

## 12.1.50 Editors - Geometry Nodes Editor - Header - Add Menu - Utilities - Matrix

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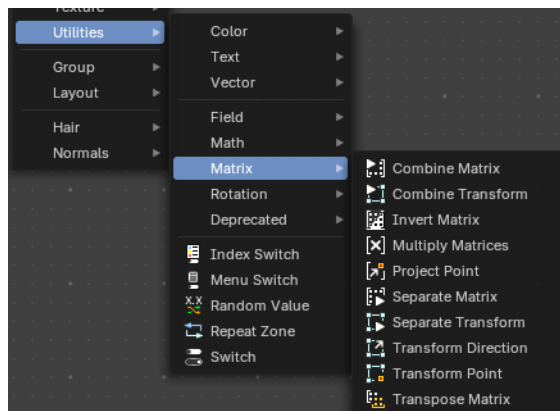
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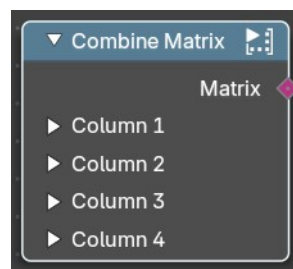
## Add menu - Utilities - Matrix

Matrix nodes.



### Combine Matrix

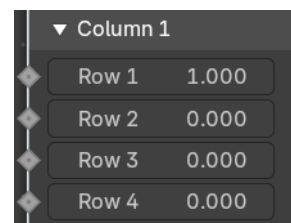
Combines values into a matrix. A matrix is something like a transform cage. A vector 4 in 4 dimensions.



### Inputs

#### **Column 1 , 2, 3, 4**

Allows you to combine values into the matrix. A matrix is made of four vector 4 in 4 dimensions. So 16 values.



### Output

#### **Matrix**

The output matrix.

## Combine Transform

Combines transforms.

### Inputs

#### **Translation**

The translation input vector.

#### **Rotation**

The rotation input vector.

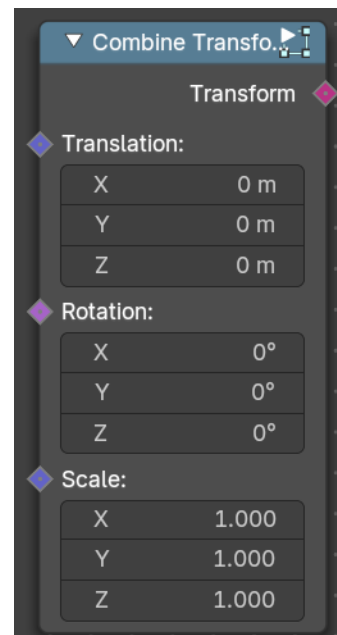
#### **Scale**

The scale input vector.

### Output

#### **Transform**

The output transform.



## Matrix Determinant

The Matrix Determinant Node is used for calculating the determinant of a given matrix. Use this node to evaluate whether a matrix has properties for invertibility, scaling, and orientation.

### Inputs

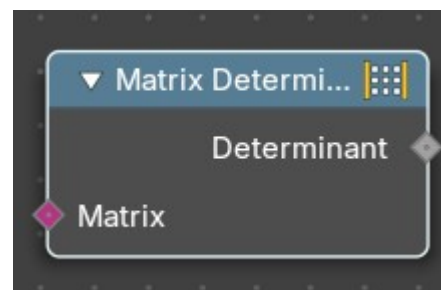
#### **Matgrix**

Accepts a matrix input.

### Output

#### **Determinant**

Returns a single numerical value representing the determinant of the input matrix. If the determinant is zero, the matrix is non-invertible.



## Invert Matrix

Inverts the matrix values.

### Inputs

#### **Matrix**

The input matrix.

### Output

#### **Matrix**

The output matrix.

#### **Invertible**

The inverted values.



## Multiply Matrix

Multiplies the values of two matrices.

### Inputs

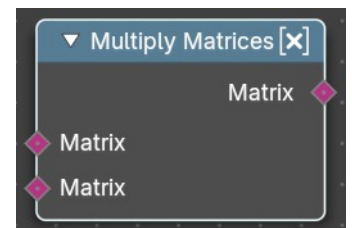
#### **Matrix, Matrix**

The input matrices

### Output

#### **Matrix**

The output matrix.



## Project Point

Projects a transform point by a vector.

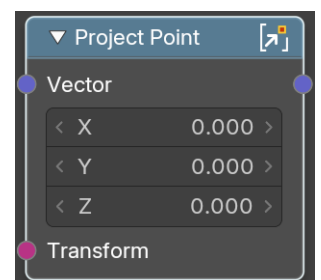
### Inputs

#### **Vector**

The input vector

#### **Transform**

The input transform point



## Output

### *Vector*

The output vector.

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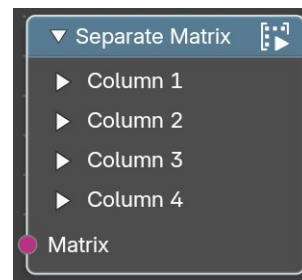
## Separate Matrix

Extract single values from a matrix. A matrix is something like a transform cage. A vector 4 in 4 dimensions.

## Inputs

### *Matrix*

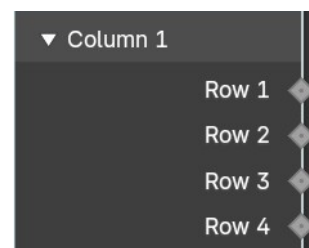
The input matrix.



## Output

### *Column 1 , 2, 3, 4*

Extract the values from a row in a column. A matrix is made of four vector 4 in 4 dimensions. So 16 values.



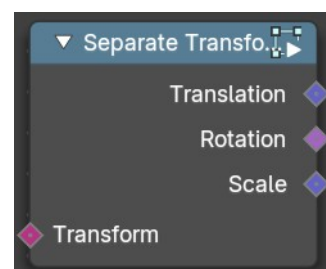
## Separate Transform

Extracts the translation, rotation or scale values from a transform.

## Inputs

### *Transform*

The input transform.



## Output

### *Translation*

The translation output vector.

## ***Rotation***

The rotation output vector.

## ***Scale***

The scale output vector.

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## **Transform Direction**

Set the direction of a transform.

### **Inputs**

#### ***Direction***

The input vector 3.

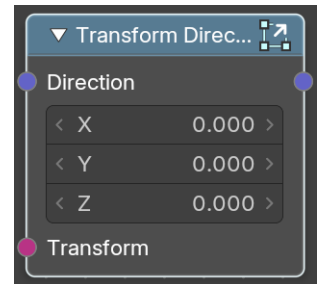
#### ***Transform***

The input transform.

### **Output**

#### ***Direction***

The output direction.



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## **Transform Point**

Transform a transform point.

### **Inputs**

#### ***Vector***

The input vector 3.

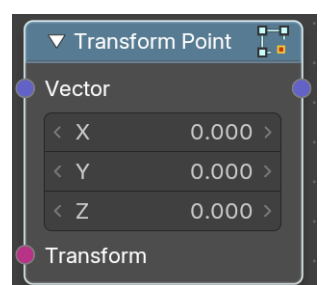
#### ***Transform***

The input transform.

### **Output**

#### ***Direction***

The output vector.



## Transpose Matrix

Retrieve the transpose matrix from a matrix.



### Inputs

#### ***Matrix***

The input matrix.

### Output

#### ***Matrix***

The output transpose matrix.