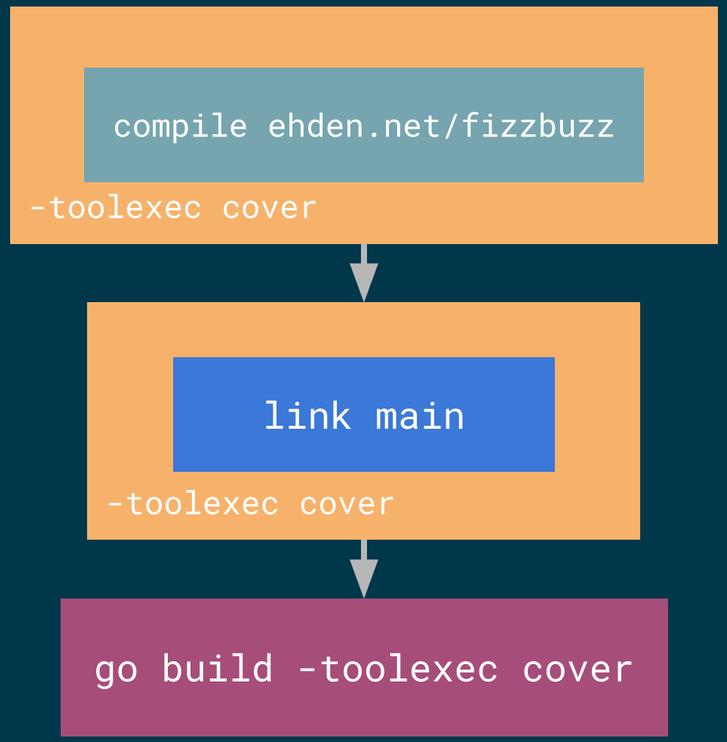



...
cover fizzbuzz.go
compile runtime/coverage
compile ehden.net/fizzbuzz
link main
go build -cover

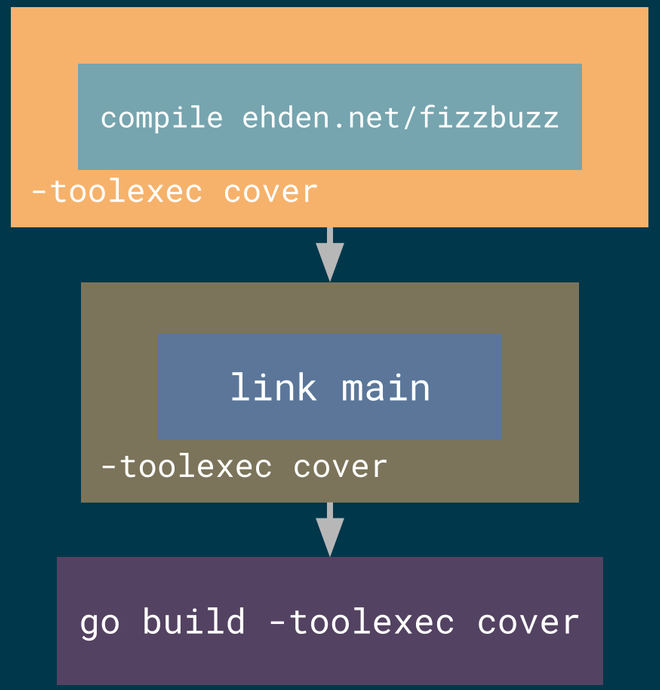
doing this ourselves

```
-toolexec 'cmd args'
    a program to use to invoke toolchain programs like vet and asm.
    For example, instead of running asm, the go command will run
    'cmd args /path/to/asm <arguments for asm>'.
    The TOOLEXEC_IMPORTPATH environment variable will be set,
    matching 'go list -f {{.ImportPath}}' for the package being built.
```

'go help build'

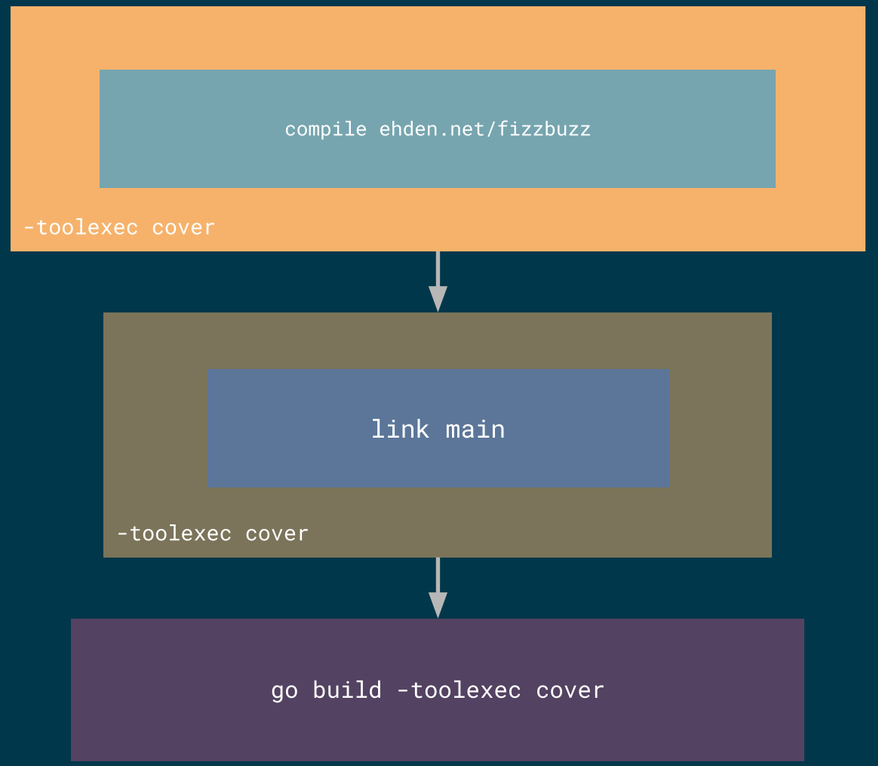

compile ehden.net/fizzbuzz
-toolexec cover
link main
-toolexec cover
go build -toolexec cover

```
compile -o $WORK/b001/_pkg_.a
    -coveragecfg=$WORK/b001/coveragecfg
    -trimpath "$WORK/b001=>"
    -p main -lang=go1.22 -complete -buildid <...>
    -goversion go1.22.5 -c=4 -shared -nolocalimports -pack
    $WORK/b001/fizzbuzz.cover.go $WORK/b001/covervars.go
```



