



WELCOME

Safe Software Deployments

MongoDB World 2022



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CTO, MongoDB

Agenda

Welcome / Intro

The 180 Rule

Z Deployments

The Goldilocks Gauge

Through the Looking Glass













43 years of nerd / data / systems background



- Developer
- Designer
- Executive
- DBA
- Founder
- General Manager
- Consumer CTO
- Board Advisor
- Board Member

- **Chief Technology Officer of MongoDB**

'84-'88		Caltech	
'88-'01	ORACLE®		Oracle Media Server
'11-'13	News Corp	BILL & MELINDA GATES foundation	
'13-'18	aws		AWS Database Migration Service 
'18-'20	Grab		  
'19-now	 MongoDB.		



The 180 Rule



THE 180 RULE

A failed software deployment should not live in Production for more than three minutes.

180 seconds to pull a 180° about-face



Stage 1
Deployment



60 seconds of hope...



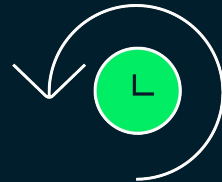
Stage 2
Monitoring



60 seconds of fear...



Stage 3
Roll Back



60 seconds of 😱

THE 180 RULE



Key Rules of the 180 Rule:

- No human may do anything except press the button to start a deployment
 - Including monitoring and pressing buttons to roll back
- Automate deployment end-to-end
 - Define metrics that allow the computers to quickly detect problems and verify fixes
 - You must create automation that fully initiates and rolls back a software deployment



Z Deployments

...because reliable rollbacks in Prod still
don't get the job done...

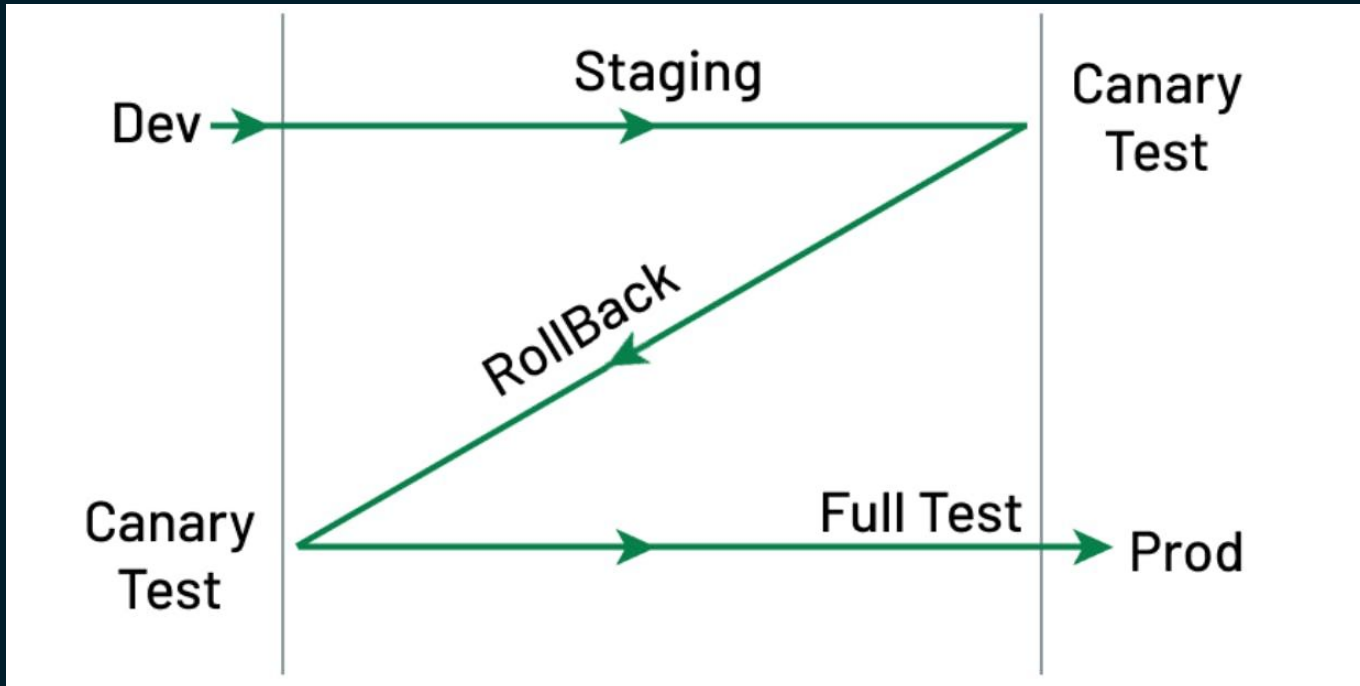


Z DEPLOYMENTS

Make rollbacks just as predictable and reliable as “roll forward” software deployments.

