

Table of Contents

Linux Quake How-To	1
Author: Steven A Version: 2.02 Last updated: February 24, 2006.....	1
1. Introduction.....	1
2. General Info.....	1
3. Game Engines.....	1
4. Mods.....	1
5. Multiplayer.....	1
6. Trouble-shooting.....	2
7. Quake Sequels.....	2
8. Other.....	2
1. Introduction.....	2
1.1 Preamble.....	2
1.2 About.....	2
2. General Info.....	3
2.1 Getting Started.....	3
2.2 Command Line Options.....	4
2.3 Game Console Commands.....	4
3. Game Engines.....	6
3.1 GLQuake.....	6
3.2 Darkplaces.....	6
3.3 QuDos Quake Ports.....	6
3.4 QuakeForge.....	7
3.5 TyrQuake.....	7
3.6 Software Quake.....	7
3.7 Other.....	8
NPRQuake.....	8
Tenebrae.....	8
Twilight Project.....	8
4. Mods.....	8
4.1 Mods.....	8
4.2 Commercial Mods.....	10
4.3 Mapping tools.....	10
5. Multiplayer.....	10
5.1 QuakeWorld.....	10
5.2 FuhQuake.....	11
5.3 Nexuiz.....	11
5.4 Digital Paint 2.....	11
5.5 Battle Mech.....	11
6. Trouble-shooting.....	11
6.1 Bash won't start the program.....	11
6.2 Program dies at startup.....	12
6.3 Program dies loading level.....	12
6.4 Sound Problems.....	13
6.5 Other Issues.....	13
6.6 Video Drivers.....	14
6.7 Sound Drivers.....	15
7. Quake Sequels.....	15
7.1 Hexen II.....	15

Table of Contents

Linux Quake How-To

<u>7.2 Quake II</u>	15
<u>7.3 Quake III Arena</u>	16
<u>7.4 Quake IV</u>	16
<u>8. Other</u>	16
<u>8.1 Text Version</u>	16
<u>8.2 Old Quake How-To</u>	17
<u>8.3 FreeBSD</u>	17
<u>8.4 Miscellaneous</u>	17
<u>8.5 Links</u>	18
<u>8.6 Glossary</u>	19
<u>8.7 Credits</u>	20
<u>8.8 Todo</u>	20
<u>8.9 Author</u>	20

Linux Quake How-To

Author: Steven A

Version: 2.02

Last updated: February 24, 2006

This document is a modern guide to GLQuake, with some information about QuakeWorld , Quake II, III and IV.

1. Introduction

- 1.1 [Preamble](#)
- 1.2 [About](#)

2. General Info

- 2.1 [Getting Started](#)
- 2.2 [Command Line Options](#)
- 2.3 [Game Console Commands](#)

3. Game Engines

- 3.1 [GLQuake](#)
- 3.2 [Darkplaces](#)
- 3.3 [QuDos Quake Ports](#)
- 3.4 [QuakeForge](#)
- 3.5 [TyrQuake](#)
- 3.6 [Software Quake](#)
- 3.7 [Other](#)

4. Mods

- 4.1 [Mods](#)
- 4.2 [Commercial Mods](#)
- 4.3 [Mapping tools](#)

5. Multiplayer

- 5.1 [QuakeWorld](#)
- 5.2 [FuhQuake](#)
- 5.3 [Nexuiz](#)
- 5.4 [Digital Paint 2](#)
- 5.5 [Battle Mech](#)

6. Trouble-shooting

- 6.1 [Bash won't start the program](#)
- 6.2 [Program dies at startup](#)
- 6.3 [Program dies loading level](#)
- 6.4 [Sound Problems](#)
- 6.5 [Other Issues](#)
- 6.6 [Video Drivers](#)
- 6.7 [Sound Drivers](#)

7. Quake Sequels

- 7.1 [Hexen II](#)
- 7.2 [Quake II](#)
- 7.3 [Quake III Arena](#)
- 7.4 [Quake IV](#)

8. Other

- 8.1 [Text Version](#)
 - 8.2 [Old Quake How-To](#)
 - 8.3 [FreeBSD](#)
 - 8.4 [Miscellaneous](#)
 - 8.5 [Links](#)
 - 8.6 [Glossary](#)
 - 8.7 [Credits](#)
 - 8.8 [Todo](#)
 - 8.9 [Author](#)
-

1. Introduction

1.1 Preamble

Linux Quake sits at the crossroads of two computing revolutions – GNU/Linux, the popular free operating system, and GLQuake, the first "first person shooter" to use the 3D graphics library OpenGL. Quake has a loyal community still making games almost ten years after it's release by ID Software, and thanks to John Carmack releasing the software under the GPL, people are able to enjoy it on non-proprietary platforms.

