It’s A Trap! How Our Abstractions Are Failing Us

@7Grok

André D. Henry

Engineering Manager @Venmo

- I have seen many, many moons in Tech
- Software Engineer, Network Engineer, CTO, Janitor
- Laser Engineer Extraordinaire
- Code, Math, Science & Electronics
- I probably made it explode at some point

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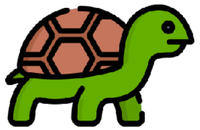
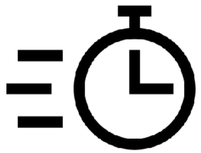
Why Are We Here?





What is an Abstraction

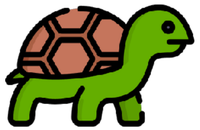
In software engineering and computer science, abstraction is a technique for arranging complexity of computer systems. It works by establishing a level of complexity on which a person interacts with the system, suppressing the more complex details below the current level

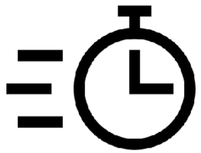
Fundamental Theorem Of Software Engineering

"We can solve any problem by introducing an extra level of indirection."

—David J. Wheeler

First, A Quick Review

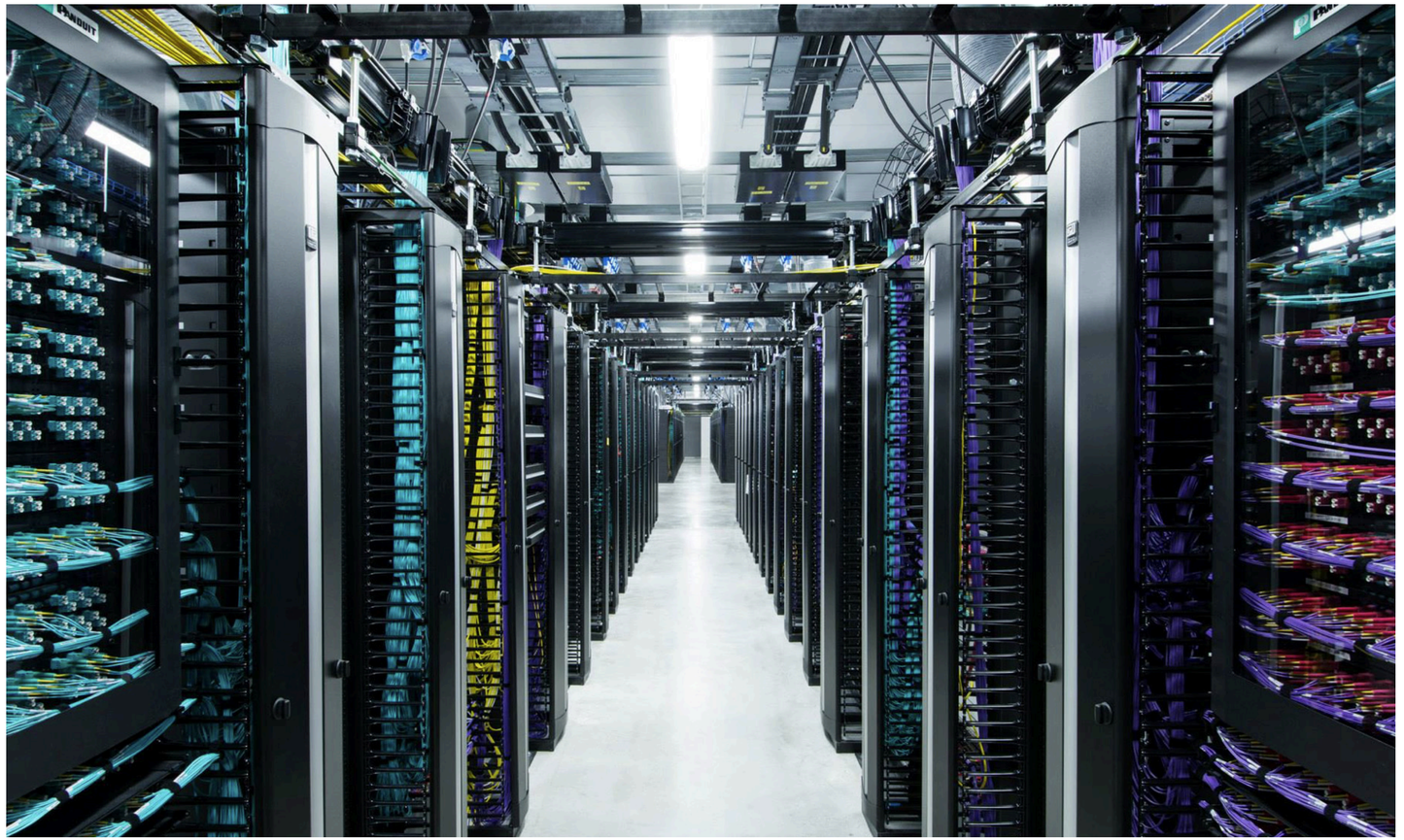




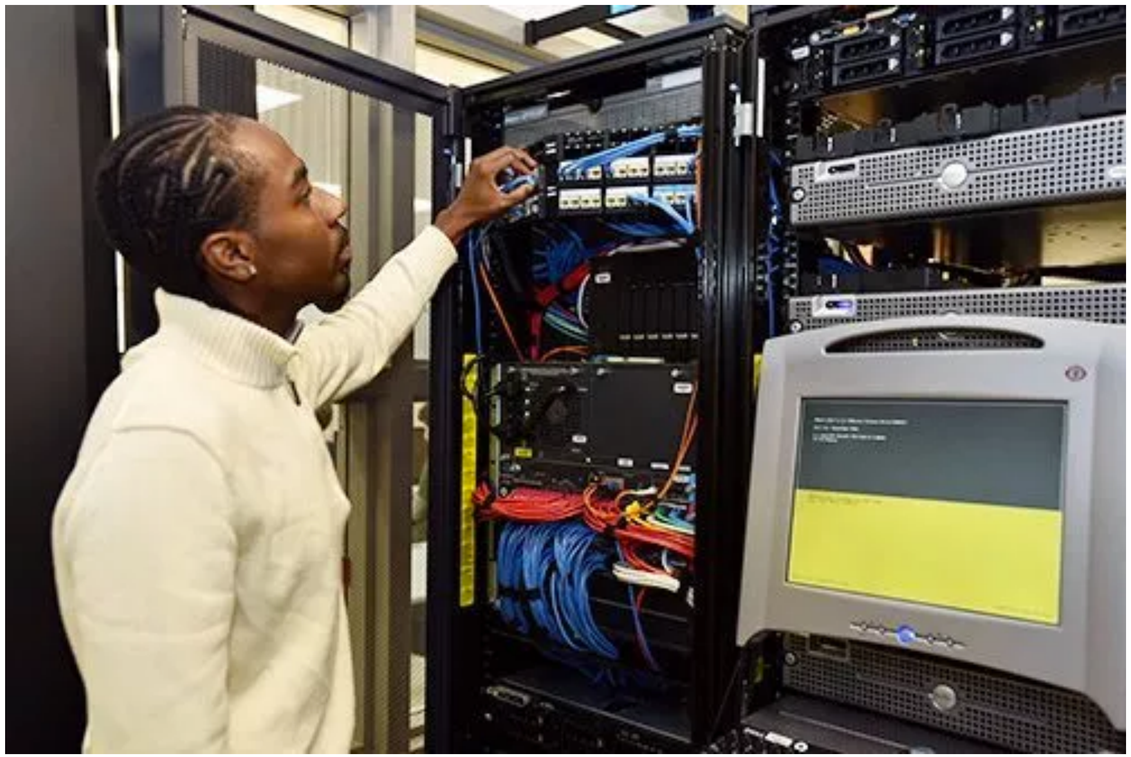
Throwback


digital
pdp11/70
ADDRESS
DATA
PARITY
HIGH LOW
USER D
SUPER D
KERNEL D
CONS PHY
USER I
SUPER I
KERNEL I
PROG PHY
DATA PATHS
BUS REG
DISPLAY REGISTER
START

