Game Server HOWTO

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v0.99, 9 July 2001

This document explains how to install, configure and maintain servers for various popular multiplayer games.

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1. Introduction

This document describes how to install, configure and maintain dedicated servers for popular multiplayer games, such as the Quake series, Half−Life/Counter−Strike and other first−person shooters. Linux makes a great operating system for game servers because of its stability and speed (not to mention it's free).

1.1. Copyright Information

1.2. Disclaimer

No liability for the contents of this documents can be accepted. Use the concepts, examples and other content at your own risk. As this is a new edition of this document, there may be errors and inaccuracies, that may of course be damaging to your system. Proceed with caution, and although this is highly unlikely, the author(s) do not take any responsibility for that.

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You are strongly recommended to take a backup of your system before major installation and backups at regular intervals.

1.3. History

This document was started by me, Anders Jensen−Urstad `<andman@fragzone.se>` because I couldn't find a good document that covered several popular multiplayer games describing how to set up servers for them. So instead of wading through piles of readmes, guides, howtos and web−pages I wrote this HOWTO.

Revision History		
Revision 0.99	2001−07−08	Revised by: aju
Changed license, minor fixes.		
Revision 0.23	2001−03−03	Revised by: aju
Revised and changed Half−Life/Counter−Strike.		
Revision 0.22	2001−01−28	Revised by: aju

Added Rocket Arena 3 and Alliance to Quake3.

Revision 0.22	2001−01−26	Revised by: aju

Added Security and permissions, revised QuakeWorld; added QuakeForge. Revised LMCTF. Added Lithium II, L−Fire DM and L−Fire CTF. Revised Q2Admin.

Revision 0.21	2001−01−15	Revised by: aju

Updated Half−Life/Counter−Strike. Added Rocket Arena to QuakeWorld.

Revision 0.20	2001−01−14	Revised by: aju

First draft.

1.4. New Versions

The newest version of this document can be found at its homepage http://illuminatus.unixsweden.net/~andman/howto/ in its SGML source. Other versions may be found in different formats at the LDP homepage http://www.linuxdoc.org/.

1.5. Credits

I have gathered information from lots and lots of different READMEs, HOWTOs, web pages, and of course personal experience. The Unreal Tournament section was written by Knight Walker `<kwalker@aros.net>`.

- Christer `<vendor@nfn.net>` helped with some parts about QuakeWorld.
- The Quake−HOWTO by `<bobz@mr.net>` gave info on various things.
- The Q2 Server FAQ.
- http://www.atomicage.com:80/quake/server/server_cfg/.
- http://www.planethalflife.com/server/.
- Lots of Counter−Strike info from http://server.counter−strike.net.
- Everybody on #newdeal @ dalnet.. you know who you are. :)
- id Software for making the best multiplayer games out there.
- Dave "Zoid" Kirsch for making Threewave CTF for all the Quake games and for the Linux ports!
- Loki Entertainment Software for their work on Quake3 and for all their contributions to the Linux community.

1.6. Feedback

If you have any questions, comments, suggestions, corrections or whatever, please mail them to me: `<andman@fragzone.se>`.

2. Basics

Game servers can consume pretty much CPU and bandwidth (depending on the game and the number of players connected to your server). If you don't own the machine and want to run a server from your account, ask the system administrator first.

2.1. Security and permissions

All dedicated servers are strongly recommended to be run from another user than root. I recommend that you create a new user which handles all the game−servers. You may not have permission to create certain directories as a normal user, for example `/usr/local/games/quake`. If so, create it as root and then `chown user:group /usr/local/games/quake`, where user is your username and group your group, or create it in your home directory.

2.2. Keep the server running

If your game server crashes, a shell script like the one below (found on linux.com) will come in handy so you won't have to restart it manually. It can easily be modified for the game server(s) you're running:

```
!/bin/sh

quake3dir="/usr/local/games/quake3"
binname="linuxq3ded"
cd $quake3dir
process=`ps auxwww | grep inet | grep -v grep | awk '{print $12}'`

if [ -z process ]; then

  echo "Couldn't find quake 3 running. Restarting it"
  nohup ./linuxq3ded +exec ffa.cfg &

  echo ""

fi
```

Put the script somewhere, name it sv_up or whatever you like, and make cron run it every 5−10 min:

```
*/10 * * * * /usr/local/games/quake3/sv_up.sh >/dev/null 2>&1
```

Put this in crontab (crontab −e). It will execute sv_up.sh (the shell script above) every 10 minutes and its output is sent to /dev/null (in other words, it disappears).

3. QuakeWorld

QuakeWorld is a multiplayer−only version of Quake with optimized network code. Id Software released the sourcecode for Quake/QuakeWorld in 1999, creating a number of projects set out to improve, optimize, add more features to the code and make it more secure. QuakeForge is the most advanced, and I recommend that you use it instead of id's old qwsv if you can. QuakeForge is based on id's QuakeWorld 2.40 code and is totally compatible with it.

3.1. System requirements

Here are the minimum system requirements for the QW (QuakeWorld) server. Remember that the requirements depend on how many players you have on your server.

- Pentium 90 or better
- 16 MB RAM
- The *.pak files from the Quake CD−ROM
- Kernel 2.0.24 or later
- Enough free space on your HDD (depends on what you want to install, at least 40−70 MB)

3.2. Installing

First you have to download QuakeForge or qwsv 2.30, the QW server. QuakeForge should be used with all modern distributions. There are two versions of the old qwsv, one for glibc (libc6) and one for libc5 if you happen to run such an old system. Download the version that suits you, most likely QuakeForge.

Note: QuakeForge is actively being developed, and it is highly possible that a newer version than the one linked below is out, so check http://quakeforge.net/files.php before you proceed further.

- http://download.sourceforge.net/quake/quakeforge−0.2.99beta6.tar.gz
- ftp://ftp.sunet.se/pub/pc/games/idgames2/idstuff/quakeworld/unix/qwsv−2.30−glibc−i386−unknown−linux2.0.tar.gz
- ftp://ftp.sunet.se/pub/pc/games/idgames2/idstuff/quakeworld/unix/qwsv−2.30−i386−unknown−linux2.0.tar.gz

Create a directory where you want to place the QW server, `/usr/local/games/quake` for example.

If you downloaded QuakeForge:

```
bash$ mkdir /usr/local/games/quake
bash$ tar zxvf quakeforge-0.2.99beta6.tar.gz
bash$ cd quakeforge-0.2.99beta6
bash$ ./configure --prefix=/usr/local/games/quake --bindir=/usr/local/games/quake; make; make install
```

This will *at least* build the qf−server and possibly one or more QF−clients. We don't need the latter; you can choose to not compile them or simply remove them if you want to. Anyway, if the compilation went fine you should now have a binary called qf−server in `/usr/local/games/quake`. You might want to rename it to qwsv since that's what I'll call it in the rest of this document.

If you downloaded qwsv:

```
bash$ mkdir /usr/local/games/quake
bash$ tar zxvf qwsv-2.30-glibc-i386-unknown-linux2.0.tar.gz -C /usr/local/games/quake
```

Now create an `id1` directory in the quake directory and copy the pak0.pak and pak1.pak files from your Quake CD or wherever you have them into that directory.

```
bash$ mkdir /usr/local/games/quake/id1
bash$ cp /where/ever/id1/pak*.pak /usr/local/games/quake/id1
```

Now you're ready to run qwsv! Run it by typing `./qwsv` in the quake directory. It should work fine now (if not, check so that all the filenames are lower–case), try connecting to your server with a QW client.

