

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.

Basic Usage

Array literal reference example:

```
derive type:single value:ARRAYCROSS(["A","B"],["1","2","3"])
```

Output: Generates a single array:

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

Column reference example:

```
derive type:single value:ARRAYCROSS(array1,array2,array3) as:'cross_Array'
```

Output: Generates a new `cross_Array` column containing a single array listing all combinations of elements between `array1`, `array2`, and `array3`.

Syntax and Arguments

```
derive type:single value: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"] |

Transform:

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.

```
derive type:single value:ARRAYCONCAT([Letters,Numerals]) as:'concat2'
```

```
derive type:single value:ARRAYINTERSECT([Letters,Numerals]) as:'intersection2'
```

```
derive type:single value:ARRAYCROSS([Letters,Numerals]) as:'cross2'
```

```
derive type:single value:ARRAYUNIQUE([Letters,Numerals]) as:'unique2'
```

Results:

| Item | ArrayA | ArrayB | concat2 | intersection2 | cross2 | unique2 |
|------|--------|--------|---------|---------------|--------|---------|
|------|--------|--------|---------|---------------|--------|---------|

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