# Defect in DacFx extracting a DacPac with nullable persisted computed columns

## Versions

* Visual Studio 2017 Professional – Version 15.8.5
* .NET Framework Version 4.7.03056
* SQL Server Data Tools Version 15.1.61808.07020

## Scenario #1 – Using a extracted dacpac

I have a sql server database project with one table [dbo].[ATable], an ID column, a date column and a persisted computed column. As below: -

CREATE TABLE [dbo].[ATable]

(

[ID] INT NOT NULL PRIMARY KEY,

[ADate] DATE NOT NULL,

[DayOfYear] AS (dbo.[CalcDayOfYear]([ADate])) PERSISTED

)

I have a scalar function which is schemabound that calculates the day of year based on a date passed in:

CREATE FUNCTION dbo.CalcDayOfYear

(

@CalcDate DATE

)

RETURNS SMALLINT

WITH SCHEMABINDING

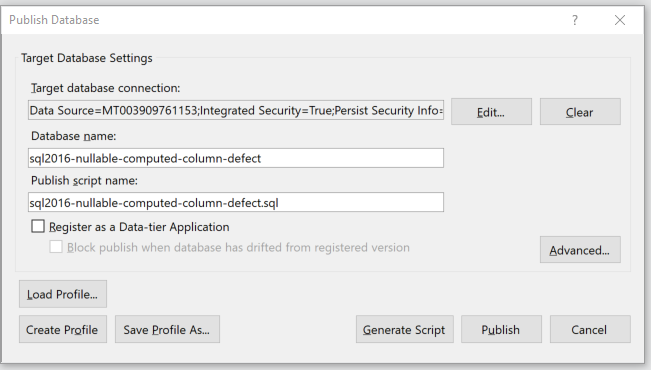
AS

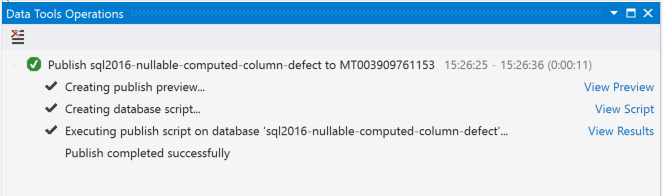
BEGIN

RETURN ((CONVERT(SMALLINT, DATEPART(DAYOFYEAR, @CalcDate ))))

END

I can publish this without any issues using the publish tools in visual studio:

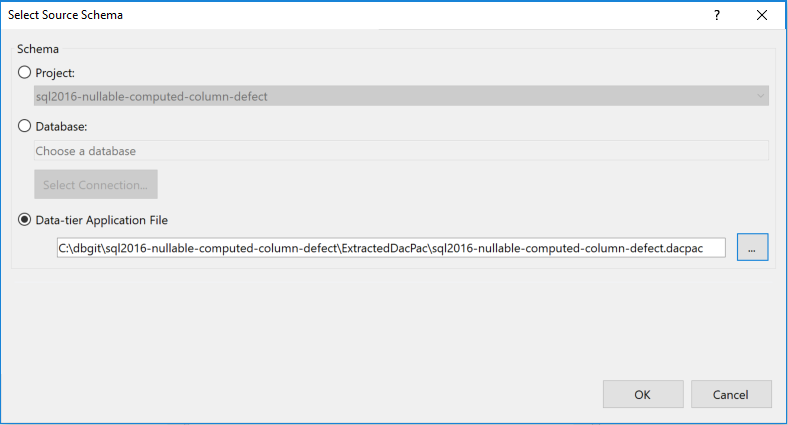




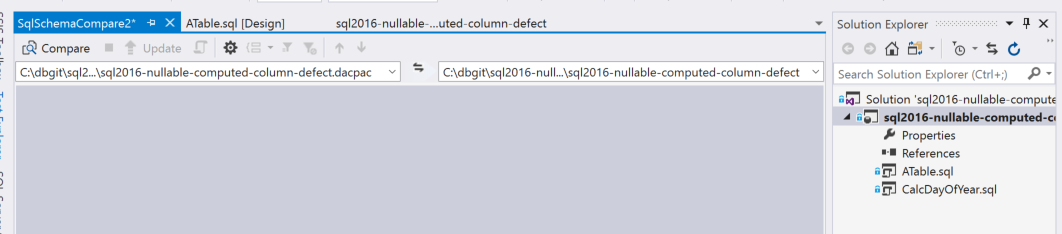
When I extract the dacpac off the database using the below script:

