

12.1.10 Editors - Geometry Nodes Editor - Header - Add Menu - Geometry

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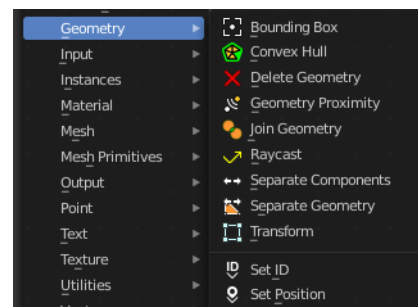
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Add menu - Geometry

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

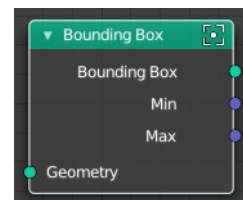
Standard output.

Min

The minimum values of the bounding box.

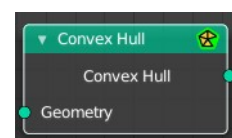
Max

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.

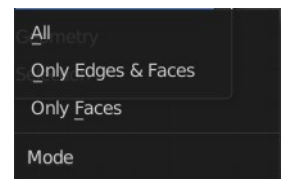
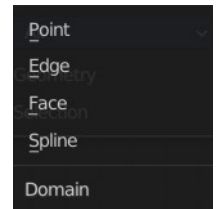
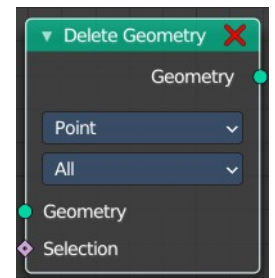
Mode

Delete mode. Names should be self explaining.

Output

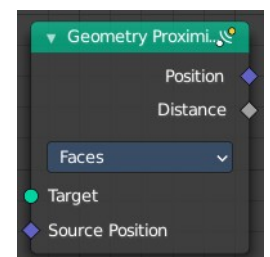
Geometry

Standard output.



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.

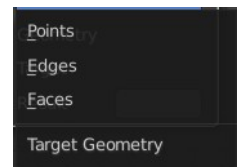
Position

The position where the computed location is stored.

Properties

Target Geometry

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



Outputs

Position

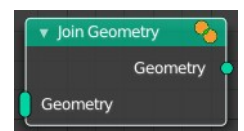
Closest location on the surface of the target mesh, or the closest point in the target point cloud in Points mode.

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.

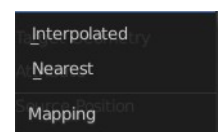
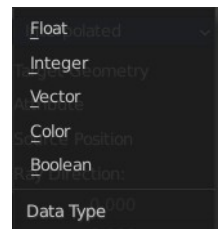
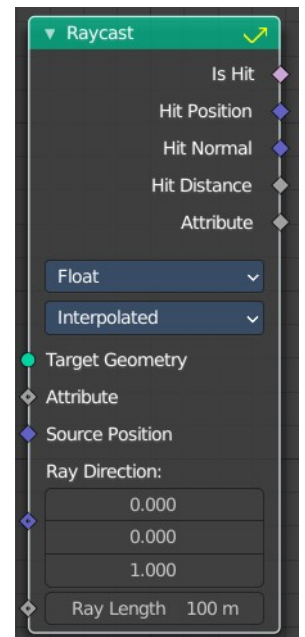
Properties

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.

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.

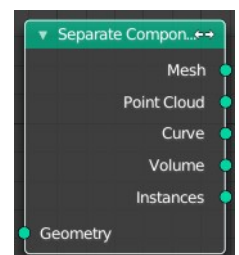
Curve

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.



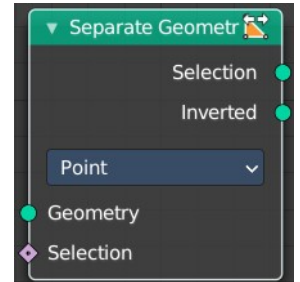
Instance

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

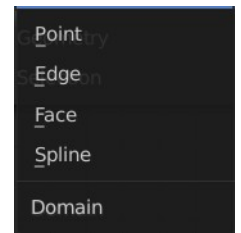
Selection input.

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.

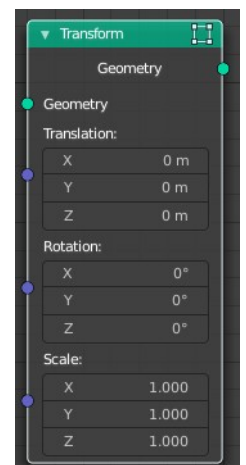
Transform

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.

