

What's New in SQL Tools for Developers

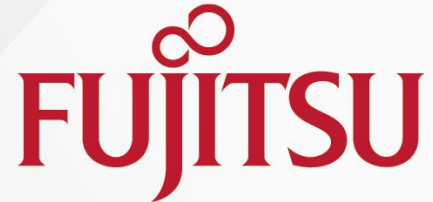
June 10, 2021

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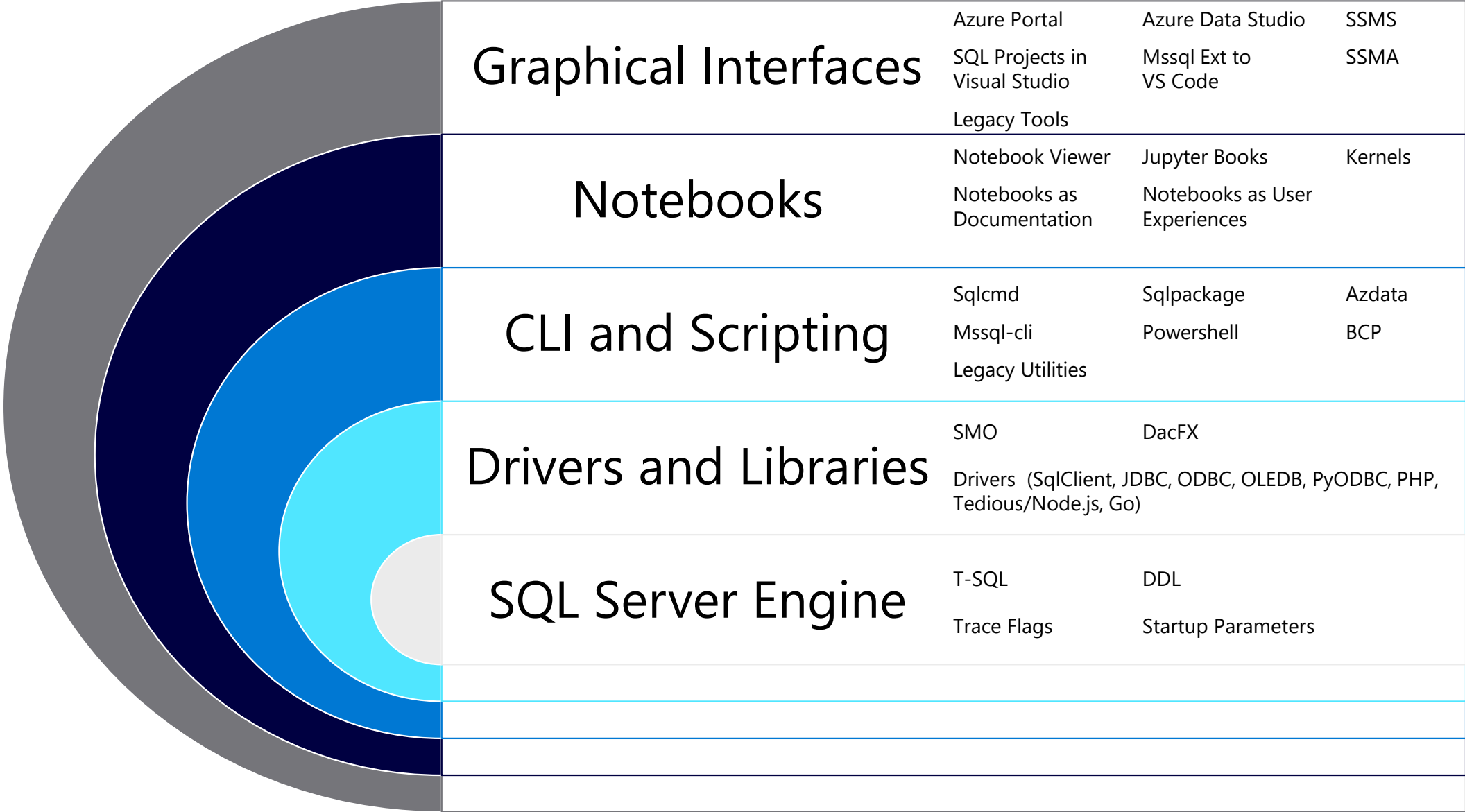
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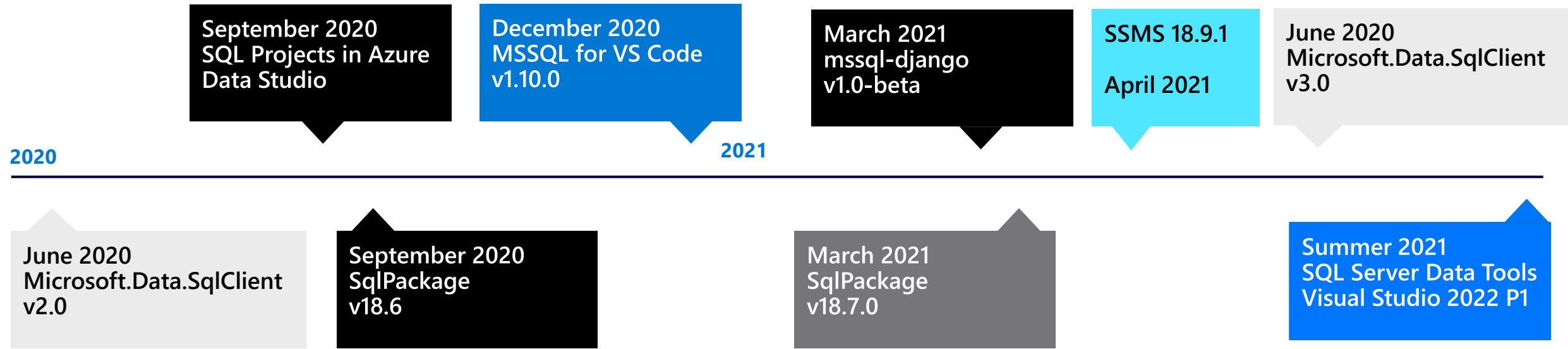
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SQL Server Experiences



