

New Features in Vue 8.5

The following is a list of new features introduced in Vue 8.5:

- Cloud layers as objects in the World Browser
- Global gamma control
- Generated diagnostic render pass information
- EcoSystem enhancements
 - Individual settings for display quality of items in EcoSystems
 - Preview of dynamic EcoSystem population
 - EcoSystem population rules for global EcoSystems
 - Temporary global settings for quality display of EcoSystems
 - Multiple object selection from the browser into an EcoSystem population
 - Drag any object or plant from the World Browser into the global EcoSystem Painter population list.
- New Terrain Editor features
 - Unlimited material selection for painting
 - Display of bitmaps on terrains
 - New brushes – Plateau, Pinch, Flatten and UniSlope
 - Zone conversion to separate terrains
- Planetary scene enhancements
 - Animated cloud maps or image sequences
 - Mercator projections for planetary terrain mapping
- Enhanced Pose/Motion handling
- Improved Color Map and Filter Editors
- Auto-exposure and Gamma reflected in OpenGL views
- New material control
- Multi-Materials for saving all materials of a plant or an object as one unit.

Cloud Layers as Objects

When you add a cloud layer in the Atmosphere Editor, it will appear as an object in the World Browser. You can click on it to directly edit its material, you can select it in the viewports and move it to change the altitude. You can move, rotate or resize them. These cloud layer objects can also be animated using the animation tools. For more information, refer to page 270.

Global Gamma Control

You can now adjust input and output gamma from the Options panel as a global control in Vue. This is enabled by default and helps prevent saturated and overly contrasted renders. When set from the Options panel, the gamma settings become global settings which can be changed for specific images using the Advanced Camera Options panel or the Post Render Options panel.

Gamma correction can selectively affect color editors, material previews, and color/scalar function previews.

For more information, refer to page 462.

Diagnostic Render Pass Information

When this option is selected, this pass generates statistical information about the last render, giving access to the following per-pixel information:

- render time
- anti-aliasing sample count
- texture anti-aliasing sample count
- sub-ray count (that is, reflected and refracted rays)
- shadow ray count
- total ray count (that is, primary camera rays, sub-rays and shadow rays)
- maximum ray tracing depth
- global illumination samples placement.

The diagnosis channels are color-coded in order to give an intuitive visual feedback about which parts of the image required more computational efforts by the rendering engine. This can help you locate potential rendering bottlenecks across the image.

For more information, refer to page 187.

EcoSystem Enhancements

Display Quality of Items in EcoSystems Can Be Set Individually

Display Full Quality Near Camera setting can now be applied to selected items in the EcoSystem. New icons next to the item name allow you to select the individual item's display quality (billboard, smooth shaded, wireframe) or whether to display full quality. For more information, refer to page 340.

Preview of Dynamic EcoSystem Population Available

When using a dynamic EcoSystem, clicking the new Preview button in the Material Editor displays the EcoSystem. For more information, refer to page 336.

Use EcoSystem Population Rules for Global EcoSystems

After setting up a global EcoSystem, select the Use EcoSystem population rules option and click on Edit for more control when painting your Ecosystem. Features such as painting limited by altitude, changing the presence of an EcoSystem item in relation to the other items, or changing the scale of individual items in the EcoSystem population can now be applied to global Ecosystems. For more information, refer to page 252.

Temporary Global Settings for Quality Display of EcoSystems

If you are using the option to **Allow Full Quality Near Camera**, you can override it globally to free resources for other work. This setting is available from the menu, Display | EcoSystem Preview and will override all settings made in the individual EcoSystems used in this scene. This clears all OpenGL data for the EcoSystems and reduces the scene overhead while you are working in other areas.

Temporary limitations can also be set for the **Global Quality Limit**, overriding the settings made in the EcoSystems used in this scene, also available from the menu Display | EcoSystem Preview. You can choose to:

- Limit to None
- Limit to Flat Billboards
- Limit to Shaded Billboards (only available with the OpenGL Shader settings)

If you need to go back and work more on the individual EcoSystems, you can always uncheck these global options to return to the settings made in the individual EcoSystems. For more information, refer to page 341.

Ability To Drag Multiple Objects From a Browser Into an EcoSystem Population

Now, when you drag an object from the Object Browser or a plant from the Plant Browser into the EcoSystem population area, the browser remains open for you to select another item. Continue dragging objects/plants until you've finished loading your plants or objects. For more information, refer to page 254.

Add Objects and Plants From the World Browser to the Global EcoSystem Painter Population

With the global EcoSystem Painter, you can now drag any object or plant from the World Browser into the EcoSystem population area and paint with it in the scene. For more information, refer to page 254.

New Features in the Terrain Editor

Paint the Terrain With Unlimited Materials

The material painting tool lets you paint distribution maps with any arbitrary number of materials. Easily add new materials to create extremely detailed distributions. Toggle material masks to constrain painting of other

materials inside existing distribution maps. Material masks are now handled independently from the rest of the material, so you can rescale materials or use any type of coordinates without affecting the distribution. For more information, refer to page 231.