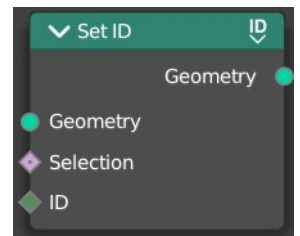
ID

ID Input

Outputs

Geometry

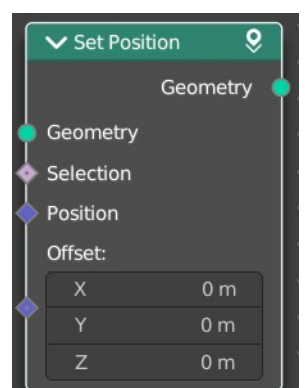
Geometry output.



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.

Legacy - Geometry

These nodes existed in a former Bforartists version, but are now deprecated. They do not show in the regular menu or UI anymore. And you cannot insert them in a newer Bforartists version. But old projects that uses this nodes still loads with these nodes showing and enabled.

Delete Geometry

Allows to delete geometry.

Inputs

Geometry

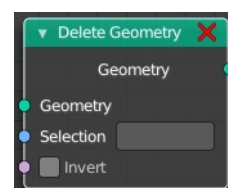
Standard geometry input.

Selection

A selection of a geometry.

Invert

Invert the selection of the geometry.



Output

Geometry

Standard geometry output.

Raycast

Casts rays from one geometry to another. When the ray hits something within its maximum ray length, then you can retrieve several different data sets.

Hit Position, Hit Normal and Hit Distance are the properties of the target mesh at the intersection point. Additionally a Target Attribute can be specified that is interpolated at the hit point and the result stored in Hit Attribute.

Inputs

Geometry

Rays are created at the geometry points.

Target Geometry

Geometry that rays are tested against.

Ray Direction

Direction of each ray from the starting position.

Ray Length

Maximum distance a ray can travel before being considered „no hit“.

Target Attribute

An optional attribute of the Target Geometry that will be interpolated at the hit points. The resulting values are stored in the output attribute named by Hit Attribute.

Is Hit

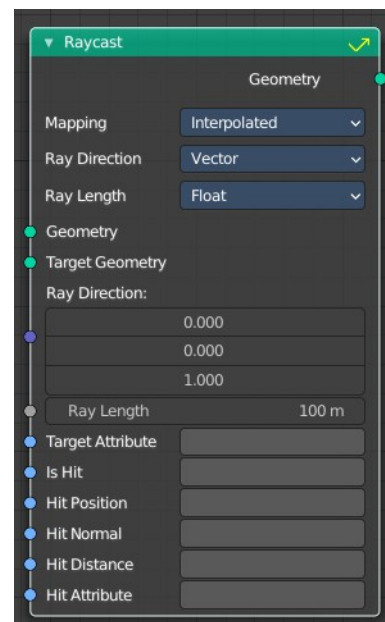
Boolean output attribute that is true for each ray which has hit the Target Geometry.

Hit Position

Output attribute storing the intersection point with the target mesh.

Hit Normal

Output attribute storing the surface normal vector at the hit location.



Hit Distance

Output attribute storing distance from the ray origin to the hit point.

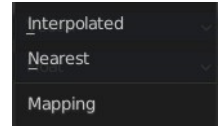
Hit Attribute

Output Attribute storing interpolated values of the Target Attribute at the hit positions.

Properties

Mapping

How the attributes of the target mesh are mapped to the attribute values on the result geometry.



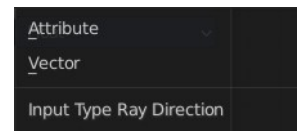
Nearest

uses the attribute from the nearest geometry.

Interpolated

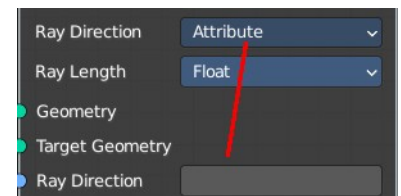
uses the attribute from the corners of the hit face.

Ray Direction



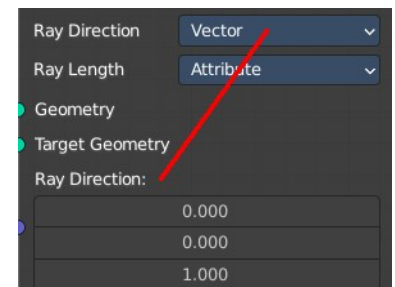
Attribute

Use an attribute instead of a vector for the ray direction.



Vector

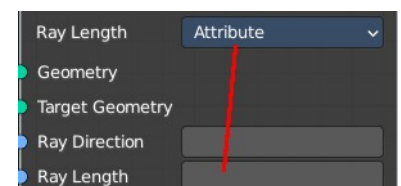
Use a vector for the ray direction.



Ray Length

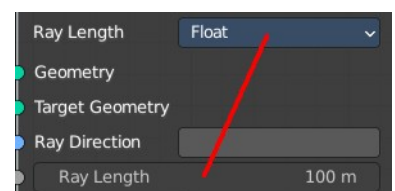
Attribute

Use an attribute instead of a float value for the ray length.



Vector

Use a float value for the ray length.



Outputs

Geometry

The geometry that contains output attributes for each ray.