**A varchar(MAX) STRING\_SPLIT function for SQL 2012 and above**

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Introduction

A table-valued function that will split a string into rows based on a delimiter, for example, a csv line. The result is a single-column table.

This function has the same signature as the SQL Server STRING\_SPLIT function introduced in SQL Server 2016. this means if you have not yet upgraded to SQL 2016 you can upgrade your code in advance to use this function and when you do upgrade to SQL 2016 or higher there will be minimal changes to make (just remove 'dbo.' from the function call).

An advantage of this function over Microsoft's SPLIT\_STRING function is that the delimiter can be longer than one character.

It will split strings up to nvarchar(MAX) or varchar(MAX) in length (2 GB).

Arguments

**@string**

Is a character type (for example, nvarchar, varchar, nchar, or char).

**@separator**

Is a character type (for example, nvarchar, varchar, nchar, or char).

Usage

To split a sentence into words:

SELECT value

FROM dbo.STRING\_SPLIT('Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.', ' ');

To split some text into sentences, partial sentences and words:

DECLARE @string    nvarchar(MAX)

SELECT @string='Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.'

SELECT @string FullText,

Sentence.value Sentence,

PartSentence.value PartSentence,

Word.value Word

FROM dbo.STRING\_SPLIT(@string, '.') Sentence

CROSS APPLY dbo.STRING\_SPLIT(Sentence.value, ',') PartSentence

CROSS APPLY dbo.STRING\_SPLIT(PartSentence.value, ' ') Word

Split a column on a table:

SELECT \*

FROM myTable t

CROSS APPLY dbo.SPLIT\_STRING(t.csvColumn,',') X

Requirements

This function will split a string into multiple rows based on a delimiter within the string.

Its operation is very similar to Microsoft's SPLIT\_STRING function, so if you intend to move to SQL Server 2016 or higher can use this then amend the code to run using Microsoft's SPLIT\_STRING with very little effort (just change dbo.SPLIT\_STRING to SPLIT\_STRING).

This is a useful function if you need to split strings that are longer than 8,000 characters and you are running SQL Server 2012 or higher.

Pros and Cons

This is an alternative for SQL 2016's STRING\_SPLIT function, it will work on SQL Server 2012 and above (SQL Server's SPLIT\_STRING was introduced in SQL Server 2016).

The advantage of this function over the Microsoft's STRING\_SPLIT function, apart from it working on SQL Server 2012, is it also allows the string delimiter to be more than one character in length.

A disadvantage is that it is a bit slower than Microsoft's STRING\_SPILT function for very large strings.

**References**

Jeff Moden:  [Tally OH! An Improved SQL 8K “CSV Splitter” Function](https://www.sqlservercentral.com/articles/tally-oh-an-improved-sql-8k-%e2%80%9ccsv-splitter%e2%80%9d-function)

Eirikur Eiriksson: [Reaping the benefits of the Window functions in T-SQL](https://www.sqlservercentral.com/articles/reaping-the-benefits-of-the-window-functions-in-t-sql-2)

Microsoft:  [STRING\_SPLIT (Transact-SQL)](https://docs.microsoft.com/en-us/sql/t-sql/functions/string-split-transact-sql?view=sql-server-2017)

The Function dbo.SPLIT\_STRING

IF OBJECT\_ID('[dbo].[STRING\_SPLIT]','IF') IS NULL BEGIN

EXEC ('CREATE FUNCTION [dbo].[STRING\_SPLIT] () RETURNS TABLE AS RETURN SELECT 1 X')

END

GO

ALTER FUNCTION [dbo].[STRING\_SPLIT]

(

@string nvarchar(MAX),

@separator nvarchar(MAX)

)

RETURNS TABLE WITH SCHEMABINDING

AS RETURN

WITH X(N) AS (SELECT 'Table1' FROM (VALUES (0),(0),(0),(0),(0),(0),(0),(0),(0),(0),(0),(0),(0),(0),(0),(0)) T(C)),

Y(N) AS (SELECT 'Table2' FROM X A1, X A2, X A3, X A4, X A5, X A6, X A7, X A8) , -- Up to 16^8 = 4 billion

T(N) AS (SELECT TOP(ISNULL(LEN(@string),0)) ROW\_NUMBER() OVER (ORDER BY (SELECT NULL)) -1 N FROM Y),

Delim(Pos) AS (SELECT t.N FROM T WHERE (SUBSTRING(@string, t.N, LEN(@separator+'x')-1) LIKE @separator OR t.N = 0)),

Separated(value) AS (SELECT SUBSTRING(@string, d.Pos + LEN(@separator+'x')-1, LEAD(d.Pos,1,2147483647) OVER (ORDER BY (SELECT NULL)) - d.Pos - LEN(@separator))

FROM Delim d

WHERE @string IS NOT NULL)

SELECT s.value

FROM Separated s

WHERE s.value <> @separator

GO