DB2 12 — The ultimate enterprise database for business-critical transactions and analytics

DB2 z DevOps and Cloud Provisioning

Patrick Bossman

Agenda

- Sept. Db2NightShow got Irma’d
- Background
- Automated provisioning scenarios
- Automated deployment scenarios
- Strategic direction
- Q & A

Irma’d - before

- Moved the house
- Loaded the pets
- Hope for the best…

Irma’d - after

- Fire up the chain saw!
- Lot’s of debris
- No storm surge…

- Dodged a bullet.
- 20 miles difference in storm track is a big deal…

DevOps and Cloud Provisioning Goals - Developer

Improve developer productivity via self-services

- Provision
- Configure
- Manage
- Use DB2 for z/OS resources

Dramatically reduce the occasions where developer is waiting on administrator.

DevOps and Cloud Provisioning Goals - DBA

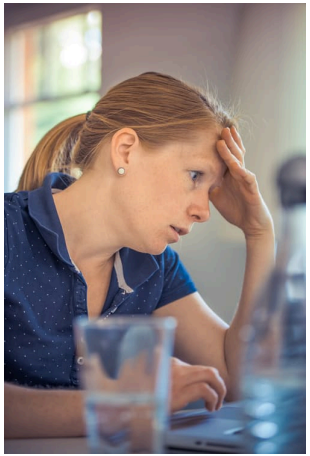
Improve administrators productivity

- Focus on database design, tuning activities
- Design automated business rule enforcement
- Deployment integrated review and approval of changes and deployment processes
- Design developer self-services for provisoning, management, and housekeeping activities

Emphasis:

- Empower developers via fully automated and/or self-service capabilities.
- DBA is transforming into "database and database self-services" developer.

Waiting, where innovation dies



Dev Request Env

DBA Request

Storage

Security

DBA create schema

Coding begins

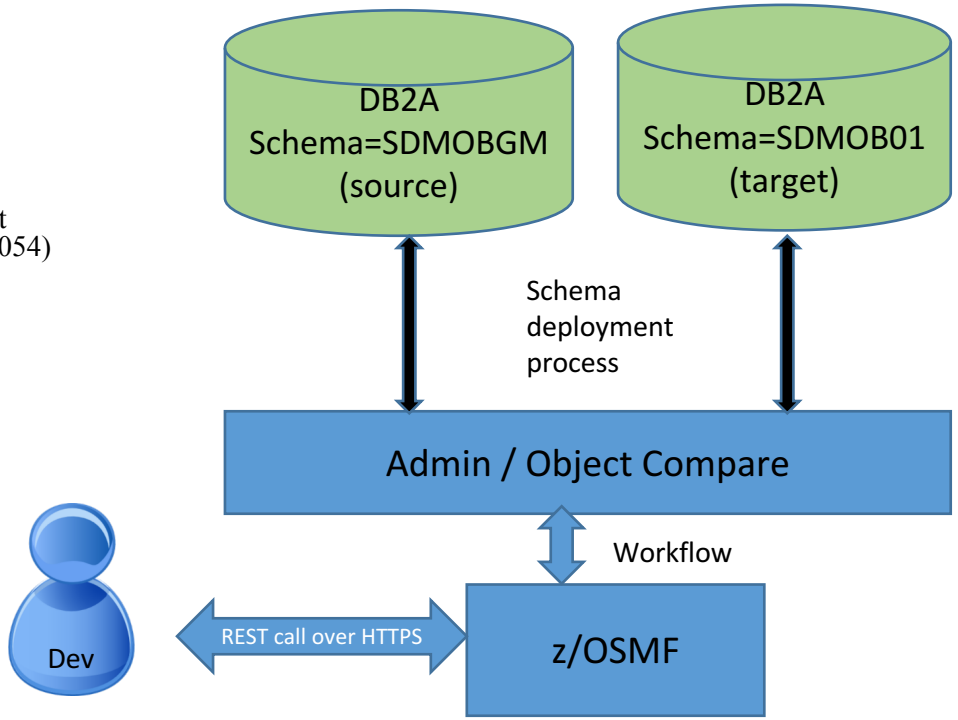
Provision developer environment

"Create schema like" service

- Specify source environment and schema, target subsystem and schema
- Rip source, provision target

