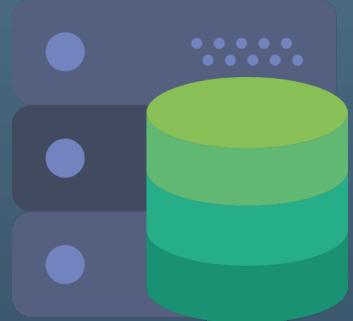


# DBA MASTERY



Migraciones de bases de  
datos con Flyway





# Carlos Robles

Principal Consultant, DBA Mastery



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## Experience

Microsoft Data Platform MVP

Friend of Redgate

+10 years of experience multi-platform  
Solutions architect

## Community

GTSSUG – Community Leader

Speaker, author, blogger, mentor

Simple Talk, SQL Server Central & MSSQL Tips

## DBA Mastery

Tips, scripts, best practices & more



MAXDOP Calculator

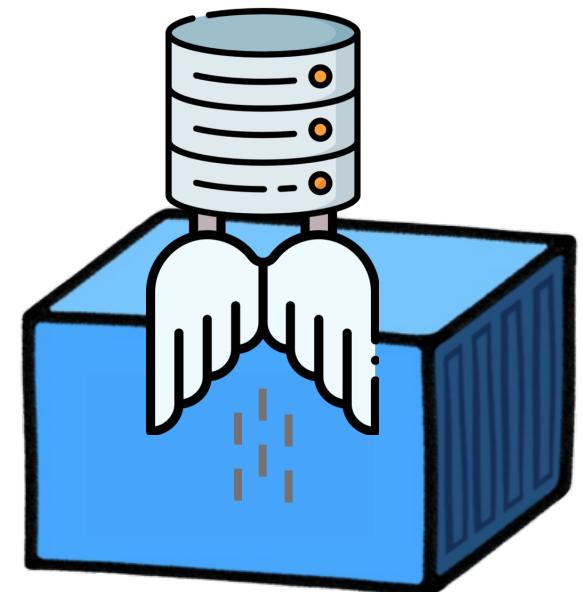
Azure Data Studio widgets & more

MSQLTools Alpine

PerfMon for DBAs - PowerShell

# Agenda

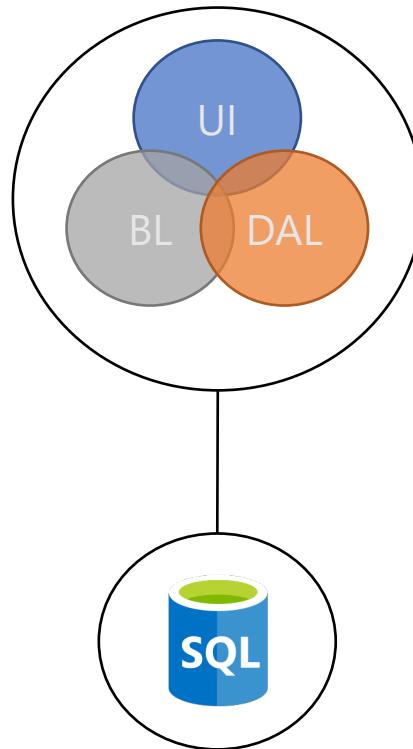
- Prácticas de desarrollo de software
- Introducción a DevOps
- DevOps para bases de datos
- Flyway
- Demos