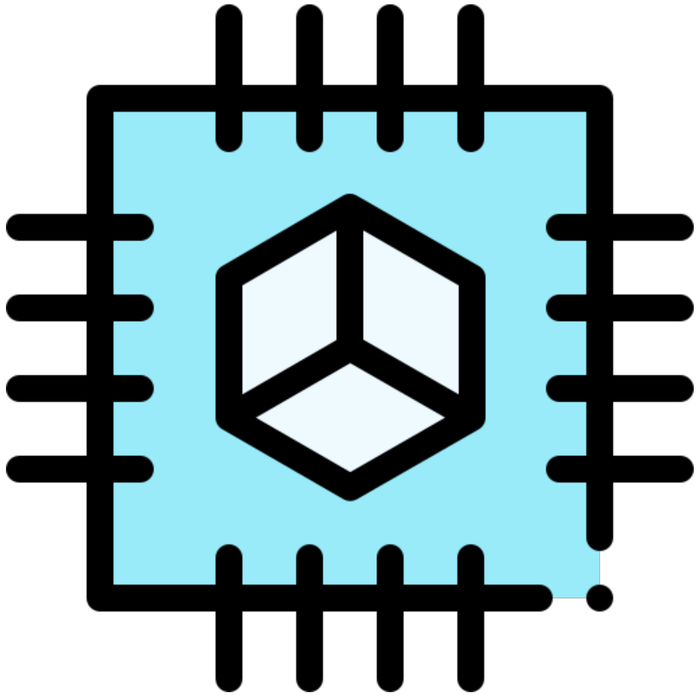
Today



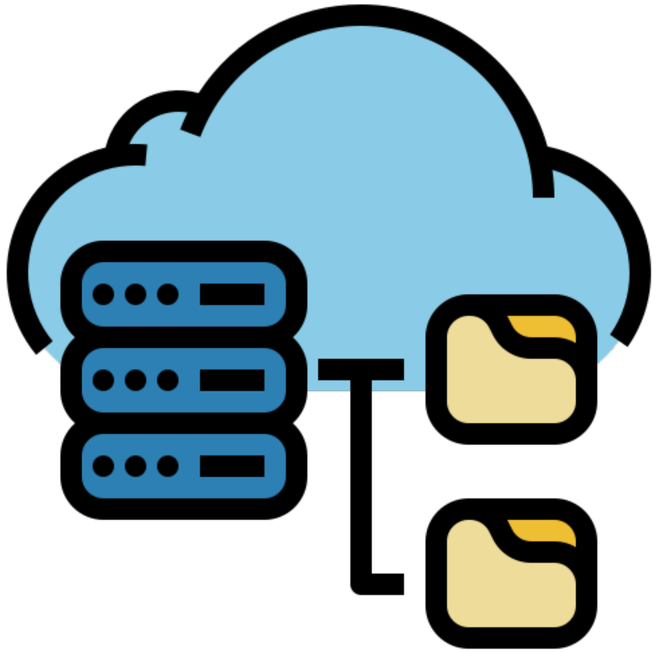
Systems Administration

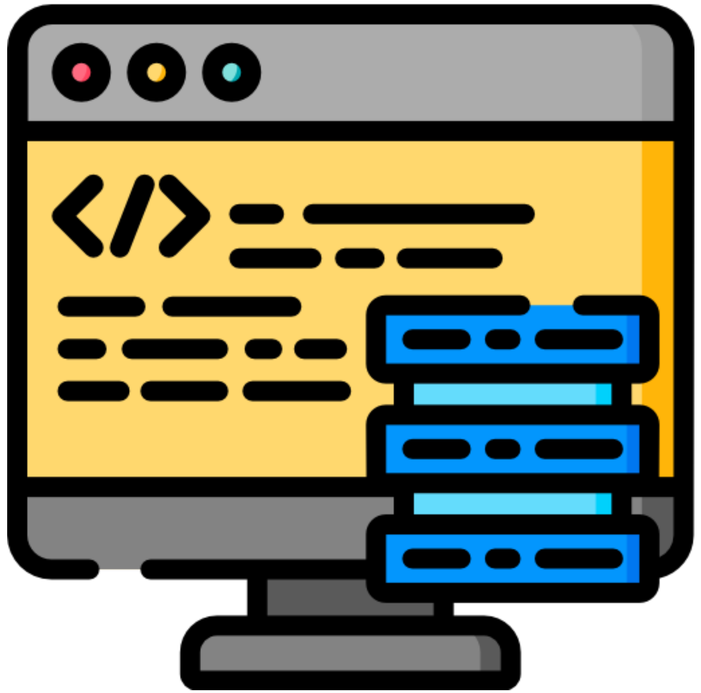


Virtualization

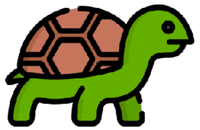


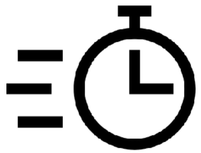
Infrastructure As Code



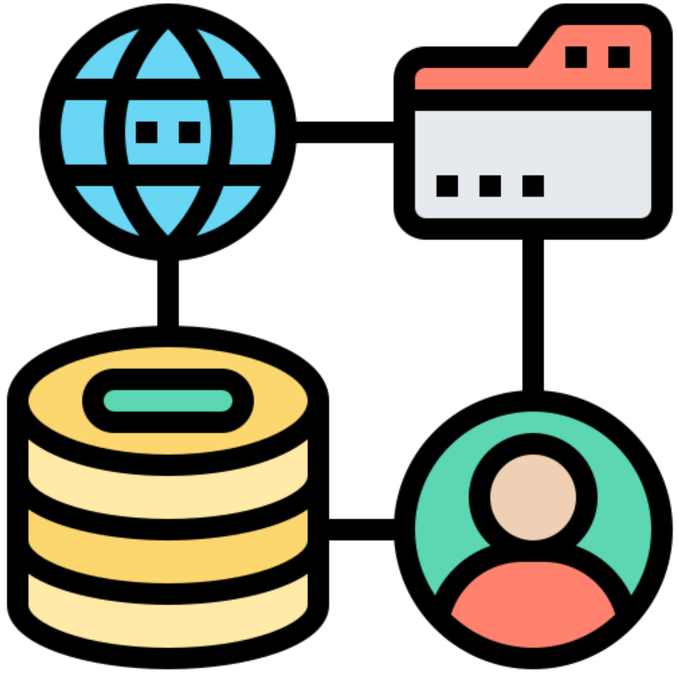


Should We Have Stopped Here?



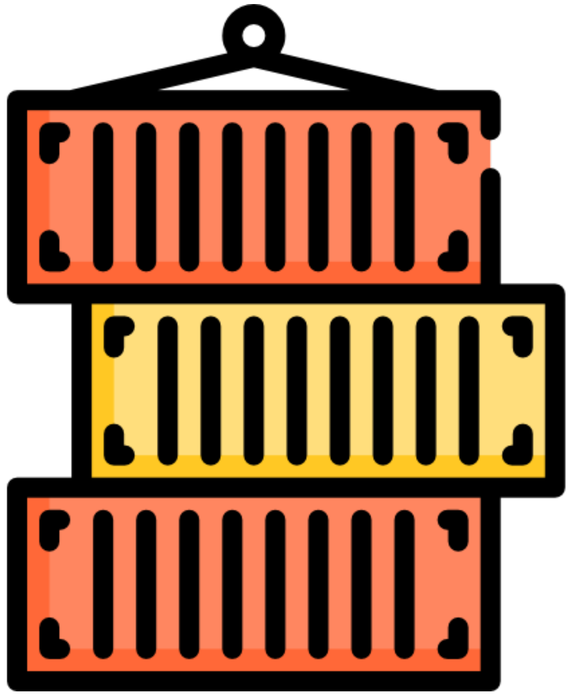


Why Didn’t We?



What Was Missing?

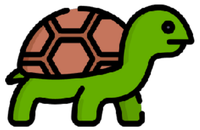
Where Did We Go?

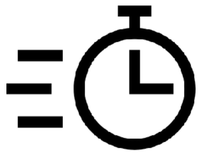


What Did We Gain?