Display of Assigned Terrain Material

Clicking the Show texture maps icon in the Terrain Editor will display the material currently assigned to the terrain. You can use this applied bitmap as a guide for sculpting the terrain. For more information, refer to page 217.

New Brushes Available

There are four powerful new sculpting brushes: Pinch, Flatten, Plateau and UniSlope. The Pinch brush brings the terrain features closer together, while the Flatten, Plateau and UniSlope brushes let you accurately control the slope of your terrains. For more information, refer to page 221 and following.

Converting Zones to Separate Terrains

You can now extract any defined zone which then becomes a new procedural terrain without affecting the original terrain. For more information, refer to page 225.

New Planetary Scene Features

In addition to static cloud maps, you can now load image sequences or animation files within a spectral cloud layer's planetary cloud maps. The image sequence or animation file is loaded in the **Large Scale Density** tab of the spectral cloud Material Editor.

Using animated density maps, you could recreate such effects as swirling hurricanes. For more information, refer to page 333.

Also, Mercator projections can now be used for planetary terrain mapping using the planetary projected texture node in the Function Editor. For more information, refer to page 216.

Easier Pose/Motion Handling

The new Motion Browser lets you visually select new poses or motions for your rigged meshes. The Motion Browser lets you interactively preview poses/motions on your rigged mesh, before applying them. For more information, refer to page 155.

Improved Color Map and Filter Editors

The Color Map and Filter Editors are significantly improved, with the ability to move groups of keypoints, change the hue, saturation and luminosity values of groups of keypoints or the entire color map. You can also invert filters and color maps, copy-paste groups of keyframes, etc. For more information, refer to page 439.

Auto-Exposure and Gamma Setting Reflected in OpenGL Views

Camera exposure and the gamma setting is now automatically reflected in the OpenGL views to provide a more accurate preview of the scene (shader engine only). This option can be enabled on the Options panel, Display tab. For more information, refer to page 452.

New Material Control

A new material mapping option, **Relative to sea**, is now available for material altitudes. With this new option you can create materials that appear at certain altitudes, either relative to the sea, or absolute in world coordinates. For more information about **Relative to sea**, refer to page 330.

A new input node, **Sea level**, is also directly accessible from the Function Editor.

The External **Dependency** nodes of the Function Editor can express object positions and dimensions in user-definable real-world units (meters, feet, etc). This is also the case for other nodes that express real world dimensions, such as Distance to object below, Distance from camera, etc. For more information, refer to page 368.

Also, real world dimensions can now be used in the Position and Size outputs.

Multi-Materials

Multi-materials let you change in one single operation all the materials of any given object. Multimaterials can be saved for future use. They can also be copy-pasted or drag-dropped between the different objects of your scenes. For more information, refer to page 300.

Rendering Improvements

- Anti-aliased Z-Depth (optional). For more information, refer to page 189.
- The selected render area can now be locked. For more information, refer to page 191.
- Number of cores used by a RenderCow can now be set. For more information, refer to page 642.
- Bucket-size is adapted to overall rendersize to maximize use of all cores on small renders. For more information, refer to page 182.
- Improved rendering of displacement for Standard Terrains.

Other Artistic Control Improvements

- Color changes in EcoSystem populations can now be controlled by a sensitivity setting. For more information, refer to page 348.
- Lock camera setting is now customizable (above terrains, above other objects). For more information, refer to page 173.

- Default views are automatically resized to adjust according to internal units. For more information, refer to page 456.
- New commands are available in the Color Editor for inversions, offsets and flipping of color maps. For more information, refer to page 439.
- New External Dependency nodes that express dimensions in real units (with a drop-down list) are available. For more information, refer to page 358 and following.
- The speed of handling of complicated group hierarchies is significantly increased.
- Normal and UV mapping is now displayed correctly in OpenGL previews. For more information, refer to page 451.
- Open GL resources (GPU resources) can be displayed in the status bar. For more information, refer to page 76.
- All layers can now be hidden. For more information, refer to page 69.
- Objects can now be copied/pasted to hidden or locked layers. For more information, refer to page 69.
- Empty layers aren't deleted automatically, but can be deleted as needed. For more information, refer to page 69.
- Browser collections can now be locked. For more information, refer to page 83.
- Length units can be specified for Distance input nodes. For more information, refer to page 358.
- There is a new Sea Level input node. For more information, refer to page 358.
- A new Relative to sea option has been added for Material altitude settings in the Material Editor for mixed materials. For more information, refer to page 330.
- Individual graph nodes can now be colored in the Function Editor for improved legibility. For more information, refer to page 354.
- The Reset button in the Terrain Editor allows for selective reset – reset all or reset 2D only, 3D only or material painting. For more information, refer to page 218.
- When installing the application, you can now easily restore the default installation folder. For more information, refer to page 37.
- Max to Vue Exporter: if the object has no skeleton, convert it to standard mesh. For more information, refer to page 154.