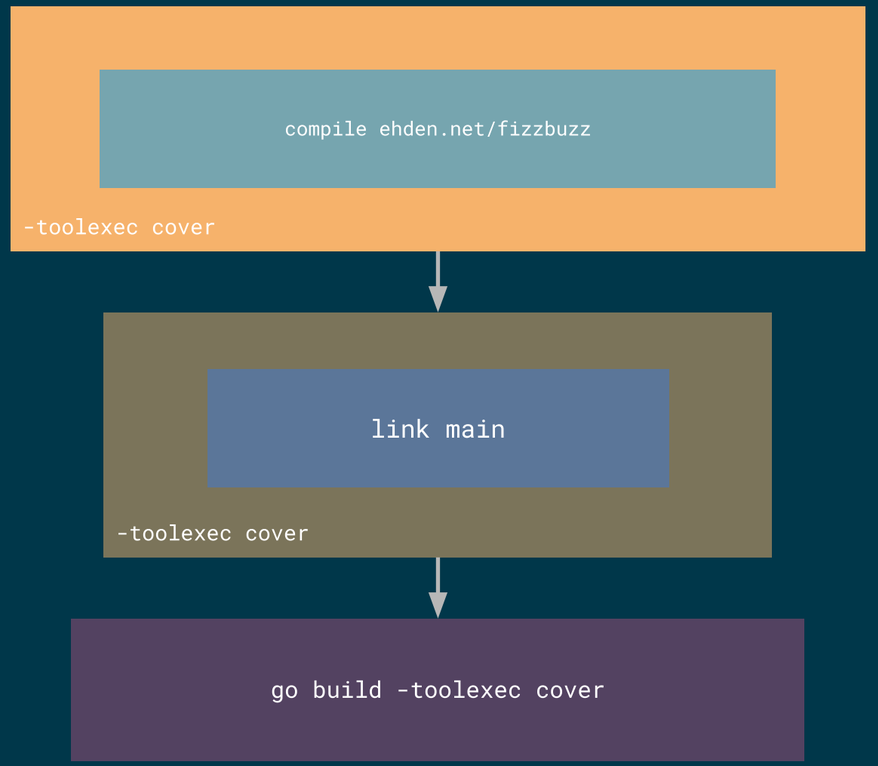
```
compile -o $WORK/b001/_pkg_.a
    -coveragecfg=$WORK/b001/coveragecfg
    -trimpath "$WORK/b001=>"
    -p main -lang=go1.22 -complete -buildid <...>
    -goversion go1.22.5 -c=4 -shared -nolocalimports -pack
    $WORK/b001/fizzbuzz.cover.go $WORK/b001/covervars.go
```

```
func main() {defer _WriteCoverage();
    cover_73_107();n, err := strconv.Atoi(os.Args[1])
    if err != nil {
        cover_127_144();log.Fatal("😡")
    }
    for i := 1; i <= n; i++ {
        cover_178_202();fmt.Println(fizzbuzz(i))
    }
}

func fizzbuzz(n int) string {
    switch {
    case n%15 == 0:
        cover_268_285();return "fizzbuzz"
    case n%5 == 0:
        cover_304_317();return "buzz"
    case n%3 == 0:
        cover_336_349();return "fizz"
    default:
        cover_362_384();return strconv.Itoa(n)
    }
}
```



```
compile -o $WORK/b001/_pkg_.a
    -coveragecfg=$WORK/b001/coveragecfg
    -trimpath "$WORK/b001=>"
    -p main -lang=go1.22 -complete -buildid <...>
    -goversion go1.22.5 -c=4 -shared -nolocalimports -pack
    $WORK/b001/fizzbuzz.cover.go $WORK/b001/covervars.go
```

```
func main() {defer _WriteCoverage();
    cover_73_107();n, err := strconv.Atoi(os.Args[1])
    if err != nil {
        cover_127_144();log.Fatal("😡")
    }
    for i := 1; i <= n; i++ {
        cover_178_202();fmt.Println(fizzbuzz(i))
    }
}

func fizzbuzz(n int) string {
    switch {
    case n%15 == 0:
        cover_268_285();return "fizzbuzz"
    case n%5 == 0:
        cover_304_317();return "buzz"
    case n%3 == 0:
        cover_336_349();return "fizz"
    default:
        cover_362_384();return strconv.Itoa(n)
    }
}
```



