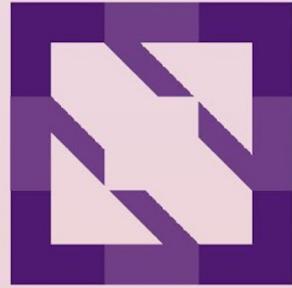


KubeCon

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CloudNativeCon



KubeCon



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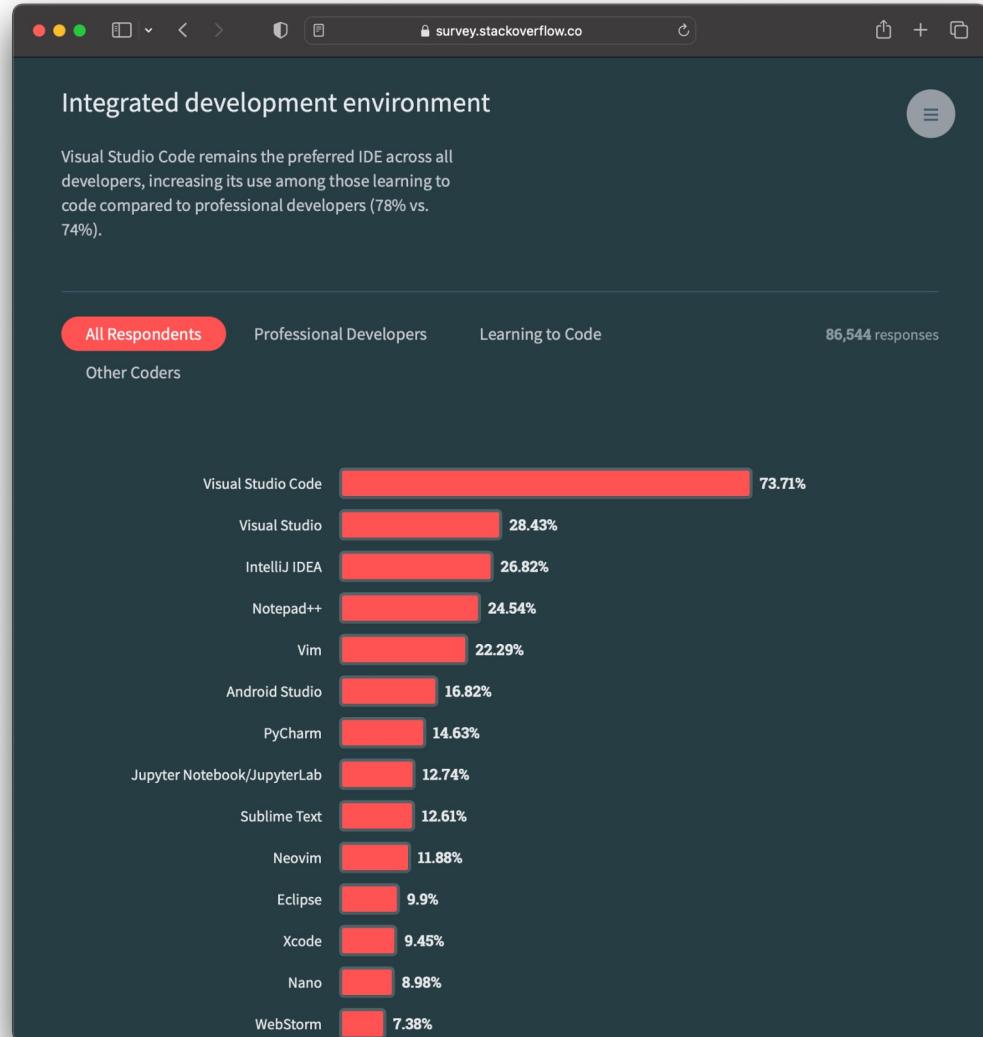
North America 2023

From Desktop to Production, Build Applications Everywhere, All at Once on Kubernetes

