

Tactical Ops Server set up for Linux

These instructions are for 64bit Ubuntu. If you plan to set up using different distro these instructions are still useful as generic steps are the same.

Commands might be different on other distros but don't worry, Google is your friend.

These instructions take advantage of windows based server packages which you can find from www.tactical-ops.eu.

Instructions should be pretty much the same for TO 3.4 and TO 3.5.

To keep things simple my instructions use ROOT account to run the game.

In these instructions steps you will need to have Putty and Filezilla.

<https://www.putty.org/> (SSH client)

<https://filezilla-project.org/> (FTP/SFTP/SCP client)

Step 0 – At all times remember LINUX is CASE SENSITIVE!!!!

Step 1 – Install 32bit subsystem

If you happen to run 32bit ubuntu you can skip this step. However most likely you run 64bit which means you need to install 32bit subsystem to run 32bit apps (UT server is 32bit app).

Run following commands:

```
sudo dpkg --add-architecture i386
```

```
sudo apt update
```

```
sudo apt install libx11-6:i386 libxext6:i386 libc6:i386
```

Output of these commands looks something like below:

```

krisu@toserver:~$ sudo dpkg --add-architecture i386
krisu@toserver:~$ sudo apt update
Hit:1 http://archive.ubuntu.com/ubuntu bionic InRelease
Get:2 http://archive.ubuntu.com/ubuntu bionic-updates InRelease [88.7 kB]
Get:3 http://archive.ubuntu.com/ubuntu bionic-backports InRelease [83.3 kB]
Get:4 http://archive.ubuntu.com/ubuntu bionic-security InRelease [88.7 kB]
Get:5 http://archive.ubuntu.com/ubuntu bionic/main i386 Packages [1,007 kB]
Get:6 http://archive.ubuntu.com/ubuntu bionic/restricted i386 Packages [9,156 B]
Get:7 http://archive.ubuntu.com/ubuntu bionic/universe i386 Packages [8,531 kB]
Get:8 http://archive.ubuntu.com/ubuntu bionic/multiverse i386 Packages [144 kB]
Get:9 http://archive.ubuntu.com/ubuntu bionic-updates/main i386 Packages [1,570 kB]
Get:10 http://archive.ubuntu.com/ubuntu bionic-updates/restricted i386 Packages [35.9 kB]
Get:11 http://archive.ubuntu.com/ubuntu bionic-updates/universe i386 Packages [1,631 kB]
Get:12 http://archive.ubuntu.com/ubuntu bionic-updates/multiverse i386 Packages [11.2 kB]
Get:13 http://archive.ubuntu.com/ubuntu bionic-backports/main i386 Packages [53.3 kB]
Get:14 http://archive.ubuntu.com/ubuntu bionic-backports/universe i386 Packages [18.1 kB]
Get:15 http://archive.ubuntu.com/ubuntu bionic-security/main i386 Packages [1,275 kB]
Get:16 http://archive.ubuntu.com/ubuntu bionic-security/restricted i386 Packages [29.3 kB]
Get:17 http://archive.ubuntu.com/ubuntu bionic-security/universe i386 Packages [1,043 kB]
Get:18 http://archive.ubuntu.com/ubuntu bionic-security/multiverse i386 Packages [6,024 B]
Fetched 15.6 MB in 8s (2,065 kB/s)
Reading package lists... Done
Building dependency tree
Reading state information... Done
30 packages can be upgraded. Run 'apt list --upgradable' to see them.
krisu@toserver:~$ _

