

# Realize Instances Node

The *Realize Instances* node makes any instances (efficient duplicates of the same geometry) into real geometry data. This makes it possible to affect each instance individually, whereas without this node, the exact same changes are applied to every instance of the same geometry. However, performance can become much worse when the input contains many instances of complex geometry, which is a fundamental limitation when procedurally processing geometry.

## Note

If the input contains multiple volume instances, only the first volume component is moved to the output.

## Attributes

When merging attributes from multiple geometry inputs, the highest complexity data type is chosen for the output attribute. For example, if a `weight` attribute is a Boolean on one geometry input and a vector on another, the `weight` attribute on the output geometry will use the vector data type.

Named and anonymous attributes are propagated from the [instance domain](#) to the realized geometry. If an attribute exists both on the base geometry and on an instance, the attribute values from the base geometry take precedence.

## Note

- The `id` attribute receives special handling to prevent duplicate values. `id` values or indices of each instance are combined with `id` values from the geometry data points.
- Vertex groups are preserved when realizing instances or joining geometries. If the domain and type propagation rules above result with the vertex domain and float type, then an attribute will be a vertex group on the output mesh.

## Inputs

### Geometry

Standard geometry input.

### Selection

Which top-level instances to realize.

### Realize All

Realize all levels of nested instances for each top-level instances (overrides the value of the *Depth* input).

### Depth

Number of levels of nested instances to realize for each top-level instance.

## Properties

This node has no properties.

## Outputs

### Geometry

Standard geometry output.