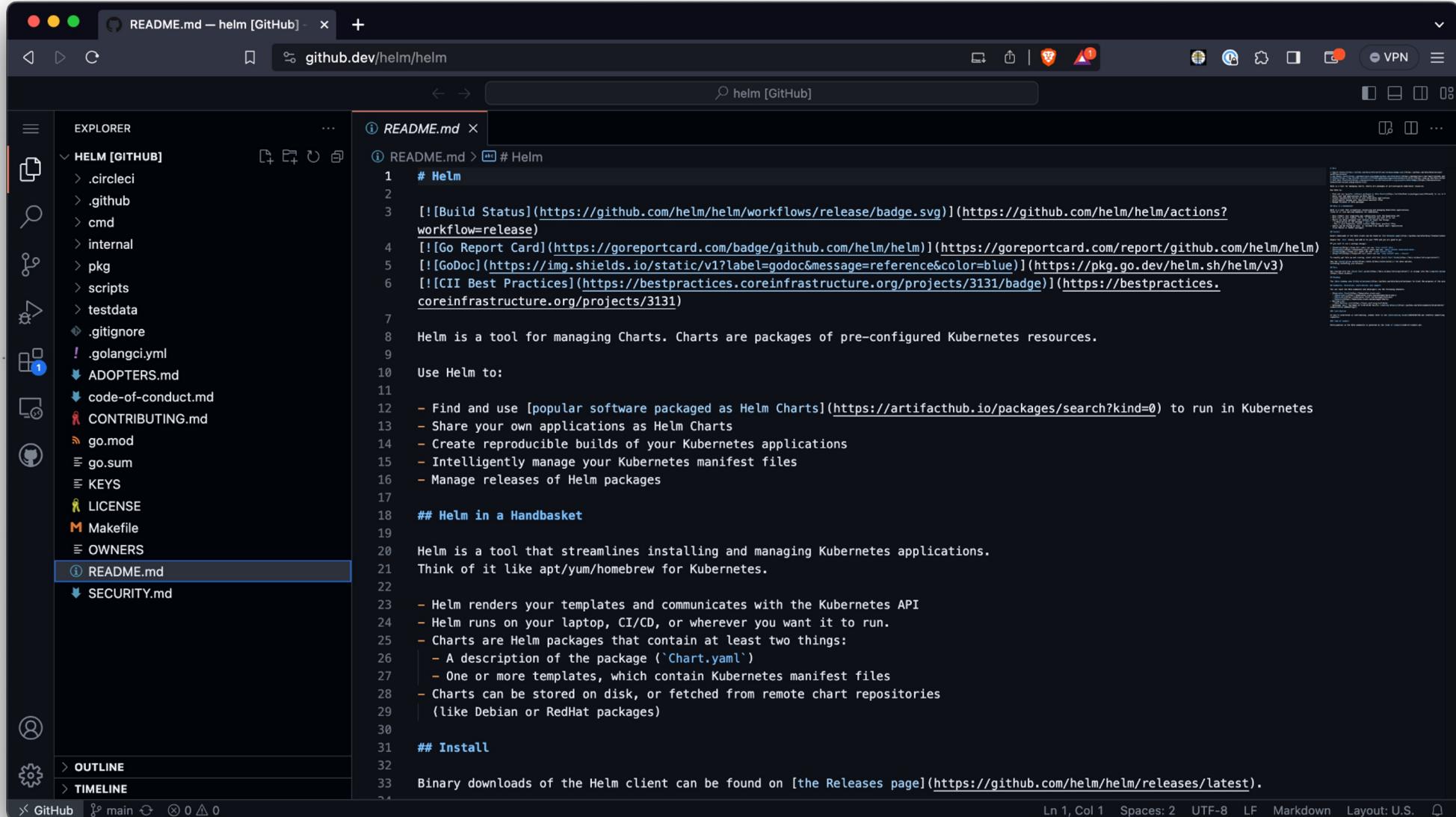
Matt Farina, SUSE

Rey Lejano, SUSE

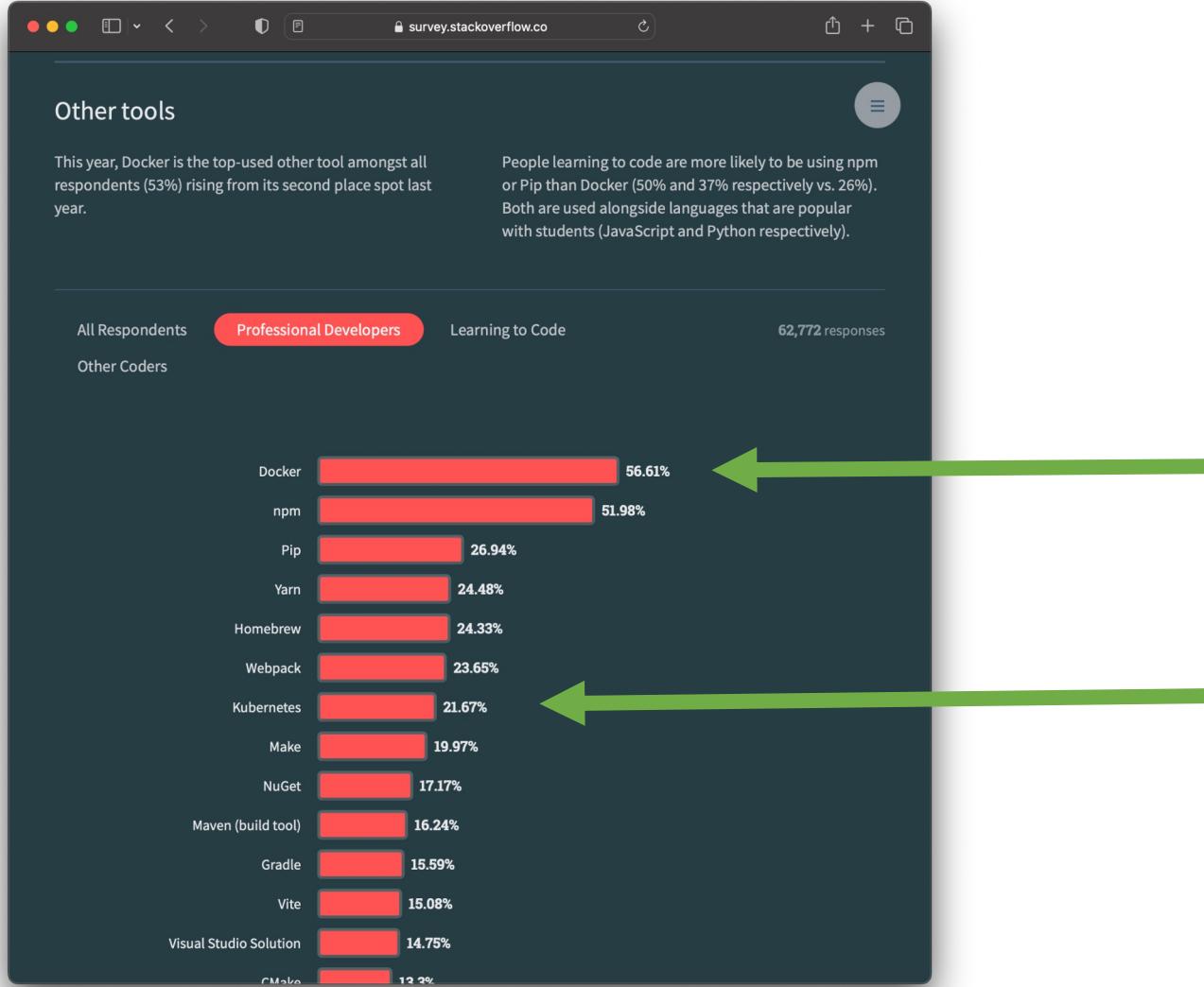
Development Happens On The Desktop



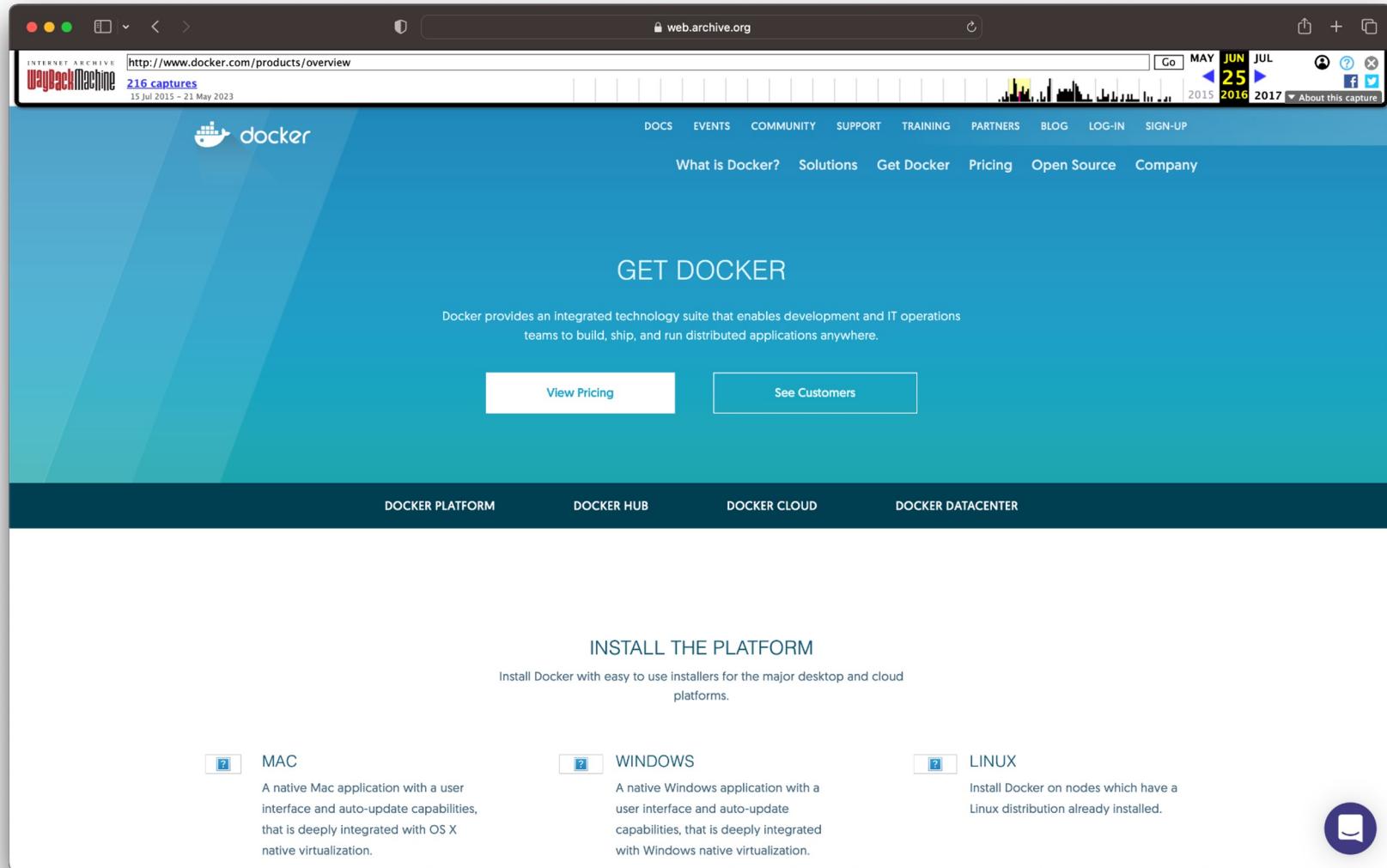
Yes, There Are Online Editors



Developers Are Using Containers



Docker Desktop Arrived in 2016



Oldest Page In Way Back Machine With Docker Desktop

Kubernetes Desktop Apps of Old



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This repository has been archived by the owner on Nov 9, 2017. It is now read-only.

[TheNewNormal / kube-solo-osx](#) [Public archive](#)

[Code](#) [Issues 20](#) [Pull requests 1](#) [Actions](#) [Projects](#) [Wiki](#) [Security](#) [Insights](#)

master · 15 branches · 84 tags

rimusz Update README.md · 10d64a2 on Oct 5, 2017 · 310 commits

File	Version	Updated
examples/pv	v0.8.9	7 years ago
src	V1.0.3 (#168)	7 years ago
.gitattributes	v0.9.6	7 years ago
.gitignore	v1.0.0 (#159)	7 years ago
DCO	v0.8.0	7 years ago
LICENSE	v0.1.1	8 years ago
MAINTAINERS	v0.8.0	7 years ago
README.md	Update README.md	6 years ago
k8s-singlenode.png	v0.1.1	8 years ago
kube-solo-osx.png	v0.9.6	7 years ago

[README.md](#)

Kubernetes Solo cluster for macOS

This project is not maintained anymore, please use [minikube](#) instead

About

Local development Kubernetes Solo Cluster for macOS made very simple

