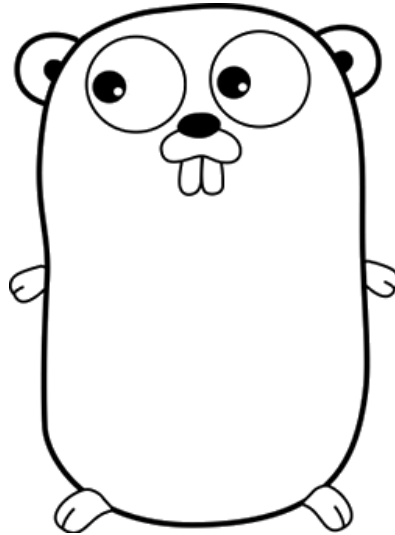


Chapter 1: Introduction



```
h1 > go hello-world.go > ...
```

```
package main
```

```
import "fmt"
```

```
// this is the main function of a Go program
```

```
//
```

```
func main()
```

```
//
```

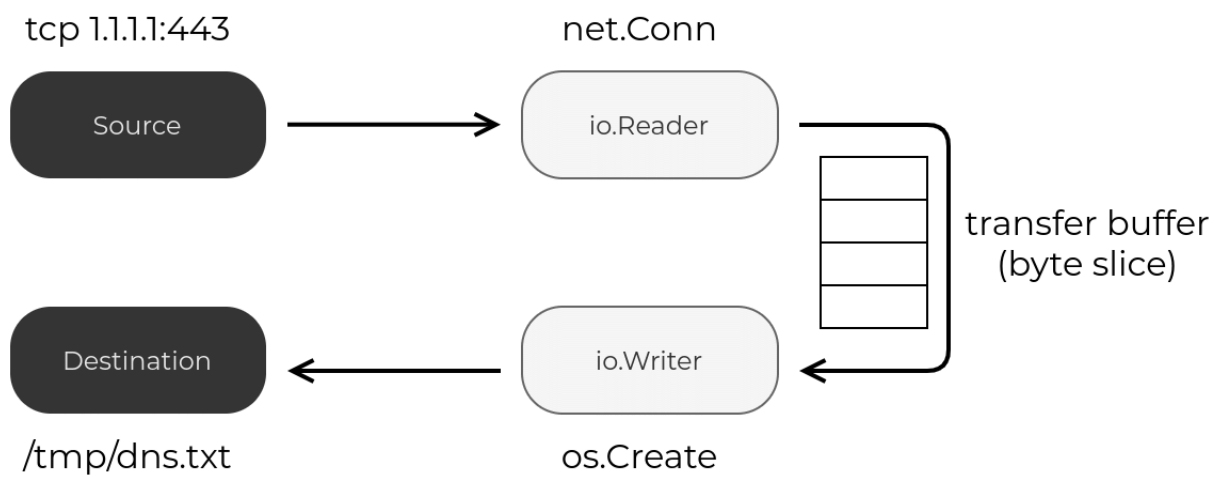
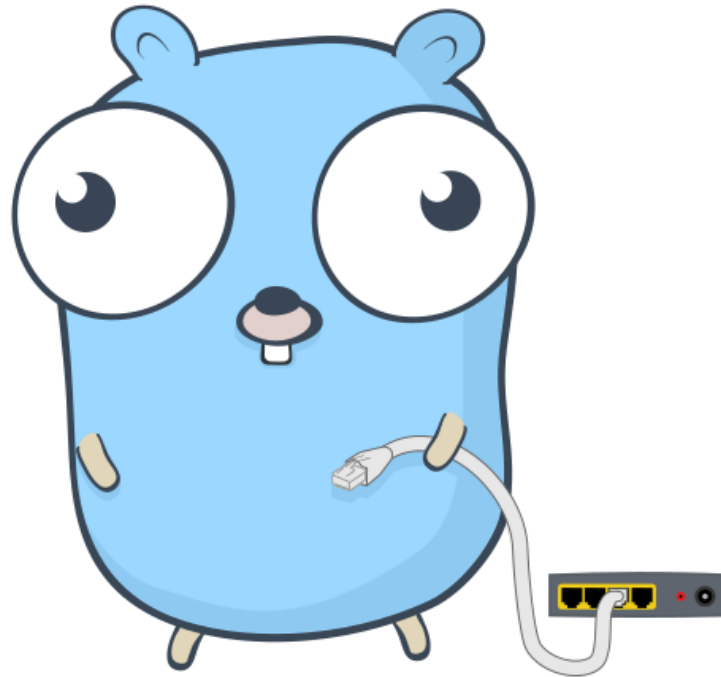
```
//
```

```
this is the main function of a Go program
```

```
func main() {
```

```
    fmt.Println("Hello World!")
```

```
}
```



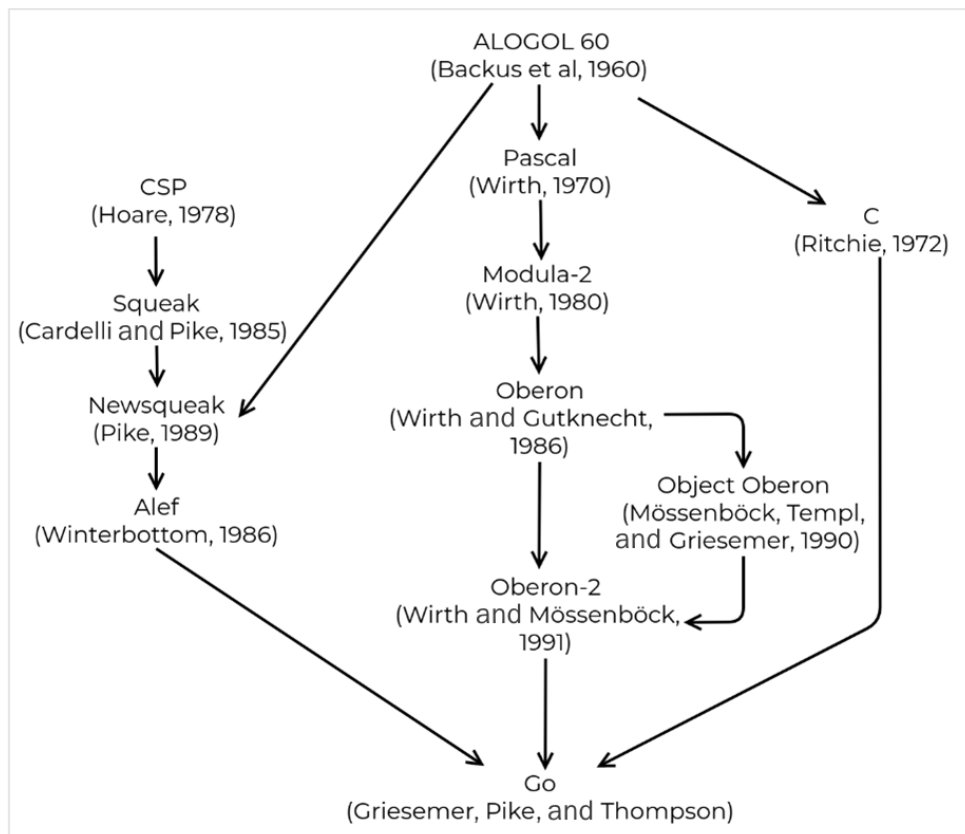
Chapter 2: Go Basics

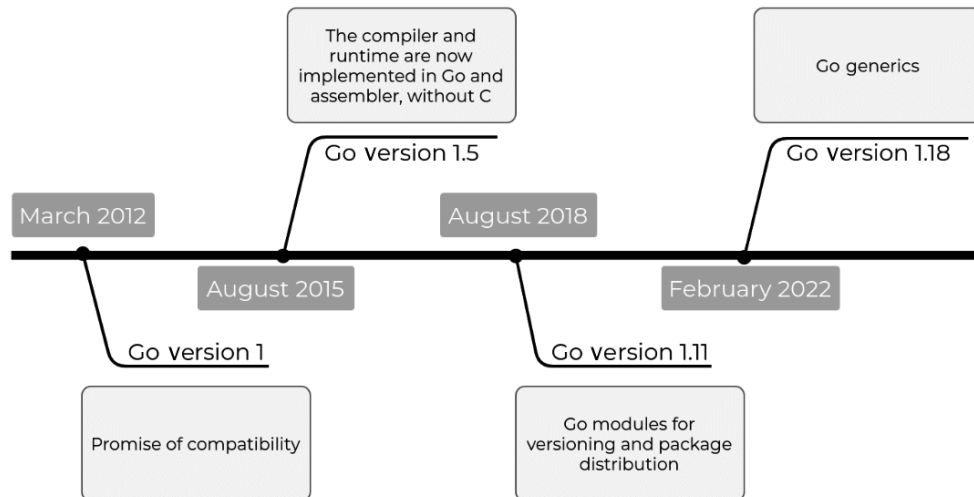
Subject: Re: prog lang discussion
From: Rob 'Commander' Pike
Date: Tue, Sep 25, 2007 at 3:12 PM
To: Robert Griesemer, Ken Thompson

i had a couple of thoughts on the drive home.

1. name

'go'. you can invent reasons for this name but it has nice properties.
it's short, easy to type. tools: goc, gol, goa. if there's an interactive
debugger/interpreter it could just be called 'go'. the suffix is .go
...





The Go Playground

Run Format Imports Share Hello, playground About

```
1 package main
2
3 import (
4     "fmt"
5 )
6
7 func main() {
8     fmt.Println("Hello, playground")
9 }
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
--
```

Hello, playground

Program exited.



The Go
Play Space

Run Ctrl+⇧

Format Ctrl+S

Share

Settings

```
1 package main
2
3 import (
4     "fmt"
5 )
6
7 func main() {
8     fmt.Println("Syscall must always be guarded with
9     build tags.")
10 }
```

About Go Play Space

This is an experimental alternative [Go Playground](#) frontend that is built in Go itself (using [GopherJS](#), a Go → JavaScript transpiler, and [Vecty](#), a React-like frontend library for GopherJS).

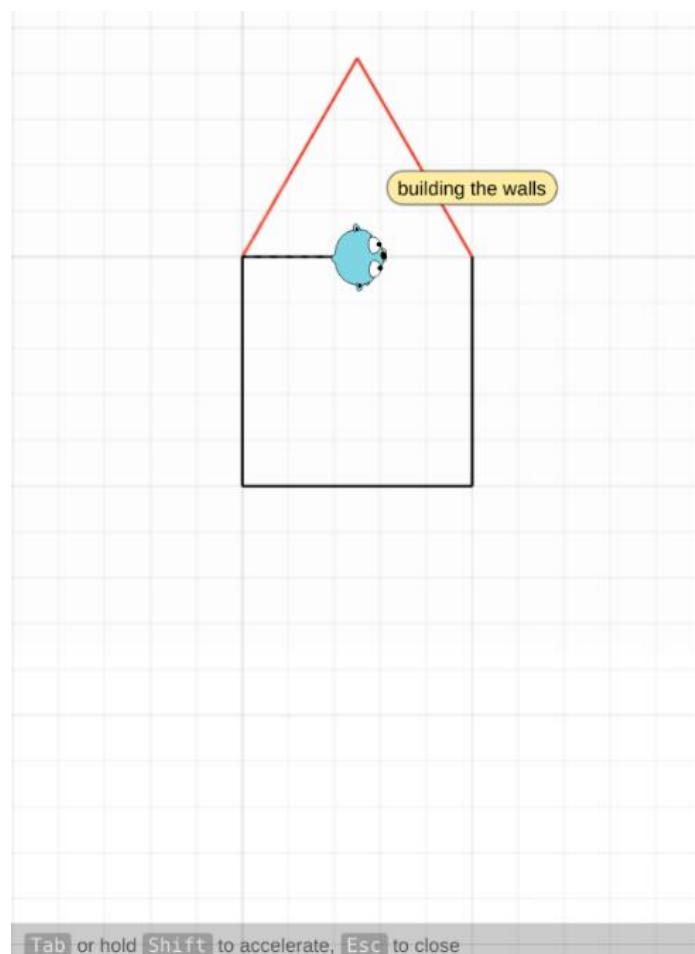
[View source code on GitHub](#)

Star 811

Features

1. **New:** an embedded [Turtle graphics mode](#). Introduce Go to your kids, or have fun yourself!
2. Syntax highlighting, auto-closing braces and quotes, proper undo/redo, auto indentation
3. Smart help lookup: double-click on e.g. `package` keyword or `Println` function name in source code, and you will see the relevant help topic. Try it!
4. Live syntax error checking
5. Error line highlighting (both for syntax errors and for errors returned from the compiler)
6. Ability to highlight lines and blocks of code (like on Github, but better!) — just click on the line numbers. Use Shift and Ctrl to modify the selection
7. Keyboard shortcuts (see button captions)
8. Support for several UI themes and UI tweaks (see the Settings button)

> Syntax OK



[Why Go](#)
[Get Started](#)
[Docs](#)
[Packages](#)
[Play](#)
[Blog](#)

The Go Playground

Go dev branch
Run
Format
Share
Hello, World!

```

1 package main
2
3 import (
4     "fmt"
5     "net/netip"
6 )
7
8 func main() {
9     IPv4s := netip.MustParseAddr("192.0.2.1")
10    IPv6s := netip.MustParseAddr("FC02:F00D::1")
11
12    fmt.Println(IPv4s.String())
13    fmt.Println(IPv4s.Unmap().Is4())
14
15    fmt.Println(IPv6s.String())
16    fmt.Println(IPv6s.Unmap().Is6())
17 }
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34

```

```

192.0.2.1
true
fc02:f00d::1
true
Program exited.