# Prácticas de desarrollo de software



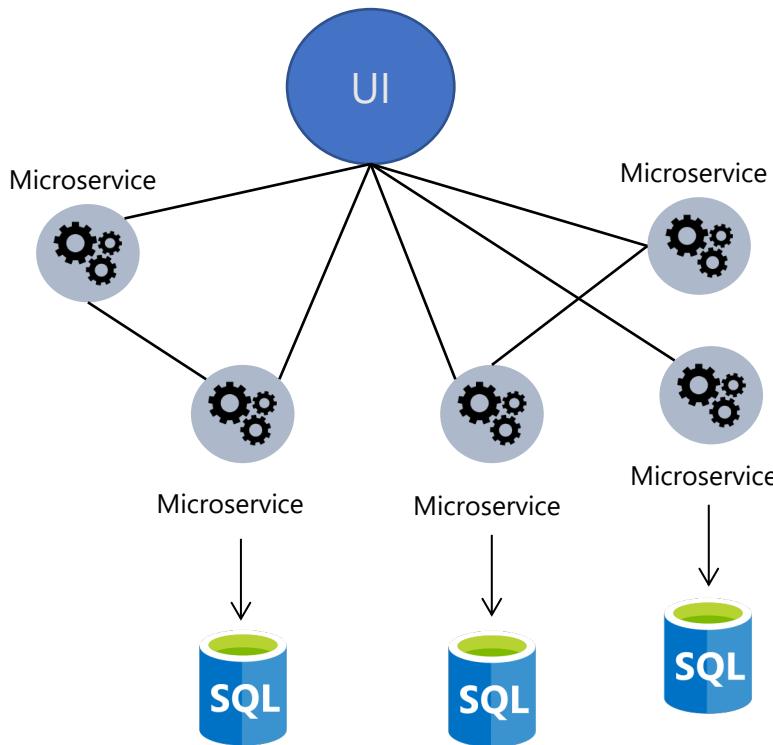
# Práctica tradicional



- **Pros**
  - Desarrollo simple
  - Implementación fácil
  - Pruebas sencillas
  - Fácil de compartir
- **Cons**
  - Difícil de entender / cambiar
  - Agilidad limitada
  - Lentitud
  - Baja confiabilidad



