



HOW TO – Getting TiVo Running 2.5.1 for Australian Conditions

Disclaimer: If you break it, you own all the pieces.

This is a work in progress; always check back at <http://www.trufit.com.au/TiVo> for the latest version of this document.

Things to do first:

- Download a copy of the TiVo 2.5.1 software. This how to has been based on the *hdr112.251* backup image found on this http server <http://www.apex.net.au/~twalker/tivo/HDR112.251>
- Please download this image and load it onto your target drive. The image will require a minimum of a 13.7Gb HDD to be used. This download is ~**150meg**. If the file is no longer there, then please contact us via the website above.
- Download a copy of *palmod-aus-2.5.1.o* from <http://www.trufit.com.au/TiVo/palmod/palmod-aus-2.5.1.o>
- Download the following files (*removesource.tcl*, *add-fta.tcl*, *dbload25.tcl*, *force_index.tcl*, *add-whole-channel.tcl* and *dumbntpd*) from <http://www.trufit.com.au/TiVo/scripts/>
- Download the MFS Tools CD from 9thtee here <http://www.9thtee.com/tivobootcd.htm> or there is a different version here <http://www.tyger.org/MFS/2.0/mfstools2noJ.iso> (Many people report that this second version is more successful in booting up) Burn this image to a CD following Hinsdale's instructions or ones available with the image.
- A copy of Hinsdale's instructions on how to backup and restore a TiVo image can be found here <http://www.newreleasesvideo.com/hinsdale-how-to/>

We won't be going into the how to of loading and backing up your drive, but you should also do a backup if you are going to load the 2.5.1 software over your old drive.

There is an excellent how to on backing up and restoring your images found here <http://www.newreleasesvideo.com/hinsdale-how-to>

(Note: From here onwards we will use **courier bold** font for things you should type. Enter them exactly as shown, except for any substutions we tell you to make. If there are quotes shown then type them too! Stuff that is displayed as prompts or responses is in **arial unbolded**)



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- Load `hdr112.251` image onto your new drive using Hinsdale's how to (see link above)

While the drive is hooked up, we need to edit the `rc.sysinit` file for the PAL mods and change the `PATH`.

- `mount /dev/hdxn /mnt/tivo`
(Replace *x* with your TiVo drive letter. See Hinsdale howto for help on this, and *n* with the appropriate partition number, usually 4.)
- `cd /mnt/tivo`
- `cd etc/rc.d`
- `cp rc.sysinit rc.sysinit.ntsc`
- `joe rc.sysinit`
- Scroll down and look for the following line
- `PATH=/bin:/sbin:/tvbin:/devbin`
- Add the following to the end of this line
 `:/var/hack:/var/hack/bin`
- Scroll down and look for the following line
 `insmod /lib/modules/pxmpegdecode.o`
- Add the following lines *above* `insmod /lib/modules/pxmpegdecode.o`
 `#Changing back to NTSC`
 `export TV_STD=NTSC`
- Add the following lines *after* `insmod /lib/modules/pxmpegdecode.o`
- `#Changing back to PAL`
 `export TV_STD=PAL`

- `#Installing PAL patch and tuner mods for Australian`
 `Conditions`
 `insmod /lib/modules/palmod-aus-2.5.1.o`



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You should end up with it looking like this

```
echo "Loading therm ..."
insmod /lib/modules/therm.o

#Changing back to NTSC
export TV_STD=NTSC

echo "Loading pxmpegdecode ..."
insmod /lib/modules/pxmpegdecode.o sTVStandard=$TV_STD

#Changing back to PAL
export TV_STD=PAL

#Installing PAL patch and tuner mods for Australian conditions
insmod /lib/modules/palmod-aus-2.5.1.o

if [ $videoconfig = 7 ]; then
```

- Scroll down to the bottom of the rc.sysinit file
- Add the following lines
Start dumb NTP daemon up for time syncs
/sbin/ifconfig lo up
/var/hack/dumbntpd
- Save the file and quit (ctrl-k then x)
- **umount /mnt/tivo**

Remove the drive from the system, and adjust the jumper if needed. (See Hinsdale for help on this)

- Replace the drive back into TiVo
- Power up TiVo
- Using the remote goto *New TiVo Messages & Setup*, then to *System Reset*.
- Select *Clear and Delete Everything*
- Press the *Thumbs Down* key three times and then the *Enter* key on the remote.
- The system will now restart and display that its preforming a system reset. This may take upto one hour to perform.



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The TiVo should have restarted and is waiting for the guided setup to be completed. (This requires that you now have the BASH prompt working. For Info on this, goto here <Insert Bash prompt howto lineThe Hack Faq?> for help.