3.3. Configuring

Now it's time to configure your QW server. Make a server.cfg file in the id1 directory containing:

```
sv_gamedir qw
deathmatch 1
hostname                "QW testserver"
serverinfo admin        "webmaster@xyz.com"
serverinfo url          "http://url.net"
rcon_password xxxx
timelimit 35
fraglimit 150
noexit 1
pausable 0
samelevel 2
maxclients 16
map dm3
floodprot 4 8 30
floodprotmsg "You have activated the flood protection and will be silenced for 30 seconds"
maxspectators 2
allow_dowload 1
allow_download_skins 1
allow_download_models 1
allow_download_sounds 1
allow_download_maps 1
```

As you can see the server.cfg file contains all kinds of variables the server uses.

- `-master <IP address>` – Command line parameter. Connects to the specified master server. QWSV starts in masterless mode by default.
- `-port` – Specified the port for the server to listen on, default is 27500.
- `gamedir` – Which game directory you want to use. Change it if you want to run a mod, like CTF. The QW directory is used by default.
- `deathmatch` – Can be set to 1, 2 or 3. 1 = Normal deathmatch; Weapons/items can be picked up and respawned (30 sec respawn time). 2 = Weapon stay. You can only pick up a weapon once, ammo & armor doesn't respawn. 3 = Combination between 1 and 2. You can only pick up a weapon once, ammo respawns after 15 seconds, everything else respawns normally.
- `hostname` – Server name.
- `serverinfo admin` – The admin's e–mail address.
- `serverinfo url` – Server url.
- `timelimit` – Match ends when timelimit (specified in minutes) is reached.

- `fraglimit` – Match ends when fraglimit is reached.
- `maxclients` – Max number of players.
- `map <mapname>` – Map that will be played.
- `maxspectators` – Max number of spectators.
- `password` – Password protect the server. Clients must set a matching password to be able to connect.
- `rcon_password` – Password used for remote administration.
- `allow_download` – Set this to 1 to allow clients download files they don't have from the server.

```
bash$ ./qwsv > /dev/null &
```

The above command runs the qwsv server in the background and sends all output to /dev/null (if you want to log the output, just replace /dev/null with /blah/qw.log or whatever), –port specifies the port the server will use, default is 27500 for QW. For a complete list of commands and the official QW manual, see http://qwcentral.stomped.com.

3.4. Threewave CTF (Capture The Flag)

Capture The Flag, or CTF for short, is the most popular Quake modification. There are many different CTF–variants. Threewave CTF is the original and most popular CTF modification. You need the following files:

- ftp://ftp.sunet.se/planetquake/threewave/ctf/server/3wave42.zip – All the server files.
- ftp://ftp.sunet.se/planetquake/threewave/ctf/server/3wave421.zip – Some bugs fixed (4.2 is required).
- ftp://ftp.sunet.se/planetquake/threewave/ctf/client/3wctfc.zip – All the CTF maps.

Create a ctf directory and extract all the files you downloaded to it (note: replace `~/` with the path to the directory where you downloaded the files).

```
bash$ cd /usr/local/games/quake
bash$ mkdir ctf
bash$ unzip ~/3wave42.zip -d ctf
bash$ unzip ~/3wave421.zip -d ctf
bash$ unzip ~/3wctfc.zip -d ctf
```

Now try to start the server (if you don't specify which map to play it'll default to an interesting modified version of Quake's start level):

```
bash$ ./qwsv +gamedir ctf +map ctf1
```

3.5. Rocket Arena

Rocket Arena is a very exciting modification. It's one–on–one games with the simple rule "winner stays, loser goes". Each player waits for his/her turn to fight in the arena. Every player gets full armor (200), 100 health and all weapons when they enter the arena. The winner stays to fight again, the loser goes back to the line. Simple? Yes. Boring? No!

Now, on to installing this modification. Get the following files:

* ftp://ftp.sunet.se/pub/games/PC/idgames2/planetquake/servers/arena/fasrv12.zip – All the server files.
* ftp://ftp.sunet.se/pub/games/PC/idgames2/planetquake/servers/arena/farena12.zip – The required client files (maps and sounds).

Create a directory called `arena` in your quake directory and unzip the above files to that directory:

```
bash$ cd /usr/local/games/quake
bash$ mkdir arena
bash$ unzip ~/fasrv12.zip -d arena
bash$ unzip ~/farena12.zip -d arena
```

Start the server:

```
bash$ ./qwsv +gamedir arena +setmaster 204.182.161.2 +exec rotate.cfg +maxclients 6 +timelimit 20 +fraglimit 15
```

For map rotation you can choose one of the following (of course you can edit these or make your own, remember that the last map must loop to the first):

* `rotate.cfg` – All the Final Arena maps.
* `newmaps.cfg` – The new Final Arena and the TF arena maps.
* `classic.cfg` – The most popular earlier Arena maps.

4. Quake II

Quake II is the sequel to Quake, featuring great multiplayer capabilities just like its prequel.

4.1. System requirements

The minimum system requirements can vary, depending on the number of players you want on your server.

- A Pentium−class processor or better is recommended. More players = more CPU.
- At least 16 MB RAM, 1MB per player is recommended.
- Some maps require more CPU/RAM than others.
- The *.pak files from the Quake II CD−ROM.
- Enough free space on your HDD, at least ~500 MB.
- If you're going to run a Q2 server on the Internet, make sure you have enough bandwidth. The more players the more bandwidth you need.

4.2. Installing

To start a Q2 server you need the pak files from the Q2 CD and the Q2 client package, download the one that suits you (most likely glibc, but you might have libc5 if you have an old distribution):

- ftp://ftp.sunet.se/pub/pc/games/idgames2/idstuff/quake2/unix/quake2−3.20−glibc−i386−unknown−linux2.0.tar.gz
- ftp://ftp.sunet.se/pub/pc/games/idgames2/idstuff/quake2/unix/quake2−3.20−i386−unknown−linux2.0.tar.gz

Make a directory for Q2 and extract the Q2 client package to that directory.

```
bash$ mkdir /usr/local/games/quake2
bash$ tar zxvf quake2-3.20-glibc-i386-unknown-linux2.0.tar.gz -C /usr/local/games/quake2
```

Now create a baseq2 directory inside the Quake2 directory and copy the pak files from the Q2 CD−ROM.

```
bash$ mkdir /usr/local/games/quake2/baseq2
bash$ cp /mnt/cdrom/baseq2/*.pak /usr/local/games/quake2/baseq2
```

Cd to the Quake2 directory and start the server.

```
bash$ cd /usr/local/games/quake2
bash$ ./quake2 +set dedicated 1 +set deathmatch 1
```

It should work fine now and people can connect to your server.

4.3. Configuring

Of course, you will want to create a server config (cfg) file. Put the following in a file called server.cfg in the baseq2 directory, modify it as you like:

```
set hostname "Q2 testserver"
set deathmatch "1"
set rcon_password "xxxx"
set timelimit "30"
set fraglimit "100"
set maxclients "16"
set allow_download "1"
set allow_download_players "0"
set allow_download_models "1"
set allow_download_sounds "1"
set allow_download_maps "1"
```

Settings:

- `dmflags` – A bitflag, controls gameplay options.
- `fraglimit` – Next map is loaded when fraglimit is reached.
- `timelimit` – Next map is loaded when timelimit is reached.
- `map` – Which map to start.
- `maxclients` – Max number of players.
- `hostname` – Name of the server.
- `deathmatch` – If you want to play DM (deathmatch), set this to 1.
- `game` – Which mod directory to use, if you want to play a mod.
- `port` – What port you want to run the server on.

