

Empowering Developers

With a Database DevOps Strategy



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What We'll Talk About

Defining the Terms

- ✓ Rise of DevOps
- ✓ Platform Engineering

Platform Engineering Challenges

- ✓ Measuring the Right Things
- ✓ Stateful Applications
- ✓ Postgres Example

Building a Strategy

- ✓ What Works?
- ✓ Common Pitfalls



Phil Vacca

Director & Global
Practice Leader,
@ Datavail



- ✓ 20+ years of Engineering and Operations team experience
- ✓ Past: Leading Platform Infrastructure teams
- ✓ Currently Global Practice Leader at Datavail for PostgreSQL services
- ✓ Extensive expertise in cloud environments

Connect or follow me on LinkedIn:



<https://www.linkedin.com/in/philmacca/>

Put the Postgres Pieces Together

Fill out your session evaluation form for a chance to win a LEGO set.



Datavail at a Glance

Delivering a superior approach to leveraging data through application of a tech-enabled global delivery model & deep specialization in databases, data management, and application services.



18⁺
Years

building and operating
mission critical data
and application systems



\$25^M
Invested

in IP that improves the
service experience and
drives efficiency



Global Team

1,300 Employees

staffed 24x7, resolving over
2,000,000 incidents per year



The Rise of DevOps

✓ Convergence of Developer Best Practices and Operational Needs

- Infrastructure-as-Code in Source Control
- CI/CD Pipelines
- Metrics, Monitoring, Observability

✓ Focused on Shipping Product

- Application code in containers
- Cloud hosted services

✓ Reduce Friction To Deploy Features

- Value Stream Mapping

✓ Eliminate Silos

✓ DevOps is a Philosophy, Not a Job



Platform Engineering Emerges

- ✓ From Philosophy to Results
- ✓ Answers the question: *How Do We Remove Friction For Developers?*
- ✓ Platform Teams are cross functional
- ✓ Focus on Developer Success Metrics
 - Time to release features and fixes
 - Time to deliver new infrastructure
- ✓ Goal is Developer Self-Service
 - Internal Developer Portal (IDP)
- ✓ Build Guardrails
 - Developers want to move fast
 - Don't let them make bad (deployment) choices

What About Stateful Data?

- ✓ Provisioning Databases for Developers Seems Easy
- ✓ Sizing and Tuning them for Production is Hard
 - RDBMS is traditionally vertical scaled
 - Traditional data stores do not auto-scale gracefully
 - *Serverless* is a misnomer, and can be expensive
 - Data replicas can increase spend substantially
 - Replica queries can feedback to the Primary
- ✓ Deployment Challenges
 - Schema Changes Block
 - Settings Changes Can Require Restart

The Postgres Example

✓ Configuration and OS Parameters

- Abstract your configuration files
- Let the Postgres project handle specifics and defaults

✓ Deploy to the Secondary first. . .

- Except many settings must match the Primary
- max worker processes, shared buffers, etc.

✓ ALTER SYSTEM / configuration drift

- You can't disable ALTER SYSTEM, you can only limit access

What Works

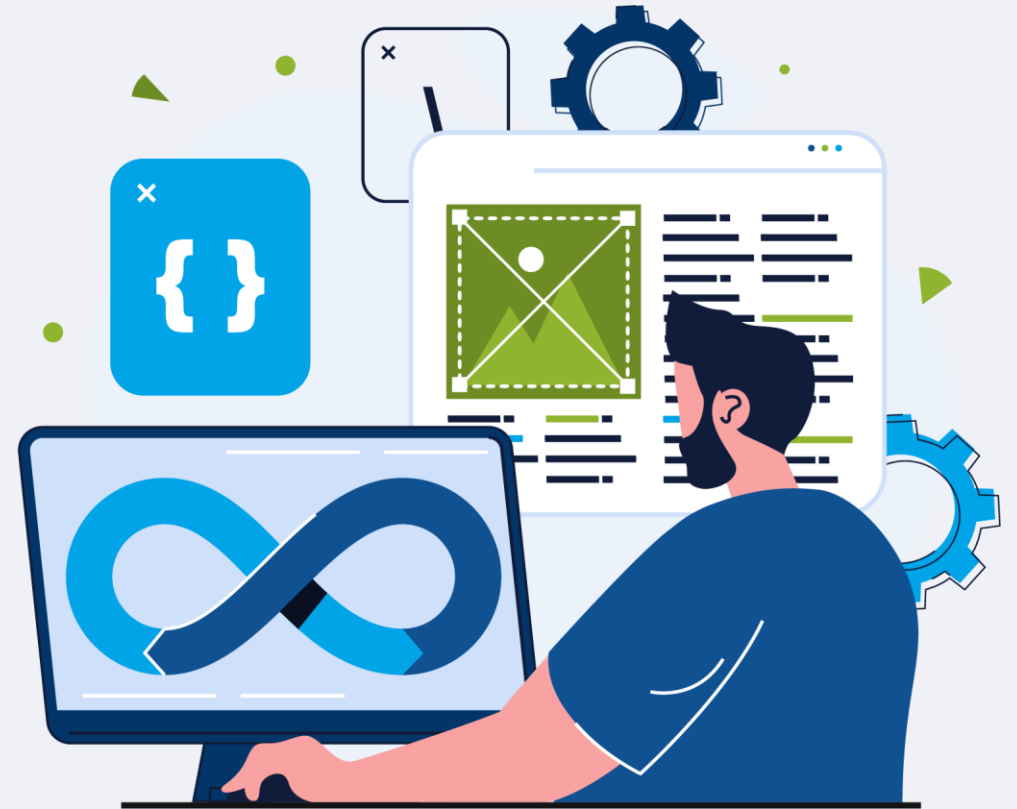
- ✓ Organizational Buy-In
 - Find an executive champion
- ✓ Have Success Metrics
 - And check them regularly
- ✓ Iterative Approach
 - Improve existing pipelines
- ✓ Focus On Automating Happy Path
 - Add clear warnings when something strays
 - Automate the boilerplate – ticket creation, pull requests, etc.
- ✓ Keep Talking to Your Developers
 - Build a feedback loop
- ✓ Build Guardrails
 - Watch your spend
 - Review new infrastructure / build infra dashboards

Common Pitfalls

- ✓ Focusing on Tools (Over Metrics)
 - A Software Catalog is what we need!
 - A Developer Platform is what we need!
- ✓ Trying to Solve All the Problems
- ✓ Inventing New Communication Patterns
- ✓ Overloading The Team
 - What is the mission of the Platform Engineering Team?
- ✓ Not Knowing the Options When You Provide A Template
 - Limit the options / avoid *all things to all people*

Conclusions

- ✓ DevOps is everywhere
- ✓ Platform Teams Exist to Serve Developer Needs
- ✓ Building Self-Service is Hard
- ✓ Short Feedback Loops Are Essential
- ✓ Self-Service is *Even Harder* When Stateful Applications Are Involved
- ✓ Build Guardrails



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Thank You



datavail.com

info@datavail.com

866-811-6764

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