No More Shelling Out!

How to create Docker containers without the CLI

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About Me

● I 💖 SCaLE!
● I 💖 the ocean 🌊
  ○ PNW resident
  ○ Beachfront naturalist (in training!)
● Computers << humans
● I play piano
● I write software at Pulumi

👤 @guineveresaenger
Why this talk?
What is Docker anyway?

- Open source container platform
- Popular container runtime
- Runs on most major operating systems (with tweaks)
- Container registries
- Cute whale logo
Why shelling out?

DO YOU EVEN KNOW HOW TO USE
THE THREE SEASHELLS?
This is how most people build docker images
Let’s look at that a bit more closely

docker build -t myimage .
The basic use case is not too bad

- Simple
- Straightforward
- Obvious
This unfortunately assumes a human operator

- Inflexible
- Manual
- Tedious
So we shell out.

```go
package main

import (  
    "os/exec"
)

func main() {  
    exec.Command("docker", "build", ":t", "myimage", ":.")
}
```
Let’s look at that a bit more closely, too

```python
exec.Command("docker", "build", "-t", "myimage", ".")
```
Not all commands are short

docker run --rm --interactive --volume $(pwd):/workdir --env CROSS_TRIPLE=x86_64-apple-darwin multiarch/crossbuild /bin/bash -s
<<EOF

(No, I am not rewriting this one in Go.)
Sometimes, shelling out is the right choice…
Sometimes it just doesn’t make sense!

(not actual relative sizes, but you get the point)
Sometimes it just doesn’t make sense!
Why do we use the whale in the first place?
That would be a different talk.

Fortunately the docker people have this covered

https://www.docker.com/why-docker/
We should be able to create and use Docker images - without the need for an interactive terminal
Demo time!

github.com/guineveresaenger/scale21x-docker-automation
Summary
Docker Classic vs Docker Buildx

Classic

- Easier to use
- Supports buildkit, but limited
- Does not support all modern Docker capabilities such as multiplatform builds

Buildx

- More configurable
- Supports custom builders
- Supports buildkit
- Focuses on build capabilities (doesn’t run containers or push images)
But there's more!
Remember the reason I went through all the trouble with the Docker client libraries?
Thank you SCALE 21x!

@guincodes
@guineveresaenger
Sample bullet slide with one-line title

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Sample bullet slide with a title that stretches for two lines

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Sample bullet slide with a subtitle
Subtitles look like this

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Two-content layout

- Each of the two content placeholders on this slide can contain text, graphics, tables, or charts.
- For example, this slide uses the left placeholder for text and the right placeholder for a graph.
Sample icons
Section title here

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Cloud Engineering for everyone