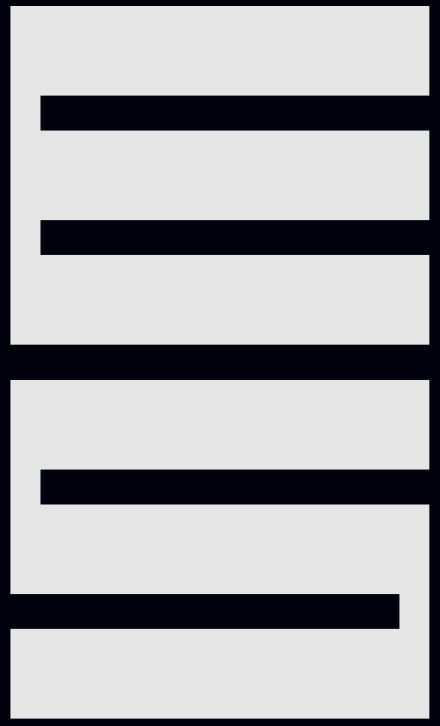


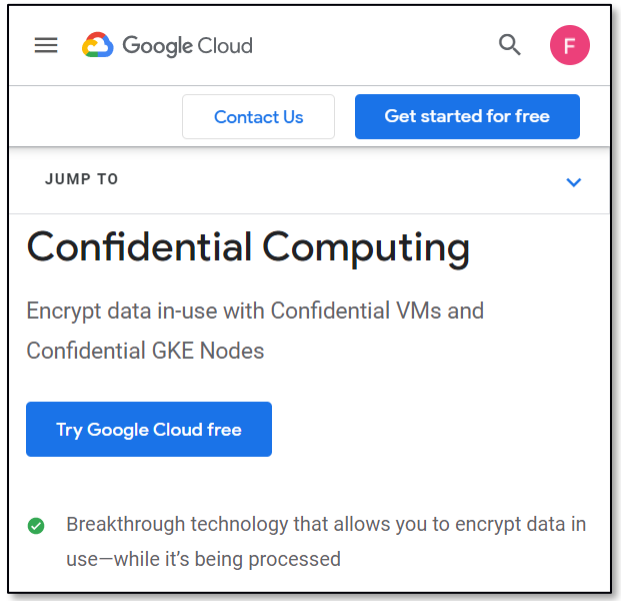
EDGELESS
SYSTEMS

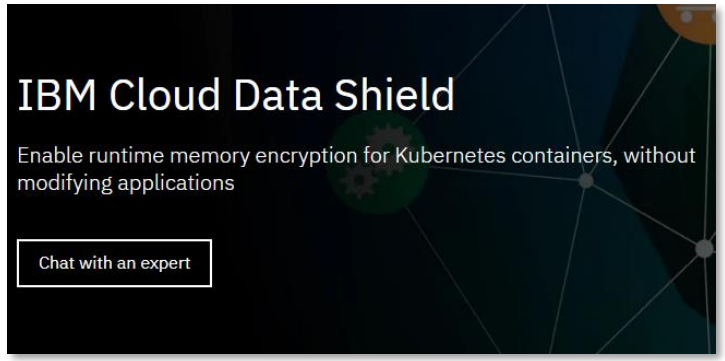
Edgeless Systems

- **Product:** Confidential Computing software
- **Focus:** Open source
- Founded 2019
- ~10 engineers
- VC funded

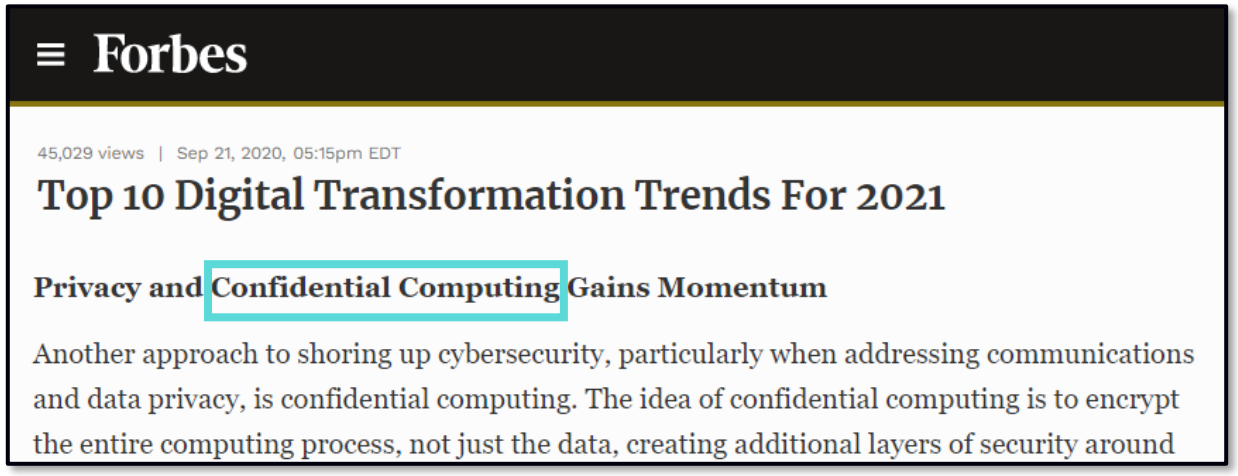
What is Confidential Computing?

