



Brian.About();



- Partner with MCW Technologies, www.mcwtech.com
- Co-author Pro ALM 2013 from Wrox
- 15 year Microsoft MVP—Development Technologies
- Linked In Learning author
 - New course DevOps for the Database with VSTS and Azure <https://bri.gd/lilddbdevopsvsts0818>
 - Also Db DevOps with TFS 2018 <http://bri.gd/lilddbdevopstfs18>
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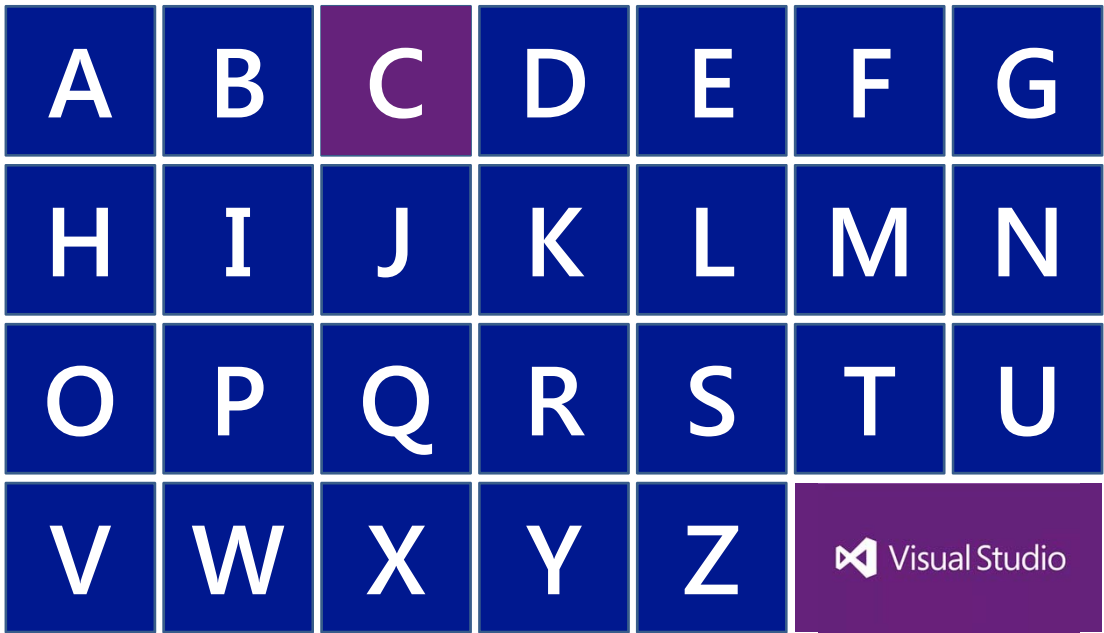
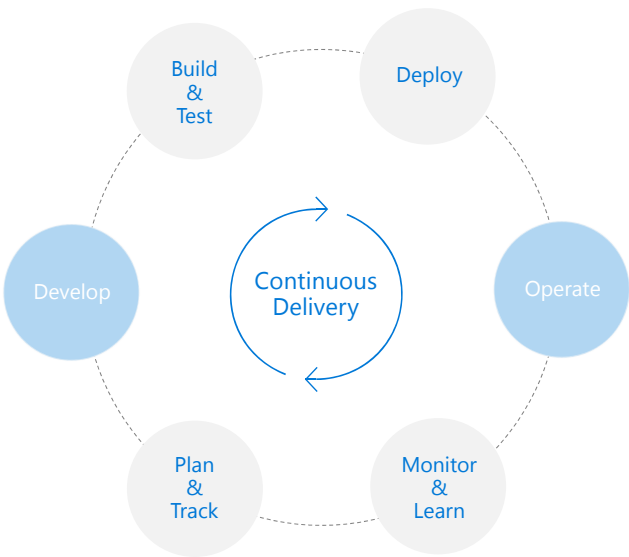


What is DevOps?

People. Process. Products.



DevOps is the union of **people**, **process**, and **products** to enable continuous delivery of value to your end users. ”



Continuous

Focus on the Flow

- Continuous Integration
- Continuous Testing
- Continuous Deployment
- Continuous Feedback
- Continuous Improvement

- Continuous (Value) Delivery

Great, but how?

- Let's show you an end-to-end pipeline
 - Manage change for a database
 - Look at a continuous delivery pipeline
- Tools I'm using
 - SQL Server Data Tools
 - Azure Pipelines
 - ~~VSTS~~ Azure DevOps
 - Microsoft Release Management
 - TFS 2015 Update 2 or later
- Other Tools
 - Redgate, Octopus Deploy, ...

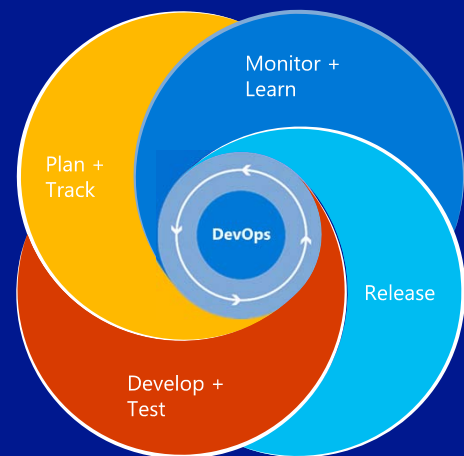
Models and Databases

- SSDT approach
- Take the "catalog" offline
 - Use a "state" model
- Model database entities as DDL entities
- Publish changes by comparing model to target
 - Changes packaged as DACPAC
 - Could use SQL scripts as well

