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Solutions. Development. Consulting.

Projektvorstellung

In-Memory Integration bei einer Energiehandel Plattform

Ansprechpartner
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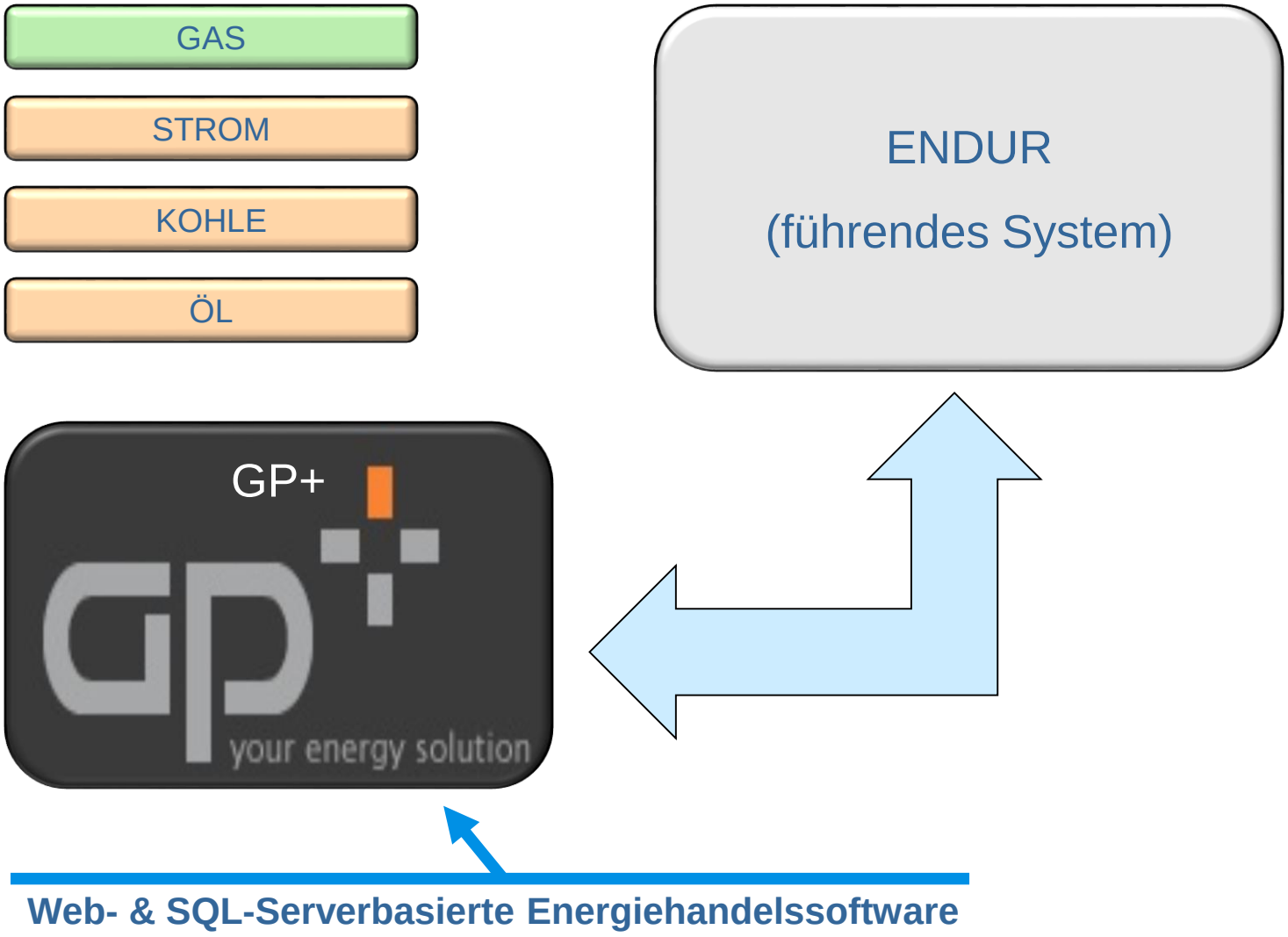
17.12.2015, Berlin

