

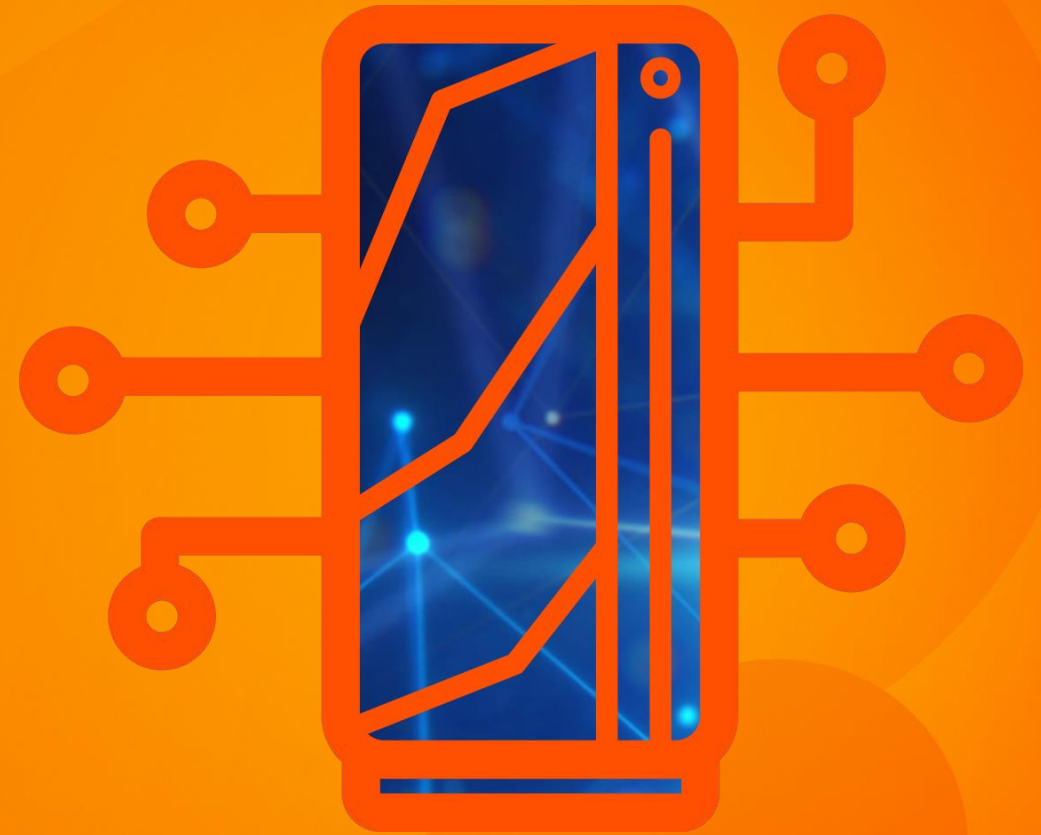
Midwest Db2 User Group

Unified DevOps Toolchains

Steve Solomon

Lead Product Manager – Db2

March 8, 2022



Please use the Questions/Chat

Let's be interactive and have some fun.

Have you ever used one of my former or current products?

Please post the name of the product in the Questions/Chat....



Please share the product name in the chat

Serena Software /Micro Focus

- ChangeMan ZMF
- ChangeMan M+R
- ChangeMan ZDD
- ChangeMan SSM
- StarTool FDM

CA Technologies /Broadcom

- CA Easytrieve
- CA Harvest SCM
- CA Panvalet
- CA Librarian
- CA Gen
- CA 2E or CA Plex
- CA Telon

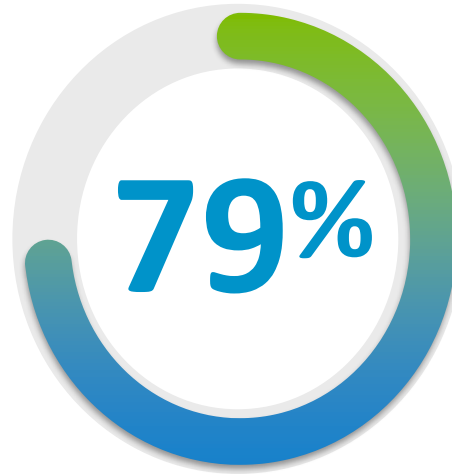
BMC Software

- BMC AMI Catalog Manager for Db2
- BMC AMI Change Manager for Db2
- BMC AMI Apptune for Db2
- BMC SQL Explorer for Db2
- BMC AMI Command Center for Db2
- BMC AMI DevOps for Db2
- BMC AMI SQL Assurance for Db2
- BMC DASD Manager for DB2
- BMC Opertune for DB2

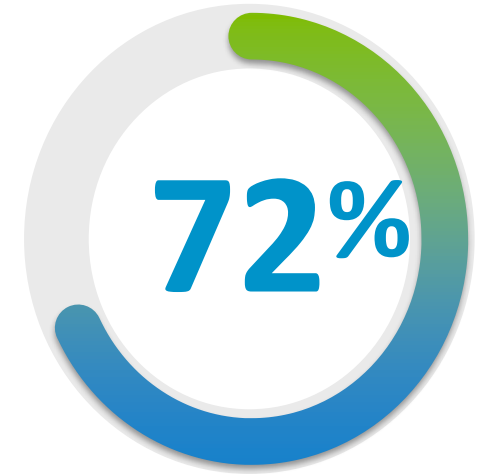
BMC 2021 Mainframe Survey – 22 SEP 2021



92% of respondents see the mainframe long-term platform for growth



79% of companies that adopt DevOps see ROI in one year or less



72% of extra-large shops have more than 50% of their data on the mainframe

The mainframe isn't going anywhere, and the 16th Annual Mainframe Survey of more than 1,000 respondents found that enterprises are leaning into ways to adapt, automate, and secure the platform to succeed in today's economy.

2021 BMC Mainframe Survey

Mainframe Database Growth

59% have reported an increased rate of database object change

2020: 53%

51% have reported an increased rate of application change

2020: 44%

53% report that the number of databases in their mainframe environment has increased in the past year