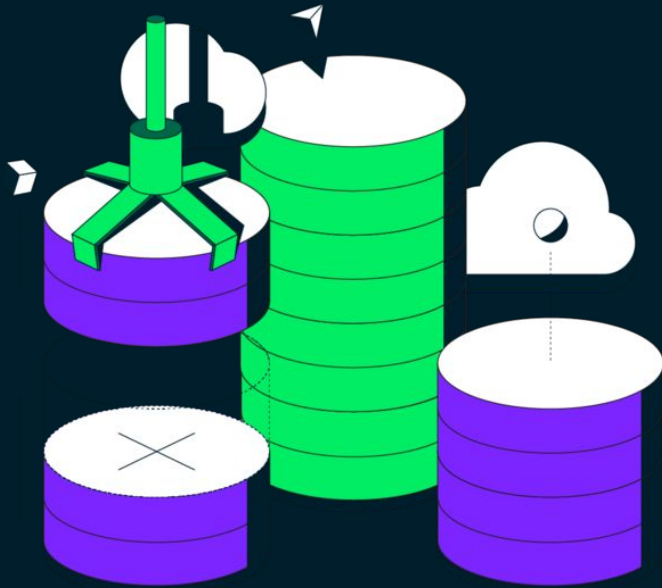


Rolling back with a Z Deployment





The Goldilocks Gauge

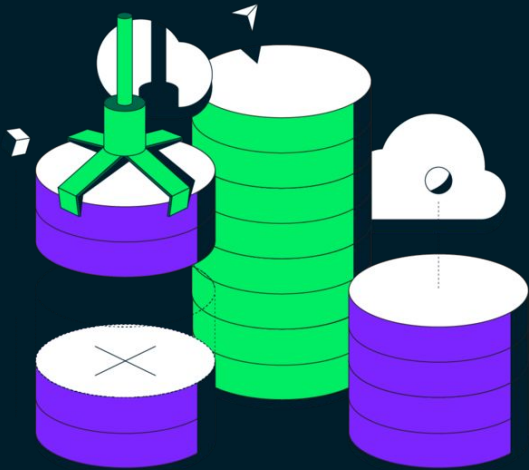


GOLDBLOCKS GAUGE

Finding the pace and size of deployment that is “just right”



GOLDBLOCKS GAUGE



What “just right” looks like:

- Dev team is in flow state, at top productivity levels
- Cognitive load is spent on producing business value
- The quantity of innovation is small enough to fit in your head, but large enough to deliver measurable value

