



# Getting it out: Advanced compression with Sorenson Squeeze and Media Composer

**Jeff I. Greenberg**

**Master Instructor - FMC Training**

**J Greenberg Consulting . com**



**JGreenberg Consulting**

**JGreenberg Consulting**



brightcove™

H.264

MPEG-4/AVC







Animation  
 Apple Intermediate Codec  
 Apple Pixlet Video  
 Apple ProRes 422  
 Apple ProRes 422 (HQ)  
 Apple VC H.263  
 Avid 1:1x  
 Avid DNxHD Codec  
 Avid DV  
 Avid DV100 Codec  
 Avid Meridien Compressed  
 Avid Meridien Uncompressed  
 Avid MPEG2 50 mbit  
 Avid Packed Codec  
 DV - PAL  
 ✓ DV/DVCPRO - NTSC  
 DVCPRO - PAL  
 DVCPRO HD 1080i50  
 DVCPRO HD 1080i60  
 DVCPRO HD 1080p25  
 DVCPRO HD 1080p30  
 DVCPRO HD 720p50  
 DVCPRO HD 720p60  
 DVCPRO50 - NTSC  
 DVCPRO50 - PAL  
 H.264  
 HDV 1080i50  
 HDV 1080i60  
 HDV 1080p24  
 HDV 1080p25  
 HDV 1080p30  
 HDV 720p24  
 HDV 720p25  
 HDV 720p30  
 HDV 720p50  
 HDV 720p60

JPEG 2000  
 MPEG IMX 525/60 (30 Mb/s)  
 MPEG IMX 525/60 (40 Mb/s)  
 MPEG IMX 525/60 (50 Mb/s)  
 MPEG IMX 625/50 (30 Mb/s)  
 MPEG IMX 625/50 (40 Mb/s)  
 MPEG IMX 625/50 (50 Mb/s)  
 MPEG-4 Video  
 None  
 Photo - JPEG  
 PNG  
 REDCODE  
 Uncompressed 10-bit 4:2:2  
 Uncompressed 8-bit 4:2:2  
 XDCAM EX 1080i50 (35 Mb/s VBR)  
 XDCAM EX 1080i60 (35 Mb/s VBR)  
 XDCAM EX 1080p24 (35 Mb/s VBR)  
 XDCAM EX 1080p25 (35 Mb/s VBR)  
 XDCAM EX 1080p30 (35 Mb/s VBR)  
 XDCAM EX 720p24 (35 Mb/s VBR)  
 XDCAM EX 720p25 (35 Mb/s VBR)  
 XDCAM EX 720p30 (35 Mb/s VBR)  
 XDCAM EX 720p50 (35 Mb/s VBR)  
 XDCAM EX 720p60 (35 Mb/s VBR)  
 XDCAM HD 1080i50 (35 Mb/s VBR)  
 XDCAM HD 1080i60 (35 Mb/s VBR)  
 XDCAM HD 1080p24 (35 Mb/s VBR)  
 XDCAM HD 1080p25 (35 Mb/s VBR)  
 XDCAM HD 1080p30 (35 Mb/s VBR)  
 XDCAM HD422 1080i50 (50 Mb/s)  
 XDCAM HD422 1080i60 (50 Mb/s)  
 XDCAM HD422 1080p24 (50 Mb/s)  
 XDCAM HD422 1080p25 (50 Mb/s)  
 XDCAM HD422 1080p30 (50 Mb/s)  
 XDCAM HD422 720p50 (50 Mb/s)  
 XDCAM HD422 720p60 (50 Mb/s)



# Session Overview

- **Avid Export**
- **Basic understand of compression**
- **Squeeze**



# Housekeeping

## HOUSEKEEPING

- **Ask anything you want!**
- **URL of Notes @ J Greenberg Consulting.com**
- **my email @ end**