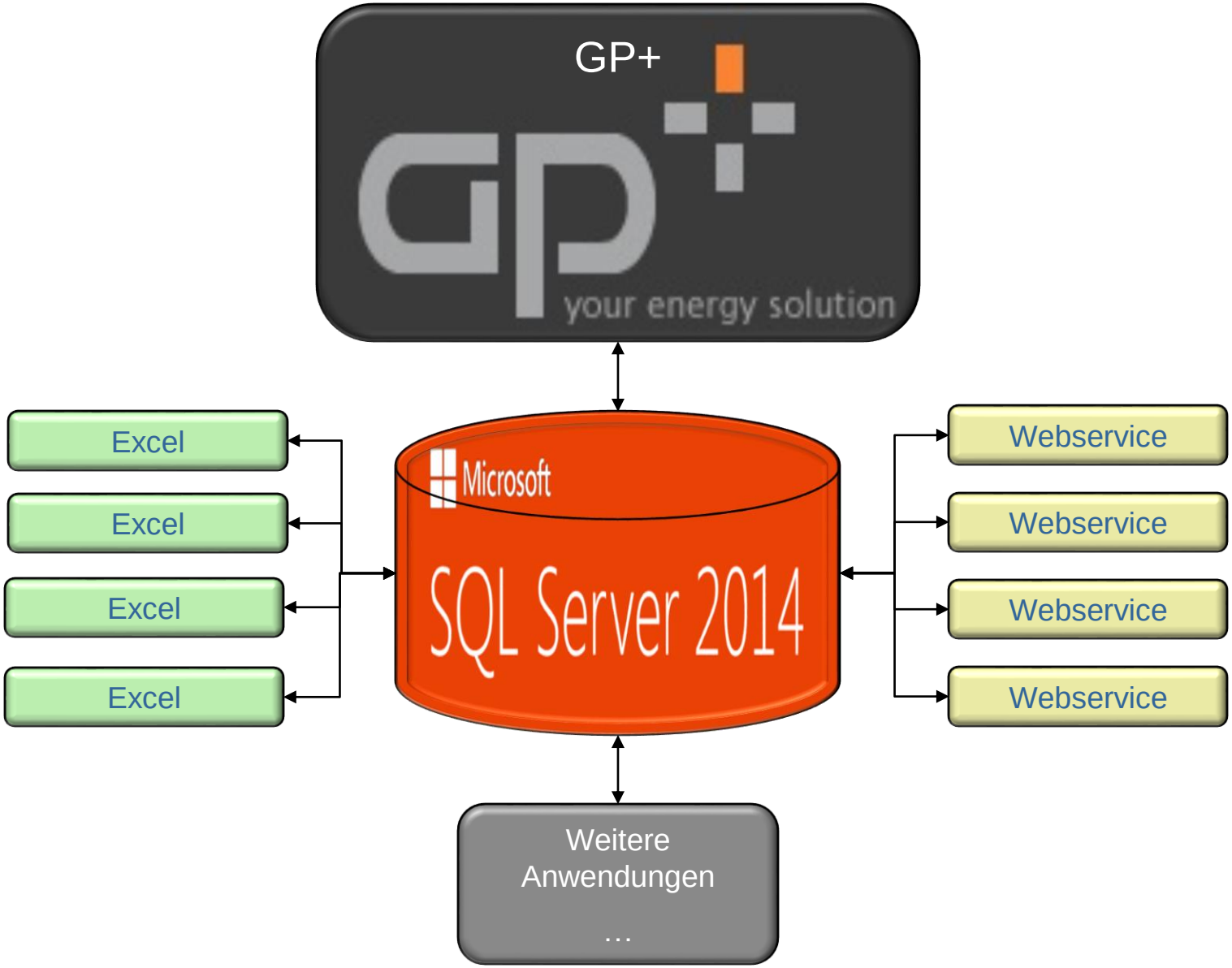
AGENDA

1. Energiehandel Plattform
2. In-Memory Integration
3. Fazit

Energiehandel Plattform - Überblick

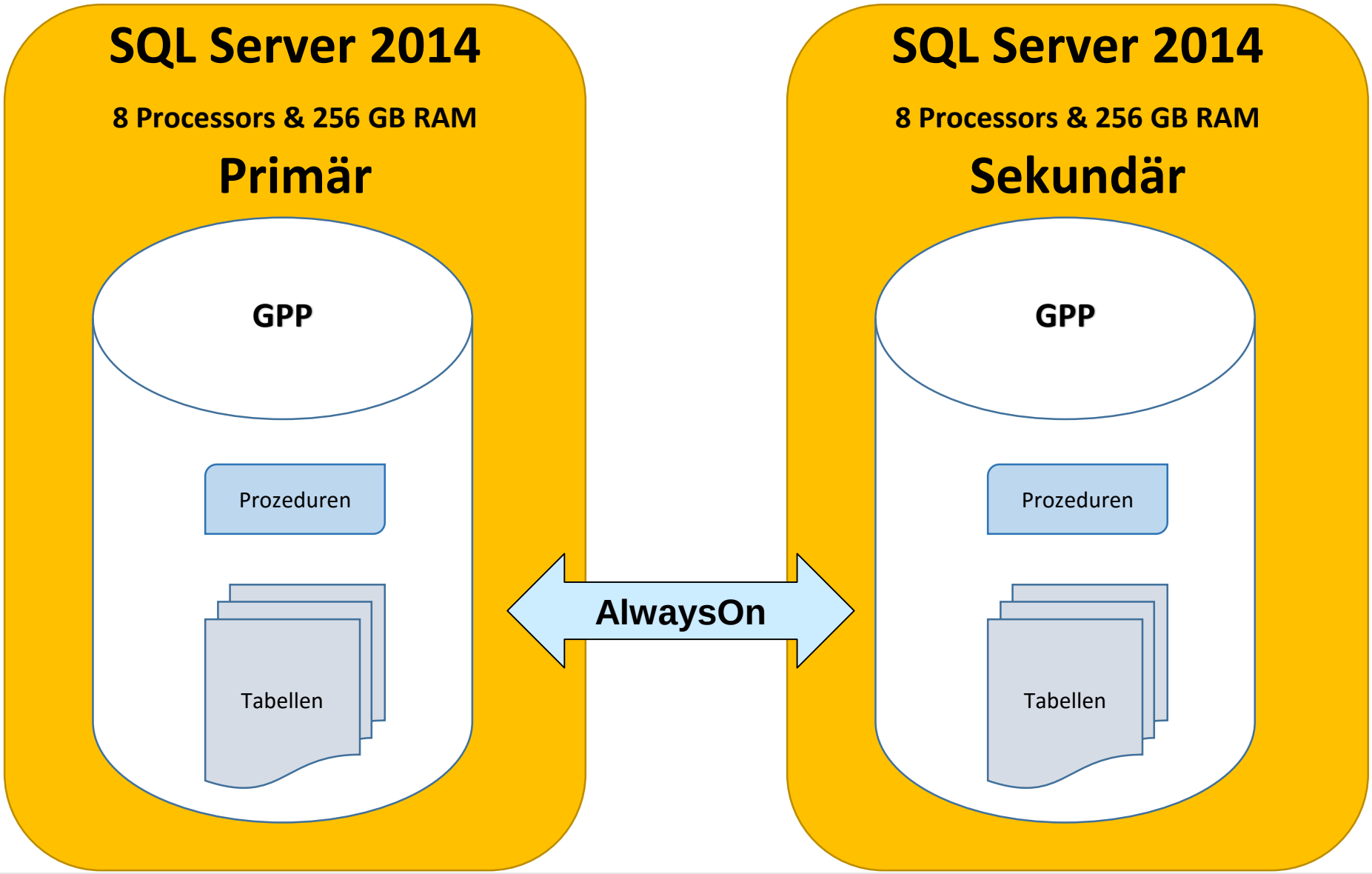


In-Memory Integration - Systemüberblick

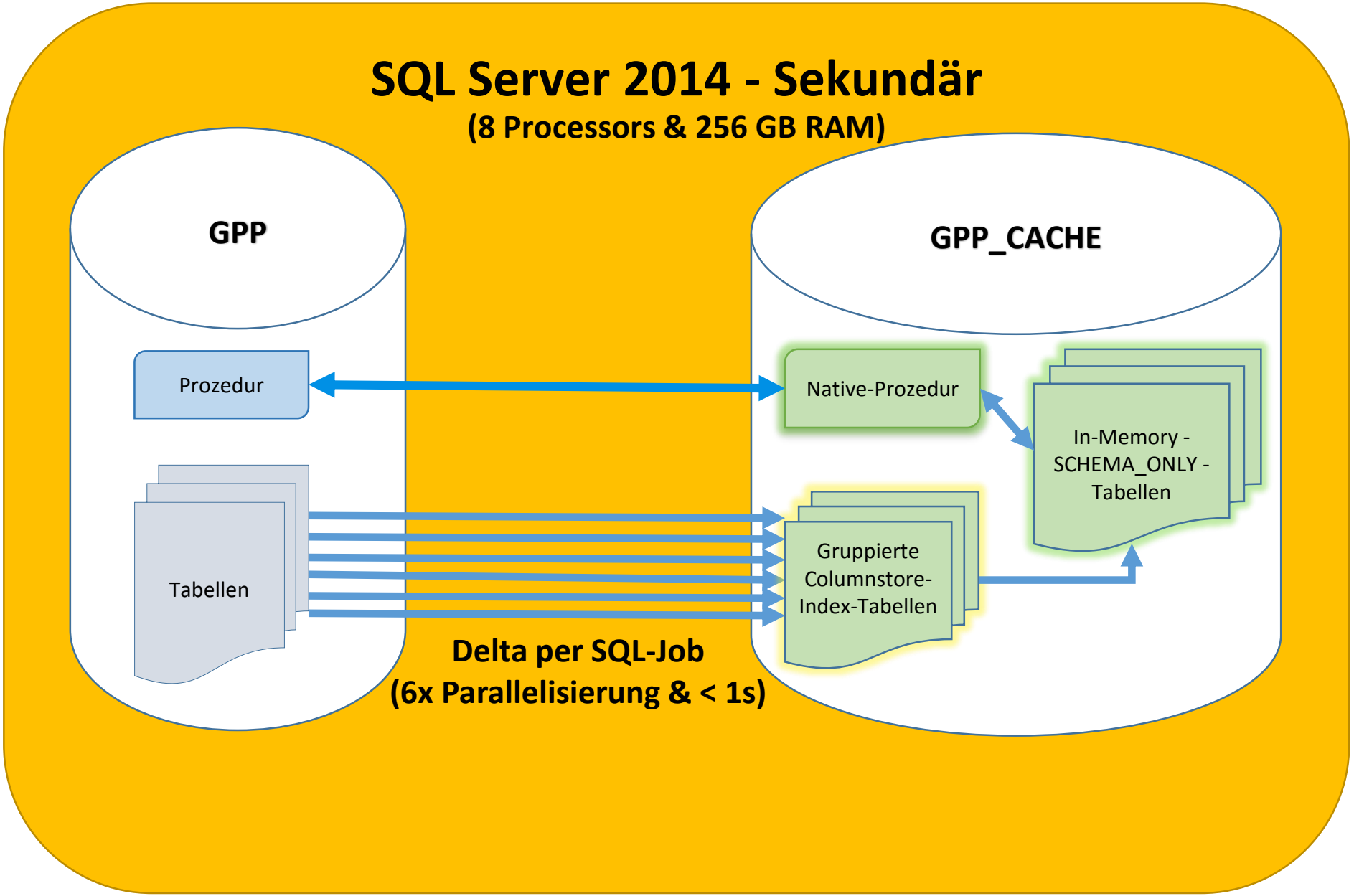


In-Memory-Integration

Produktionssystem Hochverfügbarkeitsgruppe / AlwaysOn Failover-Cluster



In-Memory Integration



In-Memory Integration - Einschränkungen

```
-- ================================================================
-- @@RoundedScenarios //-->
-- ================================================================
-- Org:
        -- Define tolerances for scenarios
        -- If no tolerance is defined use standard tolerance
        --INSERT INTO @RoundedScenarios
        --SELECT
        --   VS.SCID,
        --   ISNULL(Rounding_Tolerance,@StandardTolerance)
        --FROM @VALIDSCENARIOS VS
        --LEFT JOIN [mem].TBL_ROUNDING_TOLERANCE
        --   ON (VS.SCID = Rounding_Scenario)
        --   AND (Rounding_Scenario > 0)
        ----------------------------------------------------------------

DECLARE @StandardTolerance FLOAT = 0.000001