```

github.com/gohugoio/hugo

Click on a package in the tree view to display information about it, including a path by which it is reached from one of the initial packages. Use the *break* button to remove an edge from the graph, so that you can assess what edges need to be broken to eliminate an unwanted dependency.

Packages

Filter:
Clear

- go.opencensus.io@v0.23.0 (2)
 - go.opencensus.io/internal (6)
 - go.opencensus.io/internal/tagencoding (2)
 - go.opencensus.io/metric
 - go.opencensus.io/metric/metricdata (9)
 - go.opencensus.io/metric/metricproducer (5)
 - go.opencensus.io/plugin
 - go.opencensus.io/plugin/ocgrpc (29)
 - go.opencensus.io/plugin/ochttp (42)
 - go.opencensus.io/plugin/ochttp/propagation
 - go.opencensus.io/plugin/ochttp/propagation/b3 (8)
 - go.opencensus.io/resource (2)

Selected package: go.opencensus.io

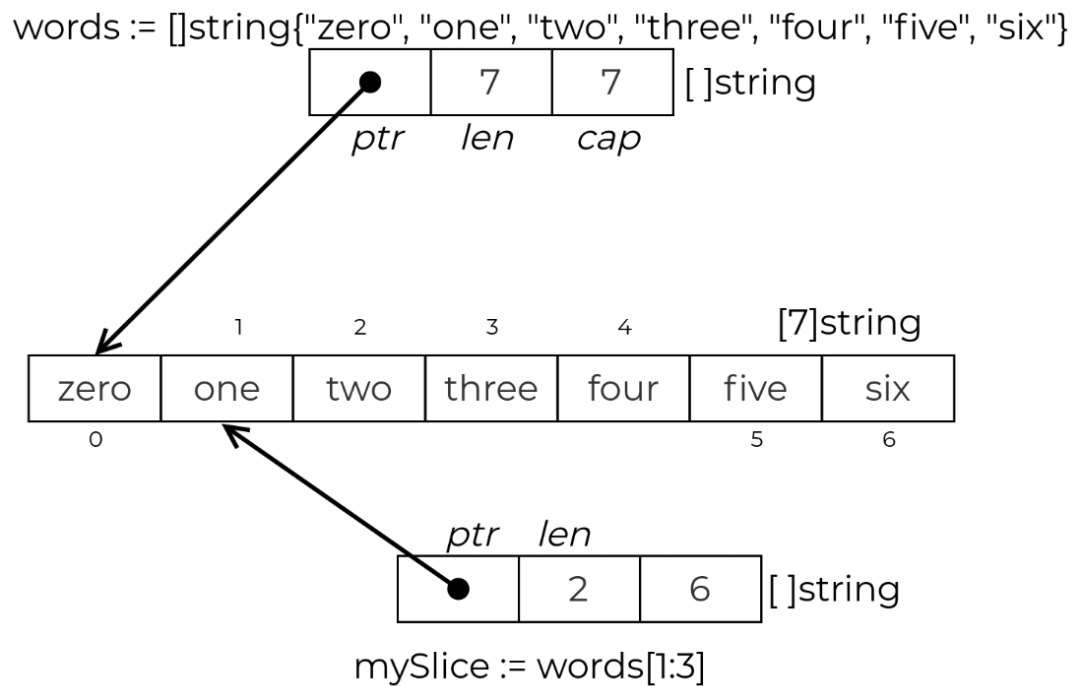
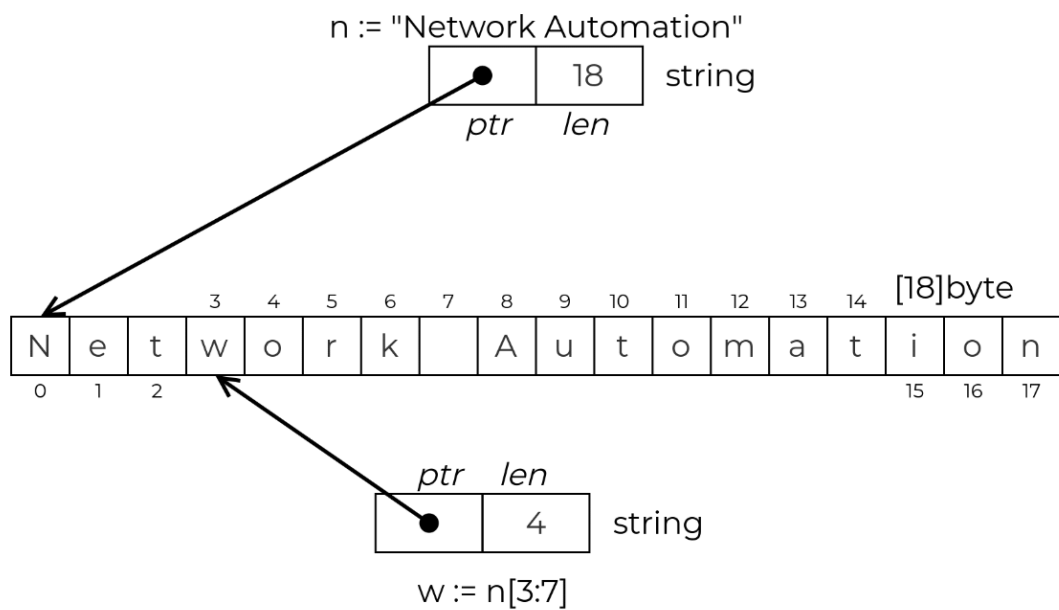
Imports: ...

Imported by: ...

Path from initial package:

github.com/gohugoio/hugo	
break	break all → github.com/gohugoio/hugo/commands
break	break all → github.com/gohugoio/hugo/deploy
break	break all → gocloud.dev/blob
break	break all → gocloud.dev/internal/oc
break	break all → go.opencensus.io/plugin/ocgrpc
break	break all → go.opencensus.io/trace
break	break all → go.opencensus.io/internal
break	break all → go.opencensus.io

Chapter 3: Getting Started with Go



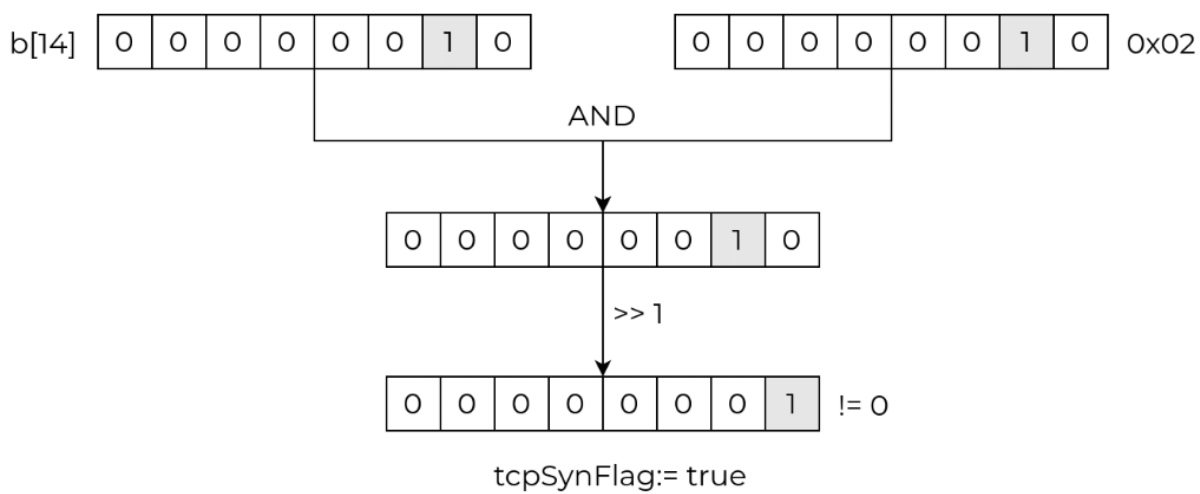
b[13]

0	1	0	1	0	0	0	0
---	---	---	---	---	---	---	---

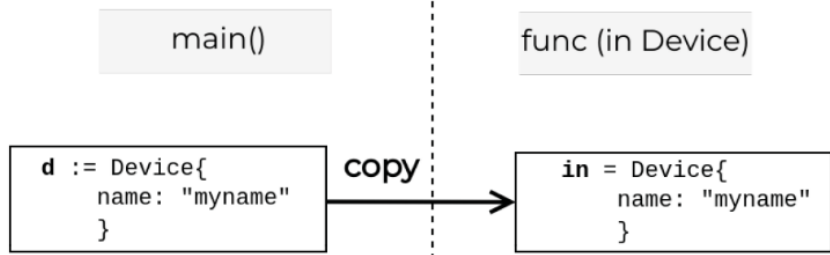
headerWords >> 4

headerWords := 5

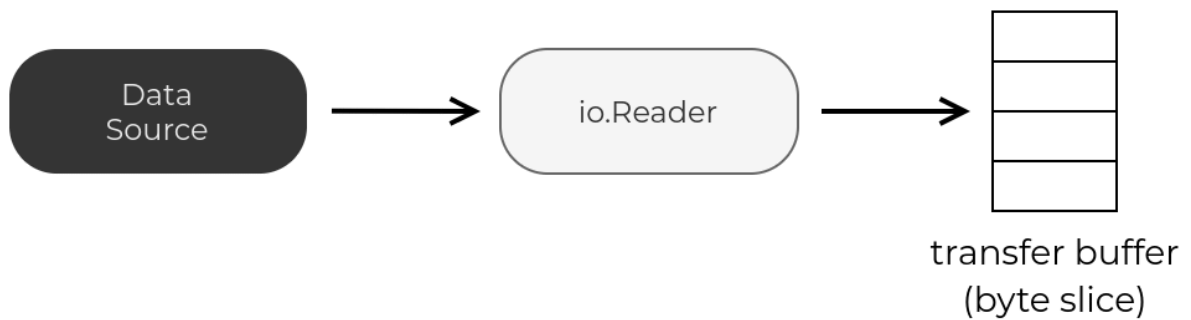
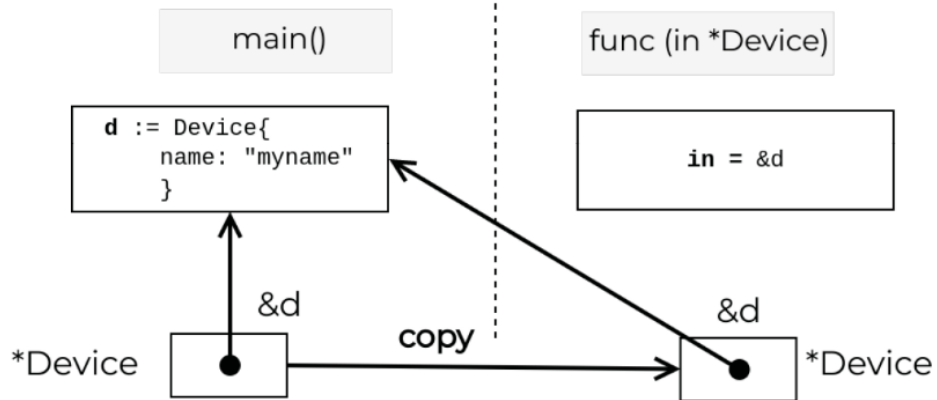
0	0	0	0	0	1	0	1
---	---	---	---	---	---	---	---

