



DevOps 101 for DBAs and Database Developers

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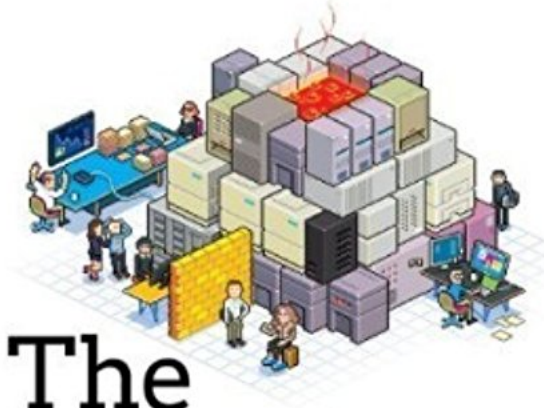
Agenda

- What is DevOps?
- Why DevOps?
- DevOps Definitions
- I'm a DBA/Database Developer – What's in this for me?
- Tools for Database DevOps
- Q & A



What is DevOps

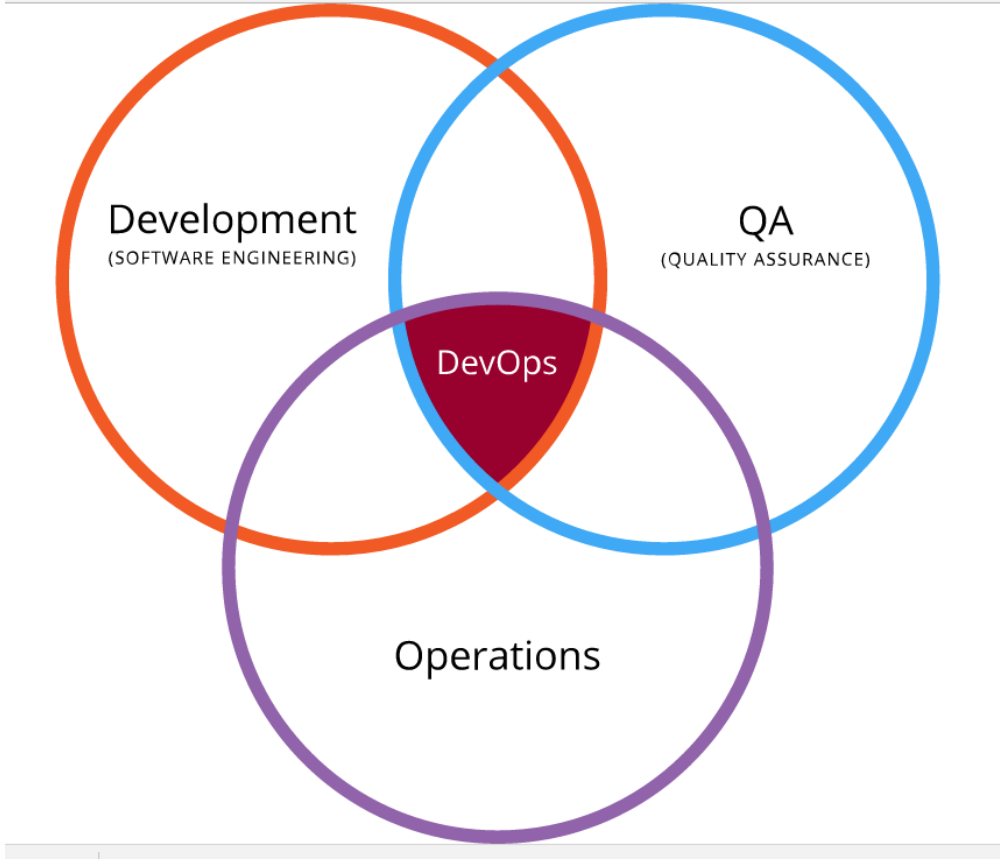
From the authors of *The Visible Ops Handbook*