Now start the server with `./quake2 +set dedicated 1 +exec server.cfg`. Your config file will be read and the variables in it will be used. You can have different config files for different game types, for example ffa.cfg, ctf.cfg, etc. with customized settings. They should all be in the baseq2 directory.

To have your server listed on the master servers (so people using GameSpy, XQF and similar programs can see your server), type `set public 1` in the server console or in the config file. With the command `set setmaster 'master server'` you can change master server (default is id Software's master server).

4.4. Q2CTF (Capture The Flag)

Download one of the following, the one that suits your system (most likely glibc for 'modern' distributions).

- ftp://ftp.sunet.se/pub/pc/games/idgames2/idstuff/quake2/ctf/unix/q2ctf150–glibc–i386–unknown–linux.tar.gz
- ftp://ftp.sunet.se/pub/pc/games/idgames2/idstuff/quake2/ctf/unix/q2ctf150–i386–unknown–linux.tar.gz

It only contains the file `gamei386.so`. Make a ctf directory in your Q2 directory and extract the q2ctf archive.

```
bash$ mkdir /usr/local/games/quake2/ctf
bash$ tar -zxvf q2ctf150-glibc-i386-unknown-linux.tar.gz -C /usr/local/games/quake2/ctf
```

You'll also want the Q2CTF package with the CTF maps, http://ftp.sunet.se/pub/pc/games/idgames2/idstuff/quake2/ctf/q2ctf150.zip (9,1MB). Unzip it to the ctf directory. To start a CTF server, type `./quake2 +set dedicated 1 +set game ctf +exec server.cfg`, where server.cfg is a file you should create in the ctf directory and contain something like this:

```
deathmatch 3
maxclients 12
rcon_password password
fraglimit 0
timelimit 30
set hostname "Q2CTF Testserver"
set admin "admin@xyz.com"
map q2ctf1
```

4.5. LMCTF (Loki's Minions CTF)

LMCTF, Loki's Minions CTF, is a popular CTF modification for Q2. You need all the following files:

- ftp://ftp.sunet.se/planetquake/lmctf/lm520−linux_bin.zip
- ftp://ftp.sunet.se/pub/games/PC/idgames2/planetquake/lmctf/lmctf456.zip
- ftp://ftp.sunet.se/pub/games/PC/idgames2/planetquake/lmctf/lmctf50.zip

Create a `lmctf` directory in your Q2 directory and unzip all the files there. Cd to the Q2 root directory and start with the following command:

```
bash$ ./quake2 +set dedicated 1 +set deathmatch 1 +set game lmctf +exec server.cfg
```

There are some files in the `lmctf` you probably want to edit: `server.cfg` is the cfg file containing many standard server options, edit it to your liking. The file `maplist.txt` contains the list of maps the server cycles through. To alter the map list, create a file called maplist.txt with the names of the maps you want in your root Q2 directory and add +map <mapname> to the command line when you start the server, where `<mapname>` is the name of the first map in your maplist.txt you just created. The `motd.txt` file contains your message of the day.

For more information on LMCTF, see its homepage at http://www.planetquake.com/lmctf.

4.6. Rocket Arena 2

To run a Rocket Arena 2 server you need the following files:

- http://ftp2.gamespy.com/pub/cdrom/servers/arena/ra2250sv.zip
- http://ftp2.gamespy.com/pub/cdrom/servers/arena/ra2250cl.exe − required client files (maps and such).

Create a directory called `arena` in your quake3 directory and extract the above files:

```
bash$ cd /usr/local/games/quake2
bash$ mkdir arena
bash$ unzip ~/ra2250sv.zip −d arena
bash$ unzip ~/ra2250cl.exe −d arena
```

Edit `server.cfg` to your liking. Another file that you may want to edit is `arena.cfg` used to customize settings on a per arena basic as well as map rotation information. Start the server:

```
bash$ /quake2 +set dedicated 1 +set game arena +exec server.cfg
```

4.7. Lithium II

Lithium II is a very popular, configurable server−side deathmatch mod, adding things like the grappling hook and letting you configure pretty much everything; see its readme.txt file for more information. Download the following file:

- ftp://ftp.sunet.se/pub/games/PC/idgames2/planetquake/lithium/lithium2_1.24−i386−unknown−linux2.0.tar.gz

Extract the file in your Quake2 directory. All the files will be placed in a lithium directory.

```
bash$ cd /usr/local/games/quake2
bash$ tar zxvf ~/lithium2_1.24-i386-unknown-linux2.0.tar.gz
```

Lithium II comes with four different config files, copy one of them to server.cfg and modify it as you like:

- `lithium.cfg` – default Lithium II server.
- `stock.cfg` – stock Quake2 server.
- `lithctf.cfg` – default Lithium II CTF server.
- `stockctf.cfg` – stock CTF server.

Start a deathmatch server with this command:

```
bash$ ./quake2 +set dedicated 1 +set game lithium +exec server.cfg
```

To start a CTF server, you must have Q2CTF installed. Extract the lithium archive into your ctf directory and start with the following command:

```
bash$ ./quake2 +set dedicated 1 +set game ctf +set ctf 1 +exec server.cfg
```

4.8. L−Fire DM

L−Fire DM is a server−side mod that adds many features to Q2, such as organized match support, anti−spam, highscore lists for each level, profanity filtering, etc. What you need:

- ftp://ftp.sunet.se/pub/games/PC/idgames2/planetquake/lfire/LFireDM_v1_11_Linux.tar.gz
- ftp://ftp.sunet.se/planetquake/lfire/LFireDM_v1_11_Config.tar.gz

You can run L−Fire DM either from the `baseq2` directory, in that case it will show up as a standard DM mod in GameSpy and similar tools, or you can give it its own directory (`lfiredm` or whatever you prefer). Extract the archive (actually, it only contains two files, gamei386.so and readme.txt), or in other words place gamei386.so in your directory of choice.

```
bash$ cd /usr/local/games/quake2
bash$ mkdir lfiredm
bash$ tar zxvf ~/LFireDM_v1_11_Linux.tar.gz -C lfiredm
```

`LFireDM_v1_11_Config.tar.gz` contains many config files which you'll want to edit. Extract it to the directory where you put gamei386.so:

```
bash$ tar zxvf ~/LFireDM_v1_11_Config.tar.gz -C lfiredm
```

Start the server:

```
bash$ ./quake2 +set dedicated 1 +game lfiredm
```

4.9. L−Fire CTF

L−Fire CTF is also, like L−Fire DM, a server−side mod that adds many features to Q2CTF, such as match support, anti−spam, highscore lists for each level, rocket arena/sudden death overtime, etc. What you need:

- ftp://ftp.sunet.se/pub/games/PC/idgames2/planetquake/lfire/LFireCTF_v1_20_Linux.tar.gz
- ftp://ftp.sunet.se/pub/games/PC/idgames2/planetquake/lfire/LFireCTF_v1_20_Config.tar.gz

Extract the archive to your Q2CTF directory:

```
bash$ cd /usr/local/games/quake2
bash$ tar zxvf ~/LFireCTF_v1_20_Linux.tar.gz -C ctf
```

`LFireCTF_v1_20_Config.tar.gz` contains a bunch of configuration files which you'll probably want to edit. Extract it to the Q2CTF directory:

```
bash$ tar zxvf ~/LFireCTF_v1_20_Config.tar.gz -C ctf
```