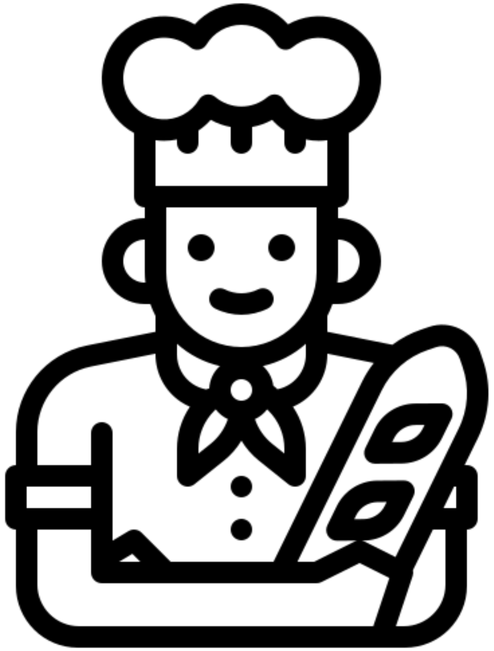
Who Benefits?

Did We Take It Too Far?

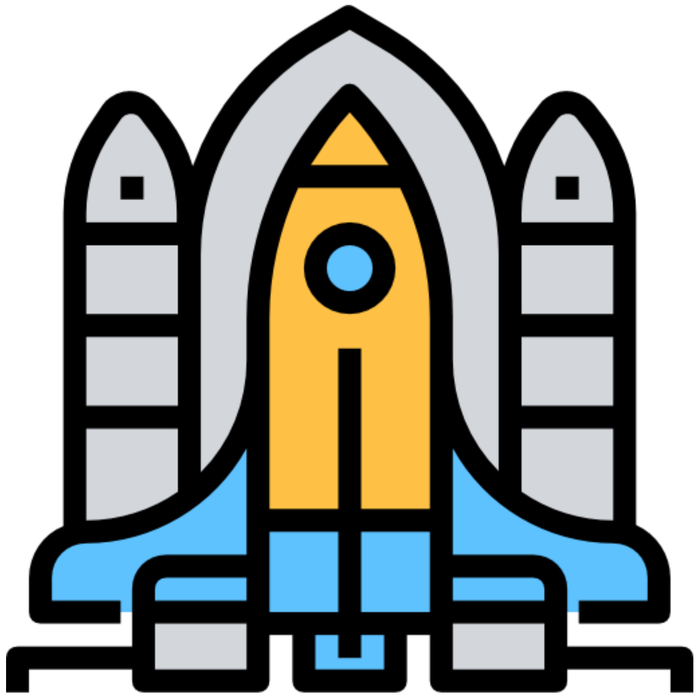


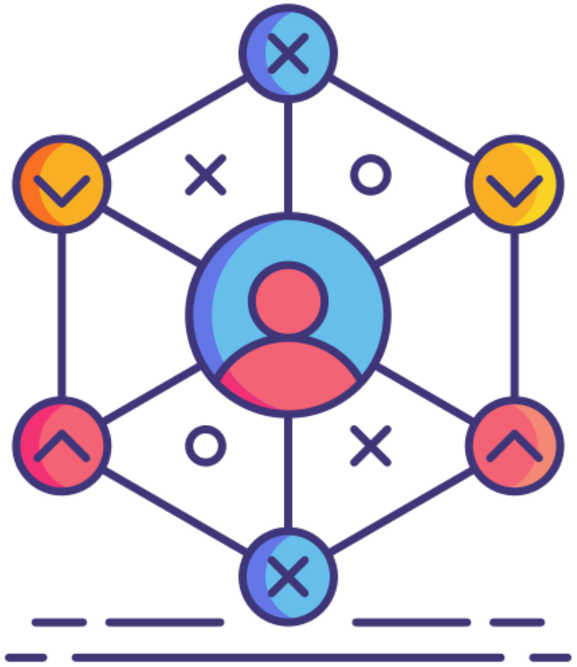


Are We All Relaxing?