[kubernetes](#) [kubernetes-setup](#)
[kubernetes-solo](#)

[Readme](#)
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[575 stars](#)
[25 watching](#)
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[Report repository](#)

Releases 35

[v1.0.3 Latest](#)
on Jan 11, 2017
+ 34 releases

Packages

No packages published

kube-solo was a Mac Desktop App for Kubernetes



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Enter The Terminal Kubernetes App

Minikube



```
~ ➔ time minikube start
😊 minikube v1.13.0 on Darwin 10.15.6
✨ Using the docker driver based on user configuration
👍 Starting control plane node minikube in cluster minikube
🔥 Creating docker container (CPUs=2, Memory=3892MB) ...
🌐 Preparing Kubernetes v1.19.0 on Docker 19.03.8 ...
🔧 Verifying Kubernetes components...
🌟 Enabled addons: default-storageclass, storage-provisioner
💡 kubectl not found. If you need it, try: 'minikube kubectl -- get pods -A'
🚀 Done! kubectl is now configured to use "minikube" by default

Executed in 23.96 secs fish external
  usr time 1.66 secs 237.00 micros 1.66 secs
  sys time 0.78 secs 943.00 micros 0.78 secs
```

Sidebar: Let's Talk Windows



2023 StackOverflow Survey Results

Windows is more widely used than any other desktop operating system.