There is no cloud
...just other people's computers
www.fsf.org



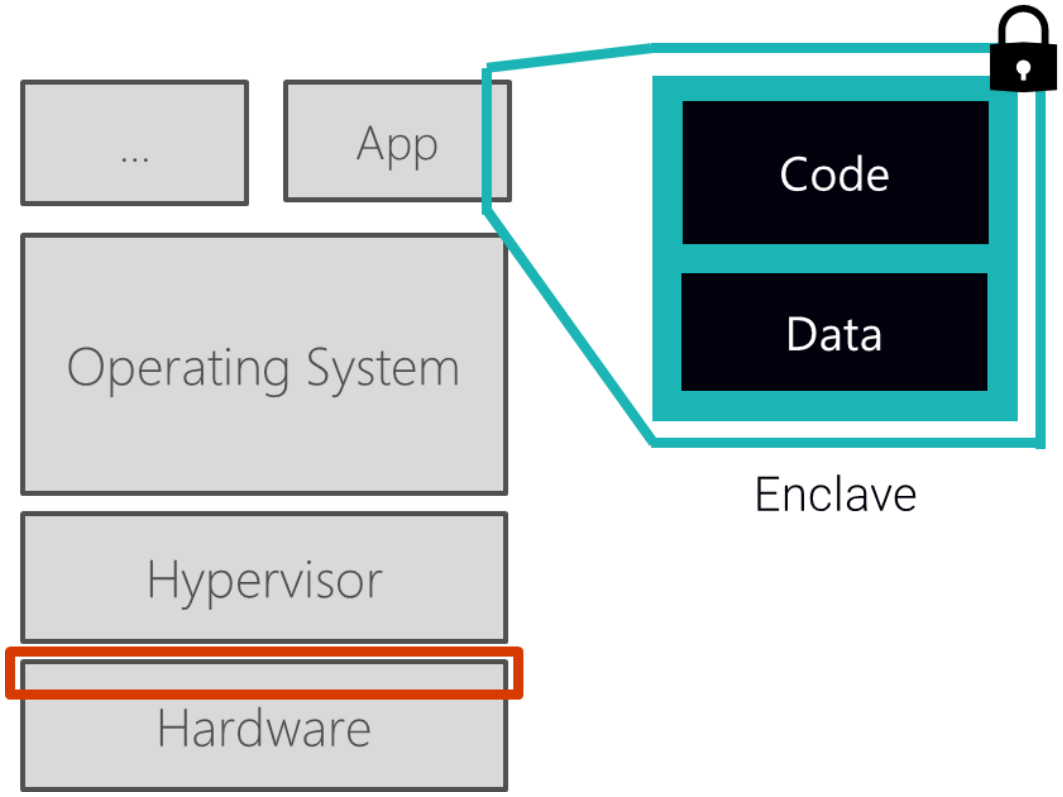


Solution: Process data in secure enclaves.