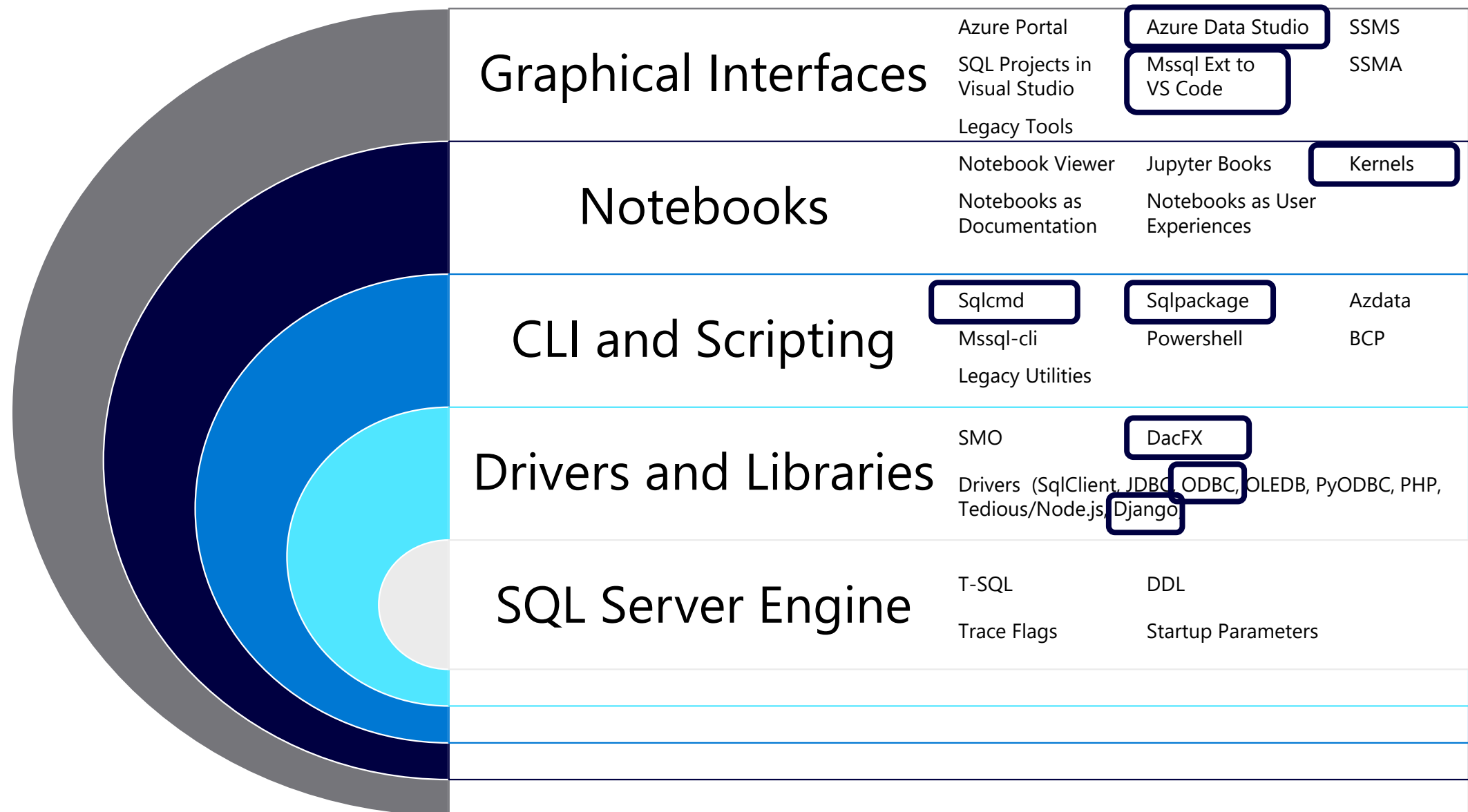
Selected Recent Releases



Azure Data Studio releases on a monthly cadence

SQL Server Management Studio (SSMS) releases on a quarterly cadence

SQL Server Experiences