And... many of them are NOT using Windows Subsystem for Linux.

kind - Kubernetes in Docker



```
$ time kind create cluster
Creating cluster "kind" ...
  ✓ Ensuring node image (kindest/node:v1.16.3) 
  ✓ Preparing nodes 
  ✓ Writing configuration 
  ✓ Starting control-plane 
  ✓ Installing CNI 
  ✓ Installing StorageClass 
Set kubectl context to "kind-kind"
You can now use your cluster with:

kubectl cluster-info --context kind-kind

Not sure what to do next? 😊 Check out https://kind.sigs.k8s.io/docs/user/quick-start/

real    0m21.890s
user    0m1.278s
sys     0m0.790s
```

k3s / k3d





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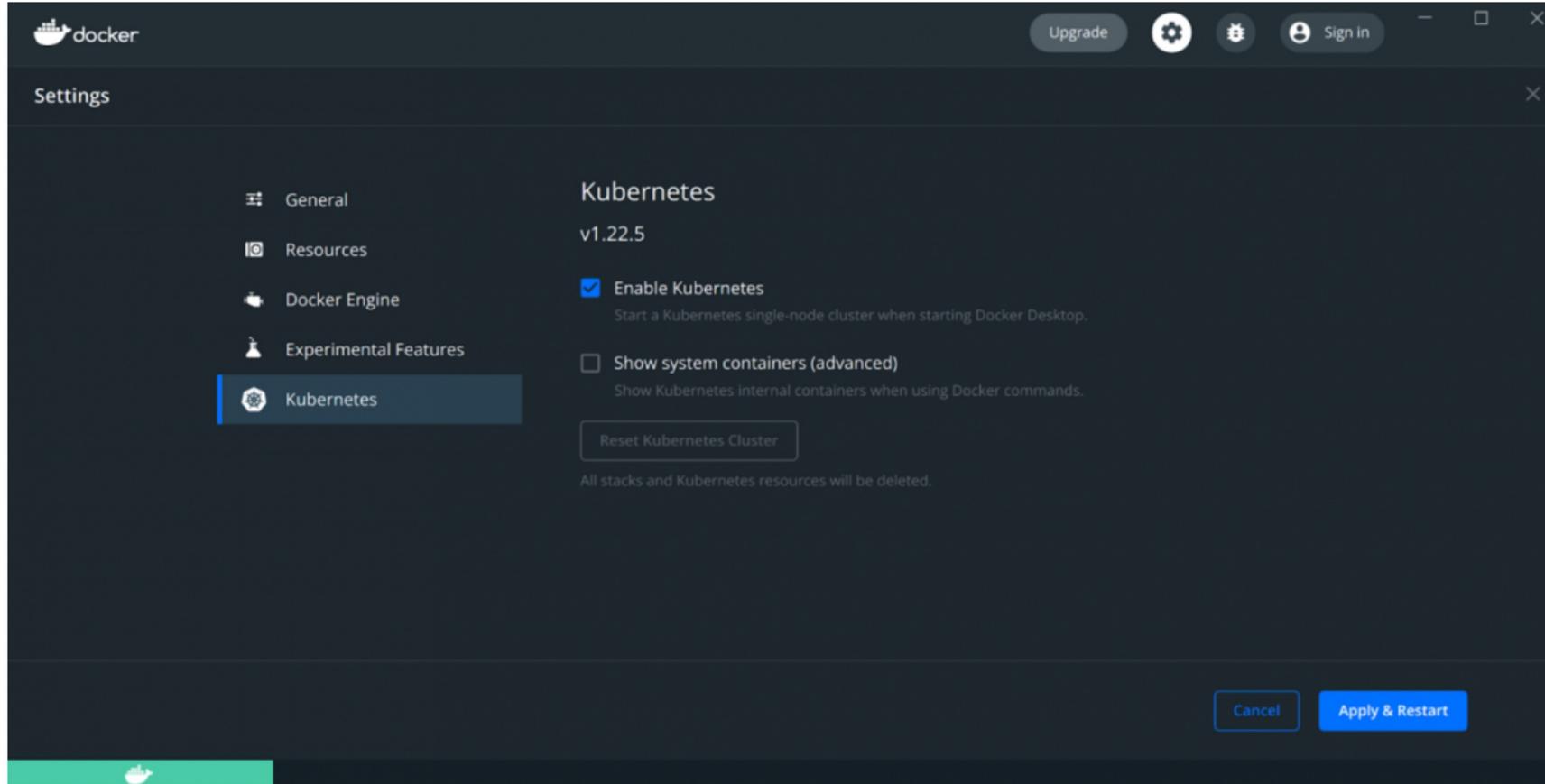


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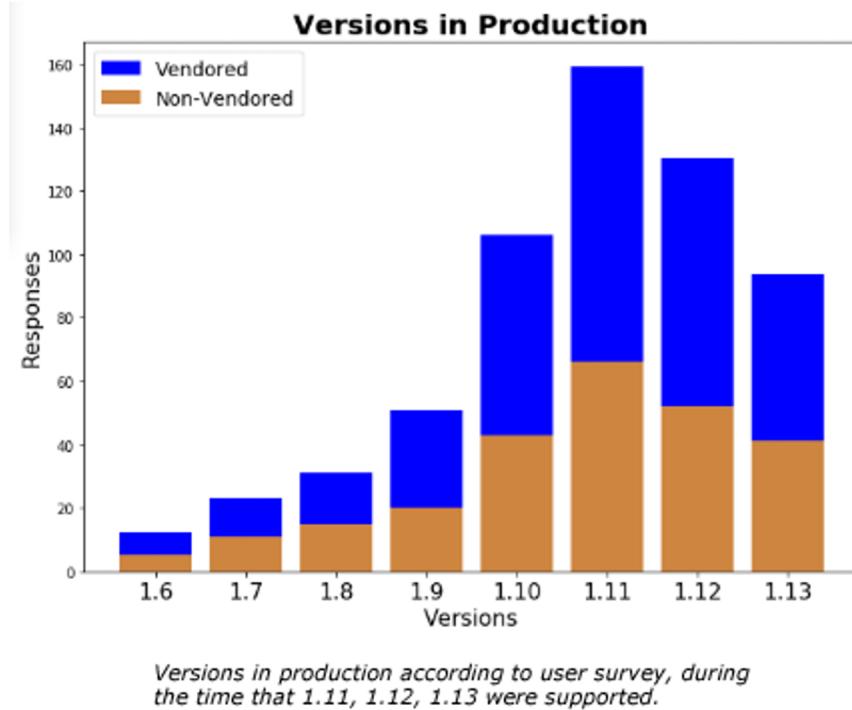
What About Desktop App Kubernetes?

