

12.1.39 Editors - Geometry Nodes Editor - Header - Add Menu - Volume - Operations

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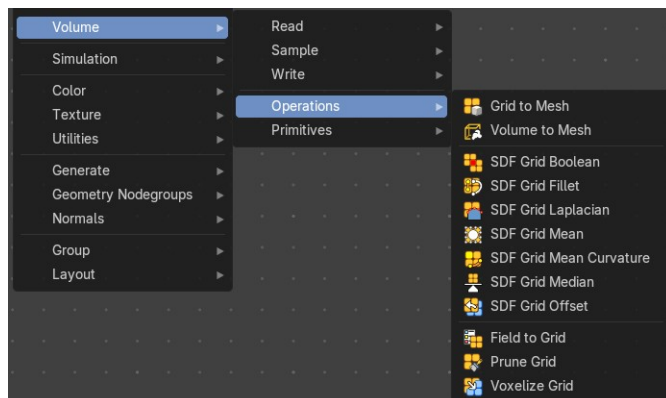
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Add menu - Volume - Operations

Here you find nodes to modify the volume.



Grid to Mesh

Generate a mesh on the surface of a volume grid.

Inputs

Grid

Standard grid input.

Threshold

Values larger than the threshold are inside the generated mesh.

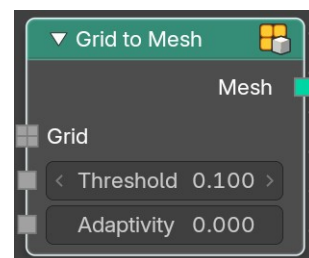
Adaptivity

The input radius

Output

Mesh

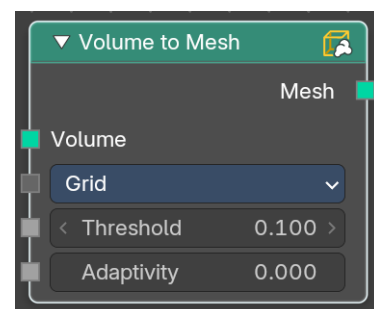
The generated mesh.



Volume to Mesh

The Volume to Mesh node generates a mesh on the “surface” of a volume. The surface is defined by a threshold value. All voxels with a larger value than the threshold are considered to be outside.

Note that currently this node only works on volumes generated using geometry nodes.



Inputs

Volume

Standard geometry input.

Resolution

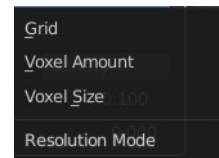
Base the voxel resolution at the gridsize, the amount or the size of the point cloud.

Threshold

The voxel amount to use.

Adaptivity

The input radius.



Output

Mesh

The generated mesh.

SDF Grid Boolean

Bool multiple sdf grids with each other.

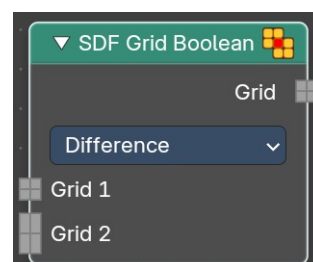
Inputs

Grid 1

The first input grid.

Grid 2

The second input grid



Properties

Operation

The bool method.

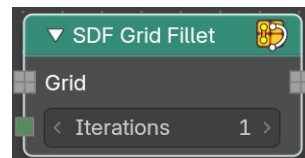
Output

Grid

The generated grid.

SDF Grid Fillet

Round off concave internal corners in a signed distance field. Only affects areas with negative principal curvature. This creates smoother transitions between surfaces.



Inputs

Grid

The input grid.

Iterations

How often to run the algorithm.

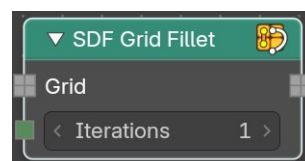
Output

Grid

The generated grid.

SDF Grid Laplacian

Apply laplacian flow smoothing to a signed distance field.



Inputs

Grid

The input grid.

Iterations

How often to run the algorithm.

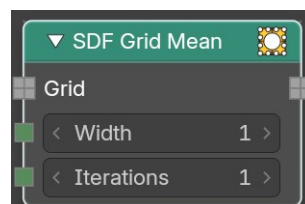
Output

Grid

The generated grid.