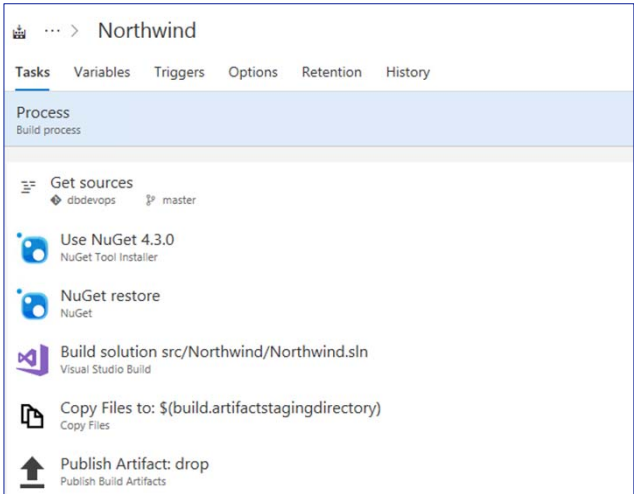
Migrations and Databases

- EF Core is an example of what this is
- Define database via ORM
- “Migrate” changes from model
- Redgate ~~ReadyRoll~~ SQL Change Automation uses migrations
 - SQL Change Automation Core included with VS 2017 Enterprise Edition

Demo



Team Build Definition



Visual Studio Build Task

Visual Studio Build ⓘ

[Link settings](#) [Remove](#)

Version

1.*

Display name *

Build solution src/Northwind/Northwind.sln

Solution *

src/Northwind/Northwind.sln

Visual Studio Version ⓘ

Latest

MSBuild Arguments ⓘ

/p:DeployOnBuild=true /p:WebPublishMethod=Package /p:PackageAsSingleFile=true /p:SkipInvalidConfigurations=true /p:PackageLocation="\$(build.artifactstagingdirectory)\\

Platform ⓘ

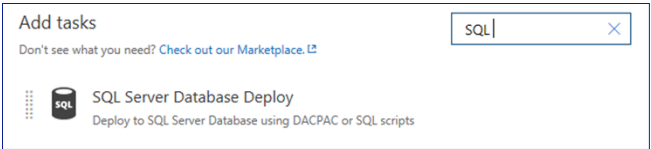
\$(BuildPlatform)

Configuration ⓘ

\$(BuildConfiguration)

☐ Clean ⓘ

Release Management Task



SQL Server Database Deploy

SQL Server Database Deploy ⓘ ✕ Remove

Version 0.* ▾

Display name * SQL DB Deploy

Deploy SQL Using * ⓘ Sql Dacpac

DACPAC File * ⓘ \$(System.DefaultWorkingDirectory)/Northwind/drop/src/Northwind/NorthwindDb/bin/Release/NorthwindDb.dacpac ...

Specify SQL Using * ⓘ Server

Server Name * ⓘ localhost

Database Name * ⓘ Northwind

Authentication * ⓘ Windows Authentication ▾

Agent Capabilities

Requests

Capabilities

USER CAPABILITIES

Shows information about user-defined capabilities supported by this host

+ Add capability

Save changes

Undo changes

SYSTEM CAPABILITIES

Shows information about the capabilities provided by this host

Capability name	Capability value
Agent.ComputerName	TFS2017
Agent.Name	TFS2017
Agent.OS	Windows_NT
Agent.OSVersion	6.3.9600
Agent.Version	2.117.2
ALLUSERSPROFILE	C:\ProgramData
APPDATA	C:\Users\TfsBuild\AppData\Roaming
AzurePS	3.1.0

SqlPackage

C:\Program Files (x86)\Microsoft SQL Server\130\DAC\bin\SqlPackage.exe

Azure SQL Database

SQL

Execute Azure SQL : DacpacTask

Azure SQL Database Deployment

✓

Azure SQL Database Deployment ⓘ

✕ Remove

Version

1.*

Display name *

Execute Azure SQL : DacpacTask

Azure Connection Type

Azure Resource Manager

Azure Subscription * ⓘ | Manage ⓘ

Add Azure Resource Manager Service Endpoint ⓘ

Connection name

Subscription

{ }

Subscriptions listed are from Azure Cloud

A new Azure Service Principal will be created and assigned with "Contributor" role, having access to all the resources in the selected subscription.

If your subscription is not listed above, or your account is not backed by Azure Active Directory or to specify an existing Service Principal, use the full version of the endpoint dialog.

OK

Close

Azure SQL Database

SQL DB Details ^

Azure SQL Server Name * ⓘ

.database.windows.net

Database Name * ⓘ

AdventureWorksLTdev

Server Admin Login ⓘ

sqlAdmin

Password ⓘ

\$(Sqlpassword)

Azure SQL Database

Deployment Package ^

Type

SQL DACPAC File

DACPAC File * ⓘ

\$(System.DefaultWorkingDirectory)/Azure-AdventureWorksLT/drop/src/Azure-AdventureWorksLT/AdventureWorksLTdb/bin/Release/AdventureWorksLTdb.dacpac

...

Publish Profile ⓘ
...

Additional SqlPackage.exe Arguments ⓘ

Issues

- How do you update database and app together
 - App (binaries) first, then database
 - Database first, then app (binaries)
- Drift
- Data Motion
- Static Data Loading
- Test Data
- Replication

A final thought ...

Don't let your **experience**
be an **impediment** to your ability
to **learn** and **grow**.

contact me

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Thank you!