2020: 44%

Link: www.bmc.com/info/mainframe-survey.html



71%

report being asked to reduce scheduled maintenance outages

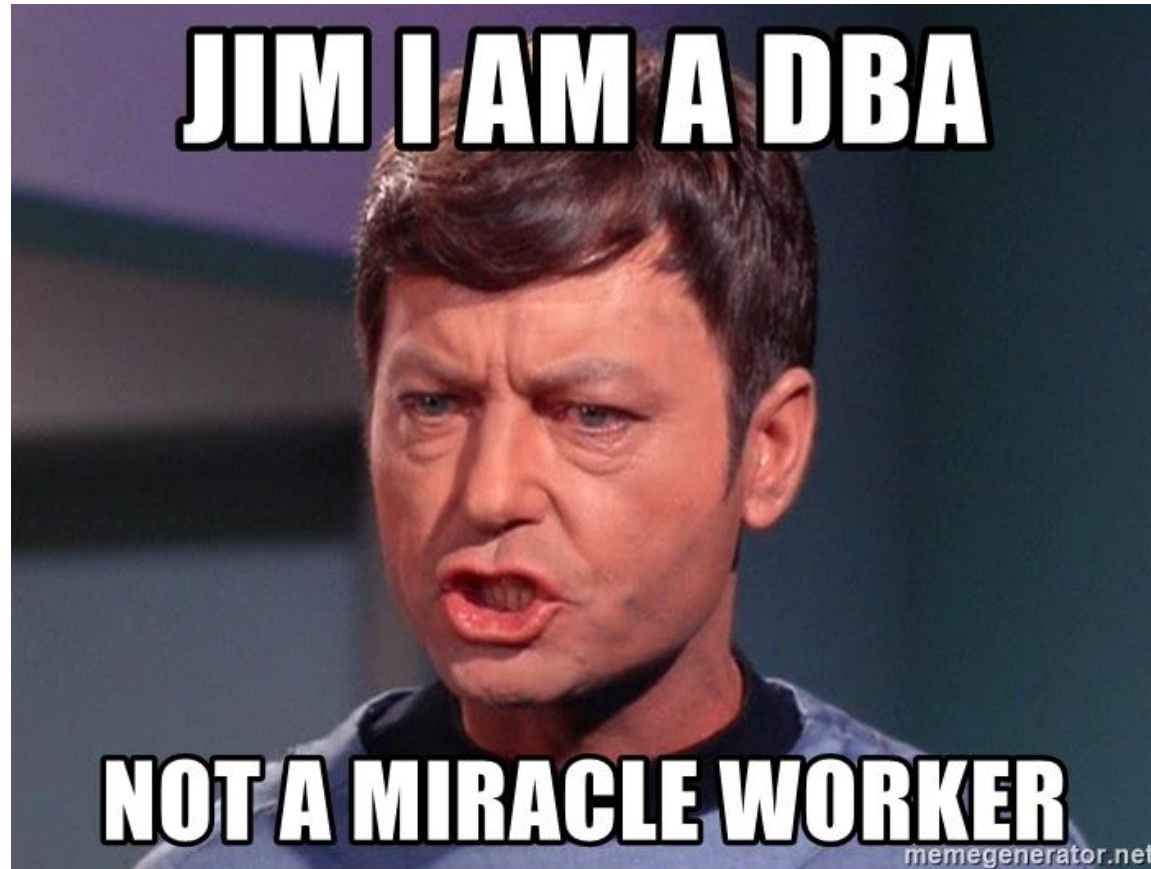
Change Windows are Shrinking



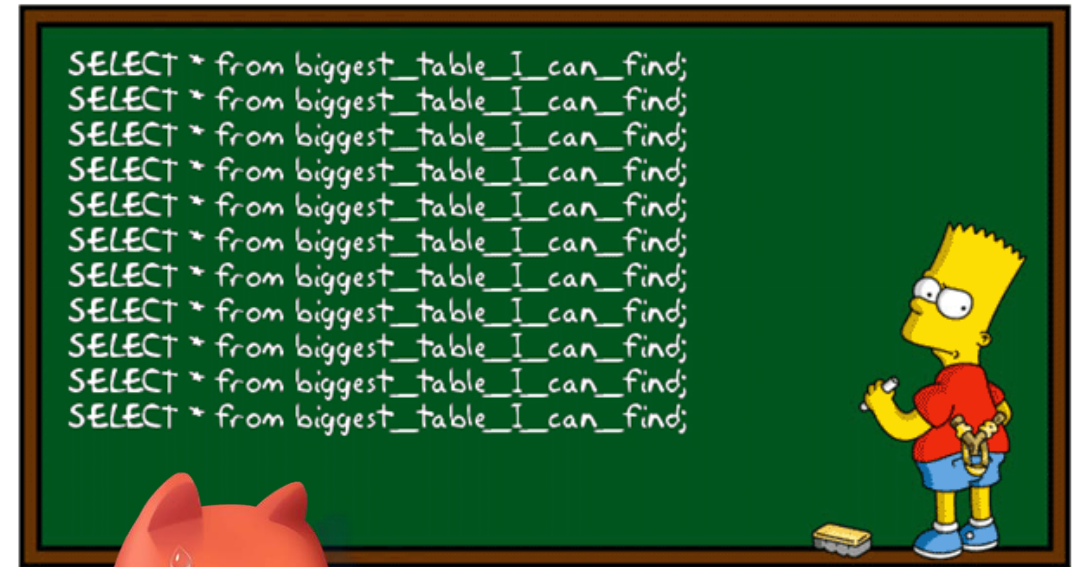
Data recovery has grown as a mainframe priority

from **39 percent** in 2019 to **46 percent** in 2020

But are you adding DBAs?



Dr. Leonard McCoy, Circa 1967



SELECT * FROM TABLE

1. Unnecessary I/O
2. Increased Network traffic
3. More Application memory
4. Depends on Column Order
5. Fragile Views
6. Conflict in JOIN Query
7. Risky while copying data

