

Kamil Nowiński

SQL Server database SSDT & CI/CD



Kamil Nowiński



Microsoft Data Platform **MVP**

Speaker, blogger, data enthusiast

Group Manager at Avanade UK&I (www.avanade.com)

Almost 20 yrs experience as DEV/BI/(DBA)

Member of the Data Community PL

Project member of „SCD Merge Wizard”

Founder of blog SQLPlayer (www.SQLplayer.net)

SQL Server Certificates:

MCITP, MCP, MCTS, MCSA, MCSE Data Platform,

MCSE Data Management & Analytics

Moreover: Bicycle, Running, Digital photography

@NowinskiK, @SQLPlayer

Blog

- Technical posts
- Various skill level
- Cheat sheets
- Recommended books
- Many useful other links
- Interviews (Podcast)
- YouTube Channel



SQL Player
Play with data & have fun!

www.SQLPlayer.net

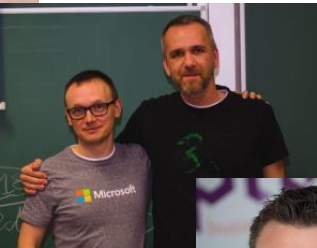
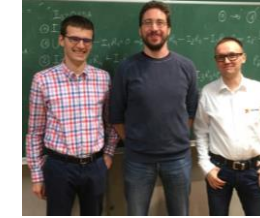
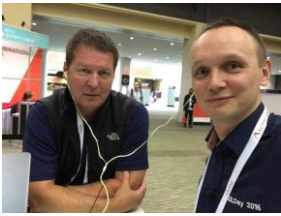


Scan me

"Ask SQL Family" #podcast



Scan me



YouTube



www.SQLPlayer.net/YouTube

Slides available



github.com
/NowinskiK/CommunityEvents

DevOps – definition (Wikipedia)

DevOps (a clipped compound of "**development**" and "**operations**") is a software engineering **culture and practice** that aims at unifying software development (Dev) and software operation (Ops). The main characteristic of the DevOps movement is to strongly advocate **automation and monitoring** at **all steps** of software construction, from integration, testing, releasing to deployment and infrastructure management.

DevOps aims at shorter development cycles, increased deployment frequency, and more dependable releases, in close alignment with business objectives.

What is DevOps?



Developers & Testers



IT Operations








DevOps – how to start?

- Database in source control
- Build CI process
- Deploy (CD) empty database
- Then add the rests:
 - data,
 - security,
 - Unit tests
 - Integration-test (if required)

What is the SSDT?

- SQL Server Data Tools
- Now, it's a part of Visual Studio
- Free!
- Database project, including:
 - Schema, Stored Procedures, Functions,
 - Tables, Views, Security, CLR
 - ... and much more!

SSDT: How to install?

Workloads	Individual components	Language packs	Installation locations
Web & Cloud (7)			
 ASP.NET and web development Build web applications using ASP.NET, ASP.NET Core, HTML, JavaScript, and container development tools. <input checked="" type="checkbox"/>		 Azure development Azure SDK, tools, and projects for developing cloud apps and creating resources. <input checked="" type="checkbox"/>	
 Python development Editing, debugging, interactive development and source control for Python. <input type="checkbox"/>		 Node.js development Build scalable network applications using Node.js, an asynchronous event-driven JavaScript runtime. <input type="checkbox"/>	
 Data storage and processing Connect, develop and test data solutions using SQL Server, Azure Data Lake, Hadoop or Azure ML. <input checked="" type="checkbox"/>		 Data science and analytical applications Languages and tooling for creating data science applications, including Python, R and F#. <input type="checkbox"/>	
 Office/SharePoint development Create Office and SharePoint add-ins, SharePoint solutions, and VSTO add-ins using C#, VB, and JavaScript. <input checked="" type="checkbox"/>			

