Table of Contents

- Overview
- Adding Generators
- Linking, Grouping, and Moving Icons
- Force, Mesh Forces, & Collision
- Icon Overlays
- Toolbar
- Templates

Generator Editor

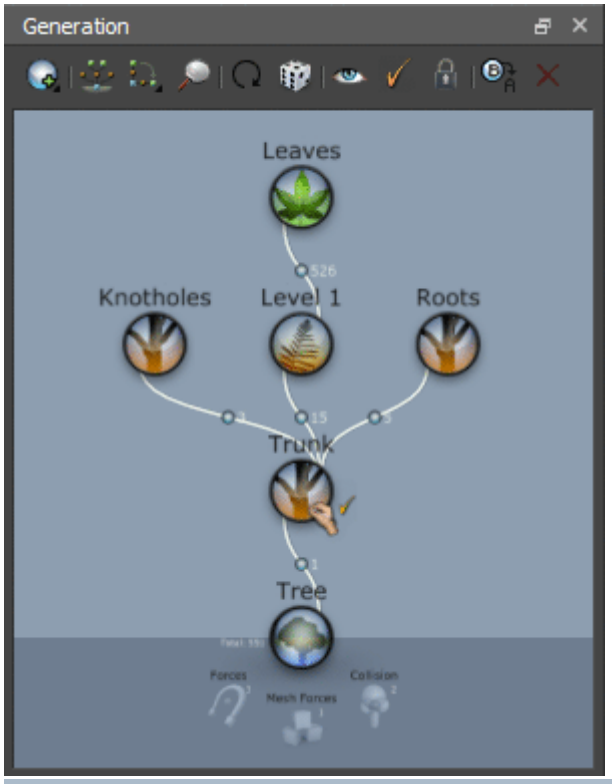
This section details the purpose and use of the 'Generation Editor' window.

Keyboard Shortcuts

To view a table of the keyboard shortcuts for the 'Generation Editor', view this page.

Overview

The generation bar is the area where tree models are constructed at the highest conceptual level. Generators are added to represent the branches, roots, fronds, leaves, and every other component of a tree. The structure of a tree is defined by how the generators are linked. For example, a tree with a trunk, roots, long branches growing off of the trunk, shorter branches growing off of them, and finally leaves growing from the shorter branches would be represented by the generator configuration shown below.


Generation
Leaves
526
Knotholes
Level 1
Roots
1
15
1
Trunk
1
Tree
Forces
Mesh Forces
Collision

Sample Generation Editor……and the corresponding tree model

Types of Generators

There are 5 basic types of generators: Tree, Leaf, Proxy, Spine, and Zone. Descriptions for each can be found here.

Workflow

Please see the Modeling > Generators page for details about modeling with generators. In short, the typical workflow for modeling a tree like the one shown above goes something like this:

1. Add a trunk generator Starting with a new tree, right-click the tree generator and add a generator to it to represent the trunk from the “Add to selected” menu option. Choose from the “Trunks” template group.

Alternatively, hold down the spacebar and start hand drawing a trunk from inside the tree radius.

2. Edit the properties in the 'Property Editor' of the trunk generator until the trunk is in the ball-park of what you're looking for (no need to get it perfect yet).

3. Set up materials Now might be a good time to set up your color sets and materials. Create a bark texture and assign it to the branch material property. You can assign materials by dragging them from the 'Material Asset' bar directly on to the trunk. Child branches will inherit this material.

4. Add branch levels and leaves Add other generators for the branches and leaves from templates. You can toggle the visibility of individual generators, or specific geometry types (such as leaves) until you are ready to edit them.

More Info: Templates

5. Now that all generators are in place, edit their properties until you get achieve the result you're looking for.

6. Fine tune your model Enter node-selection mode (Tab key) and model or remove individual branches and leaves that aren't quite right.

7. Add forces to help shape trees beyond what's possible via the generator properties.

8. If necessary, tune wind , collision, LOD, then compute ambient occlusion.

9. Export your tree

- **For Games** - Open the tree with the SpeedTree Compiler to create a real-time ready version of the tree with appropriate billboards and texture atlases, or export a static mesh version.
- **SpeedTree Cinema/Studio** - Export a mesh version of your tree as FBX or OBJ. Include a point cache of the wind, if desired.

