

E [X] TENDED MAPEDIT FOR BLOOD

We wish to thank all the beta testers that was help to find the bugs and suggesting their ideas.

Check out for updates on <http://cruo.bloodgame.ru/xmapedit/>!

Original MAPEDIT by Nick Newhard and Peter Freese.

XMAPEDIT version created by nuke.YKT and NoOne.

Always backup your maps.

.BRIEF OVERVIEW

XMAPEDIT is an extended version of original Blood map editor with fixed bugs such as wrong hitscan on high resolutions, lots of new features and extended objects limits. It's compatible with vanilla Blood, supports modern types as well and includes all the features of PMAPEDIT. It still requires DOS or DosBox to be started.

This manual designed to cover all the XMAPEDIT features relative to original MAPEDIT, thus if you don't know what is original map editor, you should refer to the full mapedit manual that answer all your questions and covers all aspects of level editing available here: <https://docs.google.com/document/d/1cUD2COD12aklTI4VbOIVO1bEr7LgW-xgLzWg4AF4nMs/edit?usp=sharing>.

The another good resources is a MAPEDIT.TXT that comes with your copy of Blood or BME's web-site: <http://baitd.bloodgame.ru/bme.htm>.

.INSTALLATION & NOTES

No special installation required, just all XMAPEDIT files must be placed in the Blood directory. You may have need to configure DOSBox to run it by just changing exe name in the conf file in case if using standalone package. That's basically all the requirements, however take attention to some notes that is good to know:

1. There was added new key sequences in the editor that may conflict with DOSBox key mapper, so you have to change it by pressing [CTRL] + [F1] or by opening mapper file in any text editor.

2. XMAPEDIT do support extended object limits (sectors, sprites, walls etc) that also extended in modern ports, but not in vanilla Blood. So, once you reach at least one of vanilla limits, the map will not work in it. Sloped or non power of two floor oriented sprites is not supported by vanilla as well.
3. Since XMAPEDIT can correctly work in all 4:3 screen resolutions up to 1280x1024, i personally still recommend 640x400 with fixed size windowed mode in DOSBox because it gives great performance, good picture and perfect font size in 3D mode. It's up to you to decide what is best. Here is some configuration info of my DosBox for 1080p and higher resolution users:

```
[sdl]
# this makes window big enough to work with
windowresolution=1280x1024
output=openglfb

[dosbox]
# set this if you have screen blinking
machine=vesa_nolfb

[render]
scaler=none
# this should make dosbox window to fit 4:3 screens
aspect=true

[cpu]
core=dynamic
cycles=max

[speaker]
# set this if you wish to hear the beeps
pcspeaker=true
```

.FEATURES, UPDATES & FIXES

GENERAL

- Increased board size (PMAPEDIT like).
- Max sprites has been raised *from 4096 to 16384!*
- Max x-sprites has been raised *from 2048 to 16384!*
- Max sectors has been raised *from 1024 to 4096!*
- Max x-sectors has been raised *from 512 to 4096!*
- Max walls has been raised *from 8192 to 16384!*
- Max x-walls has been raised *from 512 to 16384!*
- You can define your own RFF files in XMAPEDIT.INI
- You can define your own ART files in XMAPEDIT.INI
- Voxels now displaying in the editor!
- XMAPEDIT have pretty wide range of settings that stored in XMAPEDIT.INI. Please refer to "CONFIGURING XMAPEDIT" chapter in the end of this documentation for detailed info.
- The editor now uses DOS/32 Advanced DOS Extender. It produces smaller EXE file size and unbinds it from DOS4GW. Should also give a little performance boost in theory.
- Video settings now stored in XMAPEDIT.INI instead of BLOOD.CFG.

- Fixed input lag when pressing keys and Beeps are on.
- Removed various worthless things from lists.
- You can load maps geometry from many other BUILD games. Currently it supports all the games wich use *map version 6 or 7*. This includes such well known titles as: TekWar, WitchHaven (any), Reneck Rampage (any), Fate, Duke Nukem 3D (any), Powerslave (Exhumed), NAM and others.
- AutoAdjustSprites() now have less strict rules for painting and sizing. This means that you can paint or resize many enemies that vanilla editor is not allowing to do.
- The editor supports vanilla hidden and modern compatible types. Refer to "CONFIGURING XMAPEDIT" chapter for detailed info.