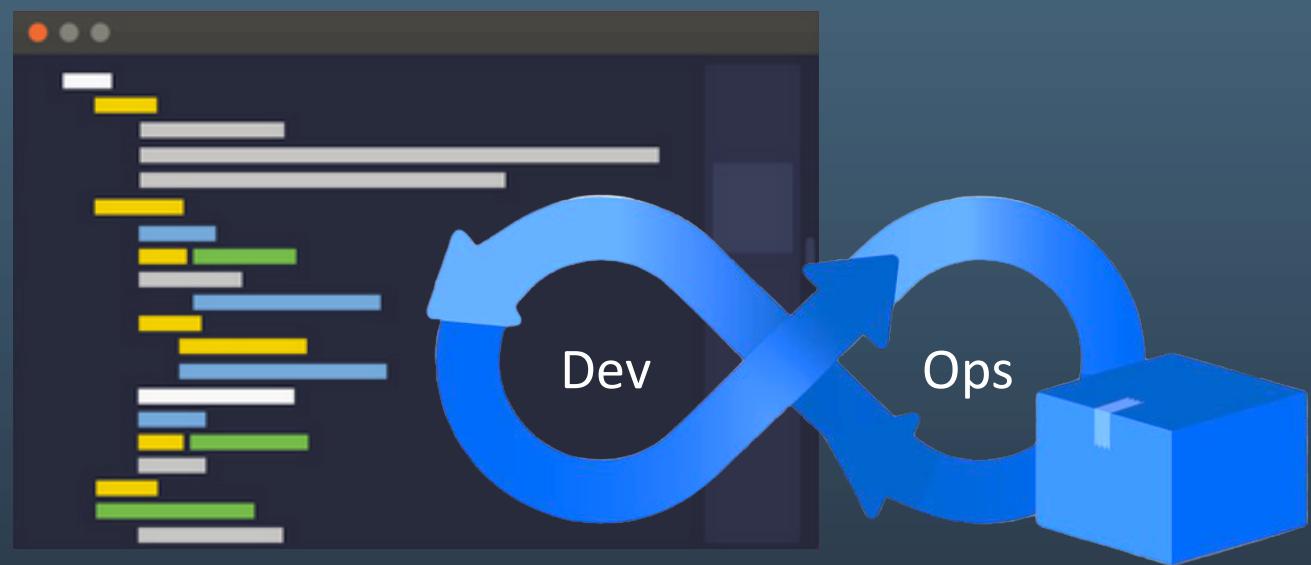
# Práctica contemporánea



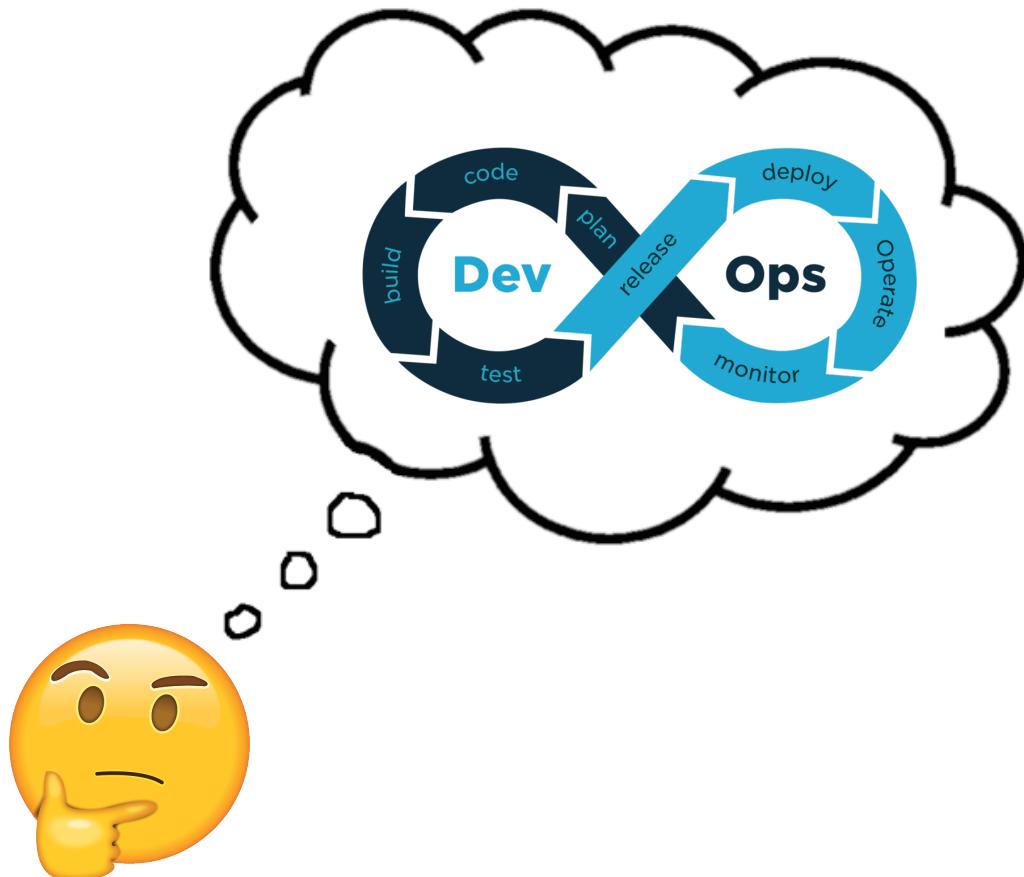
- **Pros**
  - Escalable
  - Confiable
  - Flexible
  - Adopción fácil de nuevas tecnologías
- **Cons**
  - Pruebas de integración difíciles
  - Complejidad operacional
  - Expertiz alto