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    if err != nil {
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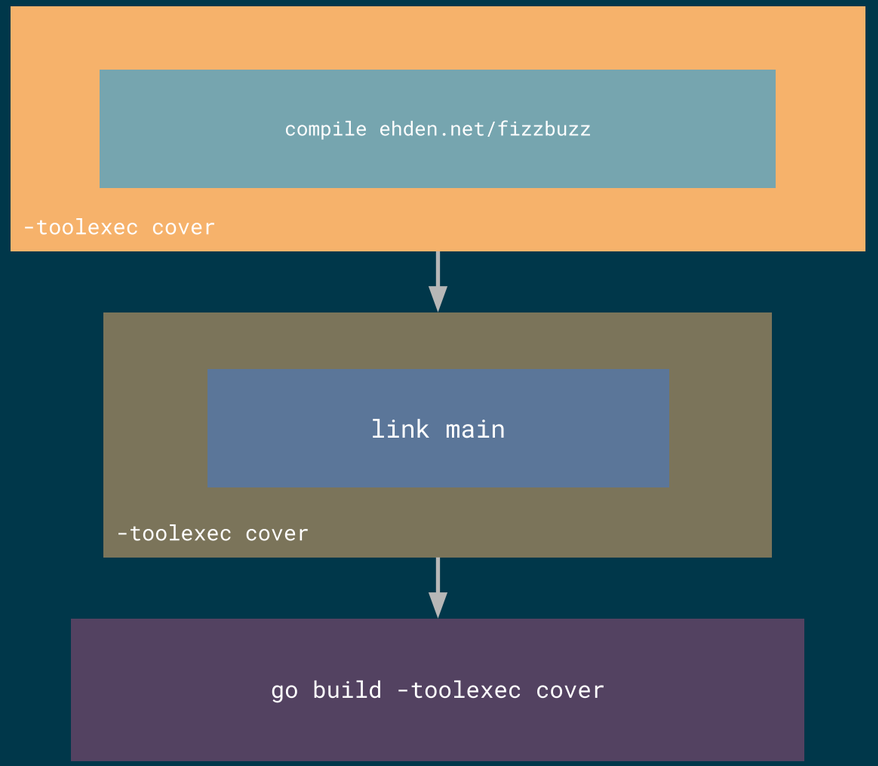
        cover_304_317();return "buzz"
    case n%3 == 0:
        cover_336_349();return "fizz"
    default:
        cover_362_384();return strconv.Itoa(n)
    }
}
```



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    -p main -lang=go1.22 -complete -buildid <...>
    -goversion go1.22.5 -c=4 -shared -nolocalimports -pack
    $WORK/b001/fizzbuzz.cover.go $WORK/b001/covervars.go
```