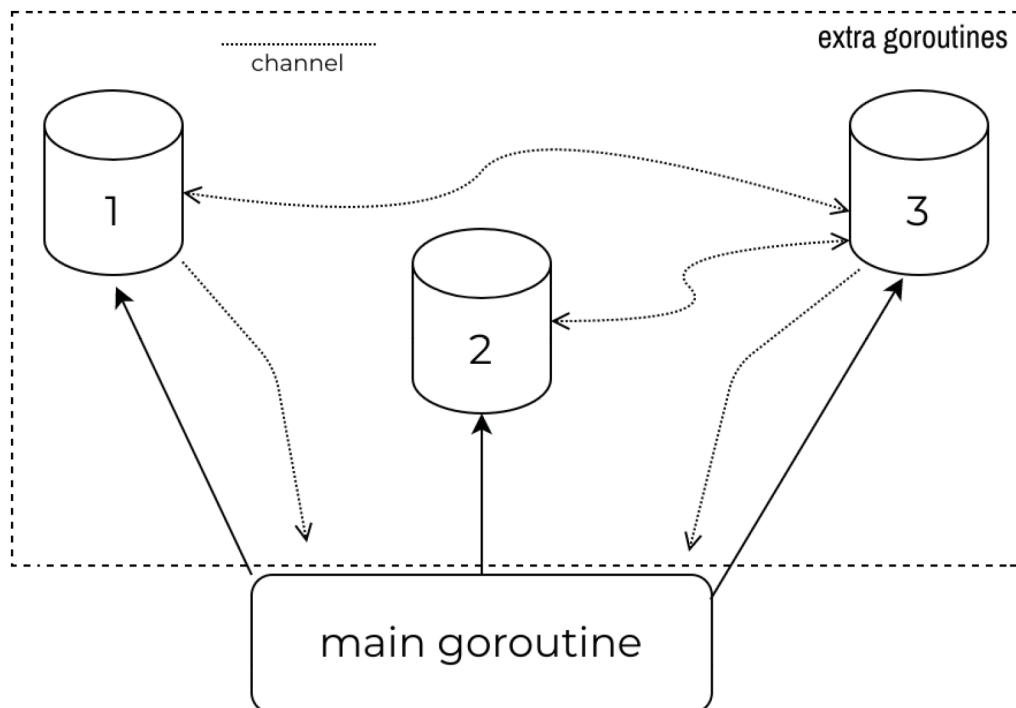
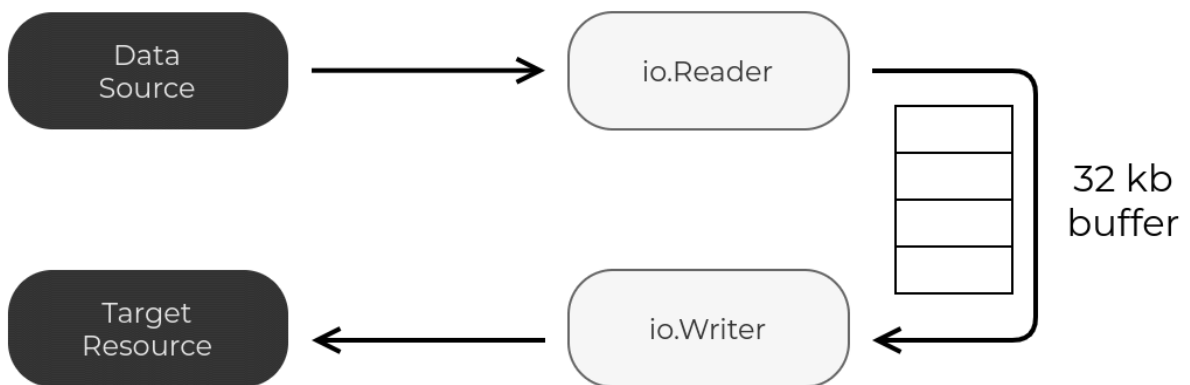
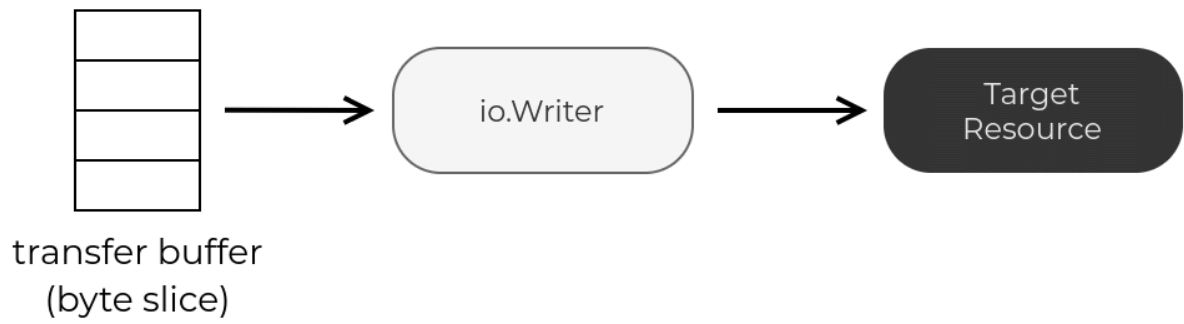


pass by value

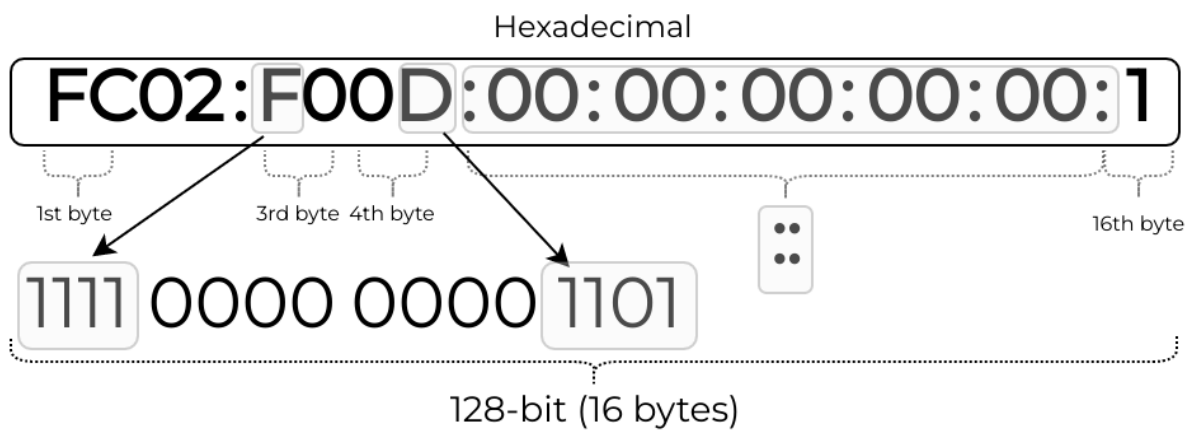
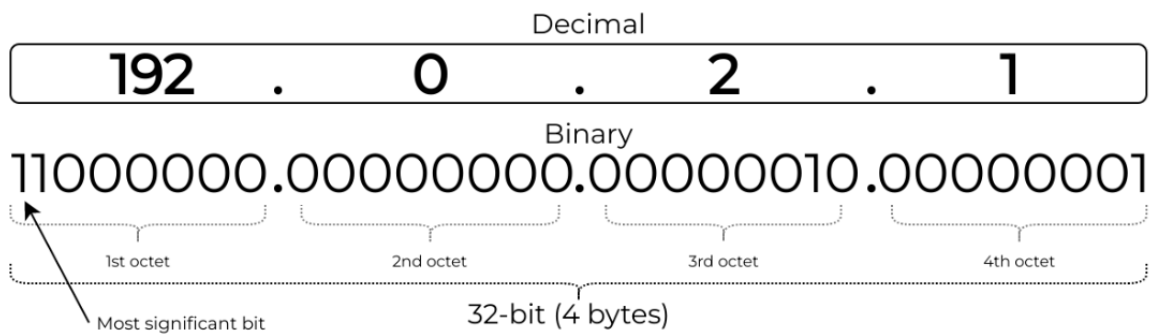
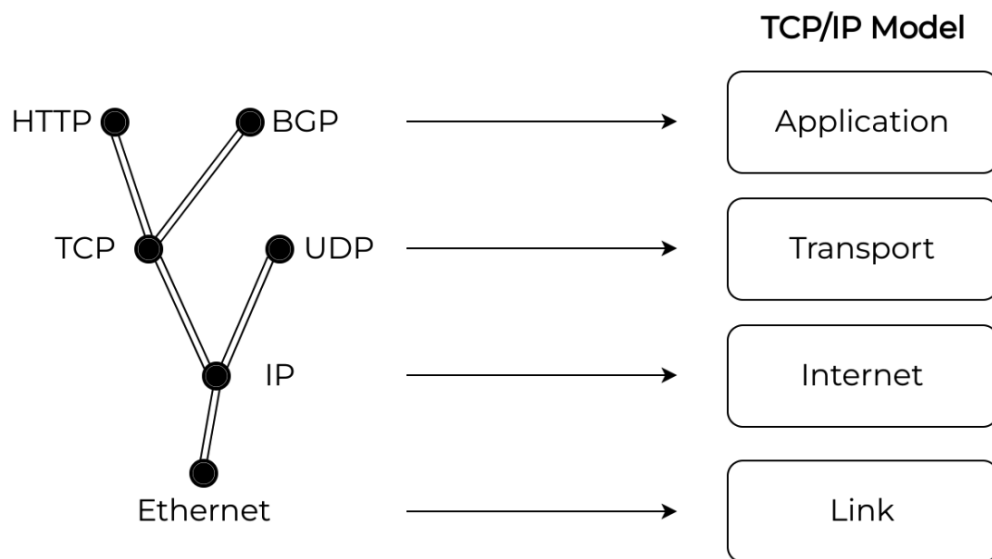


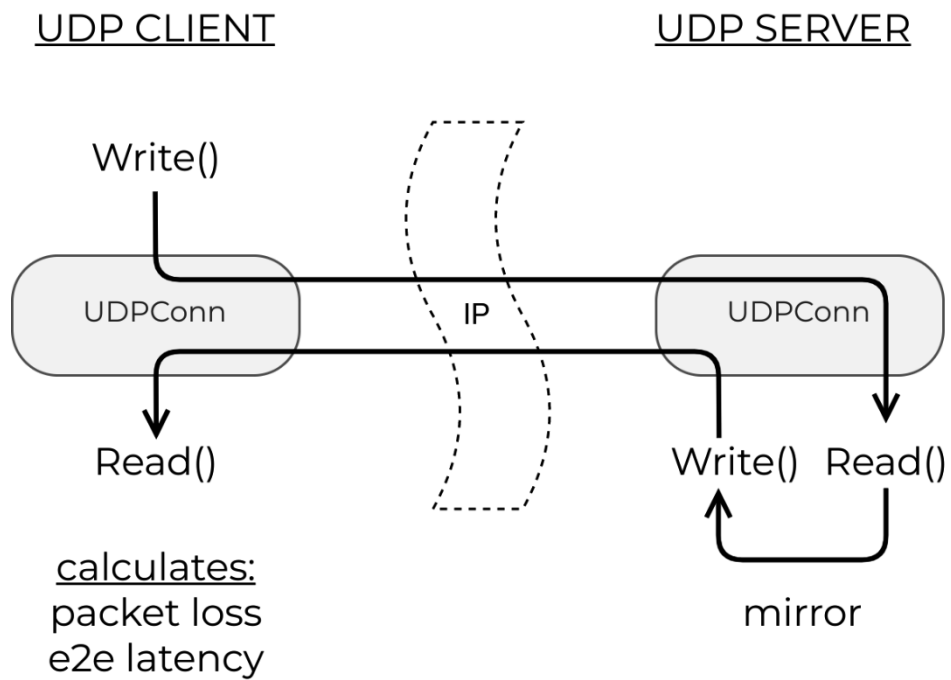
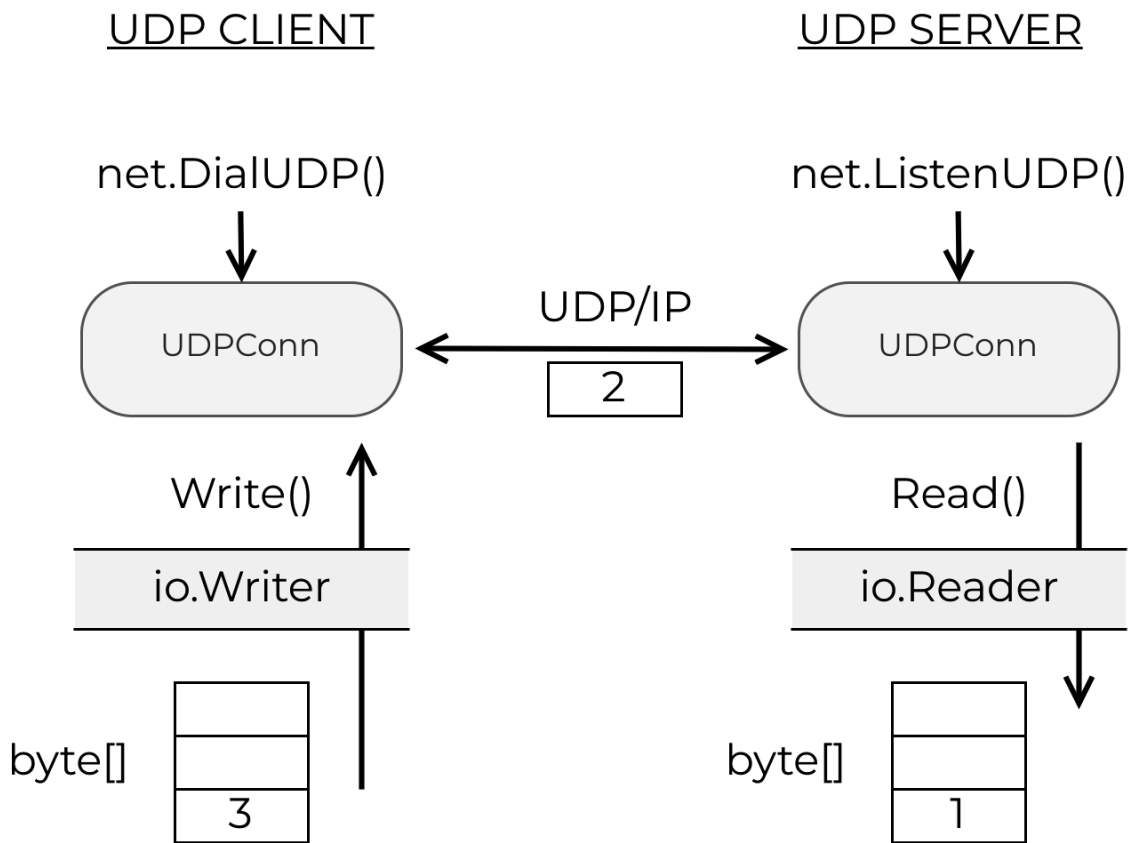
pass by pointer (value).