# Survey



**What version of  
Squeeze do you have?**



**What's wrong  
with your video?**



# Cool Tip

# Avid Export

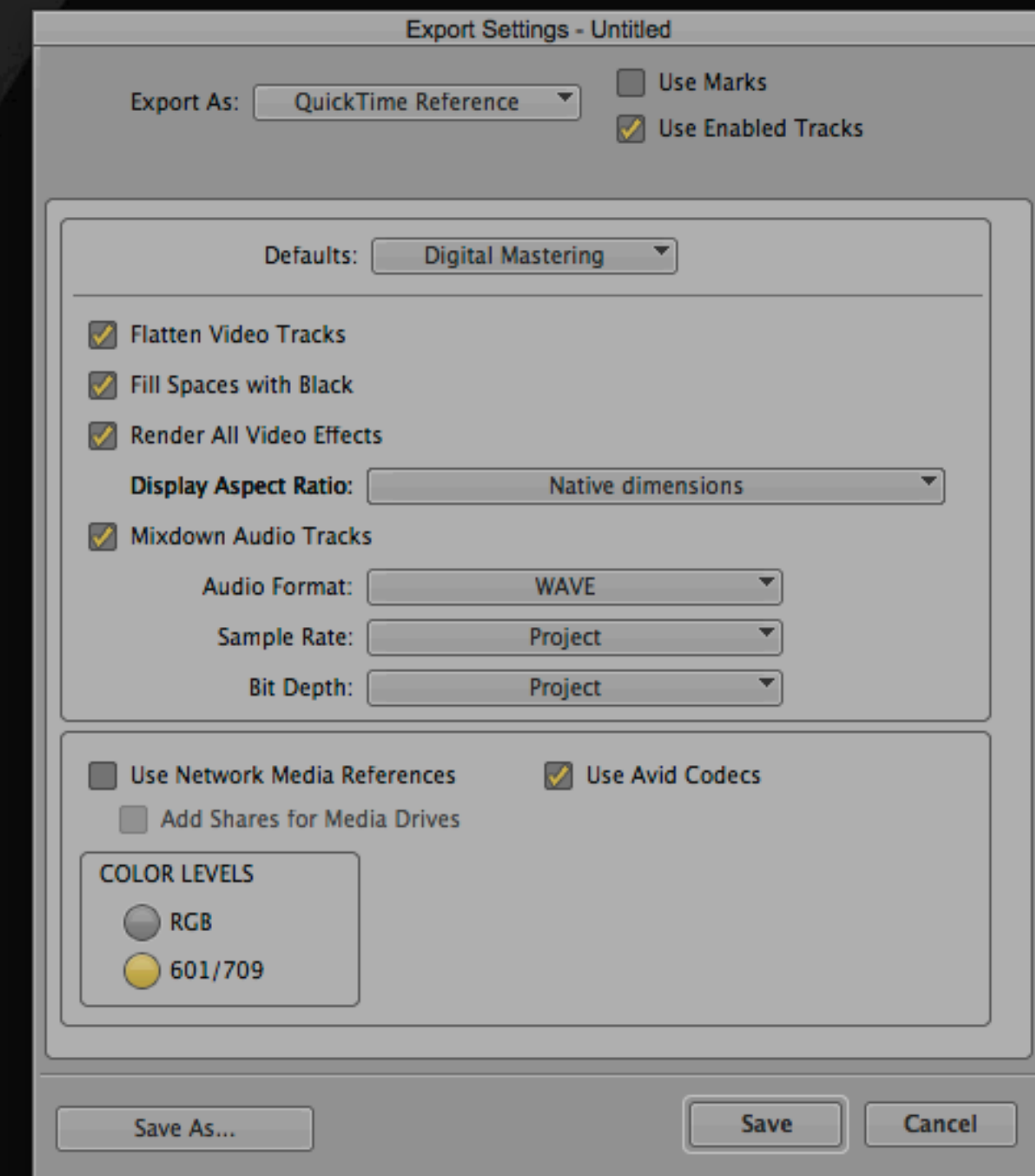


# Methods of export

- **Export Settings**
  - **QuickTime Movie/Same as Source**
  - **QuickTime Ref (digital mastering)**