```

```

(Reading database ... 67737 files and directories currently installed.)
Preparing to unpack .../0-gcc-8-base_8.4.0-1ubuntu1~18.04_i386.deb ...
Unpacking gcc-8-base:i386 (8.4.0-1ubuntu1~18.04) ...
Selecting previously unselected package libgcc1:i386.
Preparing to unpack .../1-libgcc1_1%3a8.4.0-1ubuntu1~18.04_i386.deb ...
Unpacking libgcc1:i386 (1:8.4.0-1ubuntu1~18.04) ...
Selecting previously unselected package libxau6:i386.
Preparing to unpack .../2-libxau6_1%3a1.0.8-1ubuntu1_i386.deb ...
Unpacking libxau6:i386 (1:1.0.8-1ubuntu1) ...
Selecting previously unselected package libbsd0:i386.
Preparing to unpack .../3-libbsd0_0.8.7-1ubuntu0.1_i386.deb ...
Unpacking libbsd0:i386 (0.8.7-1ubuntu0.1) ...
Selecting previously unselected package libxdmcp6:i386.
Preparing to unpack .../4-libxdmcp6_1%3a1.1.2-3_i386.deb ...
Unpacking libxdmcp6:i386 (1:1.1.2-3) ...
Selecting previously unselected package libxcb1:i386.
Preparing to unpack .../5-libxcb1_1.13-2~ubuntu18.04_i386.deb ...
Unpacking libxcb1:i386 (1.13-2~ubuntu18.04) ...
Selecting previously unselected package libx11-6:i386.
Preparing to unpack .../6-libx11-6_2%3a1.6.4-3ubuntu0.4_i386.deb ...
Unpacking libx11-6:i386 (2:1.6.4-3ubuntu0.4) ...
Selecting previously unselected package libxext6:i386.
Preparing to unpack .../7-libxext6_2%3a1.3.3-1_i386.deb ...
Unpacking libxext6:i386 (2:1.3.3-1) ...
Setting up gcc-8-base:i386 (8.4.0-1ubuntu1~18.04) ...
Setting up libc6:i386 (2.27-3ubuntu1.6) ...
Setting up libbsd0:i386 (0.8.7-1ubuntu0.1) ...
Setting up libxdmcp6:i386 (1:1.1.2-3) ...
Setting up libxau6:i386 (1:1.0.8-1ubuntu1) ...
Setting up libgcc1:i386 (1:8.4.0-1ubuntu1~18.04) ...
Setting up libxcb1:i386 (1.13-2~ubuntu18.04) ...
Setting up libx11-6:i386 (2:1.6.4-3ubuntu0.4) ...
Setting up libxext6:i386 (2:1.3.3-1) ...
Processing triggers for libc-bin (2.27-3ubuntu1.5) ...
krisu@toserver:~$

```

Step 2 – install Screen

Screen is something you need to keep the game running after you close SSH connections.

Run following command:

```
sudo apt install screen
```

In this example it seems I already had screen installed.

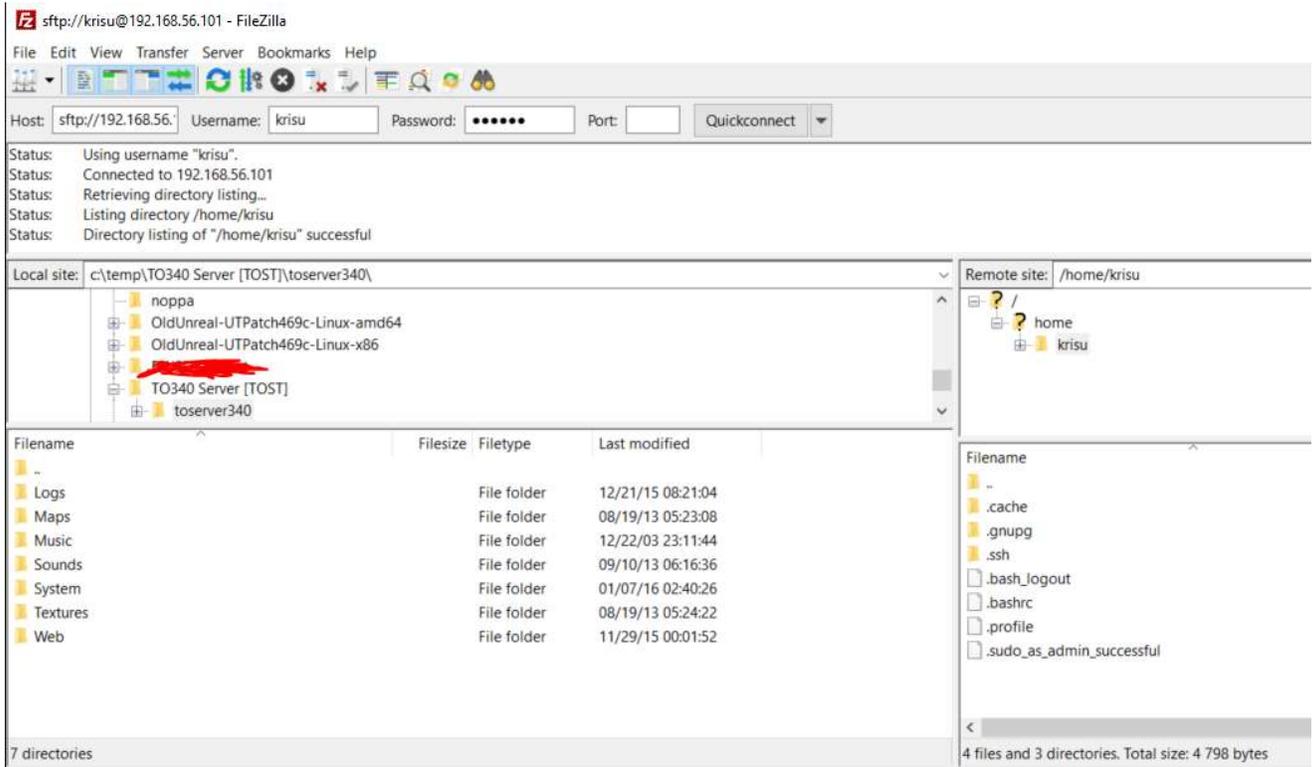
```
krisu@toserver:~$ sudo apt install screen
[sudo] password for krisu:
Reading package lists... Done
Building dependency tree
Reading state information... Done
screen is already the newest version (4.6.2-1ubuntu1.1).
screen set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 29 not upgraded.
krisu@toserver:~$ _
```