Does all this mean our game is important ? No... It's just fun ;-)

1.2 About

This document is not an exhaustive how-to about setting up any one Quake program, but a modern guide to GLQuake, a collection of the most useful tips, and a pointer to the best resources still available on the web. It concentrates on the many engine rewrites and incredible add-ons which make Quake the phenomena it is.

2. General Info

2.1 Getting Started

Installing Quake requires a few basic steps.

Get the Game Data Files

Getting the game data files is normally done by installing the game using Microsoft Windows, or an emulator such as Wine or Dosbox, and then copying the **id1** directory of the installed game to your Linux Quake directory (making sure all files are in lowercase).

Alternatively, if you have the DOS Quake CD, you can use the lha utility to extract the data files. For early CDs, you must first

```
cat /mnt/cdrom/quake101.1 /mnt/cdrom/quake101.2 > resource.1
```

Once you have the resource.1 file, then type

```
cd /usr/local/games/quake
lha e {some directory}/resource.1
```

Later versions of the game, including WinQuake, come with the data files in an uncompressed form and the **id1** directory can be directly copied from the CD.

Install a Quake Executable

The program you execute to run Quake is known as the game engine. There are several to choose from, but the simplest choice is either Jörge's GLQuake, or the author's patched TyrQuake. After downloading or compiling a game engine, place this binary in your Quake directory alongside the **id1** directory.

Summary

Finally, you should have a directory structure similar to this, with all files being in lowercase:

```
/usr/local/games/quake +- glquake.glx (or another game engine)
                        |
                        +- id1 +- config.cfg
                            |
                            +- game.dat
                            |
                            +- pak0.pak
                            |
                            +- pak1.pak
```

Now, from an xterm window, type (for example)

```
./glquake.glx -fullscreen -width 800 -height 600
```

to start the game.

Help

This sounds simple, but if you are new to Linux and you are not familiar with the command line, try one of these links for more information:

◇ Trouble-shooting section

- ◇ The old version of this how-to
- ◇ Linuxgamers Quake howto
- ◇ Quake wiki
- ◇ The Linux Game Tome

2.2 Command Line Options

Command Line Options are extra parameters that are typed on the Linux command line following the program's name. Quake has a large number of them, some of which vary from engine to engine. The most useful/common ones are:

- window**
Run the game in windowed mode
- fullscreen**
Run the game in fullscreen mode
- game NAME**
Load the mod NAME.
- mem N**
Reserve N megabytes of memory for the internal heap. This generally defaults to 8 or 16 meg, but must be increased when playing larger mods.
- width WIDTH**
window/fullscreen width
- height HEIGHT**
window/fullscreen height
- sndspeed MHz**
Set sound sampling rate (eg. 44100, 22100, 11025)
- sndbits N**
Set sound bits to N = 8 or 16
- nosound**
Disable sound. Necessary when sound is absent/unconfigured to stop the game from crashing.
- nomtex**
Disable GL multitextures.
- listen N**
Allow a maximum of N players/bots to join multiplayer games.
- cddev DEVICE**
Use DEVICE for playing the cd music
- nocdaudio**
Disable cd audio

You can also append Quake commands to the Linux command line by prefixing them with a plus sign. For example, to automatically start a new game at hard skill, use

```
glquake.glx +skill 2 +map e1m1
```

2.3 Game Console Commands

For more info see <http://www.planetquake.com/console/commands/quake.html>

The console is an in-game command line at which you can issue commands, change variables and cheat. It is

toggled by pressing the tilde "~" key when in a game. The main commands include –

god

Invulnerability

noclip

Walk through walls

notarget

Enemies won't attack player

timedemo DEMO

Play DEMO (eg. "demo1") at top speed and show frame rate

impulse N

Issue "impulse N"

These are in-game commands which can be given special uses. The most common cheat is **impulse 9** which gives all weapons.

bind key "COMMAND"

Bind a key to perform a command

map MAP

Load MAP

changelevel MAP

Load MAP without resetting player settings

quit

Exit to system

skill VALUE

value = 0 (easy) – 3 (impossible)

Degree of difficulty. Level must be restarted to take effect

r_wateralpha VALUE

value = 0.0 – 1.0

Opacity of water

_snd_mixahead VALUE

value = 0.1 – 1.0

Raising this value is a good way to speed up the game at the expense of some sound lag. I use 0.3

r_shadows FLAG

flag = 0 | 1

Display model shadows

vid_wait FLAG

flag = 0 | 1

Sync video output with screen refresh

chase_active FLAG

flag = 0 | 1

Show player from third person perspective

3. Game Engines

3.1 GLQuake

The first place for Linux noobs to go is Jörgen's no frills site. Here you'll find some relevant documentation and trouble shooting tips, and a basic version of OpenGL Quake for Linux. Fairly pain free by Linux standards, it supports most Quake mods, but gamma (brightness) support is broken.