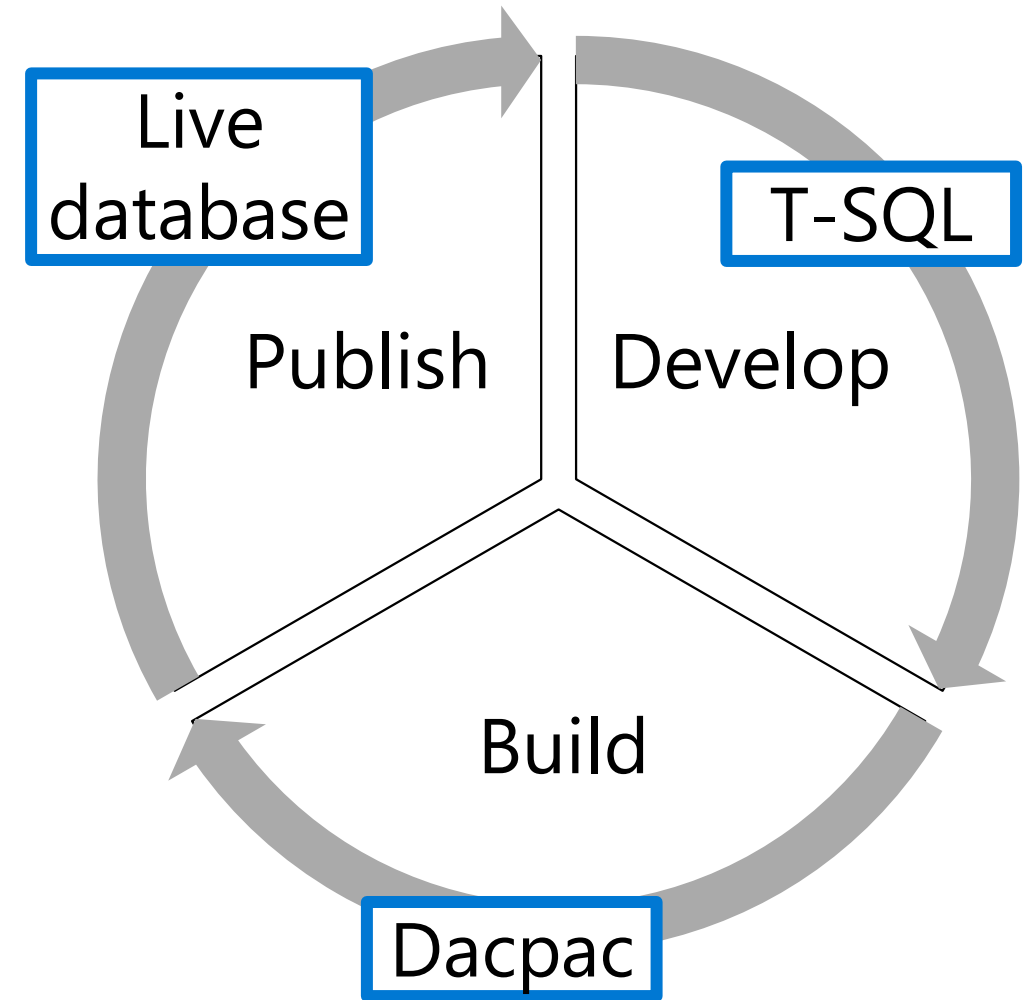
Declarative Database Development

Development of the desired end state

Also known as state-based development
Tooling manages change and migration
during deployment