Step 3 – Copy Binaries to the server

I personally prefer Filezilla when it comes to copying files to my Linux VM. No extra tweaks needed.

If your SSH is working then Filezilla will work too.

Just put SFTP://IPaddressofurVM and then specify username and password. Port is not needed if its default 22.

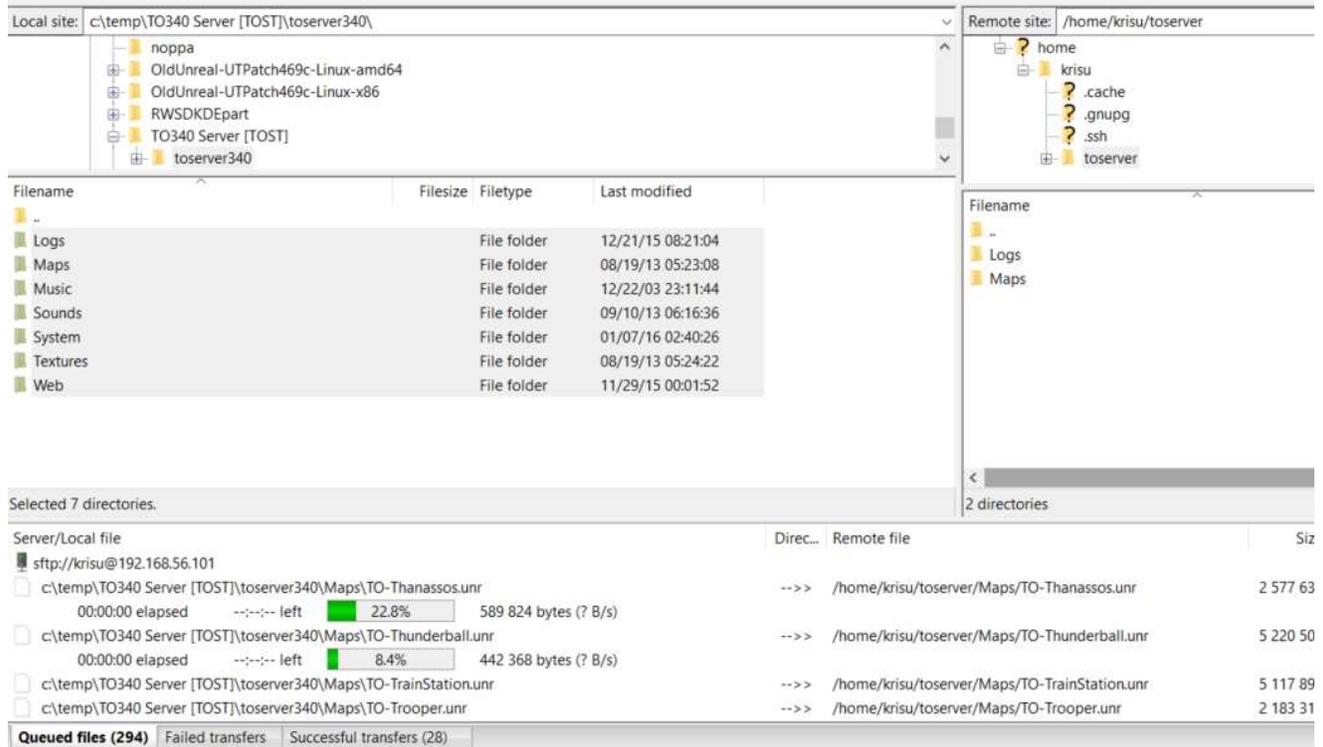


Now you can create directory for your TO install. You can create it with filezilla or if you prefer to do it from console then use putty.

