

Quake2maX

Official Manual

By psychospaz



<http://www.planetquake.com/quake2max/>
<http://modscape.telefragged.com/q2max/>

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1.0 Installation and Introduction

1.1 Introduction

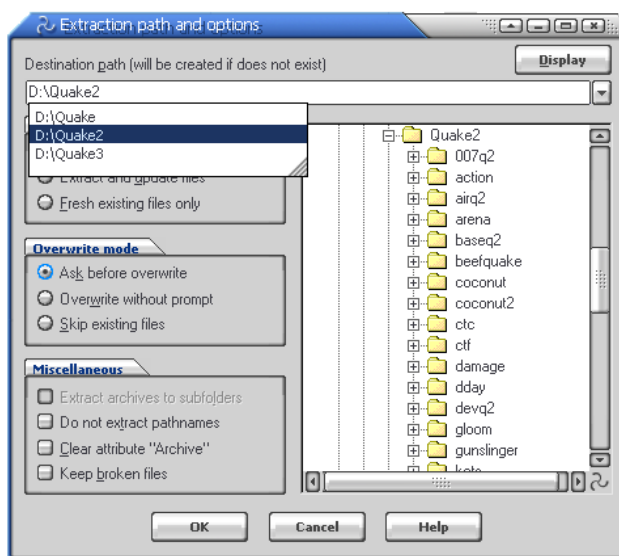
Quake2maX is an OpenGL only Quake2 engine modification. You need Quake2 full retail version with the 3.20 update installed before you can begin. Quake2maX does not have any software rendering and 3dfx cards might be unreliable. This engine modification is meant for higher end systems and might run quite badly if you have a slow CPU, little ram, an older video card or other hardware limitations.

1.2 Installation

1. First open the file you downloaded with the appropriate compressed file extraction tool (i.e. **WinZip** for .zip files or **WinRar** for .rar files)



2. Second select your Quake2 Directory (i.e. C:\Games\Quake2\) and extract to the selected directory.



3. Run Quake2maX.exe or set up GameSpy, All-Seeing-Eye, or whatever you use to find server to use Quake2maX.

4. If you encounter any problems with installation make sure you have the newest version of whatever extraction tool you're using, and if you still cant get it to work, then consult the **Quake2maX** forums for lightning fast help.

2.0 Feature List

2.1 General Features

- Global shader Language RScript (see [section 6.0](#) for details)
- Text Formatting (see [section 5.0](#) for details)
- New image types [Targa, Jpeg and Portable Network Graphics, TGA, JPG and PNG respectively]
- Support for image sizes up to 4096x4096 (or hardware limit)
- Hardware Gamma and Texture Compression
- Mouse driven menu with new menu graphics (art and shaders)
- Celshading: outline and lighting
- New sorting routines for proper particle and entity z-sorting
- Stainmaps for infinite explosion marks and blood
- Decals for bullet marks and other special effects

2.2 Particles

- New easy to use system (for programmers) with custom special effects
- Custom blend functions
- Physics that interact with world
- Lit by world and dynamic lights
- Sorted per transparent surface

2.3 Entities

- Better smooth normal based lighting (world and dynamic)
- Shaders for shells (quad, invulnerability etc.)
- Shells on 1st person weapons
- Stencil buffered shadows
- Sorted per transparent surface

2.4 Third Person Camera

- Third person camera option
- Alpha blended when near to walls for visibility
- Clipped to world
- Aim adjusted for maintained accuracy

3.0 Commands and cVars

3.1 Commands

Command Name	Description	Parameters
3dcamera	Toggles the third person camera	None
config	Saves a .cfg file	Name of file (do not include .cfg)
screenshot	Takes a screenshot using the file format selected.	Screenshot file type "tga" "jpg" or "png"