If you are interesting to create maps using modern features and types, please also visit <http://cruo.bloodgame.ru/xssystem> for the the full documentation and map examples.

- Added obsolete x-objects detection feature. It automatically tracks x-objects with *default* properties and turns it in common. This means that there is no more senseless "Normal off" captions and it saves x-objects for better usage.
- XMAPEDIT can set counter of secrets in the maps for you automatically. Refer to "CONFIGURING XMAPEDIT" chapter for detailed info.

2D MODE

- Keys [PAD MINUS] and [PAD PLUS] changes radius of Ambient Sound by 20. Hold [CTRL] to just change first radius, hold [ALT] to just change second. Also you may hold [SHIFT] for finer step.
- 2D mode now should work faster in some cases due new (and simpler) icons of sprites to draw and chached object captions.
- It's possible to listen sounds or assign new stack id for sprites by pressing [F10] on sprites without entering the edit dialog and when there is no highlighted objects available. In case of sprites that have multiple sounds set, just press [F10] repeatedly to listen sound one by one.
- Added a new indicator. It shows a small cross in the middle of the wall when you move mouse to it.
- You can see a tail of slide/slide marked markers when the angle of marker is not zero. This could be useful, because non-zero angle makes slide to rotate while moving. The tail painted with the brown color.
- Player Start and Bloodbath Start now displays differently from other sprites.
- Sprites that was highlighted with [SHIFT] is no longer resets it's Z when dragged with mouse, unless fully buried in ceiling or floor.
- Copy/Paste features & fixes:
 1. Fixed a bug that when you copy x-sector with marker (slide, rotate etc.), the new marker appear in old sector (both 2d and 3d modes).
 2. XMAPEDIT will make unique ROR markers for you when copying sectors highlighted with [RALT] or sprites highlighted with [SHIFT] if you press [F10].
 3. The editor allows to set free TX/RX channels for just duplicated objects, but keep sequence intact. This allows to create new trigger sequences really fast when there is just need different TX/RX ID for new objects. Just press [F10] when have any highlighted objects.

When you highlight objects with [SHIFT], it affects only sprites, however if highlight sectors with [RALT], this will take in account sprites, walls and sectors itself, which

means you can duplicate whole map and fully isolate it's channels from the original. *RX ID of system channels (under 100) remains unchanged.*

4. You can merge maps keeping all the properties of source intact. This includes correct appearance of sprites, markers and it's positions and all x-properties of all x-objects. To isolate RX/TX and ROR markers see the feature above.

Unfortunately, i can't get it correctly working with some maps yet. This looks like BUILD side bug that when one of (vanilla) limits is exceed, the highlighted part just copies wrongly. Right now i have no idea how to fix that.

- There was added a vanilla compatibility indicator. When one of vanilla objects is exceed, it will indicate that map is only modern ports compatible and won't work in DOS Blood.
- You can see additional sector info in the status bar. It shows area of the sector.
- You can highlight sectors with [RIGHT ALT] or walls with [SHIFT] and press [ALT] + [X] to disable auto slope for all sectors in a highlight.
- Pressing [ALT] is no more required to edit object properties. This means that you can now just press [F5] or [F6] in both 2D and 3D modes. You can also press [CTRL] + [F5] on sector to get directly in it's FX editing dialog.
- Edit dialog updates (all objects):
 1. Removed all "dudeFlags" from sprite edit dialog.
 2. Added a hints hud for all types of objects and all dialog elements in the bottom of the screen (*thanks Seizhak and Spill for writing all the text!*). We hope it will help you to figure out the things.
 3. You can enter negative numbers in "Data1", "Data2" and "Data3" fields (see modern features for mappers).
 4. "Data" fields now have dynamic names that depends on selected Type.
 5. Fixed "Drop item" limit. It's also possible to call visual selection of item when pressing [F10] on it.
 6. "Key" field now have named values.
 7. Dialog area now shows properties of common objects as well without need to pressing keys. Note that if it shows x-properties, you can press [CTRL] to see the common ones and if it shows common when you need x-properties, you can press [ALT] to see it.
 8. There was added [BACKSPACE] and [DELETE] keys in properties edit dialog in 2d mode that doing same thing as [SPACE].
 9. Key [DELETE] for number edit resets value to zero.
 10. Added "hi-tag" field to sprite editing dialog. It mostly useful for modern types.
- Removed BUILD's most popular sprite function. This means that if there is nothing in clipboard, a zero picture for sprite will be set.
- You can toggle sprites 1-sided flag by pressing [1] on it.
- You can toggle sprite orientation (face, wall, floor) by pressing [R].
- You can disable sector auto-alignment by pressing [X] without [ALT] or by pointing on first wall of sector.
- You can see XObject usage statistics in the status bar while holding [CAPS-LOCK].
- You can see additional wall info in the status bar. It now indicates if it is a first wall of the sector, if sector is auto-aligned on this wall and angle of the wall.
- There was added captions for types. They usually shorter than names in type list to free screen space (PMAPEdit like).
- Floor oriented sprite markers, when it's *one sided* have additional line to indicate from