The Phoenix Project

A Novel About IT, DevOps,
and Helping Your Business Win

Gene Kim, Kevin Behr, and George Spafford



Three Ways of DevOps – Gene Kim - 2012

- System Thinking
 - Break down silos
- Feedback Loops
 - Get closer to your customer
- Culture of Experimentation and Learning
 - You can't hit if you don't swing

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Why DevOps

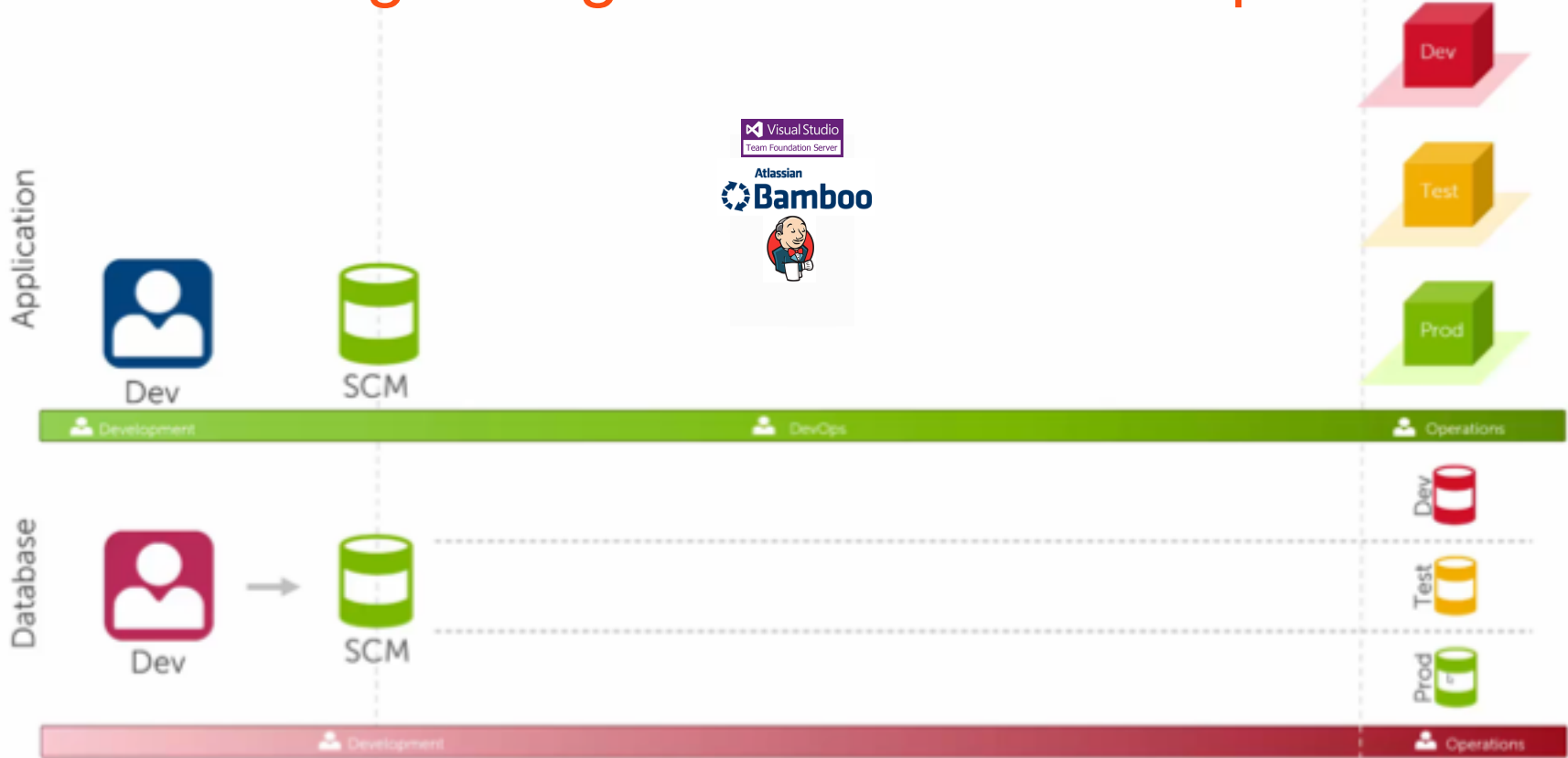