3.2 cVars

CVar Name	Type	Default	Description	Parameters Info
con_font	String	"default"	This will set the in-game font	Font file name in "/fonts/"
con_font_size	Float	8	Pixel size of each character	
inven_pos	Integer	0	Position of inventory list on screen. Adjust for better clarity of the overall player view.	0: center 1: top-left 2: top-right 3: bottom-left 4: bottom-right
menu_sensitivity	Float	1	Sensitivity of mouse in menus	
netgraph	Boolean	0	Enables net graph display	
netgraph_pos	Integer	0	Position of net graph on screen. Adjust for better clarity of the overall player view.	0: bottom-right 1: bottom-left 2: top-right 3: top-left
crosshair	Integer	1	This sets crosshair type	0: off 1-9: different crosshairs
crosshair_scale	Float	1	This sets crosshair scale	
m_noaccel	Boolean	0	Toggles WinXP mouse acceleration fix	
autosensitivity	Boolean	1	Toggles fov (zooming) adjusting mouse sensitivity for constant feel.	
cl_blood	Integer	0	Sets type of effect for blood. Anything over 1000 can hurt your system. Go crazy at your own risk	0: Splat #: Amount of Bleed Particles
cl_explosion	Integer	0	Toggles explosion type (underwater explosion bubbles & rocket trail bubbles)	0: Simple Blast 1: Blast and Smoke/Bubbles
cl_explosion_scale	Float	1	Sets scale of explosion effects	
cl_railred 20 cl_railgreen 50 cl_railblue 175	Integer	20 50 175	Use these to set the rail color for all rail effects	0-255
cl_railtype	Integer	0	This will select current rail effect used.	0: solid beam 1: beam with spiral 2: special heat beam
cl_3dcam	Boolean	0	This will toggle the camera on and off	
cl_3dcam_dist	Float	50	Sets distance for camera offset	
cl_3dcam_angle	Float	0	Sets upward angle for camera offset	
cl_3dcam_alpha	Boolean	1	Toggles alpha blending for camera pushed against wall	
cl_3dcam_adjust	Boolean	1	Toggle auto-adjustment of aim so that accuracy isn't lost	
cl_drawfps	Boolean	0	Toggles drawing an FPS counter	
cl_demomessage	Boolean	1	Toggles drawing a demo message	
r_decals	Integer	250	Sets amount of decals to be drawn onscreen	
r_dlights_normal	Boolean	1	Toggles dynamic light using surface normals to determine if light is cast to the surface or not.	
r_dynamic_time	Float	0.1	Sets time between screen capture for dynamic texture	Time in seconds
r_stainmap	Boolean	1	Toggles rendering of the stainmap. The stainmap is basically a modified lightmap that's used to display decal style effects with no slowdown.	
r_celshading	Boolean	1	Toggles use of celshading. This supposedly simulates cartoon drawing and shading.	
r_celshading_width	Integer	3	Sets size of lines for celshading outlines	
r_shaders	Boolean	1	Toggles use of shaders in-game	
r_skydistance	Integer	2300	Size of skybox: increase to see further	
r_overbrightbits	Integer	2	Sets overbrightness amount	Valid Values: { 1 2 4 }
r_model_lightlerp	Boolean	1	Toggles better model lighters	
r_model_dlights	Integer	3	Sets amount of high quality dynamic lights if r_model_lightlerp is on	
gl_surftrans_light	Boolean	1	Toggles lighting transparent map surfaces like water/windows	
gl_transrendersort	Integer	1	Toggles Z-sorting entities and particles for proper blending	0: no sorting 1: sort elements 2: sort elements per surface
gl_shadows	Boolean	0	Toggles Projective shadows	
gl_screenshot_quality	Integer	85	Sets quality percent for screenshot compression	
gl_stencil	Boolean	1	Toggles using stencil buffer	The game must be run in 32-bit mode, non-3dfx
gl_particle_lighting	Float	0.75	Sets particle lighting scale	0.0 - 1.0 range
gl_particle_min	Integer	0	Minimum render distance	
gl_particle_max	Integer	0	Maximum render distance	

4.0 Menu Mouse Usage

4.1 Main Menu

Mouse Action	Button
Mouse over	Select Option
Mouse1 (single click)	Enter Submenu

4.2 Sub-Menu

Mouse Button	Action Box	Selection Box	Slider
Mouse1 (single click)	Initiate Command	Rotate Right	Slide Option
Mouse2 (single click)		Rotate Left	Move value by one



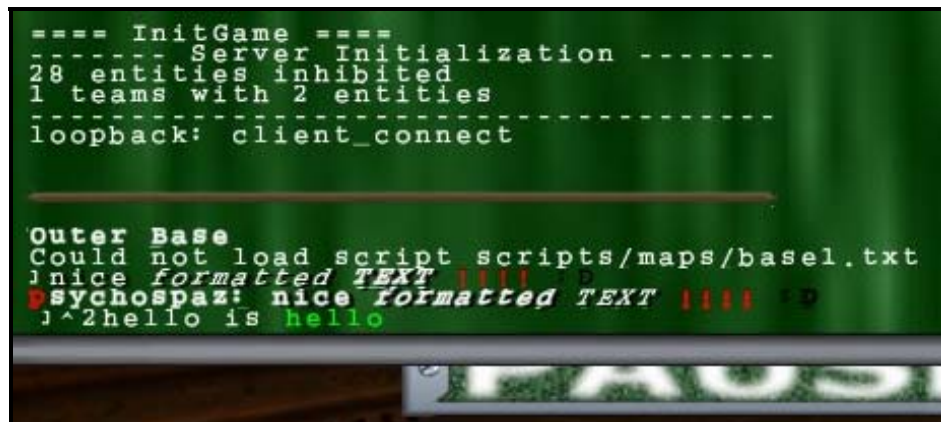
* Mouse2 (double click) always goes back a menu.