Start the server just as you normally would:

```
bash$ ./quake2 +set dedicated 1 +game ctf
```

4.10. Q2Admin

Q2Admin is a very good transparent proxy modificatiom that adds many admin functions, and the most important, ZBot/Ratbot (among other things) detection to prevent people from cheating. Q2ADmin works with all Q2 mods transparently by filtering communication between the server and the mod it's running on top of. I recommend that you install Q2Admin. Download this file:

- ftp://ftp.sunet.se/planetquake/q2admin/q2admin18src.tar.gz

Now extract the archive somewhere and compile it:

```
bash$ cd /usr/local/games/quake2
bash$ mkdir q2admin
bash$ tar zxvf q2admin18src.tar.gz -C q2admin
bash$ cd q2admin; make
bash$ tar zxvf q2admin18src.tar.gz -C /usr/local/games/quake2
```

Now you should have a file called `q2admin.so` in the q2admin directory. For each mod you want to protect with Q2Admin, copy the `install` and `q2admin.so` files to each mod directory and optionally the *.txt files if you want to customize the Q2Admin settings for different mods. Run install, `./install` (chmod +x install if it's not executable) and start the server as usual. The install script moves `gamei386.so` to `gamei386.real.so` and `q2admin.so` to `gamei386.so`. Run `install` again to move the files back to their original names. There's a huge number of commands; See the `readme.txt` file included in the q2admin package for everything you need to know.

---

5. Quake III Arena

Quake III is the latest (and last) game in the Quake series, designed as a multiplayer deathmatch game.

5.1. System requirements

As always, the system requirements may vary depending on the number of players on your server.

- Pentium II 266MHz. More CPU = more players.
- At least 64 MB RAM.
- Kernel 2.2.9 or higher, glibc 2.1.
- The *.pk3 files from the Quake III Arena CD−ROM.
- At least ~500 MB free space on your HDD.
- Enough bandwidth if you're going to run an Internet server. More players = more bandwidth.

5.2. Installing

First download the latest Q3A Linux point−release. As of this version of the HOWTO it's v1.27g, but that may have changed when you read this since id Software still releases new versions of Q3A frequently.

- ftp://ftp.3ddownloads.com/36392/linuxgames/quake3/linuxq3apoint−console−1.29f−beta1.x86.run

Run the installer:

```
bash$ sh linuxq3apoint-console-1.29f-beta1.x86.run
```

That'll put the files in `/usr/local/games/quake3`. Now copy the *.pk3 files from the Q3A CD−ROM to the baseq3 directory.

```
bash$ cp /mnt/cdrom/Quake3/baseq3/*.pk3 /usr/local/games/quake3/baseq3
```

Cd to the Q3 directory and test the dedicated server, `./q3ded`.

5.3. Configuring

Now it's time to write some config files. They contain all the variables the server will use (maps to be played, gametype, etc..). All cfg's must be in the baseq3 directory. The file q3config.cfg is *always* executed. I recommend that you have different cfg's for different gametypes, for example ctf.cfg, ffa.cfg, and so on. You can use q3config.cfg for general settings, and then some other cfg on top of it. Run `./linuxq3ded +exec configfile.cfg` to run the dedicated server and execute the specified config file. This is what my FFA (Free For All) config file looks like:

```
set sv_hostname "AndmaN FFA DM"
set sv_maxclients 10
set g_motd "To be or not to be..."
```

```
set g_forcerespawn 15
set rconpassword "password"
set g_gametype 1
set fraglimit 50
set timelimit 20

//Here's the map-cycle. When fraglimit or timelimit is reached, the map is automatically changed.
//Otherwise it would just play the same map again.
set m1 "map q3dm1; set nextmap vstr m2"
set m2 "map q3dm2; set nextmap vstr m3"
set m3 "map q3dm3; set nextmap vstr m4"
set m4 "map q3tourney1; set nextmap vstr m5"
set m5 "map q3dm4; set nextmap vstr m6"
set m6 "map q3dm5; set nextmap vstr m7"
set m7 "map q3dm6; set nextmap vstr m8"
set m8 "map q3tourney2; set nextmap vstr m9"
set m9 "map q3dm7; set nextmap vstr m10"
set m10 "map q3dm8; set nextmap vstr m11"
set m11 "map q3dm9; set nextmap vstr m12"
set m12 "map q3tourney3; set nextmap vstr m13"
set m13 "map q3dm10; set nextmap vstr m14"
set m14 "map q3dm11; set nextmap vstr m15"
set m15 "map q3dm12; set nextmap vstr m16"
set m16 "map q3tourney4; set nextmap vstr m17"
set m17 "map q3dm13; set nextmap vstr m18"
set m18 "map q3dm14; set nextmap vstr m19"
set m19 "map q3dm15; set nextmap vstr m20"
set m20 "map q3tourney5; set nextmap vstr m21"
set m21 "map q3dm16; set nextmap vstr m22"
set m22 "map q3dm17; set nextmap vstr m23"
set m23 "map q3dm18; set nextmap vstr m24"
set m24 "map q3dm19; set nextmap vstr m25"
set m25 "map q3tourney6; set nextmap vstr m1"
```

- `sv_maxclients` – Max number of players.
- `g_motd` – The message people will see on the bottom of the screen when they connect to your server.
- `g_forcerespawn` – Number of seconds until a client is automatically respawned, if the client doesn't do it herself. Set it to 0 to disable force respawn.
- `g_gametype` – Gametype. 1 = DM, 2 = Tourney (1–on–1), 3 = Team DM, 4 = CTF.

Start the server with `./q3ded +exec configfile.cfg`. You can execute cfg's directly from the server console with the commando `exec configfile.cfg`. If you want to run the server in the background, immune to hangups, start with `nohup ./q3ded +exec ffa.cfg &`.

5.4. Q3CTF (Capture The Flag)

CTF is built into Q3A (Q3CTF). Four CTF maps are included with Q3A, but you will want to download Dave 'Zoid' Kirsch's (the author of CTF for Q1/Q2/Q3) Q3WCTF maps at ftp://ftp.fragzone.se/pub/quake3/ctf/q3wctf.zip (8,2M). Here is a CTF cfg which includes all CTF maps in the mapcycle. Paste it to a new file, ctf.cfg, in the baseq3 directory.

```
set sv_hostname "AndmaN CTF"
set sv_maxclients 16
set g_motd "To be or not to be.."
```

```
set g_forcerespawn 10
set rconpassword "password"
set g_gametype 4

set m1 "capturelimit 8; map q3ctf1; set nextmap vstr m2"
set m2 "capturelimit 8; map q3ctf2 ; set nextmap vstr m3"
set m3 "capturelimit 8; map q3ctf3 ; set nextmap vstr m4"
set m4 "capturelimit 8; map q3wctf1 ; set nextmap vstr m5"
set m5 "capturelimit 8; map q3wctf2 ; set nextmap vstr m6"
set m6 "capturelimit 8; map q3wctf3 ; set nextmap vstr m1"

vstr m1
```

Start with `./q3ded +exec ctf.cfg`.

5.5. Rocket Arena 3

Rocket Arena 3 is the popular Quake3 version of Rocket Arena. You need the following files:

- http://ftp2.gamespy.com/pub/cdrom/servers/arena/ra313sv.zip
- http://ftp2.gamespy.com/pub/cdrom/servers/arena/ra314clsrv_linux_beta.tgz – update.
- http://ftp2.gamespy.com/pub/cdrom/servers/arena/ra310cl_linux.tgz – required client files (maps).