Docker Desktop



Older screenshot from Docker Blog

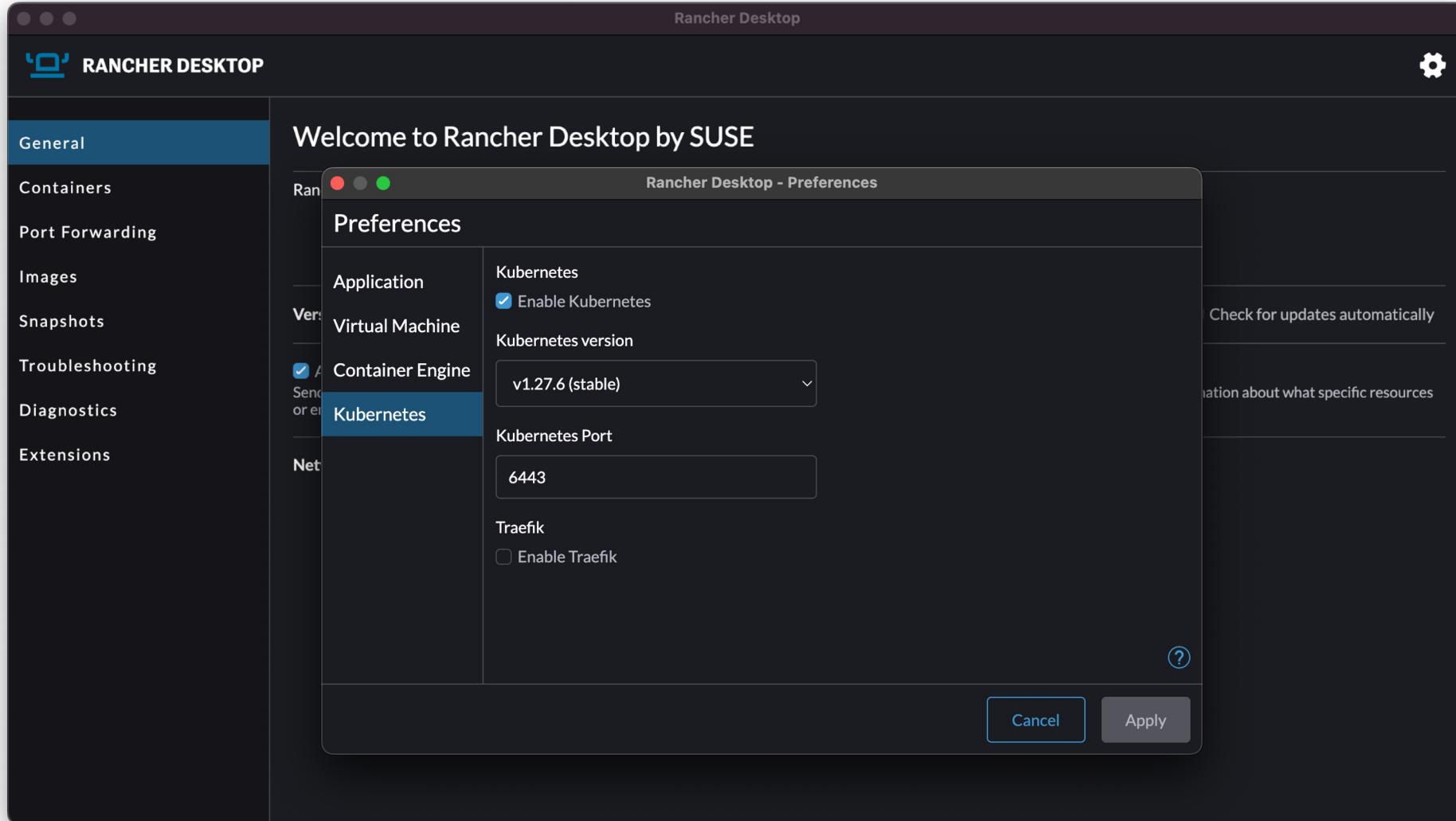
Kubernetes Versions



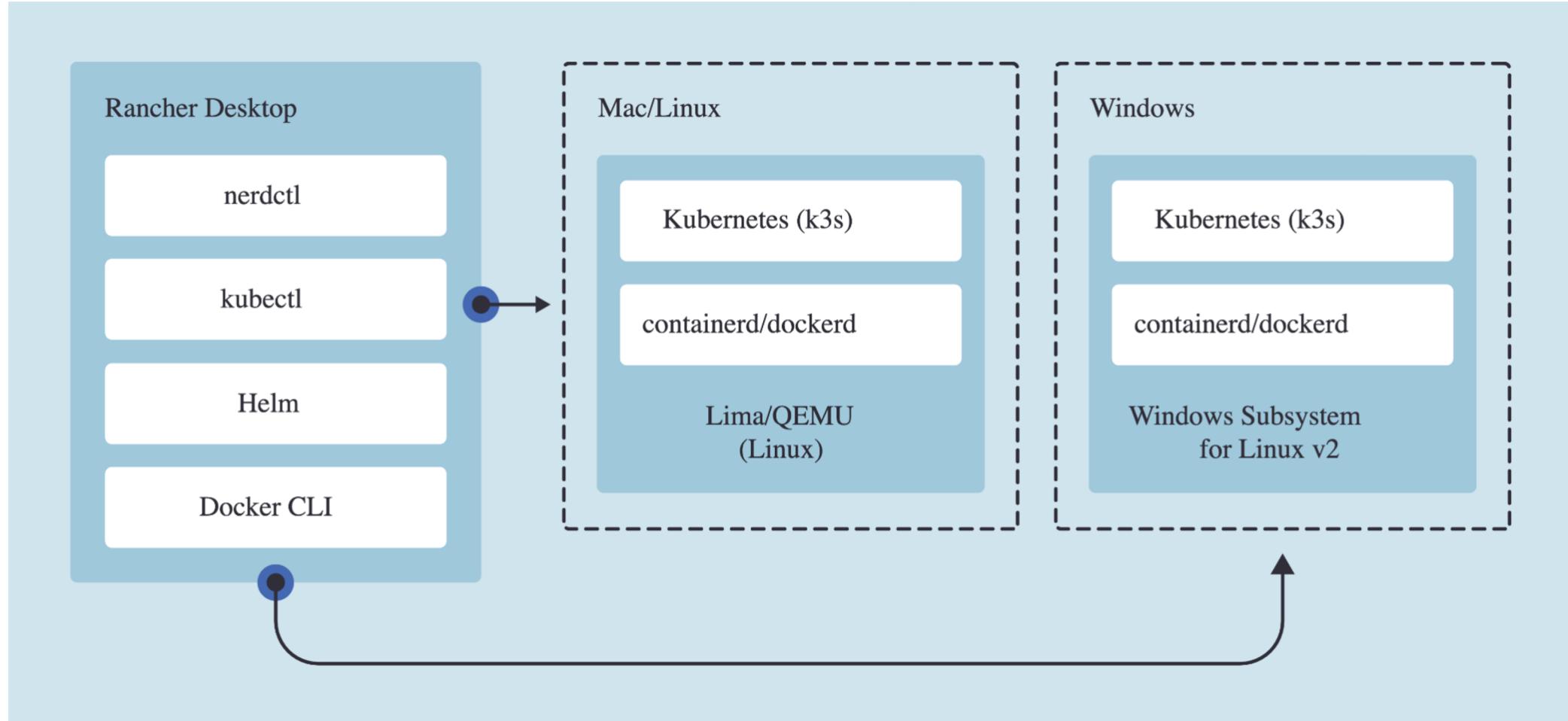
From the Kubernetes blog 3 years ago. The latest minor release is not the most widely used release. There is a distribution.

