

# TVs, Electroncs, Computers, Software





PHONOR PRINCIPLE AND 19 PHONOR



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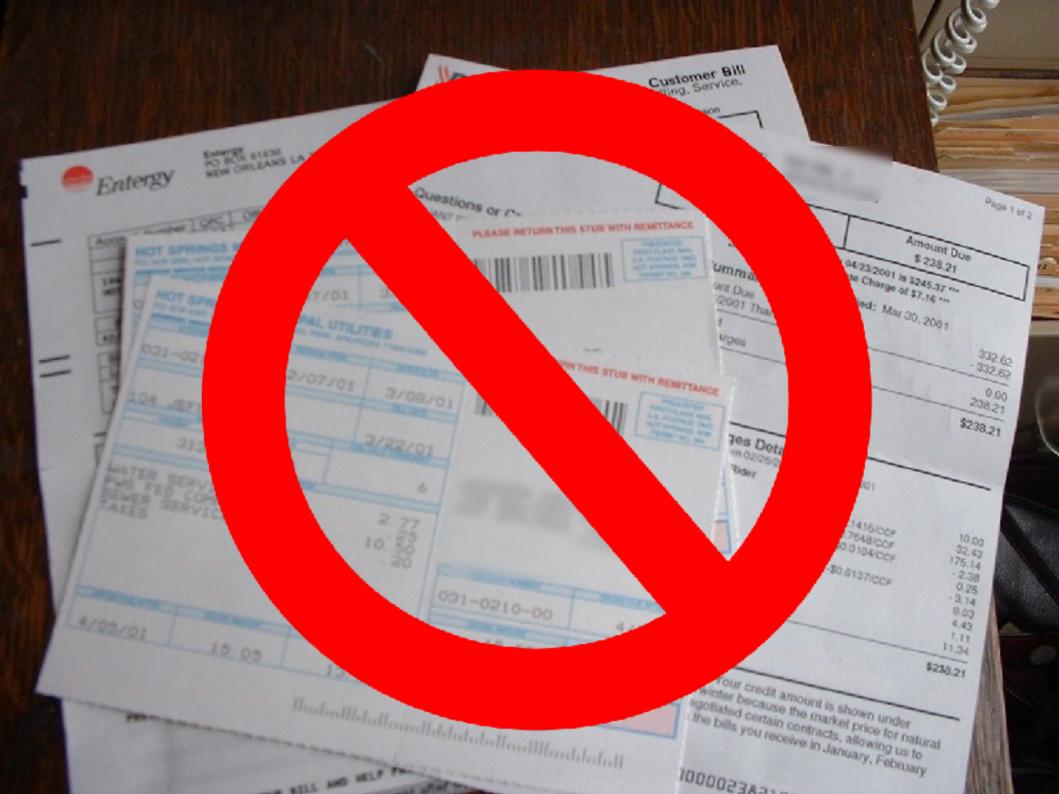
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### What I'm here to talk about

- Home Theater in General
- Digital TV
- •TVs, Projectors and other electronics
- DVRs and PCs
- Software
- How to put it all together

# My Guiding Principles for Home Theather

- I want the big movie theater experience
- ·I want great sound
- ·I want all my shows
- I want comfy seats or a couch
- ·I'm CHEAP!



## My General Requirements

- •Want to watch TV shows when I want
- Play DVDs
- •Watch any video files, local or on the Internet
- Play local or Internet Music
- Surf web
- Show Home movies
- Show Photos
- Play Games

These can all be done as a family or with friends

# My Specific Requirements

- Dedicated Computer System
- •Big Screen 72" or larger
- Comfortable seating couch
- Remote control
- Good sound system, Dolby Digital 5.1
- •Record the programs I want whenever they are on
- Have the choice to record new, old, watched, etc programs
- Have new shows pop up based on criteria, Ex. Sci-fi TV Series
- Movies, 3 stars and above
- On Screen Guide to view whats on TV

# My Specific Requirements (cont.)

- Lots of storage for high def shows
- Play DVDs
- Record shows to DVD
- Play or Save programs as video files and be able to move them to anywhere (network)
- Access the Internet
- Access music and pictures
- Play any of the above on any other TV or computer in the house (Client - Server)
- •Be able to hack and modify things if I need to
- Reliable system

# DVR - Digital Video Recorder

### Definition from Wikipedia

A digital video recorder (DVR) or personal video recorder (PVR) is a device that records video in a digital format to a disk drive or other memory medium within a device.

### My definition

A computer with a TV/Video tuner and the right software.