5.0 Text Formatting

Just like in Quake3, if you type out ^ with a character following you can set up colors and other formatting goodness for the rest of the string. Here are the codes. Colors use Q3 codes as a base for those who already know them.

^	Effect on following characters
1	Red
2	Green
3	Yellow
4	Blue
5	Teal
6	Purple
7	White
8	Black
9	Dark Red
0	Gray
s	Shadow
i	<i>Italic</i>
b	Bold
r	Resets current effects to default
^	Just a simple '^' character

Example: " ^b^1p^8sychospaz^r " = " **psychospaz** "



* Quake2 has a 16-character limit on names per mod. You'll have to make a new mod to extend the limit.

6.0 RScript

6.1 General Setup

RScript is the name of the simplistic script language that has been designed and implemented into the modified Quake II engine, Quake2maX, to allow custom visual effects to be rendered on surfaces within the game.

The way RScript works is that it replaces an image with a shader of the same name at render time. A shader is a multi-pass series or distorted images that create cool real-time effects. Here is an example of a shader replacement.

All RScript shaders are contained in ".rscript" files under the /scripts/ subdirectory per mod (/Quake2/baseq2/scripts/example.rscript). These can be in a simple directory or in a pak if wanted.

```
Original Skin:      "models/weapons/v_shotg/skin.pcx "

Shader (in .txt):  ...
                  models/weapons/v_shotg/skin
                  {
                      {
                          dynamic
                          envmap
                      }
                      {
                          map models/weapons/v_shotg/skin.png
                          blendfunc GL_SRC_ALPHA GL_ONE_MINUS_SRC_ALPHA
                      }
                  }
                  ...
```

This would be a 2-pass shader replacement, which first does a dynamically generated environment map followed by an alpha blended skin over top to create a shiny effect.

All shaders are defined in .txt files that contain single or multiple shader definitions.

6.2 Mesh Control

All mesh control functions are called right after the first "{" of the shader.

```
models/weapons/v_shotg/skin
{
    MESH CONTROL HERE
    {
        ...
    }
}
```

Name	Parameters	Description	Example
safe		This flag tells the engine not to flush the script from memory on a map change. By default, all scripts are flushed from memory as to preserve RAM, but some scripts are wanted to remain in memory at all times (such as scripts for the console). This flag should be used only when absolutely required.	... { safe { ... }
subdivide	Integer <size>	This function tells the engine to subdivide the surface into blocks with sides of a specific length. Proper use of this function can help create better-looking turbulent (think water warp) effects.	... { subdivide 64 { ... }
vertexwarp	Float <speed> Float <distance> Float <smoothness> 0.001 to 1.0	Warps the vertexes of the surface in a wave pattern along it's plane	... { vertexwarp 3 8 0.001 { ... }

6.0 RScript

6.3 Stage Control

All stage control functions are called within a stage.

```
models/weapons/v_shotg/skin
{
    {
        STAGE CONTROLS HERE
    }
}
```