There are differences between minor versions that can matter.

Enter Rancher Desktop



Enter Rancher Desktop





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Demo Time

Base Container Images

“A base image has no parent image specified in its Dockerfile. It is created using a Dockerfile with the FROM scratch directive.”

– Docker Glossary

Various Base Image Types

1. Scratch - There's nothing there
2. Distroless - Language focused without the operating system
3. Distro based base images - OS (minus kernel) images

What's This Name Mean?

- SLE - SUSE Linux Enterprise
- BCI - Base Container Images

What Are They Based On?

- Based On Suse Linux Enterprise Server (SLES) 15

How Are They Built?

- Using SUSE Build Service that can build for secure certifications (e.g., Common Criteria 4+)
- SLSA L3, SBOMs, etc

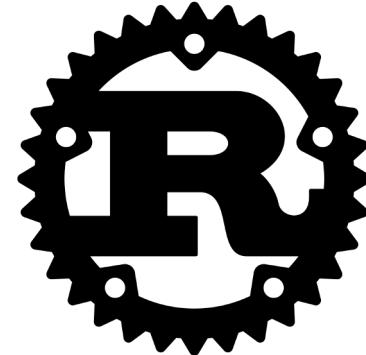
The Base Images

Features	Base	Minimal	Micro	Busybox
glibc	✓	✓	✓	✓
CA certificates	✓	✓	✓	✓
rpm database	✓	✓	✓	✓
coreutils	✓	✓	✓	busybox
bash	✓	✓	✓	✗
rpm (binary)	✓	✓	✗	✗
zypper (package mgr)	✓	✗	✗	✗
Approximate size	~94mb	~42mb	~26mb	~14mb

Programming Language Images



OpenJDK





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The screenshot shows a web browser window with the URL `registry.suse.com` in the address bar. The page has a dark green header with the SUSE logo and navigation links for Products, Solutions, Support, Partners, Communities, About, Contact Us (which is highlighted in orange), and Free Downloads. Below the header, there's a large section titled "SUSE Container Images" with the subtext "The source for official SUSE base container images." A paragraph explains that these are tested, certified, and enterprise-ready images based on SUSE Linux Enterprise Server. A button labeled "Getting started with SUSE containers" is visible. To the right of the main content area, there are several horizontal bars composed of colored segments (green, orange, blue, purple) of varying lengths. At the bottom of the page, there are six categories listed: "Base Container Images", "Language Container Images", "SUSE Linux Enterprise Server Images", "Application Container Images", "Long-Term Service Pack Support", and "Releases Out of General Support". The main title "Base Container Images" is prominently displayed at the bottom center, with the subtitle "Lightweight images for container development" below it.

SUSE Container Images

The source for official SUSE base container images.

Tested, certified and enterprise-ready container images based on SUSE Linux Enterprise Server. Up-to-date with the latest security patches and offering the same features as the base OS.

