

CI/CD with DevOps Pipelines and Azure SQL

New Build Pipeline Steps

- 1) Source = TFVC/Git
- 2) Start with an Empty Job
- 3) Add Agent Tasks
 - i) Add VSBuild Task
 - (1) Select SLN/Solution File from your Repo
 - (2) Set MSBuild Arguments for SQLPackage
 - (3) Platform – Any cpu
 - (4) Config – release
 - ii) Add Copy Files Task
 - (1) DisplayName - Copy Files to: \$(build.artifactstagingdirectory)
 - (2) Source Folder - \$/SQL Server/DatabaseProjects/DevOpsDemo/AWLT
 - (3) Contents - **\bin**
 - (4) Target Folder - \$(build.artifactstagingdirectory)
 - iii) Add Publish Build Artifact
 - (1) Display Name - Publish Artifact: AW_LT
 - (2) Path to Publish: \$(Build.ArtifactStagingDirectory)
 - (3) Artifact Name: AW_LT
 - (4) Artifact publish location: Azure Pipelines

CI/CD with DevOps Pipelines and Azure SQL

New Release Pipeline Steps

- 1) Add Artifact (input)
 - a) Select Project
 - b) Select Source
 - c) Default version – Latest
 - d) Source Alias – leave
- 2) Add Stage
 - a) Rename Stage to Prod
 - b) Add Empty Job
 - c) Click 1 Job, 0 Tasks
 - d) Edit Job Properties, under Demands, add sqlpackage/exists
 - e) Add Tasks to Agent Job
 - i) Select Azure SQL DacPac Task – blue cloud
 - ii) Set Task properties
 - (1) Azure subscription
 - (2) Auth Type – SQL
 - (3) SQL Server - insyncva.database.windows.net
 - (4) Database – use variable
 - (5) Login – use variable
 - (6) Password – use variable
 - (7) Deploy Type- SQL DacPac file
 - (8) Action – Publish
 - (9) DacPac File – browse to dacpac
 - (10) Publish Profile – empty
 - (11) Additional SqlPackage.exe Arguments
 - (a) /p:DatabaseEdition=Basic is the Product SKU

CI/CD with DevOps Pipelines and Azure SQL

Variables

Variables are useful when you create many pipelines, pipelines via automation or via YAML

The screenshot shows the 'Variables' tab in the Azure DevOps interface for a pipeline named 'AdventureWorks Deploy'. The left sidebar has a 'Variables' tab selected, which is circled in red. Below it, there are links for 'Pipeline variables', 'Variable groups', and 'Predefined variables'. The main area displays a table of variables with columns for Name, Value, and Scope. The table lists five variables: DatabaseName_Dev, DatabaseName_Prod, DatabaseName_QA, DatabaseUserName, and DatabaseUserPassword. The values are AWLT_Dev, AWLT_Prod, AWLT_QA, sqladmin, and ***** respectively. All scopes are 'Release'. At the bottom of the table, there is a '+ Add' button, which is also circled in red.

Name	Value	Scope
DatabaseName_Dev	AWLT_Dev	Release
DatabaseName_Prod	AWLT_Prod	Release
DatabaseName_QA	AWLT_QA	Release
DatabaseUserName	sqladmin	Release
DatabaseUserPassword	*****	Release

The list of pre-defined pipeline variables is here:

<https://docs.microsoft.com/en-us/azure/devops/pipelines/build/variables?view=azure-devops&tabs=yaml>

The most common variable is \$(build.artifactstagingdirectory)

CI/CD with DevOps Pipelines and Azure SQL

CI/CD Trigger

The Trigger lives on the Release Pipeline Artifact

All pipelines > AdventureWorks Deploy

Save Create release View releases

Pipeline Tasks Variables Retention Options History

Artifacts | + Add

AdventureWorks Lite

Schedule not set

Stages | + Add

QA
1 job, 1 task

Prod
1 job, 1 task

Dev
1 job, 1 task

Continuous deployment trigger

Build: AdventureWorks Lite

☒ Enabled

Creates a release every time a new build is available.

Build branch filters ⓘ

No filters added.

+ Add

CI/CD with DevOps Pipelines and Azure SQL

Pre-Post Deployment Approvals – Sends an Email

Pipeline Tasks Variables Retention Options History

Artifacts | + Add

Stages | + Add

QA
1 job, 1 task

Prod
1 job, 1 task

Dev
1 job, 1 task

Pre-deployment conditions

QA

Triggers
Define the trigger that will start deployment to this stage

Pre-deployment approvals
Select the users who can approve or reject deployments to this stage

Enabled

Approvers
george walkey

Timeout
30 Days

Approval policies

- ☐ The user requesting a release or deployment should not approve it
- ☐ Revalidate identity of approver before completing the approval.
- ☐ Skip approval if the same approver approved the previous stage

Build Pipeline – Arguments

MSBuild arguments

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

Copy File Task Args

Display Name: Copy Files to: \$(build.artifactstagingdirectory)
Contents: **\bin**
Target Folder: \$(build.artifactstagingdirectory)

Publish Build Artifact Args

Display Name: Publish Artifact: AW_LT
Path To Publish: \$(Build.ArtifactStagingDirectory)
Artifact Name: AW_LT
Artifact publish location: Azure Pipelines

CI/CD with DevOps Pipelines and Azure SQL

Release Pipeline – DacPac Task Args

Azure Sub - pick your subscription

Azure SQL Server: sqlservername.database.windows.net

Database: \$(DatabaseName_Prod)

Login: \$(DatabaseUserName)

Password: \$(DatabaseUserPassword)