



IDUG

2024 NA **Db2** Tech Conference

Driving Automation: Provisioning Db2 Schemas Using Zowe CLI and Git

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Session Code: SESS-95 | Platform: Db2 for z/OS

Agenda

- Current Challenges, open solutions
- Db2 Schema as Code
- Effective Schema Management
- Schema Management Challenges
- Schema Management Tasks
- Schema Management Tools
- Best Practices for Schema Management
- Conclusion

Current challenges, open solutions



Talent Risk

Staff Retirements, Low Career Appeal



Modern Dev

secures top talent in competitive markets



Cycle Times

Costly Manual Work, Testing Bottlenecks



DevOps Automation

improves overall velocity, quality & control



Inaccessible Resources

Complex, Monolithic Applications

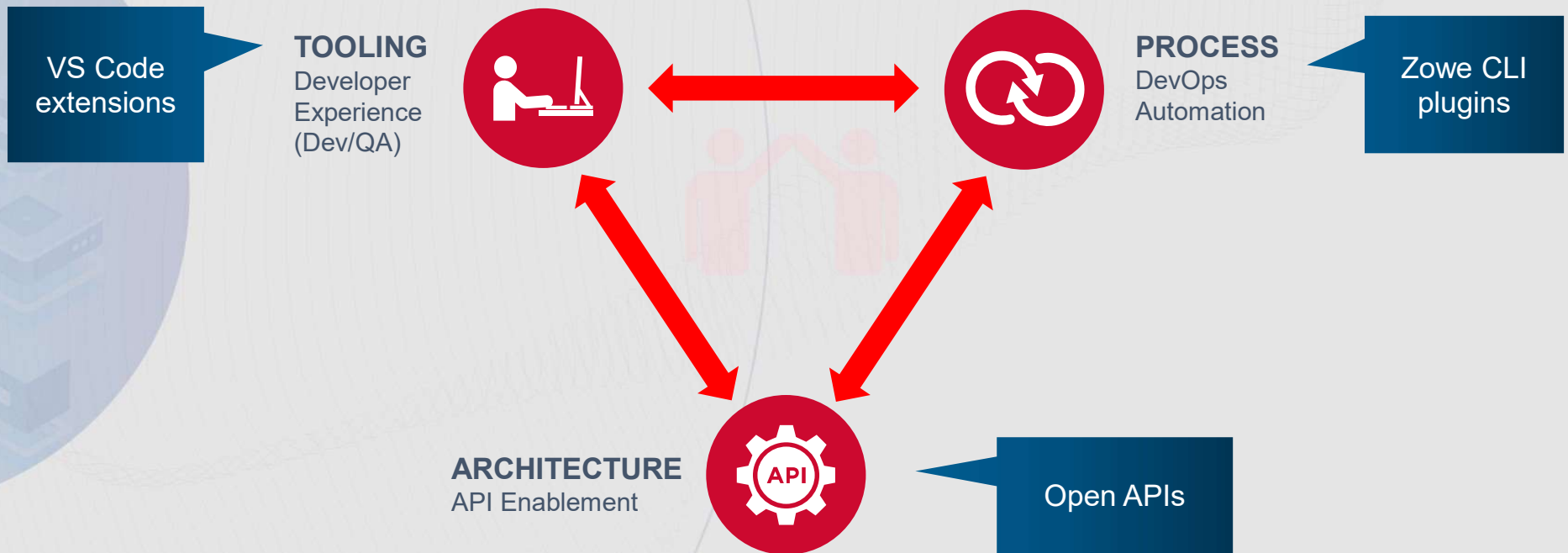


API Enablement

increases business agility & innovation



Current challenges, open solutions



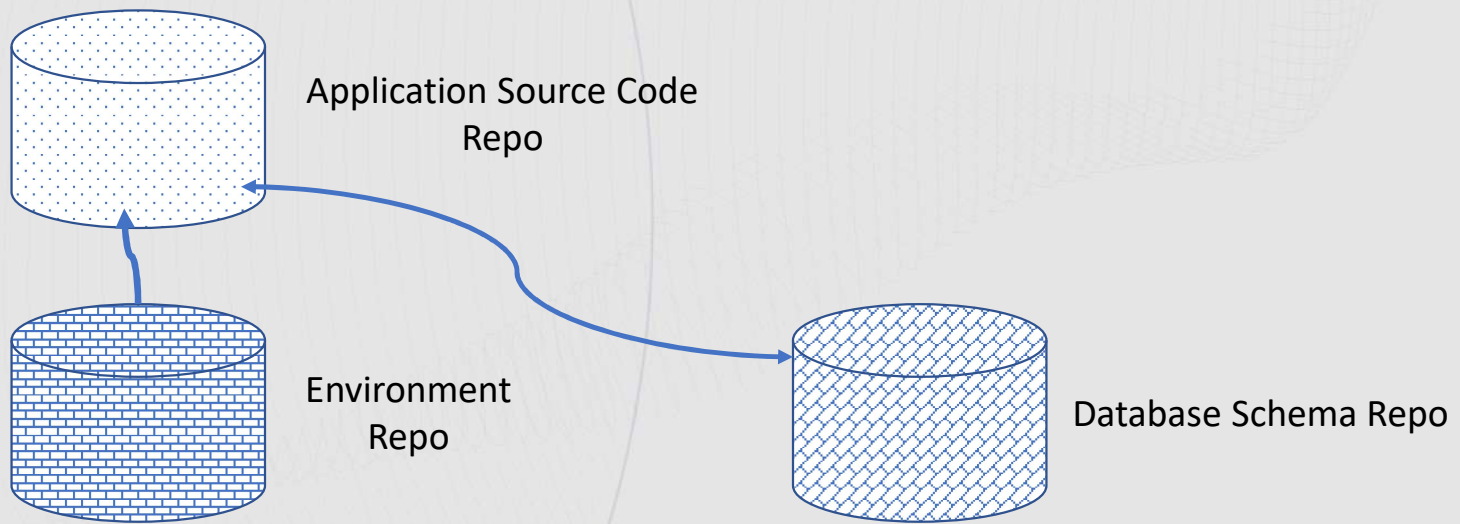
Database Schema Management

- **Schema:** The overall organization and structure of a database, including the relationships between different data entities.
- **Database Schema Management:** The process of creating, modifying, and maintaining the structure of a database, including the relationships between different data entities.