<http://mfcn.ilo.de/glxquake>

3.2 Darkplaces

Darkplaces is an amazing Quake engine with a great range of visual enhancements and options for colour, effects and sound. It uses the same Doom3 lighting features as Tenebrae and thus requires a more powerful computer than GLQuake and QuakeForge.

It also supports many otherwise incompatible mods including [Nehahra](#) and [Nexuiz](#), and has improved support for the official mission packs.

Havoc's [file archive](#) can be a little confusing. The large "gameengine2005" tarballs include precompiled binaries and the game's source code in a second tarball. To compile your own program uncompress the second tarball , type **make** to see a list of possible targets (programs), and select one. For example – to build the OpenGL engine with ALSA sound type **make cl-release**, or to build with OSS sound, **make cl-release DP_SOUND_API=OSS**.

Much thanks to Lord Havoc for this great project.

<http://www.icculus.org/twilight/darkplaces>

3.3 QuDos Quake Ports

"Here you'll find QuDos' `linuxified` src+bin tarballs for popular quake ports, including that of bjp for Nehahra."

This is great news for gamers. For the first time these engines – including DemonQuake, JoeQuake, NehQuake, Qrack and Tremor – have been ported to Linux. [NehQuake](#) runs [Nehahra](#) much faster than Darkplaces, and [JoeQuake](#) has impressive eye candy.

The tarballs include source code, binaries and in most cases the data files necessary for the engine. To install these data files, find the simply named folders (such as "joequake" or "qrack") inside the tarballs and move them to your quake directory. If they are not present you will have to download them from the game's homepage.

For some of the engines, an additional sound library (which is included) has to be installed. To do this:

```
su
cd /usr/lib
```

```
mv {some directory}/libfmod-3.74.1.so .
ln -s libfmod-3.74.1.so libfmod.so
ldconfig
```

or visit the [FMOD homepage](#) and install the libraries manually.

<http://qudos.quakedev.com/linux/quake1>

3.4 QuakeForge

QF is the most comprehensive Linux Quake project. It has a visually enhanced engine, numerous single player and [QuakeWorld](#) clients and Quake C tools. Amongst it's features are: an overhauled menuing sytem, a new "heads up display", and in-game help.

Possibly because of it's size, QuakeForge hasn't been updated in years and it's documentation was never quite finished. The usual "configure && make && make install" will build the whole project, but to make a single player binary only, try:

```
configure --with-static-plugins --without-tools --without-servers --with-clients=glx
zcat <ruamoko/cl_menu/menu.dat.gz >{somedir}/quake/id1/menu.dat
```

For information about building QuakeForge on the BSD Unices, see the [FreeBSD](#) section.

Kudos to the QuakeForge team for a huge project which has provided much inspiration for other open source games.

<http://www.quakeforge.net>

<http://sourceforge.net/projects/quake/>

3.5 TyrQuake

Is a fairly complete project including Quake and Quakeworld clients and [other tools](#) including the popular TyrLite. Tyrann's focus is on a fully featured but miminalist engine for Windows and Linux.

To compile TyrQuake-0.47, first edit the makefile and select a few options. (The single player client is "NQ"). Nvidia users may have to apply [this patch](#) to fix a few bugs. Versions after 0.47 should build without this.

A patched TyrQuake single player binary is available [here](#).

<http://disenchant.net/engine.html>

3.6 Software Quake

For a more in-depth treatment of Software Quake, see the [previous version](#) of this how-to.

The [original WinQuake source](#) also came with two pixelated versions of the game:

- X Quake (quake.x11)
- Svcga Quake (squake)

but compiling them is no longer straight forward. It involves copying **Makefile.linux** to **Makefile**, editing this file to remove the extra targets , replacing **/usr/X11/lib** with **/usr/X11R6/lib** and typing **make build_release**.

There are easier options though. [TyrQuake](#) and [QuakeForge](#) have software clients, and there is also an old [SDL Quake](#) written by SDL's author, Sam Lantinga, which should work on all modern platforms.

3.7 Other

NPRQuake

Another Quake engine which has been ported to Linux but afaik hasn't been touched in a few years is [NPRQuake](#). Notably, it has the ability to load different renderers on the fly (!) which is pretty cool. The [linux port](#) includes support for the cartoon renderer [ainpr](#), and works really well for me.

The [SDL version](#) has rewritten mouse and video code and may work on otherwise troublesome systems. But the sound APIs have not been ported to SDL, so it is not a truly portable engine.

Tenebrae

A Quake engine using advanced lighting techniques similar to those in Doom III. Requires a very fast computer to run and may not be compatible with all hardware.