- Utilize REST enabled IBM Change Management Solution Pack (V11.2 + PI67731, PI72396, PI76054)
  - DB2 z: PI79222 (V11), PI73492 (V12)

- Useful for
  - CD/CI fully automated tests
  - Self-service schema provisioning portal



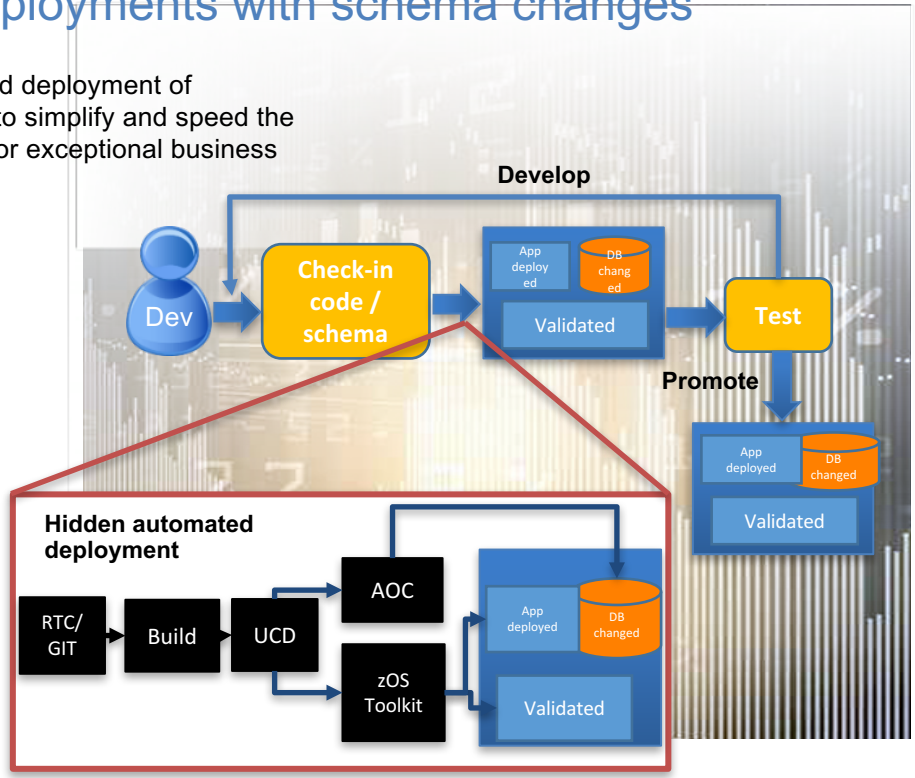
Automated application deployments with schema changes

An optimized and automated process for rapid deployment of applications and database schema changes to simplify and speed the delivery of critical operational environments for exceptional business value

SPEED
- Reduce time and cost to deploy application changes
- Deploy more frequently with more autonomy and control
- Automated. Accelerated.

SIMPLICITY
- Reduce errors of manual process
- Frees up resources by allowing other users to deploy
- Collaborative. Accurate.