Create a directory for RA3 and extract the all the files:

```
bash$ cd /usr/local/games/quake3
bash$ mkdir arena
bash$ unzip ~/ra313sv.zip -d arena
bash$ tar zxvf ~/ra314clsrc_linux_beta.tgz -C arena
bash$ tar zxvf ~/ra310cl_linux.tgz -C arena
```

Edit `server.cfg` to your liking. Start the server with the following command:

```
bash$ ./q3ded +set fs_game arena +set sv_pure 0 +bot_enable 0 +set dedicated 2 +set net_port 27960 +exec server.cfg
```

Use `+set dedicated 1` to run a private server or `+set dedicated 2` to run a public server. For more info on RA3 configuration options, read `readsrv.txt` in your `arena` directory.

5.6. Alliance

Alliance is a very popular CTF/DM mod. It offers three different game styles:

- *Alliance* – Enhanced CTF with offhanded grappling hook (players can use the grapple and shoot their weapons at the same time).
- *Combat* – Resembles the mod Expert Q2. Players spawn with all weapons plus health and ammo regenerate. Slightly different weapons balance, physics and grappling hook style.
- *Instagib* – An interesting (and very entertaining) game type where players spawn with an enhanced rail gun with an infinite ammount of ammo. When you shoot your enemy they are instantly gibbed (killed), so health is not an issue here (also, the rail gun is the only weapon).

All the above game styles can be played as CTF, FFA, Team DM or Tourney. Note that the mod was made with CTF in mind. Anyway, you need the following files:

- http://ftp2.gamespy.com/pub/cdrom/alliance/alliance20.zip
- http://ftp2.gamespy.com/pub/cdrom/alliance/Alliance20−21.zip − update.

Extract the files:

```
bash$ cd /usr/local/games/quake3
bash$ unzip ~/alliance20.zip
bash$ unzip ~/Alliance20-21.zip
```

Now start the server running your desired gametype. Alliance:

```
bash$ ./q3ded +set dedicated 2 +set fs_game alliance20 +g_gametype 4 +exec sv_alliance.cfg +map actf13
```

Combat:

```
bash$ ./q3ded +set dedicated 2 +set fs_game alliance20 +g_gametype 4 +exec sv_combat.cfg +map actf13
```

Instagib:

```
bash$ ./q3ded +set dedicated 2 +set fs_game alliance20 +g_gametype 4 +exec sv_instagib.cfg +set fs_basepath $(/bin/pwd) +map actf13
```

Edit `maplist.cfg` to change the map rotation.

6. Half−Life

Half−Life is the most popular multiplayer first−person shooter on the Internet as of this version of the HOWTO − mainly thanks to the modification Counter−Strike, hereafter referred to as CS.

6.1. System requirements

The system requirements may vary depending on how many players you have on your server.

- CPU − depends on how many clients your server will have. At least P2 266 for hosting a full game, the more the better. 400MHz recommended.
- RAM − Minimum 64MB, 128MB recommended.
- Bandwidth − Depends on how many clients you have. At least 512kbps upload recommended.

6.2. Installing

You need the HLDS dedicated server package to run an Half−Life server:

- ftp://ftp.ioerror.com/pub2/halflife/demopatch/hlds_l3104.tar.gz

When you've downloaded the above file, create a directory for HLDS and extract the HLDS package to it.

```
bash$ mkdir /usr/local/games/hlds
bash$ tar zxvf hlds_l3103.tar.gz −C /usr/local/games/hlds
bash$ tar zxvf cs_10.tar.gz −C /usr/local/games/hlds
```

Now we have to make it so hlds can see its dynamically linked libraries (*.so files). If you're running bash, which you most likely are, type:

```
bash$ export LD_LIBRARY_PATH=/usr/local/games/hlds:$LD_LIBRARY_PATH
```

This adds `/usr/local/games/hlds` to the directories ld checks for libraries in.

6.3. Configuring

Now you can start hlds, `./hlds_l` to start a dedicated Half−Life server. It should work with the default settings, so try it:

```
bash$ hlds_l +maxplayers 12 +map crossfire
```

At the end you should see something like this:

```
WON Auth Server
 . . .
```

If the 'Auth' is missing it's probably because your server is using the incorrect IP address. Type status in the server console and it will spit out some info. If your IP isn't what it should be, quit the server with the exit commando and start it again with this commando:

```
bash$ ./hlds_l +ip xx.xx.xx.xx +maxplayers 12 +map crossfire
```

See if it works this time. If it doesn't, you might be behind a firewall. If that's the case, let's just hope the network admin is friendly – make him open the port(s) you need, 27015 is the default port.

If you want to run a modification instead of regular DM or teamplay, pass the –game modname argument, for example `./hlds_l -game tfc +maxplayers 12 +map 2fort`.

The server reads autoexec.cfg, server.cfg, motd.txt and mapcycle.txt. Edit these to your liking. Autoexec.cfg is only executed when you start the server. Server.cfg is executed at every map change. Motd.txt contains the text that players will see when they join your server, a good idea would be to put in your server name, homepage (server stats page?), and contact info. Mapcycle.txt contains the list of maps you want rotated on your server. Type in all the maps you want there, each on its own line, without the ".bsp" extension.

- `sv_aim` – Setting this to 1 causes the crosshairs to turn red when placed over a player.
- `pausable` – Clients are allowed to pause the server.
- `mp_timelimit` – Server changes map when timelimit (in minutes) is reached.
- `mp_fraglimit` – Server changes map when fraglimit is reached.
- `mp_footsteps` – Setting this to 0 turns off footsteps.
- `mp_flashlight` – Clients can use flashlight (useful on dark maps).
- `mp_falldamage` – Realistic fall damage.
- `mp_friendlyfire` – Allows clients to kill people on the same team. More realistic, but set this to 0 to avoid lamers killing everybody on their team.

Min/max rates – The commands `sv_maxrate xxxx` and `sv_minrate xxxx` forces clients to use the specified rate. This is useful if you, for example, don't want LPB's stealing bandwidth and annoying HPW's – type `sv_maxrate 6000` to do this. If you on the other hand want to run a server for LPB's, set the minimum rate to something around 9000 with `sv_minrate 9000`.

Kicking/Banning – Each player is assigned userid by the server. Type `users` in the server console to see the players id's. Usually you can kick people simply by typing `kick <nick>`, but this can be difficult if a client has a long nick or with strange characters. If this is the case, you can kick clients by their id with `kick #` . If you want to ban a client, preventing them from coming back to the server, find their uniqueid with the `users` commando and then ban with `banid <minutes> <uniqueid>`, where <minutes> is the number of minutes you want to ban the player (0 makes the ban permanent), and <uniqueid> the player's uniqueid. To make so that the client is still banned after restarting the server, type `writeid` before you quit the server, and add `exec banned.cfg` to your server.cfg so that the next time you start your server, it will read the uniqueid's in banned.cfg. You can also kick & ban a client at the same time with `banid <uniqueid> kick`. Remove players from bans with `removeid <id>`, and don't forget to remove it from server.cfg if it's there too.

RCON – RCON lets clients on your server execute server commands remotely. Add the line `rcon_password "password"` to the server.cfg file. Clients type in rcon_password password in the console and can then execute server commands, like rcon kick, rcon mapchange, etc. This is good if you want to deal with abusive players directly when you're playing on the server, or maybe let a few other trustworthy persons do it. To use rcon when playing on your server, type `rcon_password password` in the in–game console. You can know execute several commands if the password was correct, but remember that you must add rcon before every command, for example `rcon kick player`.