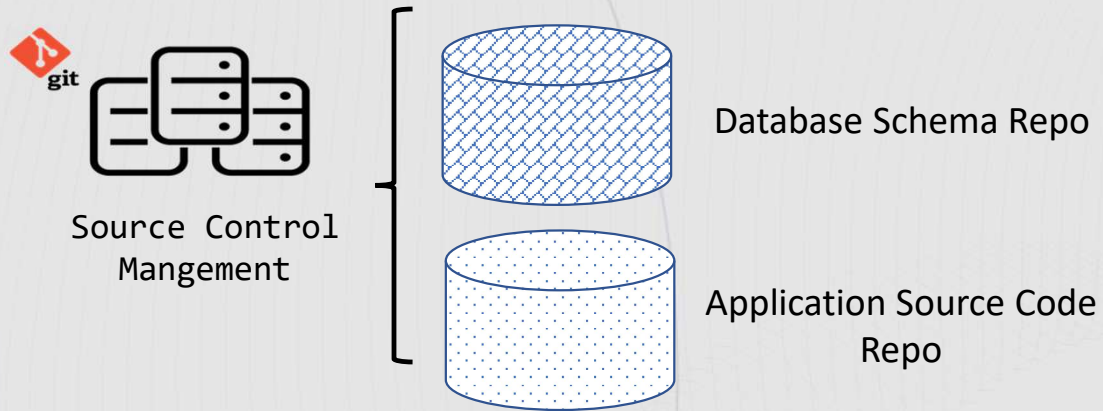
Schema Management Challenges



Schema Management Challenges



Db2 Schema Definition as Code



Version Control

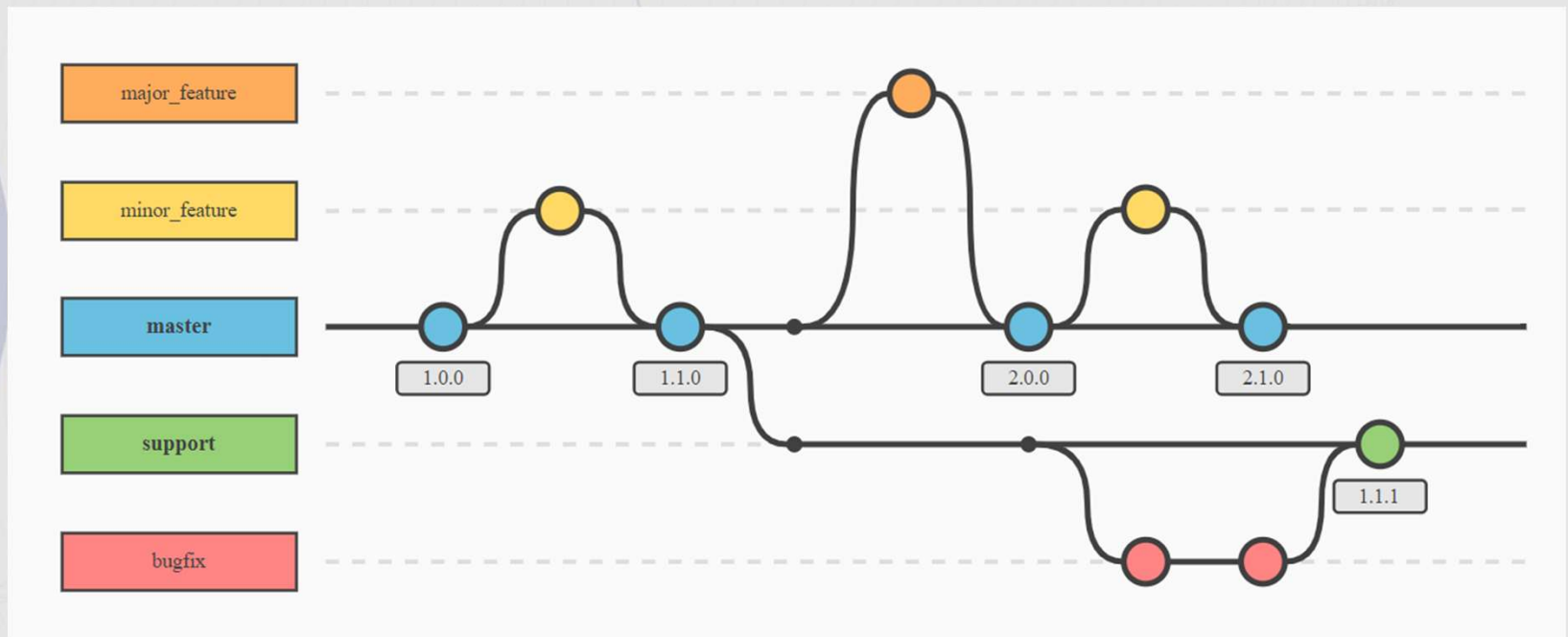
Documentation

Security

Consistency

Automation

Db2 Schema Definition as Code



DevOps Automation

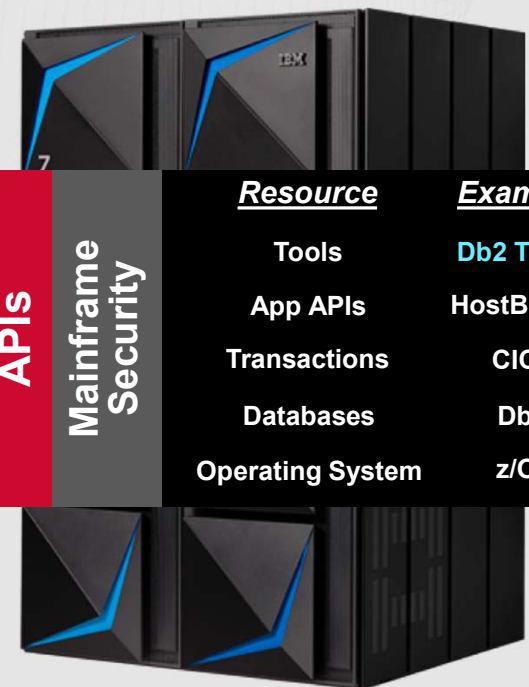
CI/CD PIPELINE

Start → Checkout → Build → Unit Test → Deploy to Production → Performance Test → End

- PROVISION
- BUILD
- DEPLOY
- TEST
- RELEASE



CLI / SDK	APIs	Mainframe Security	<u>Resource</u>	<u>Example</u>
			Tools	Db2 Tools
			App APIs	HostBridge
			Transactions	CICS
			Databases	Db2
			Operating System	z/OS



Effective Schema Management

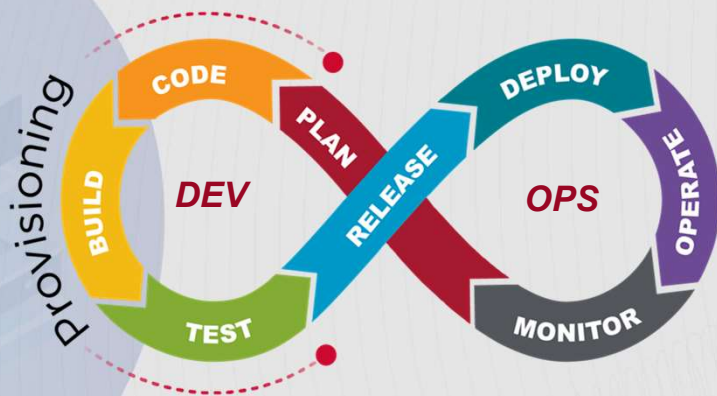
- Improved data integrity and consistency
- Enhanced data security and access control
- Better data organization and structure
- Improved query performance and optimization
- Easier maintenance and updates

Schema Management Tools

- **Db2 Command Line Interface (CLI):** Command-line interface for schema management
- **Db2 Administration Tool:** Graphical interface for schema management
- **Db2 Design Studio:** Eclipse-based tool for database design and schema management
- **Db2 SQL Editor:** Graphical interface for writing and executing SQL statements

Db2 Schema Definitions as Code

Enable true end-to-end CI/CD for Db2z applications



“

Speed up the deployment of Db2z Applications while maintaining or improving code quality