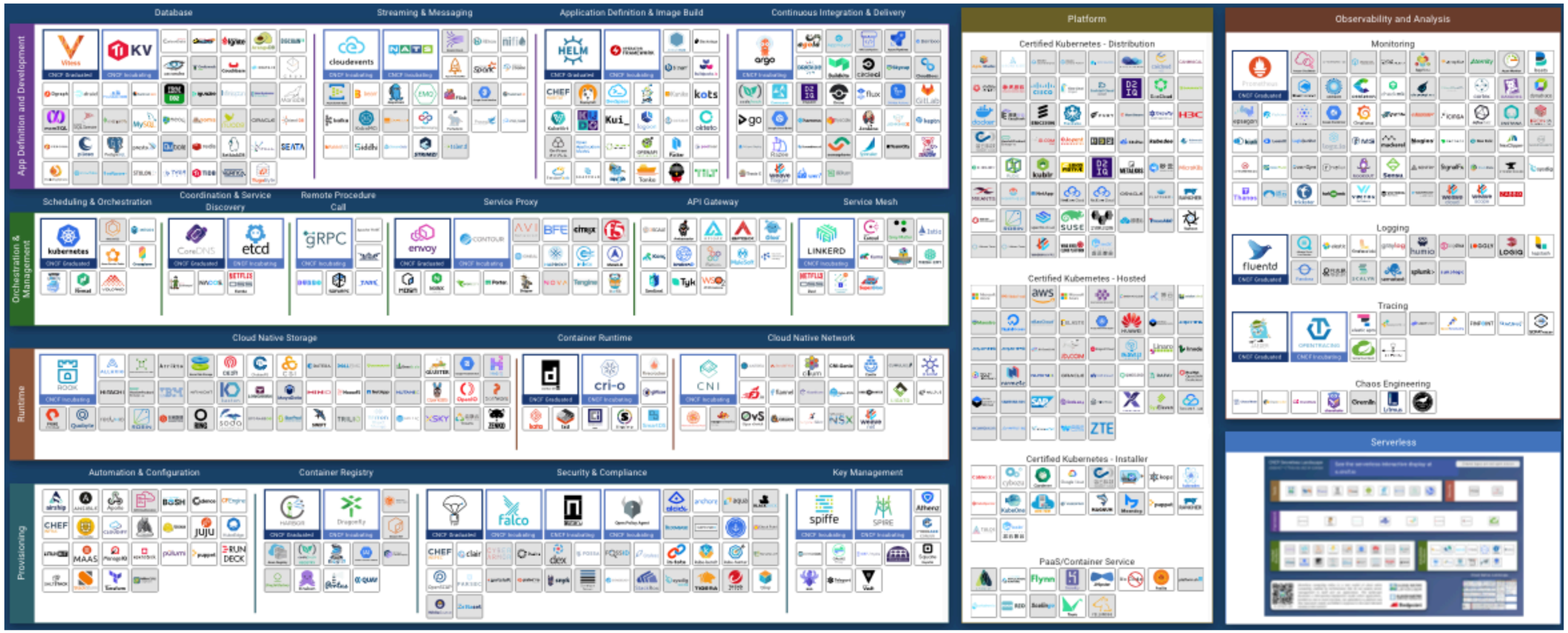


We Are Starship Captains





How Much Of It Do We Need?



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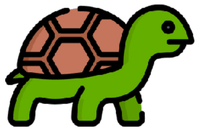
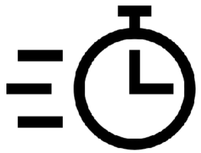
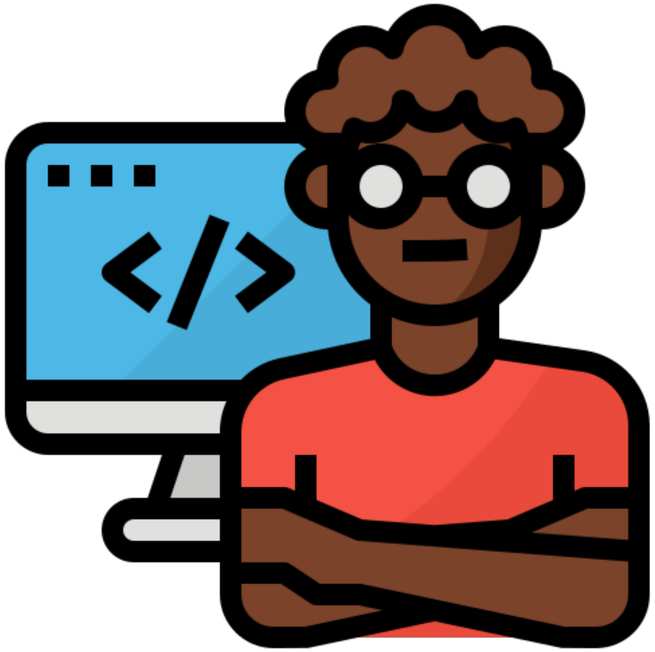
We Need Some Balance

What’s Going Wrong?