6.4. Counter−Strike

First you need, of course, a working Half−Life server. Download the latest CS package. As of this revision of the HOWTO it's 1.0b, but that may have changed when you read this.

- ftp://ftp.fragzone.se/pub/halflife/counter/cs_10.tar.gz
- ftp://ftp.wireplay.net/pub/downloads/cstrike/ln_cs10b.zip − Patch.

Extract it to your HLDS directory:

```
bash$ tar zxvf ~/cs_10.tar.gz −C /usr/local/games/hlds
bash$ unzip ~/ln_cs10b.zip −d /usr/local/games/hlds
```

Now run the CS server:

```
bash$ hlds_l −game cstrike +maxplayers 12 +map de_dust
```

Edit the `/usr/local/games/hlds/cstrike/server.cfg` file to change it to your liking and optimize the server. The file `mapcycle.txt` contains the list of maps to be included in the map cycle, and `motd.txt` contains the MOTD − Message Of The Day.

Maps − maps that begins with cs_ are hostage maps, where the CT's job is to rescue the hostages and the T's to stop them, de_ is a defusion map where T's job is to plant the bomb at selected targets and CT's job is to eliminate the T's or defuse the bomb), es_ is an escape map where T's trying to escape from a prison−type secnario. By typing mp_timelimit 0 in the console, the server will go to the next map in the cycle. The commando changelevel followed by the mapname makes the server change to the specified map. The maps must be in your cstrike/maps directory.

For more information on CS servers, see http://server.counter−strike.net.

7. Unreal Tournament

Unreal Tournament is a very addictive first person shooter which is designed to be run in several modes; DeathMatch,Capture the Flag, Last Man Standing and Assault are the most popular. It features bots, a bevy of weapons and plenty of community support. It was originally ported as an in−house development effort at Epic but later releases are handled by Loki Software. Current version as of this writing is 436.

7.1. System requirements

As always, the system requirements will vary slightly depending on the number of players on the server. Here are the basics:

- Pentium 266 (For more than 8 users, a faster server is recommended)
- At least 32 MB RAM (For a VERY dedicated machine. The more maps, skins, mutators, bots, and players that are online, the more RAM the server will use.) 64 MB is highly recommended.
- Linux kernel 2.2.14 or later, Glibc 2.1 or later.
- The retail Unreal Tournament CD (Just the first one is necessary).
- At least 500 MB disk space. Maps, skins, and mods will require a bit more.
- Enough bandwidth if you're going to run an Internet server. Epic recommends about 20kbps per player.

7.2. Installing

First, download the latest ut−install file from Loki's website. As of this version of the HOWTO, that is 436.

- http://www.lokigames.com/products/ut/updates.php3

Mount the Unreal Tournament CD (Usually /cdrom or /mnt/cdrom), and run the ut−install*.run file. It will verify the archive, check the CD for the appropriate files, and begin installing. It will ask you where you want to install UT to, as well as a few other questions. It is actually fairly painless.

Once you have it installed, you will want to change ownership of the files to the user ID that they will be running under (See Security and permissions).