<http://tenebrae.sourceforge.net/>

Twilight Project

The [Twilight Project](#) "is a set of rather minimalist NQ and QW engines that focus on insane rendering speed, it is however a bit unstable at the moment."

4. Mods

4.1 Mods

There are hundreds of user created levels – known variously as "mods", "total conversions" or simply "maps", all over the internet. When it comes to finding them though, many URLs are no longer valid, and it is easier to just google for a file name (perhaps adding "quake" as an extra search term) than to try and find the project's homepage – which is probably just dust in the ether now.

To run new maps, place the bsp file into the "quake/id1/maps" subdirectory, and start Quake with the **+map MAPNAME** option.

Installing mods is simply a matter of creating a subdirectory DIR and extracting the contents of the mod zipfile/tarball into this directory. It is then loaded by using the **-game DIR** command line option and, sometimes, **+map MAPNAME** where MAPNAME is the mod's start map.

For both maps and mods, all files should be in lowercase format.

QuakeTerminus has a good list of mods, and Tenfour numerous map reviews.

A few of the author's favourites are:

Soul of Evil

Soul of Evil is a gorgeous medieval themed mod with two single player episodes, a melee style arena mode and nice documentation. Many thanks to Tronwyn, Fat Controller and their co-authors. [Link](#)

Nehahra

Epic. Ambitious. Otherworldly. Nehahra is the definitive Quake mod, supported in Linux by LordHavoc's [Darkplaces](#), and [QuDos](#)' port of the NehQuake engine. It has some great models and maps, uses fog effects well, and has an (optional) two hour movie/demo which ties-in well with the original Quake "story-line" but is also in desperate need of an edit. [Link](#)

Contract Revoked

A modern mod which made my jaw drop. It also has ambitious sequels: The Lost Chapters and Quoth. [Link](#)

The Masque of the Red Death

A vast, recently released castle map, which also requires Darkplaces and *fast* hardware. "Monster Count: 404 on Hard" – Tronwyn. [Link](#)

The Hunted Chronicles

Another game requiring the Darkplaces engine, the Hunted Chronicles is a zombie shooter/survival mod in two parts. The second uses fog and lighting effects to spooky effect, and could almost be mistaken for a Half-Life mod. [Link](#)

Neil Manke's mods

Neil wrote the definitive Half-Life mod "They Hunger". The quality and fun is in these maps too – alba01.zip, alba02.zip, sofsp1.zip, sofsp2.zip, starshp2.zip, [Link](#)

Blood Mage

... is a dungeons and dragons themed mod with great monsters and music. It's a little dated now, and the numerous spells can be overwhelming – [bmfull.zip](#)

Operation: Urth Majik

Oum is one of the few Quake 1 mods with a sci-fi feel. It's a well made five level mod with cut-scenes and many new weapons – [oum.zip](#), [Link](#)

The Coagula Contest 2

Coagula is a six level compendium of maps originating from a contest. The novelty is that all maps are floating in the ether, and it's a great set. [Link](#)

Scourge done Slick

SdS is a speed run through Mission Pack 1, Scourge of Armagon. Hilarious and amazing. [Link](#)

Insomnia

Cracking game-play and rivers of blood – [czg07.zip](#)

Zerstörer

Dark and bloody, with Doom's paranoiac atmosphere – a classic. Zerstörer also has some good death match levels – [zerstorer.zip](#)

Fantasy Quake

FQ is a traditional medieval themed conversion. The game has some beautiful levels, but also plenty of raw edges as it was never quite finished. (The project ended prematurely when the web hosting hit a snag). Not all the player classes work perfectly. Use the "g" key twice to purchase items, the "<", ">", "/" keys for inventory, and the "w", "e", "r" keys for the grappling hook – [fantasy.zip](#)

Here you can get the long lost Fantasy Quake [manual](#).

Gib Factory, Vigil, Museum

Little mods with great game-play! – [gibfact.zip](#) [vigil.zip](#), [museum.zip](#)

4.2 Commercial Mods

Mission Pack 1

Scourge of Armagon by Ritual Entertainment (formerly known as Hipnotic Interactive).

Mission Pack 2

Dissolution of Eternity by Rogue Entertainment.

– Both official mission packs are generally acknowledged as better than the original game.

Malice

Very original Quake total conversion, with the greatest (make believe) machine gun I've ever unleashed. Worth paying for.

Abys of Pandemonium

Commercial mod now freely available: [Link](#)

Ravages of Apocalypse

Xmen mod! Great models. Shame about the game-play. ...When good mods turn bad.

This mod has now been released free of charge, and can be found [here](#).

Shrak

One of the first commercial mods. It has well modelled and totally new monsters, but the game-play doesn't cut it anymore.