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    cover_73_107();n, err := strconv.Atoi(os.Args[1])
    if err != nil {
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    }
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        cover_178_202();fmt.Println(fizzbuzz(i))
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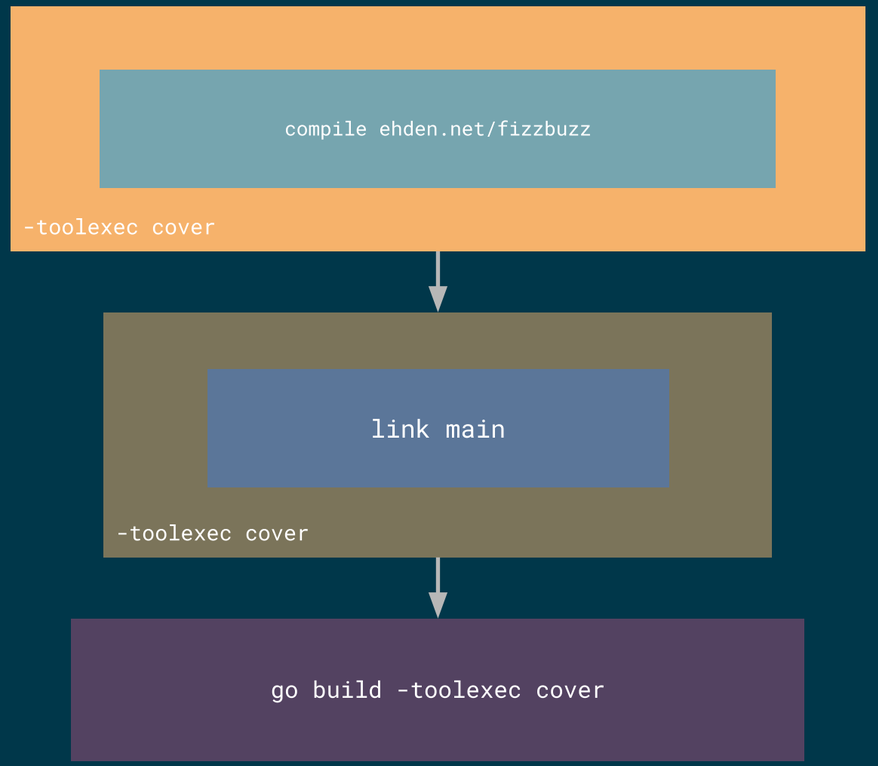
        cover_304_317();return "buzz"
    case n%3 == 0:
        cover_336_349();return "fizz"
    default:
        cover_362_384();return strconv.Itoa(n)
    }
}
```



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    -coveragecfg=$WORK/b001/coveragecfg
    -trimpath "$WORK/b001=>"
    -p main -lang=go1.22 -complete -buildid <...>
    -goversion go1.22.5 -c=4 -shared -nolocalimports -pack
    $WORK/b001/fizzbuzz.cover.go $WORK/b001/covervars.go
```

```
func main() {defer _WriteCoverage();
    cover_73_107();n, err := strconv.Atoi(os.Args[1])
    if err != nil {
        cover_127_144();log.Fatal("😡")
    }
    for i := 1; i <= n; i++ {
        cover_178_202();fmt.Println(fizzbuzz(i))
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}

func fizzbuzz(n int) string {
    switch {
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        cover_304_317();return "buzz"
    case n%3 == 0:
        cover_336_349();return "fizz"
    default:
        cover_362_384();return strconv.Itoa(n)
    }
}
```
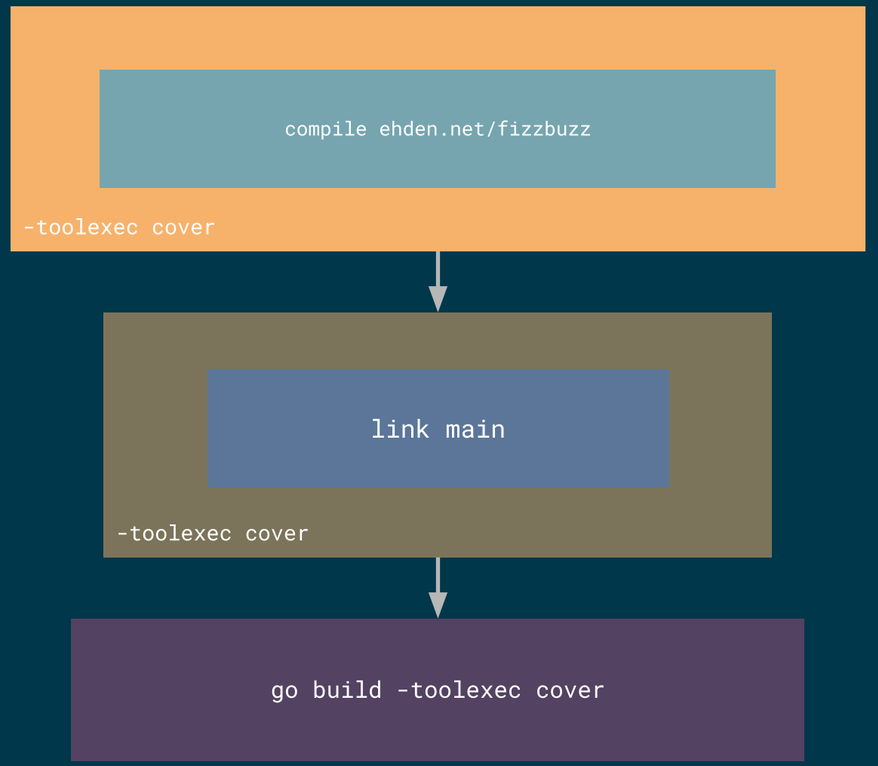
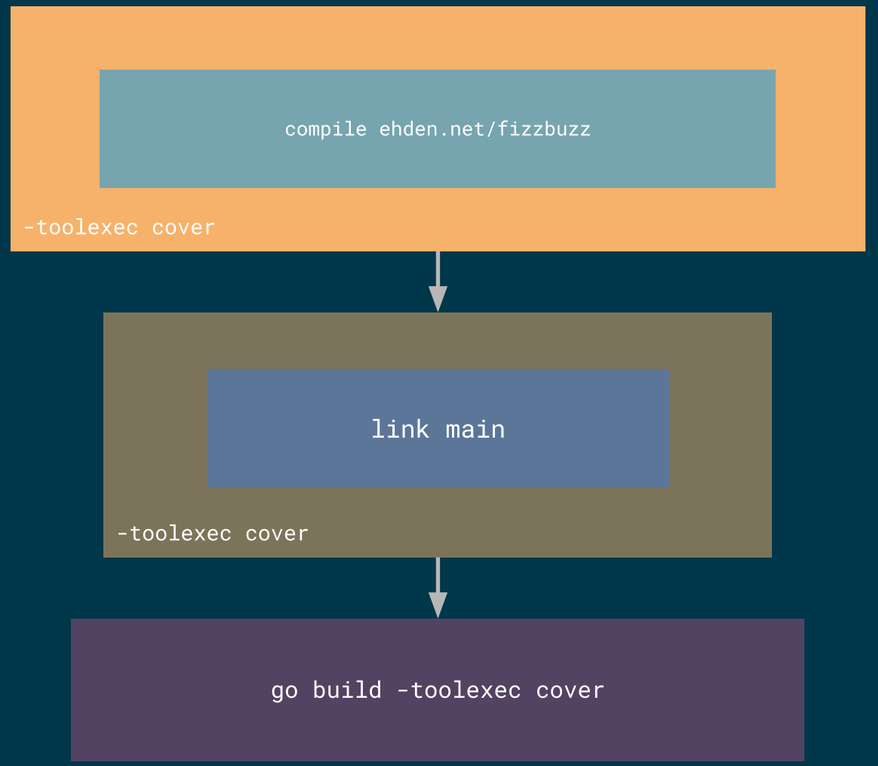