7.3. Configuring

Now it's time to write a config file. Unreal Tournament uses an INI−style config file format which is exactly like Windows INI files. This config file will contain ALL the variables the server will use, including game types, defaults for those types, number of players, bots, etc. The cfg's should be kept in the System/ directory (either `$UTROOT/System/` or `~/.loki/ut/System/`). If you have an UnrealTournament.ini and/or User.ini in that System/ directory, it will be loaded and can override settings in the server's cfg file. This is a sanitized copy of my server's cfg file (called ucc.ini):

```
----[snip]-----
[URL]
```

```
Protocol=unreal
ProtocolDescription=Unreal Protocol
Name=Player
Map=Index.unr
LocalMap=DM-Deck16][.unr
Host=
Portal=
MapExt=unr
SaveExt=usa
Port=7777
Class=Botpack.TMale1

[FirstRun]
FirstRun=428

[PackageRemap]
UnrealShare=UnrealI

[Engine.Engine]
GameRenderDevice=NullDrv.NullRenderDevice
WindowedRenderDevice=NullDrv.NullRenderDevice
RenderDevice=NullDrv.NullRenderDevice
AudioDevice=NullDrv.NullRenderDevice
NetworkDevice=IpDrv.TcpNetDriver
DemoRecordingDevice=Engine.DemoRecDriver
Console=UTMenu.UTConsole
Language=int
GameEngine=Engine.GameEngine
EditorEngine=Editor.EditorEngine
DefaultGame=Botpack.DeathMatchPlus
DefaultServerGame=Botpack.DeathMatchPlus
ViewportManager=SDLDrv.SDLClient
Render=Render.Render
Input=Engine.Input
Canvas=Engine.Canvas

[Core.System]
PurgeCacheDays=30
SavePath=../Save
CachePath=../Cache
CacheExt=.uxx
Paths=../System/*.u
Paths=/path/to/ut/Maps/*.unr
Paths=/path/to/ut/Textures/*.utx
Paths=/path/to/ut/Sounds/*.uax
Paths=/path/to/ut/Music/*.umx
Suppress=DevLoad
Suppress=DevSave
Suppress=DevNetTraffic
Suppress=DevGarbage
Suppress=DevKill
Suppress=DevReplace
Suppress=DevSound
Suppress=DevCompile
Suppress=DevBind
Suppress=DevBsp

[Engine.GameEngine]
CacheSizeMegs=4
UseSound=False
ServerActors=IpDrv.UdpBeacon
ServerActors=IpServer.UdpServerQuery
```

```
;ServerActors=IpServer.UdpServerUplink MasterServerAddress=unreal.epicgames.com MasterServerPort=27900
;ServerActors=IpServer.UdpServerUplink MasterServerAddress=master0.gamespy.com MasterServerPort=27900
;ServerActors=IpServer.UdpServerUplink MasterServerAddress=master.mplayer.com MasterServerPort=27900
ServerActors=UWeb.WebServer
ServerPackages=SoldierSkins
ServerPackages=CommandoSkins
ServerPackages=FCommandoSkins
ServerPackages=SGirlSkins
ServerPackages=BossSkins
ServerPackages=Botpack

[Engine.Player]
ConfiguredInternetSpeed=20000
ConfiguredLanSpeed=20000

[IpDrv.TcpNetDriver]
AllowDownloads=True
ConnectionTimeout=15.0
InitialConnectTimeout=300.0
AckTimeout=1.0
KeepAliveTime=0.2
MaxClientRate=20000
SimLatency=0
RelevantTimeout=5.0
SpawnPrioritySeconds=1.0
ServerTravelPause=4.0
NetServerMaxTickRate=20
LanServerMaxTickRate=35
DownloadManagers=IpDrv.HTTPDownload
DownloadManagers=Engine.ChannelDownload

[Engine.DemoRecDriver]
DemoSpectatorClass=Botpack.CHSpectator
MaxClientRate=25000
ConnectionTimeout=15.0
InitialConnectTimeout=500.0
AckTimeout=1.0
KeepAliveTime=1.0
SimLatency=0
RelevantTimeout=5.0
SpawnPrioritySeconds=1.0
ServerTravelPause=4.0
NetServerMaxTickRate=60
LanServerMaxTickRate=60

[Engine.GameReplicationInfo]
ServerName=Generic UT Server
ShortName=UT Server
AdminName=Lamer
AdminEmail=root@localhost
Region=0
MOTDLine1=
MOTDLine2=
MOTDLine3=
MOTDLine4=

[IpDrv.TcpipConnection]
SimPacketLoss=0
SimLatency=0

[IpServer.UdpServerUplink]
DoUpLink=False
```

```
UpdateMinutes=1
MasterServerPort=27900

[IpServer.UdpServerQuery]
GameName=ut

[IpDrv.UdpBeacon]
DoBeacon=True
BeaconTime=0.50
BeaconTimeout=5.0
BeaconProduct=ut

[UMenu.UnrealConsole]
RootWindow=UMenu.UMenuRootWindow
UWindowKey=IK_Esc
ShowDesktop=False

[UMenu.UMenuMenuBar]
ShowHelp=True
GameUMenuDefault=UTMenu.UTGameMenu
MultiplayerUMenuDefault=UTMenu.UTMultiplayerMenu
OptionsUMenuDefault=UTMenu.UTOptionsMenu
ModMenuClass=UMenu.UMenuModMenu

[Botpack.ChallengeBotInfo]
Difficulty=1

[Botpack.DeathMatchPlus]
bNoviceMode=True
bHardCoreMode=False
bUseTranslocator=True
bCoopWeaponMode=False
MinPlayers=8
AirControl=0.350000
bChangeLevels=True
bMegaSpeed=False
bAltScoring=False
bTournament=False
NetWait=10
RestartWait=15
InitialBots=10
FragLimit=30
TimeLimit=0
bMultiWeaponStay=False
bForceRespawn=False
MaxCommanders=0
bNoMonsters=False
bHumansOnly=False
bClassicDeathMessages=False

[Botpack.CTFGame]
bUseTranslocator=True
bCoopWeaponMode=True
GoalTeamScore=3.000000
bNoTeamChanges=False
FriendlyFireScale=0.000000
MaxTeams=2
MaxTeamSize=16
FragLimit=0
TimeLimit=0
bMultiWeaponStay=True
bForceRespawn=False
```

```
MaxCommanders=0
bNoMonsters=False
bHumansOnly=True
bClassicDeathMessages=False

[Botpack.Domination]
bDumbDown=True
bUseTranslocator=True
bCoopWeaponMode=True
GoalTeamScore=100.000000
bNoTeamChanges=False
FriendlyFireScale=0.000000
MaxTeams=2
MaxTeamSize=16
FragLimit=30
TimeLimit=0
bMultiWeaponStay=True
bForceRespawn=False
MaxCommanders=0
bNoMonsters=False
bHumansOnly=False
bClassicDeathMessages=False

[Botpack.Assault]
bUseTranslocator=False
bCoopWeaponMode=True
Defenses=3
SavedTime=0.000000
NumDefenses=0
CurrentDefender=0
bDefenseSet=False
bTiePartOne=False
GameCode=
Part=1
bNoTeamChanges=False
FriendlyFireScale=0.000000
MaxTeams=2
GoalTeamScore=0.000000
MaxTeamSize=16
FragLimit=0
TimeLimit=7
bMultiWeaponStay=False
bForceRespawn=False
MaxCommanders=2
bNoMonsters=False
bHumansOnly=False
bClassicDeathMessages=False

[Botpack.TeamGamePlus]
bBalanceTeams=True
GoalTeamScore=30
bPlayersBalanceTeams=True

[Engine.GameInfo]
bLowGore=False
bVeryLowGore=False
bMuteSpectators=False
bNoCheating=True
bAllowFOV=False
AutoAim=0.930000
GameSpeed=1.000000
MaxSpectators=2
```

```
AdminPassword=
GamePassword=
MaxPlayers=16
IPPolicies[0]=ACCEPT,*
IPPolicies[1]=
IPPolicies[2]=
IPPolicies[3]=
IPPolicies[4]=
IPPolicies[5]=
IPPolicies[6]=
IPPolicies[7]=
IPPolicies[8]=
IPPolicies[9]=
IPPolicies[10]=
IPPolicies[11]=
IPPolicies[12]=
IPPolicies[13]=
IPPolicies[14]=
IPPolicies[15]=
IPPolicies[16]=
IPPolicies[17]=
IPPolicies[18]=
IPPolicies[19]=
IPPolicies[20]=
IPPolicies[21]=
IPPolicies[22]=
IPPolicies[23]=
IPPolicies[24]=
IPPolicies[25]=
IPPolicies[26]=
IPPolicies[27]=
IPPolicies[28]=
IPPolicies[29]=
IPPolicies[30]=
IPPolicies[31]=
IPPolicies[32]=
IPPolicies[33]=
IPPolicies[34]=
IPPolicies[35]=
IPPolicies[36]=
IPPolicies[37]=
IPPolicies[38]=
IPPolicies[39]=
IPPolicies[40]=
IPPolicies[41]=
IPPolicies[42]=
IPPolicies[43]=
IPPolicies[44]=
IPPolicies[45]=
IPPolicies[46]=
IPPolicies[47]=
IPPolicies[48]=
IPPolicies[49]=
ServerLogName=server.log
bLocalLog=True
bWorldLog=True
bBatchLocal=False
DemoBuild=0
DemoHasTuts=0
bExternalBatcher=False
bNoMonsters=False
bHumansOnly=False
```

```
bCoopWeaponMode=False
bClassicDeathMessages=False

[UnrealShare.UnrealGameOptionsMenu]
bCanModifyGore=True

[UWeb.WebServer]
Applications[0]=UTServerAdmin.UTServerAdmin
ApplicationPaths[0]=/ServerAdmin
Applications[1]=UTServerAdmin.UTImageServer
ApplicationPaths[1]=/images
DefaultApplication=0
bEnabled=True
ListenPort=5080
MaxConnections=30

[UTServerAdmin.UTServerAdmin]
AdminUsername=utadmin
AdminPassword=utpasswd
MenuPage=menu
RootPage=root
CurrentPage=current
CurrentMenuPage=current_menu
CurrentIndexPage=current_index
CurrentPlayersPage=current_players
CurrentGamePage=current_game
CurrentConsolePage=current_console
CurrentConsoleLogPage=current_console_log
CurrentConsoleSendPage=current_console_send
DefaultSendText=say
CurrentMutatorsPage=current_mutators
CurrentRestartPage=current_restart
DefaultsPage=defaults
DefaultsMenuPage=defaults_menu
DefaultsMapsPage=defaults_maps
DefaultsRulesPage=defaults_rules
DefaultsSettingsPage=defaults_settings
DefaultsBotsPage=defaults_bots
DefaultsServerPage=defaults_server
DefaultsIPPolicyPage=defaults_ippolicy
DefaultsRestartPage=defaults_restart
MessageUHTM=message.uhtm
DefaultBG=#aaaaaa
HighlightedBG=#ffffff
AdminRealm=UT Remote Admin Server

[IpDrv.HTTPDownLoad]
UseCompression=True

[Engine.StatLog]
LocalBatcherURL=../NetGamesUSA.com/ngStats/ngStatsUT
LocalBatcherParams=
LocalStatsURL=../NetGamesUSA.com/ngStats/html/ngStats_Main.html
WorldBatcherURL=../NetGamesUSA.com/ngWorldStats/bin/ngWorldStats
WorldBatcherParams=-d ../NetGamesUSA.com/ngWorldStats/logs -g UT
WorldStatsURL=http://www.netgamesusa.com
LocalLogDir=../Logs
WorldLogDir=../NetGamesUSA.com/ngWorldStats/logs
bWorldBatcherError=False

[Botpack.TrainingDM]
FragLimit=3
```

```
TimeLimit=0
bMultiWeaponStay=True
bForceRespawn=False
bUseTranslocator=False
MaxCommanders=0
bNoMonsters=False
bHumansOnly=False
bCoopWeaponMode=False
bClassicDeathMessages=False

[Botpack.TrainingDOM]
bDumbDown=True
bNoTeamChanges=False
FriendlyFireScale=0.000000
MaxTeams=2
GoalTeamScore=100.000000
MaxTeamSize=16
FragLimit=0
TimeLimit=0
bMultiWeaponStay=True
bForceRespawn=False
bUseTranslocator=True
MaxCommanders=0
bNoMonsters=False
bHumansOnly=False
bCoopWeaponMode=True
bClassicDeathMessages=False

[UTMenu.UTServerSetupPage]
bLanPlay=True

[UTMenu.UTStartGameCW]
Map=DM-Deck16][.unr
GameType=BotPack.DeathMatchPlus
MutatorList=
bKeepMutators=False

[Botpack.TDMmaplist]
Maps[0]=DM-Liandri.unr
Maps[1]=DM-Codex.unr
Maps[2]=DM-Grinder.unr
Maps[3]=DM-Pressure.unr
Maps[4]=DM-HyperBlast.unr
Maps[5]=DM-Peak.unr
Maps[6]=DM-KGalleon.unr
Maps[7]=DM-Turbine.unr
Maps[8]=DM-StalwartXL.unr
Maps[9]=DM-Curse][.unr
Maps[10]=DM-Deck16][.unr
Maps[11]=DM-Phobos.unr
Maps[12]=
Maps[13]=
Maps[14]=
Maps[15]=
Maps[16]=
Maps[17]=
Maps[18]=
Maps[19]=
Maps[20]=
Maps[21]=
Maps[22]=
Maps[23]=
```

```
Maps[24]=
Maps[25]=
Maps[26]=
Maps[27]=
Maps[28]=
Maps[29]=
Maps[30]=
Maps[31]=
MapNum=0

[Botpack.TrainingCTF]
bNoTeamChanges=False
FriendlyFireScale=0.000000
MaxTeams=2
GoalTeamScore=3.000000
MaxTeamSize=16
FragLimit=0
TimeLimit=0
bMultiWeaponStay=True
bForceRespawn=False
bUseTranslocator=True
MaxCommanders=0
bNoMonsters=False
bHumansOnly=True
bCoopWeaponMode=True
bClassicDeathMessages=False

[UTMenu.UTMenuBotmatchCW]
Map=DM-Gothic.unr
GameType=BotPack.DeathMatchPlus
MutatorList=
bKeepMutators=False

[Botpack.ASMapList]
Maps[0]=AS-Hispeed.unr
Maps[1]=AS-Frigate.unr
Maps[2]=AS-Rook.unr
Maps[3]=AS-Mazon.unr
Maps[4]=AS-OceanFloor.unr
Maps[5]=AS-Overlord.unr
Maps[6]=AS-Guardia.unr
Maps[7]=
Maps[8]=
Maps[9]=
Maps[10]=
Maps[11]=
Maps[12]=
Maps[13]=
Maps[14]=
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Maps[19]=
Maps[20]=
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Maps[22]=
Maps[23]=
Maps[24]=
Maps[25]=
Maps[26]=
Maps[27]=
```

```
Maps[28]=
Maps[29]=
Maps[30]=
Maps[31]=
MapNum=0

-----[snip]-----
```