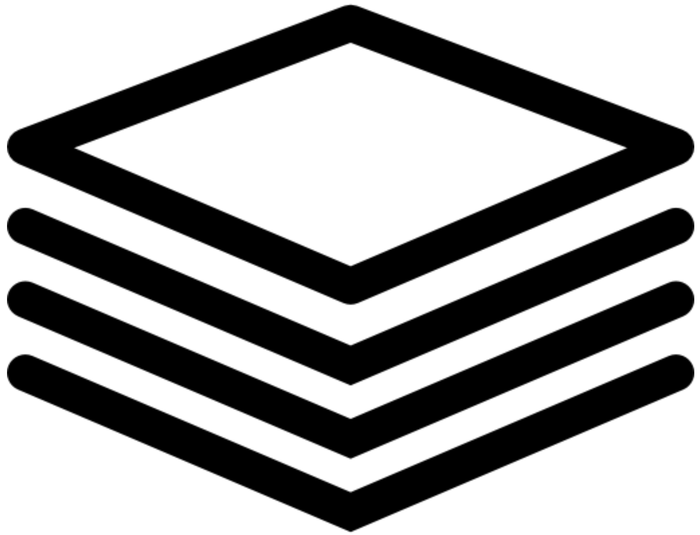




We Forgot About Our Customer



It’s Not Just APIs & YAML



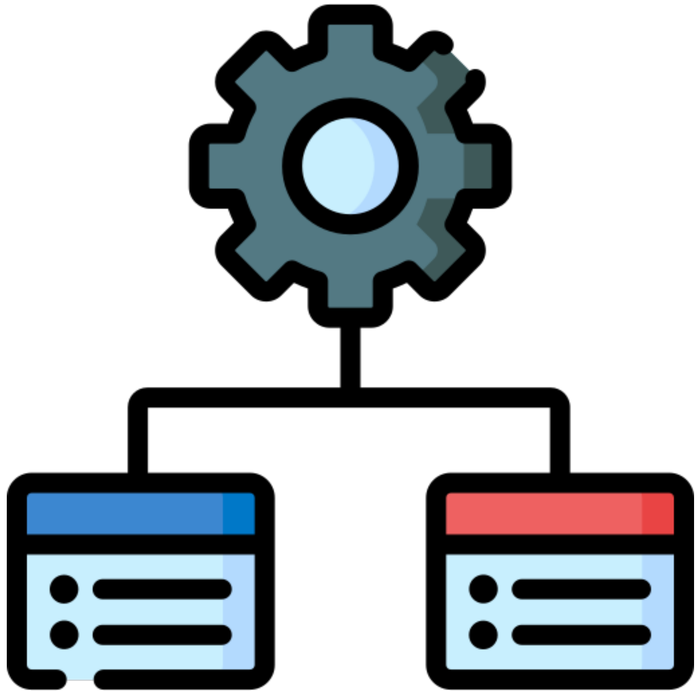
There Is A Real Computer Somewhere

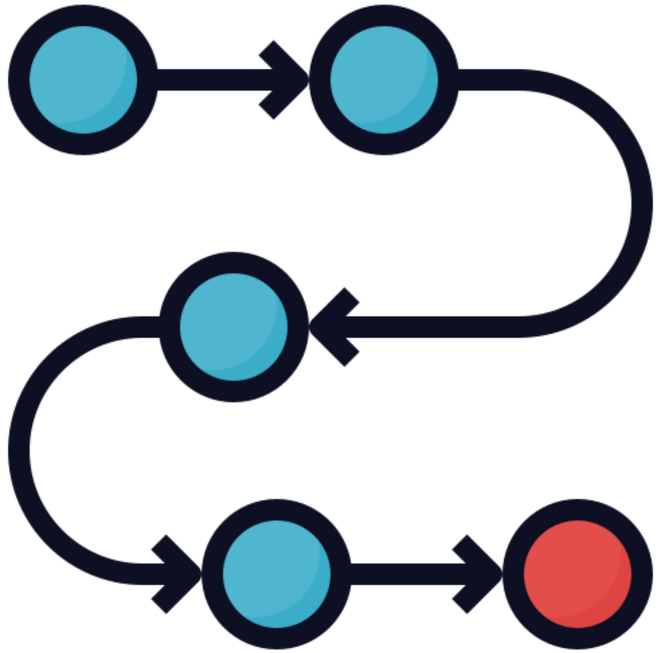
There is no cloud. It's just someone else's computer.

— ??

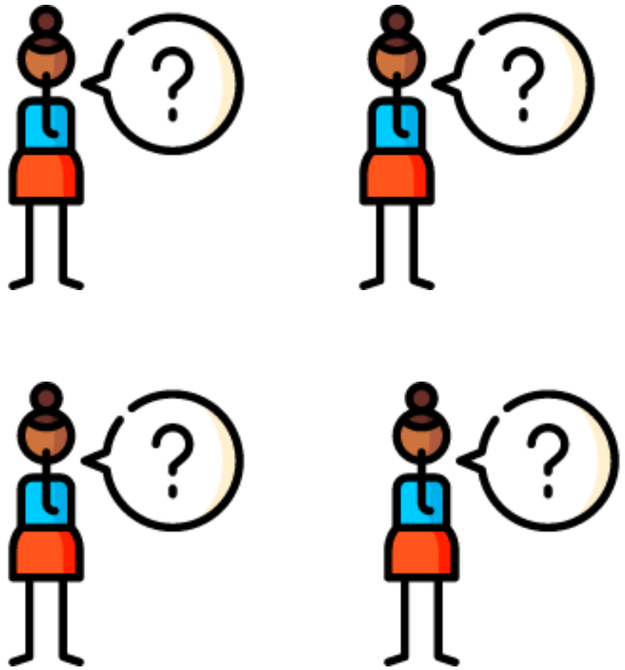
But I Configured It!

Silos Of Knowledge

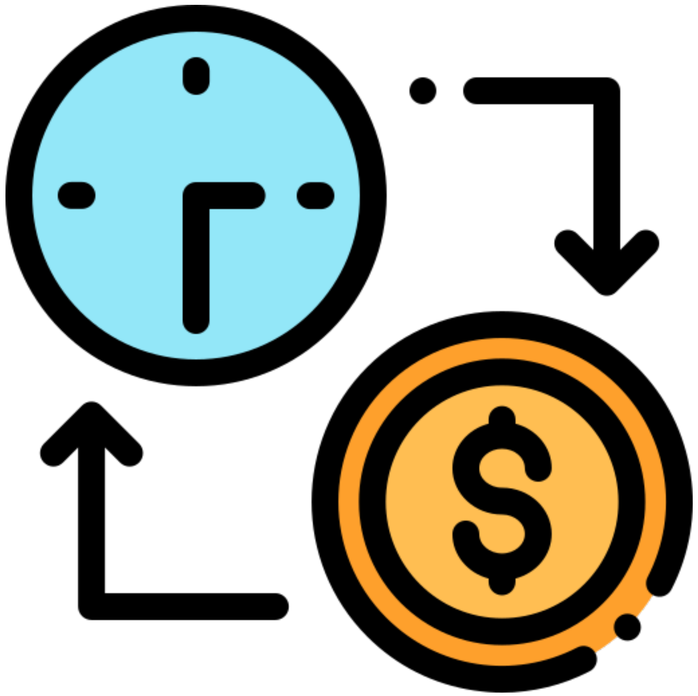




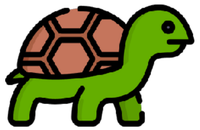
Difficult to Debug

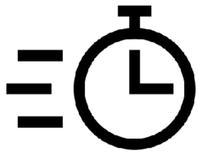


What Is The True Cost?