DECLARE @RoundedScenarios [mem].[TBLTyp_RoundedScenarios]
DECLARE @outer1 [mem].t1_type
DECLARE @result1 [mem].t1t2_join_type2

INSERT @outer1(c1) SELECT SCID FROM @VALIDSCENARIOS

SET @i = 1
DECLARE @max1 INT = scope_identity()
SET @t1c1 = NULL

WHILE @i <= @max1
BEGIN
    SELECT @t1c1 = c1 FROM @outer1 WHERE id = @i

    INSERT @result1
    SELECT @t1c1, SCID, Rounding_Tolerance
    FROM @VALIDSCENARIOS INNER JOIN [mem].TBL_ROUNDING_TOLERANCE_MEM_GetMismatchReportMatrix
            ON SCID = Rounding_Scenario AND (Rounding_Scenario > 0)
    WHERE @t1c1 = SCID

    IF @@rowcount = 0
        INSERT @result1 (t1c1) VALUES (@t1c1)

    SET @i += 1
END

INSERT INTO @RoundedScenarios
SELECT t1c1,
       ISNULL(t01, @StandardTolerance)
FROM @result1
```

In-Memory Integration - Mathematische Funktionen

```
-- ============================================================
-- @DATAVALUESTOLERANCE //-->
-- ============================================================
-- Org: DECLARE @DATAVALUESTOLERANCE TABLE (sobjid int, value float, tol float, UNIQUE CLUSTERED(sobjid, val
      --INSERT INTO @DATAVALUESTOLERANCE