SDF Grid Mean

Apply lmean (box) filter smoothing to a signed distance field. Fast separable averaging filter for general smoothing of the distance field.



Inputs

Grid

The input grid.

Width

Filter kernel radius in voxel.

Iterations

How often to run the algorithm.

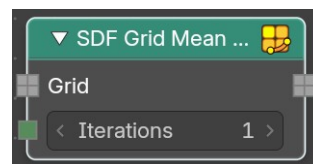
Output

Grid

The generated grid.

SDF Grid Mean

Apply mean filter smoothing to a signed distance field. Evolves the surface based on its mean curvature. This smooths high curvature regions more than flat areas.



Inputs

Grid

The input grid.

Iterations

How often to run the algorithm.

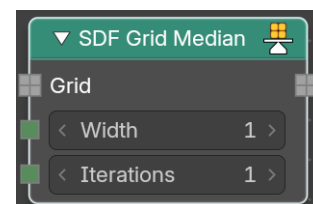
Output

Grid

The generated grid.

SDF Grid Median

Apply median filter smoothing to a signed distance field. Reduces noise while preserving sharp features and edges in the distance field.



Inputs

Grid

The input grid.

Width

Filter kernel radius in voxel.

Iterations

How often to run the algorithm.

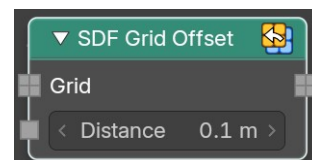
Output

Grid

The generated grid.

SDF Grid Offset

Offset a signed distance field surface by a world space distance. It dilates or erodes while maintaining the signed distance property.



Inputs

Grid

The input grid.

Distance

Object space distance to offset the sdf surface.

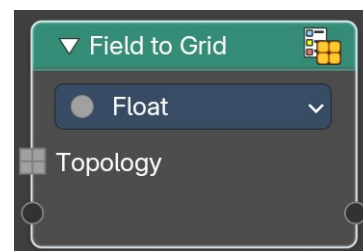
Output

Grid

The generated grid.

Field to Grid

Create new grids by evaluating new values on an existing volume grid topology.



Inputs

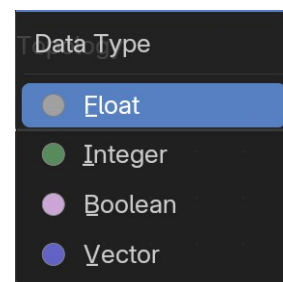
Topology

The input topology.

Properties

Data Type

The data type to evaluate.



Output

Grid

The generated grid.

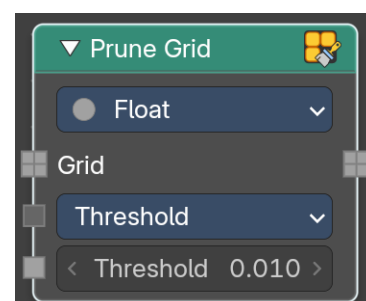
Prune Grid

Create new grids by evaluating new values on an existing volume grid topology.

Inputs

Grid

The input grid.

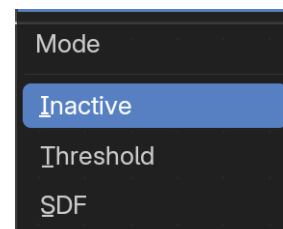


Mode

How to progress the state.

Inactive

Turn inactive voxels and tiels into inactive background tiles.



Threshold

Turn regions where all voxels have the same value and active state into inactive background tiles. You will see a threshold slider.

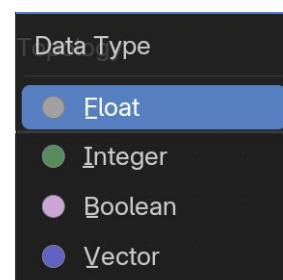
SDF

Replace inactive tiles with inactive nodes.

Properties

Data Type

The data type to evaluate.



Output

Grid

The generated grid.

Prune Grid

Create new grids by evaluating new values on an existing volume grid topology.

Inputs

Grid

The input grid.

Properties

Data Type

The data type to evaluate.

Output

Grid

The generated grid.