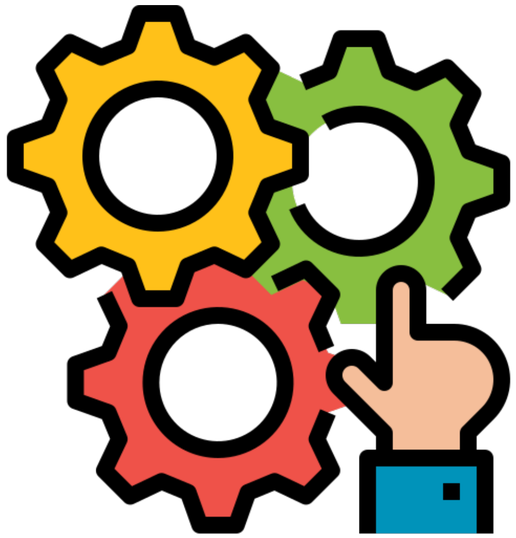


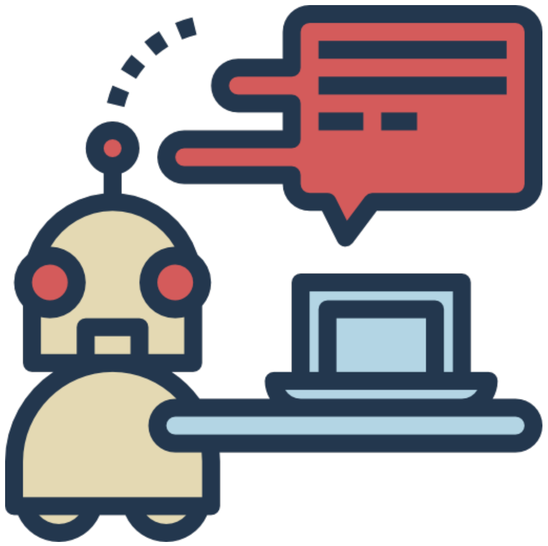
Where Do We Go From Here?