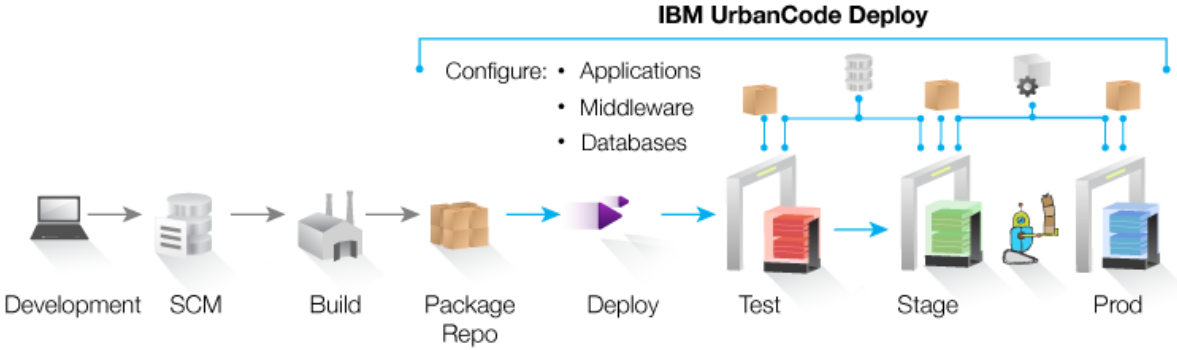
SECURITY
- Safeguard valuable assets under the control and security of DB2 for z/OS
- Transparent and auditable review built into process
- Protected. Secured.



Delivered via IBM Change Management Solution Pack 4Q2016 Generally Available

What is UrbanCode Deploy (UCD, uDeploy)

- Application Deployment Automation tool
  - Automates deployment and rollback of applications
  - Orchestrates complex deployments of applications and configurations
  - Designed to handle development and production deployments
  - Provides “self-service” ability to deploy a particular app version into particular env



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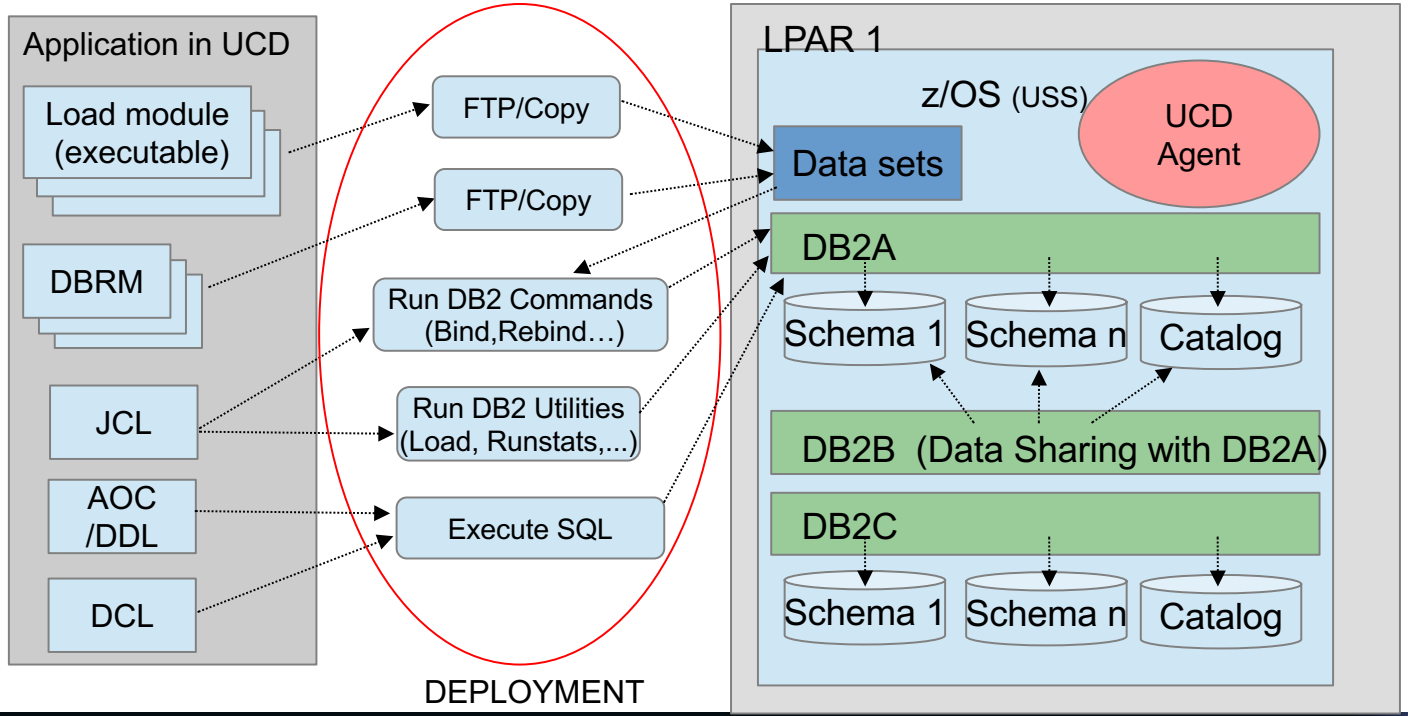
DB2 application deployment in UCD