Please recap **STEP 0** before proceeding

I chose to use "toserver" for my server installation.

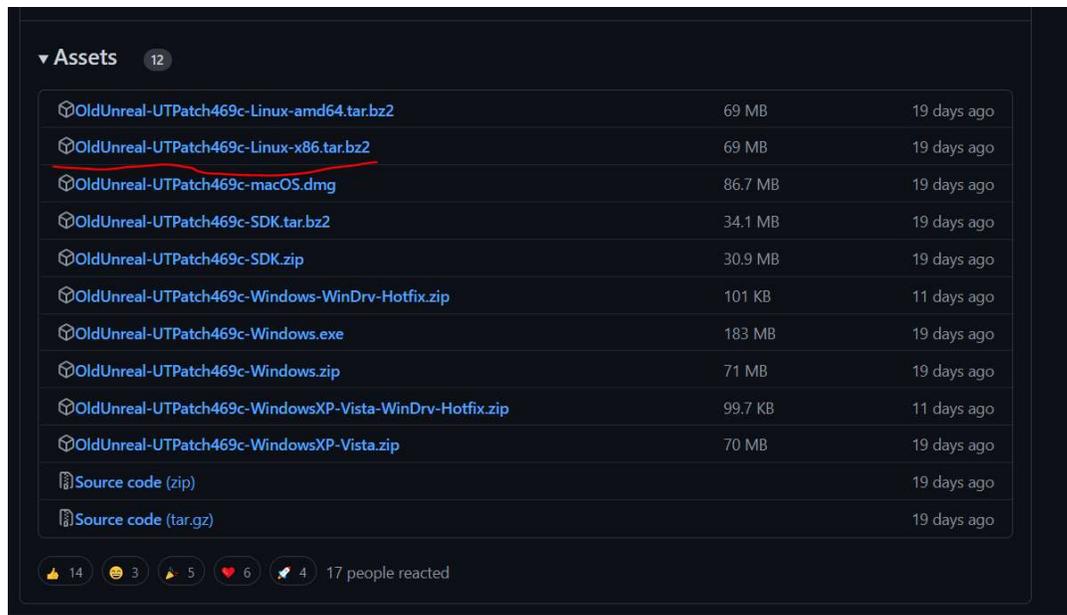
Next I drag and drop the TO server binaries to toserver directory. In this exercise I used “TO340 Server [TOST]” package for **windows** from www.tactical-ops.eu.



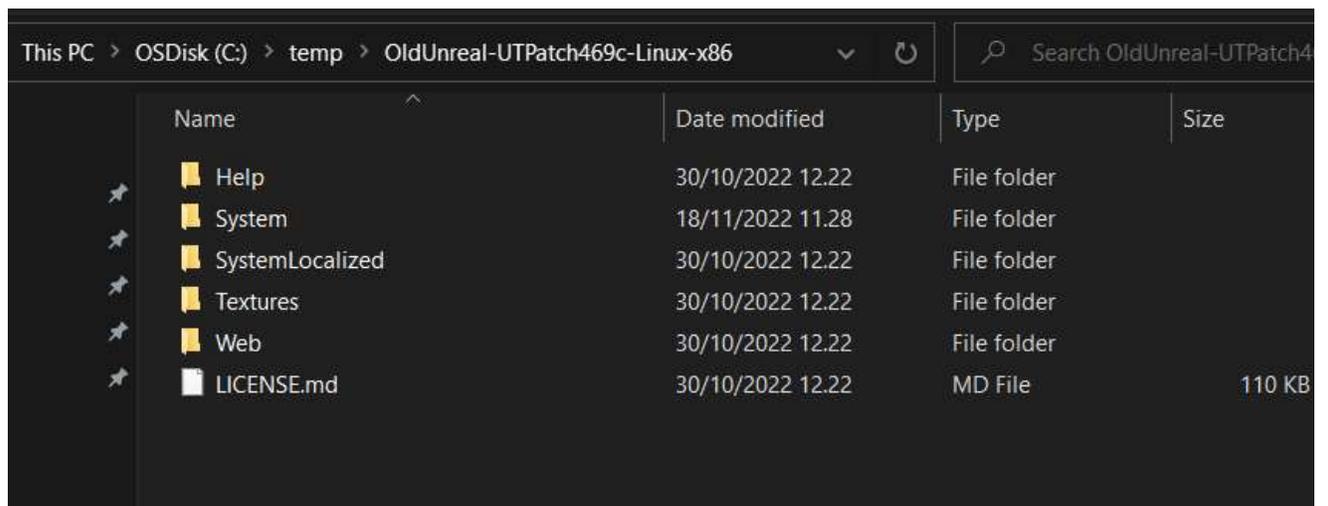
Since our server is linux we need to get linux binaries. At the time of writing this document latest binaries could be found here:

<https://github.com/OldUnreal/UnrealTournamentPatches/releases/>

Download x86 binaries for linux. Do not bother with amd64 binaries. Those apparently are only valid for UT99 client but not server.



Use 7zip to unpack .bz2 and tar that is inside it. Once done you should have folder structure looking like this:



Open System folder. Either delete or rename these files: botpack.u UTmenu.u

In this example I've renamed those.

Name	Date modified	Type	Size
xopengl	30/10/2022 12:22	File folder	
Fonts	30/10/2022 12:22	File folder	
UTMenu.u.v469c	30/10/2022 12:22	V469C File	4 636 KB
Botpack.u.v469c	30/10/2022 12:22	V469C File	39 198 KB
UWindow.u	30/10/2022 12:22	U File	673 KB
UWeb.u	30/10/2022 12:22	U File	30 KB
UTServerAdmin.u	30/10/2022 12:22	U File	116 KB
UTBrowser.u	30/10/2022 12:22	U File	14 KB

Now we have Linux binaries ready and now we need to upload them to server. Upload System, Textures and Web folders.

Overwrite existing files.

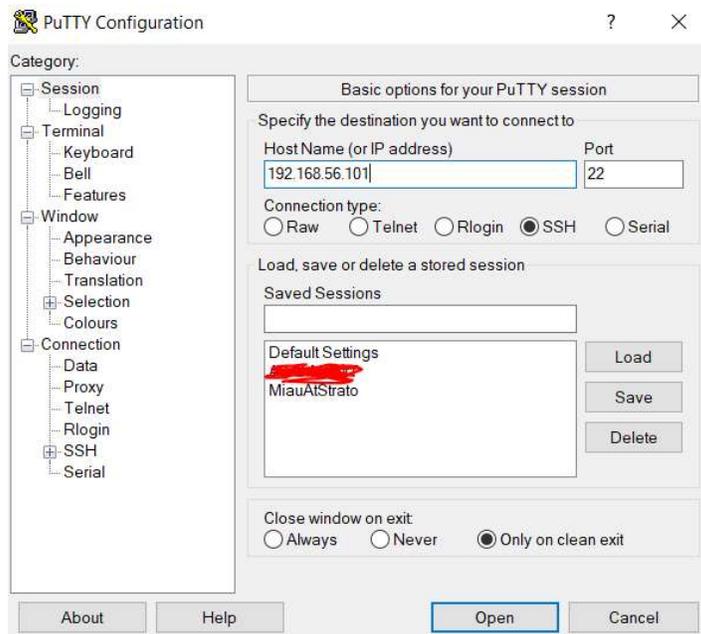
Step 4 – Set executable attributes and understand what screen is

Unlike in windows Linux does not have .exe files. Instead any file can be executable if it has “executable” attribute.

Now we add executable attribute to ucc-bin and TacticalOpsServer.sh

For this you need console access and this is done with Putty.

Put in your server IP and set port 22 assuming it’s the default.



On first run it says host key isn’t cached. Hit Yes.



In login prompt put credentials.

Once you're in open new screen by typing: sudo screen

Then move to your TO server's System folder.

