

# ONS 2019

Using Kubernetes to Build a Microservices Cloud Native Network OS to  
Bring CI/CD to Networking

April 4, 2019



# Agenda

- About Me
- The need for CI/CD in Networking...
- What is CI/CD?
- How does the network fit in? – Why is it special?
- What is the automation landscape today?
- Why isn't this good enough for CI/CD?
- Maybe the network isn't special?
- Tackling this from the network OS level...
- Why is Kubernetes perfect for the job?
- Steps you can take now...
- Q&A
- Contact

# About me

- Glenn Sullivan, Co-Founder SnapRoute
- Former network engineer running global DC ops at Apple
- Using whitebox switches since the early days
- Started SnapRoute to build solutions for operators, by operators



@GlennSullivanSR



/glenn-sullivan





# The need for CI/CD in Networking...





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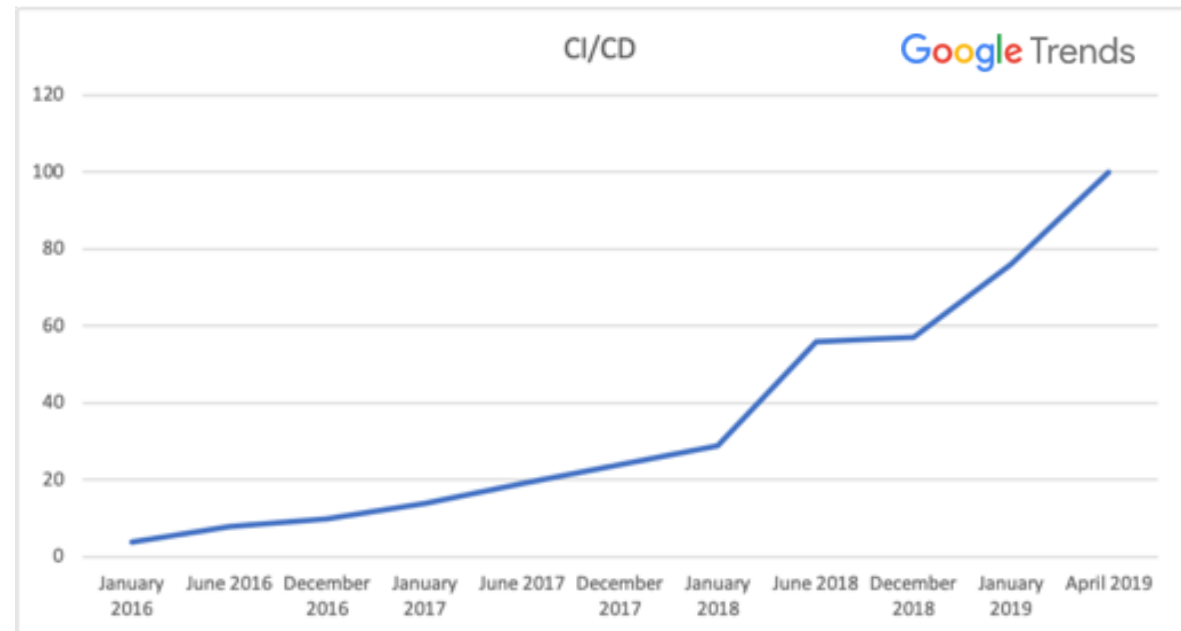
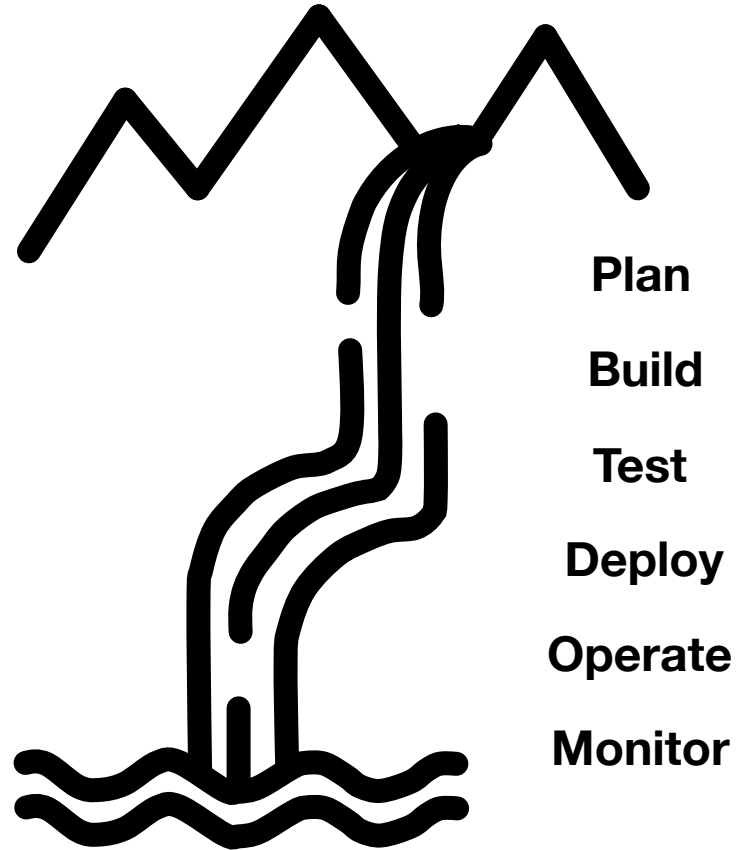