# Introducción a DevOps

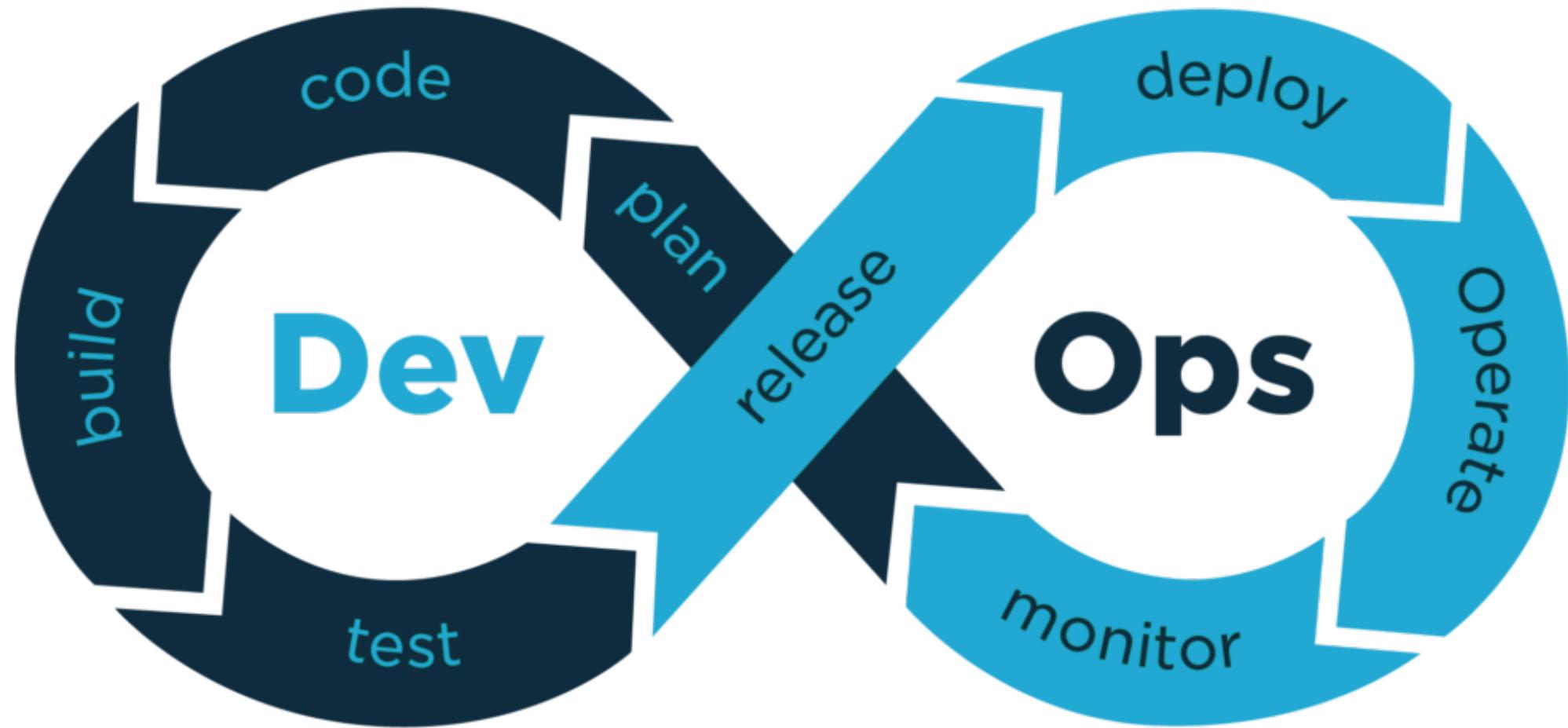


# ¿Qué es DevOps?



- Cultura
- Practicas
- Herramientas





# ¿Qué es DevOps?

## Beneficios

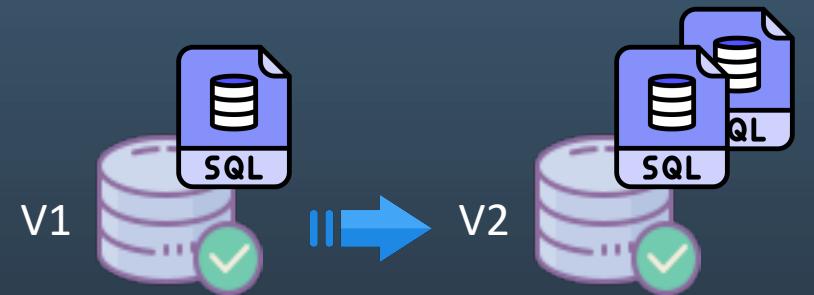
- Agilidad
- Entrega rápida
- Confiabilidad
- Escalabilidad
- Mentalidad innovadora
- Mejora experiencia del cliente

## Prácticas

- Infraestructura como código
- Integración continua
- Entrega continua
- Micro-servicios
- Monitoreo
- Comunicación y colaboración