There are two kinds

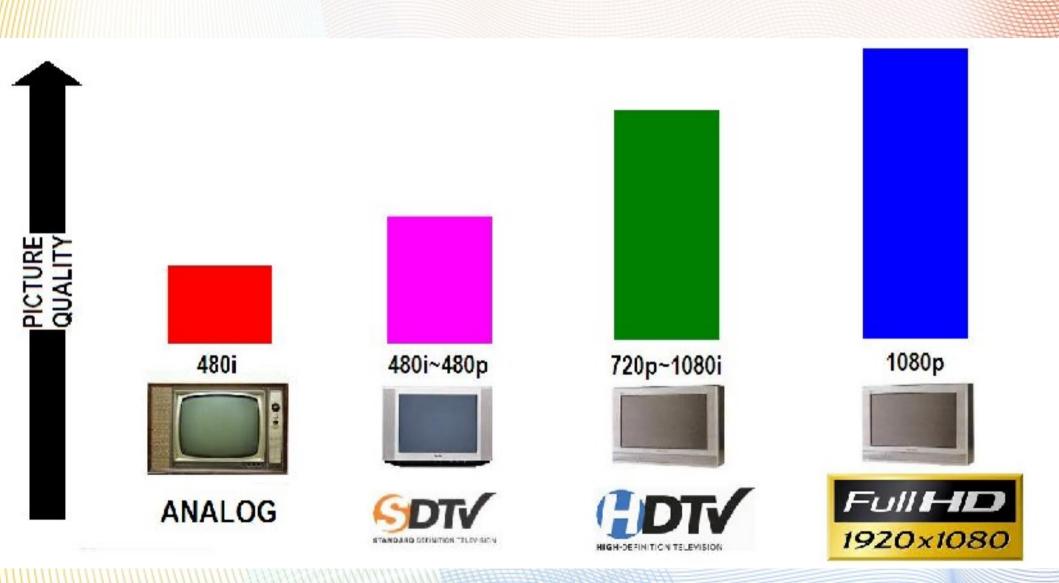
# **Security Systems**



# Home PVR, Ex. TIVO



# TV, Digital TV and HDTV



# Stand Alone DVRs

## Software - Ex. TIVO



# Find Programs

Search by Title

WishList Search (Actor, Category, or Keyword)

**TiVo Suggestions** 

**Record by Time or Channel** 

Season Pass Manager

To Do List

#### **Download TV & Movies**

KidZone Recommendations & Guru Guides
Universal Swivel Search



### Cable PVR

- PROS
- Convienent
- Gets all cable channels
- Records any show you get (unless they don't want you to)
- ·CONS
- Expensive, montly charge
- Not expandable
- Can't get your programs out of the box
- Limited software
- Usually just PVR and live TV functions

# Sharp. Savvy. Sweet.





# The new TiVo HD



WHAT IS TIVO? | BUY TIVO | SETUP & SUPPORT | MY TIVO | ABOUT TIVO INC.

### TIVO HD

- •20 150 hours of programming
- •\$300 \$600 to buy
- Not very expandable
- Access Netflix, other services
- Software is locked
- Can't access programs
- Monitor your data
- •Extra charges ~\$13/ month or \$129 /year

# PC Based DVR

### PC Based DVR

### **Hardware**

- Standard or modified PC computer in some form
- Over the Air and or Cable tuner

### **Software**

- Windows Based
- Microsoft Media Center
- Third Party products
- Linux Based
- •Ubuntu
- MythTV
- Combined Mythbuntu

### Other Services on an HTPC

- •YouTube watch them on your big screen
- Web Videos
- Hulu and TV.com
- •Not Highest Res, can be jerky if bad Internet connection, limited time to watch shows, but very cool and you can watch it on your big screen with an HTPC
- Streaming audio listen on your stereo
- Games

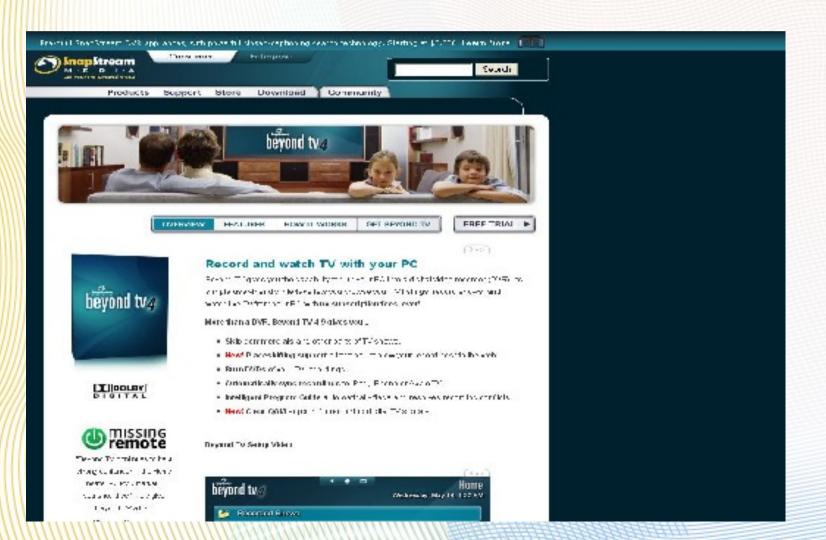
### Other PC Based DVR

Microsoft Media Center, comes with most Vista systems, so it's free!



## Other Third Party DVR

Beyond TV and other products for Windows



# What's wrong with These?

A problem has been detected and Windows has been shut down to prevent damage to your computer.

DRIVER\_IRQL\_NOT\_LESS\_OR\_EQUAL

If this is the first time you've seen this Stop error screen, restart your computer, If this screen appears again, follow these steps:

Check to make sure any new hardware or software is properly installed. If this is a new installation, ask your hardware or software manufacturer for any Windows updates you might need.

If problems continue, disable or remove any newly installed hardware or software. Disable BIOS memory options such as caching or shadowing. If you need to use Safe Mode to remove or disable components, restart your computer, press F8 to select Advanced Startup Options, and then select Safe Mode.

Technical information:

\*\*\* STOP: 0x00000001 (0x0000000C,0x00000002,0x000000000,0xF86B5A89)

\*\*\* gv3.sys - Address F86B5A89 base at F86B5000, DateStamp 3dd991eb

Beginning dump of physical memory Physical memory dump complete. Contact your system administrator or technical support group for further assistance.