4.3 Mapping tools

Another first for Quake was the implementation of it's own game language – Quake C. This enables mods to work seamlessly on any operating system. It is possible to install many of the editors which are used to make Quake maps, but creating full scale mods is real voodoo and beyond my knowledge.

GtkRadiant is the only currently maintained world editor I know of [Link](#)

The **Quake Army Knife** (QuArK) is a multi-purpose Quake editing tool which.. may or may not have Linux support %-(. [Link](#)

...You may be able to find out from the [Func_Msgboard](#) – an ongoing hub for Q1 development and new mapping projects.

[QuakeForge](#) include Quake C tools with their tarball.

The [Quake Wiki](#) has some relevant links for the windows platforms.

5. Multiplayer

5.1 QuakeWorld

An enhanced Quake engine for on-line and network multiplayer action. It is incorporated into [QuakeForge](#) , [FuhQuake](#) and [TyrQuake](#).

5.2 FuhQuake

... "contains numerous game-play and eye candy enhancements over the original QuakeWorld game". FuhQuake will still play the original game but the focus is on multiplayer, and single player mods won't work. It is still actively maintained by Fuh.

5.3 Nexuiz

Nexuiz is a new standalone multiplayer game using the Darkplaces engine. It uses advanced lighting features, so users with less powerful video cards should try disabling these to get the game to run.

<http://www.nexuiz.com>

5.4 Digital Paint 2

Paintball comes to Linux !

Digital Paint 2 is an "original" multiplayer game based on the Quake II engine. It's colourful and fun nature is a departure from the usual dark tone of most Quake games. Being a totally remodeled game, it doesn't require you to have the original Quake II ;->.

Single player games are possible by playing against computer bots.

<http://www.planetquake.com/digitalpaint/>

5.5 Battle Mech

Battle Mech is a top down Mechwarrior style mod. Make sure to use the 1.1 tarball.

<http://static.condemned.com/index.shtml>

6. Trouble-shooting

Other trouble-shooting resources can be found at: Jörgen's GLQuake Site, the old version of this how-to, and Linux Gamers FAQ.

Often, using an alternative game engine such as TyrQuake, FuhQuake and Darkplaces will fix mouse and sound related problems.

6.1 Bash won't start the program

"bash: ./glquake.glx: Permission denied"

- The binary may not have the executable bit set. Type **chmod +x glquake.glx** to fix this.

- If the program is located on a windows partition, it is possible it has been mounted with the **noexec** option.

Type (as root): **mount -o remount,exec /mnt/windows**

"bash: glquake.glx: command not found"

- Bash may not be including the current directory in it's path. Type: "**export PATH=\$PATH:.**"

6.2 Program dies at startup

This is not good, but some simple options to try are:

- – use **-nosound** to test if sound is the problem.
Sound problems are covered in detail below.
- – use **-noudp** if network is unconfigured.
- – use **-nocdaudio** if cdrom is absent.
- – use **-height**, **-width** and **-fullscreen** command line options to select a screen mode you know is properly configured.
e.g. **glquake.glx -width 800 -height 600 -fullscreen -nosound**

Files not lowercased or Data files missing.

Linux Quake requires (most) filenames to be in lowercase. If you get an error similar to "**Error: W_LoadWadFile: couldn't load gfx.wad**" it means the game can't find the data files, possibly because they are not all lowercase.

- Make sure you have the subdirectory "id1" (not "ID1") containing the files "pak0.pak" and "pak1.pak".
- For a comprehensive lowercase utility, download this [utility](http://filerenameutils.sourceforge.net) or visit <http://filerenameutils.sourceforge.net>.

"Memory overwrite in Sys_Printf"

- This error means you need to edit file **sys_linux.c**, procedure **Sys_Printf**, at or near line 89, and change **text[1024]** to **text[4096]** and recompile.

6.3 Program dies loading level

- Many mods require extra memory. Use the **-mem 48** option to allocate 48 meg of memory for the heap.
- A few newer mods just won't work with standard GLQuake, and need an enhanced [game engine](#), though they will generally indicate this in their documentation.
- In some cases, this problem can be sound related. Try some of the tips in the sound section.

6.4 Sound Problems

For more information about Linux sound see the [drivers](#) section.

An error such as: **"/dev/dsp: Device or resource busy"** indicates some program is already using your sound card, and you will have to halt this program to get Quake sound effects.

- From the Linux command line, type **killall artsd** or **killall esd** to terminate either of these popular sound daemons.
- Alternatively, to run Quake through the KDE sound daemon, type **artsdsp glquake.glx ...**

"Quake engine games exit, and I see an error about **mmap!**"

- The [Linux Gamers FAQ](#) recommends "Your sound card/driver doesn't support this needed feature. However, if you use KDE/arts you may be able to bypass this with the **-m** switch to the artsdsp wrapper".