Adding Generators

Add generators by selecting any generator and using the “Add default” options on the right-click menu. Alternatively, use the the toolbar's “Add” button to add generators to the selected generator.

Adding From Templates

A convenient way to build a tree is out of templates. Choose the desired templates from the right-click menu and add them to the existing tree, or use the default generator templates.

Deleting Generators

Delete generators by selecting them and pressing “Delete” or using the delete button on the toolbar.

Linking, Grouping, and Moving Icons

The links between generators define the conceptual structure of a tree. The lower generator in a pair of linked generators is considered the parent of the higher generator. Make new links between generators by dragging the desired child generator onto the icon of the desired parent. A crosshair will appear over valid parent generators. Delete links by selecting them and pressing “Delete” or using the delete button on the toolbar.

Generator Groups

Double click on a generator to hide its children in a group. Double click again to reveal its children.

Moving Icons

To change the display order of the generator icons, drag the icons to the desired spot. You cannot move a generator to a level equal to or lower than its parent, but you can move them sideways or up higher. Press the “auto-arrange” toolbar button to automatically layout the icons.

Force, Mesh Forces, & Collision

Forces, mesh forces, and collision objects could all be considered part of the tree. As such, they are represented in the 'Generation Editor' as icons below the ground plane. Click on each icon to select existing objects of each type, or to add new objects of each type.

Each icon displays the current count of each type next to the icon. When each of these types is selected in the 'Tree Window', the relevant icon will become highlighted in the 'Generation Editor'.

See the following sections for more info on each of these types of objects: *Forces, Mesh Forces, Collision*

Icon Overlays

There are three types of overlays that appear in the various corners of a generator icon:

Node Selected Overlay

This indicator appears in the top right corner of the generator that created the selected node(s) while in 'Node Selection Mode'.

Active Force Overlay


This indicator appears in the top left corner of generator icons when a force that is selected in the 'Tree Window' is actively influencing a generator. Individual forces can be turned on or off for each generator via the 'Property Editor'.

Hand Drawn Overlay

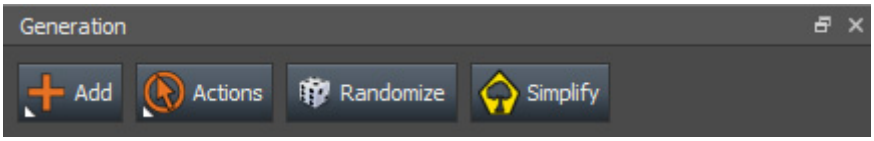

This indicator appears in the bottom right corner of generator icons that are designated for hand drawn branches. See the hand drawing documentation for more info.

Additionally, there are two other icons associated with *hand drawing: hand drawn target* and hand drawn source toggles. They provide additional hand drawn functionality as described in the hand

drawing documentation.

Toolbar

The generation editor toolbar houses many shortcuts, tools and other controls.



Add To Selected

Use this option to add generators to selected generators.

Arrange Generators

Automatically organize the layout of generation editor objects (this happens automatically when generators are added).

Window Layout

Choose between landscape, portrait or automatic layout modes (automatic will switch depending on the aspect ratio of the window).

Zoom All

Show all objects in the generation editor.

Reset

This option removes any node edits for the selected generators and any of their descendants.

Resetting a generator will clear all node edits.

Toggle Visibility

Use this option to hide and restore generators. The nodes associated with hidden generators are never drawn; however, they are computed if they have visible children.

Toggle Hand Drawn Target

If a hand drawn generator is selected, the target icon becomes available. If the selected generator is already the designated target, the checkmark (√) will be removed from the generator. Otherwise, it will make that generator the target. There can only be a single target for any common parent. If all targets are disabled for a branch level, any newly drawn branches will be placed into a new “default”

hand drawn generator based on a template.

Toggle Hand Drawn Lock

When a lock icon appears on a generator, no hand drawn children are allowed to be generated. Toggle this via the toolbar icon.