Name	Parameters	Description	Example
map	<code>String</code> <filename>	<p>This sets the texture to be used in the given rendering pass. You must give the whole path relative to the mod directory.</p> <p>This function specifies the filename of the texture map to apply on the stage. If using frame-based animation, ignore this function.</p> <p>Optionally instead of specifying a texture image, a .cin (Quake II cinematic) file may be used here. Only 8 of these are allowed to be used at once, any more will be ignored by the engine. These are decompressed in real-time and uploaded to OpenGL, allowing streaming video on surfaces within the game.</p>	<pre>... { map models/.../v_shotg/skin.png }</pre>
colormap	<code>Integer</code> <red> 0 to 255 <code>Integer</code> <green> 0 to 255 <code>Integer</code> <blue> 0 to 255	<p>This function is instead of the "map" function that selects a texture. use this if you are going to fill a layer with a whole color instead of an image.</p>	<pre>... { colormap 255 255 0 }</pre>
dynamic		<p>This sets the image used to a screenshot of the world from the last frame.</p>	<pre>... { dynamic }</pre>
alphamask		<p>Alpha masking is a pretty simple effect. If the texture map of a stage has an alpha channel on it, and alpha masking is enabled on it, any pixels with an alpha value less than 255 aren't rendered, leaving sections of the image transparent (or "see-through"). This effect is often used to create grates and chain-link fence type images.</p>	<pre>... { SET TEXTURE HERE alphamask }</pre>
blendfunc	<code><source></code> GL_ZERO GL_ONE GL_DST_COLOR GL_ONE_MINUS_DST_COLOR GL_SRC_ALPHA GL_ONE_MINUS_SRC_ALPHA GL_DST_ALPHA GL_ONE_MINUS_DST_ALPHA GL_SRC_ALPHA_SATURATE <code><destination></code> GL_ZERO GL_ONE GL_SRC_COLOR GL_ONE_MINUS_SRC_COLOR GL_SRC_ALPHA GL_ONE_MINUS_SRC_ALPHA GL_DST_ALPHA GL_ONE_MINUS_DST_ALPHA	<p>This function tells the renderer how to blend the stage in with the previous stages. If the script is meant to leave objects behind it visible. Beware when using it on the first stage of world geometry.</p> <p>GL_SRC_ALPHA_SATURATE may not be supported by some video cards/drivers.</p>	<pre>... { SET TEXTURE HERE blendfunc GL_ONE GL_ONE }</pre>
blendfunc	<code><type></code> FILTER ADD BLEND	FILTER: " GL_ZERO GL_SRC_COLOR" ADD: " GL_ONE GL_ONE" BLEND: "GL_SRC_ALPHA GL_ONE_MINUS_SRC_ALPHA"	<pre>... { SET TEXTURE HERE blendfunc ADD }</pre>
alphashift	<code>Float</code> <speed> <code>Float</code> <min> <code>Float</code> <max>	<p>This function controls the alpha value of a stage for blending purposes. It is used to set the amount that the stage is blended into the stage before it, or anything rendered behind it. It must be used in combination with the function "blendfunc" (see Blend Function).</p>	<pre>... { SET TEXTURE HERE SET BLENDFUNC HERE alphashift 3 0.5 0.75 }</pre>
scale	<code><xtype></code> STATIC SINE COSINE <code>Float</code> <X-Scale> <code><ytype></code> STATIC SINE COSINE <code>Float</code> <Y-Scale>	<p>This function controls how the stages texture map scales. Scaling can be static, following a sine wave, or following a cosine wave.</p>	<pre>... { SET TEXTURE HERE scale STATIC 4 SINE 0.5 }</pre>
scroll	<code><xtype></code> STATIC SINE COSINE <code>Float</code> <X-Speed> <code><ytype></code> STATIC SINE COSINE <code>Float</code> <Y-Speed>	<p>This function controls how the stages texture map moves. Movement can be linear, following a sine wave, or following a cosine wave.</p>	<pre>... { SET TEXTURE HERE scroll COSINE 0.75 STATIC 0.5 }</pre>
rotate	<code>Float</code> <rot_speed>	<p>This function controls how the stages texture map is rotated.</p>	<pre>... { SET TEXTURE HERE rotate 15 }</pre>
envmap		<p>This flag enables the sphere-mapping effect on a stage. This is often used to give a surface a reflective "shiny" effect, such as that found on glass or the surface of water.</p>	<pre>... { SET TEXTURE HERE envmap }</pre>
nolightmap		<p>If the destination is a map texture, then it toggles whether or not the lightmap will be drawn. If the destination is a model, then the vertex lighting is ignored during the current render pass.</p>	<pre>... { SET TEXTURE HERE nolightmap }</pre>

7.0 Credits

First there is I, psychospaz who hacked together this mess. My main website can be found at <http://modscape.telefragged.com> and I can be reached at the email address psychospaz@telefragged.com or psychospaz@planetquake.com. Now for the help I've had doing this project...

Menu Graphics

FuShanks ([Fu's Site](#))

Code

Vic ([Hell's Kitchen](#))
MrG ([BeefQuake](#))
Sul ([SulQ2](#))
Heffo ([Heffo.QuakeSrc.Org](#))
BramBo ([Quake Standards Group](#))
LordHavoc ([DarkPlaces](#))
Ion_Pulse ([007 Q2](#))
Discoloda
Nightmare

Fonts

Yun

Forum Moderators

Karen ([Pretzel Q2](#))
RipVTide ([CotF](#))

Special Thanks to id Software for making Quake2, the rest of the Quake2 series, and every other game they've made that I've played to death.