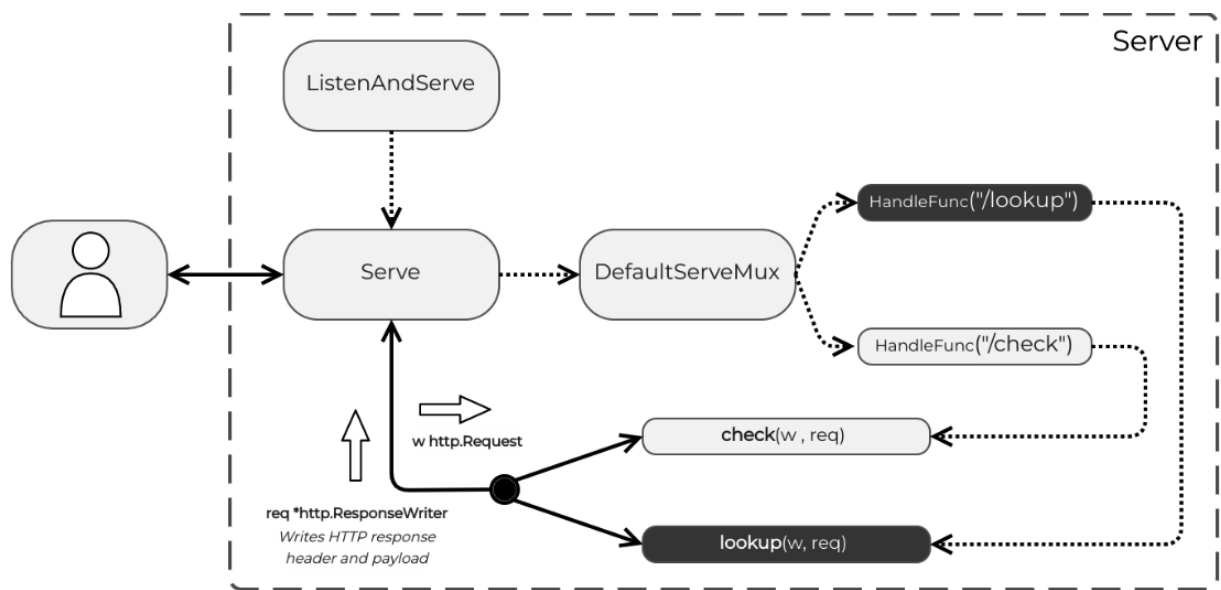




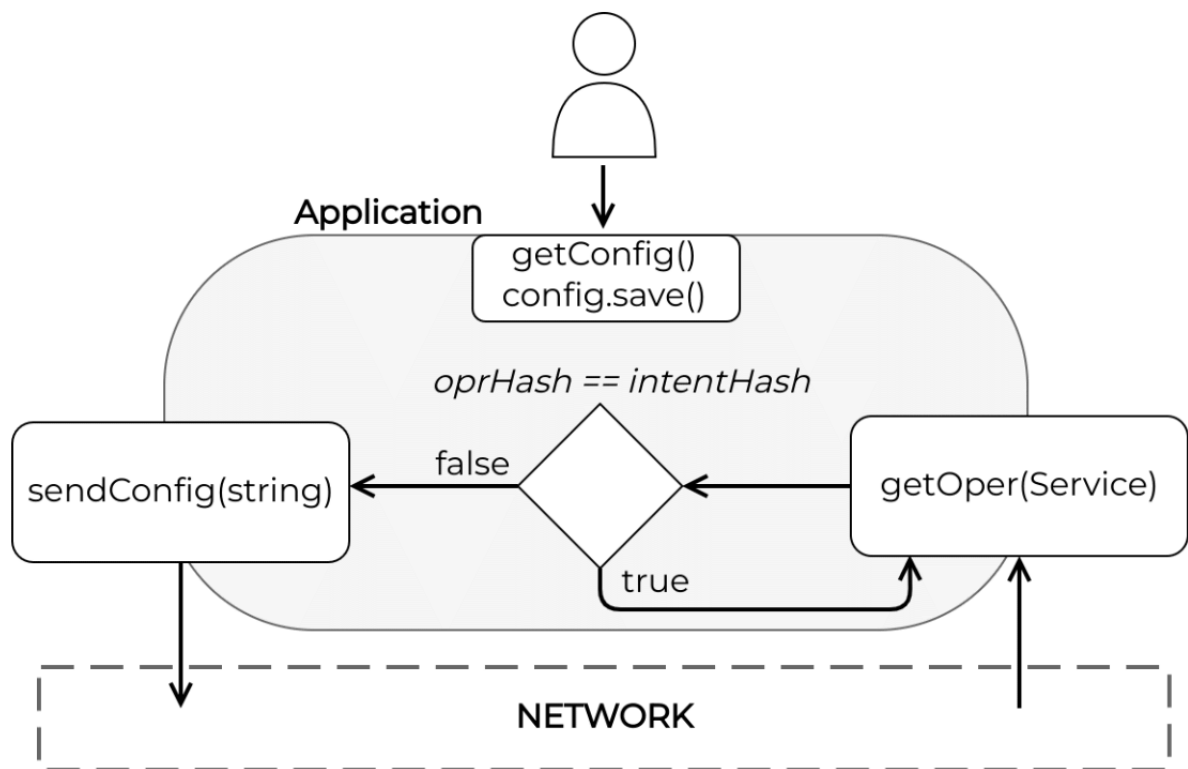
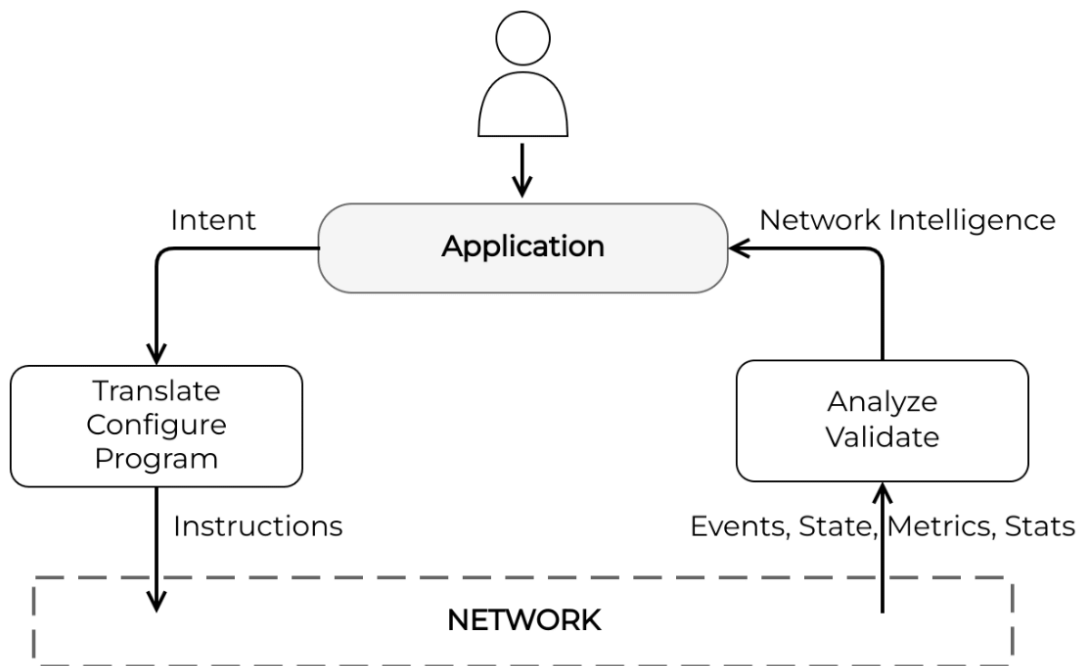
Chapter 4: Networking (TCP/IP) with Go



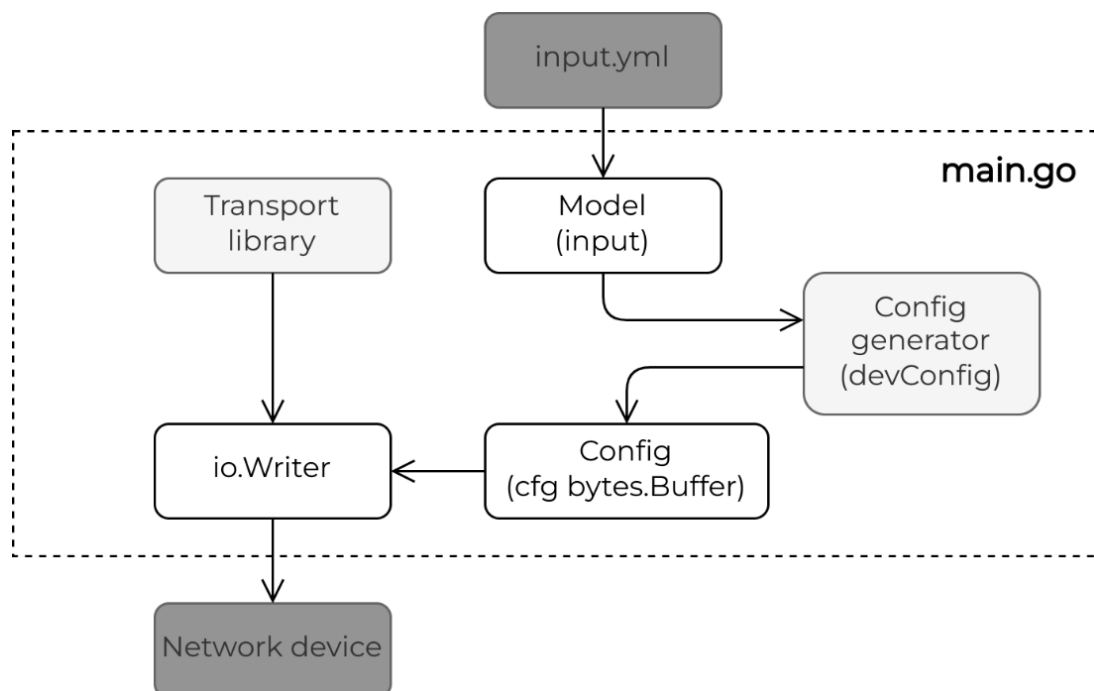
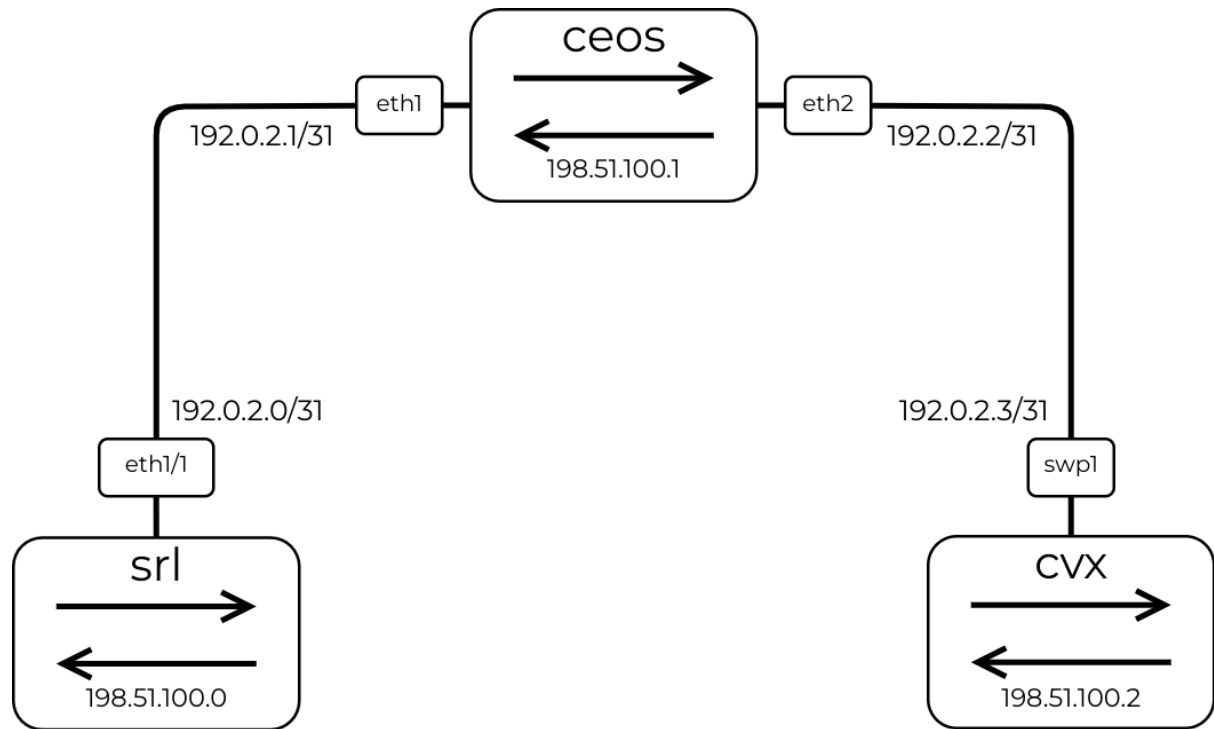