DevOps Increases

- Innovation speed
 - Shorter development cycles
 - Continuous Delivery
- Communication and Collaboration
 - Team Performance
 - Continuous Integration
- Efficiency
 - Scalable Infrastructure

DevOps Decreases

- Development time
 - Shorter cycles
- Failures
 - Deployment
 - Time to recover
- Costs
 - Less IT Staff
 - Less Overhead

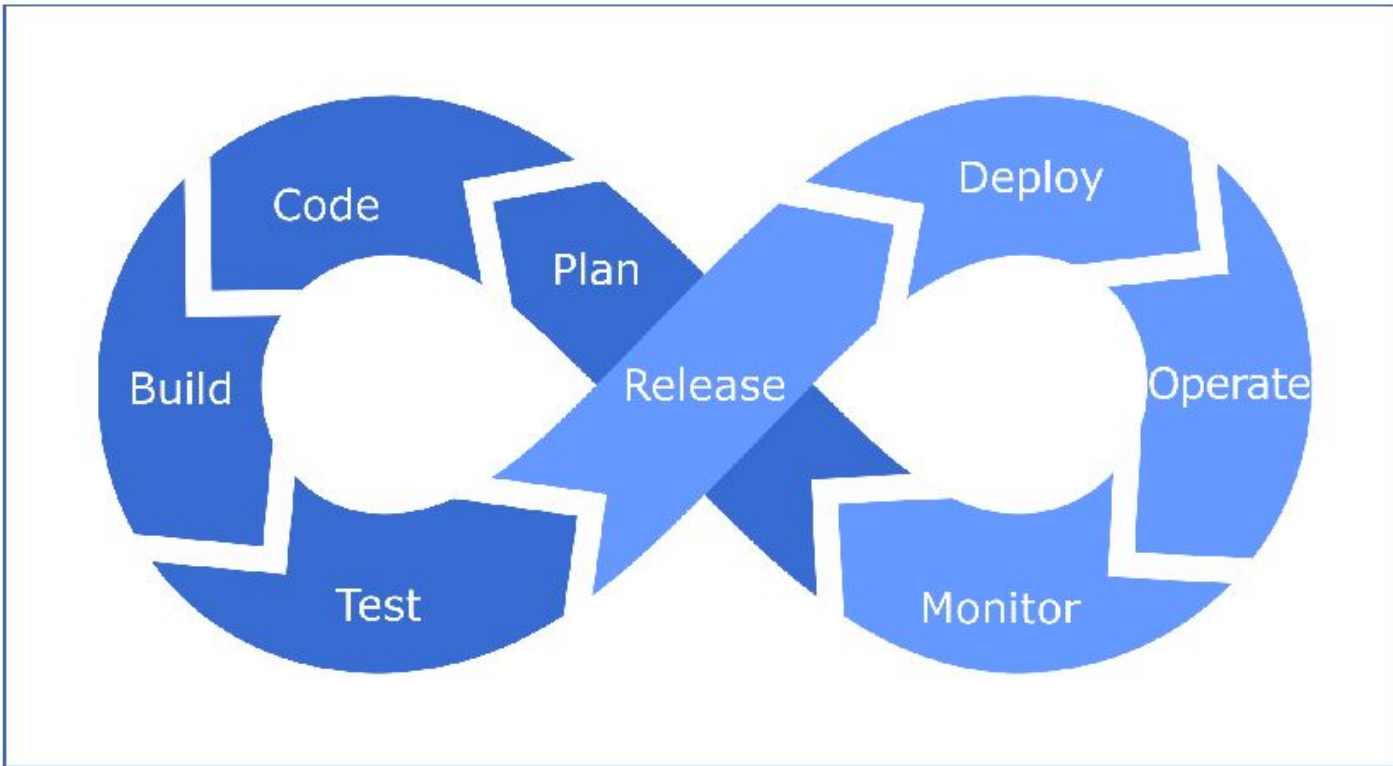
The Challenge of Agile Database Development