which side you can see it:

1. Line drawn from top left corner to right bottom indicates that this sprite visible from bottom only.
 2. Line drawn from top right corner to left bottom indicates that this sprite visible from top only.
 3. If no lines drawn at all, this means that this sprite is visible from both sides.
- You can see caption for Decoration when it's an XSprite (PMAPEDIT like).
 - A bit different shape for axis (rotate) markers. They are also painted with light cyan color.
 - Changed color for Teleport Target marker from yellow to light magenta.
 - Ambient Sound changes:
 1. caption has been removed.
 2. marker shape has been changed.
 3. if sprite is in Off state, radius colors changes to light gray and dark gray automatically.
 4. show ambient radius now saves in XMAPEDIT.INI, so you don't have to disable it every time.
 - Changed shape for On and Off markers that used by slide sectors to cross. Size of the marker shape depends on sector state. Also have changed color to light cyan.
 - Caption for SFX Gen now shows soundID.
 - Path Marker changes:
 1. changed marker shape to cross.
 2. caption now shows "source -> destination" ids.
 3. there is also added check for correct destination id. If it does not exist, destination caption changes to "??".
 - Wall oriented sprite markers, when *it's not one sided* have *longer face side (the one that you see when making it one sided)* and it painted with different color.

3D MODE

- Fixed the panning speed. It now exactly like it should be in the game.
- Fixed a bug with hitscan on resolutions higher than 320x200! This means that sprites will be placed *exactly* where you pointing at.
- Fixed x-panning / x-offset direction for walls or sprites that are x-flipped.
- Added mouse look wich supports up to 3 modes. See "CONFIGURING XMAPEDIT" section below for detailed information.
- There is no more 3D mode outside the sectors (hello, NEWBOARD.MAP).
- You can make any sprite floor oriented and it will be displayed just perfect!
- There was added a slopes for sprites! You can control it's slope just like you do it for sectors - by **pressing [] or []** keys. However, to make it sloped, the sprite *must be floor oriented* first.
- Added HUD that displays some information about objects you currently pointing at. Currently it shows tile information, some basic information about objects such as wall ange and sector visibility, object type and information triggers such as rx, tx channels, data and flags. Refer to "CONFIGURING XMAPEDIT" chapter to learn how to configure it best for you.

- Key [/] is no longer resets cstat of object, it only resets panning, offset and repeats.
- Keys [PAD 7] and [PAD 9] changes repeats and panning in both X and Y directions at once. Hold [SHIFT] for finer step.
- Removed: [O] function for sprites.
- Added a mouse controls (WIP):

TILE VIEWER

Press [LEFT MOUSE] to select a tile.

Move mouse to the first row and hold [RIGHT MOUSE] to scroll the tiles up.

Move mouse to the last row and hold [RIGHT MOUSE] to scroll the tiles down.

SPRITES

Hold [LEFT MOUSE] to drag the sprite you currently pointing at. If sprite was placed on a wall, you may also hold [RIGHT MOUSE] to align it according to that wall angle.

