

Myth or Bust...

Changing your TV habits efficiently

by

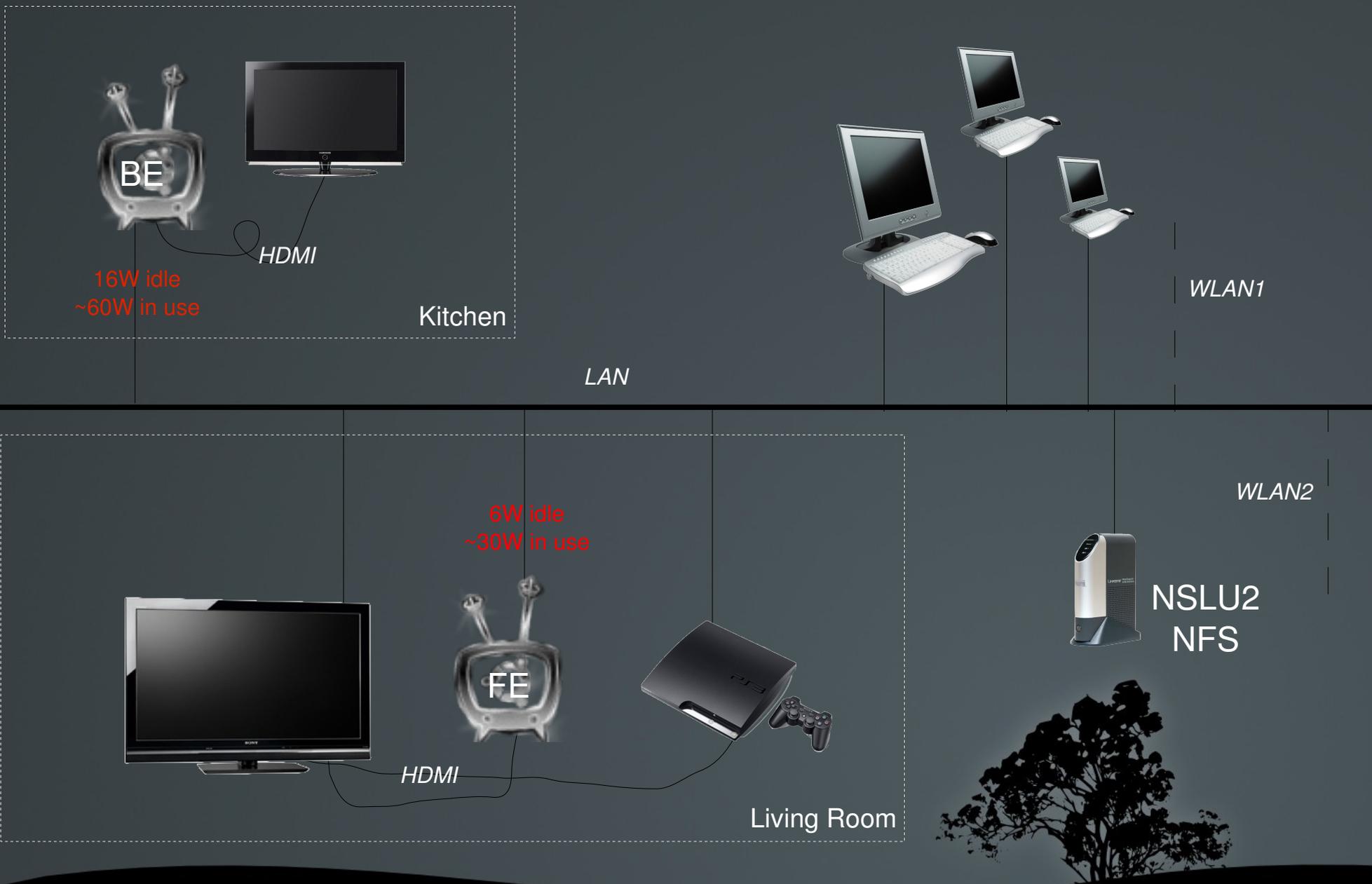
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mythTV – an introduction

- mythTV is a fully open, networked, optionally distributed and completely customisable HTPC solution that in principle supports all TV and video standards, and offers internet access too
- mythTV offers a simple-to-understand interface for the non-geeks
- Allows access from multiple types of clients
- Runs well on "cheap" and eco-friendly HW
(but may require time to get running properly)

Our current mythTV setup @home



What can be achieved?