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DevOps Definitions

The DevOps “Figure 8”



ITPedia

Test Driven Development

- AKA Design Driven
- Write tests first!
- Designers write tests
- Iterative
 - Design
 - Write tests
 - Code
 - Test
 - Repeat

Regression Testing

- Testing to be sure new features don't break
- Supports Continuous Integration and Continuous Delivery
- Must be automated
- Must be designed
- Must be deliberate
- Don't just test "old bugs"

Microservices

- Wiki – A variant of Service Oriented Architecture
 - Small
 - Single Function
 - Built to facilitate automated testing
 - Elastic
 - Composable
 - Complete

Continuous Integration

- AWS – Developers merge their code changes into a central repository
 - Automated
 - Tested
 - Pass/Fail
 - If pass, ready for Continuous Delivery

Continuous Delivery

- AWS – Automatic build, test and prepare for production
 - Automated
 - Repeatable
 - Pass/Fail
 - PREPARE for production
 - Part of a pipeline

(Build) Automation

- Automatic Tasks
 - Optimization at the task level
- Build Automation
 - Check out code
 - Compile Code
 - Execute Tests
 - Summarize Results

(Release) Orchestration

- Orchestration vs Automation
 - Automation – Tasks
 - Orchestration – Processes
 - Enables Process Optimization
 - WorkFlows can be Orchestrated
- Release Orchestration
 - Use of tools to manage releases
 - Essential for Continuous Integration/Continuous Delivery

Provisioning

- Preparing <something>
 - Usually Servers
 - Might be networks or switches
 - Virtual
- Not to be confused with Configuration
 - Provisioning does NOT make ready for a specific use
 - Configuration is the next step
 - Addresses

Configuration Management

- NetApp – Automated methods to maintain software and systems in a known state
- Manages changes
 - But more than just change management
- Most often applied to software
 - Build the same thing twice
 - Automated versioning
 - Difference reporting
 - Automation is the key

Canary Release

- AKA Phased Rollout
- Deploy to subset of users
- Allows for capacity evaluation
- Quick Go/No Go
- Easy rollback
- Planning is key
 - Don't lose data with rollback
 - Consistent functionality

Dark Release

- Like Canary Release
- Shhhh – Don't tell anyone
- USUALLY deploy to subset of users
- Planning is still key
 - Don't lose data with rollback
 - Consistent functionality

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I'm a DBA – What's
in it for me?

What If You Could...



Monitor and identify performance issues throughout your DevOps pipeline?



Develop and deploy higher quality database changes faster, together with application changes, without making compromises?



Automatically replicate production changes in near real-time to other database environments?

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Tools for Database DevOps

Achieving Continuous Database Operations with Quest's Database Solutions

Foglight

Foglight[®]