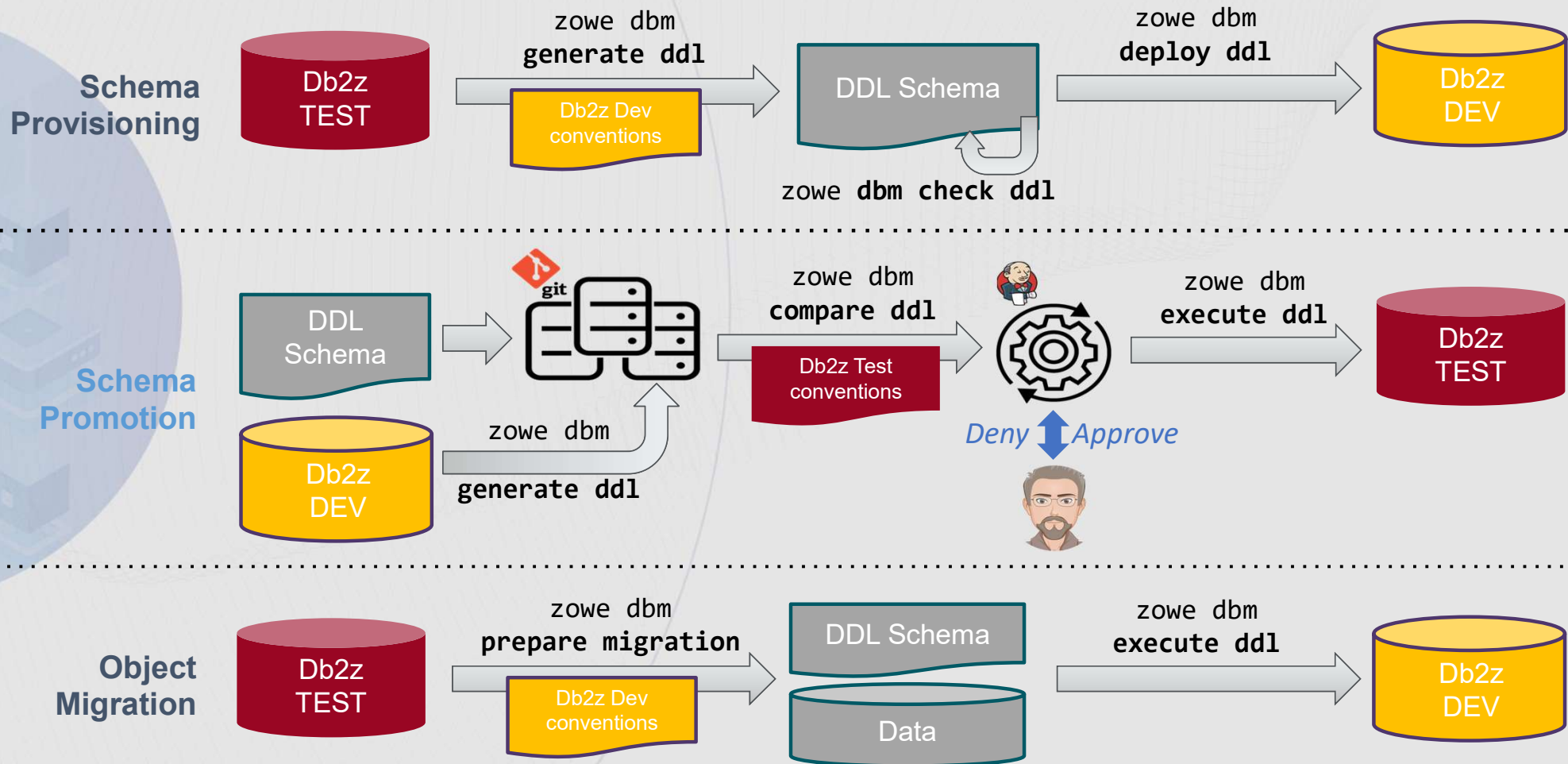
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Manage Db2 Schema Definitions as a Code

Schema Management Components

- **Create:** Define new schema objects
- **Alter:** Modify existing schema objects
- **Drop:** Delete schema objects
- **Rename:** Change the name of schema objects
- **Backup and Recovery:** Ensure data integrity and availability

Zowe CLI use cases



Database Schema Management

Key Takeaways

- Database schema management is crucial for ensuring data integrity, security, and organization.
- A well-designed schema supports business intelligence, scalability, and query performance.
- Effective schema management reduces data redundancy and simplifies data maintenance.

Best Practices for Schema Management

- **Document schema changes:** Keep track of changes and updates
- **Use version control:** Manage different versions of schema objects
- **Test and validate:** Ensure schema changes do not affect data integrity
- **Use naming conventions:** Follow consistent naming standards
- **Regularly monitor and optimize:** Ensure optimal performance and data organization



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