Press [RIGHT MOUSE] repeatedly when aiming in floors or ceilings to just rotate sprite in CCW order, holding [SHIFT] leads to rotate the opposite way. *Grid size and grid lock affects x/y dragging.*

WALLS AND SECTORS

Hold [LEFT MOUSE] to raise the sector or [RIGHT MOUSE] to lower it. Hold [SHIFT] for finer step or [CTRL] to set Z of sector to the closest neighbor sector(s).

HIGHLIGHTING WALLS AND SECTORS

Press [MIDDLE MOUSE] to highlight an object for *gradient shading* (see below). Press again on it to unhighlight. Usually, highlighted objects displays as pink colored, however sometimes it might display as normal (for instance, after you applied the gradient shading). To show previously highlighted objects, continue holding [RIGHT MOUSE] and press [CTRL]. To reset highlight, just press [ESC].

- Press [U] without holding [CTRL] to toggle underwater status of the sector. Hold [CTRL] to call a dialog where you can set selected visibility for all sectors.
- [CTRL] + [O] while pointing at wall or sector allows to toggle textures alignment of all walls of that sector.
- [SHIFT] + [G] changes grid size.
- [CTRL] + [SHIFT] + [G] toggles grid lock on and off.
- Dynamic fire (tile 2342) is now working. It also playing in tile viewer.
- Gib and Explode objects allowed to be placed under floors and ceilings.
- It's allowed to set different sky for each sector if "MultipleSky" value in XMAPEDIT.INI is set to 1.
- Added "Gradient shading" feature that works for walls and non-parallaxed sectors. To use it, you must first highlight at least 2 objects in 3D mode (see mouse controls), then press [G] while pointing at one of highlighted objects. A dialog window that contains the following options will appear:

BASE SHADE	= a start shade level that will be set for first highlighted wall.
SHADE STEP	= each next object will have "shade = prevShade + this value".
MAX SHADE	= final shade level cannot be greater than this value.
OBJECT STEP	= how many objects should have same shade.

It's recommended to always select object with direction from *left to right*, because currently shading comes in order objects was selected. When you go in 2D Mode,

highlighting will be reset.

If **BASE SHADE** greater than **MAX SHADE**, it will lead to brighting instead of shading.
The max game's shade range is from -127 to 63.

SHADE DIRECTION

- > = shade comes from first to last object.
- <--> = shade comes from middle to first and last objects.
- >< = shade comes from first and last objects to middle.
- <-- = shade comes from last to first object.

To quickly toggle between shade directions without showing the dialog, you may hold **[CTRL]** while pressing **[G]**. You may also change shade relatively for highlighted objects with **[PAD PLUS]** and **[PAD MINUS]** keys.

- It's possible to use more than 15 palookups.
- You can cycle through palookups holding **[LSHIFT]** or **[RSHIFT]** while pressing **[P]**.
- System messages now uses better font.
- There is xpan and ypan status message displays for sectors when changing it.
- **[F5]** and **[F6]** keys are working in 3D Mode. It allows you to be redirected in 2d mode to edit object properties and then automatically return back to 3D when finishing editing. If you press **[F5]** on a non-sector object, it will redirect you to the sector dialog of that object anyway. As a small bonus, you can press **[CTRL]** + **[F5]** to get directly in the sector lighting settings dialog.
- Tile viewer updates:
 - Added palswaps support. Press **[P]** to enter PLU id, **[RSHIFT]** + **[P]** cycles PLUs to the left, **[LSHIFT]** + **[P]** to the right.
 - Transparent color is no longer showing by default. You can control it by pressing **[T]**.
 - It can play animated tiles. Note that some animations might bouncing. To toggle animation on and off, press **[CTRL]** + **[A]**. If you wish to hide all the animation frames, except the first one, press just **[A]**.
 - Added auto tile sorting:
 1. when selecting textures for walls and sectors, it shows power-of-two sized tiles with no transparent pixels first.
 2. when selecting pictures for face and wall sprites, shows tiles with transparent pixels first.
 3. when selecting pictures for masked walls and floor sprites: shows power-of-two sized tiles with transparent pixels.