Our cloud will be fully confidential in 5 years
-Cloud security manager

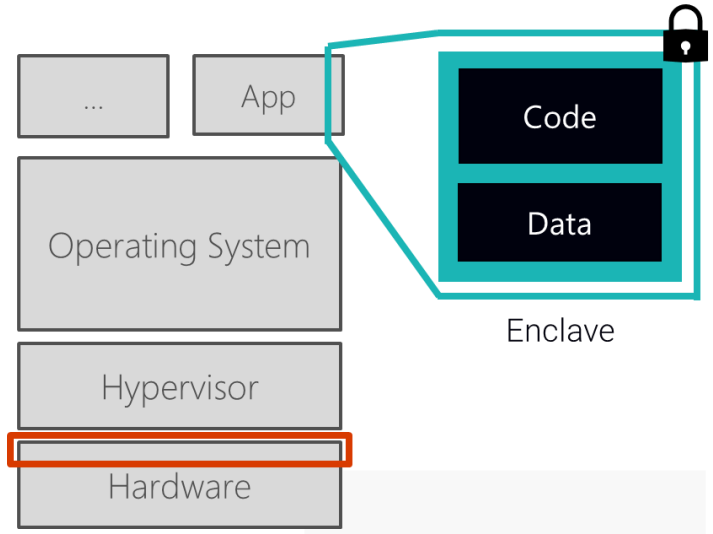
Solution: Process data in secure enclaves.



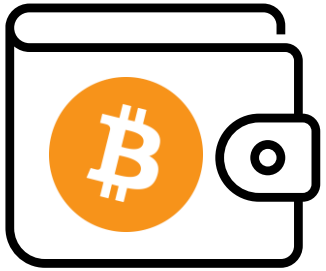
Solution: Process data in secure enclaves.

Enclaves have 4 defining security properties…

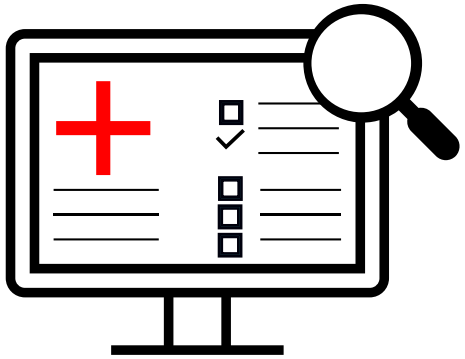
- Isolation
- Runtime memory-encryption
- Sealing
- Remote attestation



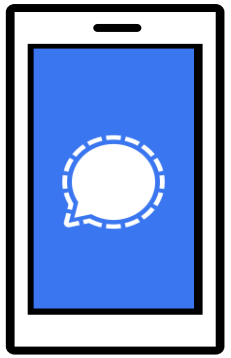
Use case examples



Hardware wallet without special hardware
Privacy-preserving payments networks (MobileCoin)



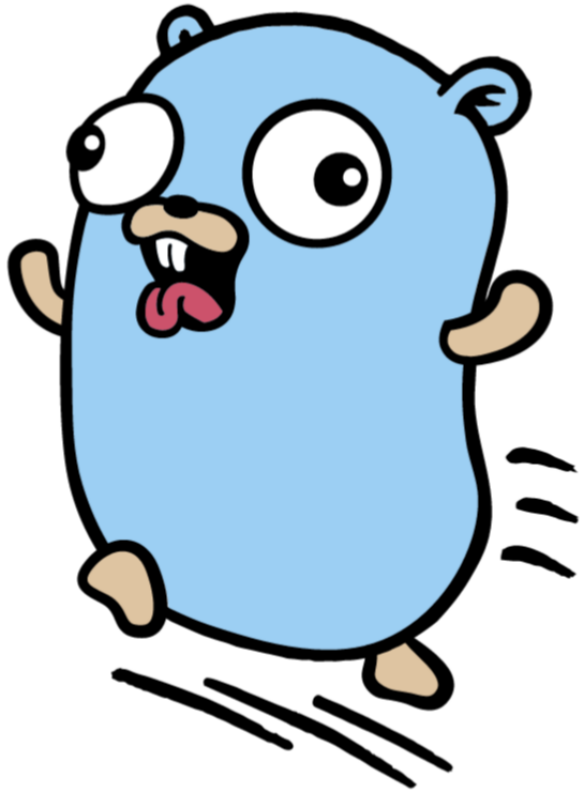
E-Health (electronic health records (eHR))



Messenger contact discovery (Signal)

EGo makes it easy to build CC apps in Go

Why Go?