Chapter 5: Network Automation



Chapter 6: Configuration Management



Devices / AMS01 / ams01-ceos-02

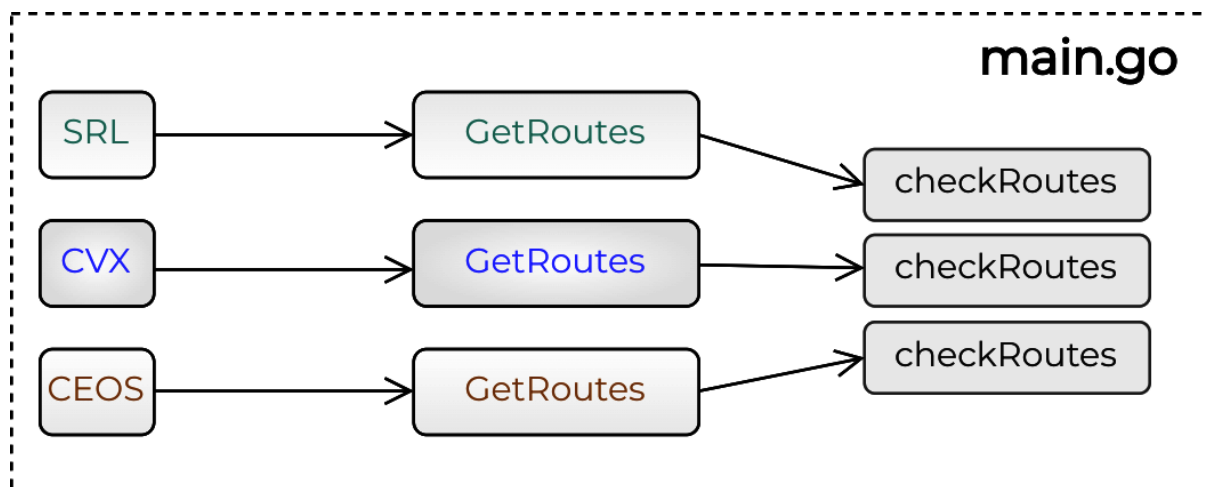
ams01-ceos-02

Created May 25, 2022 · Updated 6 hours, 40 minutes ago

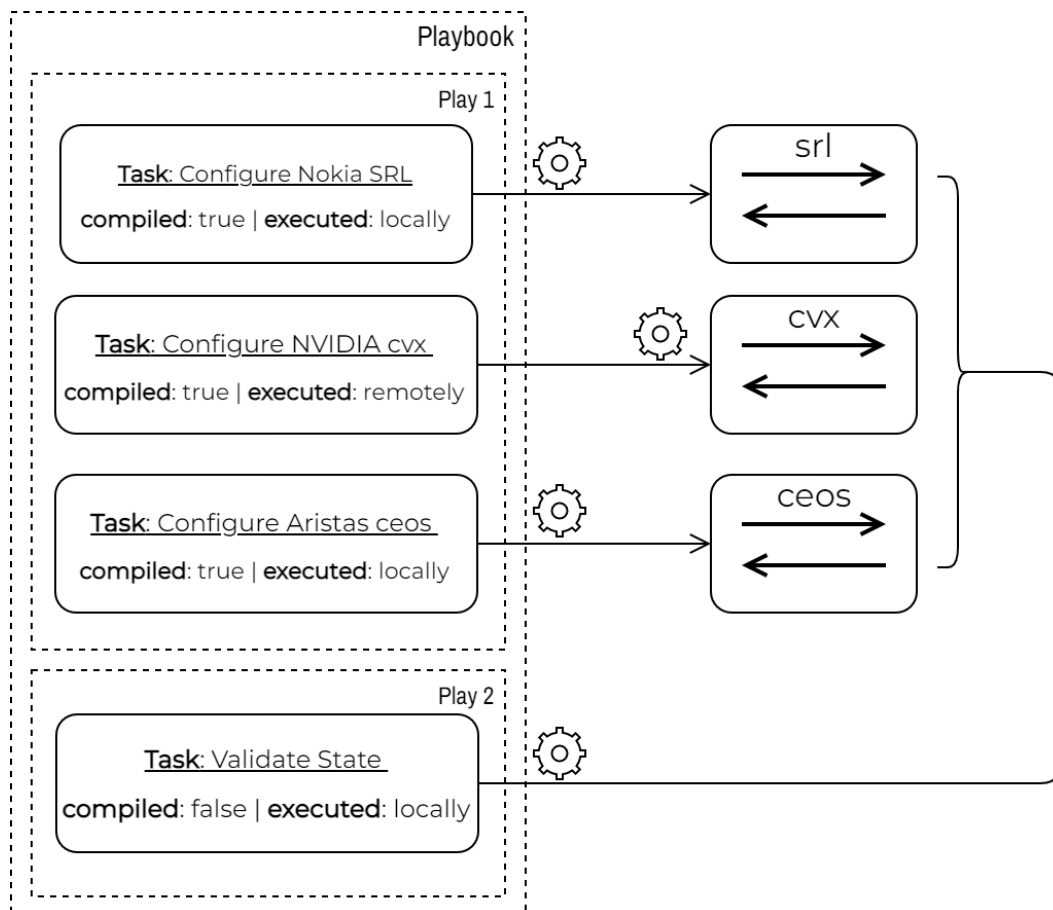
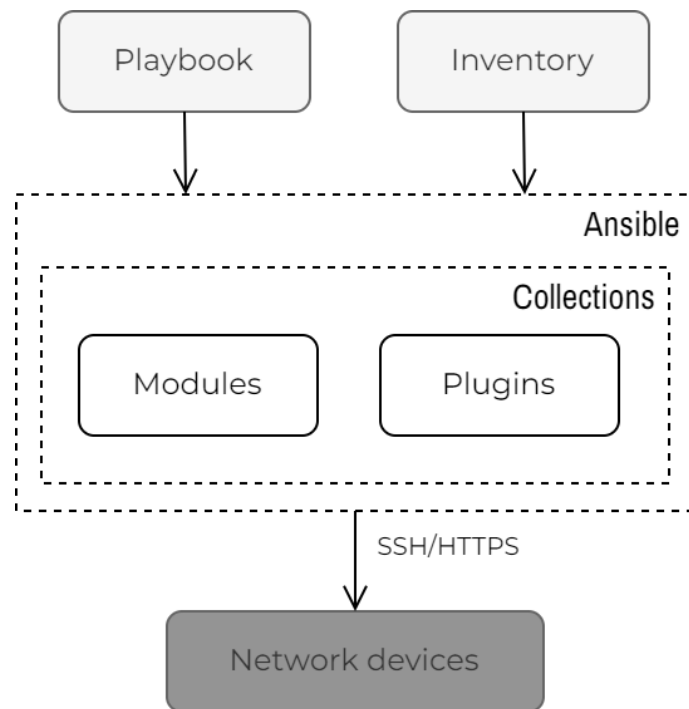
Device [Advanced](#) [Config Context](#) [Change Log](#)

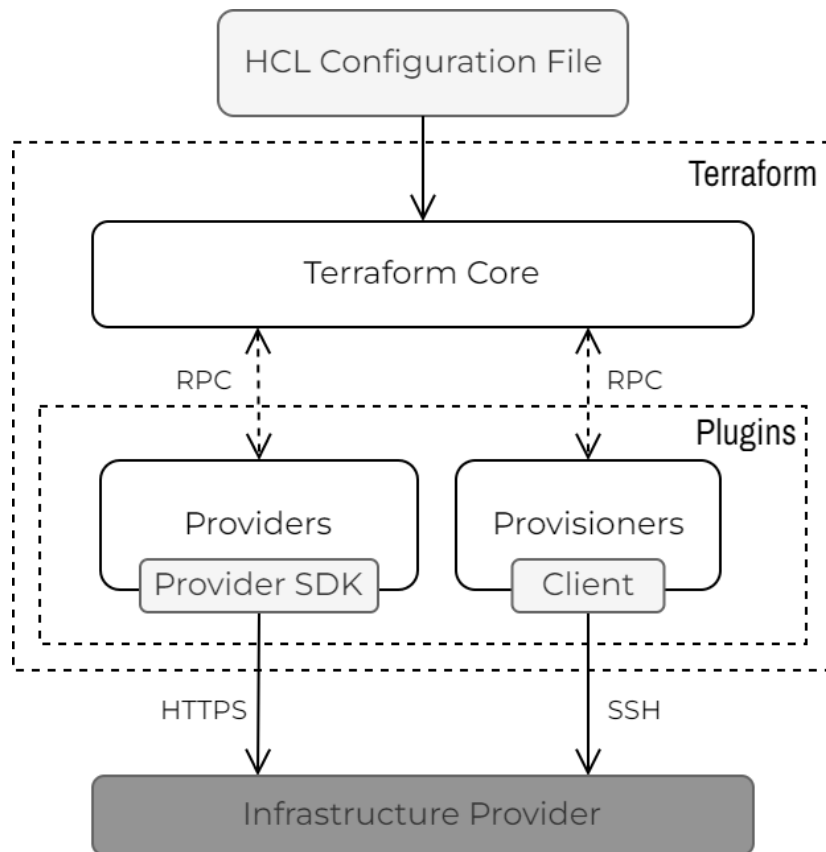
Device	
Site	Netherlands / AMS01
Rack	None
Position	—
Tenant	None
Device Type	Arista cEOS (1U)
Serial Number	—
Asset Tag	—

Management	
Role	Router
Platform	None
Status	Active
Primary IPv4	—
Primary IPv6	—
Secrets Group	—

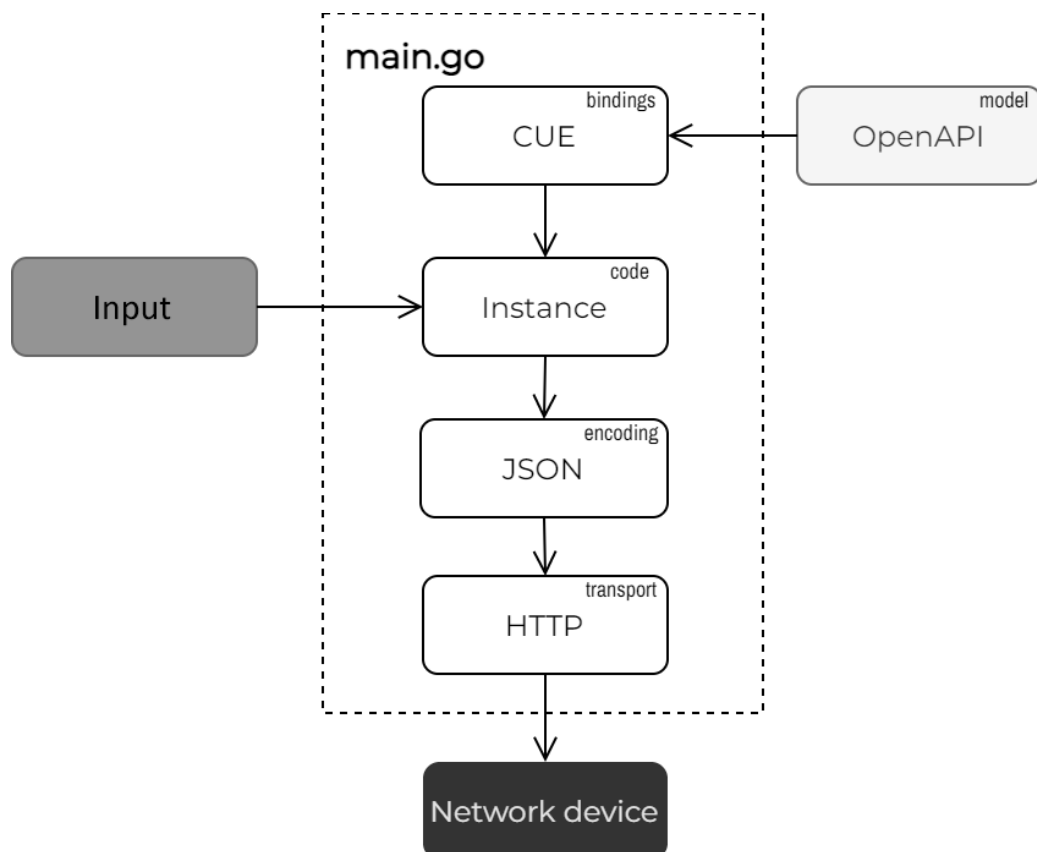
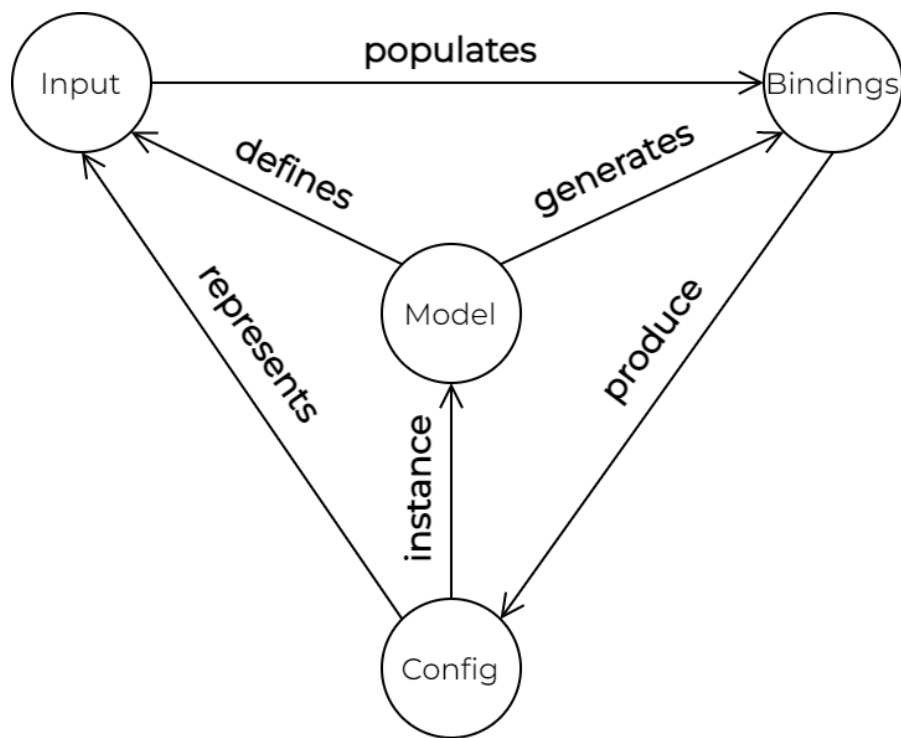