In my case command `cd toserver\System`

 krisu@toserver: ~

```
root@toserver:~# cd toserver/System
root@toserver:~/toserver/System# █
```

Then type: `ls`

This will list all files.

```
krisu@toserver: ~
root@toserver:~# cd toserver/System
root@toserver:~/toserver/System# ls
ActorResetter.u          FamasPack42.u          multimesh.u            TOData.s.u            UMenu.u
ALAudio.so              Fire.dll               NullDrv.so             TODecos.u             UnrealI.u
Botpack.int             Fire.so               NullNetDriver.so      TO-j3rkyDecos2.u     UnrealSha
Botpack.u               Fire.u                NullRender.so         TO-j3rkyDecos.u      ut-bin
Botpack.u.v469c        Fonts                 OldUnreal469c.u       TOModels.u           ut-bin-x8
C4Pack42.u             IpDrv.dll             OpenGLDrv.so          TOPModels.u          UTBrowser
Cluster.so              IpDrv.int             Packages.md5          TOST42.u             UTMenu.u
ControlledAmbientSound.u IpDrv.so              relics.u              TOSTClient.u         UTMenu.u
Core.dll                IpDrv.u              Render.so              TOSTFun.u            UTServerAc
Core.int                IpServer.int         richdecos.u           TOSTGUICtrl.u       UTServerAc
Core.so                 IpServer.u           SDLDrv.so             TOSTHitparade.u     UWeb.dll
Core.u                  libfmod.so.13         ServerCrashFix.ini    TOSTProtect1994.u   UWeb.int
cybdeco.u              libmpgl23.so         ServerCrashFix_v11.dll TOSTTools.u          UWeb.so
Default.ini            libopenal.so.1       ServerCrashFix_v11.u  TOSTWeapons42.u     UWeb.u
DefUser.ini            libSDL-1.1.so.0      Server-TacticalOpsLinux.ini TOSTWeaponsClient42.u UWindow.u
Dlamp.u                libSDL-1.2.so.0      Server-TacticalOpsWin.ini TOSTWeaponsServer42.u Window.dl
Editor.dll             libSDL2-2.0.so.0     Server-UserLinux.ini  TOSTSystem.int      Window.in
Editor.int             libSDL2_ttf-2.0.so.0 Server-UserWin.ini    TOSystem.u           WinDrv.dl
Editor.so              libX11.so.6          s_SWAT.int            UBrowser.int         Windrv.in
Editor.u               libXext.so.6         s_SWAT.u              UBrowser.u           xopengl
Engine.dll             libxmp.so.4          SteyrAugPack42.u      ucc-bin             XOpenGLDr
Engine.int             LinuxCharsetFix.u    TacticalOps.int       ucc-bin-x86
Engine.so              LonelyTrigger.u      TacticalOpsServer.bat UCC.exe
Engine.u               MidnightAssault.u    TacticalOpsServer.sh  udemo.so
epiccustommodels.u    MSVCRT.dll           TearGasPack42.u       udemo.u
root@toserver:~/toserver/System#
```

Now just for sake of showing you what screen is close putty.

Then re-open putty again and login.

Now you already have screen open so we do not want to open another one but instead connect to the existing one.

To do this type: `sudo screen -rd`

Now you should see the screen with results of `ls` command. You must run your TO server in screen so it doesn't terminate when your SSH session ends.

Some basic screen tips:

Ctrl a + c Create new screen windows

Ctrl a + space Switch to next screen window

Ctrl a + d Detach from screen

Now that you have mastered screen we can set the attributes.

Run these 2 commands:

(remove " " from the command.)

`"chmod +x ucc-bin"`

`"chmod +x TacticalOpsServer.sh"`

Once you have run those commands and you do "ls" to list files you should see them highlighted with green.

Now you should have working TO server set up. In this particular TO server package there is LinuxCharsetFix enabled. This isn't needed anymore with v469 engine so you may comment those lines out from .ini

Editor in ubuntu is "pico" ie. pico Server-TacticalOpsLinux.ini

```
ServerPackages=TOST42
ServerPackages=TOSTGUICtrl
ServerPackages=TOSTClient
ServerPackages=TOSTHitparade
ServerPackages=TOSTProtect1994
ServerPackages=TOSTWeapons42
ServerPackages=TOSTWeaponsClient42
ServerPackages=C4Pack42
ServerPackages=FamasPack42
ServerPackages=SteyrAugPack42
ServerPackages=TearGasPack42
ServerPackages=TOAnnouncer2k0
#ServerPackages=LinuxCharsetFix
ServerActors=TOSystem.TO_UdpServerQuery
ServerActors=IpDrv.UdpBeacon
ServerActors=IpServer.UdpServerQuery
ServerActors=IpServer.UdpServerUplink MasterServerAddress=unreal.epicgames.com MasterServerPort=27900 DoU
ServerActors=IpServer.UdpServerUplink MasterServerAddress=gsm.qtracker.com MasterServerPort=27900 DoUplin
ServerActors=IpServer.UdpServerUplink MasterServerAddress=master.333networks.com MasterServerPort=27900 D
ServerActors=UWeb.WebServer
ServerActors=TOST42.TOSTServerActor
#ServerActors=LinuxCharsetFix.LCF_Actor
```