Mainstream the Mainframe

Enabling DevOps Across the Enterprise



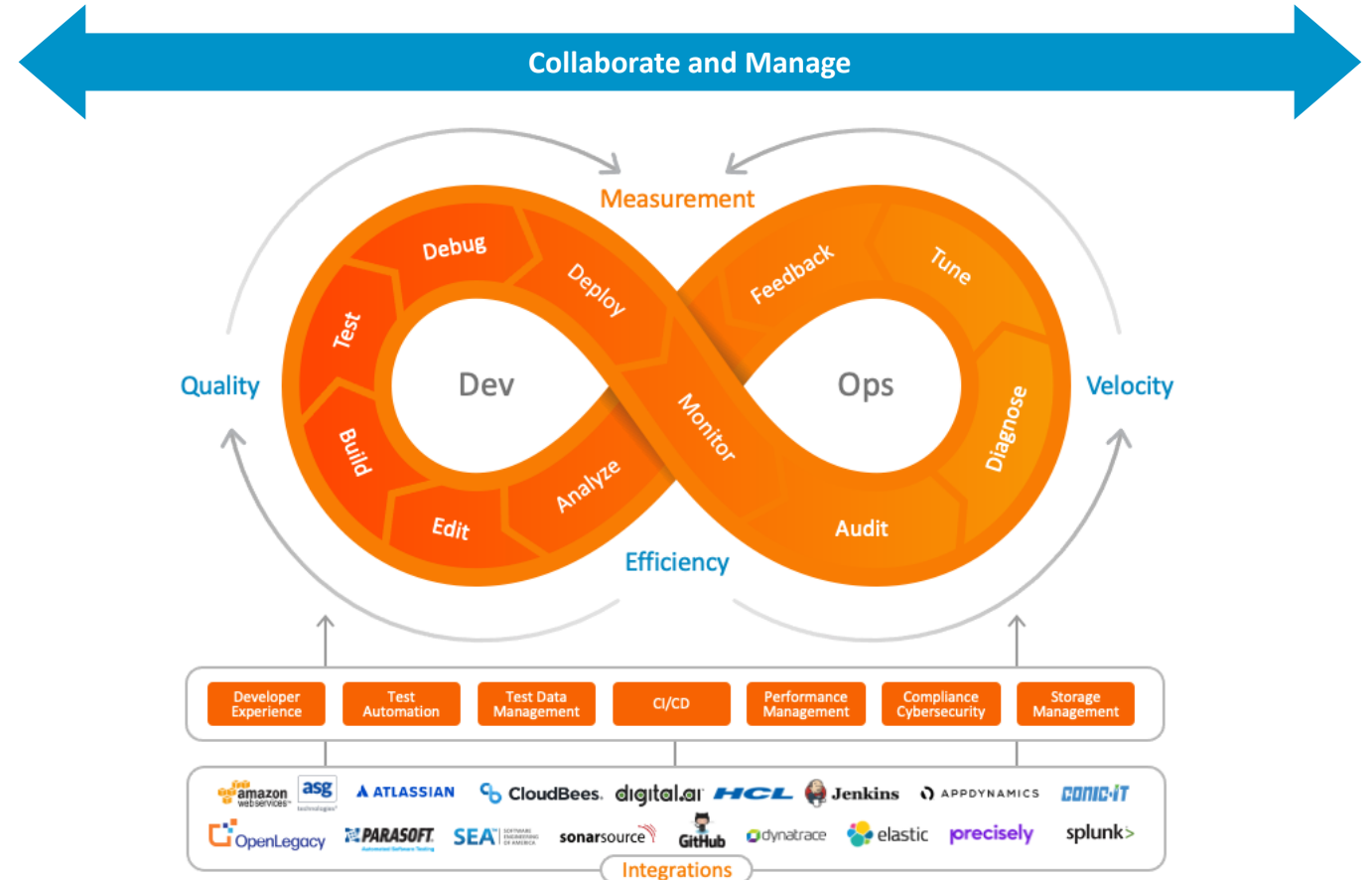
Automate



Integrate



Measure

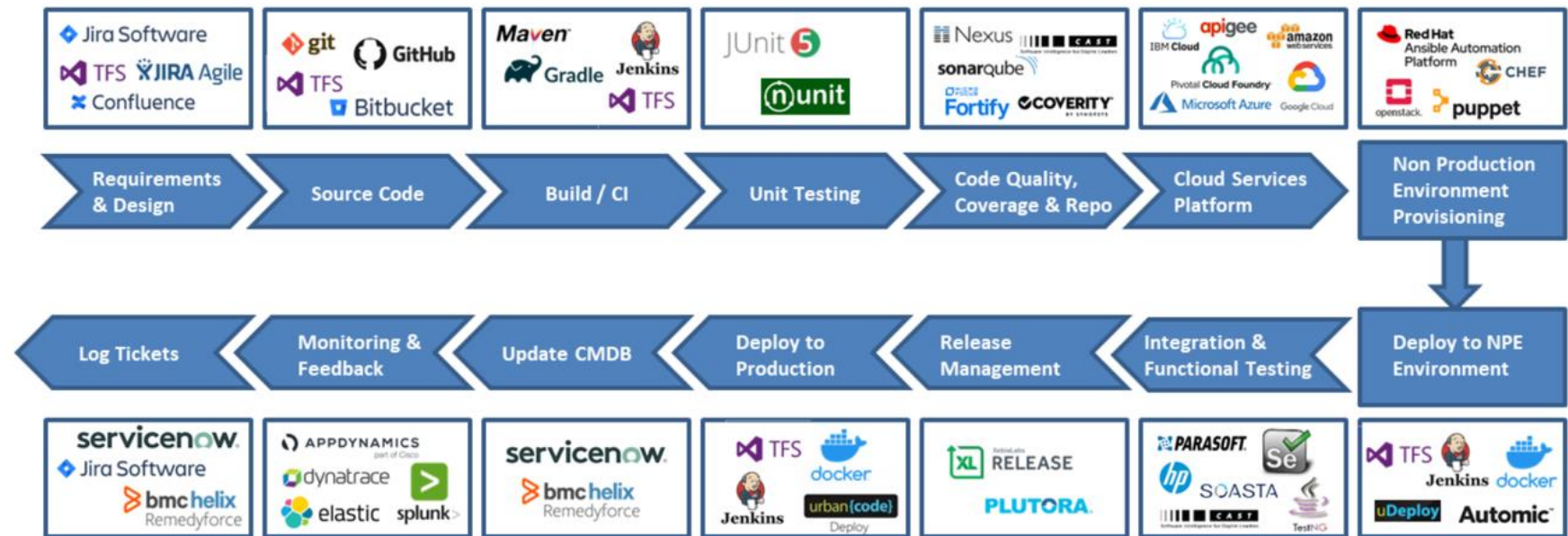


DevOps Toolchain

Things to remember about DevOps

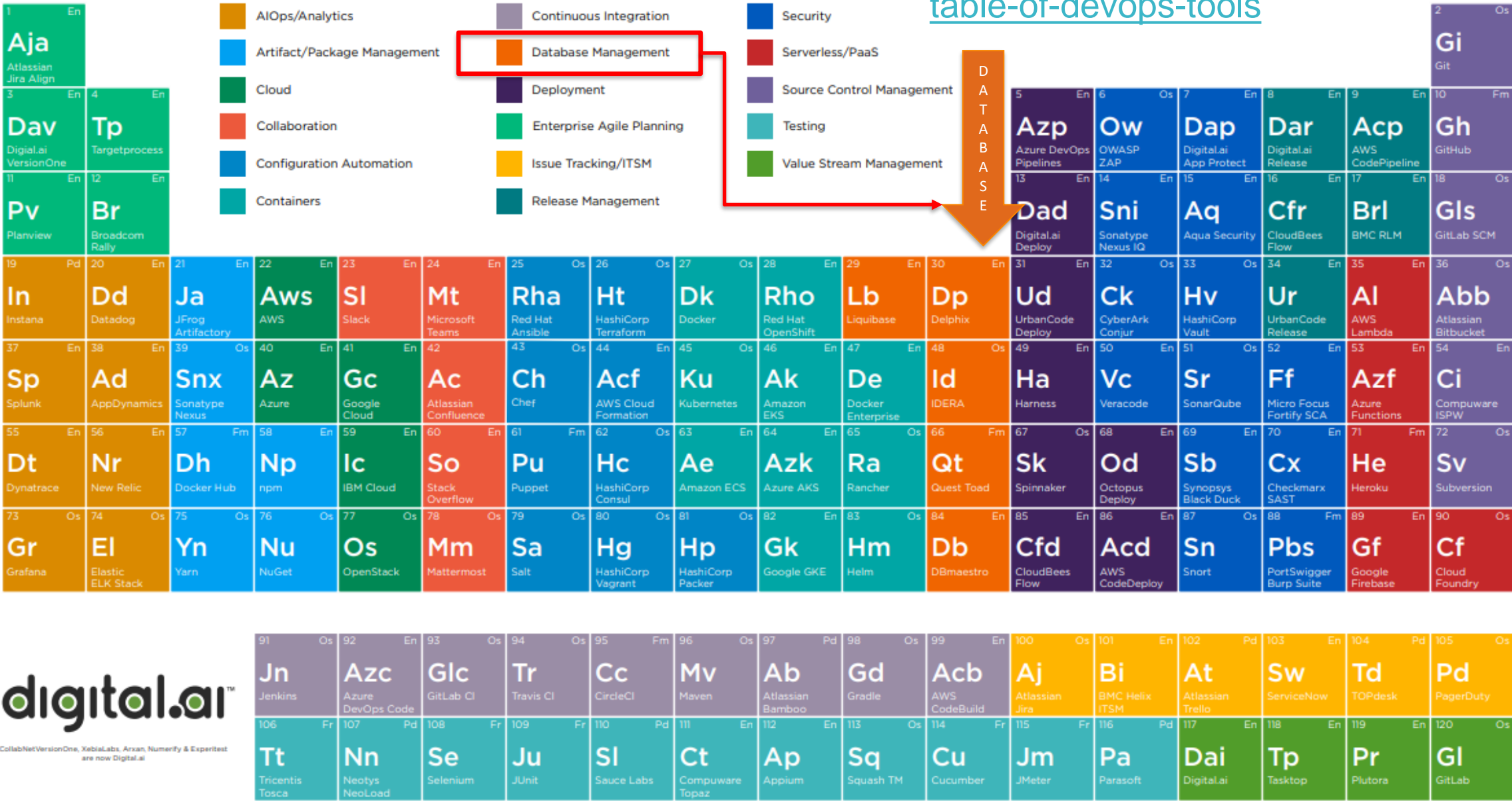
- The goal is continuous improvement
- You can't buy DevOps
- Tool adoption happens in stages