Make sure the **artsd** program is running by typing **ps -A | grep artsd** and checking that this command returns at least one non-empty line. Then type **artsdsp -m glquake.glx**.

- Try alternative sound drivers as outlined in the [Sound Drivers](#) section.

Sound stutters or is not very good.

- Try using the **-sndspeed** or **-sndbits** option(s), or swapping sound drivers.

6.5 Other Issues

Game is too dark

If changing the brightness setting in the options menu doesn't work, you can use the **xgamma** program to brighten the whole display.

- ◇ Type **xgamma -gamma VALUE** before running the game, where VALUE is a number larger than 1. When you've finished, use **xgamma -gamma 1** to restore the brightness.

This tip will not work with poorly supported hardware. For Voodoo 1/2 users, visit [here](#) for more information.

Mouse look

"This game won't let me look around properly. %\$!\$@"

- ◇ Bring down the game console with the "~" key and enter **+mlook**.

Mouse doesn't work properly

Try the following –

- ◇ Start the game in fullscreen mode by using the **-fullscreen** option.

- ◇ From the game console, type **_windowed_mouse 1**

- ◇ If you're using fluxbox, try another window manager. Fluxbox has issues with some games in fullscreen mode.

- ◇ If still without success, try the [NPRQuake](#) or [Darkplaces](#) SDL clients. Typing **export SDL_VIDEO_X11_DGAMOUSE=0** before starting the game will disable hardware dga mouse.

Game saves fail / Options not remembered

If you are running Quake as a normal user and experiencing these problems it's probably due to having insufficient privileges to write to the game directories. Solutions include:

- ◇ Run the game as super user: Type **su** and enter root's password before typing **glquake.glx ...** to start the game.
 - ◇ Change the game file permissions. Unix operating systems have strong security preventing unauthorised or accidental file changes. The simplest way to overcome this in a single user environment is to become super user and change ownership of the quake directory with (as root): **chown -R USERNAME /usr/local/games/quake**. However it is recommended users read the **chmod** and **chown** man and info pages to better understand Unix file permissions.
 - ◇ In full multi-user environments it is recommended using the [Darkplaces](#) or [QuakeForge](#) game engines, which correctly place per-user data in their home directory.
- Quake uses a confusing method of saving and restoring game options, especially when playing add-ons, and game options sometimes have to be reinitialised even though file permissions are not an issue. In such cases, the author can offer no simple advice %-/.

Crazy polygons

Some mission-packs/mods for Quake can cause existing player/monster models to be drawn with lines all over the place. To fix this, delete the directory "quake/id1/glquake". When you next run the game, it will remake this directory and everything should be fine.

Lines on screen

A common problem with 3dfx cards is a shower of flickering lines on the screen.

- ◇ From the game console, type **gl_ztrick 0**.

Other graphical anomalies

Some Quake engines use an OpenGL speed-up known as multitexturing. This normally works fine, but if you are experiencing glitches you can disable this feature with the **-nomtex** option.

Older video cards may occasionally draw models in all white. See the PlanetQuake [command list](#) for in-game GL variables to fine tune performance.

6.6 Video Drivers

Setting up hardware GL acceleration under Linux used to be a big deal, but modern distros should now handle this automatically. Of course there are exceptions...

Nvidia's drivers for all of their modern video cards are not open source. Because of this many distributions do not include them. If your Nvidia card is running slowly this is probably the cause and you should visit <http://www.nvidia.com> to download the Linux installer. In the author's experience these drivers are great, but not all versions work 100% with all cards. If you have a misbehaving Nvidia video card, try a different driver.

While new versions of XFree and Xorg have great support for Voodoo 3, 4 and 5, early 3dfx hardware such as Voodoo1, Voodoo2 and Rush are no longer hardware accelerated. To get OpenGL working for these cards,

you'll need to download, install and/or compile the software libraries called Glide and Mesa. [Here](#) is a detailed README on old 3dfx cards.

Links

<http://www.x.org>

[Linux Gamers ATI How-To](#)

[Linux Gamers Nvidia How-To](#)

6.7 Sound Drivers

There are two major Linux sound systems – Open Sound System and ALSA. If you are experiencing sound problems and the trouble-shooting section hasn't helped, you may consider changing the sound driver. This can be hard work, and is only for experienced users.

To ascertain which driver you are currently using, type **lsmod** to list currently loaded kernel modules. The ALSA sound modules have verbose names starting with "snd_", while the OSS modules have more terse names. For example, the ALSA Sound Blaster Live module is "snd_emu10k1", while the OSS module is "emu10k1". Since Linux kernel 2.6, ALSA has been the standard sound system, while 2.4 and earlier were more likely to come with OSS sound.