# The need for CI/CD in Networking...





# What is CI/CD?

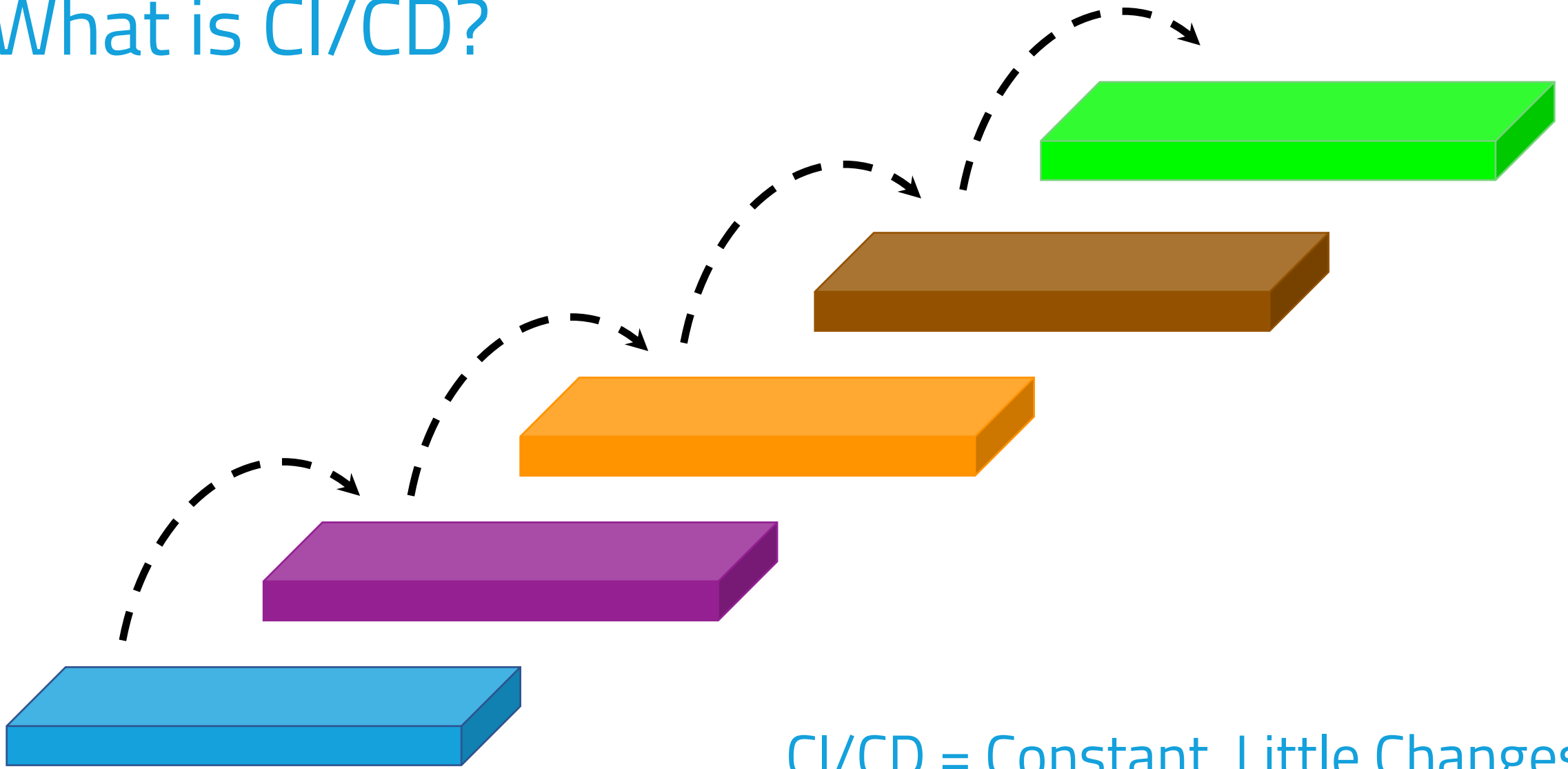


# What is CI/CD?



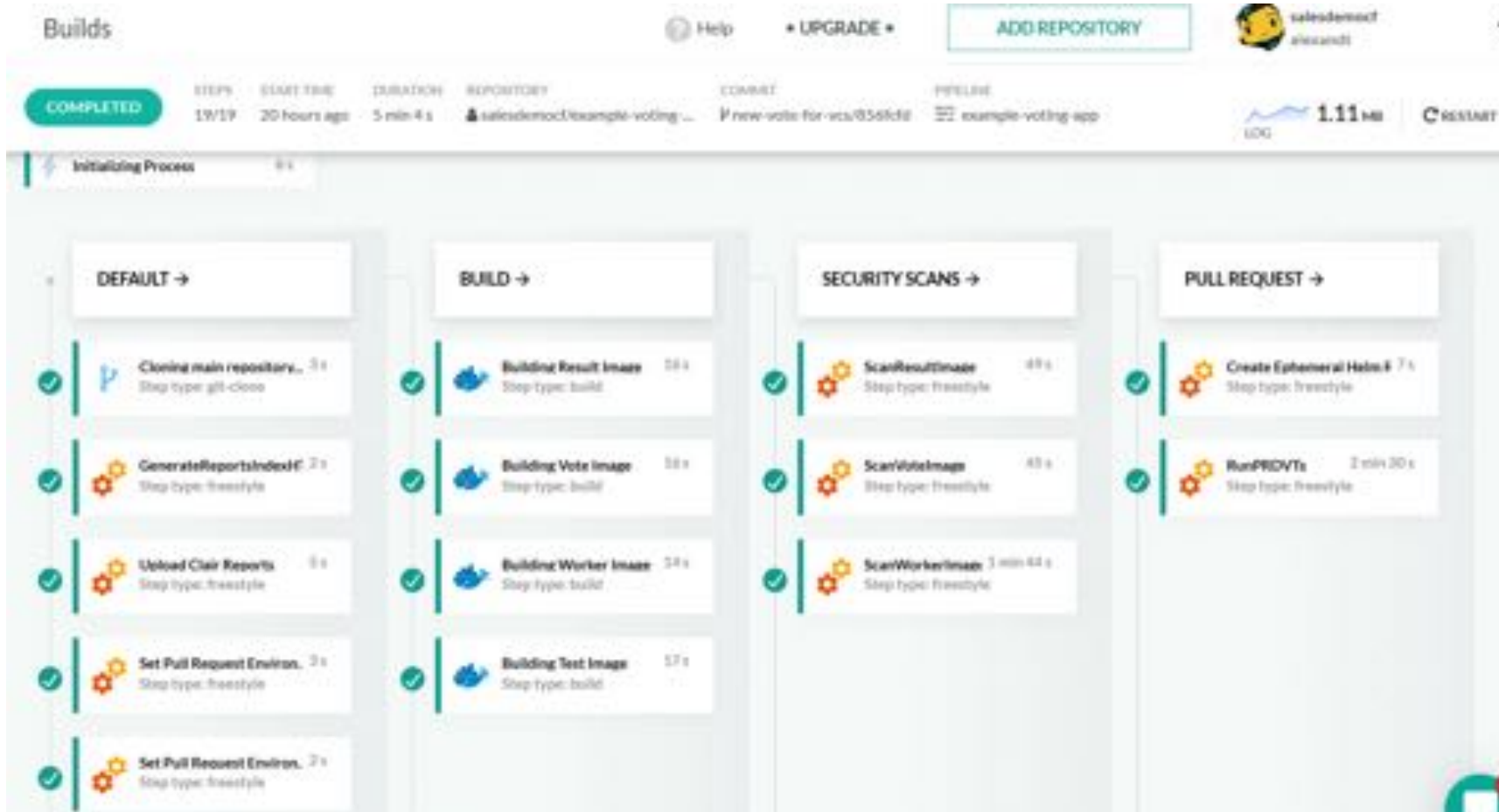


# What is CI/CD?



CI/CD = Constant, Little Changes