- Pull the plug on TiVo, and plug it back in.
- Open up a terminal emulator and set it to 9600,8,n,1 and point at appropriate serial port
- Get into the Factory Diag Menu, by pressing the Enter within 1-2 seconds after you plug the power back into TiVo, in the terminal emulator window.
- At the password: prompt, enter the password **factory**
- Press **X** for extended Menus, and then **P** to adjust the boot parms.
- At the prompt, retype what is there, and add SETUP_BYPASS=1 to it. eg
Old: root=/dev/hda4
New(- to abort): **root=/dev/hda4 SETUP_BYPASS=1 TV_STD=PAL**
- Press Enter to continue and then **B** to boot TiVo.
- You should see TiVo starting. This time TiVo will take you into TiVo Central rather than asking you to do the guided setup.

Open up a bash prompt to your TiVo (terminal emulator and set it to 9600,8,n,1)

- Type **stty sane** then Enter. (You'll need to type this again every time you reboot the machine so the input text echos on the screen)
- **mount -o rw,remount /**
- **cd /lib/modules**
- copy the palmod-aus-2.5.1.o file to TiVo (If you are using HyperTerminal in Windows, select transfer/send file)
- Verify that the file is there, by typing **echo p*** you should see palmod-aus-2.5.1.o file listed.
- Reboot TiVo, by typing **reboot**

The system will start in NTSC, but will load into PAL. This normally happens on the 'Just a few more seconds' screen. You should then see TiVo start up and the TiVo Central will be in PAL. You can check this look looking at the bottom of the screen, and notice the menu is too short to fill the screen (There is a large amount of black at the very bottom of the screen) although normal TV will be fine. You will also find that there is a stutter in the sound when the TiVo symbol is bouncing around during startup video, this is normal as well.



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Now to add a lineup for TiVo.

- Open a bash prompt
- **mkdir /var/hack/guide**
- **cd /var/hack/guide**
- **tivosh**
- You should now see a % prompt
- **mls /**
- Note the ID of the Setup Object

SeasonPass	tyDir	183864	02/16/01	21:36	360
SeriesTitleGS	tyDir	183787	12/01/01	08:45	1212
Server	tyDir	183732	12/16/01	07:28	1316
Setup	tyDb	<u>1878</u>	06/19/02	11:43	6936
Showcase	tyDir	183839	12/09/01	16:19	412
ShowcaseIndex	tyDir	381271	12/16/01	07:30	216

- In this case its 1878.
- **dumpobj 1878** (replace with your Setup ID)
- You should see a Source section and then some numbers next to it. Note these down. Eg 1878/1625 in this example.

```
SoundVolume = 25
Source       = 1878/1625
ThumbsLogMagicNumber = 1954570303
```

- **exit**
- You should be now at the bash-2.02# prompt.
- On your PC, edit the removesource.tcl file and change the following line

```
set source [ db $db openidconstruction 1878 1625 ]
```

Note, in our example the source was 1878/1625 replace the / with a space, as shown above. If you have two sources, uncomment the section below in the removesource.tcl file, and put the second source in there.

- Copy removesource.tcl to tivo (these should be under /var/hack/guide)
- Copy add-fta.tcl to TiVo
- Copy add-av.tcl to TiVo
- Copy dbload25.tcl to TiVo
- Copy force_index.tcl to TiVo
- Copy add-whole-channel.tcl to TiVo
- Copy fixup25.tcl to TiVo
- Copy timezoneadjust.tcl to TiVo
- **cd /var/hack**
- Copy dumbntpd to on the Tivo
- **chmod +x /var/hack/dumbntpd**



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- `cd /var/hack/guide`
- `tivosh removesource.tcl`
- You should have no sources in you setup now. You can check by running the steps above again. (eg “dumpobj 1878”)

Now time to add new sources (best to do one at a time eg FTA then Cable lineup)

- `tivosh add-fta.tcl` (if you have the PAL tuner installed)
Or
- `tivosh add-av.tcl` (If you have Cable Lineup (eg AV Input source))
- Reboot tivo by typing `reboot`

We need to find out what the new source ID is

- Open a bash prompt
- `stty sane`
- `tivosh`
- Wait for the % Prompt
- `dumpobj 1878` (replace with your Setup ID from above)
- Take note of your new source ID number
- `exit`

- Open a bash prompt
- `cd /var/hack/guide`
- Create the following text file on your computer.
(Refer to <http://www.trufit.com.au/TiVo/slices/howtouseslices-FTA.txt> and <http://www.trufit.com.au/TiVo/slices/howtouseslices-PayTV.txt> for details of what numbers are appropriate for your area.)