# DevOps para bases de datos



Shiny Soft

Version: 5.2.4

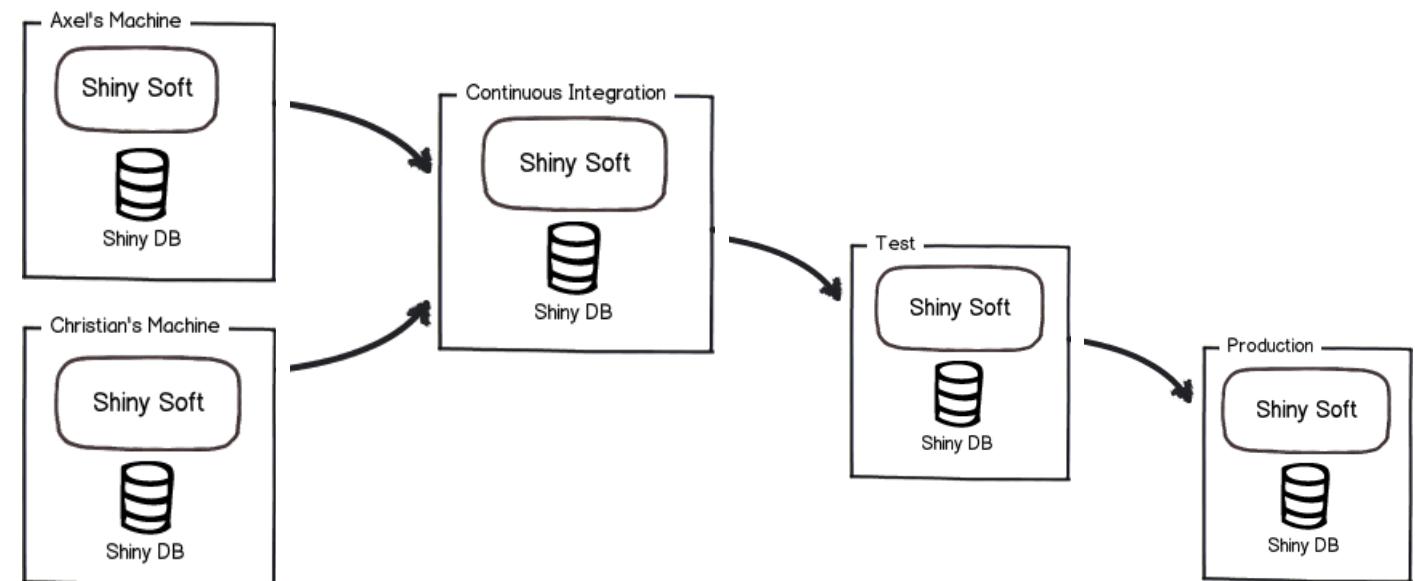
-> Well defined and  
reproducible

Version: ?