Also TOST isn't working too well these days. It's not worth keeping. Comment it our from your ini:

```
[Engine.GameEngine]
CacheSizeMegs=64
UseSound=False
MinClientVersion=432
ServerPackages=Botpack
ServerPackages=ActorResetter
ServerPackages=TOModels
ServerPackages=TODecos
ServerPackages=TODatas
ServerPackages=TOSystem
ServerPackages=TOPModels
ServerPackages=s_SWAT
ServerPackages=TOST42
ServerPackages=TOSTGUICtrl
#ServerPackages=TOSTClient
ServerPackages=TOSTHitparade
#ServerPackages=TOSTProtect1994
ServerPackages=TOSTWeapons42
ServerPackages=TOSTWeaponsClient42
ServerPackages=C4Pack42
```

Remove both TOSTClient and TOSTProtect1994 from DefaultServerPackages line. In this example those are already removed.

```
[TOSTTools.TOSTMapHandling]
NextMap=True
MapVote=True
MapVoteMode=1
MapNoReplay=0
MapVotePercentage=0.500000
MapVotePercentageInGame=0.660000
VoteTime=25
NextMapMessageInterval=1800
NoVoteAction=1
DefaultServerPackages=TOST42;TOSTGUICtrl;TOSTHitparade;TOSTWeapons42;TOSTWeaponsClient42;C4Pack42;
CurrentGameType=0
GameType[0]=Tactical Ops;s_SWAT.s_SWATGame;
GameType[1]=
GameType[2]=
GameType[3]=
GameType[4]=
GameType[5]=
GameType[6]=
GameType[7]=
GameType[8]=
GameType[9]=
AutoDetectNewServerPackages=True
```

Now you are ready to fire up your TO server. Execute `./TacticalOpsServer.sh`

krisu@toserver: ~

```
Loaded TOST piece : TOST Weapons Configurator (Version 1.4.0.0)
Resolving tost.tactical-ops.de...
TOST Protect: TOST Protect Package : TOSTPROTECT1994 - TOST 42 Package : TOST42
TOST Protect: TOST Package TOSTFun auto-set to server-only
TOST Protect: TOST Package TOSTTools auto-set to server-only
TOST Protect: TOST Package TOSTWeaponsServer42 auto-set to server-only
WebServer: Bad IncludePath:
TOST Protect: Checksums calculated...
TOST Server Tools: Request Piece version list
Resolving tost.tactical-ops.de...
TOST Ban List: Requesting global BanList
Resolving tost.global-banlist.de...

-----TOSTWeapons-----
The following gunpacks are available for use with TOSTWeapons:
> Famas, SteyrAug, C4, TearGas
The following gunpacks are unavailable for use with TOSTWeapons:
> None

-----TOSTWeapons-----
The following weapon-mode applied to map: TO-Trooper
> preset mode "TO All Weapons Config"

-----
Warning: TO-Trooper.Mover0 is BumpOpenTimed. Bots don't understand this well - use StandOpenTimed inst
Game engine initialized
AInternetLink Resolve failed: Can't find host unreal.epicgames.com (TRY_AGAIN)
UdpServerUplink: Failed to resolve master server address, aborting.
AInternetLink Resolve failed: Can't find host gsm.gtracker.com (TRY_AGAIN)
UdpServerUplink: Failed to resolve master server address, aborting.
AInternetLink Resolve failed: Can't find host master.333networks.com (TRY_AGAIN)
UdpServerUplink: Failed to resolve master server address, aborting.
AInternetLink Resolve failed: Can't find host tost.tactical-ops.de (TRY_AGAIN)
TOST Protect: Could not update quickfixes, Transfer failed
AInternetLink Resolve failed: Can't find host tost.tactical-ops.de (TRY_AGAIN)
TOST Server Tools: Could not check for updates, Transfer failed
AInternetLink Resolve failed: Can't find host tost.global-banlist.de (TRY_AGAIN)
TOST Ban List: Could not update banlist, Transfer failed
```