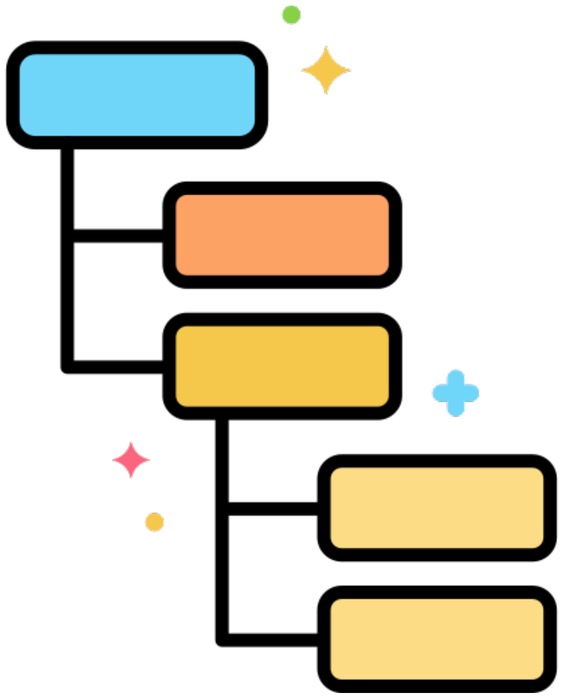


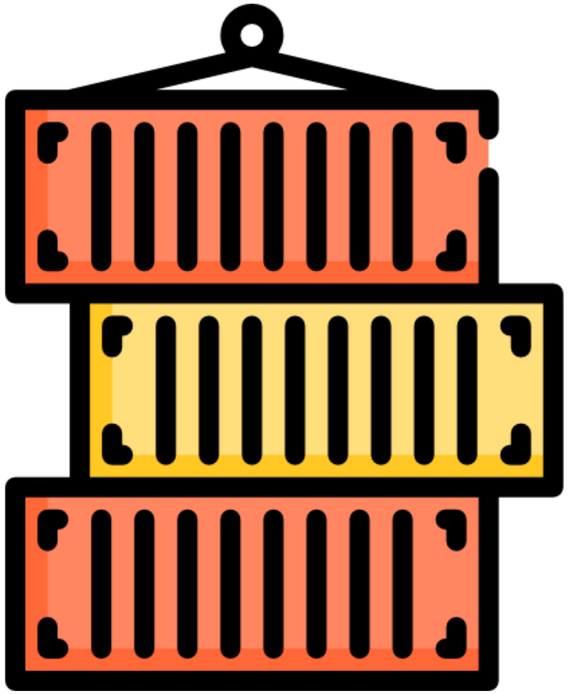
We Are Not Alone



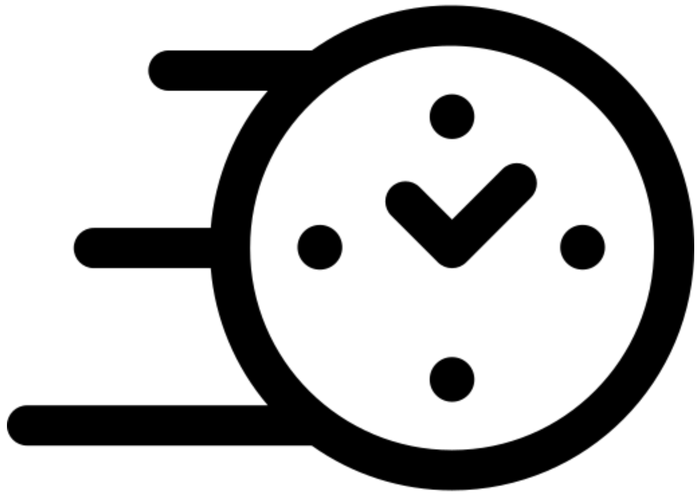


Dependency Management

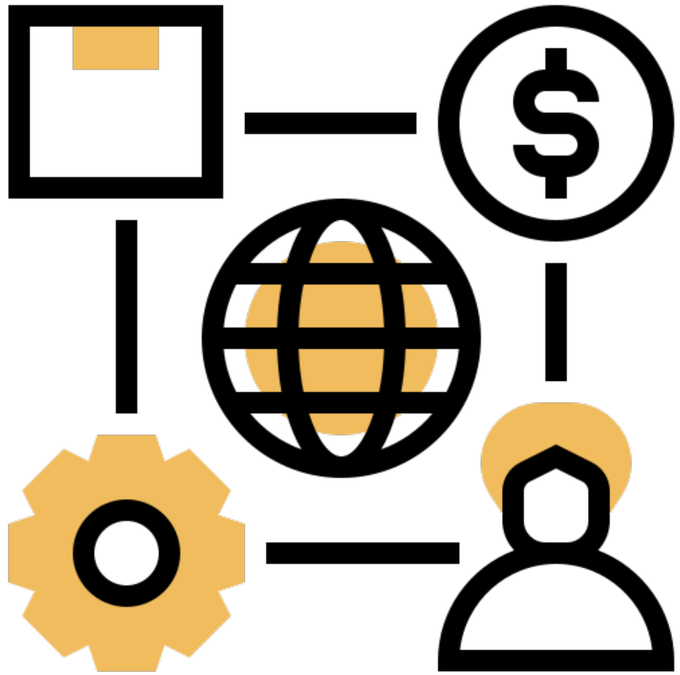


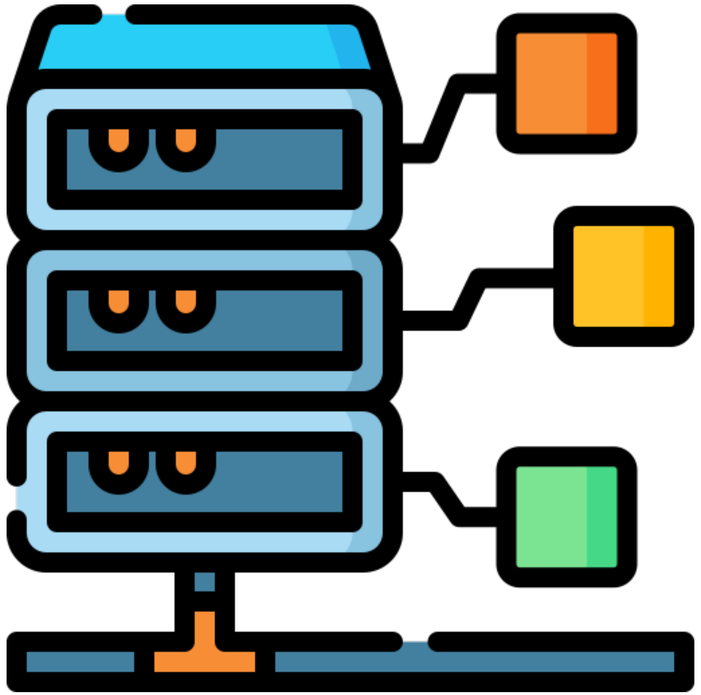


Fast Provisioning



Did You Add Value?





What Is Our Job?

Site reliability engineering (**SRE**) is a discipline that incorporates aspects of software engineering and applies them to infrastructure and operations problems. The main goals are to create scalable and highly reliable software systems. According to Ben Treynor, founder of Google's Site Reliability Team, SRE is "what happens when a software engineer is tasked with what used to be called operations."