      --SELECT DISTINCT
      --   SCE.sobjid,
      --   ABS(SCE.value - nomint.DATA_value),
      --   SCE.tol
      --FROM @SUMVALUES as SCE
      --INNER JOIN data.TBL_DATA_OTHER nomint WITH(NOLOCK)
      --   ON  nomint.Data_ObjID = SCE.sobjid
      --   AND nomint.Data_DateTimeStart = SCE.Start
      --   AND nomint.Data_TypID = 42
      --   AND nomint.Data_HistoryID = 0
      --   AND nomint.Data_UnitID = 1
      ------------------------------------------------------------------------------------------------
      DECLARE @DATAVALUESTOLERANCE [mem].[TBLTyp_DATAVALUESTOLERANCE];

      INSERT INTO @DATAVALUESTOLERANCE
      SELECT
           SCE.sobjid,
           SQRT(POWER((SCE.value - nomint.Data_Value),2)),
           MAX(SCE.tol) tol
      FROM @SUMVALUES as SCE
      INNER JOIN [mem].[TBL_DATA_OTHER_MEM_GetMismatchReportMatrix] nomint
           ON  nomint.Data_ObjID = SCE.sobjid
           AND nomint.Data_DateTimeStart = SCE.Start
           AND nomint.Data_TypID = 42
           AND nomint.Data_HistoryID = 0
           AND nomint.Data_UnitID = 1
      GROUP BY sobjid,