# What is CI/CD?



Source: codefresh.io

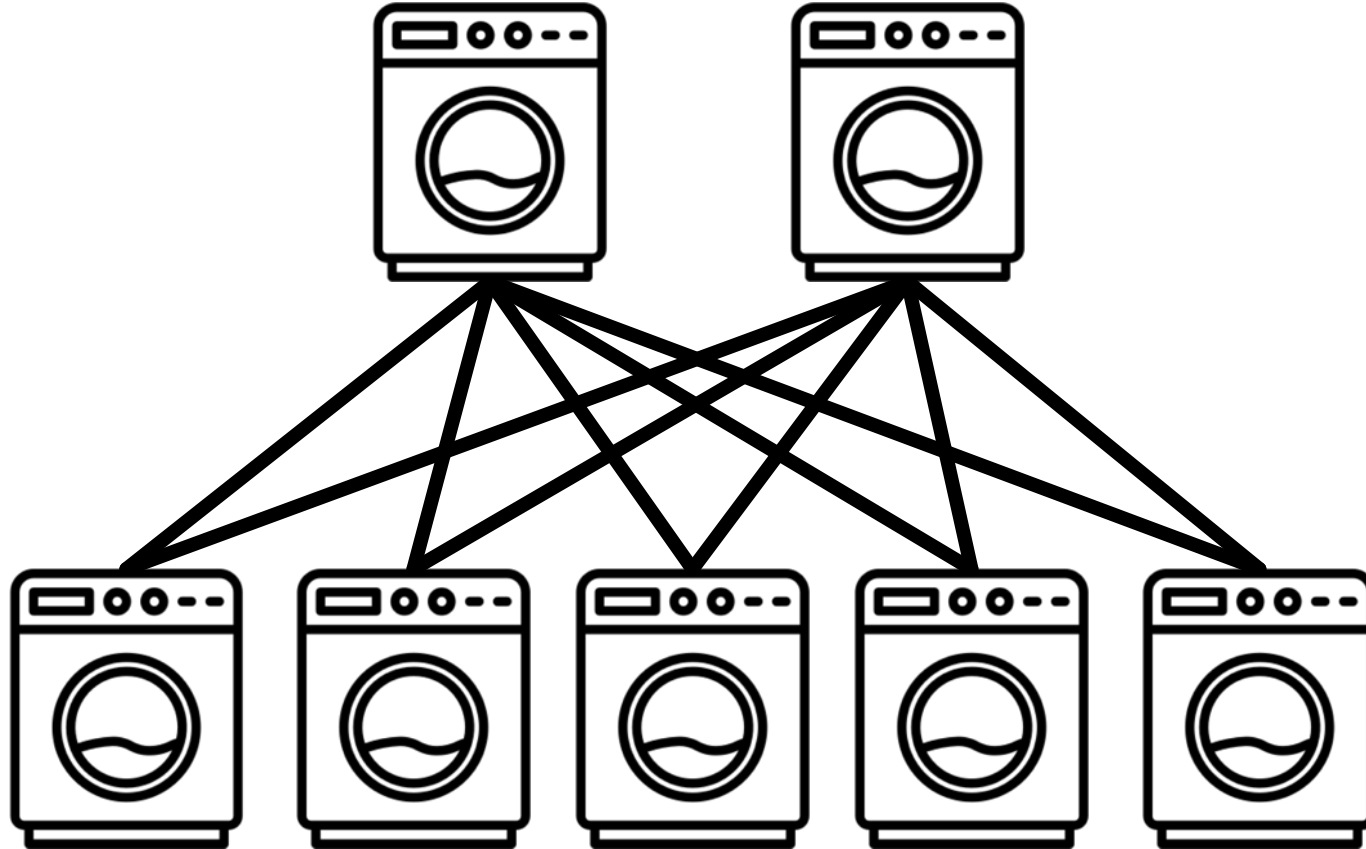


# How does the network fit In – Why is it special?

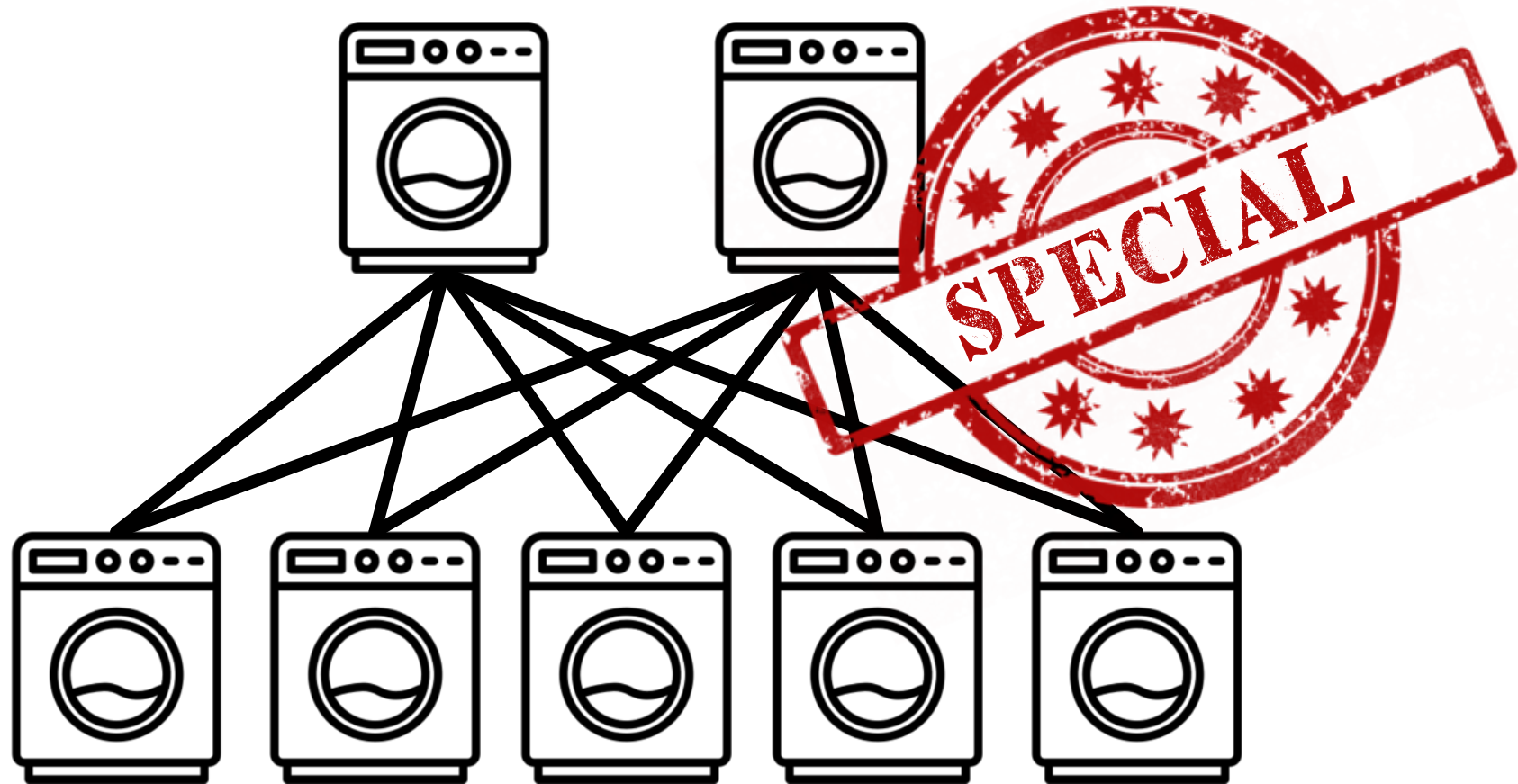