Your DevOps Engineering team will have a diagram that is unique to your company and maybe unique by team

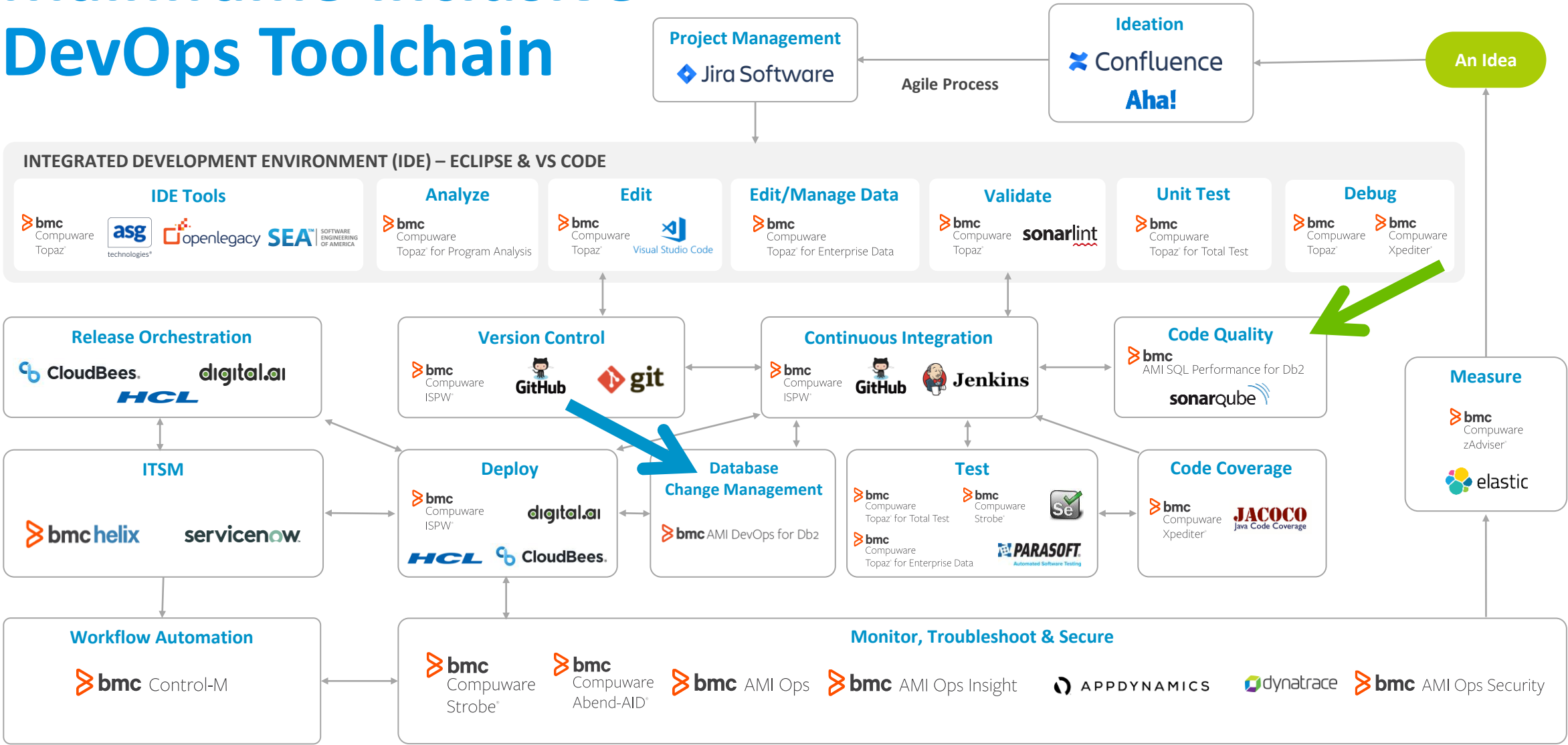


The Periodic Table of DevOps Tools (V4.1)

Link: <https://digital.ai/periodic-table-of-devops-tools>

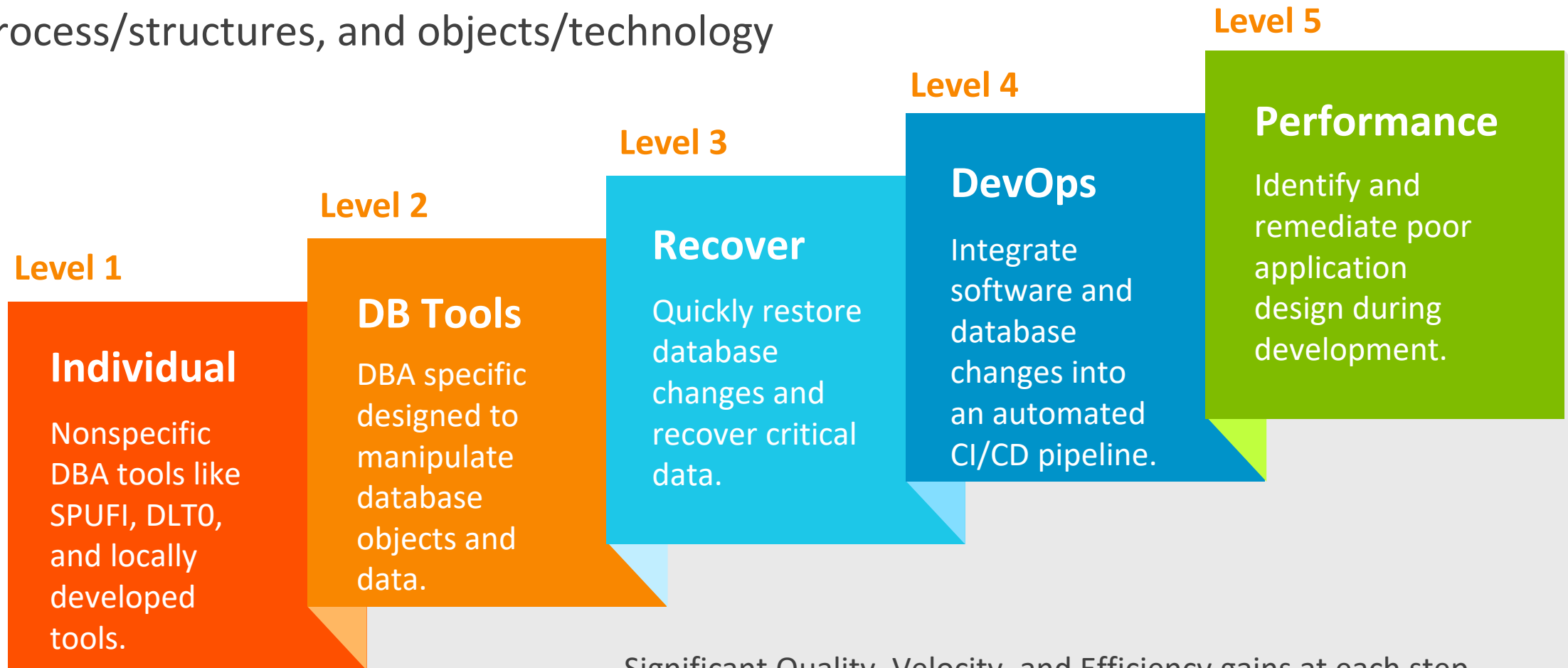


Mainframe-inclusive DevOps Toolchain



Database DevOps Capability Model

Model includes people/culture,
process/structures, and objects/technology



Significant Quality, Velocity, and Efficiency gains at each step

Database DevOps

Developers and DBAs work together to make Table Schema Changes (DDL) in Development and then automatically apply the updates as changes are promoted on the route to live.