### Can you say "Blue Screen of Death"?

# Digital TV and HDTV

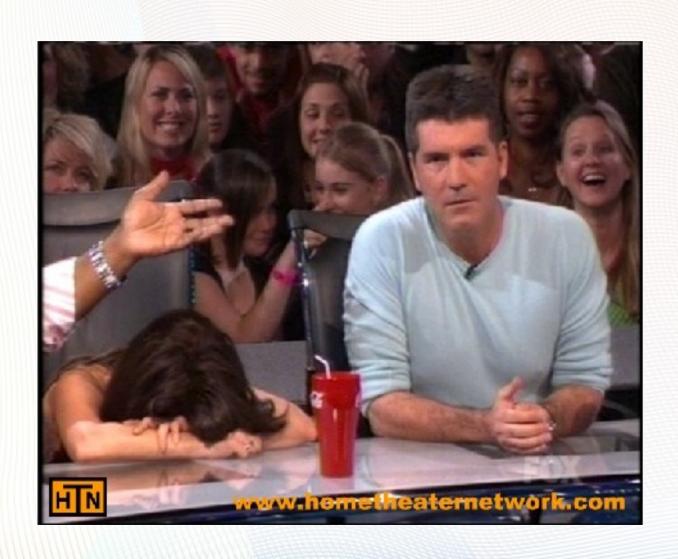
# Say Goodbye to Analog TV

As of June 12th, no more analog TV broadcasts But the cable companies will still deliver analog

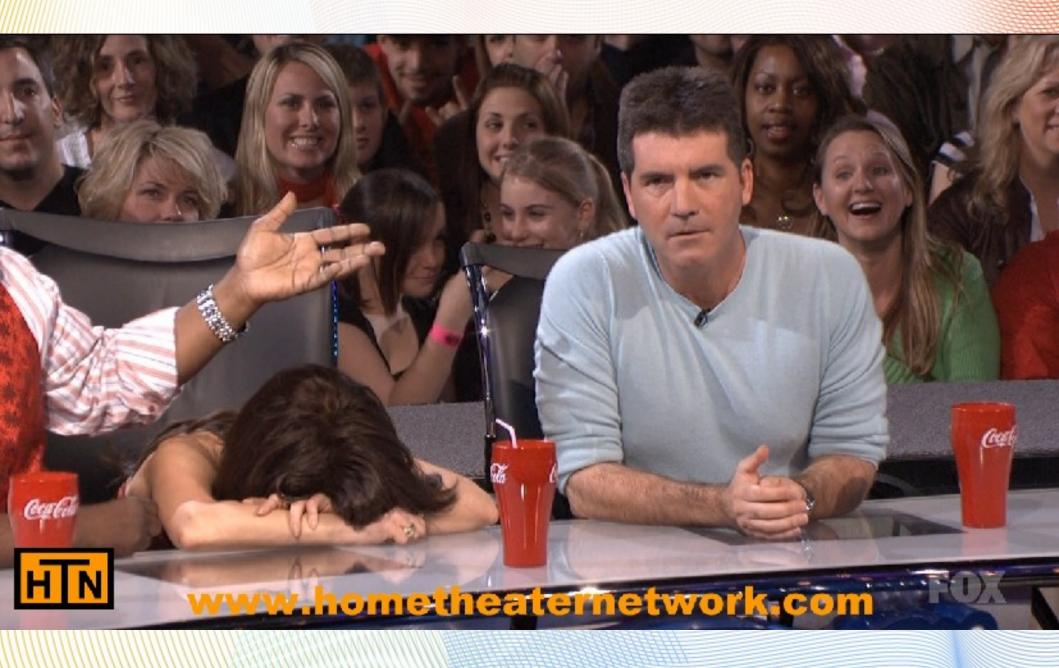




# Digital TV - Standard Vs HDTV



### HDTV



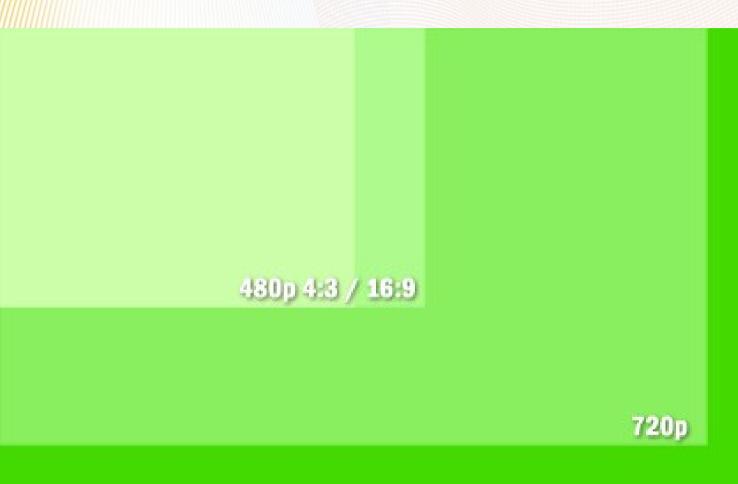
# Compaitive resolutions

SD (NTSC) (525 x 700)

> 720 HD (1280 x 720)

> > 1080 HD (1920 x 1080)

# Different Digital Standards



# Interlaced (i) vs Progressive (p)





### HDTV Sources

Encrypted Cable can be decode by Windows Media Center (Cable Card) and by Cable boxes

For our Purposes No HBO, on Demand, etc

- Cable (unencrypted QAM-256) -depends on cable system, but is on very basic cable
- Over the Air (ATSC)



### TVs

Plasma or LCD are about the same Most people buy 50" or less for good buys



### **Panasonic**

### Panasonic VII RA 50° 1000p 4000z Plasma DDTV w/Anti-Reflective Lilter IE 3 100 ML - 1050PZ000T



Original Price: \$2,099.99 Tou Save \$650.00

\$1,449,99

Free Shipping

Product not available in AA, AE, AF, HI, AK and PR

### Image Viewer

























### A Protect Your Investment

Avoid the headaches or but-of warranty repairs, get the ultimate protection for your purchase! (expand for options):

### Special Offers



No Interest for up to 12 Months, Minimum purchase required.