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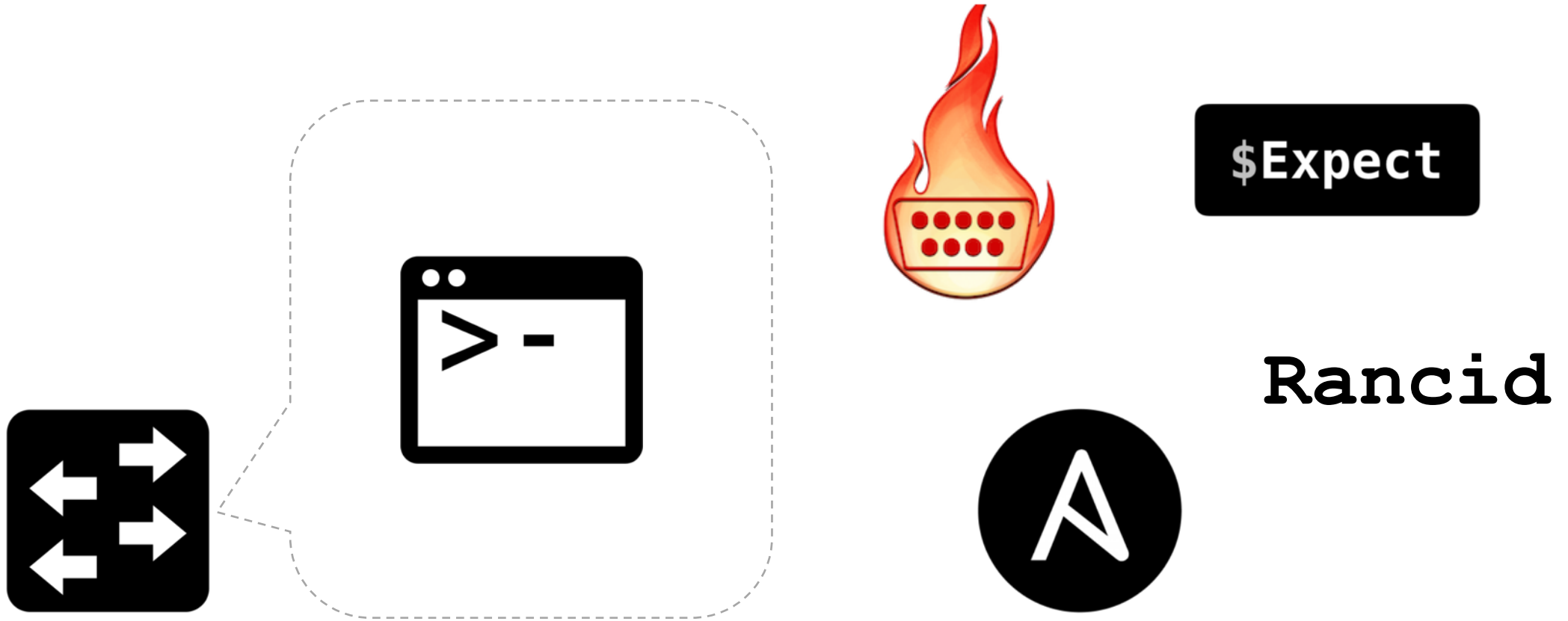
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# What is the automation landscape today?