App Developer

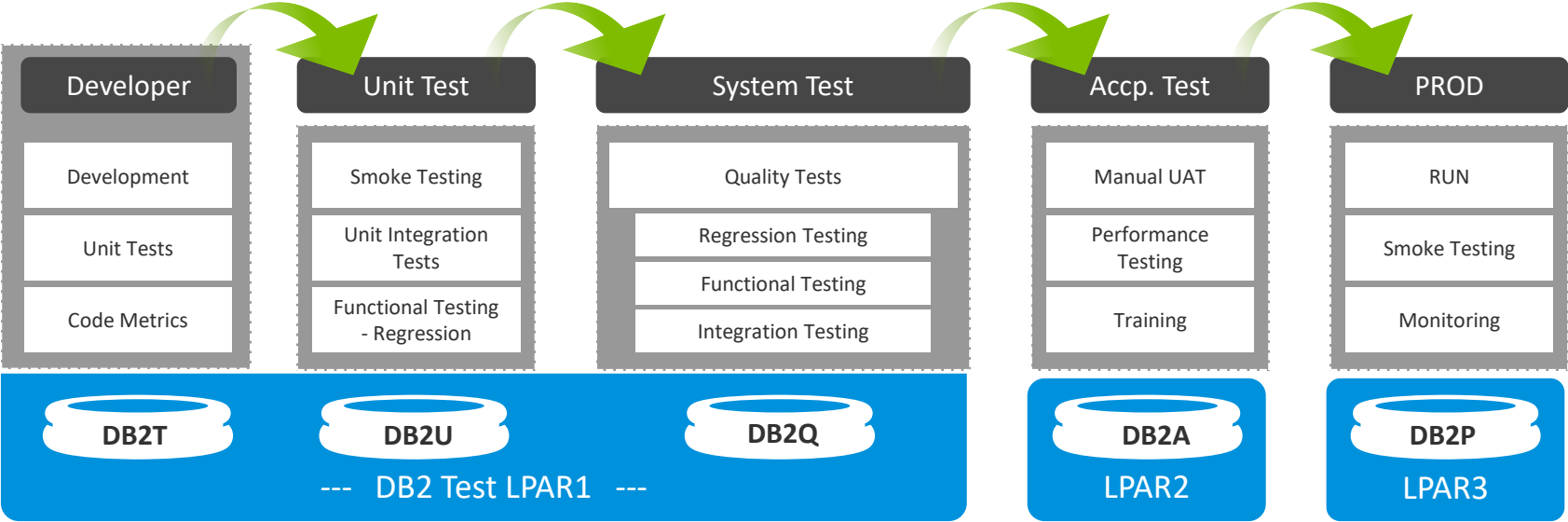
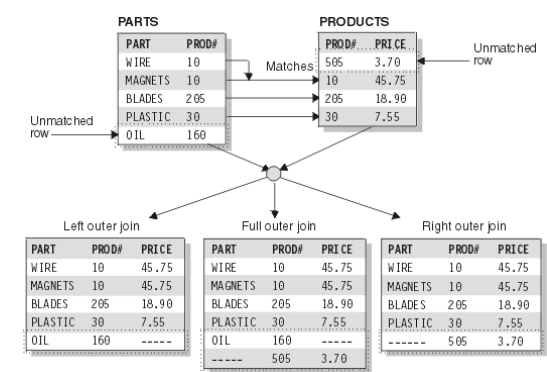


Schema Standards: DBAs can create standards by environment that must be met ensuring site standards and best practices

Database Admin



Production Approval



Automate DDL updates from Dev to Test to Prod.
Each Production Environment typically has 7 to 10 Dev and Test Environments.

SQL Performance

As Developers make SQL Changes in both **Static** and **Dynamic** SQL the SQL is checked for Best Practices, Site Standards, and Performance issues.

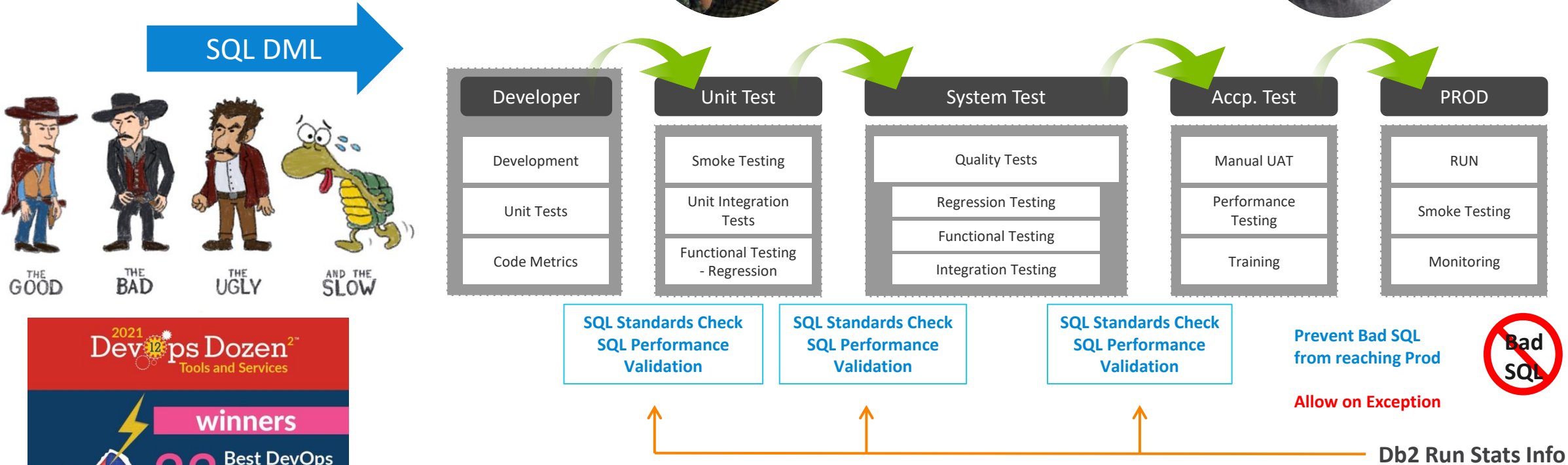
App Developer



Database Admin



Best Practices rules that check both code and environments for Bad SQL



SQL Standards can be different by Environment. SQL such as "Select *" may be allowed in Unit Test but Not in System Test. Comparison to Product Run Stats is also included.