- Moving through the chain of...
 - "So ein ding" is on tonight, so I'd better see it
 - "So ein ding" tonight is to be recorded and seen later
 - I'd like to watch TV now, what do I want to see?
("I already told what is of interest to me")



Our experience

- Have (re)built myth systems 10+ times over ~1.5 yrs
- Have spent way too many hours tweaking setup files and configure/compile drivers, mainly due to bad planning or bad selections of components (tuners, gpx cards, ...)
- Having a system "under maintenance" often clashes with the rest of the family's desire to record/watch
- Getting a stable system requires some preplanning
 - Our myth setup could ruin the network @home...
- Currently a well-working and stable BE (and almost FE)



Planning ahead

- Importance of planning ahead; otherwise you definitely will waste both time and money!
- Ask yourself first:
 - What type of system
 - Simple appliance with high "WAF"
 - Distributed system, remotely controlable
 - Living room PC or simple "set-top box"
 - Archiving policies and storage needs
 - Record and keep only limited shows
 - Record 16 channels and store 4 wks of programs



Hardware selections

for an appliance-type living room setup

- Consider
 - Noise factor
 - Low Power consumption
 - Suitability for the living room
 - To be networked for streaming or not (LAN/WLAN)
- Atom ION based boxes are close to ideal
 - DVD (BD) or not
 - Consider SSD/diskless FE (PXE) with separate BE
 - http://www.mythtv.org/wiki/Diskless_Frontend
 - Avoid the Windows tax if possible

~2.0 Ghz x86 or x86_64 Processor
2GB MB of system memory (RAM)
10 GB disk space (Frontend Role)
160 GB+ disk space (Backend Role)
nVidia VDPAU compatible Graphics Card
Supported TV Tuner Card (Backend Role)



Some options



ASRock ION 330 series
Includes DVD or BD
No Windows license



Asus Revo 36xx series
Very slim
Comes with Windows

Further silencing:

<http://asrockion.wiki.zoho.com/silencing-the-ASRock-ION330.html>



Software strategies

- Spend your time watching TV or tweaking?
- Package driven (Mythbuntu) or DIY (Gentoo)
 - In-between is time consuming...
- Update policies: Bleeding edge, lazy or not at all
 - Either "lazy" or only if needed (if it ain't broken don't fix it)
 - In-between is a waste of time...
- Are you OK to compile your own drivers or not
 - Version management/resolving dependencies
 - Use DKMS!
- If possible, copy someone else's system (HW & SW)...



TV / Monitor selection

- Likely you may already have a flat-screen TV
- A combined TV/PC is not user friendly if you cannot switch them on/off seperately
- Having a TV with a separate tuner is nice
 - ... with a working DLNA makes it even smarter



Sound

- HDMI output supports audio, DVI does not
 - If your TV has HDMI, this is preferred!
 - Set your output by creating an ALSA .asoundrc as this makes non-myth appl also use that output
 - http://www.mythtv.org/wiki/Configuring_Digital_Sound
- Simultaneous analog output is possible
 - But getting it in sync with HDMI is a challenge!
- Do you need surround sound?



Remote and keyboard

- If you are a "couch-surfer", a wireless keyboard is nice
 - Bluetooth keyboards (Logitech diNovo edge) looks nice, but work only with every 2nd release of Ubuntu...
- A simple "MCE" wireless remote is IR is easiest
 - ... but may still require some tweaking of lirc files if you want the same keys to work in mplayer, vlc and myth
- A BD remote (PS3 type) is really fancy
 - But requires even more tweaking, a special server or kernel module to avoid draining batteries, and is not compatible with a keyboard on the same BT i/f!

