

Editor

Editor General

- **New:** Shift-Escape triggers in-game menu in the Editor without leaving game. Escape quits as normal.
- **Fixed:** Mouse move events were sent every frame even if there was no movement.
- **Fixed:** Handle spec changes for road objects.
- **Fixed:** Preserve cursor changes while in Editor.
- **Fixed:** Roads, rivers and distance clouds being exported to game when on a 'No Export' layer.
- **Fixed:** Potential crash when showing the 'Duplicate objectname' dialog.
- **Fixed:** Crash in AuxGeom Renderer - caused by unexpected reference-to-value conversion.
- **Fixed:** More reliable initialization of gEnv in plugins.
- **Fixed:** Do not allow object names containing '%' as they can crash the Sandbox.
- **Fixed:** (Trackview) Sometimes a sequence won't play when jumping into game mode after editing them.
- **Fixed:** (Trackview) "Undo" Add/Delete Sequence creates cloned representations of already existing nodes.
- **Fixed:** (Trackview) "Undo" leaves traces in sequences which can lead to crashes.
- **Fixed:** (Vehicle Editor) Selected class for vehicle part appears twice in the dropdown menu.
- **Fixed:** Remove malfunctioning vehicle debug view and respective CVar v_debugView. Use instead CVar's v_debugViewDetach 1/2 and v_debugViewAbove.

Renderer

Renderer General

- **Fixed:** ScreenFader effect behaves incorrectly when HUD doesn't get drawn.
- **Fixed:** Light-clip volume entity links in pure game mode.
- **Fixed:** Engine won't handle LOD's for Vegetation Objects if cloth-feature included.
- **Fixed:** LOD baker smoothness map generation and wrong UV layout.
- **Fixed:** Fixed dynamic textures not loading properly if the same texture is registered already as a different texture type.
- **Fixed:** AUX geometry draw flickers.

SVOGI

- **Fixed:** Crash on light source delete in the launcher.
- **Fixed:** Terrain holes support (underground geometry placed in terrain holes is also voxelized now).
- **Fixed:** Debug assert related to forward tiled shading when GI is disabled.
- **Fixed:** Crash in clip volume voxelization.
- **Fixed:** sRGB handling in voxelization, now voxels have color closer to original geometry.
- **Tweaked:** Improved low glossiness handling in specular tracing (only for mode 2).
- **Fixed:** Screen depth tracing not working in levels with great view distance (only for mode 1-2).
- **New:** Added PointLightsMultiplier and EmissiveMultiplier cvars.

Volumetric Fog

- **Optimized:** Added the feature of tiled FogVolume density injection.
- **Fixed:** Stripe-artifacts appear on very dense FogVolume.
- **Fixed:** The transition of noise distribution is discontinuous when DensityNoisetimeFrequency parameter is changed.
- **Tweaked:** The value range of DensityNoiseFrequency and DensityOffset in FogVolume entity.

Engine

System

- **Fixed:** Improved layout of 'profile' 1 & 2 debug views.
- **Fixed:** Inconsistent XML serialization of strings containing newlines.
- **Fixed:** Unify allocator construct member functions for all allocators to use, which is C+11 compliant.
- **Fixed:** (Vegetation) e_MergedMeshesDebug memory information.
- **Fixed:** (Vegetation) Fix for merged mesh pool overflow, e_MergedMeshesViewDistRatio adjusted to produce reasonable 500m max view distance.

Particles

- **Fixed:** Emitter priming no longer ignores sub-effects with disabled parents.
- **Fixed:** Disappearing emitters due to too-small dynamic bounds maintenance.

RC/Tools

Tools

- **New:** Batch script and python script to enable simple copying of Wwise headers and libraries.

Resource Compiler

- **Fixed:** Removed resolution reduction from the Minimap preset.
- **Fixed:** Crash in getting computed cubemap pixels.
- **Fixed:** Crash incorrect printf arguments.
- **Fixed:** Wrong asserts and code related to non-div-by-4 images.
- **Fixed:** DXT1 error if the output image is not compressed - DXT1 error no longer computed.
- **Fixed:** UpdateAndSaveSettingsToTIF(): Some compressed images were saved with data loss.

Animation

Animation General

- **Fixed:** Crash in the animation command buffer - related to a race condition occurring on a frame-local memory allocation call.

Character Tool

- **New:** Added warning when software skinning is not enabled when blendshapes are present.
- **Fixed:** Reload entities when saving from CharacterTool.
- **Fixed:** Missing keyboard support for undo/redo in properties panel.
- **Fixed:** All animations in the same folder of a CGA showed up in its animationlist (and not just those with the proper prefix).
- **Fixed:** Blendshapes not appearing when creating a character.
- **Fixed:** Possible fix for crashes in CTransitionQueue::UnloadAnimationAssets - now ensures that whenever a chrparams gets reloaded all other characters using the same animationset stop their animations as well.

Mannequin

- **Fixed:** Crash when loading a new level while having a fragment opened in the Mannequin Editor.

Action

Flowgraph

- **Fixed:** Weapon:HitInfo - did not work with explosions.
- **Fixed:** Null-terminated array not terminated - can crash depending on the final image layout (random).
- **Fixed:** Add color picker widget for Debug:Draw flow nodes.
- **Fixed:** Cleanup for Inventory:ItemRemove flow node - fixes output in case of removing an item that is not in the inventory.

Audio

Audio General

- **Optimized:** An audio middleware switch at runtime no longer kills and recreates all of the ATL resources.
- **Fixed:** Repositioned the Audio Listener after runtime middleware switch.
- **Fixed:** Audio system shutdown not cleaning up all resources.
- **Fixed:** Where switches and their states debug drawing overlapped.
- **Fixed:** PlayFile and StopFile to not lose callback info data when being queued.
- **Fixed:** AudioProxy position updates to also take rotation into account and additionally preventing the Audio Listener from being spammed with position updates even though it did not move.
- **Fixed:** Crash in CAudioEventManager::Init on audio middleware switch when an unsigned variable flipped around.
- **Fixed:** Crash in audio debug name store during shutdown.
- **Fixed:** Crash on shutdown with audio trying to access an invalid logging system.
- **Fixed:** Crash on a level load where a physics RWI callback accessed an invalid ray counter.
- **Fixed:** Audio environment updates for FlowAudioTriggerNode
- **Fixed:** Audio environment updates for AudioTriggerSpot
- **Fixed:** Double playback of ATS triggers after save/load
- **Tweaked:** Now keeping track of standalone audio files.

ACE (Audio Controls Editor)

- **Fixed:** Issue with libraries being deleted when the casing of the name was changed.
- **Fixed:** Disabled drag and drop of folders with the same name.

Game

- **Fixed:** Play sound when turning the turret of an Abrams.
- **Fixed:** Prevent crash when hitting Tab in main menu after multiplayer game.
- **Fixed:** Potentially added additional weapons to the player's inventory when loading a savegame.
- **Fixed:** Reloading scripts spawned a rifle under each AI character.