$WORK/b001/covervars.go

```
package main

import _ "unsafe"

//go:linkname cover_73_107 ehden.net/cover/vars.cover_73_107_XRA0BjRi2VWNrDxFsPct
//go:linkname cover_127_144 ehden.net/cover/vars.cover_127_144_XRA0BjRi2VWNrDxFsPct
//go:linkname cover_178_202 ehden.net/cover/vars.cover_178_202_XRA0BjRi2VWNrDxFsPct
//go:linkname cover_268_285 ehden.net/cover/vars.cover_268_285_XRA0BjRi2VWNrDxFsPct
//go:linkname cover_304_317 ehden.net/cover/vars.cover_304_317_XRA0BjRi2VWNrDxFsPct
//go:linkname cover_336_349 ehden.net/cover/vars.cover_336_349_XRA0BjRi2VWNrDxFsPct
//go:linkname cover_362_384 ehden.net/cover/vars.cover_362_384_XRA0BjRi2VWNrDxFsPct

// ehden.net/fizzbuzz/fizzbuzz.go:11.2,11.36
func cover_73_107()
// ehden.net/fizzbuzz/fizzbuzz.go:13.3,13.20
func cover_127_144()
// ehden.net/fizzbuzz/fizzbuzz.go:17.3,17.27
func cover_178_202()
// ehden.net/fizzbuzz/fizzbuzz.go:24.3,24.20
func cover_268_285()
// ehden.net/fizzbuzz/fizzbuzz.go:26.3,26.16
func cover_304_317()
// ehden.net/fizzbuzz/fizzbuzz.go:28.3,28.16
func cover_336_349()
// ehden.net/fizzbuzz/fizzbuzz.go:30.3,30.25
func cover_362_384()

//go:linkname _WriteCoverage ehden.net/cover/vars.WriteCoverage
func _WriteCoverage()
```



```
package vars

import _ "unsafe"
import "os"

//go:linkname cover_73_107_XRA0BjRi2VWNrDxFsPct ehden.net/cover/vars.cover_73_107_XRA0BjRi2VWNrDxFsPct
//go:linkname cover_127_144_XRA0BjRi2VWNrDxFsPct ehden.net/cover/vars.cover_127_144_XRA0BjRi2VWNrDxFsPct
//go:linkname cover_178_202_XRA0BjRi2VWNrDxFsPct ehden.net/cover/vars.cover_178_202_XRA0BjRi2VWNrDxFsPct
// ...

// ehden.net/fizzbuzz/fizzbuzz.go:11.2,11.36
var _cover_73_107_XRA0BjRi2VWNrDxFsPct uint8
func cover_73_107_XRA0BjRi2VWNrDxFsPct() { _cover_73_107_XRA0BjRi2VWNrDxFsPct = 1 }

var _cover_127_144_XRA0BjRi2VWNrDxFsPct uint8
func cover_127_144_XRA0BjRi2VWNrDxFsPct() { _cover_127_144_XRA0BjRi2VWNrDxFsPct = 1 }

var _cover_178_202_XRA0BjRi2VWNrDxFsPct uint8
func cover_178_202_XRA0BjRi2VWNrDxFsPct() { _cover_178_202_XRA0BjRi2VWNrDxFsPct = 1 }

// ...

func WriteCoverage() {
    outPath := "cover.out"
    f, _ := os.Create(outPath)
    defer f.Close()

    f.WriteString("mode: set\n")
    f.WriteString("ehden.net/fizzbuzz/fizzbuzz.go:11.2,11.36" + " 1 " + stringFor(_cover_73_107_XRA0BjRi2VWNrDxFsPct) + "\n")
    f.WriteString("ehden.net/fizzbuzz/fizzbuzz.go:13.3,13.20" + " 1 " + stringFor(_cover_127_144_XRA0BjRi2VWNrDxFsPct) + "\n")
    // ...
}
```

```
package vars

import _ "unsafe"
import "os"

//go:linkname cover_73_107_XRA0BjRi2VWNrDxFsPct ehden.net/cover/vars.cover_73_107_XRA0BjRi2VWNrDxFsPct
//go:linkname cover_127_144_XRA0BjRi2VWNrDxFsPct ehden.net/cover/vars.cover_127_144_XRA0BjRi2VWNrDxFsPct
//go:linkname cover_178_202_XRA0BjRi2VWNrDxFsPct ehden.net/cover/vars.cover_178_202_XRA0BjRi2VWNrDxFsPct
// ...

// ehden.net/fizzbuzz/fizzbuzz.go:11.2,11.36
var _cover_73_107_XRA0BjRi2VWNrDxFsPct uint8
func cover_73_107_XRA0BjRi2VWNrDxFsPct() { _cover_73_107_XRA0BjRi2VWNrDxFsPct = 1 }

var _cover_127_144_XRA0BjRi2VWNrDxFsPct uint8
func cover_127_144_XRA0BjRi2VWNrDxFsPct() { _cover_127_144_XRA0BjRi2VWNrDxFsPct = 1 }

var _cover_178_202_XRA0BjRi2VWNrDxFsPct uint8
func cover_178_202_XRA0BjRi2VWNrDxFsPct() { _cover_178_202_XRA0BjRi2VWNrDxFsPct = 1 }

// ...

func WriteCoverage() {
    outPath := "cover.out"
    f, _ := os.Create(outPath)
    defer f.Close()

    f.WriteString("mode: set\n")
    f.WriteString("ehden.net/fizzbuzz/fizzbuzz.go:11.2,11.36" + " 1 " + stringFor(_cover_73_107_XRA0BjRi2VWNrDxFsPct) + "\n")
    f.WriteString("ehden.net/fizzbuzz/fizzbuzz.go:13.3,13.20" + " 1 " + stringFor(_cover_127_144_XRA0BjRi2VWNrDxFsPct) + "\n")
    // ...
}
```

```
package vars

import _ "unsafe"
import "os"

//go:linkname cover_73_107_XRA0BjRi2VWNrDxFsPct ehden.net/cover/vars.cover_73_107_XRA0BjRi2VWNrDxFsPct
//go:linkname cover_127_144_XRA0BjRi2VWNrDxFsPct ehden.net/cover/vars.cover_127_144_XRA0BjRi2VWNrDxFsPct
//go:linkname cover_178_202_XRA0BjRi2VWNrDxFsPct ehden.net/cover/vars.cover_178_202_XRA0BjRi2VWNrDxFsPct
// ...

// ehden.net/fizzbuzz/fizzbuzz.go:11.2,11.36
var _cover_73_107_XRA0BjRi2VWNrDxFsPct uint8
func cover_73_107_XRA0BjRi2VWNrDxFsPct() { _cover_73_107_XRA0BjRi2VWNrDxFsPct = 1 }

var _cover_127_144_XRA0BjRi2VWNrDxFsPct uint8
func cover_127_144_XRA0BjRi2VWNrDxFsPct() { _cover_127_144_XRA0BjRi2VWNrDxFsPct = 1 }

var _cover_178_202_XRA0BjRi2VWNrDxFsPct uint8
func cover_178_202_XRA0BjRi2VWNrDxFsPct() { _cover_178_202_XRA0BjRi2VWNrDxFsPct = 1 }

// ...

func WriteCoverage() {
    outPath := "cover.out"
    f, _ := os.Create(outPath)
    defer f.Close()

    f.WriteString("mode: set\n")
    f.WriteString("ehden.net/fizzbuzz/fizzbuzz.go:11.2,11.36" + " 1 " + stringFor(_cover_73_107_XRA0BjRi2VWNrDxFsPct) + "\n")
    f.WriteString("ehden.net/fizzbuzz/fizzbuzz.go:13.3,13.20" + " 1 " + stringFor(_cover_127_144_XRA0BjRi2VWNrDxFsPct) + "\n")
    // ...
}
```