Information about ALSA can be found at the [Alsa Homepage](#) and Linux Journal's [Guide to ALSA](#).

For those already with ALSA wishing to try the OSS modules, a [kernel recompile](#) is probably necessary.

7. Quake Sequels

7.1 Hexen II

Hexen II is a colourful adaption of the Quake engine, and in terms of source code and theme is much closer than Quake II to the original game. Unfortunately, [Raven Software](#) released the game with many rough edges... So beautiful, yet so cruel.

[Hammer of Thyrior](#) is the main Linux Hexen II port, and has had much work done towards squishing bugs and enhancing the OpenGL graphics. While it is not as widely distributed as Quake, the HoT demo includes some of the game's best levels and is available from the Sourceforge [project page](#).

7.2 Quake II

Quake II is the sci-fi themed sequel to Quake.

Early Linux releases weren't very solid, especially the mouse handling, but there is now a few related projects to choose from. [QuDos' Quake II](#) is the most recent, being based on [Icculus Quake II](#), but having an enhanced graphics engine. Michael Olson has some Quake II [source](#) and [binary](#) rpms which appear to be old Icculus releases. Alternatively, there is the [QuakeForge Quake II](#) project which also provides support for multiple operating systems.

The multiplayer paintball mod [Digital Paint 2](#) is based on Quake II.

See the [old version of this how-to for Quake II troubleshooting tips](#).

7.3 [Quake III Arena](#)

The third Quake installment was a landmark multiplayer game, with some of the most beautiful and well balanced fragging ever. It was one of the first games to receive a full Linux commercial release.

Recently [ID Software](#) released the source code, and you'll find an [Open Source Quake III](#) project at [Icculus.org](#).

Most mods should work. The Linux Gamers FAQ reports:

```
Yes, ... modifications work in Linux as long as they are compiled to the
Quake III ... VM bytecode as advised by id software. ... modifications
compiled to Windows library files will not work.
```

The retail add-on Quake III Team Arena is supported and, despite never getting rave reviews, is a great game.

For an atmospheric Q3 single player conversion visit [The Dark Conjunction](#).

Links

The Zerowing [installation](#) and [known issues](#) guides hosted by ID Software.

Linuxgamer's [Quake III Howto](#).

Linux Question's Quake III forums for [Sound](#) and [Mouse](#) problems.

All things Quake III at [Planet Quake](#)

7.4 [Quake IV](#)

Quake IV is an epic FPS from the awesome [Raven Software](#). It is based on the Doom-III engine and has high hardware specs. A 2ghz cpu and 512meg ram are minimum requirements.

Links

The [Official Linux Faq](#)

Linux Questions [Quake IV bug forums](#)

[Quake IV demo](#)

8. [Other](#)

8.1 [Text Version](#)

This how-to is also available as a [text file](#), and a [single html file](#).

8.2 Old Quake How-To

... is located [here](#)

8.3 FreeBSD

The author has limited experience with this OS and currently uses FreeBSD 5.3 with Nvidia's proprietary drivers. [Darkplaces](#) and [Hammer of Thyron](#) work well with this system.

[QuDos](#) has recently ported several [engines](#) to Linux and has recently started work on FreeBSD compatibility. His great [Quake II project](#) is also now BSD friendly.

For basic GLQuake support, you can find a hacked FreeBSD binary and source tarball [here](#).

[QuakeForge](#) is a comprehensive Quake project, but may have installation issues with newer FreeBSD releases. The memory allocator routine "alloca" is not correctly detected on FreeBSD 5.3. The fix is, after running "configure", to add "#define C_ALLOCA 1" to "include/config.h" and undefine other ALLOCA variables. Another issue is the opening of plugins. If the project builds, but you can't get the console or menus, you may have to enable static plugins using **configure LDFLAGS=-lpthread --with-static-plugins**.

8.4 Miscellaneous

- Because of the way the original game renders the sky, any map with numerous outdoor enemies suffers a big performance hit.
- You can jump further when strafing than when going forward or back 8-)
- The **timedemo demo1** command is a great way to benchmark your system.
- Rocket-jumping is the technique of using a rocket or grenade explosion to jump further than normal. For a demonstration see the Scourge done Slick speed run.
- John Carmack –
"At this time (march '97), the only standard opengl hardware that can play glquake reasonably is an intergraph realizm, which is a VERY expensive card"
- From the original Quake How-To –
"Hardware-accelerated OpenGL Quake is Quake the way God intended it to be. There is no substitute, and once you've experienced it there's no going back."
- Func Message Board –
> This Will Produce A Fully Functional Bouncing, Exploding Zombie
Sounds like fun :)
- Moby Games
(by Pathogen)
..... Quake was the first FPS to introduce realistic lighting and shadows. Of course, this came at a price. Quake has taken a lot of flak because it's all dull brown and grey. This was necessary because it

was the only way to get the lighting to work properly. Since each surface needs a wide variety of reserved colors for displaying darkened/brightened portions of the surface, the game was limited to just a few colors and all their respective shades.