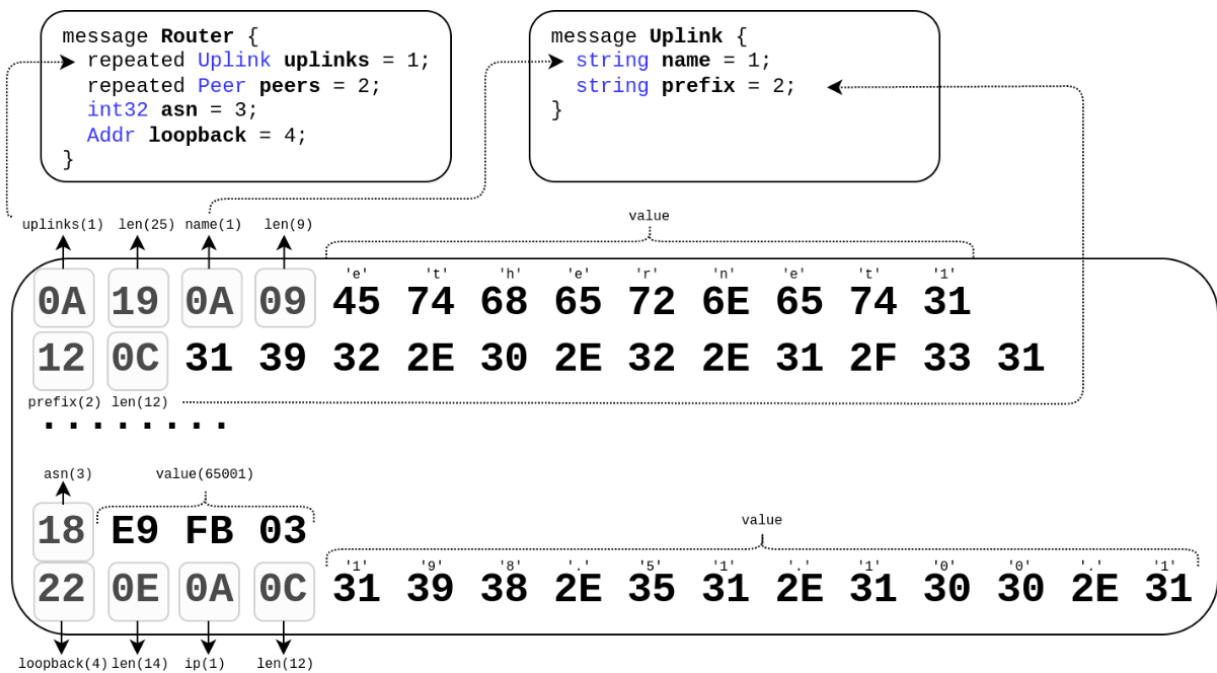
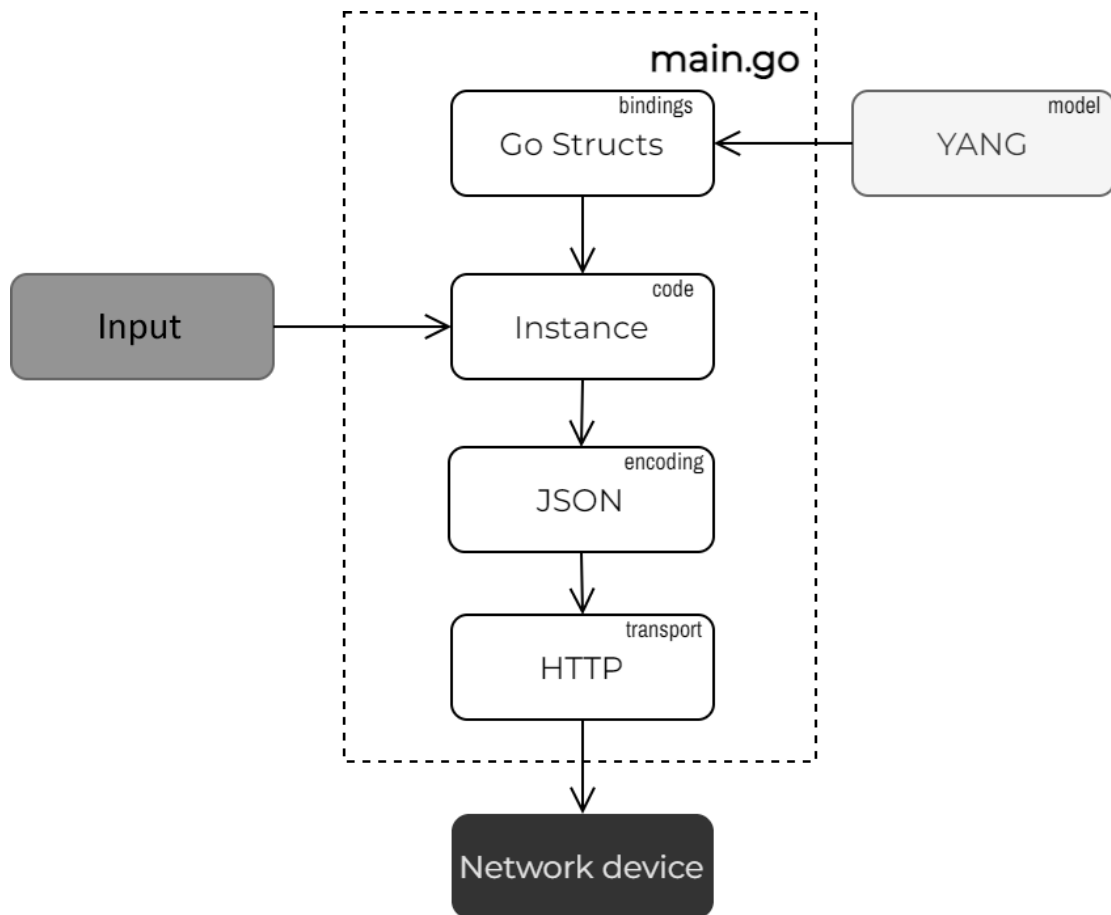
Chapter 7: Automation Frameworks

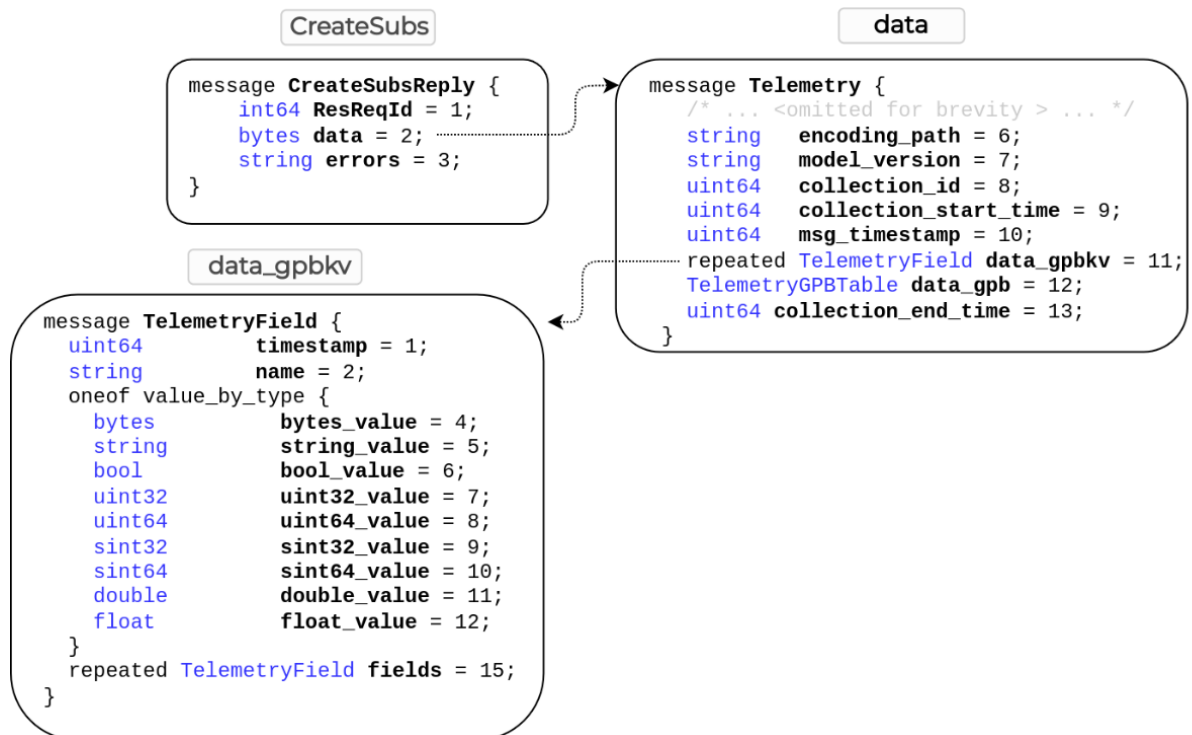
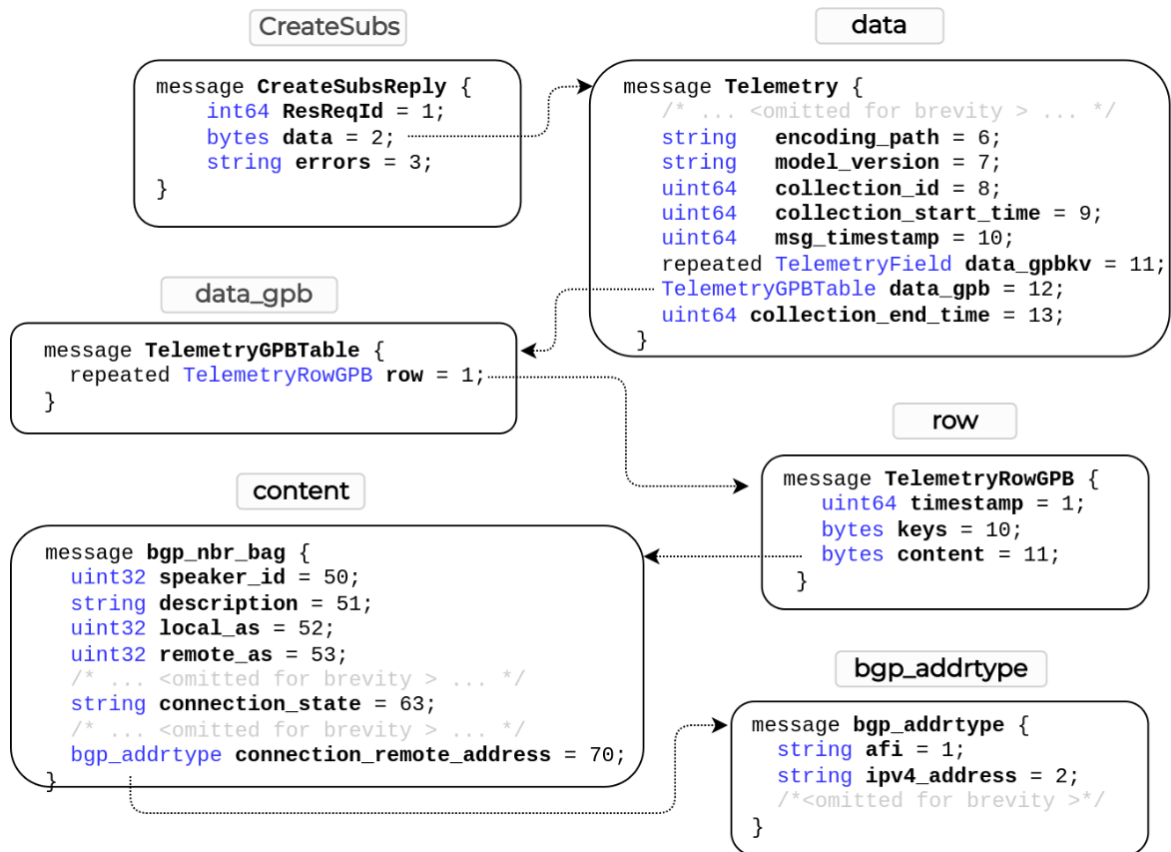