Summary

- > Visual Studio core editor
- > Universal Windows Platform development
- > .NET desktop development
- > Mobile development with .NET
- > Office/SharePoint development *
- > Azure development
- > ASP.NET and web development
- > Game development with Unity
- ✓ **Data storage and processing**
 - Optional
 - ✓ SQL Server Data Tools
 - ✓ Azure Data Lake and Stream Analytics Tools
 - ✓ .NET Framework 4 – 4.6 development tools
 - ✓ Redgate ReadyRoll Core
 - ✓ Redgate SQL Prompt Core
 - ✓ Redgate SQL Search
 - ✓ F# language support

DEMO – part 1

- Create GIT repo in Azure DevOps
- Create empty database project
- Import database from server

Tips for 8 weeks

- 1 email / week
- Useful things attached:
 - Cheat sheet
 - Tips
 - Step by step manuals
- Visit:
 - <https://learn.sqlplayer.net/database-projects-with-ssdt-dacpac>



SCAN ME

Tips for 8 weeks

SSDT - Tips & Cheat sheets

Enroll now to receive a few emails (8 weeks, one a week) with free, useful materials.
Afterwards, you'll have access to them forever!

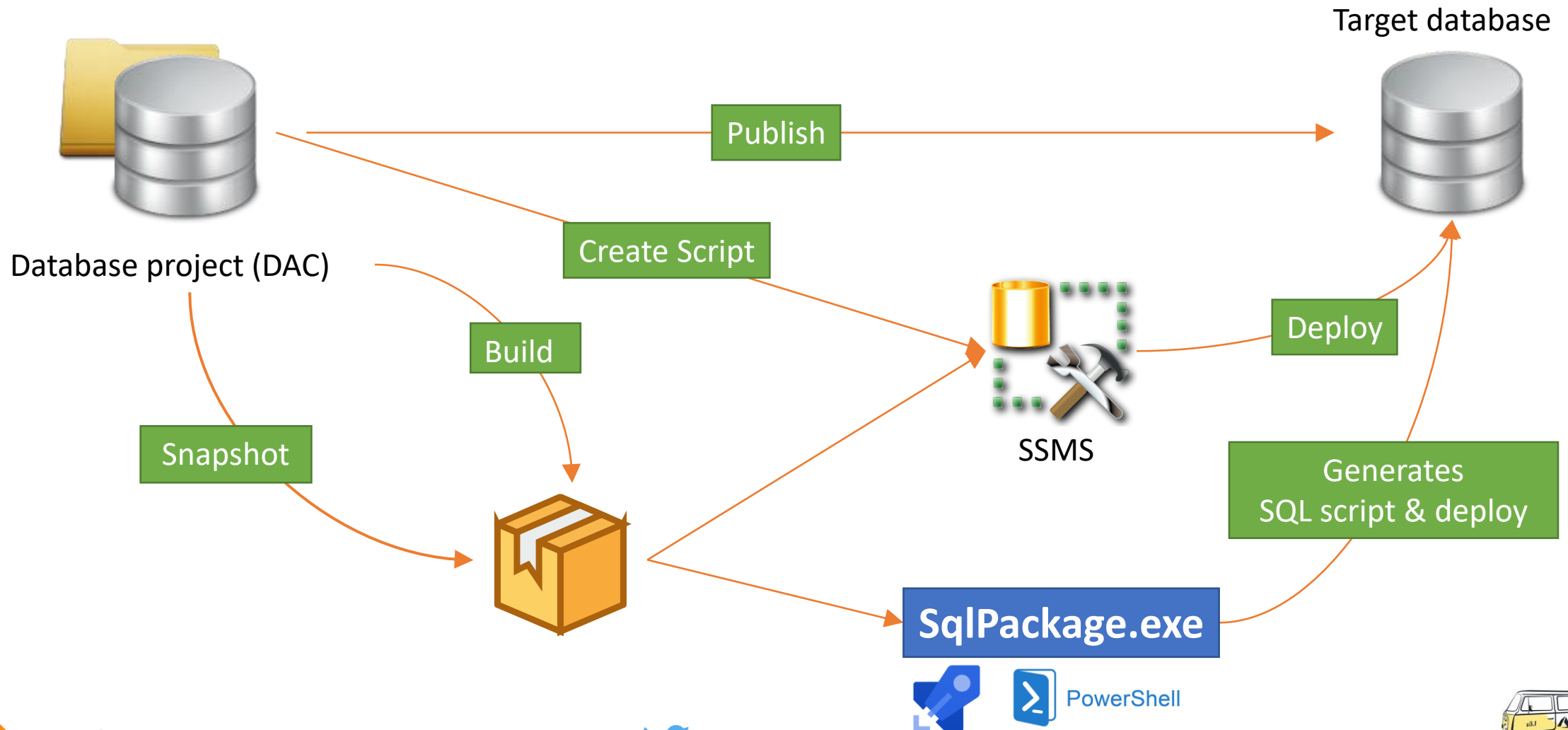
Get access for free



SCAN ME

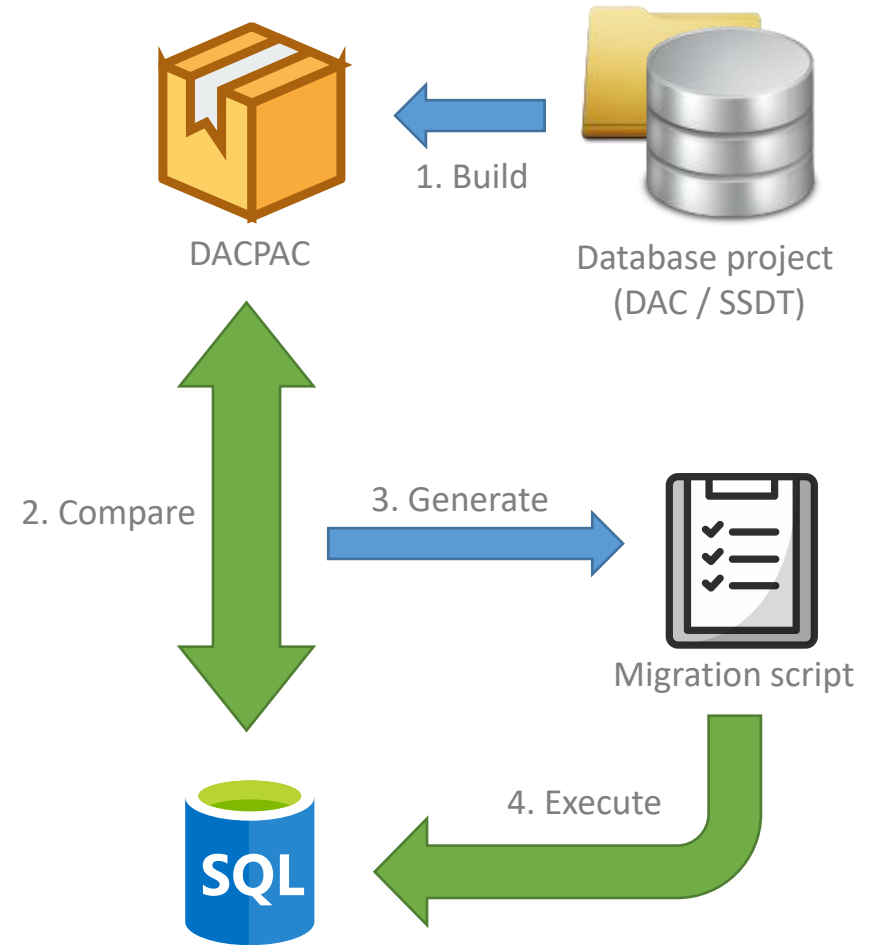
<https://learn.sqlplayer.net/ssdt-tips>

DACPAC file usage scenarios



SSDT Deployment Pipeline

- Build database project
 - Generates DACPAC
- SQLPackage compares
 - DACPAC to target database
- SQLPackage generates
 - Migration script
 - Execute script against target server



Azure DevOps

- Build database project
 - Generates DACPAC
- SQLPackage compares
 - DACPAC to target database
- SQLPackage generates
 - Migration script
 - Execute script against target server



DEMO – part 2

- Build (Visual Studio)
- Build Pipeline (Azure DevOps)
- Publish (Visual Studio)
- Release Pipeline (Azure DevOps)

SSDT offers much more...