problem

- we need to compile this package somehow

problem

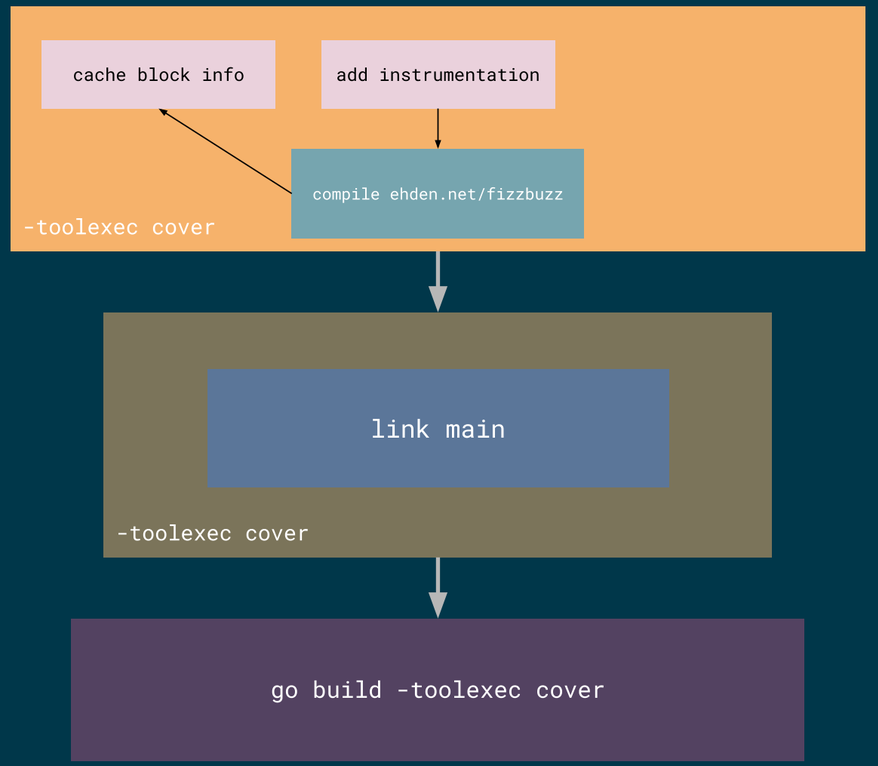
- we need to compile this package somehow
  - … into main

problem

- we need to compile this package somehow
  - ... into main
    - but it needs to be compiled after main
    - ... woops