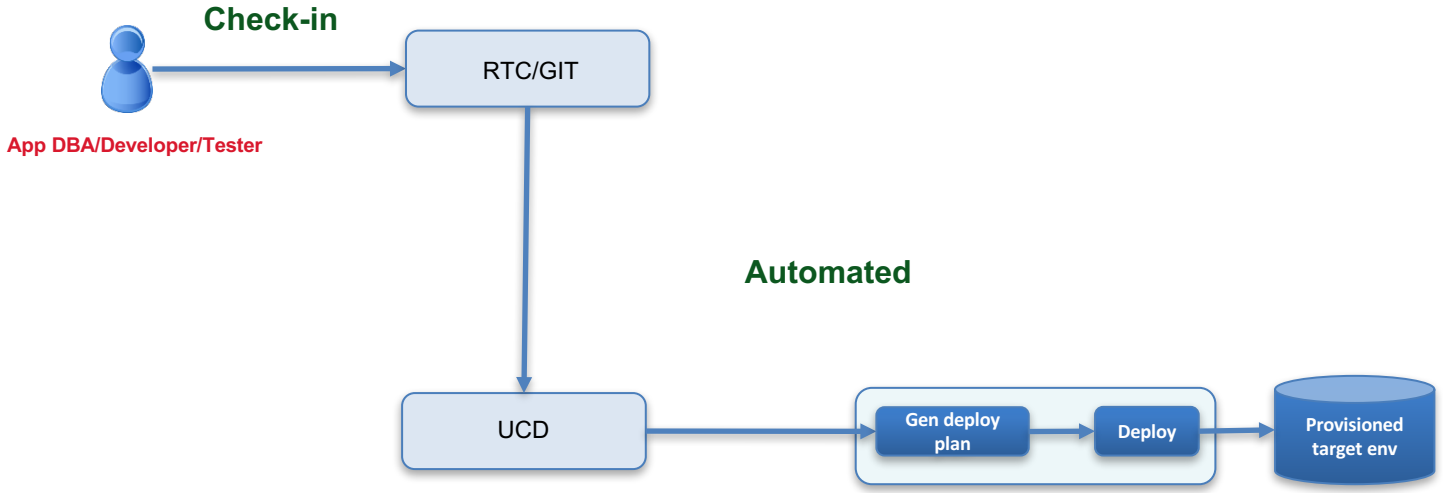
Pre-Requisites

- Pre-requisites
  - IBM Urbancode Deploy server 6.2, agent, and toolkit
  - IBM zOSMF server version 2.2
  - IBM DB2 Change Management Solution Pack V11.2 + PI67731, PI72396, PI76054)
  - JDBC driver, RACF PassTicket jar files on USS
  - Urbancode plugins
    - File Utils
    - zOS Utility
    - zOSMF

Demo 1 – sandbox schema change

- Sandbox environment schema change
  - Generate schema modification
    - We're using direct edit / check in of DDL
    - Other schema change methods are possible.