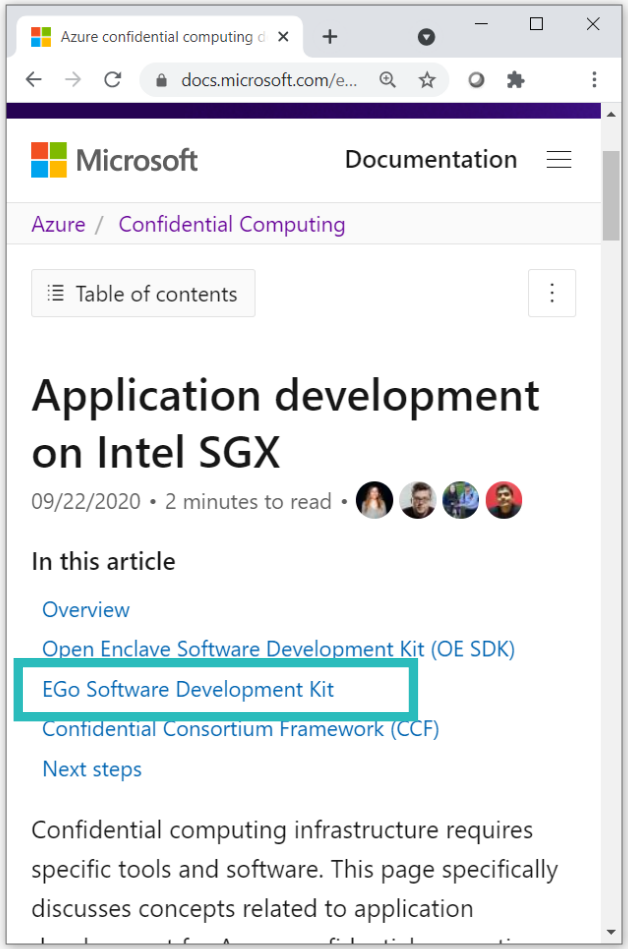
EGo in a nutshell

- Modified Go compiler
- SGX-specific tooling
- Inside-enclave and outside-enclave libraries

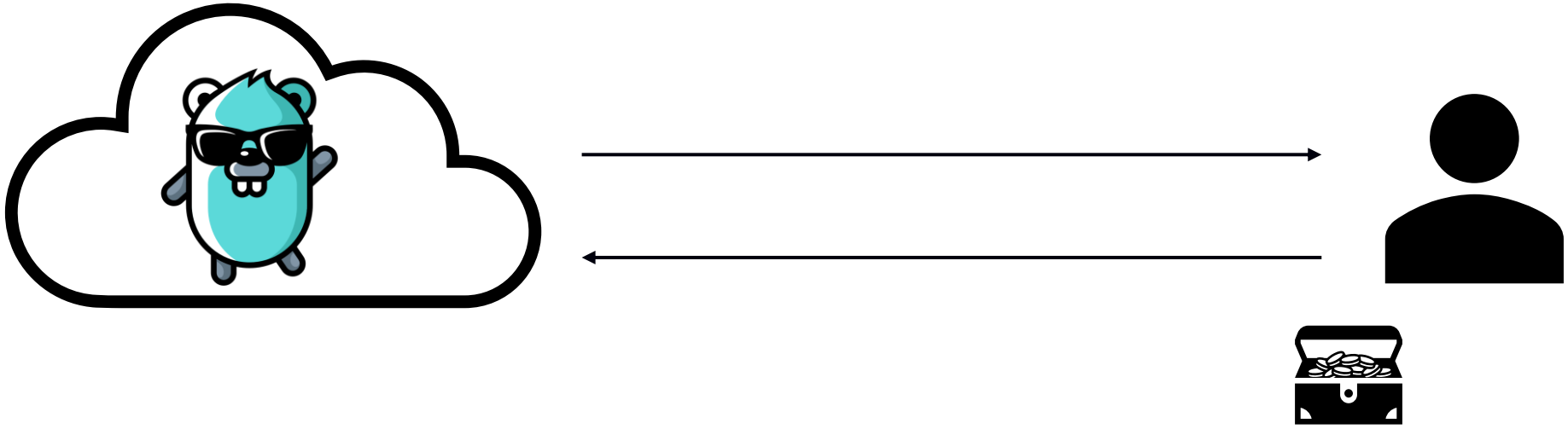
```
$ sudo snap install ego-dev --classic
$ ego-go build helloworld.go
$ ego sign helloworld
$ ego run helloworld
Loading enclave…
Entering enclave…
Hello from enclave!
```