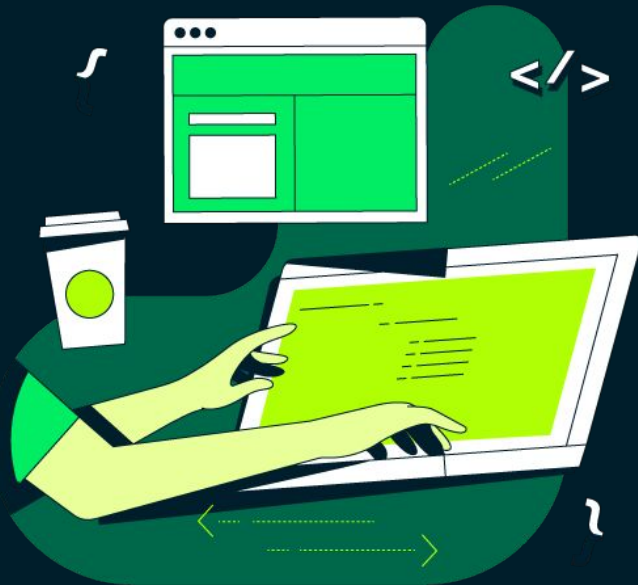


Through the Looking Glass



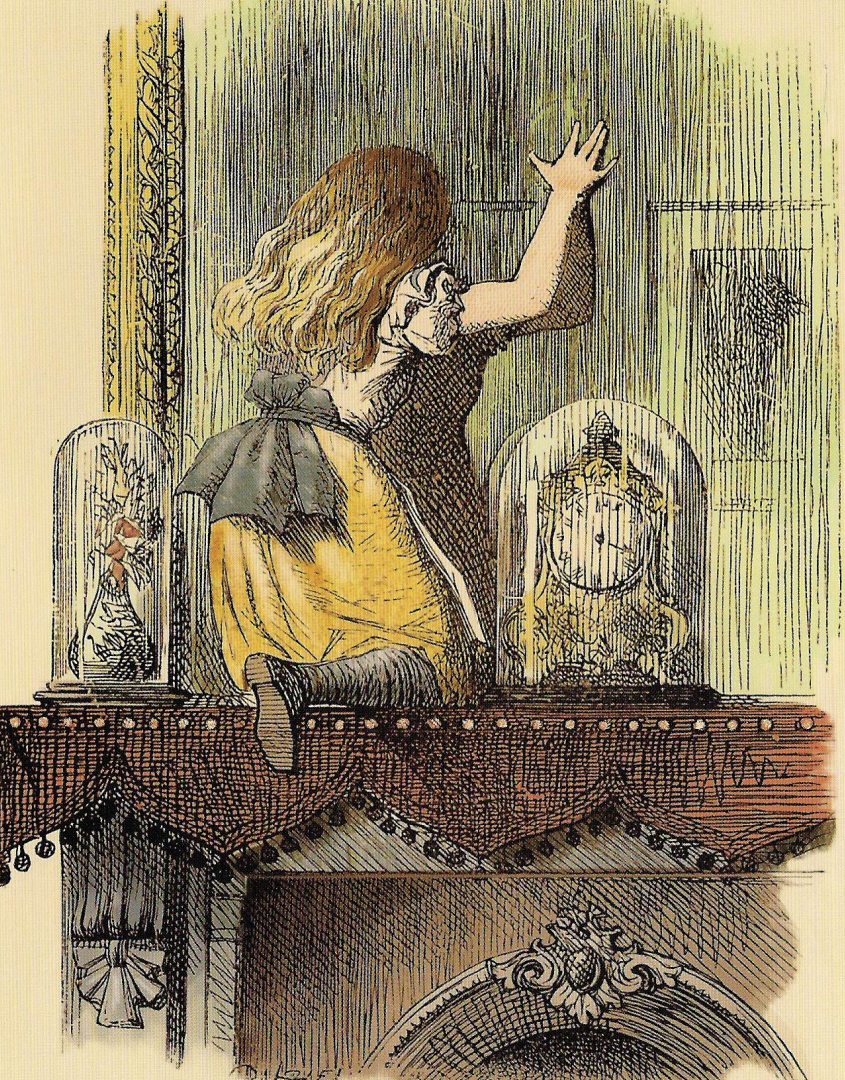
THROUGH THE
LOOKING GLASS

Many developers want
to think of Staging as a
“mirror” of Production...



THROUGH THE LOOKING GLASS

The mirror image is an illusion. Staging and Prod are distinct worlds that deviate more with every change.



Alice pushes
to Staging.





Here's
Staging...



...and here's
Production.