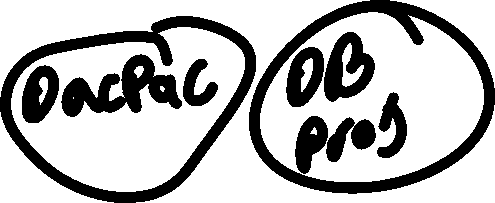
"C:\Program Files (x86)\Microsoft Visual Studio\2017\Professional\Common7\IDE\Extensions\Microsoft\SQLDB\DAC\150\sqlpackage.exe" /Action:Extract /OverwriteFiles:True /TargetFile:".\ExtractedDacPac\sql2016-nullable-computed-column-defect.dacpac" /SourceDatabaseName:sql2016-nullable-computed-column-defect /SourceServerName:.

And compare it to the project using the compare schema tool in visual studio:

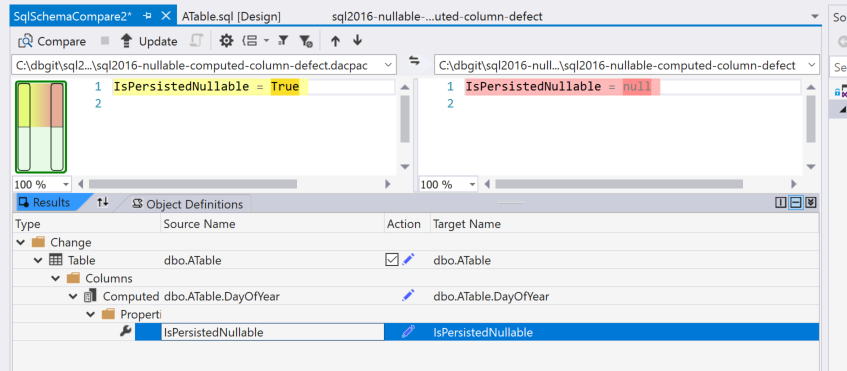




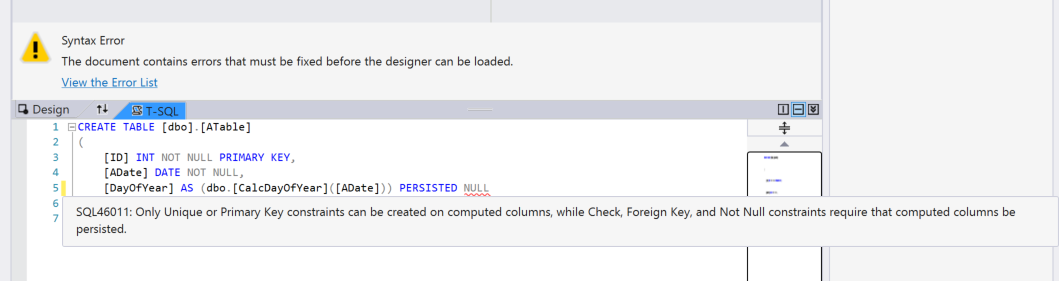




When I select “Compare” the Results show that there is a difference and its due to the IsPersistedNullable property:



When I try and add the persisted column as nullable, I am presented with a syntax error as below:



## Scenario 2 – Using the complied DacPac as a source to the schema compare

As above, however instead of deploying the project, build the db project and use the built dacpac in the schema compare.

This gives the same results.

## Conclusion

In my opinion the publish or building of the db project should have identified that the syntax:

[DayOfYear] AS (dbo.[CalcDayOfYear]([ADate])) PERSISTED

Is invalid or should have automatically added the computed column as not nullable as it’s a persisted computed column, and the compare should ignore it as a difference.

## Github.com Repo

I have added the defect to github.com for your convenience so that you can run through the scenarios:

<https://github.com/fenngineering/sql2016-nullable-computed-column-defect>

Thanks

Andrew