Architecture Overview



* Anyone that needs to get notified can be notified automatically

Team environment schema change scenario

- 8 developer team
  1. Developer makes change in sandbox
  2. Merges change into the team branch
     1. Deploy to CI server
     2. Automated checks
     3. (Efficient) reviews/approvals
  3. Commit to team schema
  4. Automated notification & push/pull requests to team

Database versioning

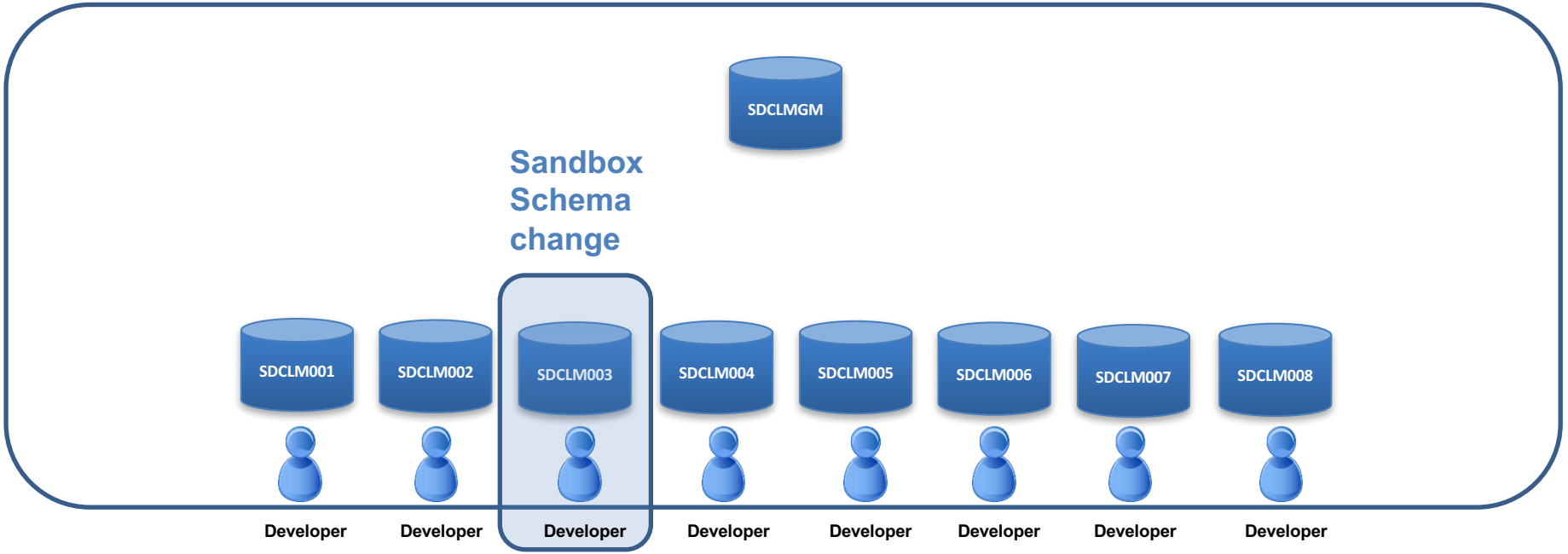
Claims development team

Claims Dev Gold Master

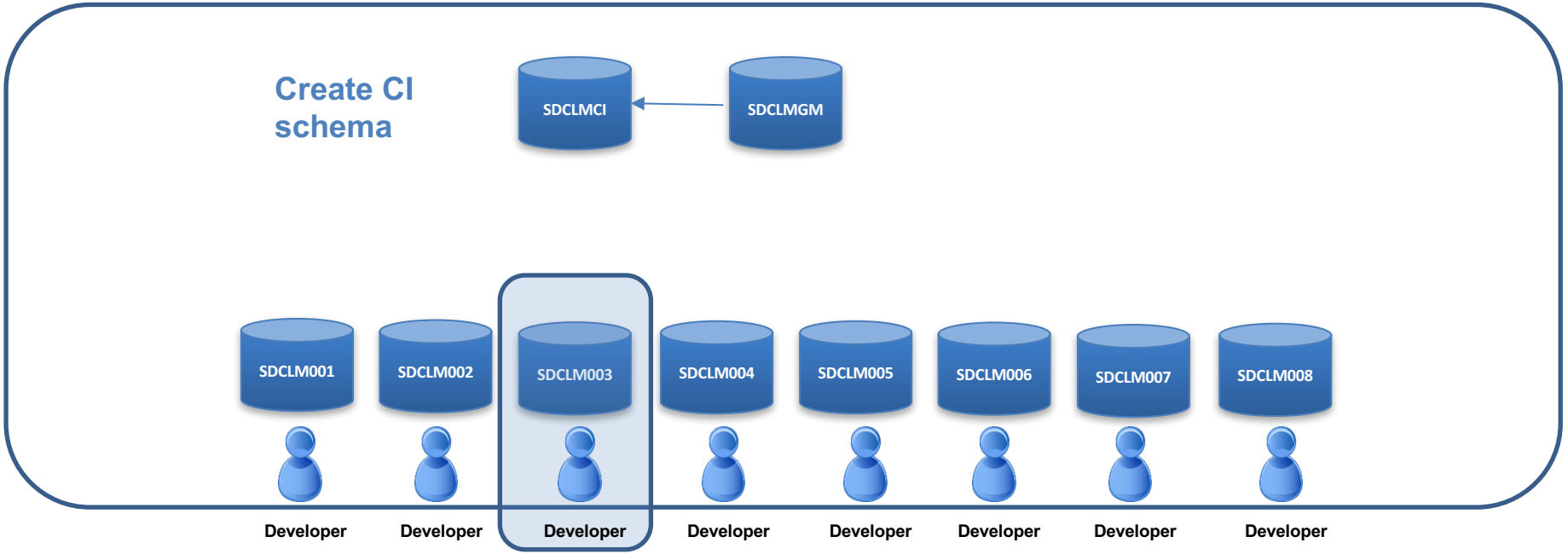
- **Provisioning source**
- **Data refresh source**
- **Statistics refresh source…**