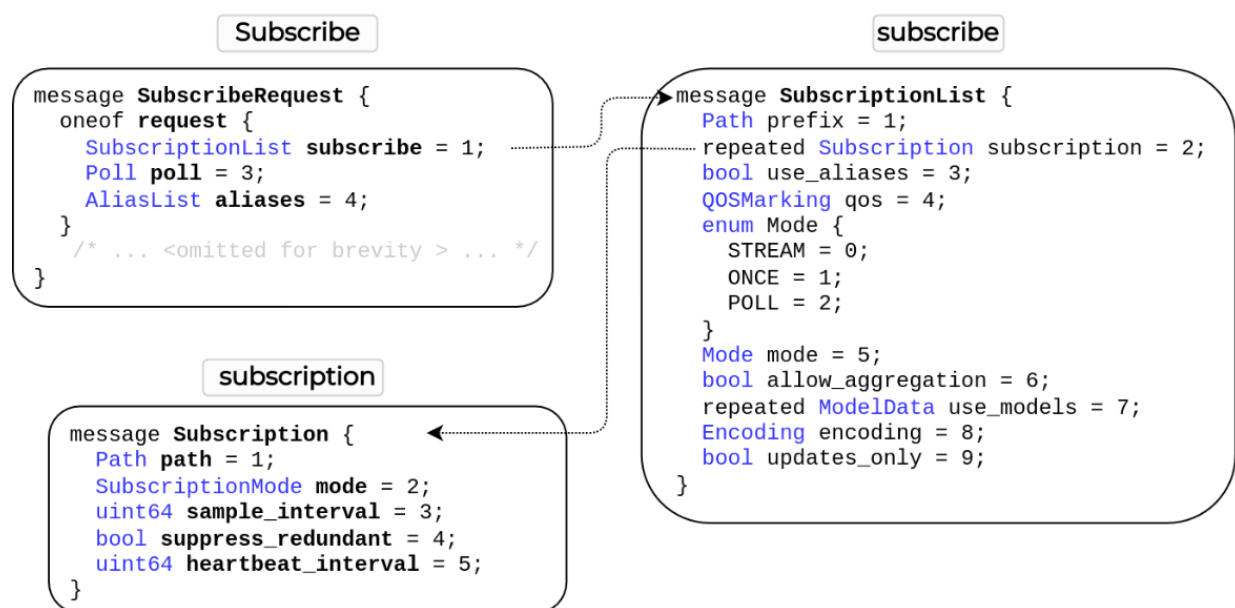
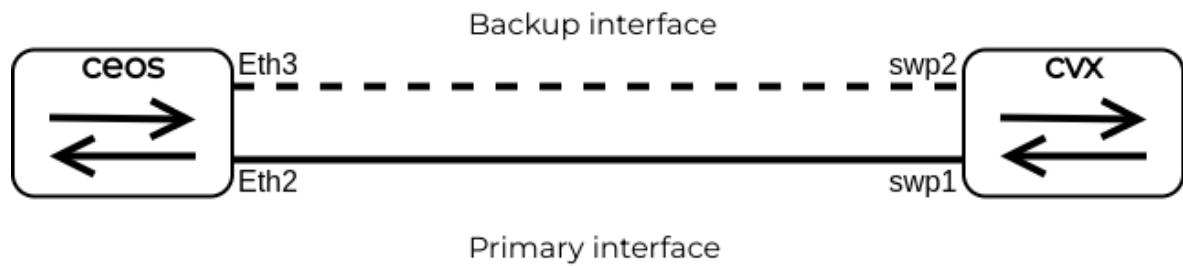
Chapter 8: Network APIs

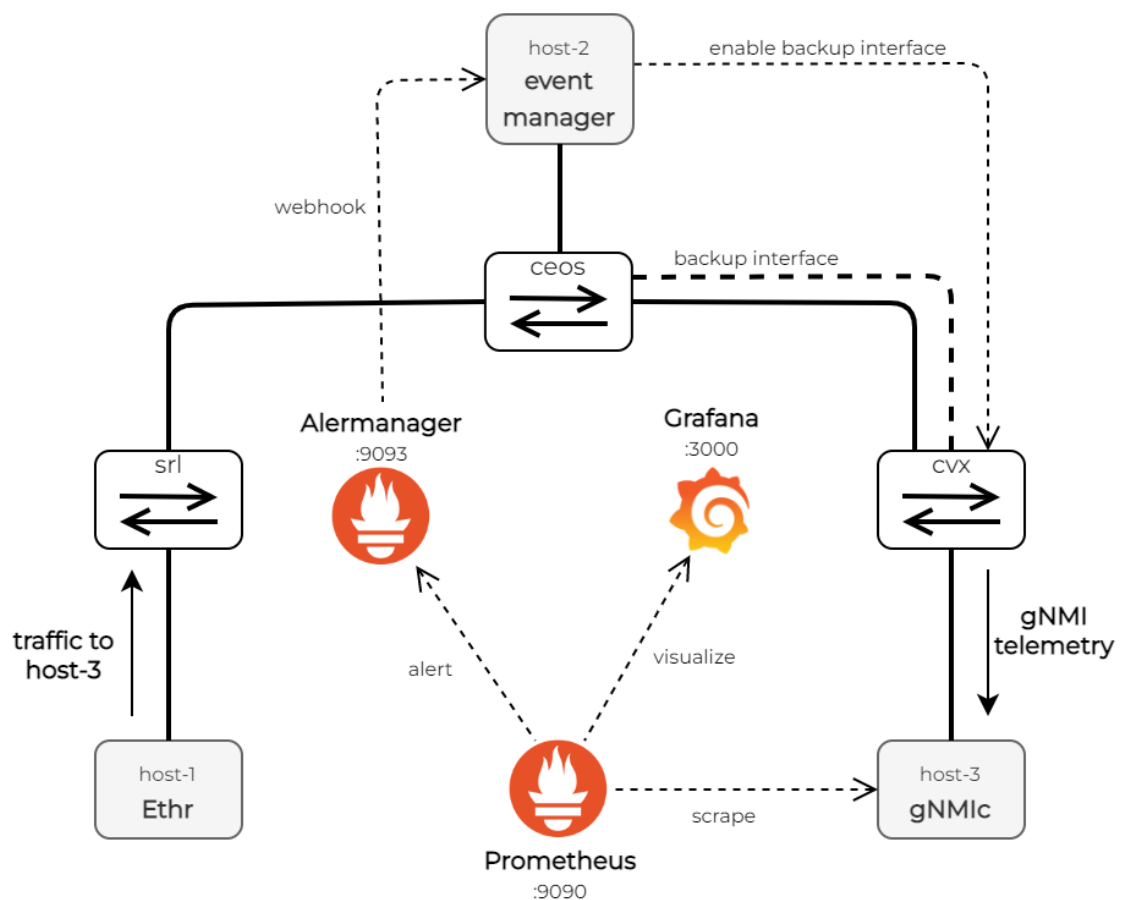
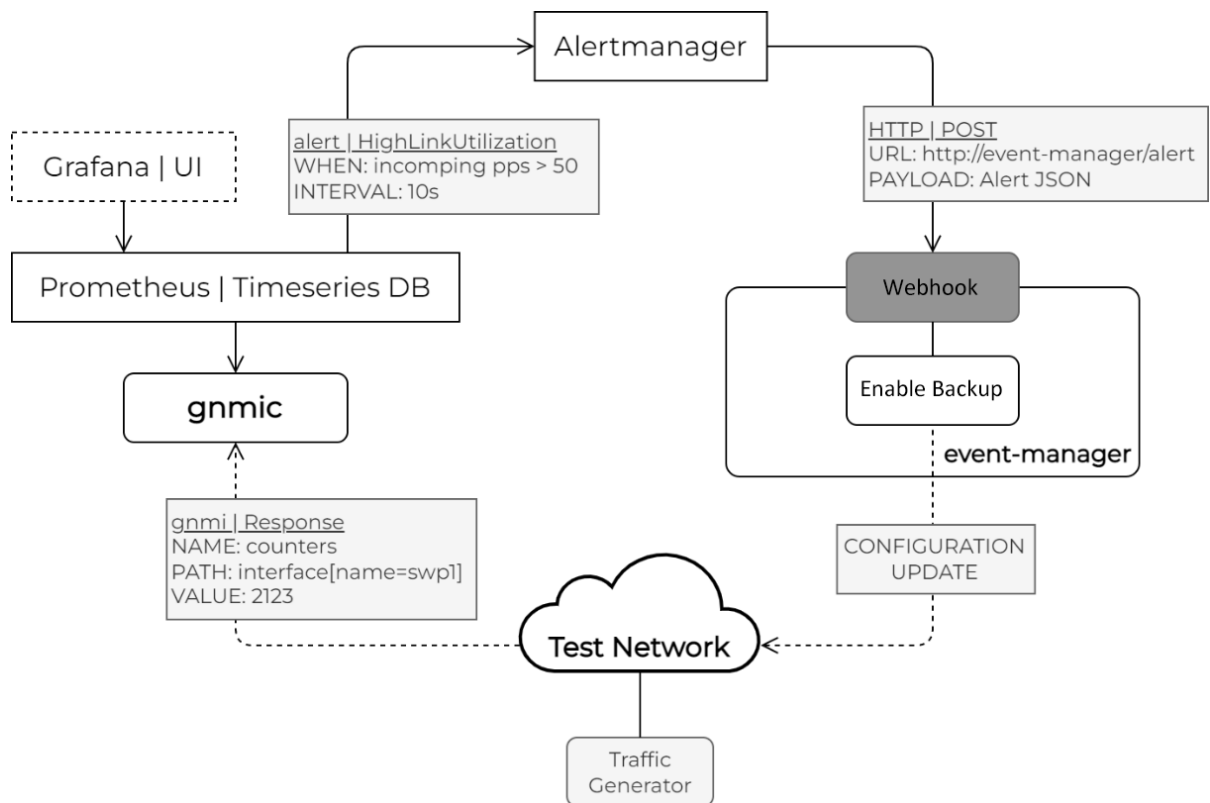