How Zowe fit into DevOps

Zowe

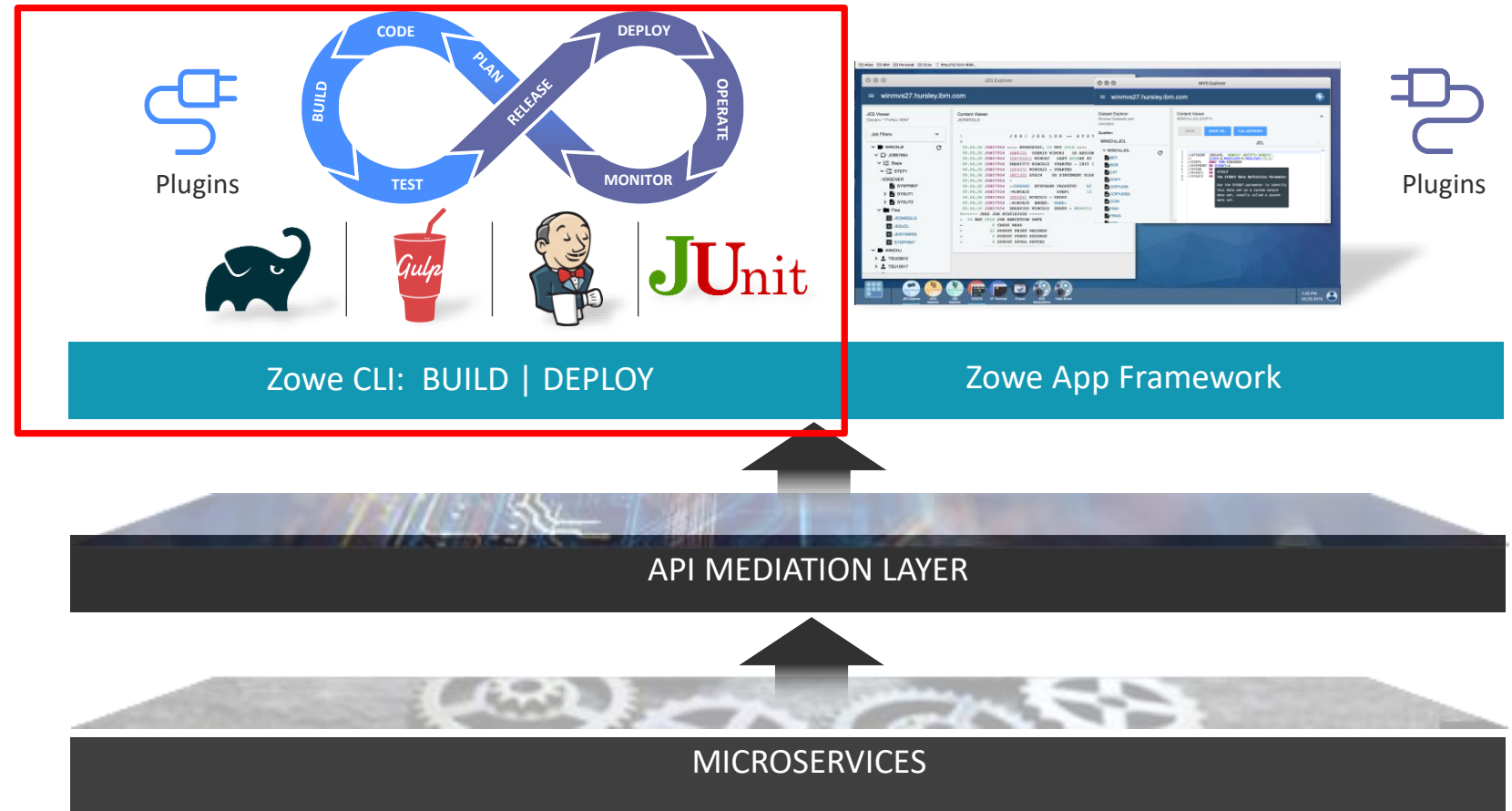


Zowe framework and ecosystem at a glance

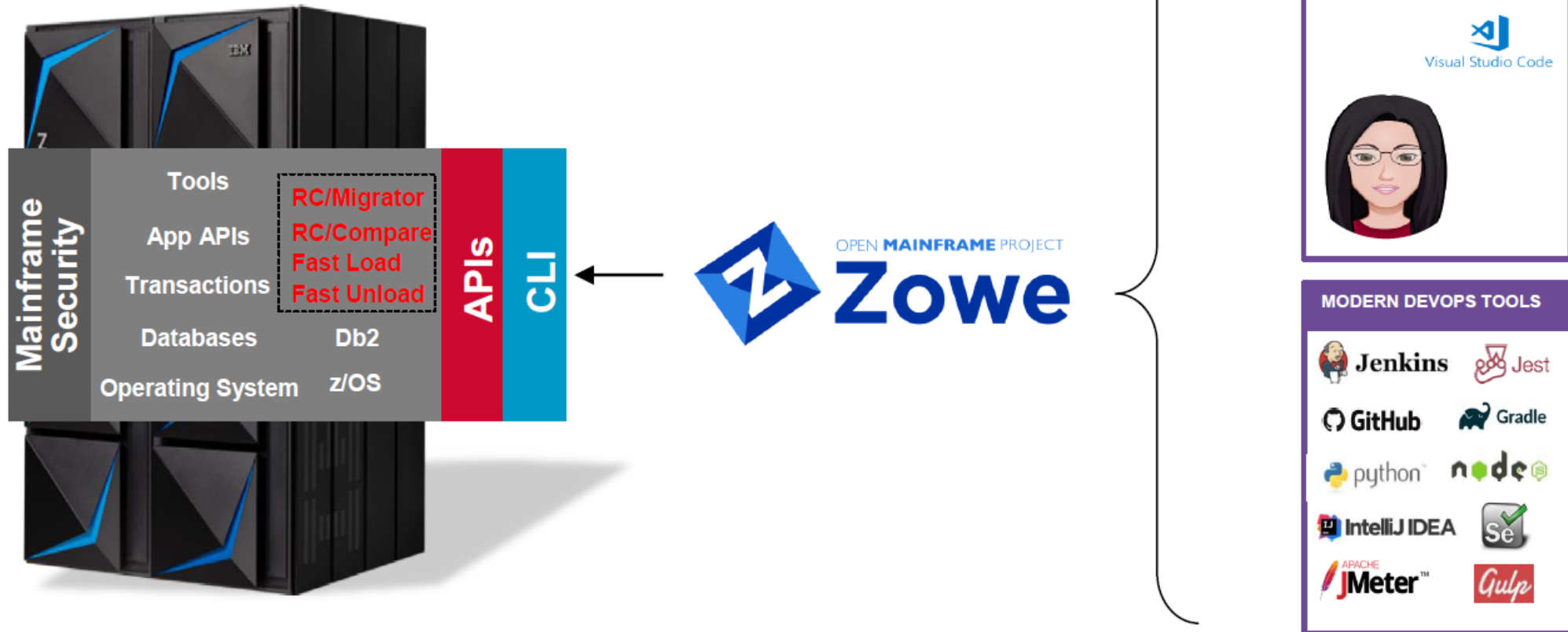


Core Zowe includes
API Mediation Layer,
Command Line
Interface (CLI), and
Web User Interface

Vendors can build
'Zowe Compliant'
plugins that will
leverage this
framework.



Broadcom Database DevOps



Please check with your Broadcom contacts as presenter is not an authority on Broadcom software products.

What about the Ops in DevOps?

Site Reliability Engineering SRE



What Do SREs Do?