EGo

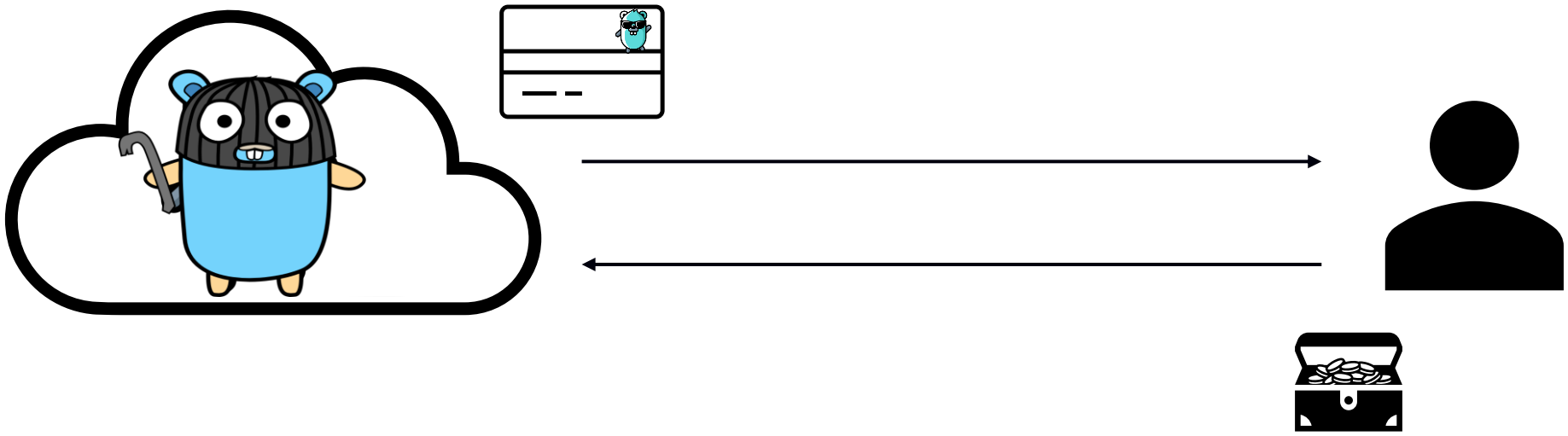
Works great with your favorite tools and clouds