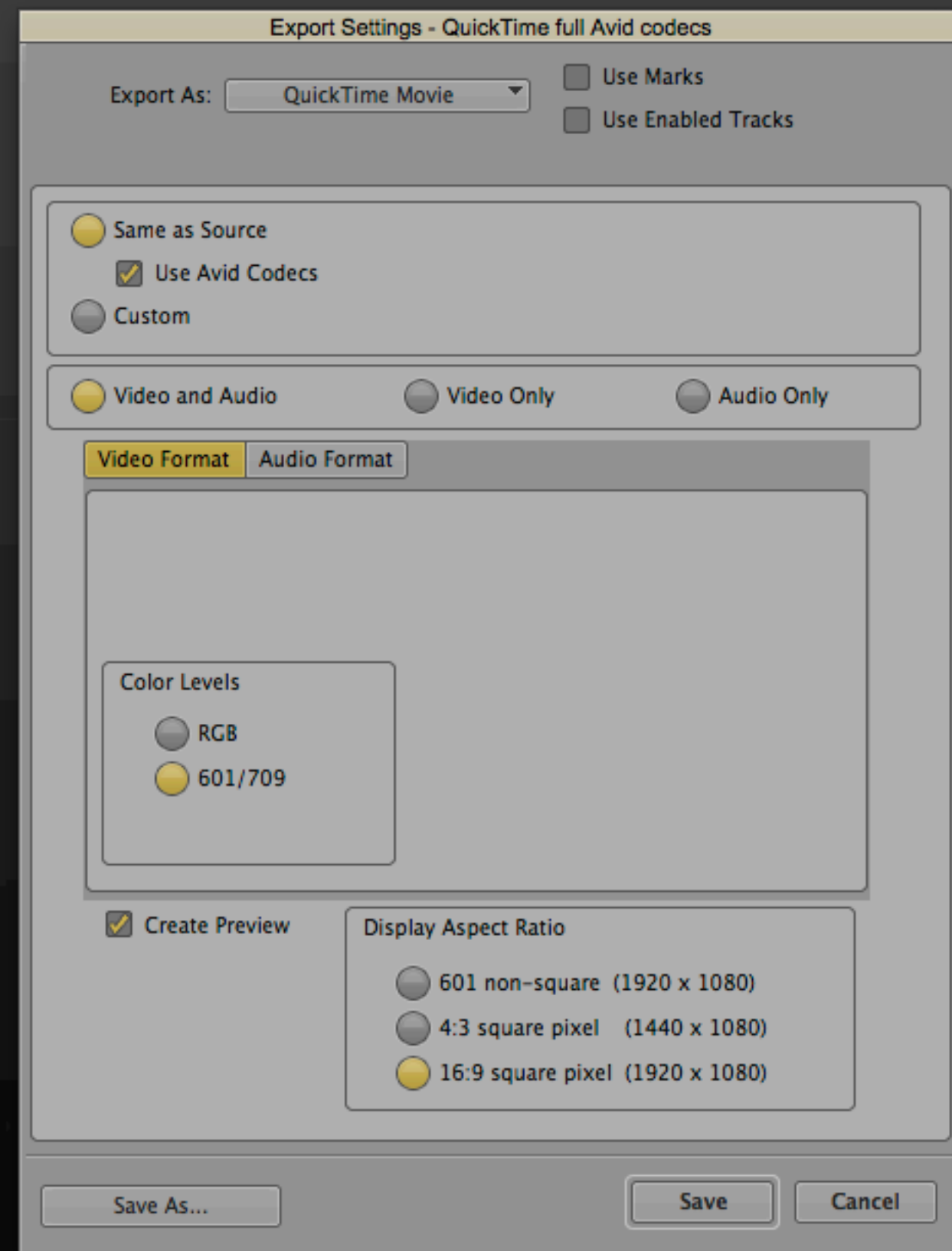
# QuickTime Ref

- **Use Marks/Enabled tracks**
- **Digital Mastering**
- **Mixdown audio**
- **601 color levels**
- **Save export preset**