Keep Customers Happy



Site Reliability Engineer

Spend 50% of contributions on Operations problems

- Problem Solving
- Maintenance
- Incident Command
- SLI / SLO / SLA



Spend 50% of contributions on Engineering problems

- Automation
- Key integrations
- Observability
- Post Mortems

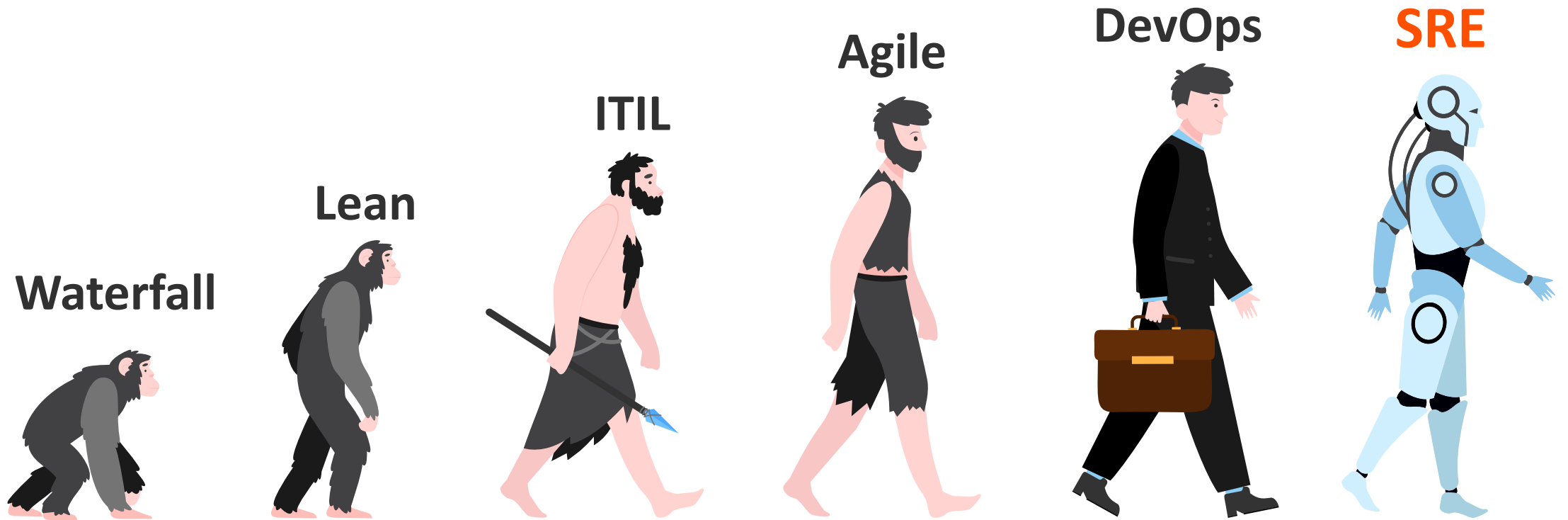
Eliminate Toil



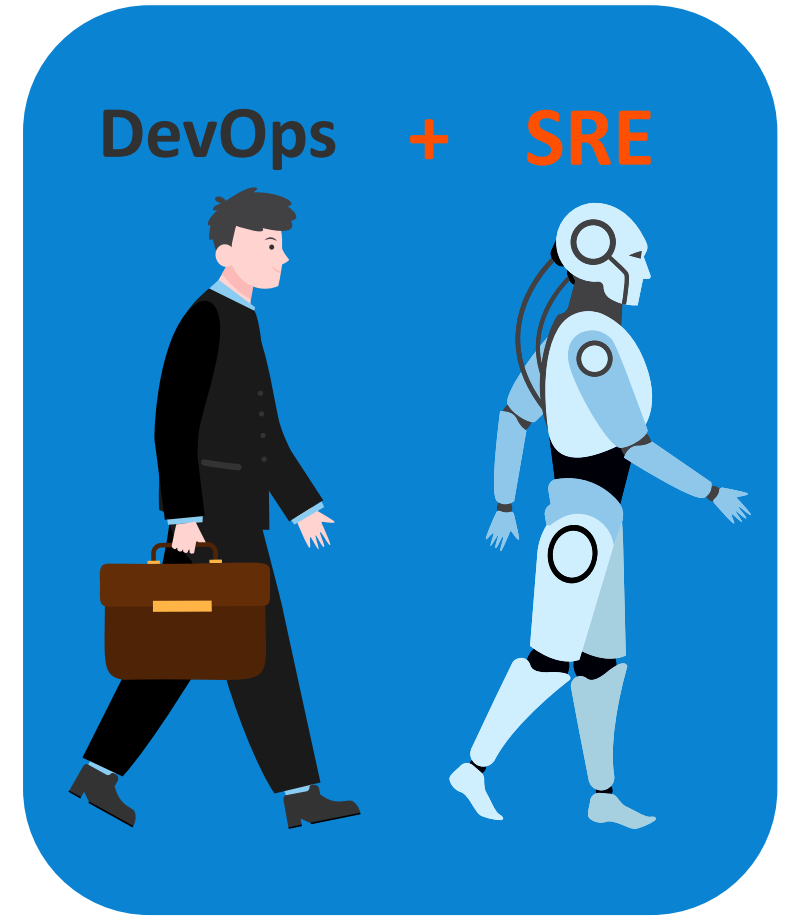
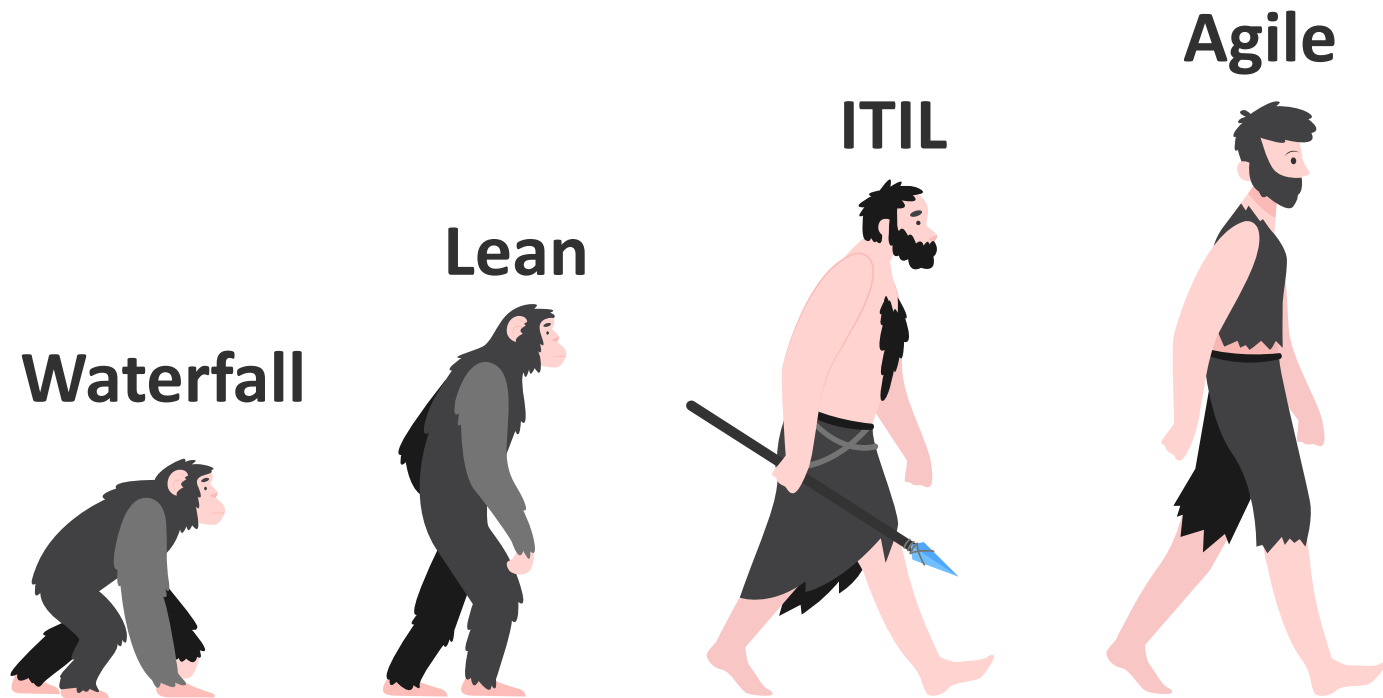
SRE is what you get when you treat operations like an engineering problem

- Google

The Promise of SRE



The Reality of DevOps and SRE

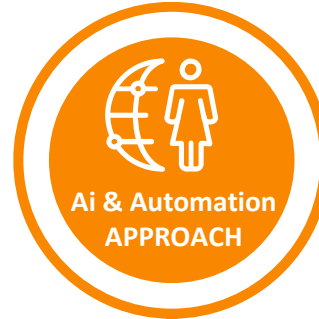


Integrated Change,
Configuration, Release
Management, and Operations
Including Performance

Intelligent Automation is a SRE's friend!