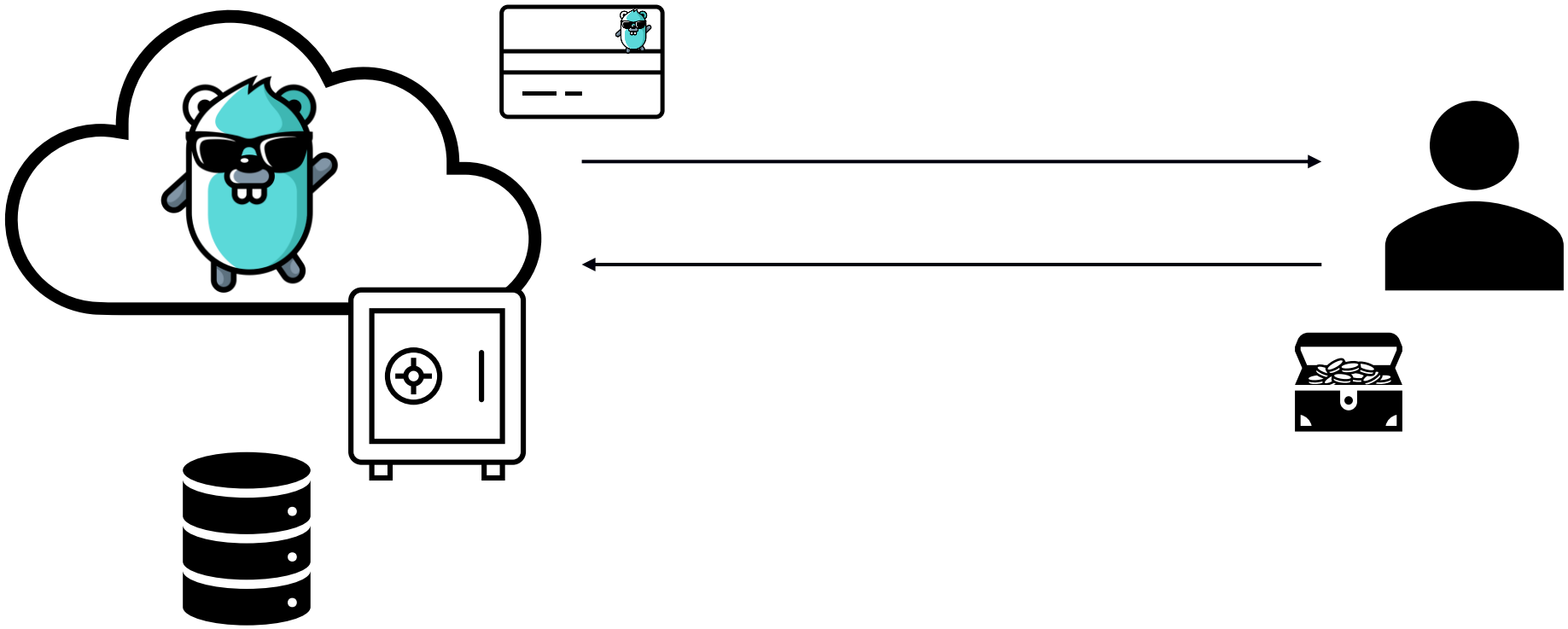
Demo: Hello World



Demo: Remote Attestation

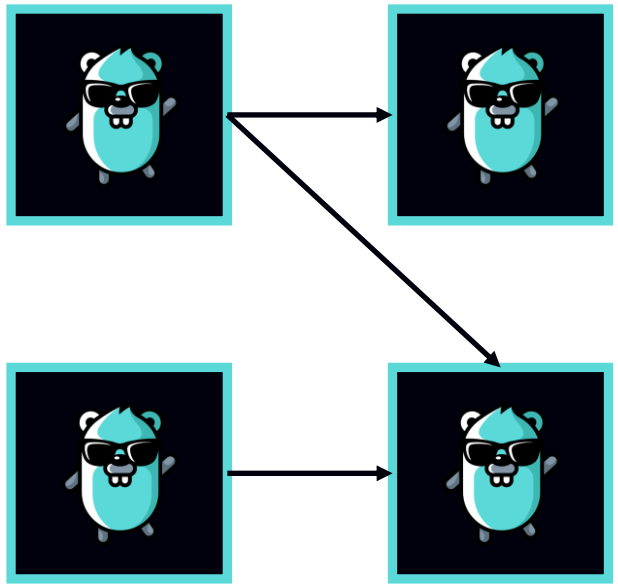


Demo: Sealing



Deploying CC with Marblerun

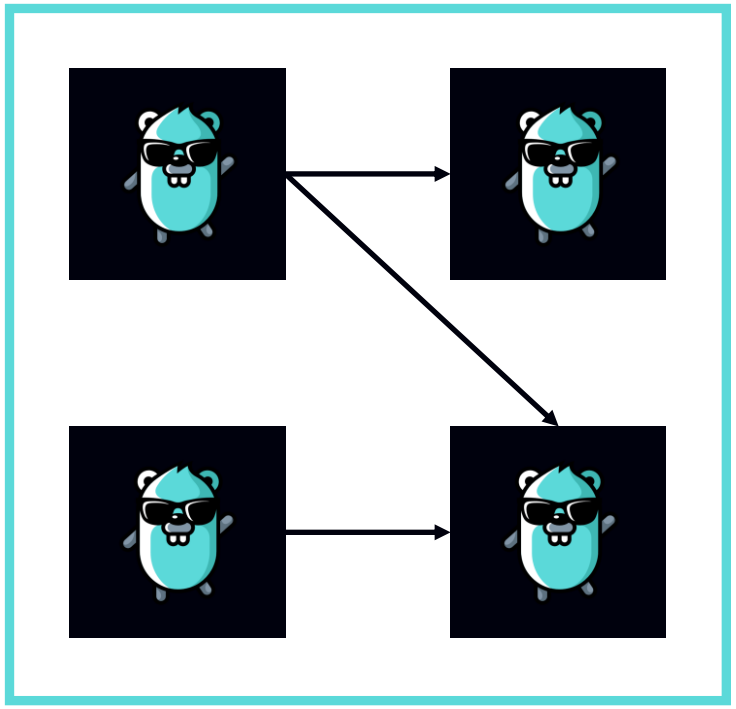
Marblerun extends the enclave concept to your cluster



Marblerun extends the enclave concept to your cluster

- ✓ E2E confidentiality
- ✓ E2E integrity
- ✓ E2E verifiability

- ✓ Updatable
- ✓ Cloud-native



MARBLERUN

Marblerun augments existing service meshes with CC

Conclusion