               SQRT(POWER((SCE.value - nomint.Data_Value),2)),
               tol
      --SELECT sobjid, value, tol FROM @DATAVALUESTOLERANCE
```

In-Memory Integration - Mathematische Funktionen

```
if OBJECT_ID('dbo.Mathtest') is not null
drop procedure dbo.MathTest
go
create procedure dbo.MathTest(@arg numeric(10,2))
with native_compilation, schemabinding, execute as owner
as
begin atomic with
(transaction isolation level = snapshot,
language = N'English')
	declare @sign int
	declare @dump numeric(10,2)
	begin try
		select @sign = cast(@arg/SQRT(POWER(@arg,2)) as numeric(10,0))
	end try
	begin catch -- division by zero means, @arg is zero
		select @sign = 0
	end catch
	begin try
		select @dump = 1/@sign -- is our number zero?
		-- nmber is not zero
		select cast(@arg-(@arg % 1) + (-1+@sign)*0.5 as int) as [floor], cast(@arg-(@arg%1) + (1+@sign)*0.5 as int) as [ceil], @sign as [sign]
	end try
	begin catch -- @arg is zero!
			select 0 as [floor], 0 as [ceil], 0 as [sign]
	end catch
	--select ceiling(@arg)
end
go
```

Geschwindigkeitsvorteil: **8 Fach** schnellere Antwortzeiten

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