Subject to predit approval. Details:



No Payments for 90 Days on orders over 1950. Plus, New Bill Mellate <sup>49</sup> Customers: Save \$10 on \$50. Suprect to praditiabordyal. Details

OVERVIEW   CUSTOMER	REVIEWS SPECIFICATIONS PRODUCT TOUR		
Model			
Brand	Panasan d		
Series	VIERA		
Mode	TH SOPZECU		
Тур∋	Consumer		
Cahinet Color	rack		
Display			
Screen Size	50'		
Panel	Stil Progressive 1080p HD Plasma Display Panel		
Aspect Ratio	15:0		
Native Resolution	14202.100		
Contrast Ratio	20000:1		
Pixe Hitch	J.576m=		
Connectivity			
Input Vicen	NTBC / ATSC / QAM Tuner		
Compatibility	1080i/p, 720p, 48Ci/o		
HETV Capability	ID V lunerinside		
	30 Card 3luc		
	IDML log it: (1 (1 front)		
	Analog Audio Input (for HDMI); 2		
	Composite video Input: 2 (1 frant)		

Galideo Innuit: 200 front'i

MUISUBISHI HU1800 HD Home Theater DUP Projector.





























# HDTV Projectors



- Get 16:7 ratio projectors no 4:3
- •LCD
- •DLP
- •Both are fine, I like DLP for the richer colors



### MITSUBISHI HC1600 HD Hurne Theater 1280 x 720 DLP Projector 1700 ANSI Lumens 2500:1 - Retail



### Image Viewer (Viev Al)

-		-	RG-F
2000	(100)	10.0	
	-	to	4.5

Original Price: \$789.99 You Save: 100 00

\$699.99

ADD TO CART SE

ADD TO WISH LIST WE'D

EMAIL THIS PAGE 100

PRINT THIS PAGE

PRICE ALERT SA

### Protect Your Investment

Avoid the headadnes of out-or warranty rapairs; get the ultimate protection for your purchase! (expand for options).

### Special Offers



No Interess for up to 12 Months, Minimum pard use: Subject to credit approval. Details:



No Payments for 90 Days or orders over \$250. Plus, New Bill Me Later 8 Customers: Baye \$10 cm \$50. Suggestioned Lapproval, Details

### Similar Tlems

Not the product you're looking for? We can make some suggestions to help you decide on a product that fits you needs. views mile products

COMBOS & ESSENTIALS | MANUFACTURER INFO | RETURNS & REBATES

### Customers Also Bought



action TH WHIPD FM Universals Projector Flush Yount - Retail

250 00 559 99 CUSTOMER REVIEWS SPECIFICATIONS

### Model

P. m J	MITSURIBHT	
Model	HC FOO	
Cab net Color	Black	
Typu	DLF	

### Display

Lons	F=2.4-2.6; (142" in thes@100 ) Throw Rubic: 1.55 - 1.07 Manual Focus 3-Zoom Lens	
Lamp	Normal Mode: 200W (Shut Off lime: 2000 hrs) Low Mode: 160W (Shot Off Time: 3000 hrs)	
Display Size	√0" 275'	
Native Resolution	12CD x 72C	
Brightness	1700 ANSI Lumens	
Commend Bullin	2500:1	
Horizontal Refresh Rate	15 - 80 kHz	
Vartical Reinesh Rate	50 - 05 1 7	

### Commercially

Input Video Compatibility	NTSO, DAL J SECAM (480i/p(525i/h)). 576 /p(625i/p), 720 (750p 50/60Uz), 1000i. (1125i 50/50Uz), SCANT (ROU – EV sync)	
Input Video Connectors	Min Desub 150m x 1 HDMI x 1 PMI x 1 = 3-MIDDO x 1, MIA (Y, PB/C3, P //OK) x 1	

### Power

Hower Supply	10C - 24C VAC, 5U/50Hz	
Hower Cor any ion	28UV/ / 2.9/\	

### Dimensions

Dimensions (∀ «H>D)	12.2 < 3.9' < 9.5'/\$10 > 100 × 2/5mm
Weight	6.5 hs. (2.9kg)

### Convenience

Exact university and which Builds of Culturated buildings. Elter free design. Allows upon to manually adjust for vavetorial

ADD ITEM WITH SELECTED



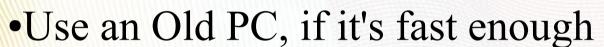
# PC Hardware Requirements

### **Mythbuntu - Recommended System Requirements:**

- \* 2.0 Ghz x86 or x86\_64 Processor (Single Core) You can't have too fast a system
- \* 1024 MB of system memory (RAM)
- \* 10 GB disk space (Frontend Role)
- \* 80 GB+ disk space (Backend Role)\*\*
- \* nVidia 128MB Graphics Card w/ HDMI, VGA or Component video
- \* Supported TV Tuner Card (Backend Role)

