

# MSSQL: Customer-Managed UDAF Installation

## Download The Binaries

Follow this [link](#) to download the `.dll` file and `SHA512` hash.

## MSSQL: Register The HLL Functions

1. From your MSSQL Server configuration, turn on the `clr_enabled` option.

```
sp_configure clr_enabled, 1 RECONFIGURE;
```

2. For MSSQL Server 2016, use the following [SQL script](#).
3. For MSSQL Server 2017 and later, use the following [SQL script](#).

## MSSQL: Additional Steps

1. Open the SQL Script ([2016](#) or [2017](#)) with a text editor, and replace the exact `.dll` file name and location in the SQL file.
2. For MSSQL Server 2017 or later, replace the `{DLLSHA512HASH}` string in the [SQL script](#) with the hash value you downloaded as described above.

Here is an example showing how the corresponding line of the script should look like:

```
EXEC sys.sp_add_trusted_assembly
0xc96c3187794385b89a35c5948af538d82688a0cdbae13c2a4f39beb03d46714eb750f9cc6f2f5040594c06b63025c
3250a6c3f04364d5487cb06f33e41a53461
```

3. Copy the `.dll` and `.sql` file to your MSSQL Server (For example, in `/tmp`)
4. Execute the edited SQL File.
5. Execute the following SQL Queries:

```
CREATE FUNCTION ATSCALEUDAF.atscale_honeybee_version () RETURNS nvarchar(100) EXTERNAL NAME
AtScaleHLLFunctions.[Com.Atscale.Honeybee.Mssql.HoneyBeeVersionUDF].Version

CREATE FUNCTION ATSCALEUDAF.quantileFromSketch (@s nvarchar(max), @q float) RETURNS float EXTERNAL
NAME AtScaleHLLFunctions.[Com.Atscale.Honeybee.Mssql.QuantileEstimateFromSketchUDF].Evaluate
```

6. Execute the following SQL query against your MSSQL database:

```
select ATSCALEUDAF.hll_estimate(1)
```

7. If the SQL query returns `1` the HLL functions were successfully installed.
8. Choose Settings from the top navigation menu, select Data Warehouses, and edit your MSSQL data warehouse. Select **Customer managed** for User Defined Aggregate Functions mode.