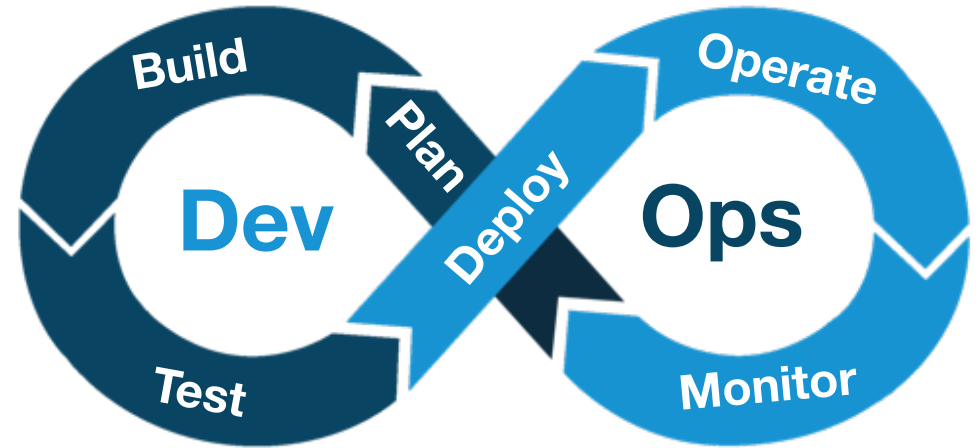




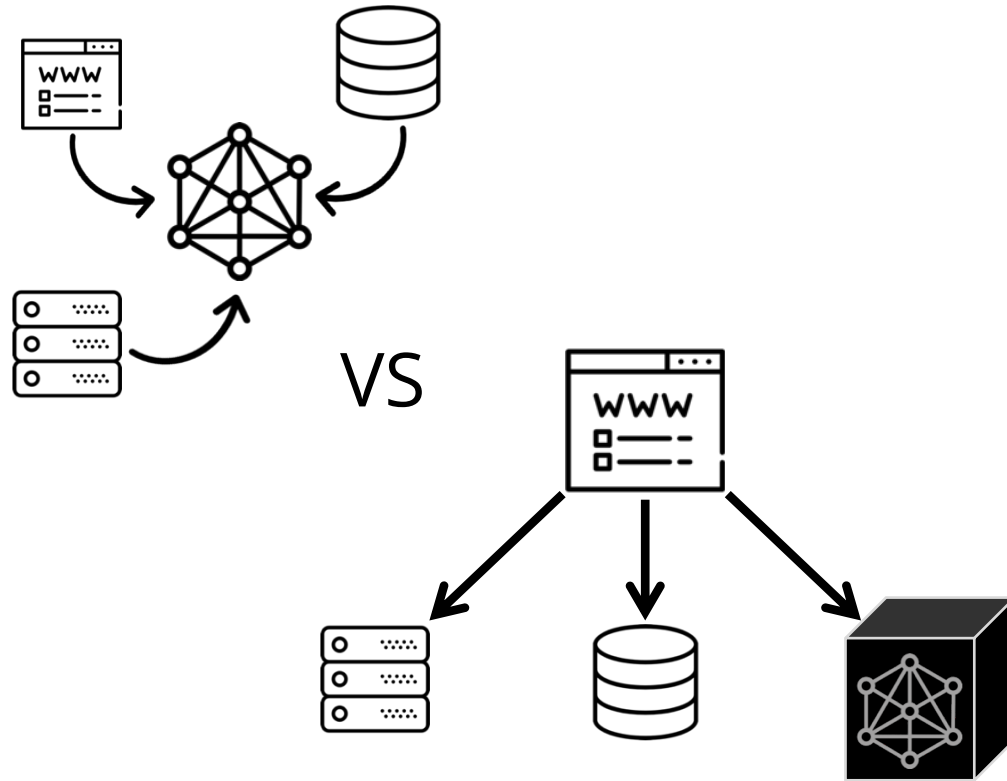
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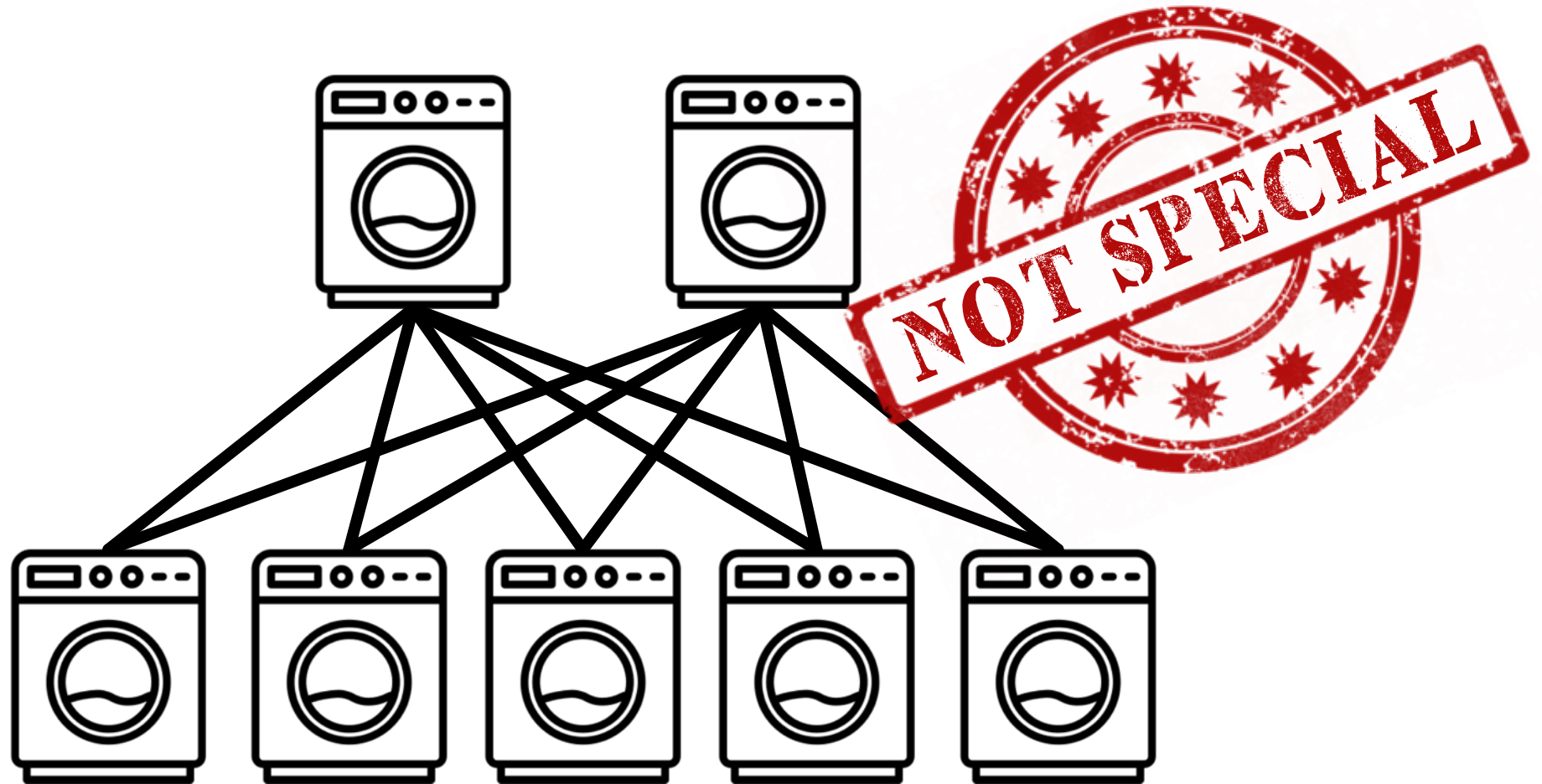
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# Why isn't this good enough for CI/CD?