So for Melbourne FTA non digital it would look like.

```
tivosh add-whole-channel.tcl 7300002 2 ABC "ABC Network" 1878/32
tivosh add-whole-channel.tcl 7300007 7 Seven "Seven Network" 1878/32
tivosh add-whole-channel.tcl 7300009 9 Nine "Nine Network" 1878/32
tivosh add-whole-channel.tcl 7300010 10 Ten "Ten Network" 1878/32
tivosh add-whole-channel.tcl 7300028 28 SBS "SBS Network" 1878/32
tivosh add-whole-channel.tcl 7300031 31 Ch-31 "Channel 31" 1878/32
tivosh add-whole-channel.tcl 7999999 99 NoNag "No Nag" 1878/32
```

The no nag line is used for all areas, and is the way to stop the TiVo nagging you about not making a phone call. It loads dummy information for the next three weeks. You can get rid of it from your lineup on the TiVo by going to settings, then customize channels, channels you receive, and unselecting it.



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Layout of the command is
add-whole-channel.tcl tivochannelid stationnumber shortcallsign “longcallsign”
signalsource

tivochannelid = 7 digit number. Best to use a 7xxxxxx range number.
stationnumber = The number of station. Eg pressing 2 on the remote
shortcallsign = ABC displayed on the TiVo bar, on channel changes (keep under
4-5 Characters)
longcallsign = Longer station name. Needs to be in quotation marks
signalsource = The signal source that you want to add the channel to eg FTA
signal source or AV signal source ID number.

It’s worth triple checking these entires, as it’s hard to correct them afterwards.

- Now you have that file created, ***copy one line at a time***, and paste this into the bash window. It's best to use the Edit, paste menu, than the keyboard shortcut. You should see something like this

```
bash-2.02# tivosh add-whole-channel.tcl 7300010 10 Ten "Ten Network" 1878/12
The file id you will need to use add-channel is 525439/10
station {Ten Network}
channel 10
bash-2.02#
```

- Repeat for all Channels required.
- **Reboot**

You should now be able to go into LiveTV and see your lineup there. Pressing channel up and down will cycle through your channels.

If you have made a mistake in the spelling etc, remove the signal source and start again. This is why its critical to triple check the text file entires before pasting them into the bash window. If you have to start again, you need to go back to where you cleared and deleted everything before you loaded palmod-aus-2.5.1.o. If you do this you will also need to remove the file “removesource.tcl” before copying over the new one. The command to do this is rm (as in **rm removesource.tcl**)

If you have a cable lineup, repeat the above process, but run add-av.tcl rather than add-fta.tcl. Also change the source to the AV source. You can use dumpobj <SourceID> to see what type of source it is if you are unsure.

Now it's time to create the guide data. This how to won't be going into it, but there are some excellent guide making programs out there. You will need to know your tivochannelid's for each channel to create guide data. Make sure you noted them down from the steps above (eg 7300002)

Or you can download it each Friday from <http://www.trufit.com.au/TiVo/slices>



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Once you have your slice file, copy the file to TiVo

- `cd /var/hack/guide`
- copy slice file to TiVo
- `tivosh dbload25.tcl filename.slice`
- `tivosh fixup25.tcl`

For TiVo to index, you have to have TiVo time sync to a time server. Tivo is running a dumb NTPD service so it can time sync with itself. This saves the trouble of having to time sync with an external source.

Now set the correct time and date for where you are. It would be handy at this point if you had an exact time, either network or "dial the time"

You can correct the tivo time with the `settime` command.

Go to a BASH prompt and type `date`, then type `settime` using the following (Usage: `settime [YYYYMMDDhhmm[ss]] [-rtc]`)

```
bash-2.02# date
Sun Mar 30 10:31:02 localtime 2003
bash-2.02# settime 20030330093200
Time set to: Sun Mar 30 09:32:00 2003
Have a nice day.
bash-2.02# settime -rtc
Time set to: Sun Mar 30 09:32:10 2003
Have a nice day.
bash-2.02#
```

You will also need to reset the time every time daylight saving time changes if you are in a state affected by this.

After you have tested the TiVo and established that everything is OK, it's probably a good idea at this point, to do another backup of the disk, so if anything goes wrong, you don't have to go through all this again. (See Hinsdale)

That's it. Happy TiVoing ;)



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Files you may require

Lastest TiVo How to - <http://www.trufit.com.au/TiVo/howto>

FTP Images - <ftp://207.174.176.30/> (file is hdr112.251

FTP Images - <http://www.apex.net.au/~twalker/tivo/HDR112.251>

Palmod for 2.5.1 – <http://www.trufit.com.au/TiVo/palmod>

dbload25.tcl + scripts – <http://www.trufit.com.au/TiVo/scripts>

dumpntpd - <http://minnie.tuhs.org/Programs/Dumbnptd>

TiVo Guide Data – <http://www.trufit.com.au/TiVo/slices>

Other Links

Warrens fetch_one Program – http://minnie.tuhs.org/Programs/Fetch_one/

oztivo mailing list - <http://minnie.tuhs.org/mailman/listinfo/oztivo>