Getting started with SUSE containers

Base Container Images

Language Container Images

SUSE Linux Enterprise Server Images

Application Container Images

Long-Term Service Pack Support

Releases Out of General Support

Base Container Images

Lightweight images for container development



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PaaS With Epinio

Deploying on Kubernetes



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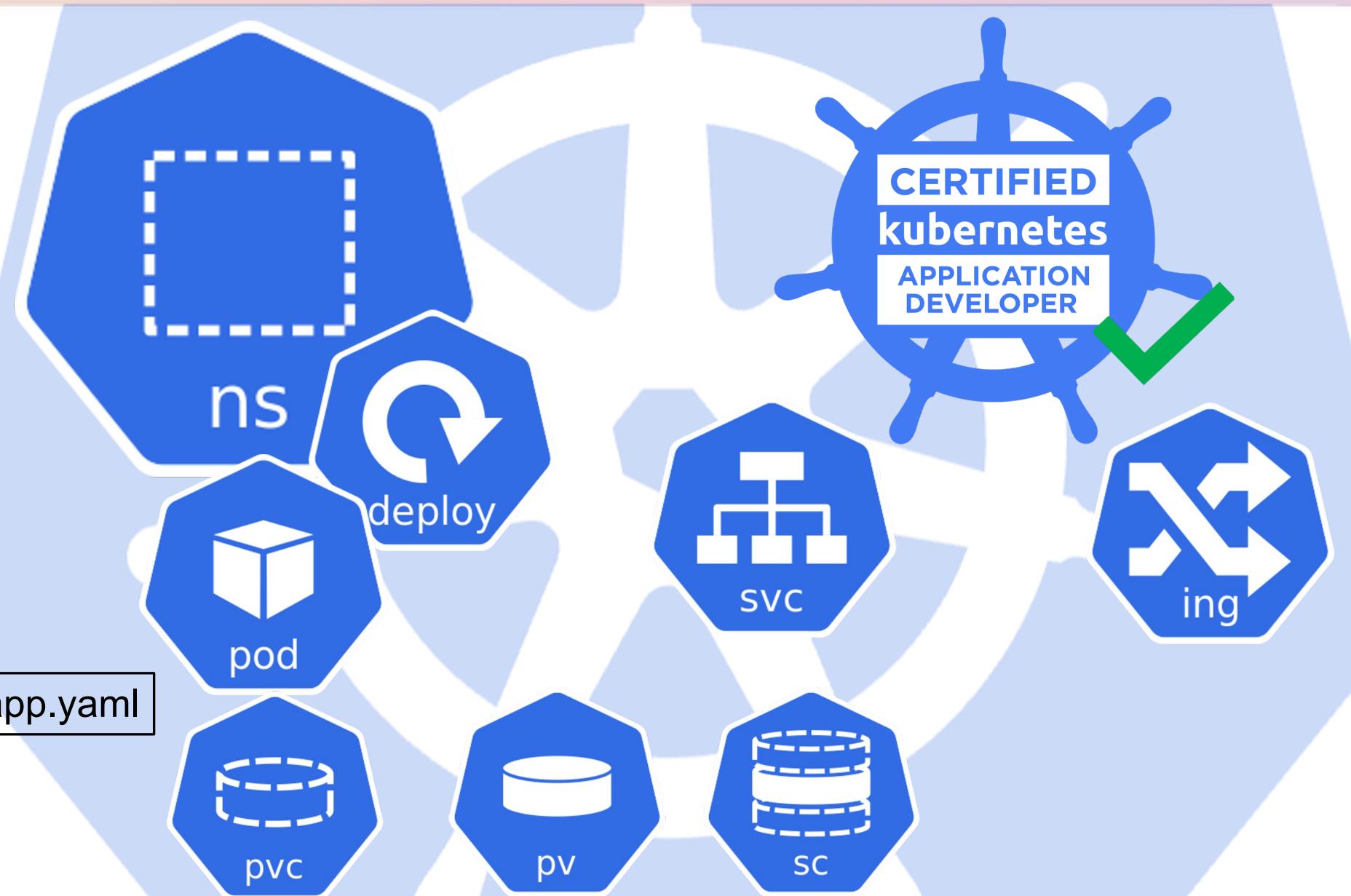
```
1 package main
2
3 import (
4     "fmt"
5     "net/http"
6     "os"
7     "log"
8 )
9
10 func main() {
11     logger := log.New(os.Stdout, "http:", log.LstdFlags)
12     logger.Println("Server is starting...")
13     http.HandleFunc("/", handler)
14     http.ListenAndServe(":8080", nil)
15 }
16
17 func handler(w http.ResponseWriter, r *http.Request) {
18     hostname, err := os.Hostname()
19     if err != nil {
20         fmt.Println(err)
21         os.Exit(1)
22     }
23     fmt.Fprintf(w, "Hostname is "+hostname)
```



container image



app.yaml



PaaS on Kubernetes



Kelsey Hightower

@kelseyhightower · [Follow](#)

I'm convinced the majority of people managing infrastructure just want a PaaS. The only requirement: it has to be built by them.

1:08 AM · Apr 12, 2017



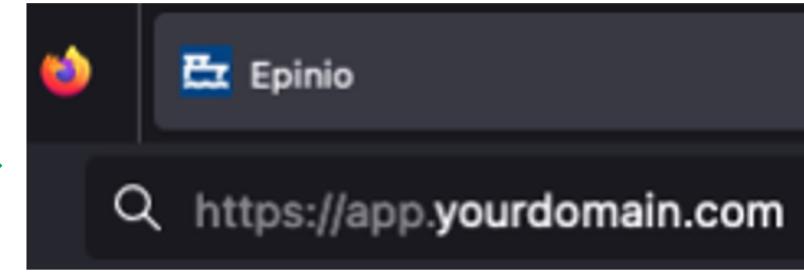
Kelsey Hightower

@kelseyhightower · [Follow](#)

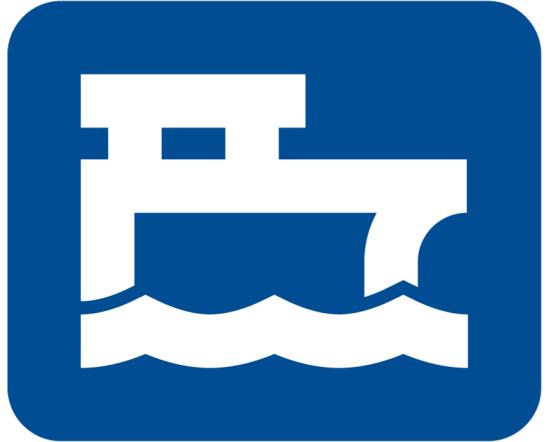
Kubernetes is a platform for building platforms. It's a better place to start; not the endgame.

10:04 PM · Nov 27, 2017

Simplify App Development with Epinio



“From Code to URL in one push”



- Application Platform on Kubernetes
- Single-step push to deploy source code to URL on Kubernetes
- Enable self-service provisioning

```
🚢 About to push an application with the given setup
Manifest: <>Defaults<>
Name: 12factor
Source Origin: /home/olblak
AppChart:
Target Namespace: workspace
Routes: <>default<>

⚠ Hit Enter to continue or Ctrl+C to abort (deployment will continue automatically in 5 seconds)
```

- CLI to deploy apps

The screenshot shows the Epinio UI interface. On the left, a sidebar menu includes 'Dashboard', 'Applications' (which is selected), 'Namespaces', 'Services', and 'Advanced'. The main area is titled 'Application Create: Step 1' with the sub-instruction 'Provide the source'. It features a dropdown for 'Source Type' set to 'GitHub', and three input fields: 'Username / Organization*' containing 'epinio', 'Repository*' containing 'example-rails', and 'Branch*' containing 'main'. A 'From Manifest' button is located to the right of the source type dropdown.