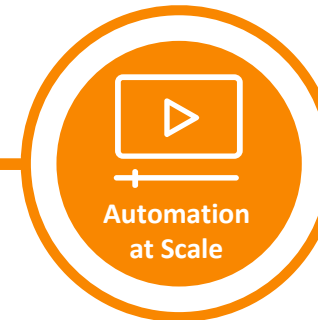
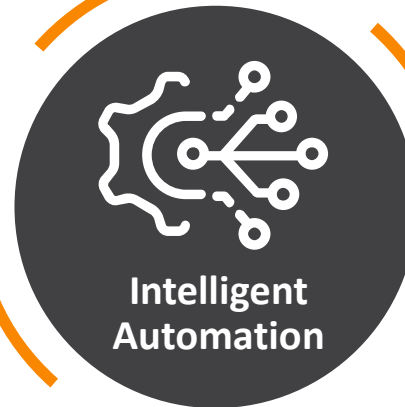
BREAKDOWN AUTOMATION SILOS

- **Determine** real-time probable cause reducing event noise
- Request Automation
- Run available and recommended Automation
- Auto-remediate many issues and drive faster MTTR



LEARN, OBSERVE & RECOMMEND

- **Learn** from past executions and recommends the best possible action.
- **Uses reinforcement learning** by taking user feedback.
- **Proactively recommends** the appropriate automation for incoming events



SCALE & RE-USE AUTOMATION

- **Provide** Remediation Recommendations
- **Enable** re-use of automation to different stakeholders

Three Keys to Including Mainframe in SRE

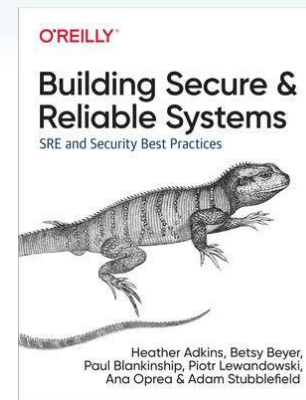
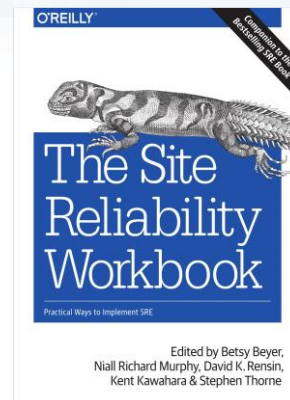
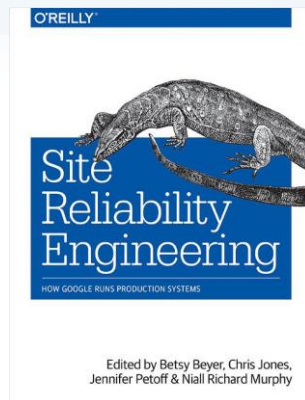
Visibility, Monitoring, and Observability



SLI, SLO, SLA



Eliminate Toil



Read online at <https://sre.google>

But wait there's more

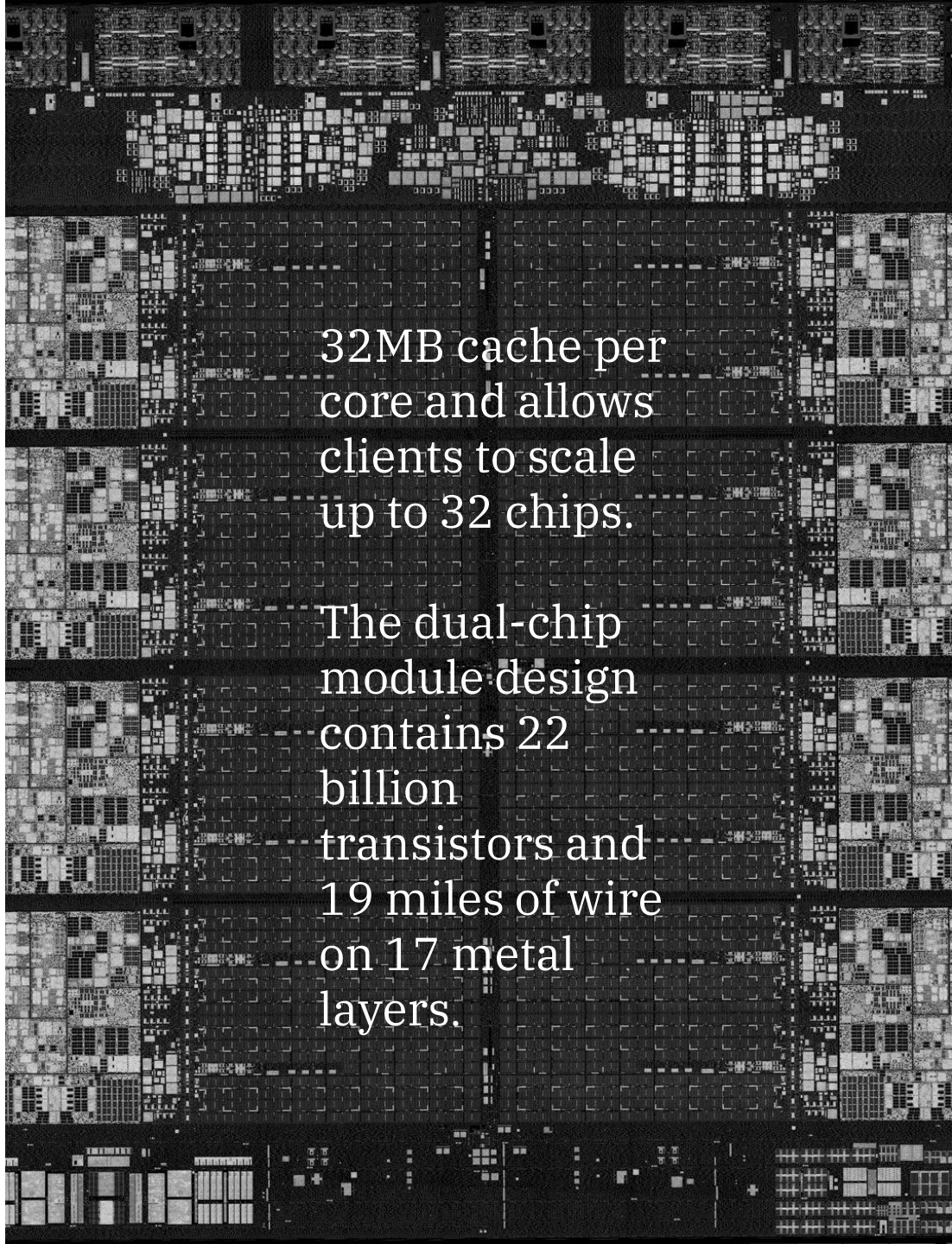
IBM Z
2022 will be a
great year



Coming in 2022

- New IBM Z Mainframe code name **Artemis**
- Brand New IBM Z mainframe chip designed code name **Telum** =====>
- New Version of Db2 code name **Apollo**
 - You're going to love it, we already do
- New versions of CICS and IMS
- New releases of BMC Db2 Software

If you are a BMC Db2 customer we can help you with your upgrade plans.



32MB cache per core and allows clients to scale up to 32 chips.

The dual-chip module design contains 22 billion transistors and 19 miles of wire on 17 metal layers.





About BMC

From core to cloud to edge, BMC delivers the software and services that enable over 10,000 global customers, including 84% of the Forbes Global 100, to thrive in their ongoing evolution to an Autonomous Digital Enterprise.

BMC—Run and Reinvent

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