If you don't need auto-sorting, change "AutoSortTiles" value in XMAPEDIT.INI to 0.
To manually toggle sort order, press key **[S]** while in tile viewer. You must be in all tiles mode.

- **[CTRL]** + **[G]** makes you to go to the selected tile index (not tile number).
- **[CTRL]** + **[S]** toggles stretching small tiles to the full size.
- If tile added in favorites, tile viewer prints "FAV" sign in the bottom right corner of the tile.

- **[CTRL] + [I]** toggles showing of all invisible sprites.
- Game objects menu (**ALT + S**) has been done a complete overhaul. Now it have all the sprites that should be in and also there was added new categories such as "Markers" that contains such objects as Dude Spawn and "Favorites" (see below).
- Added "*Favorite tiles*" feature:

It allows to save selected tile in *XMAPEDIT.FTL* and use it in other maps instead of searching for it every time you start a new board. Also it allows to bind a type which is useful for sprites.

Press **[F]** while in tile viewer to add current tile to the favorites or remove it from the list. When adding a tile, it will also ask to define a type for sprites. You can enter name, caption or id. If you don't want to define anything, just leave it empty and it will be automatically defined as decoration.

- Added a system message to indicate which object was just copied in the clipboard.
- You can enable global floor shade for all parallaxed ceilings. Just point at any floor and press **[ALT] + [L]**. To disable it point at any unhighlighted ceiling.
- Added "*Advanced game object editor*" feature (WIP). It allows to change some properties directly in 3d mode. To call it, press **[F1]** key.

SUPPORTED TYPES A TM:

Dude Spawn (set enemy type).
Upper / Lower Water (set stack type and stack id).
Upper / Lower Stack (set stack type and stack id).
Upper / Lower Link (set stack type and stack id).
Upper / Lower Goo (set stack type and stack id).

- There is no more auto-save message in 3d mode. It now shows a diskette picture with number of current auto-save file in top right corner.
- Faster falling in gravity z-mode (fps independent).
- Faster raise/lower in free z-mode (fps independent).

CONFIGURING XMAPEDIT

All settings of the editor stored in XMAPEDIT.INI. This file will be automatically created once you launch the editor for first time. It allows to change many aspects of the editor. When you edit it, please make sure that editor is closed, otherwise you may lost your changes.

BRIEF SECTIONS OVERVIEW

[SCREEN]

Overrides Blood's configuration file screen resolution settings.
 Remove the whole section if you wish to use Blood's resolution.

[SOUND]

Intended to change various sound options

"InitAtStartup" : If disabled, the whole sound system will be intited just once you actually listen the sounds (for example, with F10 key)

press).

[MOUSE]

The name speaks for itself.

"SpeedX" : set horizontal mouse sensitivity.
"SpeedY" : set vertical mouse sensitivity.
"Controls" : specify what exactly controls is allowed:
0 = disabled (highlighting with middle button still available).
1 = allow only drag sprite with left mouse.
2 = allow only raise or lower sector with left and right mouse.
3 = all functions available.

[MOUSELOOK]

Select mouse looking mode and setup it's properties

"Mode" : specify a mouse look mode. There is 3 modes available:
0 = mouse look disabled.
1 = move mouse to the screen edges and press mouse1 to look or rotate.
2 = just move mouse to the screen edges to look or rotate.
3 = free (move mouse to look or rotate).
"Direction" : specify direction mouse look is allowed to work.
1 = just vertical.
2 = just horizontal.
3 = both directions.
"Invert" : specify direction that will be inverted.
0 = none.
1 = just vertical.
2 = just horizontal.
3 = both directions.
"EdgeArea" : for modes 1 and 2 only - specify in pixels the size of screen edges that treated as mouse look area. From 2 to 30.
"ShowArea" : for modes 1 and 2 only - when mouse in look area, it will draw arrows to show the direction.
"TurnSpeed" : for modes 1 and 2 only - specify look speed. From 1 to 10.
"MaxSlope" : specify max slope for mouse look. From 32 to 400, default is 200.

[TILEVIEWER]

This section related to tile viewer that you call when pressing [V] in 3D mode.

