ARRAYCROSS Function

Generates a nested array containing the cross-product of all elements in two or more arrays.

- Input arrays can be referenced as column names or array literals.
- If Array1 has M elements and Array2 has N elements, the generated array has M X N elements.

> **NOTE:** Be careful applying this function across columns of large arrays. A limit is automatically applied on large arrays to prevent overloading the browser. Avoid apply the ARRAYCROSS transform to very wide columns.

Wrangle vs. SQL: This function is part of Wrangle , a proprietary data transformation language. Wrangle is not SQL. For more information, see *Wrangle Language*.

Basic Usage

Array literal reference example:

```
arraycross[["A","B"],["1","2","3"]])
```

Output: Returns a single array:

```
[["A","1"],["A","2"],["A","3"],["B","1"],["B","2"],["B","3"]]
```

Column reference example:

```
arraycross(array1,array2,array3)
```

Output: Returns an array containing a single array listing all combinations of elements between `array1`, `array2`, and `array3`.

Syntax and Arguments

```
arraycross(array_ref1,array_ref2)
```

Argument	Required?	Data Type	Description
array_ref1	Y	string or array	Name of first column or first array literal to apply to the function
array_ref2	Y	string or array	Name of second column or second array literal to apply to the function

For more information on syntax standards, see *Language Documentation Syntax Notes*.

array_ref1, array_ref2

Array literal or name of the array column whose intersection you want to derive.

Usage Notes:

Required?	Data Type	Example Value

Yes	Array literal or column reference	`myArray1`, `myArray2`

Examples

> **Tip:** For additional examples, see *Common Tasks*.

Example - Simple cross example

This simple example illustrates how the following functions operate on nested data.

- `ARRAYCONCAT` - Concatenate multiple arrays together. See *ARRAYCONCAT Function*.
- `ARRAYINTERSECT` - Find the intersection of elements between multiple arrays. See *ARRAYINTERSECT Function*.
- `ARRAYCROSS` - Compute the cross product of multiple arrays. See *ARRAYCROSS Function*.
- `ARRAYUNIQUE` - Generate unique values across multiple arrays. See *ARRAYUNIQUE Function*.

Source:

Code formatting has been applied to improve legibility.

Item	ArrayA	ArrayB
Item1	`["A","B","C"]`	`["1","2","3"]`
Item2	`["A","B"]`	`["A","B","C"]`
Item3	`["D","E","F"]`	`["4","5","6"]`

Transformation:

You can apply the following transforms in the following order. Note that the column names must be different from the transform name, which is a reserved word.

Transformation Name	`New formula`
Parameter: Formula type	`Single row formula`
Parameter: Formula	`ARRAYCONCAT([Letters,Numerals])`
Parameter: New column name	`'concat2'`

Transformation Name	`New formula`
Parameter: Formula type	`Single row formula`
Parameter: Formula	`ARRAYINTERSECT([Letters,Numerals])`
Parameter: New column name	`'intersection2'`

Transformation Name	`New formula`
Parameter: Formula type	`Single row formula`
Parameter: Formula	`ARRAYCROSS([Letters,Numerals])`

Parameter: New column name	'cross2'

Transformation Name	New formula
Parameter: Formula type	Single row formula
Parameter: Formula	ARRAYUNIQUE([Letters,Numerals])
Parameter: New column name	'unique2'

Results:

For display purposes, the results table has been broken down into three separate sets of columns.

Column set 1:

Item	ArrayA	ArrayB	concat2	intersection2
Item1	["A","B","C"]	["1","2","3"]	["A","B","C","1","2","3"]	[ ]
Item2	["A","B"]	["A","B","C"]	["A","B","A","B","C"]	["A","B"]
Item3	["D","E","F"]	["4","5","6"]	["D","E","F","4","5","6"]	[ ]

Column set 2:

Item	cross2
Item1	[["A","1"],["A","2"],["A","3"],["B","1"],["B","2"],["B","3"],["C","1"],["C","2"],["C","3"]]
Item2	[["A","A"],["A","B"],["A","C"],["B","A"],["B","B"],["B","C"]]
Item3	[["D","4"],["D","5"],["D","6"],["E","4"],["E","5"],["E","6"], ["F","4"],["F","5"],["F","6"]]

Column set 3:

Item	unique2
Item1	["A","B","C","1","2","3"]
Item2	["A","B","C"]
Item3	["D","E","F","4","5","6"]