Storage

- You need plenty of storage!
- However, a USB disk is just fine and so is an NFS server somewhere on the net
- You can easily just move files around once you have told myth where to look for them
- Watch out for fsck(!)
 - With auto-wakeup, a fsck will ruin your recording

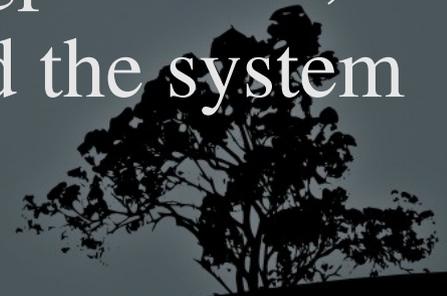


Tuner(s)

- Analog or digital? DVB-T, DVB-C or DVB-S?
 - MPEG2 and MPEG4 are the same for myth; DVB tuners just deliver a raw mux'ed stream
 - Yousee DVB-C is around 2x bitstream of DVB-T
 - You need as many digital tuners as the number of MUX'es you want to record simultaneously
 - DR1, DR2, TV2, DR Update often samme mux
 - Best choices are probably USB2 or ethernet based
 - HDhomerun, Anysee Combo Plus or e30, ...
 - Do you need CAM?
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Graphics card

- You need probably HDMI (not DVI) output
- As of now, an Nvidia VDPAU capable system is preferred (the ION platform has this)
 - <http://www.mythtv.org/wiki/VDPAU>
 - h.264 needs to be offloaded, or else a very capable CPU is required (Athlon XP4800 not enough)
 - Video de-interlacing improves significantly w/HW
- Flash is currently not offloaded to gpx board, so many youtube videos tend to load the system



Network

- 100 Mbps and above for LAN works well
- WLAN OK for a single client only
 - Challenges with multiple clients (802.11a/b/g/n)
 - Challenges with other traffic (VoIP, MP3, ...)



Getting program data

- EPG or xmltv-based scrapers
 - EPG has ~1 wk and is usually well updated
 - xmltv can give you more visibility
 - But more options, a bit more challenging to set up
 - Not good for un-monitored systems
 - Small problems with both (episode #, inconsistencies like spelling, subtitles/descriptions, ...)
 - Use custom recording rules if possible
 - Some modes are worse than others if EPG changes
- Ensure you update frequently if away for days



Switching your system on/off

- You want the BE to have auto wakeup/shutdown
 - This will allow it to wake up and record as needed
 - <http://ubuntuforums.org/showthread.php?t=1176528>
- Do you want sleep
 - Fast boot, but may require seperate BE to run always
 - WOL can be used also for BE, but...
- You may not be able to switch it on via the remote!



DVD playing

- Blue-ray is possibly not ready for linux primetime
- DVD playing works
 - ... most of the time; problems w/menu
 - You may need to change the player to
 - `mplayer dvdnav://` and not `dvd://`; supports VDPAU
 - Special setup in `.mplayer` file
 - or `vlc`, which may not support VDPAU...
 - Remember to update LIRC files to use same buttons
 - Ensure sound will be sent correctly



Subtitles

- Subtitles are sent in different formats
 - Not the same as the US "closed captions"
 - Can be image or text
- DR currently burns them to the image
 - Will change to send them to become a digital stream
- TV2 is not currently working for me with mythTV standard player, but mplayer reads them fine



Additional clients

- Additional myth FE are easy to add and configure
- Using a browser and VLC allow you to connect any PC (Windows, MacOS, Linux, FreeBSD, ...)
- Some smartphones work directly with myth
- Sony PS3 DLNA client works well with myth also
- Sony Bravia TV's don't work directly with myth
 - A seperate miniDLNA client can be added
 - Likely you want then also mythtv-fuse

- <http://sourceforge.net/projects/minidlna/>

- <http://outflux.net/software/pkgs/mythtvfs-fuse/>



Maintenance work

- The couch is not a comfortable place to work from
- Use `vinagre` and/or `ssh -X` to maintain your system from another computer on the network



Scanning for channels

- Scanning digital channels can pose problems
- You may need "external tools" to discover actual frequencies and seed those to myth
- No good data useable or published (pls share!)
- http://www.sslug.dk/emailarkiv/teknik/2009_09/msg00197.html



How to contribute

- Translation work (<http://www.mythtv.dk>)
 - mythTV 0.23 will be significantly better than 0.22
- Describing your setup and component selections
- Sharing channel scan files for your area
- Help someone else set-up a mythTV system
- Streamline LIRC files, fix bugs/inconsistencies
- Document and report errors you may find
- Live life on the bleeding edge...

