



## 12.1.11 Editors - Geometry Nodes Editor - Header - Add Menu - Geometry

### Table of content

Detailed table of content.....	1
Add menu - Geometry.....	4
Bounding Box.....	4
Convex Hull.....	5
Delete Geometry.....	5
Duplicate Elements.....	6
Merge by Distance.....	6
Geometry to Instance.....	7
Geometry Proximity.....	7
Join Geometry.....	8
Raycast.....	9
Sample Index.....	10
Sample Nearest.....	11
Separate Components.....	11
Separate Geometry.....	12
Transform Geometry.....	13
Set ID.....	13
Set Position.....	14

### Detailed table of content

### Detailed table of content

Detailed table of content.....	1
Add menu - Geometry.....	4
Bounding Box.....	4
Inputs.....	4
Geometry.....	4
Output.....	4
Bounding Box.....	4
Min.....	4
Max.....	5
Convex Hull.....	5
Inputs.....	5
Geometry.....	5
Output.....	5
Convex Hull.....	5
Delete Geometry.....	5
Inputs.....	5
Geometry.....	5
Selection.....	5
Properties.....	5
Domain.....	5
Mode.....	5
Output.....	5

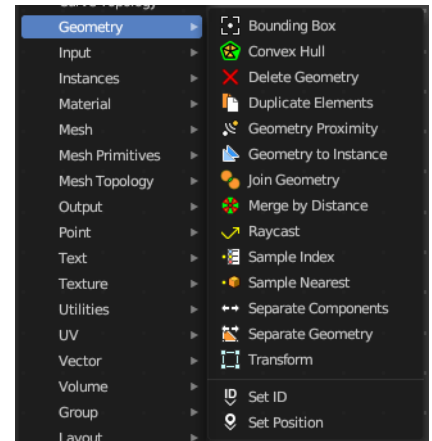
Geometry.....	5
Duplicate Elements.....	6
Inputs.....	6
Geometry.....	6
Selection.....	6
Amount.....	6
Properties.....	6
Domain.....	6
Output.....	6
Geometry.....	6
Duplicate Index.....	6
Merge by Distance.....	6
Input.....	7
Geometry.....	7
Selection.....	7
Distance.....	7
Properties.....	7
Mode.....	7
All.....	7
Connected.....	7
Output.....	7
Geometry.....	7
Geometry to Instance.....	7
Inputs.....	7
Geometry.....	7
Outputs.....	7
Instances.....	7
Geometry Proximity.....	7
Inputs.....	8
Target.....	8
Result.....	8
Position.....	8
Properties.....	8
Target Geometry.....	8
Outputs.....	8
Position.....	8
Distance.....	8
Join Geometry.....	8
Inputs.....	8
Geometry.....	8
Output.....	8
Geometry.....	8
Raycast.....	9
Inputs.....	9
Target Geometry.....	9
Attribute.....	9
Source Position.....	9
Ray Direction.....	9
Ray Length.....	9
Properties.....	9
Data Type.....	9
Mapping.....	9
Output.....	9

Is Hit.....	9
Hit Position.....	9
Hit Normal.....	10
Hit Distance.....	10
Attribute.....	10
Sample Index.....	10
Inputs.....	10
Geometry.....	10
Value.....	10
Index.....	10
Properties.....	10
Data Type.....	10
Domain.....	10
Clamp.....	10
Output.....	11
Value.....	11
Sample Nearest.....	11
Inputs.....	11
Geometry.....	11
Sample Position.....	11
Properties.....	11
Domain.....	11
Output.....	11
Index.....	11
Separate Components.....	11
Inputs.....	11
Geometry.....	11
Outputs.....	11
Mesh.....	11
Point Cloud.....	12
Curve.....	12
Volume.....	12
Instance.....	12
Separate Geometry.....	12
Inputs.....	12
Geometry.....	12
Selection.....	12
Properties.....	12
Domain.....	12
Outputs.....	12
Selection.....	12
Inverted.....	12
Transform Geometry.....	13
Inputs.....	13
Geometry.....	13
Translation.....	13
Rotation.....	13
Scale.....	13
Output.....	13
Geometry.....	13
Set ID.....	13
Inputs.....	13
Geometry.....	13

Selection.....	13
ID.....	13
Outputs.....	14
Geometry.....	14
Set Position.....	14
Inputs.....	14
Geometry.....	14
Selection.....	14
Position.....	14
Offset.....	14
Outputs.....	14
Geometry.....	14

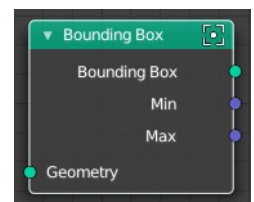
## Add menu - Geometry

Here you find nodes to modify the geometry.