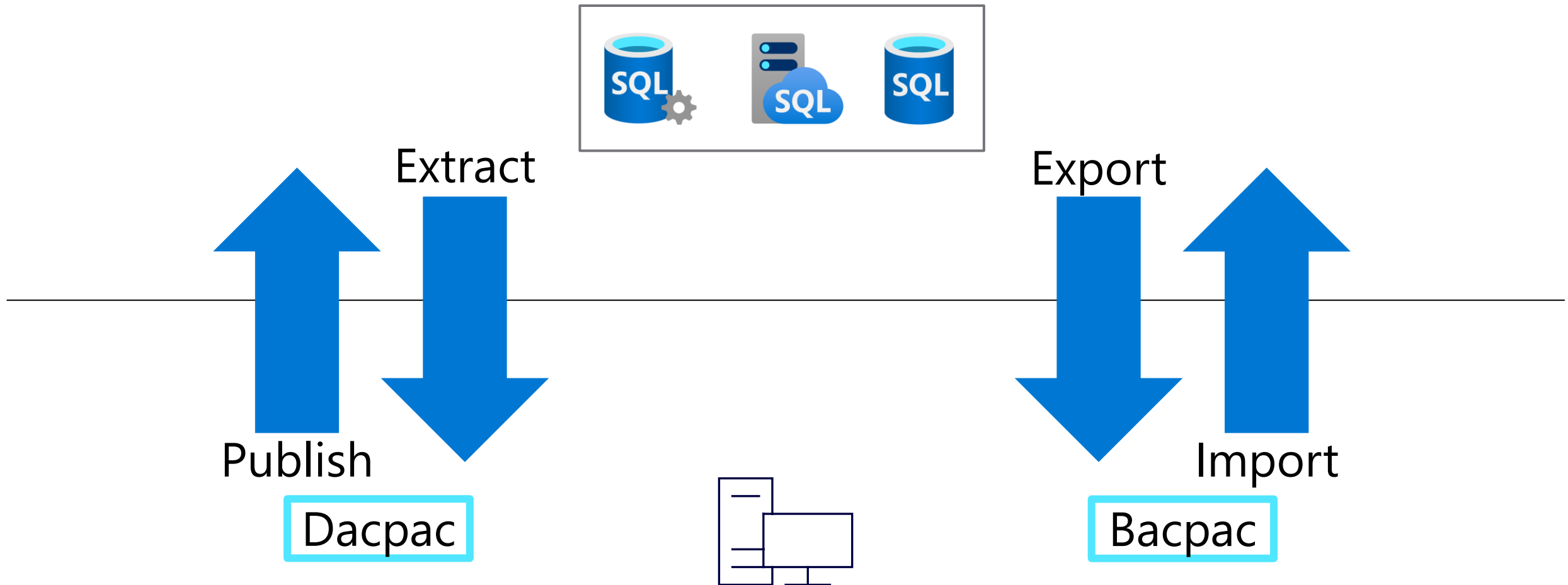
Facilitates version control

Dacpac is the result from building
a database project



SqlPackage

Command line interface to DacFx framework



SqlPackage Command Syntax

```
SqlPackage /Action:{action}  
/{additionalParameter}:{parameterValue}
```

```
SqlPackage /Action:Extract /SourceServerName:localhost  
/SourceDatabaseName:AdventureWorksLT2019  
/TargetFile:c:\Users\you\AdventureWorksLT.dacpac
```

Parameters have long and short form names

/Action:	/a:
/SourceServerName:	/ssn:
/TargetFile:	/tf:

<https://docs.microsoft.com/en-us/sql/tools/sqlpackage/sqlpackage>

New in SqlPackage

Features

- External Streams and Streaming Job support for Azure Sql Edge
- Support for extracting Synapse database's data to Azure Storage

Performance

- Improvements on Import Export Perf
- Granular Perf Logging

Logging

- Hashed logging for detailed analysis

Demo: SqlPackage

Database Projects (Azure Data Studio)

Declarative Syntax for Development

Incremental Deployment of only the required changes

Parity with SSDT features

- Pre/Post deployment
 - Database references
 - Deployment profile
 - Schema compare
-

Backward compatibility with SSDT

Same project will work with ADS as well as with SSDT.