Toad for
Oracle

Toad[®]
for Oracle 

Toad DevOps
Toolkit



SharePlex

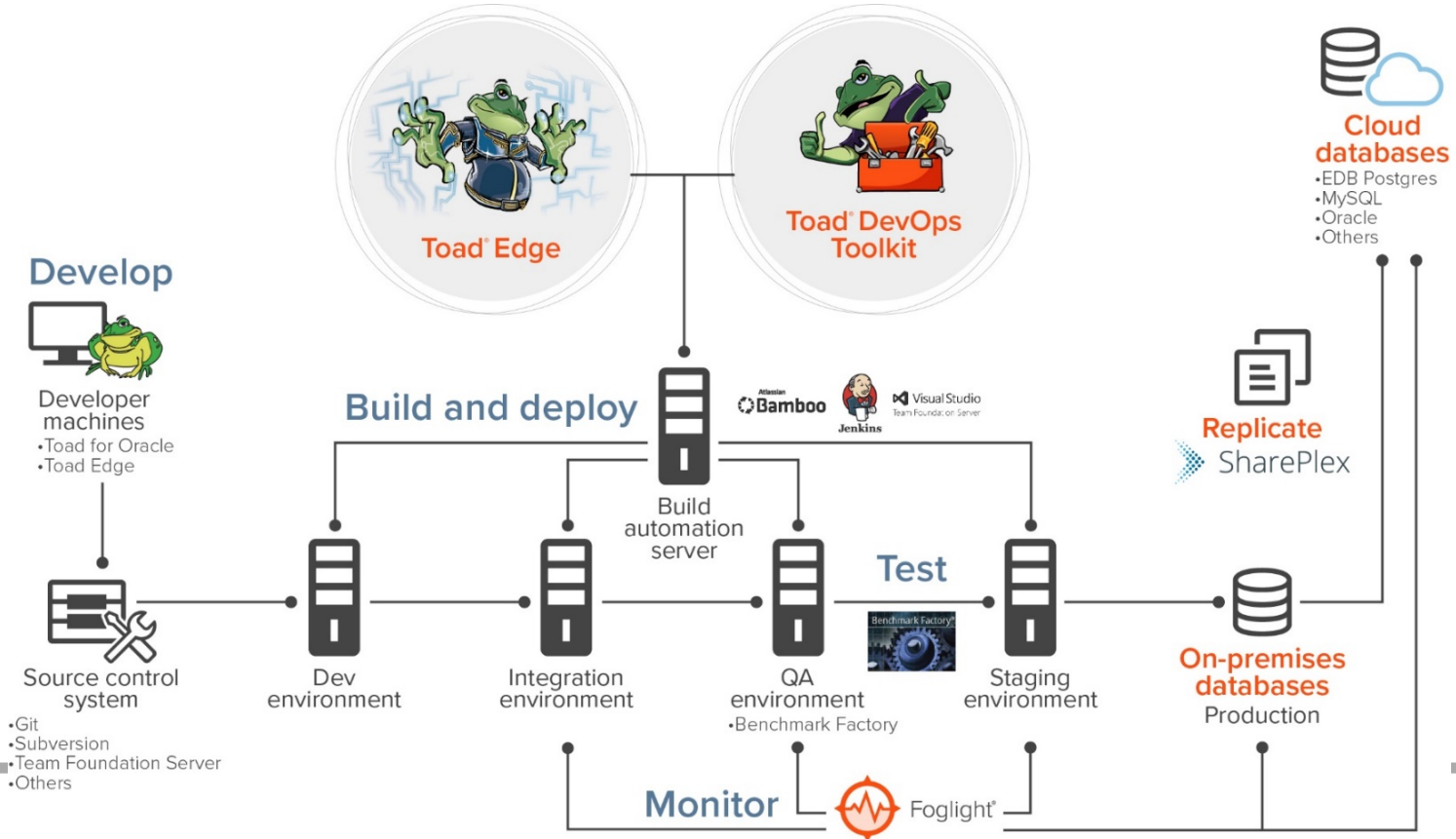


SharePlex[®]

Toad Data
Point

Toad[®]
Data Point 

Quest's DevOps Infrastructure Solution



Questions?



Quest[®]

Resources

- Quest website (quest.com/products/toad-for-oracle)
 - On-demand webcasts ([Cloud](#), [IDC](#))
 - Toad Agile Cookbook (3-part series)
 - [Database DevOps Solutions](#)
- Toad World Community (community.toadworld.com/products/toad-for-oracle)
 - Featured videos
 - Evaluation resources
- Support website (support.quest.com/toad-for-oracle)
 - Knowledge Base
 - Video tutorials and free training courses
 - Technical documentation



Thank you

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