# PC Hardware





- Buy a PC and modify it
- You're paying for things you aren't using, but it can be cheap
- Put together your own from components
- Not as hard was it sounds
- •Get recomendations on the web
- Put together a bare bones system





# Buying PC Hardware?

### Where to buy?

- Newegg.com look at buyers ratings
- Amazon.com look at buyers ratings
- TCF, but know what you're getting

**Buying Advice** 

- •pcmag.com
- •extremetech.com
- •eggxpert.com
- Consumer Reports
- •Books, but can be out of date









# Full Home Theater PC The Easy Road



- AMD Athlon 64 YE 5000 | EVECSHIZ Dual Core Processor
- 750GB Lard Drive
- Blu-ray/DVD Combo Driva

# The Hard Road

Building your own HTPC will take some time And it won't be easy, but it will satisfy your inner Geek

# What's a PC made of?

Most PC have same kinds of components

- Case
- Power Supply
- Motherboard
- Video Card\*
- Sound Card\*
- •CPU
- Memory
- Hard Disk Drive
- DVD/CD and maybe Bluray
- \* A motherboard can have these included



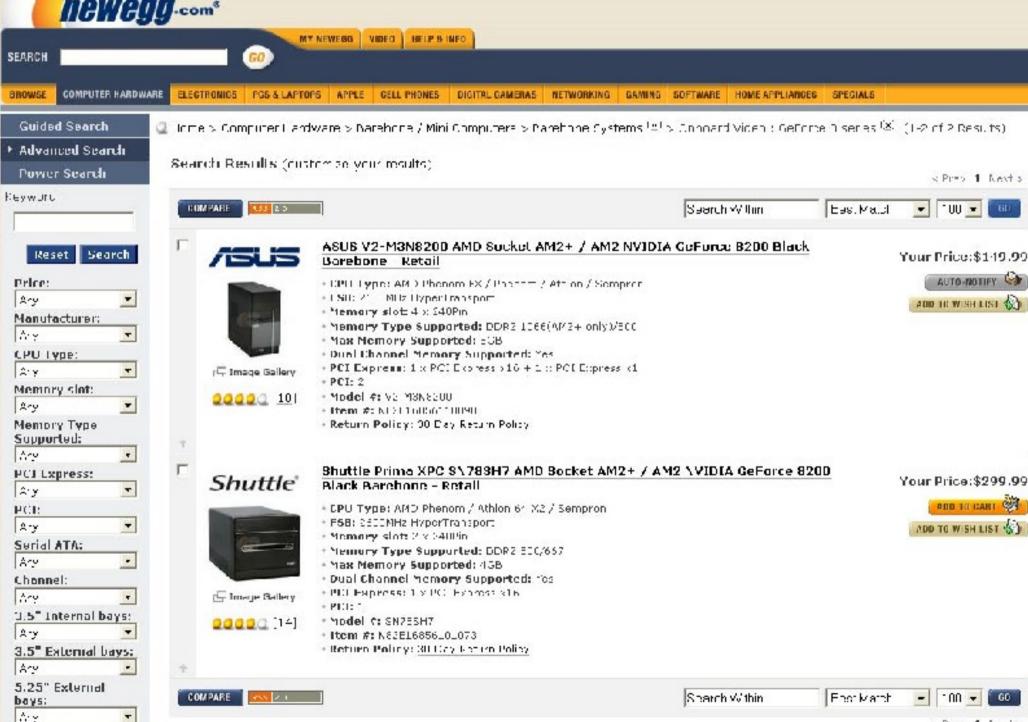
# Bare Bones Systems

- Bare bones will have a case, mothboard, video, sound and power supply all in one.
- You have to add the processor, memory and drives
- Easy way to build a system
- •Examples:
- •ASUS, Shuttle Systems









# Which PC Case?

### Special Media System Cases

- Antec Fusion
- Silverstone
- Others
- •Some have PS, some use different motherboards, etc, no standard





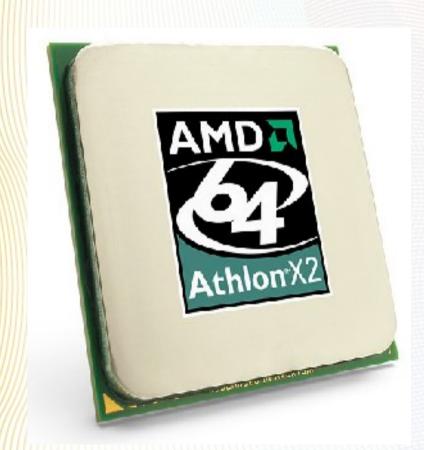


# Inside a Silverstone Case



# CPU Choice?

•Intel or AMD?

