

# Hellsmith WAD Editor Proposal

The proposed Hellsmith WAD editor will be integrated into future versions of the GZDoom codebase, for those who don't want to use Windows or apply Linux-specific kludges in their workflow. This proposal could be GZDoom's crown jewel for cross-platform high-quality map creation workflows.

## The Namesake

This proposed tool is named after the **Hellsmith**, a major demon from Eriance/Amuscaria's old SP/co-op campaign, Demon Eclipse. Some players envisage the Hellsmith as one of Hell's great architects.

## Synopsis

To invoke Hellsmith, launch GZDoom with the `hell` or `hellsmith` command line switches. Launching GZDoom without those magic command line switches will launch the game, not the proposed integrated Hellsmith editor.

## General Features

This editor will have an integrated ACS script compiler derived from ACC, capable of outputting any bytecode format supported by GZDoom.

## The Archive Editor Interface

The archive editor's interface should be a WxWidgets-independent variant of SLADE 3.x's archive editor's interface, with additional features including an actor tester, a 3D model viewer, a save-capable reverb editor and archive-specific advanced properties window. The archive editor will include a material editor for making those pretty PBR materials for players with capable enough graphics cards.

## The Map Editor Interface

The map editor's interface will have a similar interface to GZDoom Builder but with cross-platform interoperability in mind. Additional views can be created in a similar method to Blender's subdivision interface, with 2D and 3D views in separate areas. 3D views can be rendered using hardware or software. An example of a multi-view setup

is a big 2D view on the left, with a Carmack renderer view on the upper right and a hardware-accelerated 3D view on the lower right. Some interface elements may overlap, including dialog boxes and dockable properties windows.

## Unique Features (Map Editor)

- NODES Viewer, with tree view on left-hand side of 2D view for BSP nodes
- BLOCKMAP Viewer
- Sound Propagation Viewer (GZDB and Eureka have this feature, and so will Hellsmith)
- Reject table builder (useful for monster-rich and/or sector-rich maps)
- Visplane Explorer (good for making vanilla DOOM/Heretic/Hexen maps)
- Visplane Overlay (Carmack renderer only, ditto for vanilla mapping)
- Rendering Statistics
- GZDoom rendering system, complete with Carmack, SoftPoly and hardware renderers
- User interface is drawn using the same code as the HUD, menus and console
- Platform-independent file browser for archives, archive entries, images and maps
- ACS script and line special preview (for previewing them switches!)
- Playtesting your map invokes the GZDoom game code (Quitting the game takes you back to Hellsmith when active)
- Ambient sound preview
- Animated textures, skies and flats
- Nodebuilding process visualization (optional)

## Key Differences between Hellsmith and GZDB-Bugfix

- Cross-platform! (No need for Windows and DirectX when using Hellsmith)
- Hellsmith has 3D view areas in place of GZDB's visual mode
- Previews the map's ambient audio
- Previews ACS scripts and line specials
- Permits use of the Carmack renderer
- More accurate previews of the map (GZDB's visual mode may differ cosmetically due to Direct3D quirks)
- Visualizes the node-building process

## How Hellsmith builds REJECT tables

REJECT tables are built with a variant of GZDoom's BLOCKMAP-based line of sight algorithm, with modifications for making monster line-of-sight tables for vanilla DOOM and other ports that use a BSP-based LoS algorithm.