"BackgroundColor" : controls how dark background color is. From 0 to 13.
"AutoSortTiles" : toggles tile auto-sorting on and off.
"TilesPerRow" : allows to specify how many tiles you will see in single row in a range from 3 to 10.

[AUTOSAVE]

The name explain itself.

"FileName" : specify a map filename (max 8 symbols).
"SaveInterval" : in seconds (30 is default).
"MaxSaveCopies" : how many copies allowed to save during session. When counter reaches max, it will start overwrite old copies.

[COMPATIBILITY]

The name explain itself.

- "IndicateCompat" : toggles showing vanilla compatibility status in top right corner in 2D Mode on and off.
- "SaveAsModernMap" : this makes the editor save your maps with version 7.1 which treated by port(s) as modern map and force it activate all the features listed here <http://cruo.bloodgame.ru/xxsystem>.

[GENERAL]

This section controls various aspects of the editor.

- "HighlightThreshold" : proximity threshold (in pixels) for highlighting vertices and lines in 2D Mode.
- "ZMode" : current zmode in 3D Mode. Saves automatically.
- "EyeHeight" : camera height in 3D Mode.
- "Beep" : toggles pc speaker beeps on and off.
- "StairHeight" : default height for stair builder.
- "ShowAdvancedTypes" : controls which types are available in the editor:
0 = only vanilla classic types.
1 = + hidden vanilla compatible types.
2 = + modern only compatible types.
- "MultipleSky" : toggles pallax sectors auto-adjusting on and off. If enabled, it allows to have different sky tiles on each sector.
- "ShowAmbientRadius" : controls how exactly sound circles should be shown:
0: don't show ambient circles in at all.
1: show only first radius (the yellow one).
2: show only second radius (the brown one).
3: show both always.
4: show both only when highlighted.
- "UseCaptions" : captions is a shorter versions of type names. This setting toggles it on and off in 2D Mode.
- "FirstTile2Color" : does nothing, but replaces tile#0 with specified color in a range from 1 to 254.
- "AutoCountSecrets" : clears all user secret counters and set it's own automatically. It creates a green sprite in first wall of first sector coordinates. The sprite is invisible in 3d Mode.

[3DINFO]

This section related to HUD in 3D mode that displays some info about objects you pointing at.

- "ShowBasic" : toggles showing some basic info about objects such as it's type, angle and other flags.
- "ShowAdvanced" : toggles showing info about triggers (rx, tx, command, trigger flags etc).
- "ShowTilePreview" : toggles showing tile preview window.
- "ShowTileInfo" : toggles showing info about tile such as shade and size.
- "TilePreviewShowPals" : 0 = show normal tile, 1 = show painted tile.
- "TilePreviewSize" : the size of tile preview window size in pixels (32 - 128).

[RESOURCES.ART]

A section that allows to override default ART files and define your own instead.

"%ART_FILE_INDEX% = %PATH%\FILENAME.EXT" (no quotes, max path length is 256).

The following example loads Cryptic Passage ART file instead of TILES015.ART:
"15=CPART15.AR_".

"Voxels" : specify path to VOXEL.DAT file.
"Surfaces" : specify path to SURFACE.DAT file.
"Shades" : specify path to SHADE.DAT file (if any presented).

[RESOURCES.RFF]

Same as ART, but allows to override resource archives (max path length is 256).

"Blood" : specify path to BLOOD.RFF file.
"Sounds" : specify path to SOUNDS.RFF file.

[BUILD.LevelImport]

This section related to importing maps from other BUILD games.

"EraseSprites" : deletes all sprites.
"ErasePalettes" : resets palettes of all objects to zero.
"EraseTypes" : resets types of all objects to zero.
"WallPicToTilenum" : specify a tile number for all walls (0 = original).
"WallOverPicToTilenum" : specify a tile number for mask of all walls (0 = original).
"SpritePicToTilenum" : specify a tile number for all sprites (0 = original).
"FloorPicToTilenum" : specify a tile number for all floors (0 = original).
"CeilPicToTilenum" : specify a tile number for all ceilings (0 = original).
"ParallaxToTilenum" : specify a tile number for all parallaxed sectors (0 = original).

END OF THE DOCUMENT