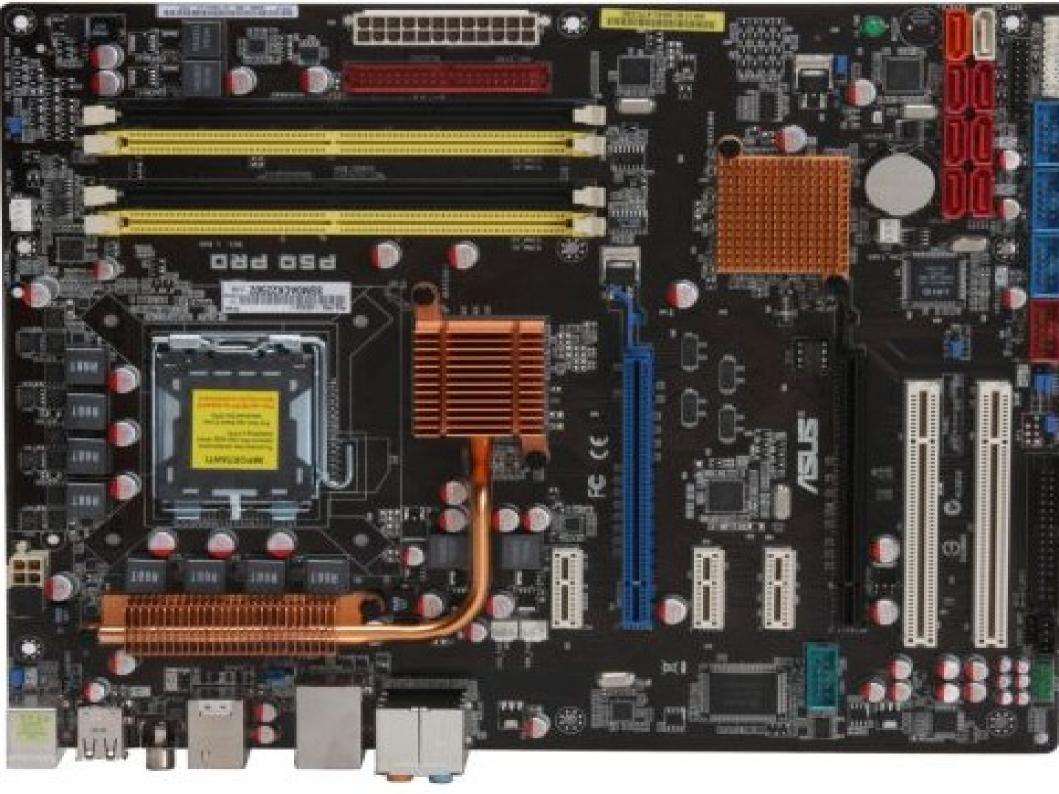


•Both are 64 bit chips



# Motherboard choice?

- This is now a function of what case you choose and what CPU.
- Or vise-versa, if you choose a motherboard first then that will determine what kinds of cases and CPUs you can use.
- Motherboards are chosen by CPU type and size
- Sizes
- •ATX-most popular -12" X 9.6"
- Most slots for extra cards
- Biggest space, bigger case
- Lots of choice



# Motherboard choice? (cont.)

- •Micro-ATX smaller size 9.6" x 9.6"
- Smaller case
- •Less slots
- Lots of choice
- •Micro-ITX 6.7" x 6.7"
- •Nice small form factor case
- Might have one slot which can be enough
- Much less popular, less choices
- •Harder to squeeze all the stuff into a case
- •I like ASUS boards it's one of the biggest
- Stay away from small brands
- Look at reviews and recomendations for boards

### Micro-ATX board





### Mini-itx board

# Sound card and Memory





# Video Card

Simple, get an NVIDIA card or motherboard with NVIDIA built in. Nvidia has real Linux drivers and they work great. They've been making them for years



### Tuners

### Hardest to choose

This is an a DviCO FusionHDTV7 Dual Express DUAL HDTV – two tuners in one with a remote control

www.linuxtv.org says it works

You need a remote too

Look at www.linuxtv.org
for which tuners work with linux
and then price them.

I've been using the pcHDTV HD-5500 It's design for Linux only

### Drives

- Hard drive need to be big a one hour hdtv program takes up 8 gigabytes
- Hard Disk if you want to spend the money, a RAID system is nice
- •But of the rest of us a 1Tbyte Drive will do



- •A DVD/CD Burner is \$30
- •No Bluray for Linux, at the moment

# Human Interface

Buy a wireless keyboard/mouse, whichever one you like



Harmony Remotes www.logitech.com
You can spend from \$60 -\$500 for a good universal remote.





# Software: Operating System

▶ Products ▶ Support ▶ Community ▶ Permers ▶ News



### Welcome to Ubuntu 8.10 Desktop Edition

The largest release of Uhuro, brings the response source technologies trigether on one planform, with the description free updates for 10 months. Hundreds of improvements, including features like full DS support explaining ty Ubuniu wine more converte with every release. This Liuriovi, help you discover, the millions of large will be not been partially as to be so inthibuted, very Ohurita Billion he discloped 6. From .