(by Ashley Pomeroy)

Almost incidentally, Quake introduced the now-standard concept of a FPS "console", and popularised "mouselook" as *the* absolute standard control interface. Although the specifications required a Pentium, Quake ran acceptably well on a 486 DX4/100

- "Quake and its three follow up games, Quake II, Quake III Arena and Quake 4 (which many do not regard as true sequels), have sold over 4 million copies combined. In 2005, a version of Quake was produced for mobile phones."
- Popular games derived from the Quake engine include – Return to Castle Wolfenstein, Half-Life, Star Trek Voyager – Elite Force, Soldier of Fortune, American McGee's Alice, and – distantly – Doom III.

8.5 Links

ID Software

<http://www.idsoftware.com>

The Linux Game Tome

<http://www.happypenguin.org>

Icculus

<http://www.icculus.org>

Icculus Gamers FAQ

<http://www.icculus.org/lgfaq>

Linux Gamers

<http://www.linux-gamers.net>

Planetquake

<http://www.planetquake.com/quake1>

Quake Terminus

<http://www.quaketerminus.com>

Quake Marine

<http://www.quakemarine.com>

Retro Quake

<http://www.planetquake.com/retroquake/quake/index.html>

Quake Basics

<http://www.quaketerminus.com/quakebible/index.htm>

Quake Wikipedias

<http://wiki.quakesrc.org/index.php/HomePage>, <http://en.wikipedia.org/wiki/Quake>

Jörgen's GLQuake Site

<http://mfcn.ilo.de/glxquake>

Quake Forge

<http://www.quakeforge.net>

Darkplaces Game Engine

<http://www.icculus.org/twilight/darkplaces>

Linux Hexen II project

<http://uhexen2.sourceforge.net>

SDL – Cross platform hardware API

<http://www.libsdl.org/>

ALSA – Linux sound project

<http://www.alsa-project.org>

Lowercase utility

<http://filerenameutils.sourceforge.net>

Func_Msgboard – message board from hell ...no, I mean it

<http://www.celephais.net/board/forum.php>

8.6 Glossary

ALSA

Advanced Linux Sound Architecture.

API

Application Program Interface. The computer libraries which are used when programming, and link the game to the hardware.

Bot

A computer generated player with artificial intelligence (cough), in a multiplayer game. Used to play multiplayer when no-one's around or not connected to a network.

Client

This word is used in two subtly different ways. In single player, the Quake game is known as a client, with different clients using their own graphics libraries (for example, the GL client "quake.glx" or the X11 client "quake.x11"). The usage is similar in multiplayer games, but also means the per-user program which connects to a single "server" program which lets all the players exist in the same world.

FPS

First Person Shooter. A shooting game viewed from the "first person" perspective.

Mod

Modification to the original Quake game varying from a complete game overhaul (total conversion) to simple map/model reworks. Quake was designed to allow for ease of platform portability with it's own computer language "Quake C" giving mappers control over most every aspect of their Quake world.

Noob

Newbie. Someone new to a computer related topic.

Patch

A software patch (or diff) is a single file used to alter a source code tree before compilation. It is often used to fix bugs or add new features that the original author didn't include.

Usage of the GNU patch utility is of the form **patch [--dry-run] -pNUM <FILE** where NUM is the number (usually 0 or 1) of directories to strip from the patch file. This number is not obvious except to unix gurus, but using the "--dry-run" option will let you test run patch so you can find the correct NUM. ...Using the wrong number will make patch output all sorts of cryptic messages which can be terminated with a **control-C** character.

Of course you could always type **man patch** and learn for yourself how to use this powerful unix command. ;-/

SDL

Simple DirectMedia Layer cross platform hardware API widely used in Linux games.

Server

A program central to multiplayer games to which every player connects.

Tarball

An archive file such as **somefile.tar** created by the "tar" program. It is often compressed using the programs "gzip" or "bzip2", in which case it will normally end in the letters **.gz** or **.bz2**. The extension **.tar.gz** is often shortened to **.tgz**.

8.7 Credits

Thanks to:

- The [Linux Documentation Project](#).
- Linus Torvalds for hacking together his little operating system.
- [ID Software](#).
- Quake modders great and small.

This webpage was constructed using [Linuxdoc-Tools 0.9.20](#), [Vim](#) and [Bash](#).

8.8 Todo

demo, quakeworld status , impulses, ezquake.

8.9 Author

Steven A.

[Sourceforge user page](#)

[Email](#)