New in Database Projects (Azure Data Studio)

Workspace Integration

- Manage a collection of projects through VSCode workspace

Git Integration

- Open a project or workspace from a Git repo
- Manage and collaborate through Git

Project Dashboard

- Do operation on project
- View history of project Builds/Deployments

Demo: Azure Data Studio SQL Projects

Instance deployment with Azure Data Studio

Select the deployment options

Filter resources...

Categories

All

On-premises

Hybrid

Cloud

SQL Server



SQL Server on Windows

Run SQL Server on Windows, select a version to get started.



SQL Server container image

Run SQL Server container image with docker



SQL Server Big Data Cluster

SQL Server Big Data Cluster allows you to deploy scalable clusters of SQL Server, Spark, and HDFS containers running on Kubernetes



Azure SQL Database

Create a SQL database, database server, or elastic pool in Azure.



SQL Server on Azure Virtual Machine

Create SQL virtual machines on Azure. Best for migrations and applications requiring OS-level access.



Azure SQL managed instance

Create a SQL Managed Instance in either Azure or a customer-managed environment



Azure SQL Edge

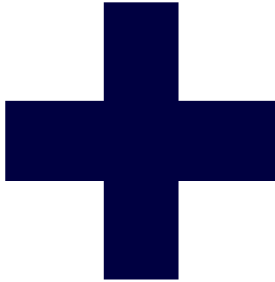
Azure SQL Edge (Preview) is an optimized relational database engine geared for IoT and IoT Edge deployments.

Demo: Azure Data Studio notebooks

Notebooks

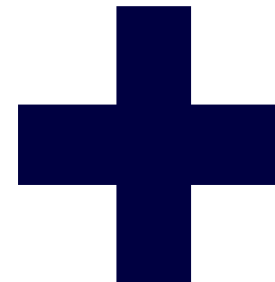
Markdown

Document



Kernel Options

Run code in T-SQL,
Python, PowerShell, KQL,
and other shells.