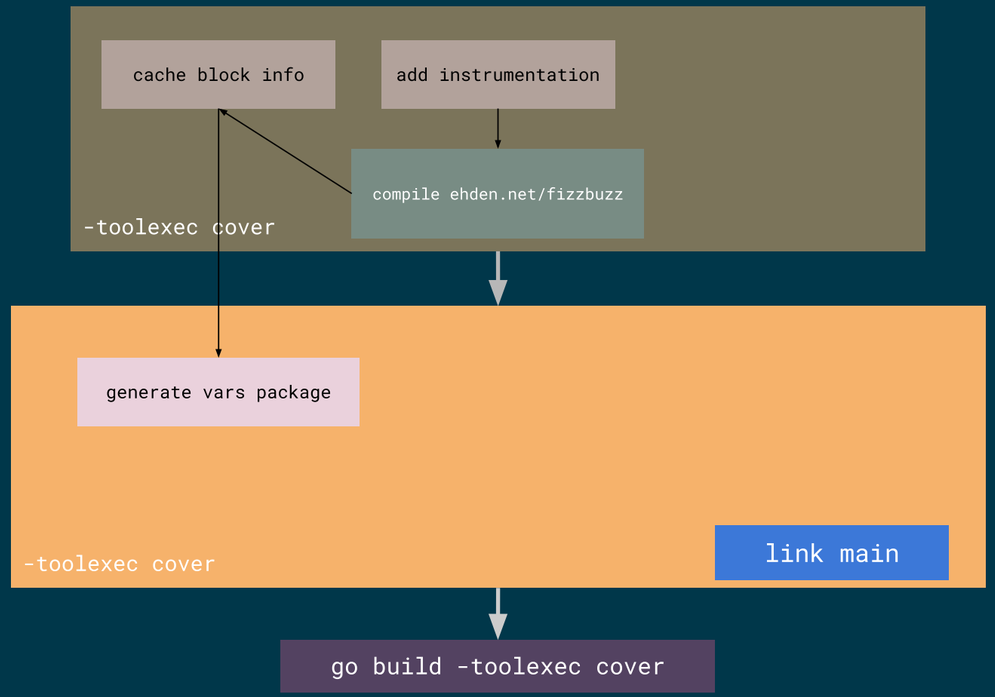
~~the plan~~ hold my beer

1. cache block info while we compile each package



~~the plan~~ hold my beer

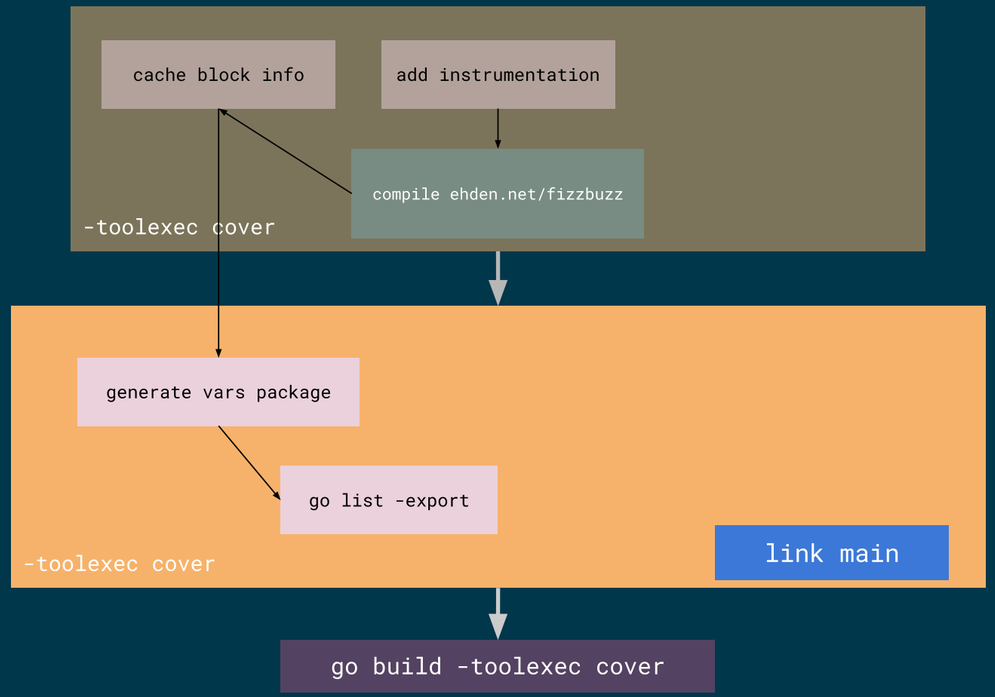
1. cache block info while we compile each package
2. generate package code with importcfg.link



~~the plan~~ hold my beer

1. cache block info while we compile each package
2. generate package code with importcfg.link
3. build our generated package

```
go list -toolexec cover -export -f {{ .Export }}
```

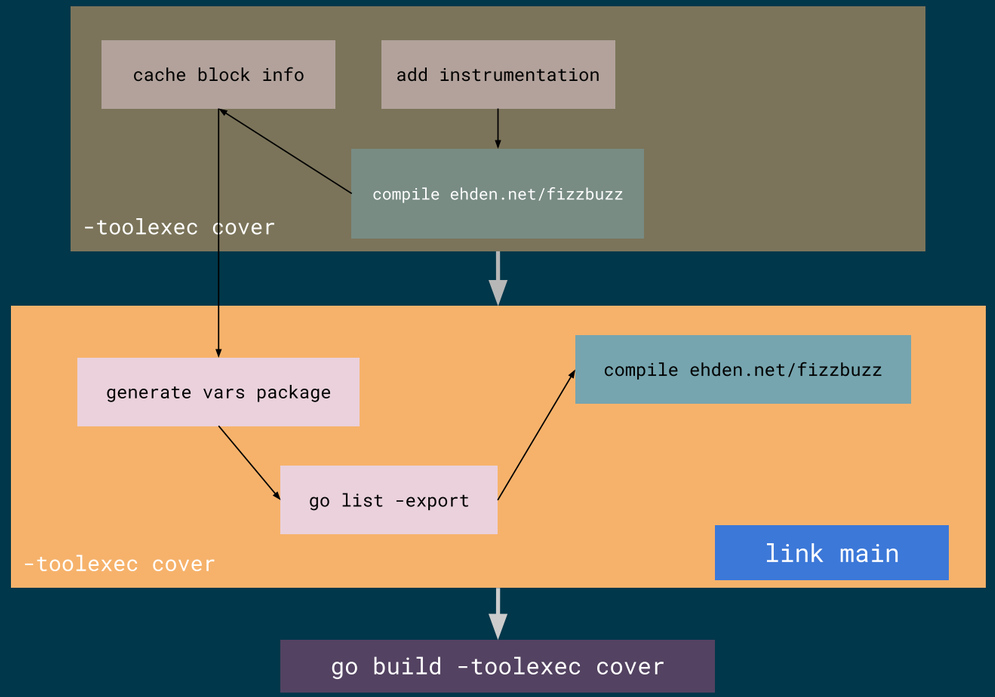


~~the plan~~ hold my beer

1. cache block info while we compile each package
2. generate package code with importcfg.link
3. build our generated package

```
go list -toolexec cover -export -f {{ .Export }}
```

4. recompile main so it imports generated package

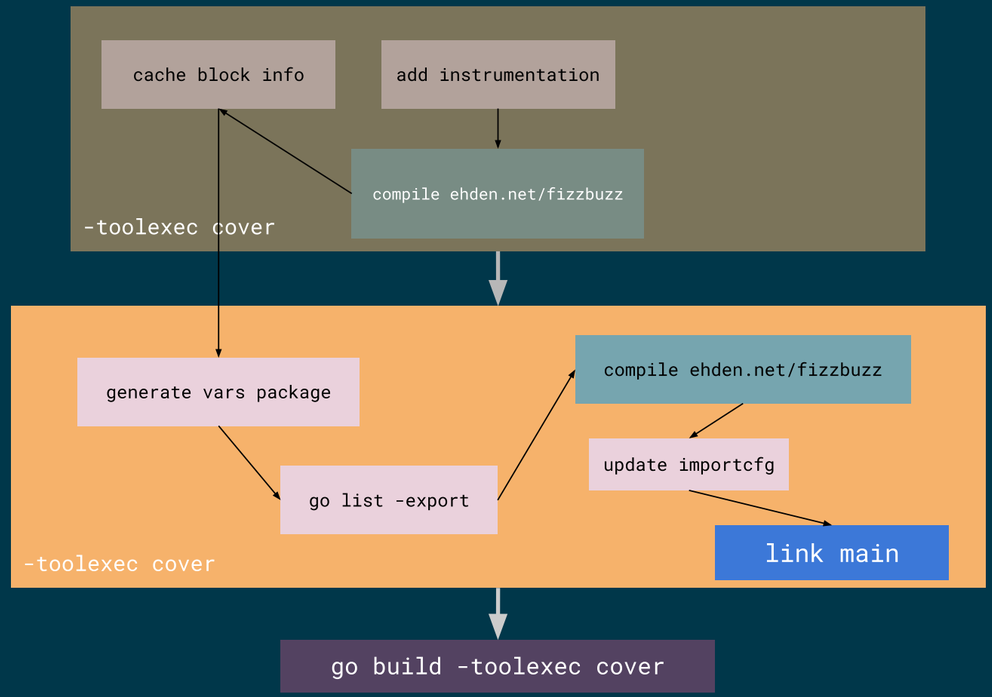


~~the plan~~ hold my beer

1. cache block info while we compile each package
2. generate package code with importcfg.link
3. build our generated package

```
go list -toolexec cover -export -f {{ .Export }}
```