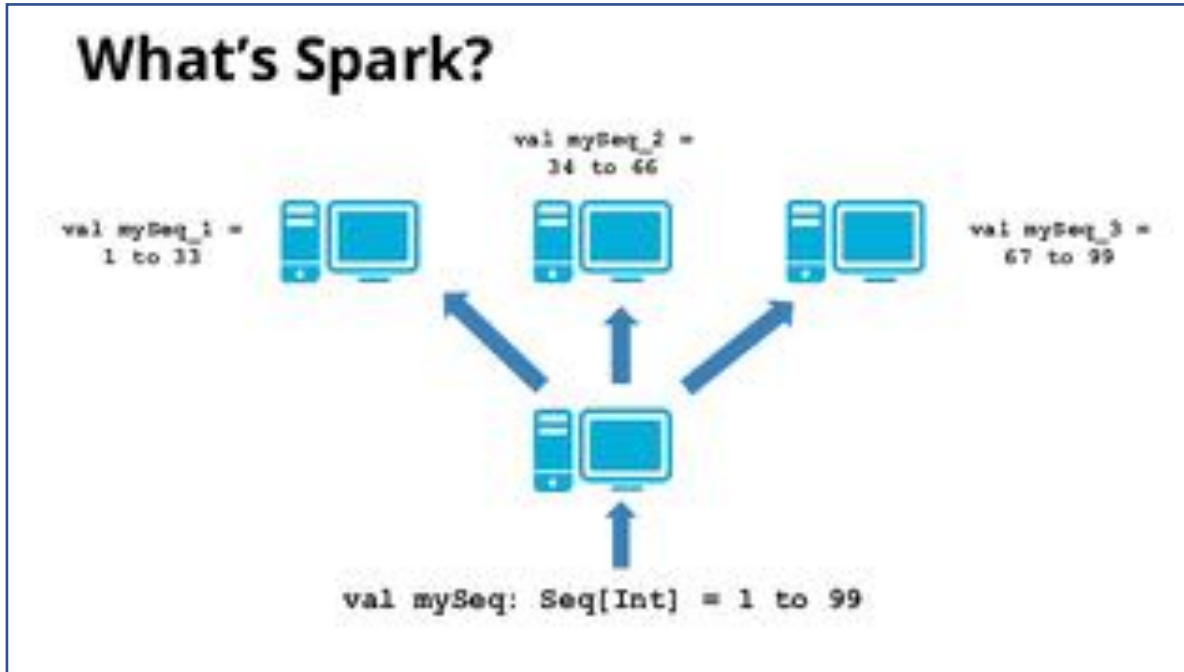


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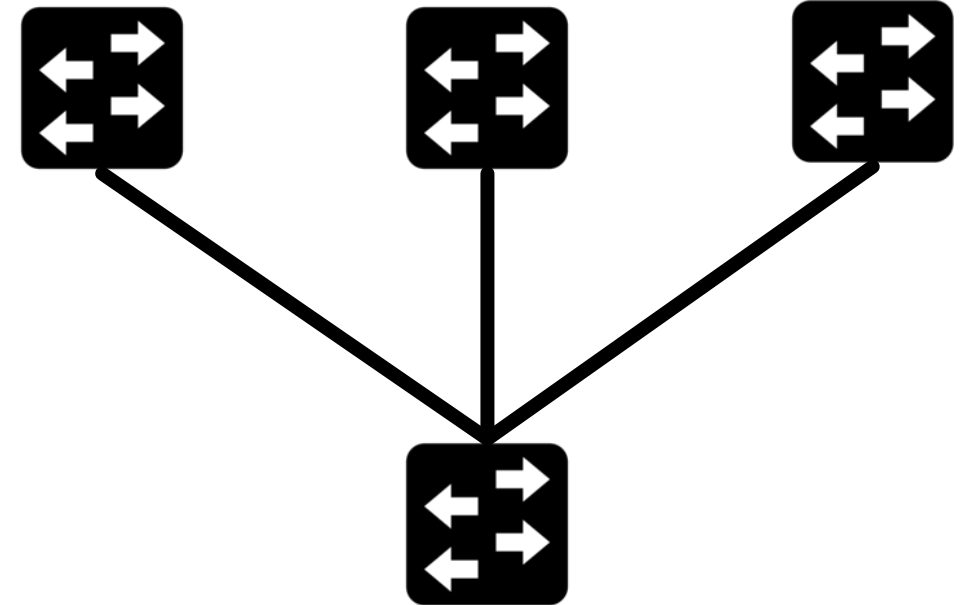




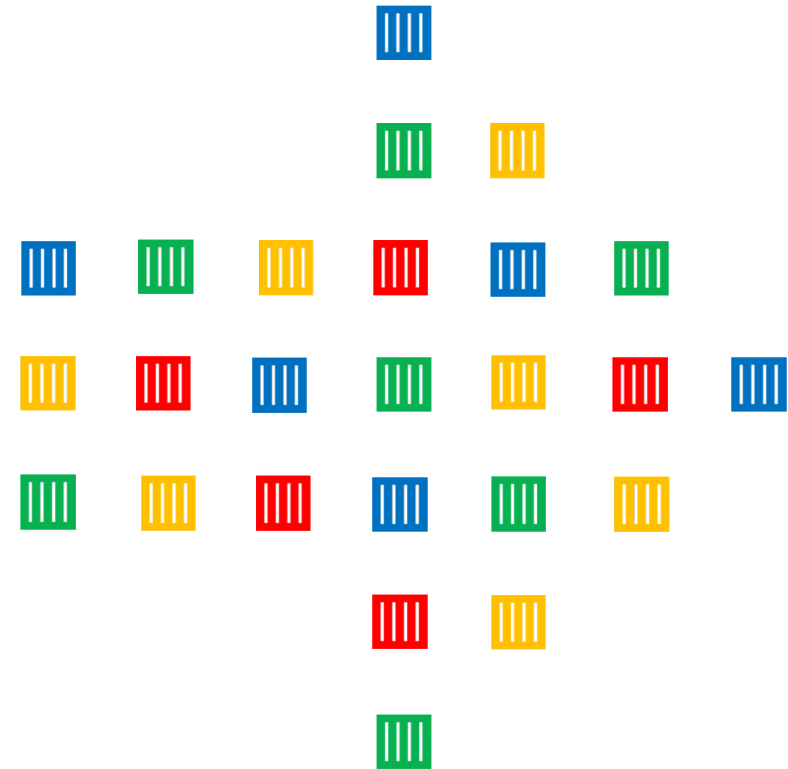
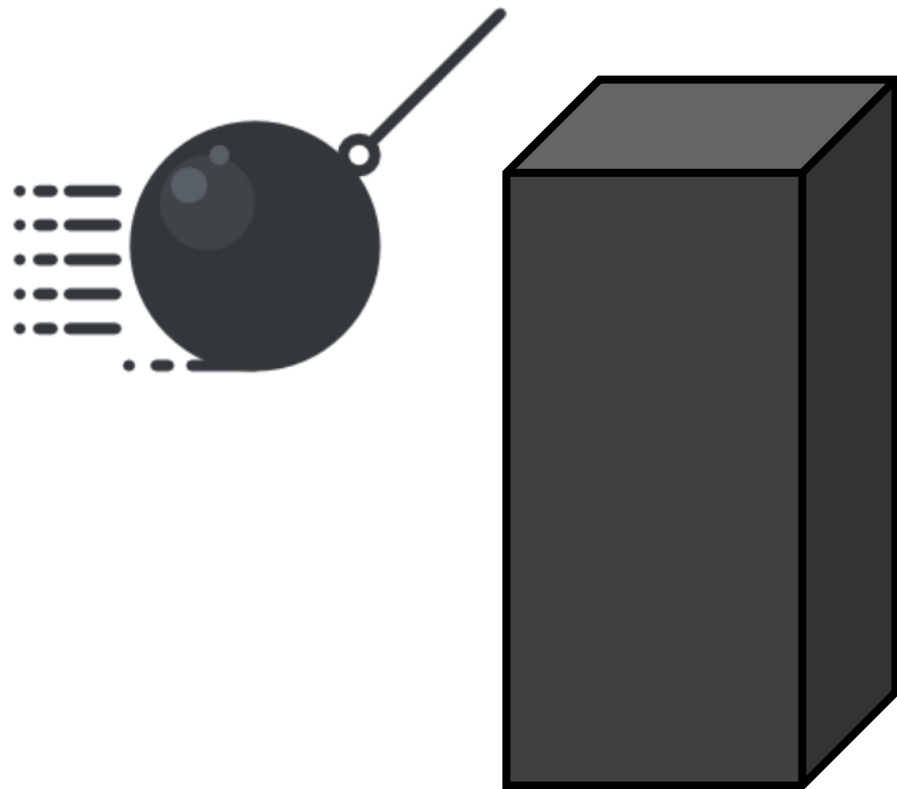
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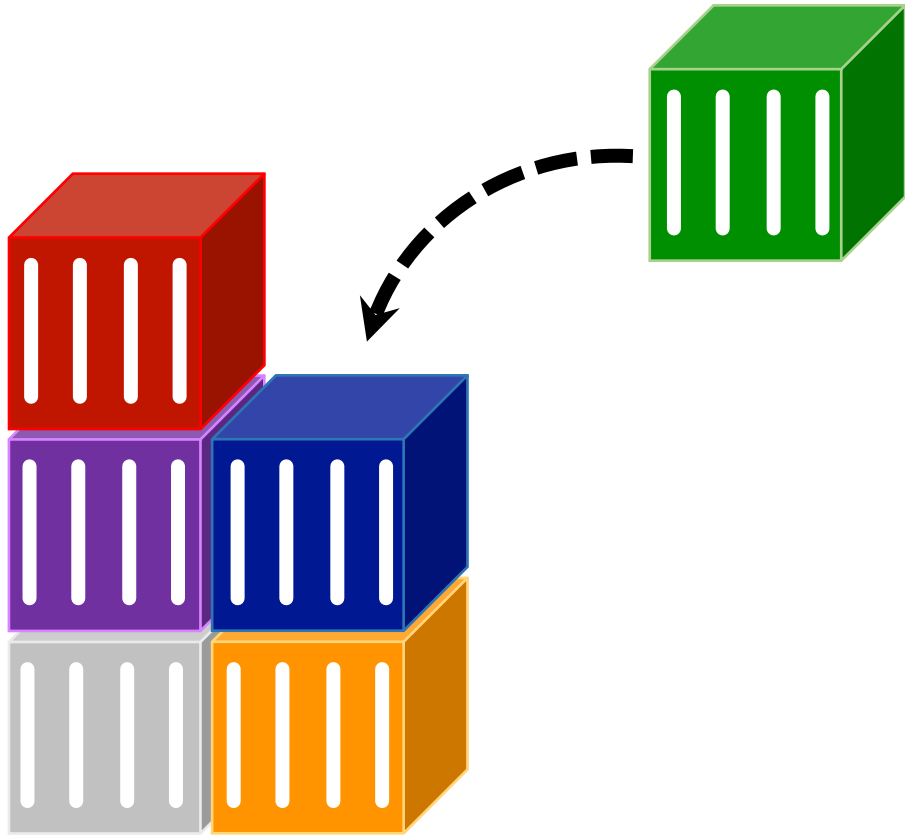
Source: Javier Santos Paniego, Scala Developer & Co-Founder of Scalera Blog