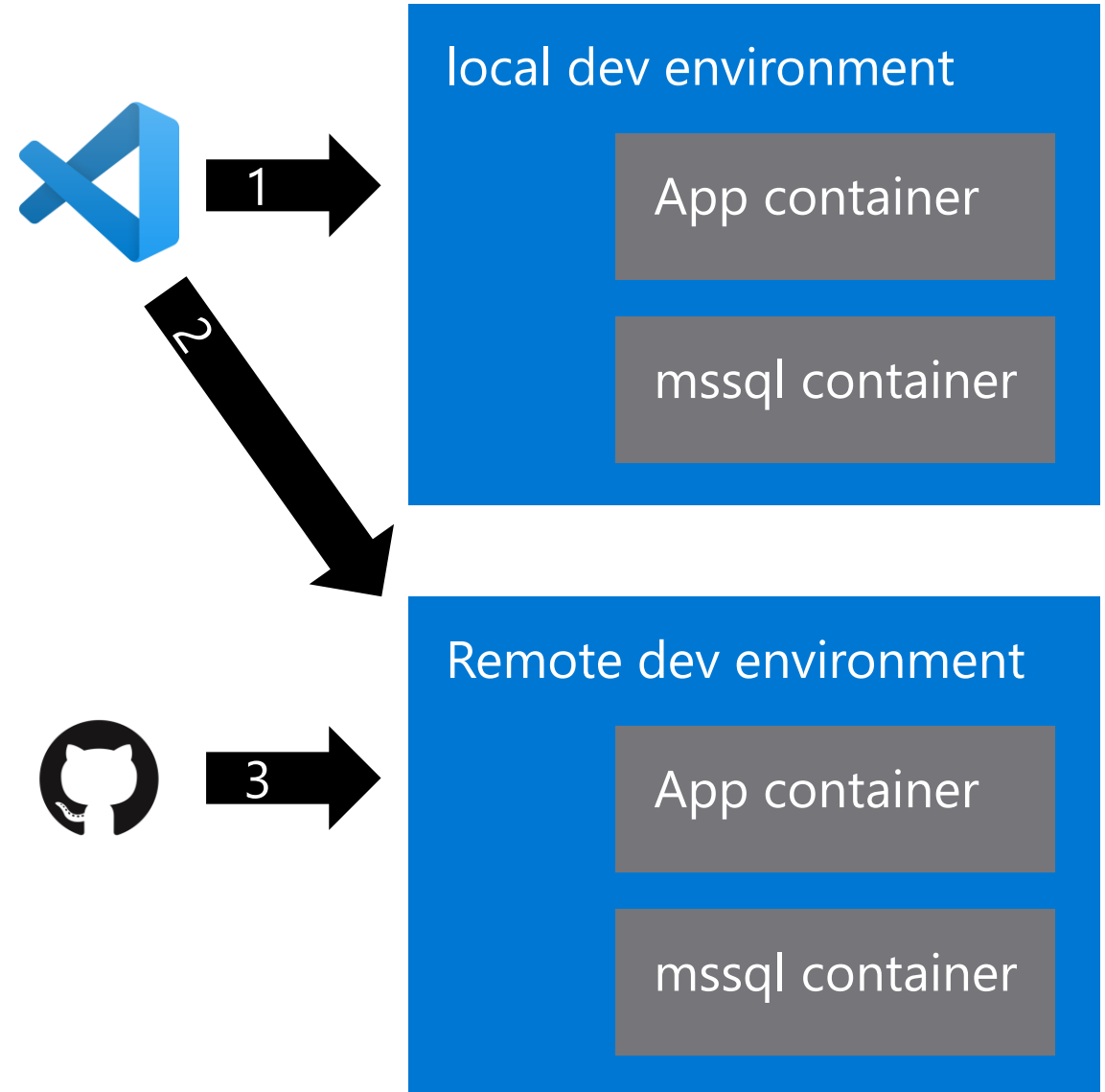
Store Results

Sample data
Expected results

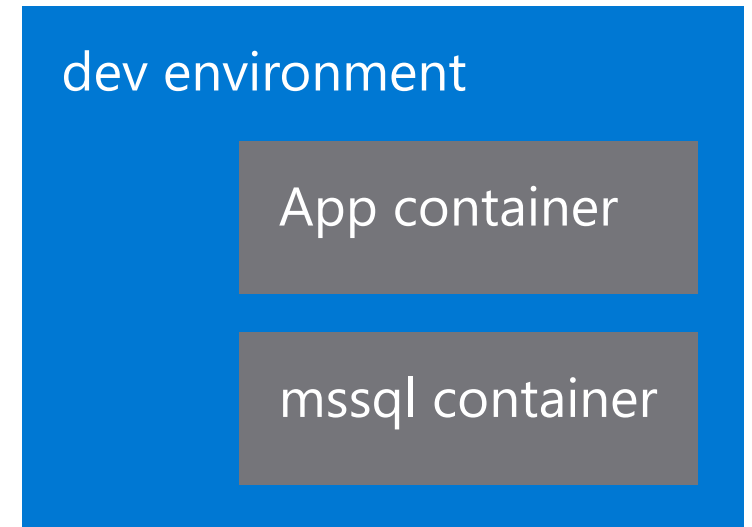
Remote Development in VS Code with mssql

Add an mssql container to your development environment definition

Use SqlPackage, sqlcmd, or other command line tools to deploy data-tier application components



Example Mssql-Django Environment Setup



Automated:

1. Adds Azure SQL Edge instance
2. Installs ODBC driver and Python dependencies
3. Creates the Django app database
4. Applies app models to the database and adds a Django app superuser

How :

1. `docker-compose.yml`
2. `apt-get` & `pip` in Dockerfile
3. `Sqlcmd`
4. Python commands

Demo: VS Code and mssql

We want to hear from you!

- Many of these tools are open source – including Azure Data Studio, mssql extension for VS Code, and Microsoft.Data.SqlClient
- Raise bugs and share feedback through corresponding GitHub repositories
Azure Data Studio: <https://github.com/microsoft/azuredatstudio>
mssql for VS Code: <https://github.com/microsoft/vscode-mssql>
DacFx/SqlPackage: <https://github.com/microsoft/DACExtensions>
SqlClient for .NET: <https://github.com/dotnet/SqlClient>
mssql client for Django: <https://github.com/microsoft/mssql-django>

Resources

- <https://aka.ms/sqlpackage>
- <https://aka.ms/azuredatatstudio-sqlprojects>
- <https://github.com/dzsquared/mssql-django-demo>
- <https://github.com/Azure-Samples/app-sql-devops-demo-project>

Thank you!