Features
Froductivity tools
Web browsing
Friotos
Musicians video

Americanty

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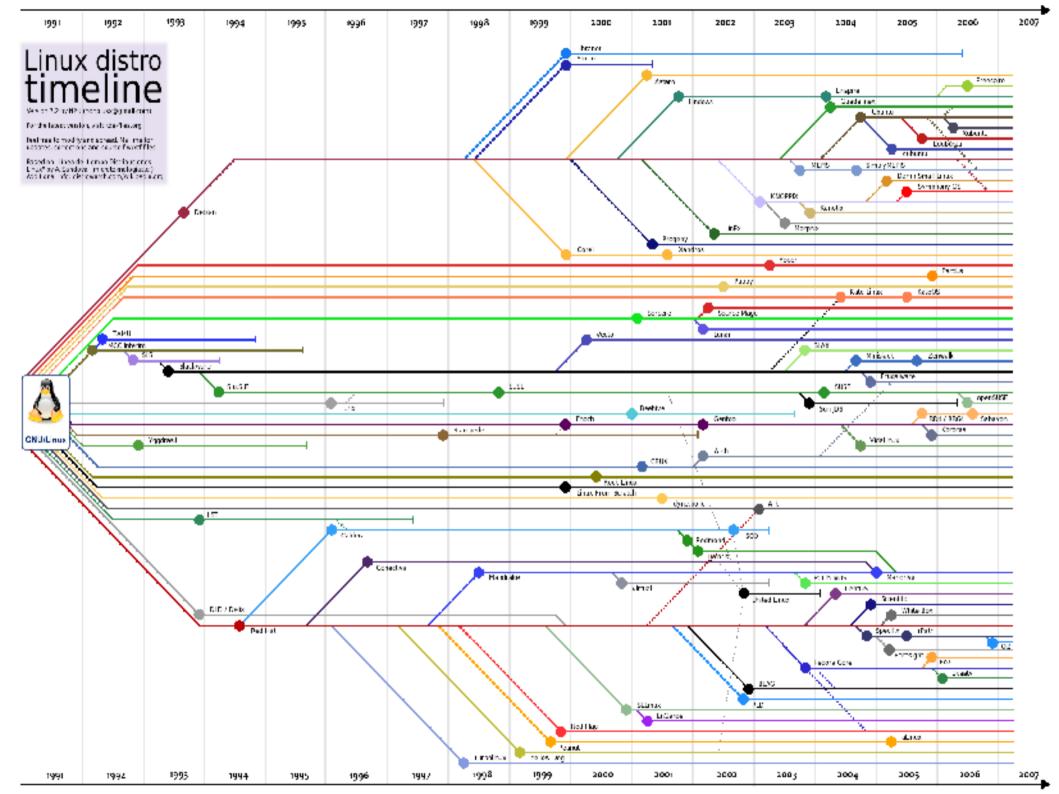
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Music and video. Plug trigotal EPP, Prd, MEX player; share playlers of thyour filterer; hay in the creative commons colling music stores, stream more valradio and content from the 200 and bug in more day bus with JEIP.

Diffice applications: work, processing, specially and processing and all he developed

# What is Linux?

- An operating system
  - Runs the computer and talks to hardware
- You don't have to learn Linux, but it helps
- An Open Source program
  - The most important open source project
  - Many different programs
  - Many people all around the world
- Many different distributions
  - All user the Linux Kernal
- Linux Kernal written by Linus Torvalds in 1991



### What is Ubuntu

- •Pronounced oo-boon- too
- The largest Distribution in the World
- •First forked in 2004, a branch of Debian
- Started by Mark Shuttleworth in 2004
- Debian was first started in 1993 by Ian Murdock
- Has most open source software anyone would need
  - Open Office
  - Games
  - Internet: Email, Browser, IM, etc
  - Many many more

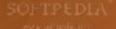


















# mythTV

Tue Jan 13 11:14 PM













# Ubuntu+Mythtv=Mythbuntu



- Mythbunto 9.04 Alpha 6.1 Is Here!
- Mythbuntu 9.04 Alpha 5. I inally available
- Mythbuntu.org goes over 1,000,000 unique visitors)
- Mythbuntu 9.04 Alpha 3. Released!
- Mythbuntu 9.04 Alpha 2. now available

more

### Mythbuntu 8,10 is now available!

Mythburitu 9.04 alpha 3 is now available!



My Lour to is an community supported acd-on on abunat beased upon salar grob a standaurie Myth Mibased (Mill system i tidar Leid sed to prepare a standator e system or for megration with an existing Myth M nelwork. Unlike sim an projects, Mythochic keeps blase lies voil. Ubuniu and all development is given pack to Upuntu. This architecture allows simple perwersions from a standard desidop to a Meinbuniu. maphine and wice versa. The development cycle of Myinbuniu blosely. to lows that of Ubuniu, releasing every six morths with Ubuniu releases.

### Related Projects









### Desktop

Mythill into legal 1 46F0F4 do aktir. All inner elea unverandam Union i apolica inno a cone. OperC fine: Exploting and a full Grown medical are normal aller for a Mythhautor If at any lime in ear swant ato, they man met all adjustes des Alego, Karbelota et e Alego, de verbelota et e Alego and addition the skill principal of the entertal of the This is then expect the Mother of the Culm Caire