Rename Selected

Use this option to rename the selected generation editor objects.

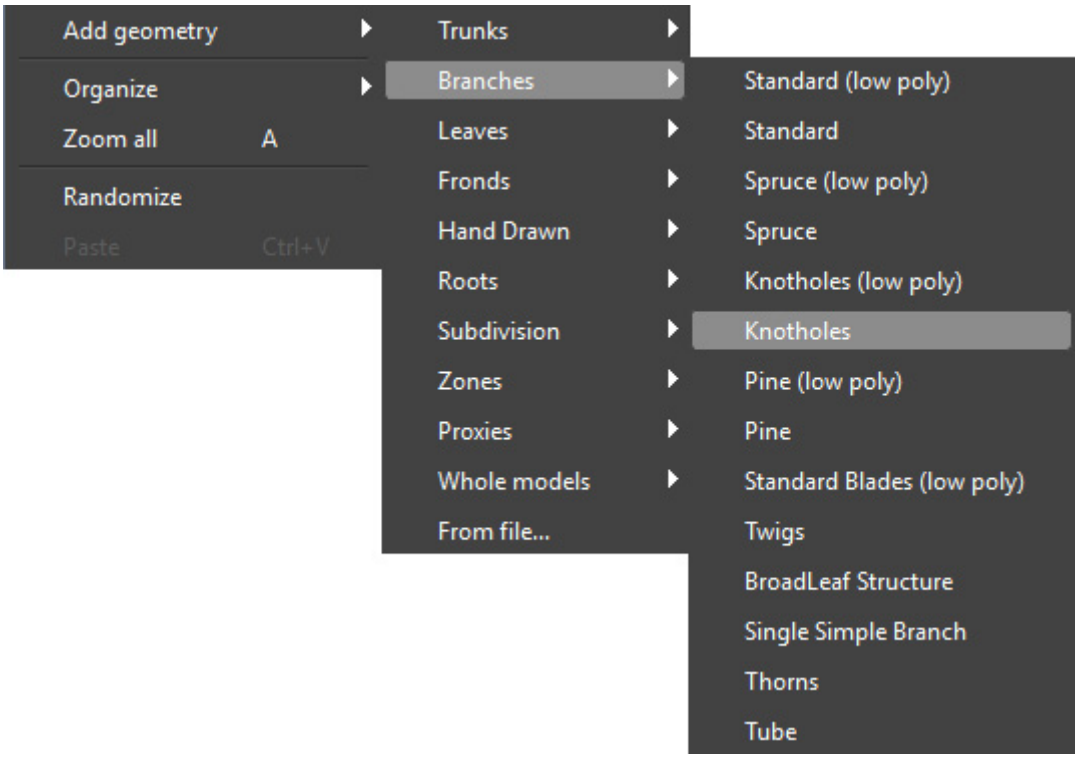
Delete

This option deletes all selected generation editor objects. The 'Tree Generator' cannot be deleted.

Templates

Adding templates to your tree

Preset generators are stored as “template” files (STT files) in the SpeedTree installation folder (e.g., Trunk→medium, Roots→gnarly, etc). They are added to the tree via the right-click menu, or through the “Add to” toolbar button.



Saving templates

Any generator combination can be saved for future use under the “Add” menus (right-click and toolbar). Select any number of generators, right-click and select “Save selected as template…”, and choose a folder and filename in the “Templates” folder located in the application's installation folder. Each folder will represent a pull-right menu and the filename will be used as the menu option.

For example, the template file: “<installation folder>\Templates\Branches\Cool branches.stt” would appear in the “Add” menus as “Add to selected→Branches→Cool branches”.

About Templates

- Node edits and materials are not included in templates
- Templates can contain multiple generators. Just multiple select the desired generators before creating the template.
- Hand drawn templates can be saved just like any other template. However, keep in mind that procedural content cannot be generated from hand drawn templates. If you would like to convert a hand drawn template to a standard template (and vice versa), use the “Paste Into” command found in the right-click menu of the 'Generation Editor' on a generator of the desired format.