## Bounding Box

The Bounding Box geometry node allows you to work with the values of a bounding box.



### Inputs

#### Geometry

Standard geometry input.

### Output

#### Bounding Box

Standard output.

#### Min

The minimum values of the bounding box.

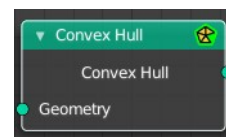
## Max

The maximum values of the bounding box.

---

## Convex Hull

The node allows you to work with the values of a convex hull of this object.



### Inputs

#### Geometry

Standard geometry input.

### Output

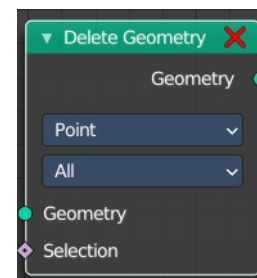
#### Convex Hull

Standard output.

---

## Delete Geometry

The node allows you to work with the values of a convex hull of this object.



### Inputs

#### Geometry

Standard geometry input.

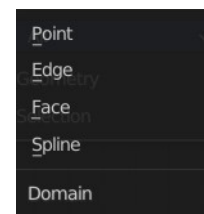
#### Selection

A selection of the geometry

### Properties

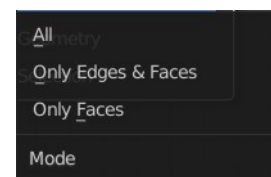
#### Domain

What element to delete.



#### Mode

Delete mode. Names should be self explaining.



### Output

#### Geometry

Standard output.

## Duplicate Elements

Duplicates a part of a geometry a dynamic number of times.

### Inputs

#### **Geometry**

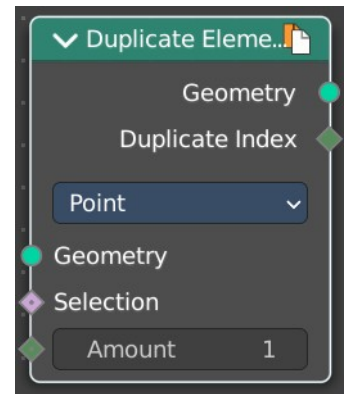
Standard geometry input.

#### **Selection**

A selection of the geometry.

#### **Amount**

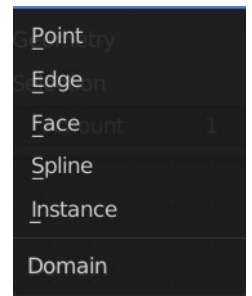
Number of times the geometry should be duplicated.



### Properties

#### **Domain**

What element to duplicate.



### Output

#### **Geometry**

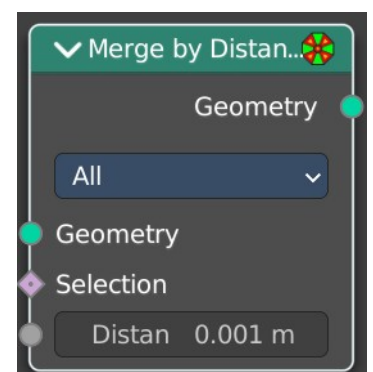
Standard output.

#### **Duplicate Index**

The index of the duplicated elements.

## Merge by Distance

Welds the selected geometry below a given distance into one vertice.



## Input

### **Geometry**

The input geometry.

### **Selection**

A selection of the input geometry.

### **Distance**

The merge distance. Everything below this distance will be merged into one vertice.

## Properties

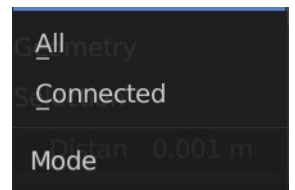
### **Mode**

#### **All**

Merges all vertices in reach.

#### **Connected**

Merges just vertices that are connected by edges.



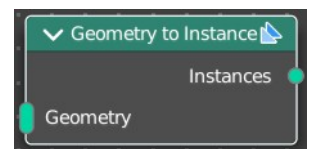
## Output

### **Geometry**

The output geometry.

## Geometry to Instance

Turns every connected input geometry into an instance. These instances can then for example be used in the Instance on Points node.



## Inputs

### **Geometry**

The input geometry.