- UI

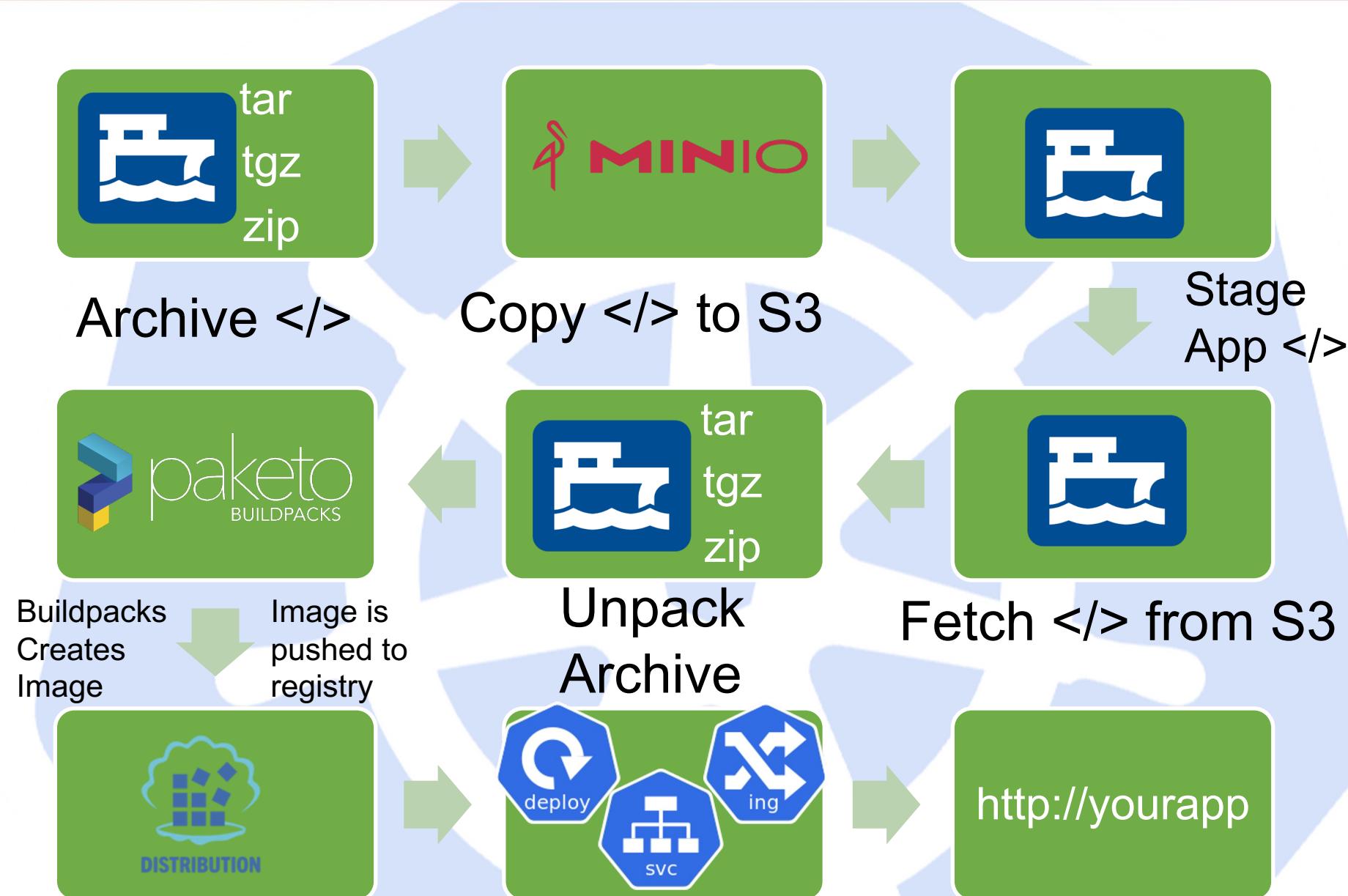
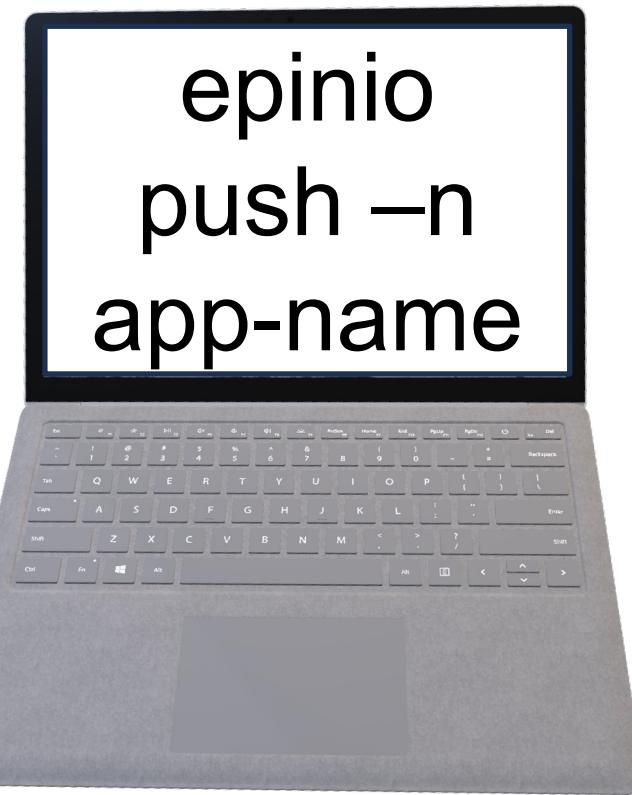
Batteries Included



Epinio



Behind an `epinio push`



Demo

The image shows a dual-pane interface. On the left is a terminal window titled "aws — ssh -i rey-us-west-gco.pem ec2-user@34.217.90.181 —". It displays the command "aws — ssh -i rey-us-west-gco.pem ec2-user@34.217.90.181 —" and the user prompt "ec2-user@ip-172-31-24-25:~/epinio-samples/samples/react". On the right is a web browser window titled "Epinio". The URL in the address bar is "https://epinio.rancherprime.io/epinio/c/default/dashboard". The browser title bar also says "Epinio". The Epinio dashboard is visible, showing the "Welcome to Epinio v1.9.0" message, "Namespaces 1", "Applications 0", and "Newest Namespaces sample-app".

aws — ssh -i rey-us-west-gco.pem ec2-user@34.217.90.181 —
ec2-user@ip-172-31-24-25:~/epinio-samples/samples/react

Epinio

All Namespaces

Welcome to Epinio v1.9.0

The Application Development Engine for Kubernetes

Epinio takes your application from source code to deployment and allow for Developers and Operators to work better together!

Get started Issues

Namespaces 1

Namespaces group your applications, services and other resources. Deleting a namespace will delete all of it's resources.

Create Namespace

Newest Namespaces
sample-app

Applications 0

Epinio uses Applications to transition your code, through build, to being deployed.

Deploy Application

v1.9.0



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Questions?



PromCon
North America 2021



**Please scan the QR Code above
to leave feedback on this session**