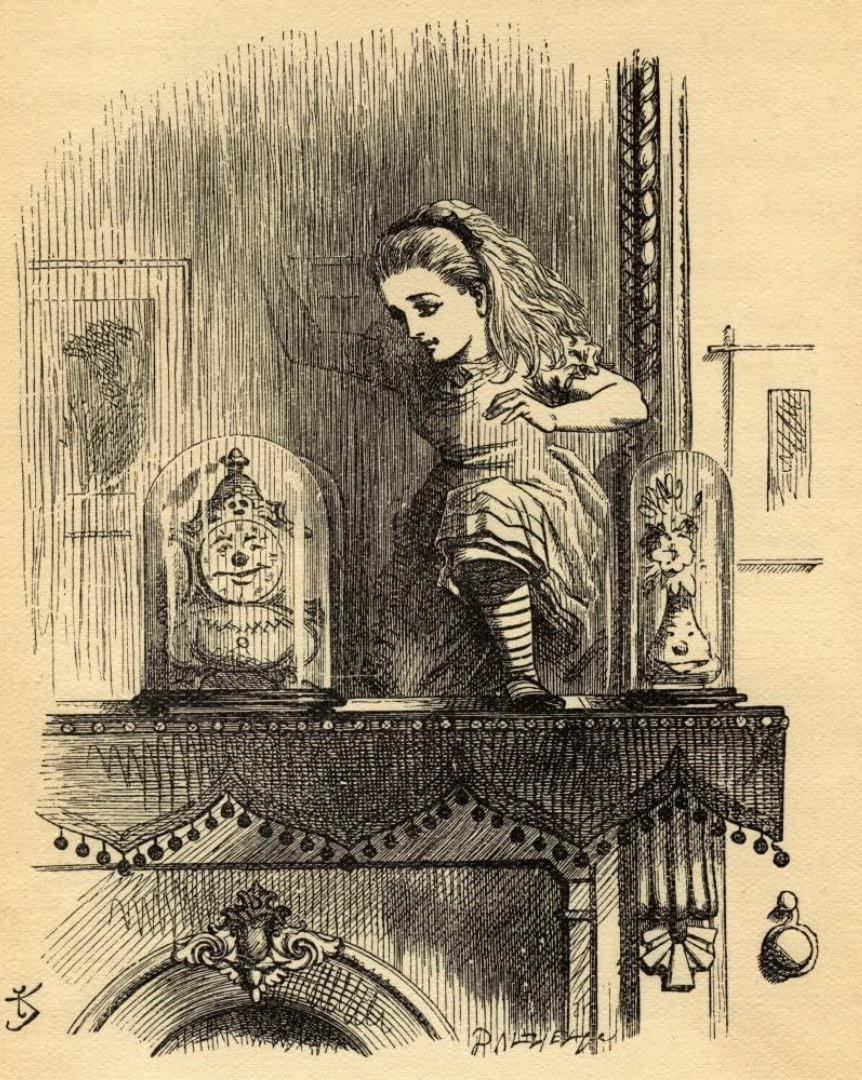


Things
didn't work
as Alice had
expected.



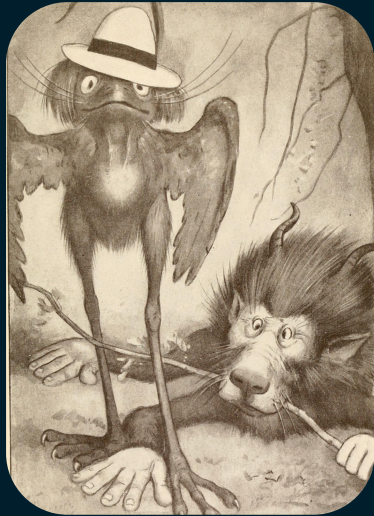


Alice rolls
back...



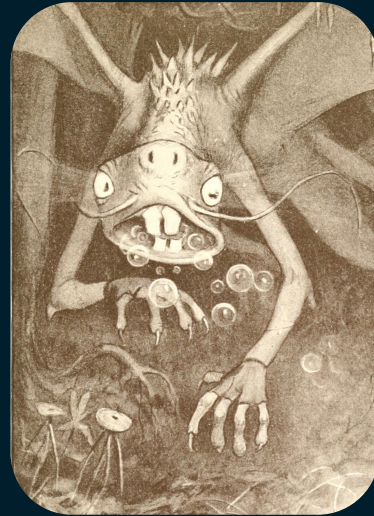


Staging



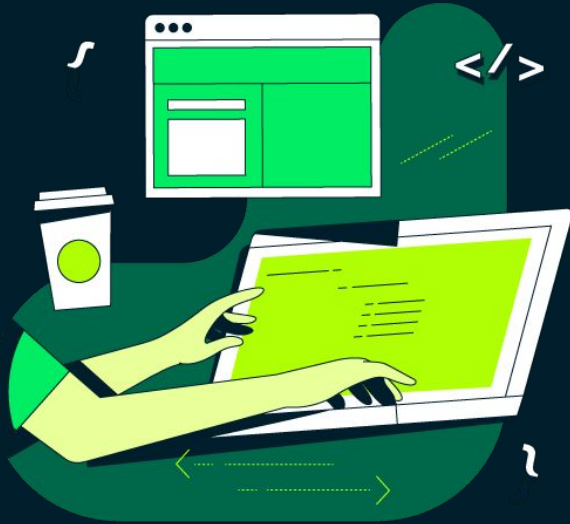
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Production



...and it never will be.

THROUGH THE LOOKING GLASS



Be Pragmatic

- Know your architecture, operational characteristics, and costs
- Focus on the risks and impact of potential events - and prioritize your testing accordingly
- Automate fast, reliable rollbacks of right-sized deployments
- Make your Staging environments disposable and recreatable



Thank you for
your time.



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