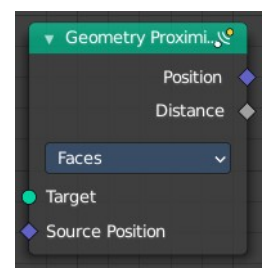
## Outputs

### **Instances**

The output instances.

## Geometry Proximity

This node finds the closest position on the target for each point in the input geometry.



## Inputs

### **Target**

The target object.

### **Result**

Name of the attribute where the output is stored. If the attribute does not exist yet, it is created.

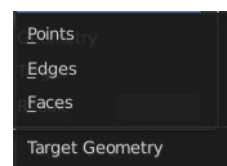
### **Position**

The position where the computed location is stored.

## Properties

### **Target Geometry**

The element of the target geometry to calculate the distance from.



## Outputs

### **Position**

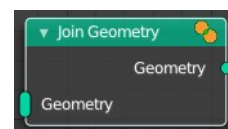
Closest location on the surface of the target mesh, or the closest point in the target point cloud in Points mode.

### **Distance**

Distance from the source position to the closest location in the target.

## Join Geometry

The Join Geometry enables you to merge separately generated pieces of geometry into a single one. In case that the inputted pieces contain different types of geometry, the output will contain multiple types of geometry.



## Inputs

### **Geometry**

Standard geometry input.

## Output

### **Geometry**

Standard geometry output.



## Raycast

This node sends a raycast and retrieves data from the hit target.

### Inputs

#### Target Geometry

This is actually the source object that sends the ray.

#### Attribute

Attribute input.

#### Source Position

Source position input.

#### Ray Direction

A vector 3 for the ray direction.

#### Ray Length

The length of the ray.

### Properties

#### Data Type

What data to calculate on hit.

#### Mapping

Mapping from the target geometry to hit points. Interpolated or nearest.

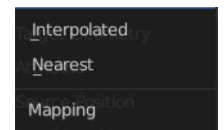
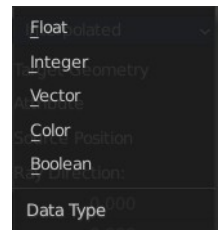
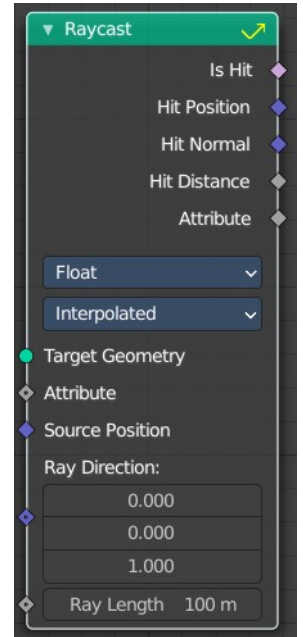
### Output

#### Is Hit

Has the raycast hit something?

#### Hit Position

The hit position if any.



### ***Hit Normal***

The normal of the hit point.

### ***Hit Distance***

The distance of the hit point.

### ***Attribute***

The attribute of the hit object.

## **Sample Index**

Retrieve values from specific geometry elements

### **Inputs**

#### ***Geometry***

The source object to take the data from.

#### ***Value***

The value to retrieve.

#### ***Index***

The index position of the value.

### **Properties**

#### ***Data Type***

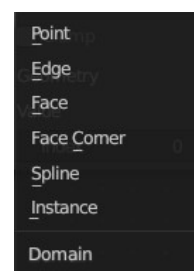
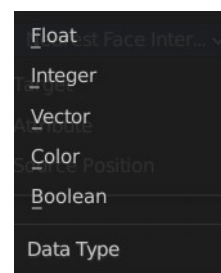
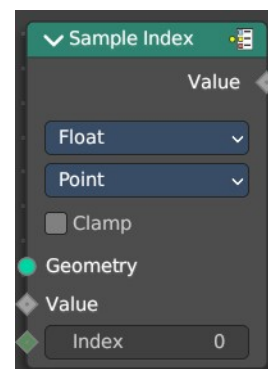
The type for the source and result data.

#### ***Domain***

What kind of data to process.

#### ***Clamp***

Clamp the indices to the size of the attribute domain.



## Output

### Value

The output value.

---

## Sample Nearest

Retrieves the element of a geometry closest to a position.

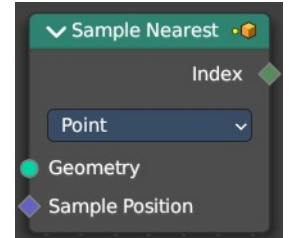
### Inputs

#### Geometry

The source object to take the data from.