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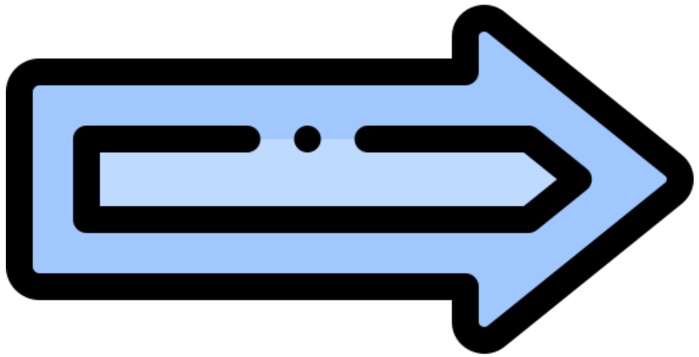
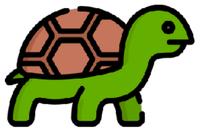
Guidance For Thing.Next





Thank You!

References

- Server Rack, Data Center
- Female Engineer, Male Engineer
- Xen Project Logo
- Icons made by Freepik from www.flaticon.com
- Icons made by ultimatearm from www.flaticon.com
- Icons made by Eucalyp from www.flaticon.com
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- CNCF Cloud Native Interactive Landscape
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