-> No exact idea about  
state

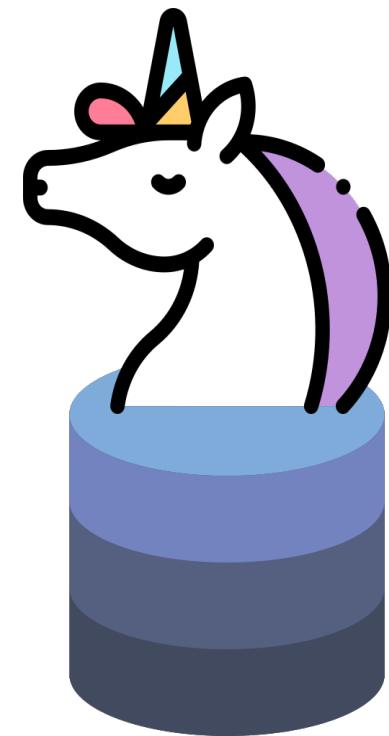


Shiny DB



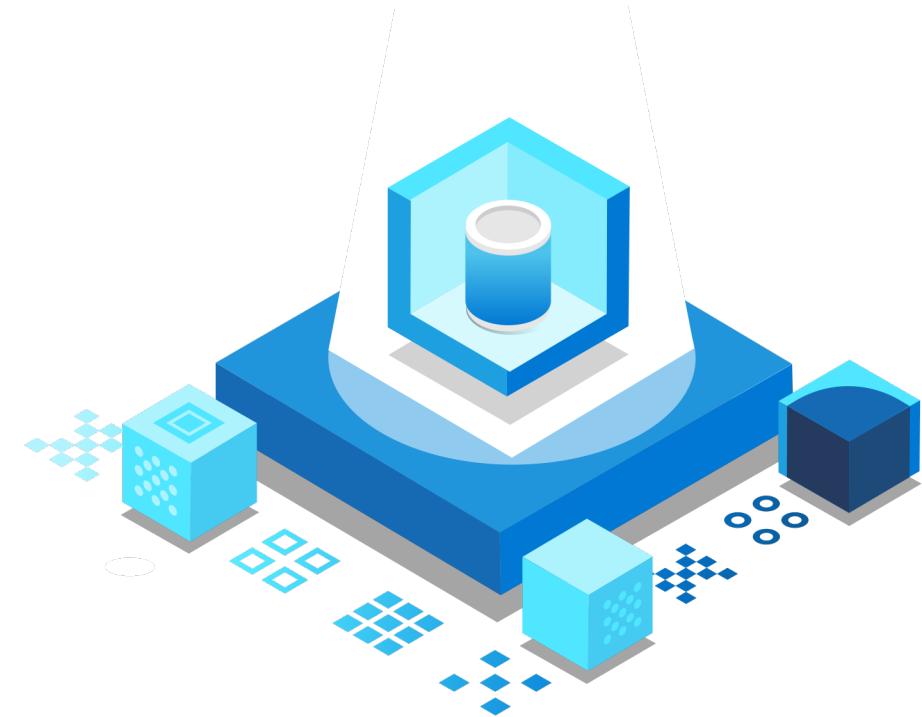
# Evolutionary database design

- Colaboración = DBA + Developer
- Control de versiones
- Cambio = Migración
- Base de datos propia
- Integración continua

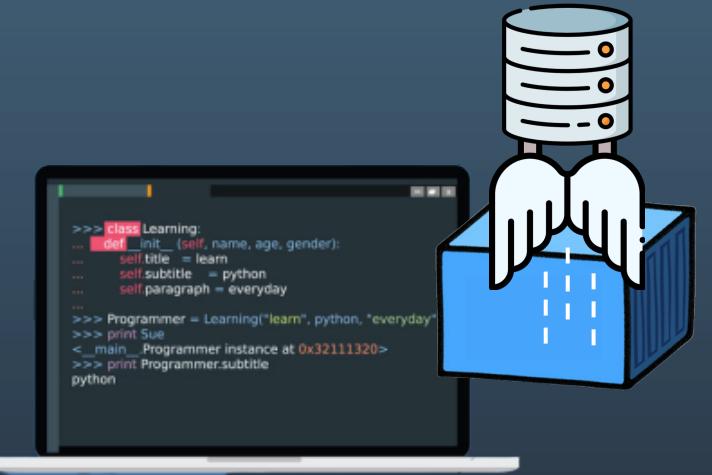


# Migraciones bases de datos

- Identificación única
- Historial de migración
- Repetible
- Consistente



# Enter Flyway



# ¿Qué es Flyway?

- Open source
- Multi-plataforma
- Migraciones
- CLI, containers, SQL, Java, API
- Versionamiento esquema



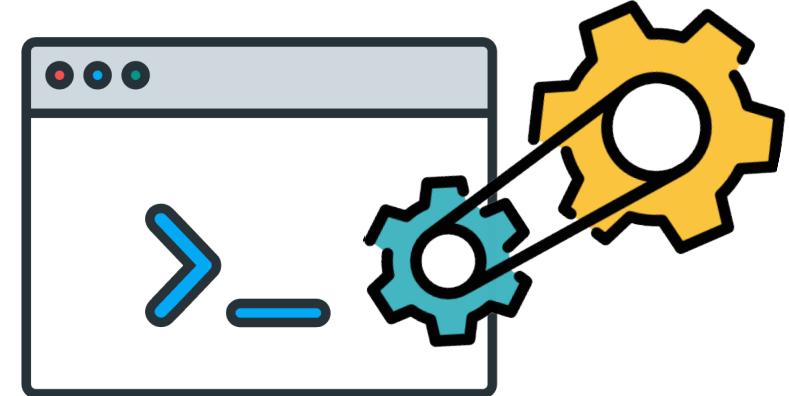
# Estructura - app

```
flyway-7.0.4
  conf
    flyway.conf   ← configuration file
    drivers       ← JDBC drivers
    jars          ← Java-based migrations (as jars)
    jre
    lib
    licenses
    sql           ← SQL migrations
    flyway        ← macOS/Linux executable
    flyway.cmd    ← Windows executable
```