#### Sample Position

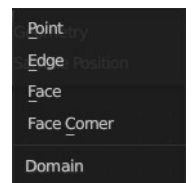
The position of the source object.



### Properties

#### Domain

What data to process.



### Output

#### Index

The index output.

---

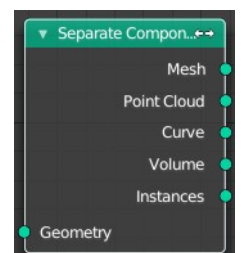
## Separate Components

Splits a geometry into its components.

### Inputs

#### Geometry

Geometry input.



### Outputs

#### Mesh

Mesh component of the input geometry.

## ***Point Cloud***

Point cloud component of the input geometry.

## ***Curve***

Curve component of the input geometry.

## ***Volume***

Volume component of the input geometry.

In case that the input contains multiple volume instances, only the first volume component will be calculated.

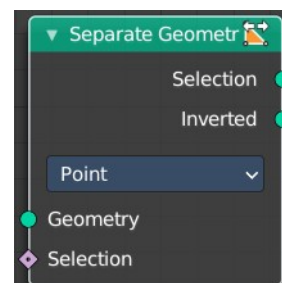
## ***Instance***

The single instances of the geometry.

## **Separate Geometry**

Separates a selection of a geometry into its own object.

Tip: when you combine it with the Compare Floats node then you get a more precise control of which parts are separated to a given output geometry.



### **Inputs**

#### ***Geometry***

Geometry input.

#### ***Selection***

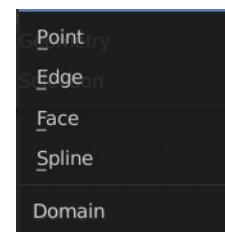
Selection input.

### **Properties**

#### ***Domain***

What kind of geometry to separate.

Note that when selecting a domain that doesn't modify all components, the unmodified components will appear in both outputs.



### **Outputs**

#### **Selection**

Separated selection.

#### ***Inverted***

The inverted separated selection.

## Transform Geometry

Move, rotate or scale the geometry. The transformation is applied to the entire geometry, and not per element. For example, you can not rotate individual point cloud points with this node.

### Inputs

#### **Geometry**

Standard geometry input.

#### **Translation**

Translates the geometry in local space of the modified object.

#### **Rotation**

Euler rotation in local space.

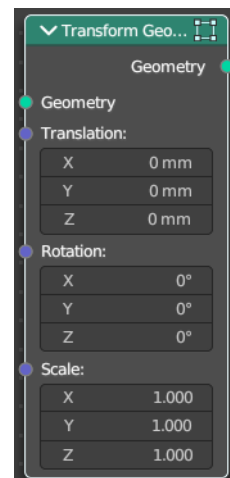
#### **Scale**

Scale to transform the geometries in local space.

### Output

#### **Geometry**

Standard geometry output.



## Set ID

Sets the ID of the target geometry.

### Inputs

#### **Geometry**

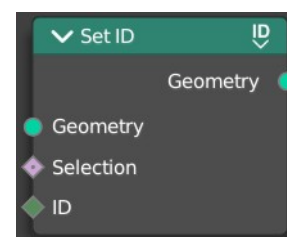
Geometry input.

#### **Selection**

Selection input.

#### **ID**

ID Input



## Outputs

### Geometry

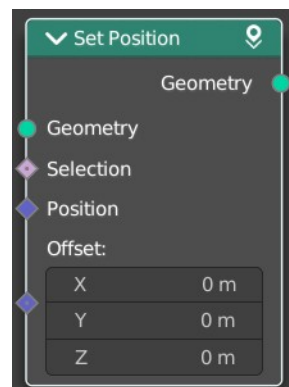
Geometry output.

---

## Set Position

The Set Position node controls the location of each point, the same way as controlling the position attribute. If the input geometry contains instances, this node will affect the location of the origin of each instance.

The input node for this data is the Position Node.



## Inputs

### Geometry

Geometry input.

### Selection

Whether or not to change the position of each point or instance. True values mean the position will be changed, false values mean it will remain the same.

### Position

The new position for selected elements. By default, this is the same as if the Position Node was connected, meaning the node will do nothing.

### Offset

An optional translation for each point. This is evaluated at the same time as the Position input, meaning that fields evaluated for it will not reflect the changed position.

## Outputs

### Geometry

Geometry outputs.