4. recompile main so it imports generated package
5. import linker's importcfg to include new packages

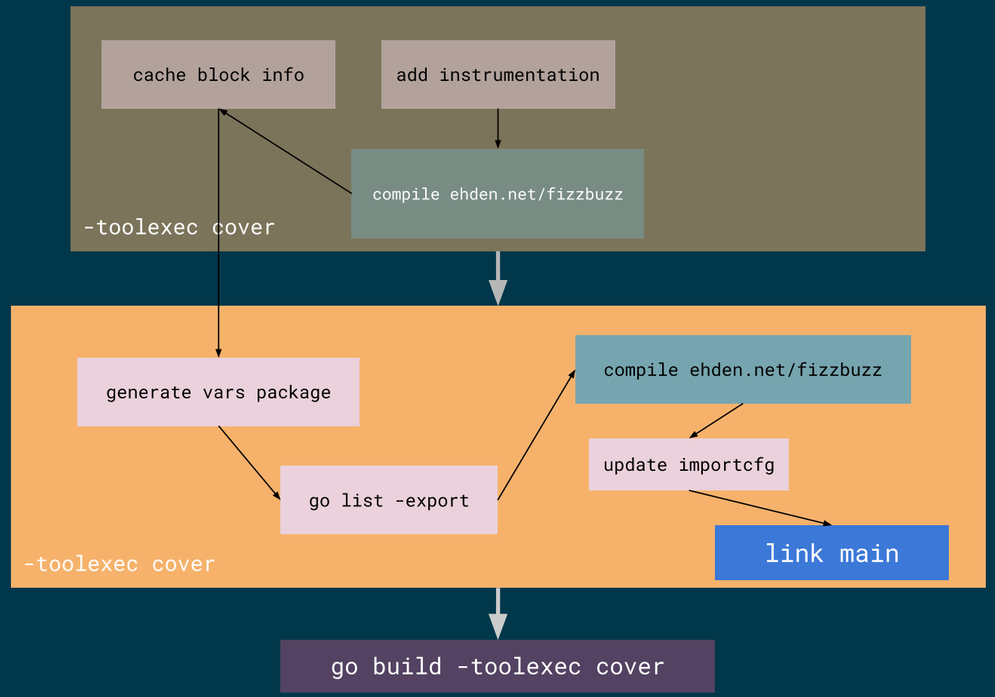


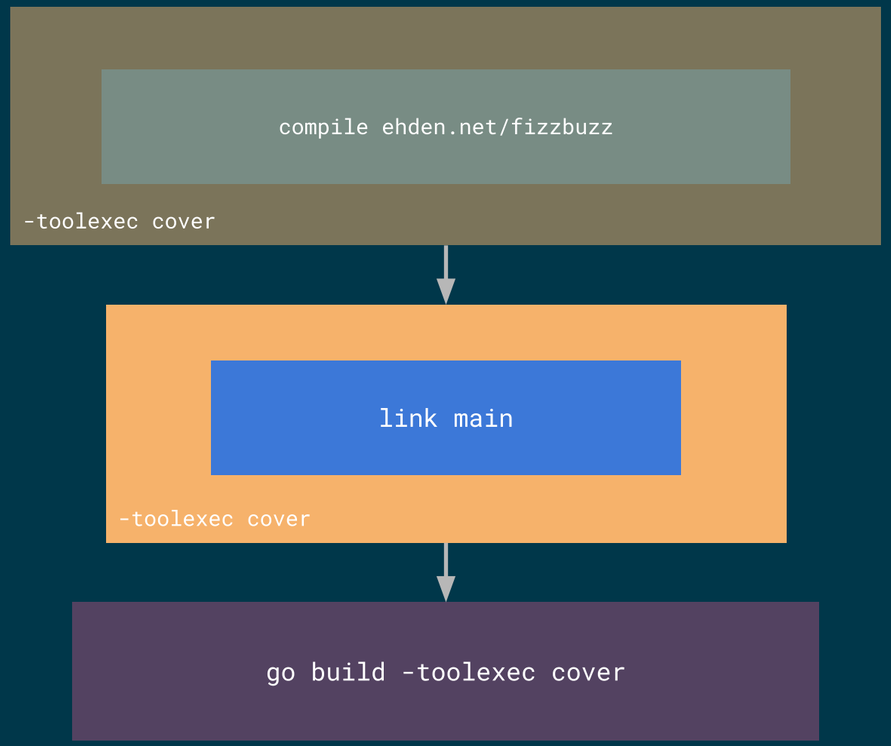
~~the plan~~ hold my beer

1. cache block info while we compile each package
2. generate package code with importcfg.link
3. build our generated package

   ```
   go list -toolexec cover -export -f {{ .Export }}
   ```

4. recompile main so it imports generated package
5. import linker's importcfg to include new packages
6. quiet contemplation




compile ehden.net/fizzbuzz
-toolexec cover
link main
-toolexec cover
go build -toolexec cover

please talk to me

email: ehdens@gmail.com

gophers slack: @ehden

discord: cixel

talk materials and code available at
github.com/cixel/gc2024