Developer sandboxes

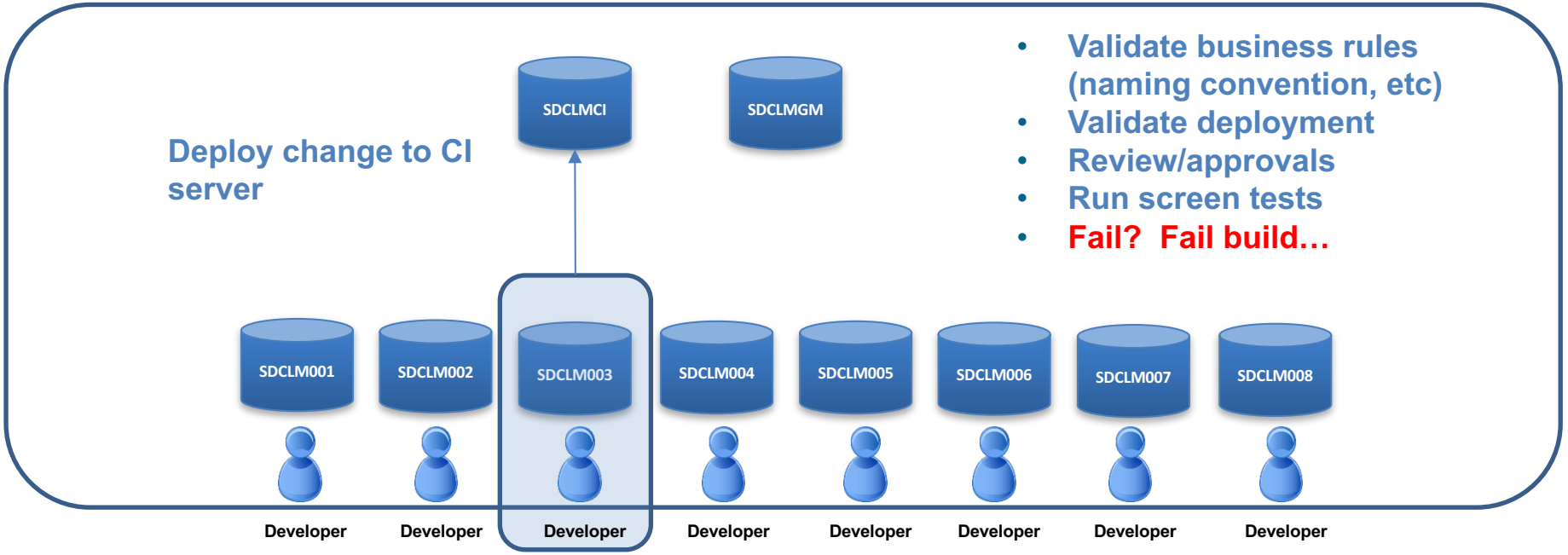
Developer changes database



Merge to team branch – create CI schema

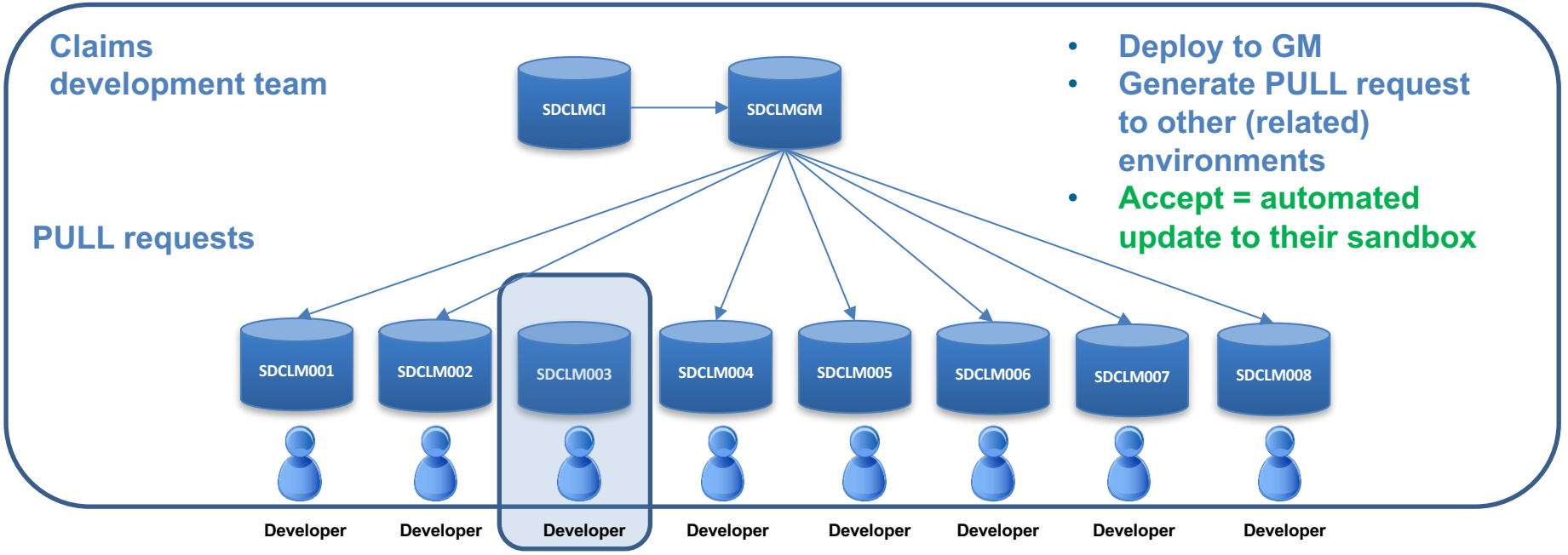


Merge to team branch – deploy/test in CI



- Validate business rules (naming convention, etc)
- Validate deployment
- Review/approvals
- Run screen tests
- **Fail? Fail build…**

Merge to team branch – update GM
Auto-notify team



Future DB2 for z/OS DBaaS capabilities under consideration

- Deliver REST services to support developer self-service…
  - De-provision a DB2 application environment
  - Configure automated backups
  - Snapshot backup/restore services
  - Monitor/add/remove storage
  - Data refresh
  - Statistics refresh
  - …

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Thank you!

Patrick Bossman
bossman@us.ibm.com