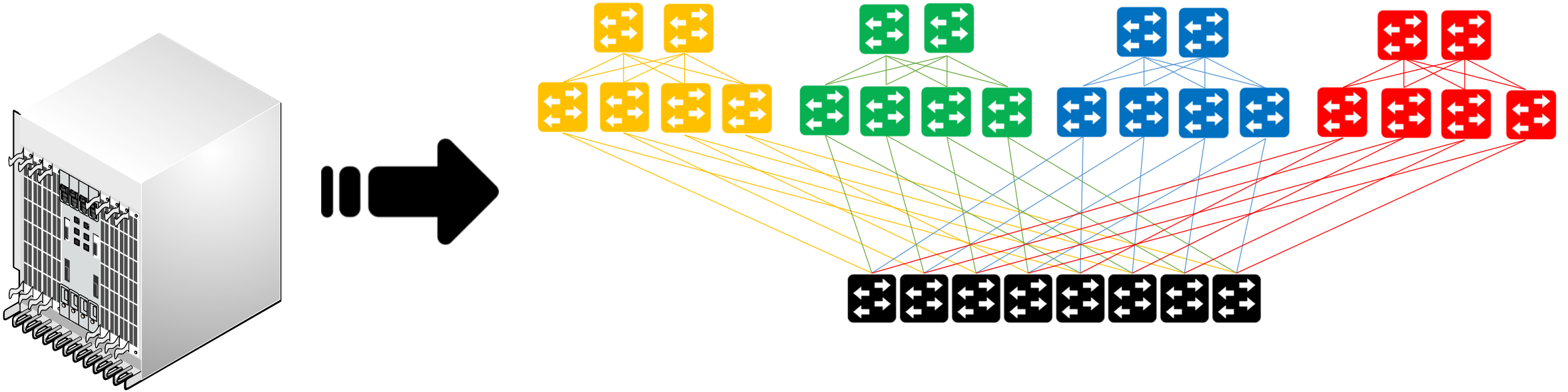
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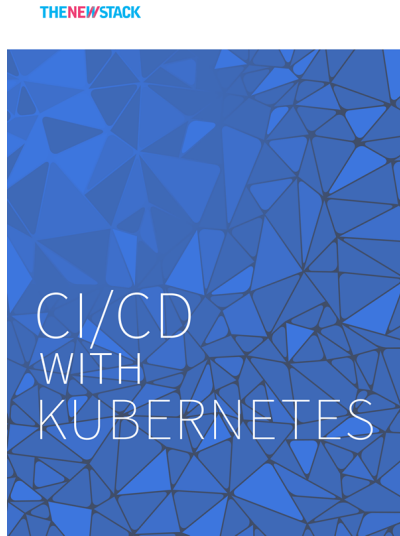