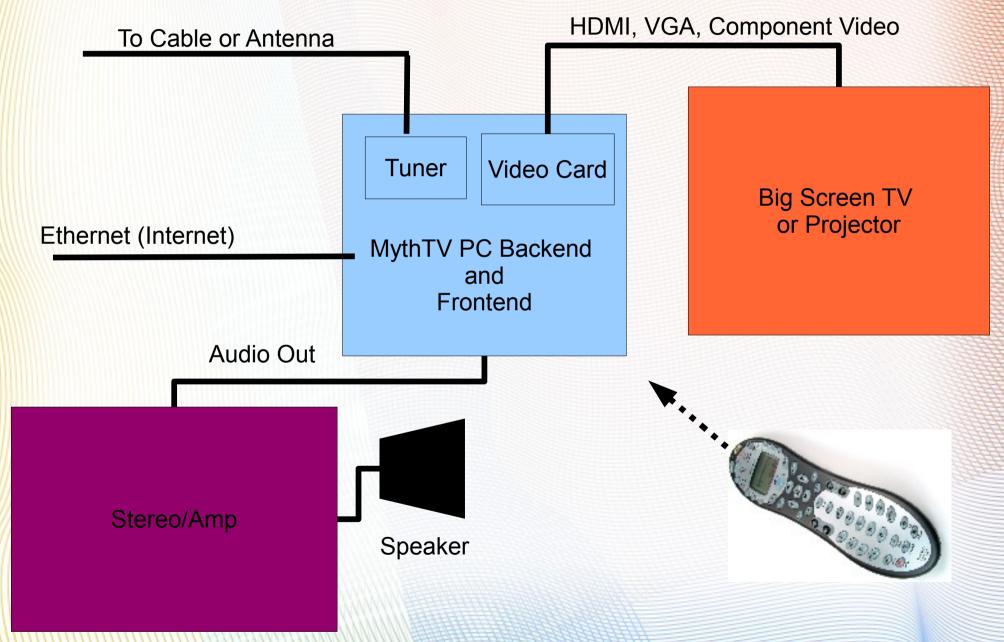


### Mythbuntu-Control-Centre

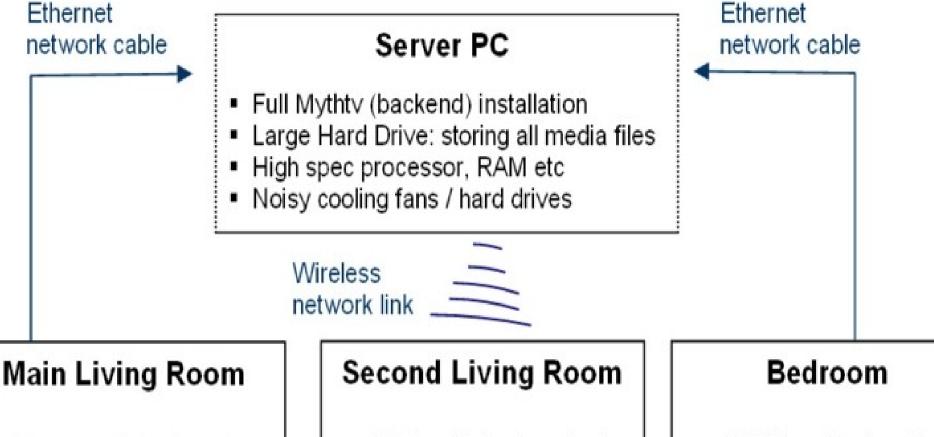


The Mythbuntu Confid Centre is a bustom GUI used to compute the system. From here you can select what kind of system (Dackend, Frontend, Doth) you want. You can also install different cesktops such. as third edeadop and bit introdes dop thistal Plucins cooligins.

# Single MythTV system



### Multiple front-end only systems accessing Myth-tv server



### Knoppmyth front-end only installation

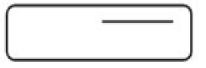
 PC with heatsinks and quiet cooling fans

127	

- Mini-myth front-end only installation, network boot
- Fanless mini-itx system

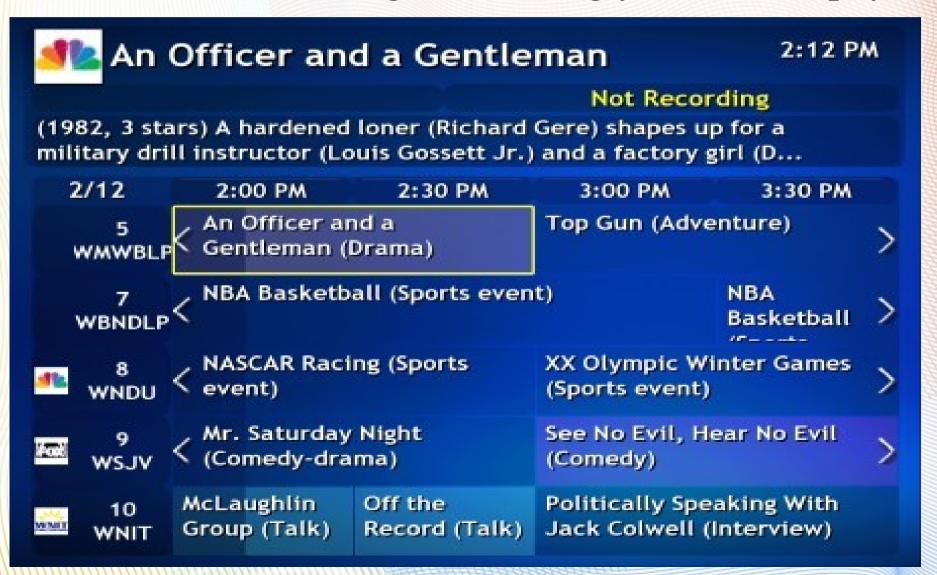
	`

 Full Linux Fedora Core with Myth-tv front-end only installation



# Schedules Direct

www.schedulesdirect.org, One thing you need to pay for.



# Hardware Configuration

### Putting it all together

- •TV signals
  - DTV Antenna
  - Cable very basic works fine < \$20/month
- High speed Internet access
  - FIOS, cable or DSL

# Screens

Buy or Build





## Screen Cont.





Goo systems
A real sceen that's
Painted on, it's a compete
System, but \$100 to \$300

Inexpensive way- Behr paint, silverscreen
The wall will need prep and primer

# Software Installation



## Database and Maintenance

- Mythtv Database is MySQL
- Make sure the username and password match MythTVs
- •All the data for what programs are available, have been and will be recorded are stored
- Also has all channel and configuration data
- •It's good to Know SQL
- Database Repair
- CleanUp
- Database repair can be on through the web site

# Support

- No one to call
- But, all the information you could want on-line Web Sites
- Google
- •mythbuntu.org
- Mythtv.org
- •Ubuntu.com
- Ubuntuforums.org
- Linuxtv.org
- •newegg.com
- •pcmag.com
- •extremetech.com
- •www.eggxpert.com/