A few things of note here.

The following values should be changed before the server is launched for the first time:

```
[Core.System]
Paths=../System/*.u
Paths=/path/to/ut/Maps/*.unr
Paths=/path/to/ut/Textures/*.utx
Paths=/path/to/ut/Sounds/*.uax
Paths=/path/to/ut/Music/*.umx
```

Should all be set to where Unreal Tournament is installed.

```
[Engine.GameEngine]
;ServerActors=IpServer.UdpServerUplink
```

Should be uncommented if you wish to link your Unreal Tournament server into an existing Unreal Tournament league and have it accessible over the Internet.

```
[IpServer.UdpServerUplink]
DoUpLink=False
```

Additionally, if you do want to link your UT server with an Internet league, you will need to allow UpLinking.

```
[Engine.Player]
ConfiguredInternetSpeed=20000
```

This should be set to the allocated bandwidth (in bytes per second) for each player. Leaving it at the recommended 20000 is good.

```
[Engine.GameReplicationInfo]
ServerName=Generic UT Server
ShortName=UT Server
AdminName=Lamer
AdminEmail=root@localhost
Region=0
MOTDLine1=
MOTDLine2=
MOTDLine3=
MOTDLine4=
```

All of that should be changed.

```
[Engine.GameInfo]
AdminPassword=
```

```
MaxPlayers=16
```

An admin password should be set, and the Max Players should be set to a sane value (See ConfiguredInternetSpeed).

```
[UWeb.WebServer]
bEnabled=True
ListenPort=5080
```

One of the most interesting aspects of running a UT server is the web−server interface for admins. By setting bEnabled to True and specifying a ListenPort, you can administer an UnrealTournament server via a normal Web Browser.

```
[UTServerAdmin.UTServerAdmin]
AdminUsername=utadmin
AdminPassword=utpasswd
AdminRealm=UT Remote Admin Server
```

If you do decide to run the UT Webserver interface (Recommended), the above values should be set. AdminRealm is less important, but will be used by your browser to know when to ask for the administrator username and password.

All other values should be checked and seasoned to taste.

7.4. Starting the server

To start the Unreal Tournament server, you will need to use the command "ucc server" and specify a few things on the command line. These being:

- Mapname − Name of the map to start from the Maps/ directory, minus the .unr extension.
- Gametype − One of Botpack.DeathMatchPlus, Botpack.Domination, Botpack.CTFGame.
- INI − The config file to use to start the server.
- LOG − the log file the server should use.
- Port − (Optional) the port the UT server should use.

Most of this is specified in the config file, but the mapname and Gametype are required.

Here is an example:

```
bash$ ucc server "DM−Turbine?game=Botpack.DeathMatchPlus" ini=ucc.ini log=ucc.log
```

I quoted the mapname and gametype because of the presence of the ? (Linux shells use that as a wild card) and because a lot of Unreal Tournament maps have odd characters in their name (DM−Deck16][anyone?). I recommend they always be quoted.

Once the server starts, it will load the settings specified in the System/ucc.ini file and load the game.

I also recommend the server be started with the nohup command and placed in the background. All the configuration will take place in the web interface.

7.5. Administrating the server

Administering the server is as easy as browsing a website. When you started the server, you should have seen something like this toward the end:

```
Spawning: IpDrv.UdpBeacon
Spawning: IpServer.UdpServerQuery
Spawning: UWeb.WebServer
Bound to UWeb.so
```

< Notice the UWeb.Webserver and UWeb.so sections? Those are the webserver, and since it didn't give any errors, we know it's running.

Now, in the configuration section, you told it what port to listen on:

```
[UWeb.WebServer]
bEnabled=True
ListenPort=5080
```

So, to connect to the administration server, you would need to browse to `http://utserver:5080/ServerAdmin`

The first thing that will happen is that your browser will ask you for authentication. Back in the configuration file, we specified that:

```
[UTServerAdmin.UTServerAdmin]
AdminUsername=utadmin
AdminPassword=utpasswd
AdminRealm=UT Remote Admin Server
```

So in this case, you would sign in as utadmin with a password of utpasswd (You had better change these before you actually start the server).

Once you are authenticated, you are presented with an interface that allows you to specify the game type, map, number of bots and connections as well as kick and ban users. It's all very point−n−click.

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