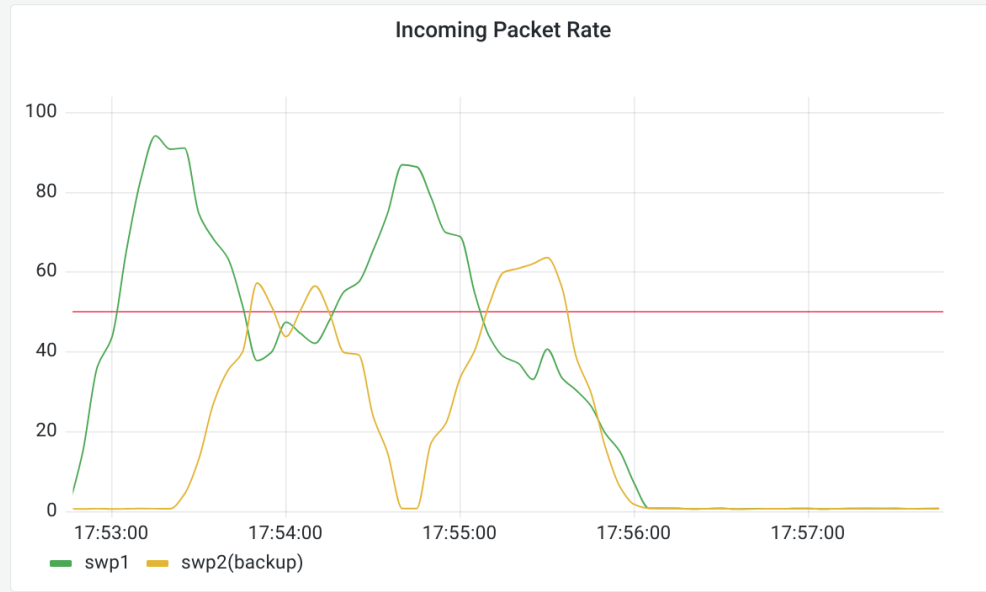
Chapter 9: OpenConfig



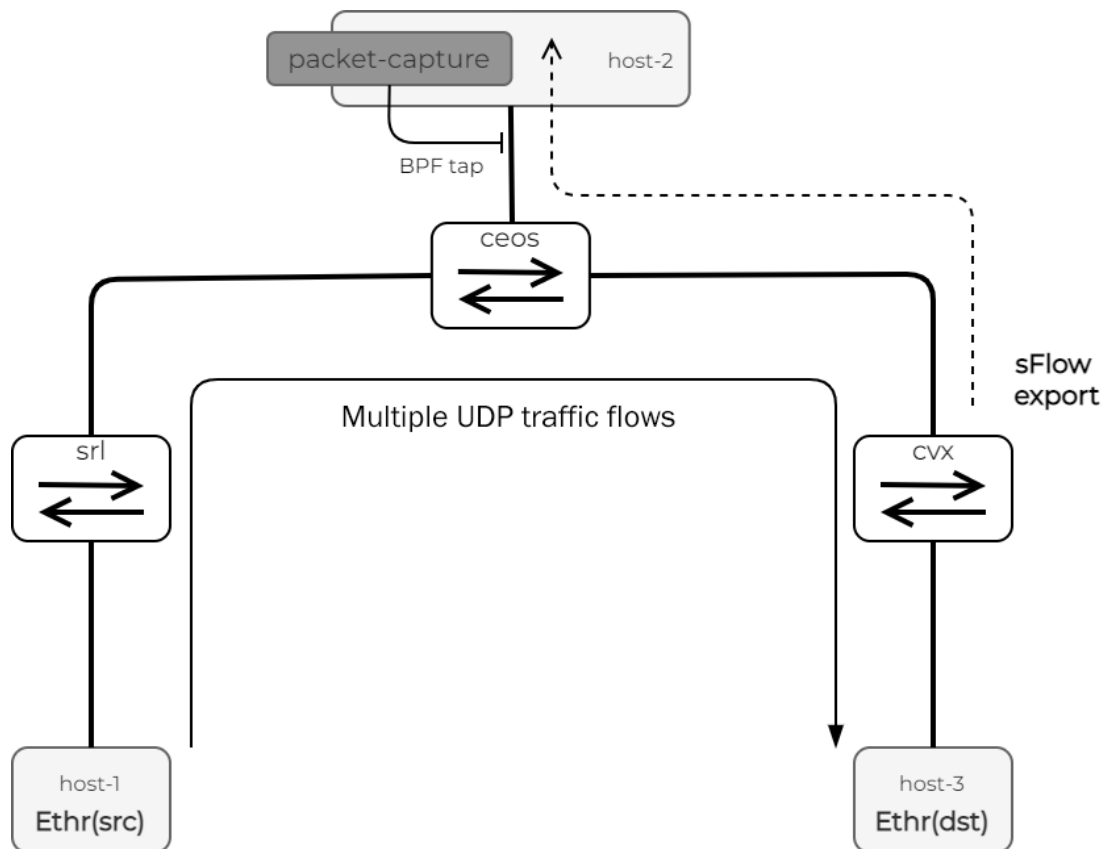




General / event-manager ☆ 🔗

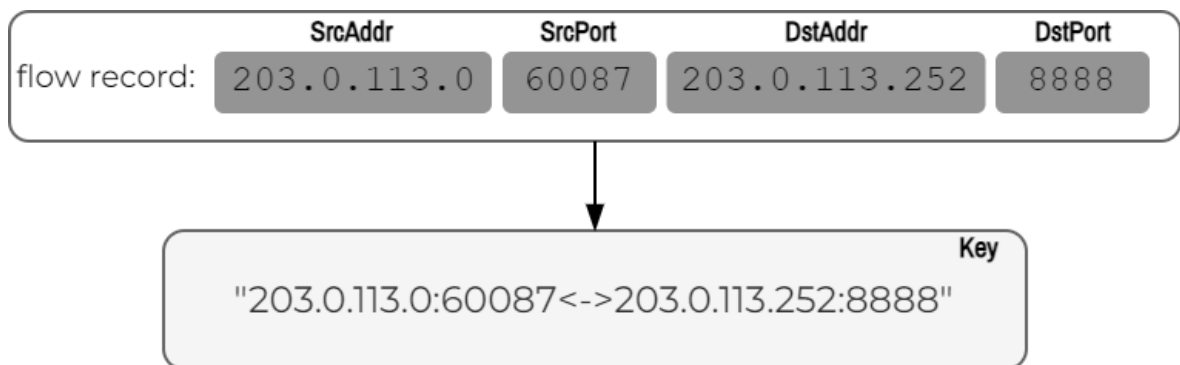


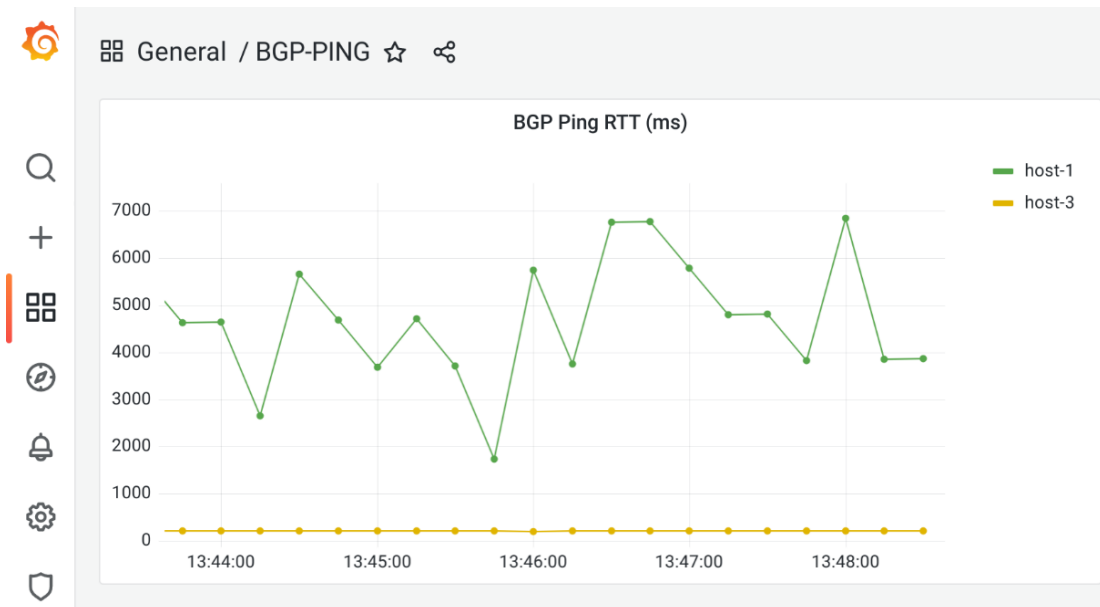
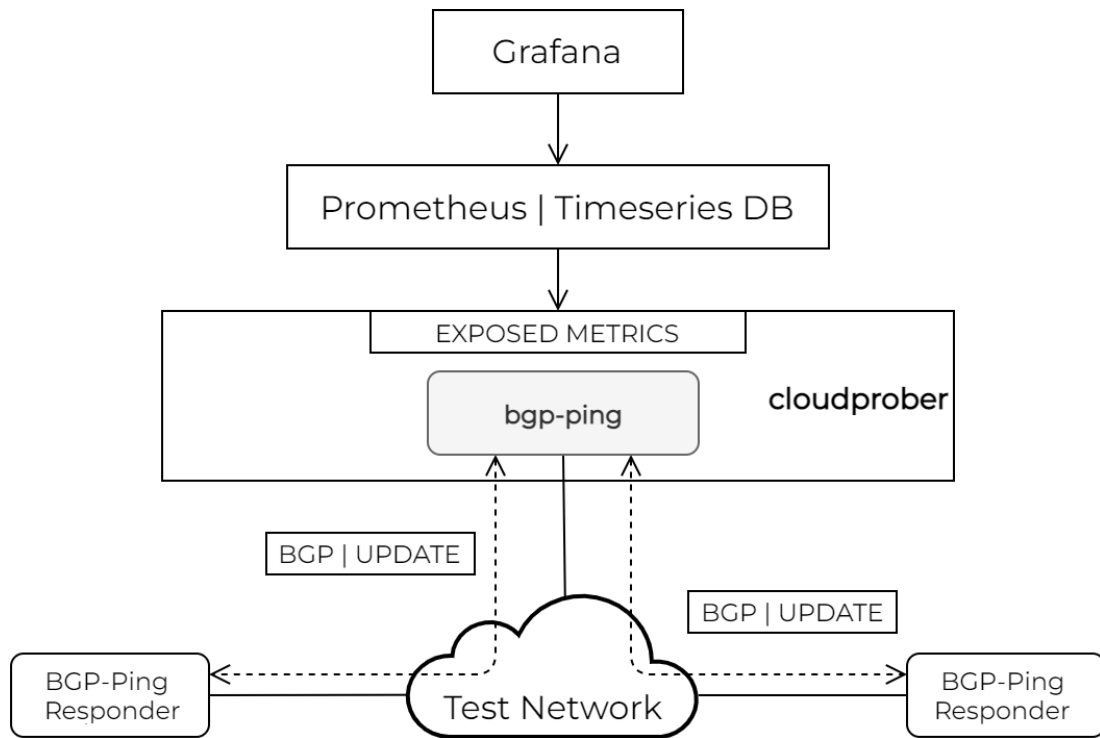
Chapter 10: Network Monitoring

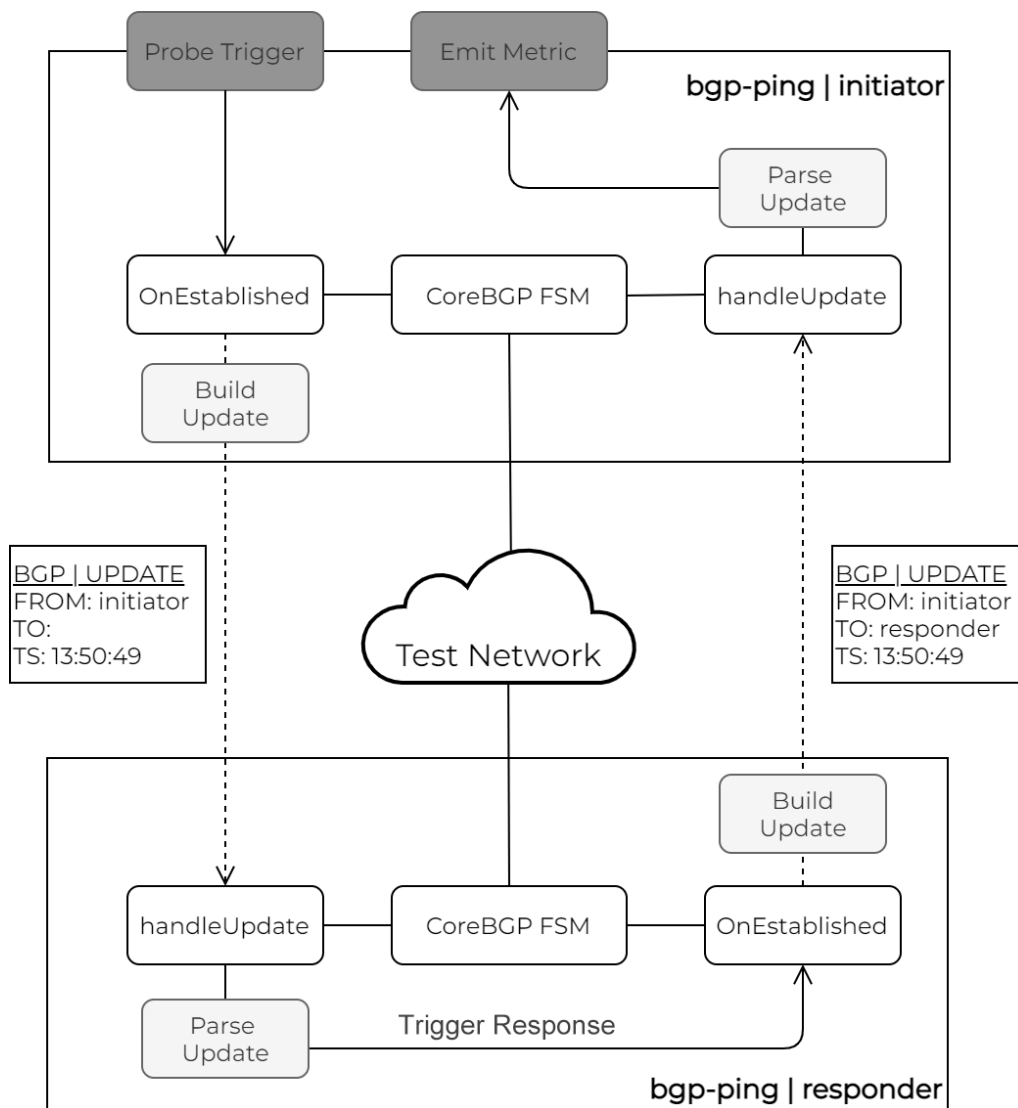


```
main.go - packet-capture - Visual Studio Code
File Edit Selection View Go Run Terminal Help
RUN AND DEBUG Connect to server
VARIABLES
WATCH
main.go x
main
1 package main
2
3 import (
4     "flag"
5     "log"
6
7     "github.com/google/gopacket"
8     "github.com/google/gopacket/layers"
9     "github.com/google/gopacket/pcapgo"
10    "golang.org/x/net/bpf"
11 )
12
13 var (
14     intf = flag.String("intf", "eth1", "interface")
15 )
16
17 func main() {
18     handle, err := pcapgo.NewEthernetHandle(*intf)
19     if err != nil {
20         log.Panic(err)
21     }
22 }
```

```
30 // skip to the last instruction if protocol is not UDP.
31 bpf.JumpIf(Cond: bpf.JumpNotEqual, Val: 0x11, SkipTrue: 1),
32 // Verdict is "send up to 4k of the packet to userspace."
33 bpf.RetConstant(Val: 4096),
34 // Verdict is "ignore packet."
35 bpf.RetConstant(Val: 0),
36 }
37 if err != nil {
38     log.Panic(err)
39 }
40 if err := handle.SetBPF(rawInstructions); err != nil {
41     log.Panic(err)
42 }
43
44 packetSource := gopacket.NewPacketSource(
45     handle,
46     layers.LayerTypeEthernet,
47 )
48
49 for packet := range packetSource.Packets() {
50     if l4 := packet.TransportLayer(); l4 == nil {
51         continue
52     }
53
54     sflowLayer := packet.Layer(layers.LayerTypeSFlow)
55     if sflowLayer != nil {
56         sflow, ok := sflowLayer.(*layers.SFlowDatagram)
57         if !ok {
58             log.Println("failed decoding sflow")
59             continue
60         }
61
62         for _, sample := range sflow.FlowSamples {
63             for _, record := range sample.GetRecords() {
64                 p, ok := record.(layers.SFlowRawPacketFlowRecord)
65                 if !ok {
66                     log.Println("failed to decode sflow record")
67                     continue
68                 }
69             }
70         }
71     }
72 }
```







RESOURCES

- ✓

(Tiltfile)

1m ago

🔄

Completed in 0.0s
- ✓

host-1

1m ago

🔄

No update status
- ✓

host-2

1m ago

🔄

No update status
- ✓

host-3

1m ago

🔄

No update status

```

Running cmd: ip netns exec clab-netgo-host-2 go run main.go -id host-2 -nlri
2022/03/13 11:51:13 starting corebgp server
2022/03/13 11:51:13 peer established, starting main loop
2022/03/13 11:51:23 sending ping request
2022/03/13 11:51:23 Received a ping response
2022/03/13 11:51:23 bgp_ping_rtt_ms{device=host-3} 622.781100

2022/03/13 11:51:27 Received a ping response
2022/03/13 11:51:27 bgp_ping_rtt_ms{device=host-1} 4355.899100

2022/03/13 11:51:30 Sending ping withdraw
2022/03/13 11:51:33 sending ping request
2022/03/13 11:51:33 Received a ping response
2022/03/13 11:51:33 bgp_ping_rtt_ms{device=host-3} 584.051400

2022/03/13 11:51:36 Received a ping response
2022/03/13 11:51:36 bgp_ping_rtt_ms{device=host-1} 3358.114100

2022/03/13 11:51:40 Sending ping withdraw
2022/03/13 11:51:43 sending ping request
2022/03/13 11:51:43 Received a ping response
2022/03/13 11:51:43 bgp_ping_rtt_ms{device=host-3} 603.646700

```

Chapter 11: Expert Insights

No images...

Chapter 12: Appendix: Building a Testing Environment