# Comandos

- Migrate
- Clean
- Info
- Validate
- Baseline
- Repair
- Undo (Pro version)



# Configuración

`flyway.url`

`flyway.user`

`flyway.password`

`flyway.env_abc`

`jdbc:<db>:<host>:<port>`

`sa / postgres`

`s3cr3Tp@s$`

`${abc}`



# Migraciones - SQL

Versioned Migrations

Undo Migrations

Repeatable Migrations

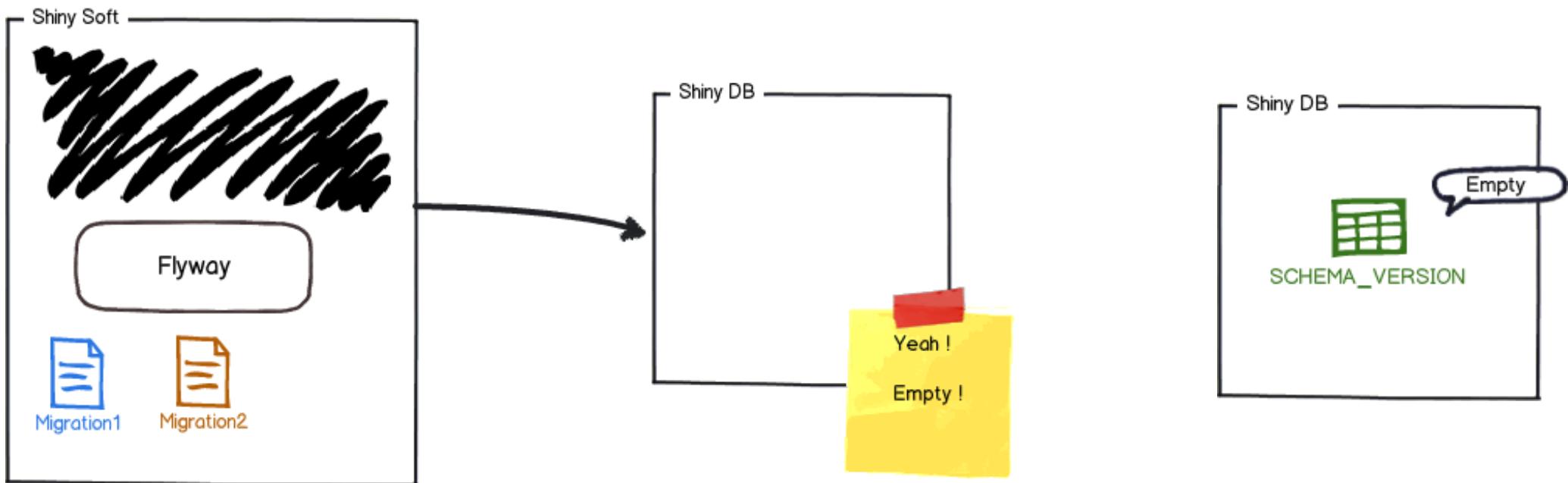
V 2 \_\_ Add\_new\_table .sql

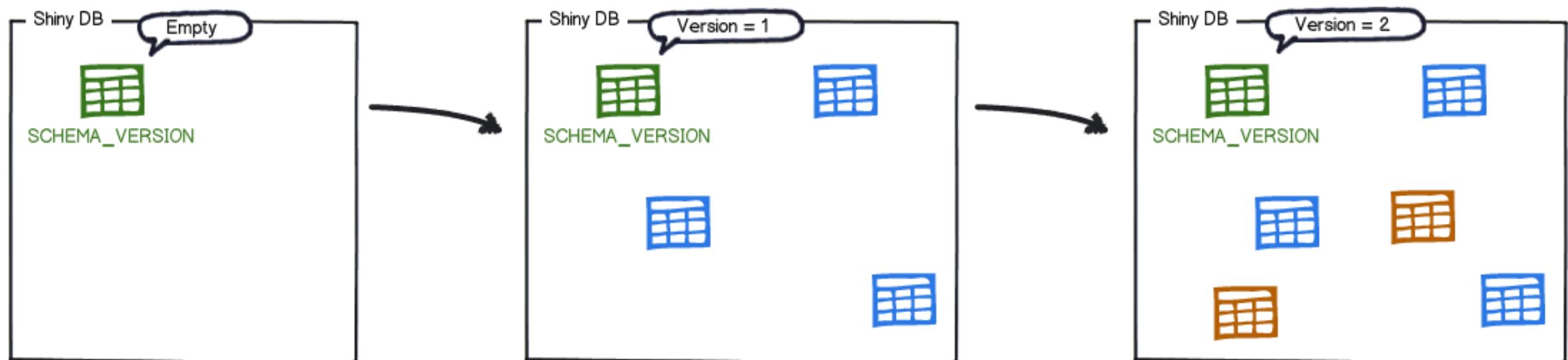
U 2 \_\_ Add\_new\_table .sql

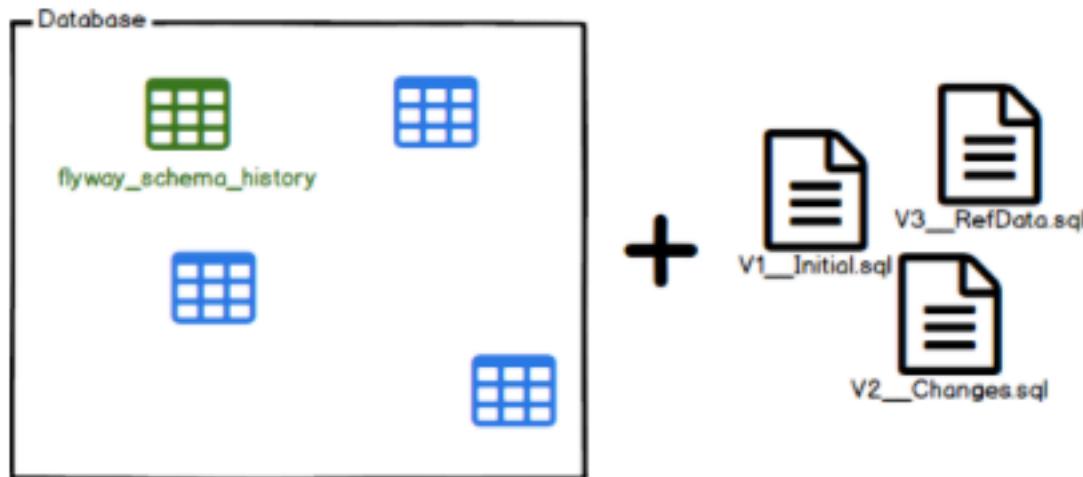
R \_\_ Add\_new\_table .sql



# ¿Cómo funciona?







Category	Version	Description	Type	Installed on	State
Versioned	1	Initial	SQL	2017-11-16 10:26:35	SUCCESS
Repeatable		Package	SQL	2017-11-16 10:26:37	SUCCESS
Versioned	2	RefData	JDBC	2017-11-16 10:26:41	PENDING



# DEMO

Flyway app + container



# Resumen

- DevOps + Databases
- Migraciones bases de datos
- Flyway
- Seis commandos (+1 pro)
- CLI, containers, SQL, Java API



# Preguntas?



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# Referencias

- **Flyway**
  - [Flyway docs](#)
- **Otros**
  - [Docker Docs](#)
  - [Jenkins Handbook](#)
  - [Kubernetes Docs](#)
- **Libros**
  - [The Phoenix / Unicorn Project](#)
  - [The DevOps Handbook](#)
  - [Kubernetes: Up and Running](#)
- [Designing Distributed Systems](#)
- [Continuous Delivery](#)
- [Refactoring databases](#)
- [Database Reliability Engineering](#)



# Articulos y mas

- **YouTube**
  - [SQL Containers on Docker & Kubernetes](#)
  - [SQL Server containers in Microsoft Azure](#)
- **Articles**
  - [Redgate - Simple Talk](#)
  - [SQL Server Central](#)
  - [MSQL Tips](#)





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# Gracias!