# Why is Kubernetes perfect for the job?

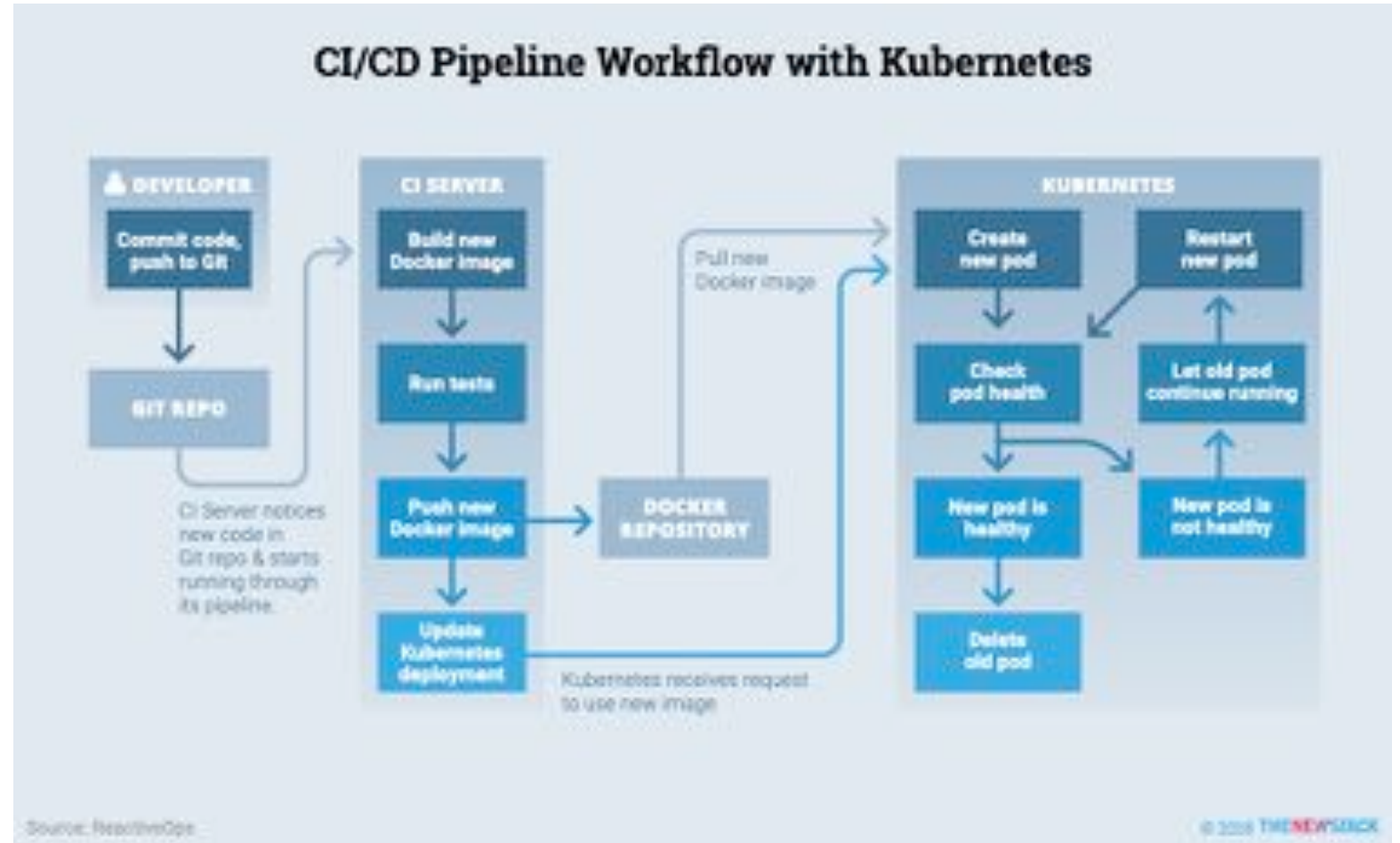




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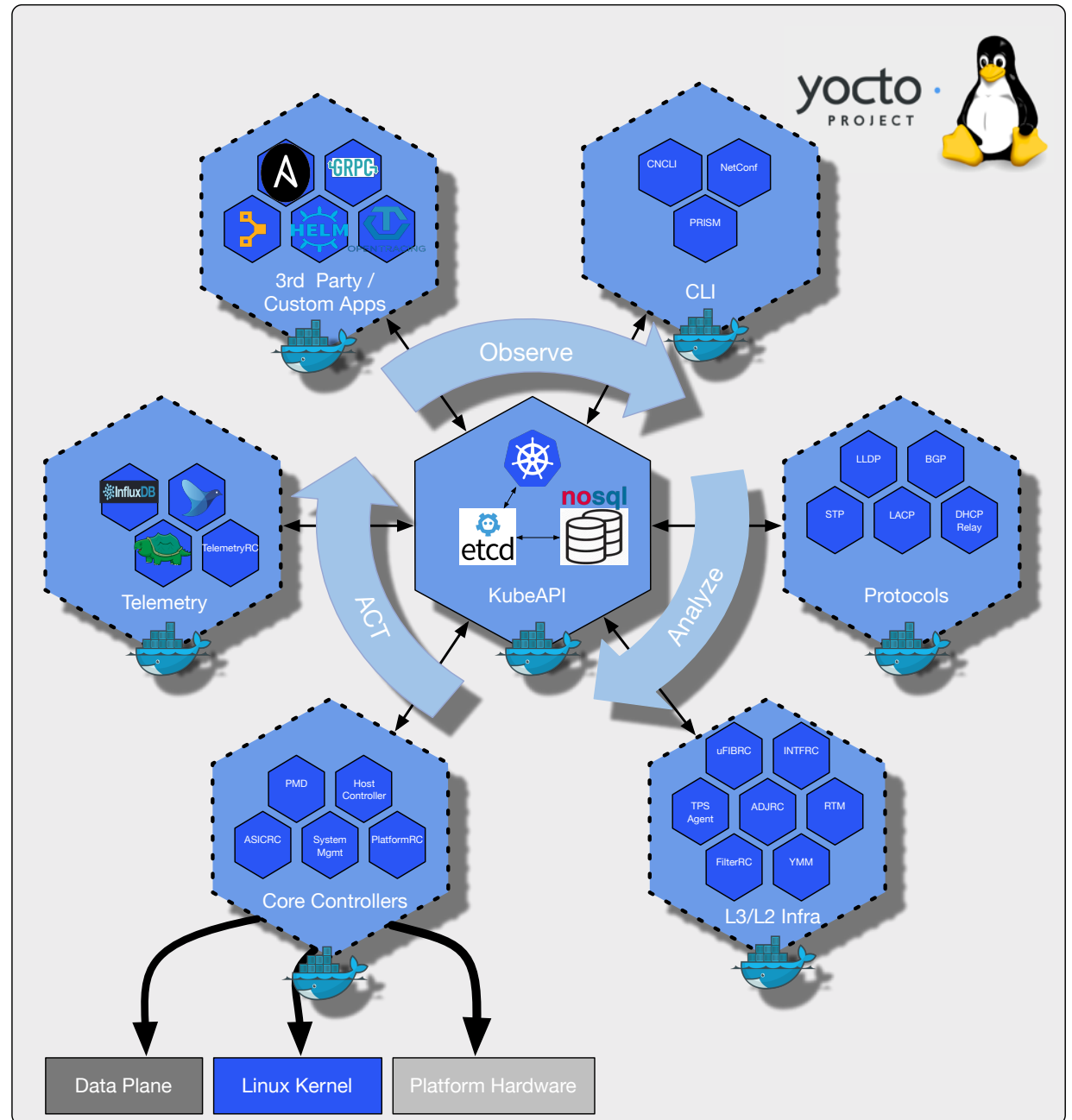


Source:  
[thenewstack.io/ebooks/kubernetes/ci-cd-with-kubernetes](https://thenewstack.io/ebooks/kubernetes/ci-cd-with-kubernetes)



# CN-NOS Architecture

- Native embedded Kubernetes
- Yocto base
- Hardware abstraction
- KubeAPI / REST API Layer
- Cloud Native CLI
- Telemetry Layer



# Steps you can take now...



- Use CI/CD to adopt CI/CD
- Get rid of the culture of “NO”
- Use SnapRoute CN-NOS in your environment ;)
- Define clear roles for each team
- Find manual, repetitive changes – get rid of them
- Change maintenance window times
- Networks are not sacred – don’t treat them as such
- Decrease time between upgrades – build the muscle
- Start small and build upon easy wins

# Q&A



# Contact Us



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