- Database references
- Variables
- Publish Profiles
- Pre & Post-deployment scripts

Resources: <https://sqlplayer.net/ssdt>

SQL Server Data Tools (SSDT)

All the following posts are in **SSDT series** on the blog:

- New DB project with SSDT and import existing database
- How to create DACPAC file?
- #TSQL2sDay – How SQLPackage.exe can spoil your deployment
- Tokenization of database project in SSDT
- SSDT (SqlPackage) thread crashes with error when publishing
- Script and deploy the data for database from SSDT project
- 📺 Deployment of Microsoft SQL database with Azure DevOps (video)

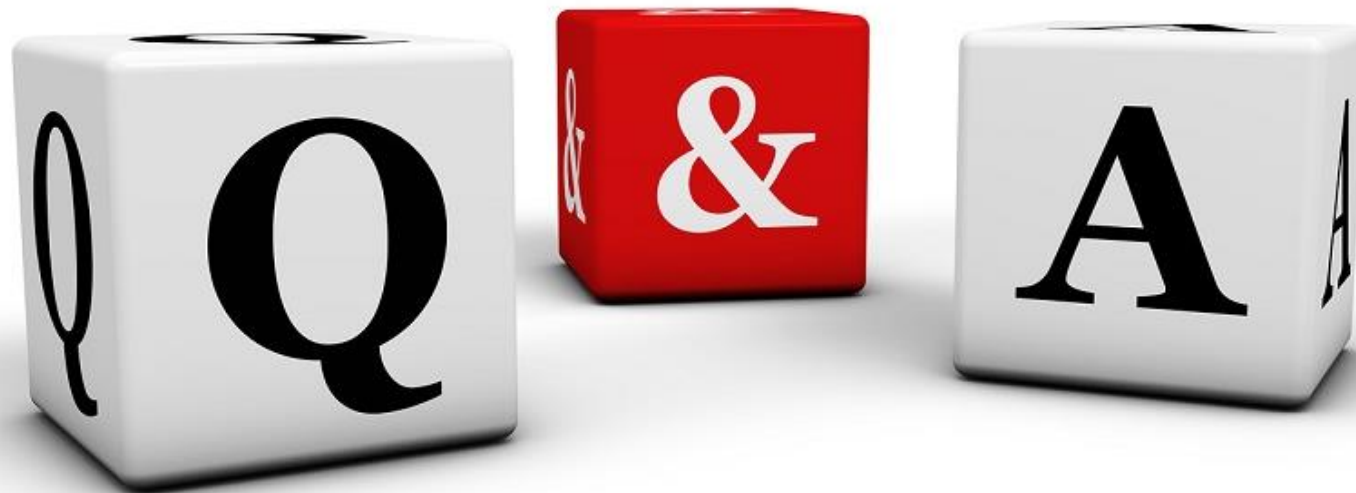
Microsoft resources:

- 🛠 SQL Server Data Tools (MSDN)
- 🛠 SQLPackage.exe (MSDN)
- 🛠 Data-tier Application Framework (DACFx)
- Microsoft SQL Server Data Tools Team Blog
- GIT – branch organization

Other resources:



Questions?



<https://github.com/NowinskiK/ssdt-training/discussions>



kamil@nowinski.net



@NowinskiK

@SQLPlayer



SQLPlayer.net



<https://github.com/NowinskiK/CommunityEvents>



Thank you!