# QTFull Export settings

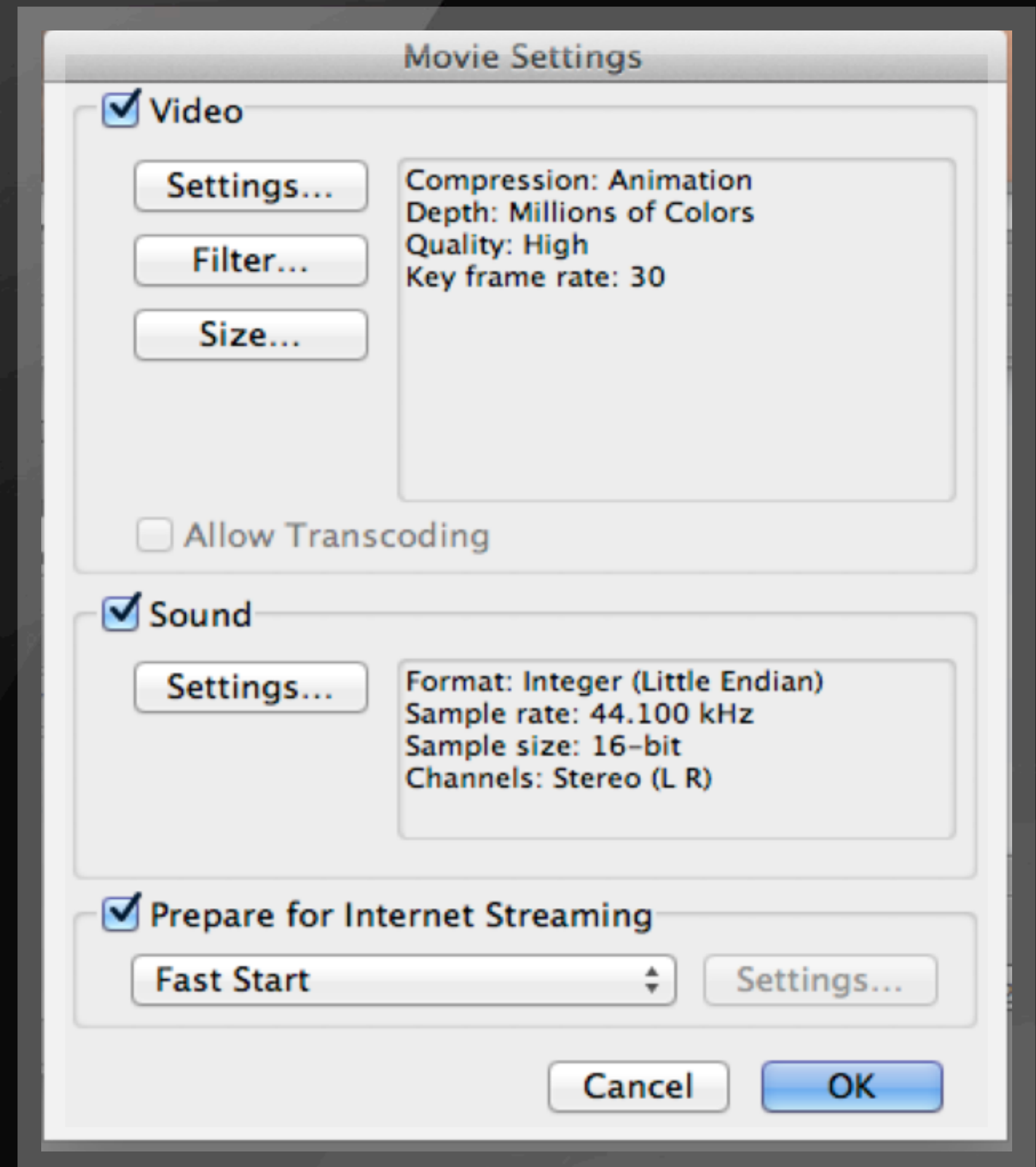


- **Mezzanine file/digital master**
- **Works great with Avid codecs**
- **601 space**
- **Save export preset**

# Mixing formats and frame rates?

Either use “Custom” (eeek)

Or use Squeeze to build a digital  
master via QuickTime Ref





# AMA complication

- **All AMA material must be transcoded by the end**
- **Pick larger (generally next largest data rate) DNxHD codec**
- **Consolidate/transcode sequence depending on codec type**

# **A little about compression**



# GIGO

# TETO



# Containers

# Architectures

- **QuickTime**
- **WMV**
- **Flash**
- **MPEG-4**
- **...think of them as buckets**

# Codec



# Encoding vs. transcoding

- **“Encoding” to a distribution codec**
- **“Transcoding” to a post codec**

# Post codecs

- **Every frame has all the information**
- **Large**
- **DNxHD, Animation, ProRes**

# Distribution codecs

- **Full frame of information, followed by just the changes**
- **Small**



# Camera codecs

- **Used to mostly like post codecs**
- **Smaller files are distribution**
- **Very hard for distribution codecs**

# **Basic Understanding of Data Rates**

# Understanding Data Rates

- **Measurement of how much data per second the video receives**
- **Larger is generally better**
- **Uh...oh....numbers**



**Math doesn't have  
to be scary**

# 4 numbers to understand

1

25

125

880

# 4 numbers to understand

1

25

480i SD  
Uncompressed  
**125** Megabits/sec  
1 min ~ 1 gig  
1 hr ~ 60 gigs

880



# 4 numbers to understand

1

Mini DV  
DV25

**25** Megabits/Sec

5 min ~ 1 gig

1 hr ~ 12 gig

480i SD  
Uncompressed  
125 Megabits/sec  
1 min ~ 1 gig  
1 hr ~ 60 gigs

880

# 4 numbers to understand

1

Mini DV  
DV25

25 Megabits/Sec

5 min ~ 1 gig

1 hr ~ 12 gig

480i SD

Uncompressed

125 Megabits/sec

1 min ~ 1 gig

1 hr ~ 60 gigs

**1080 HD**

**Uncompressed**

**880 Megabits/Sec**

**1 min ~6 gigs**

**1 hr ~ 600 gigs**

# 4 numbers to understand

**Youtube SD**

**640x360**

**1 megabits/sec**

**2 hrs ~ 1 gig**

**1hr ~ 500 megs**

**Mini DV**

**DV25**

**25 Megabits/Sec**

**5 min ~ 1 gig**

**1 hr ~ 12 gig**

**480i SD**

**Uncompressed**

**125 Megabits/sec**

**1 min ~ 1 gig**

**1 hr ~ 60 gigs**

**1080 HD**

**Uncompressed**

**880 Megabits/Sec**

**1 min ~6 gigs**

**1 hr ~ 600 gigs**



# 4 numbers to understand

Youtube SD

640x360

1 megabits/sec

2 hrs ~ 1 gig

1hr ~ 500 megs

Mini DV

DV/25

25 Megabits/Sec

5 min ~ 1 gig

1 hr ~ 12 gig

480i SD

Uncompressed

125 Megabits/sec

4 min ~ 1 gig

1 hr ~ 60 gigs

1080 HD

Uncompressed

880 Megabits/Sec

4 min ~ 5 gigs

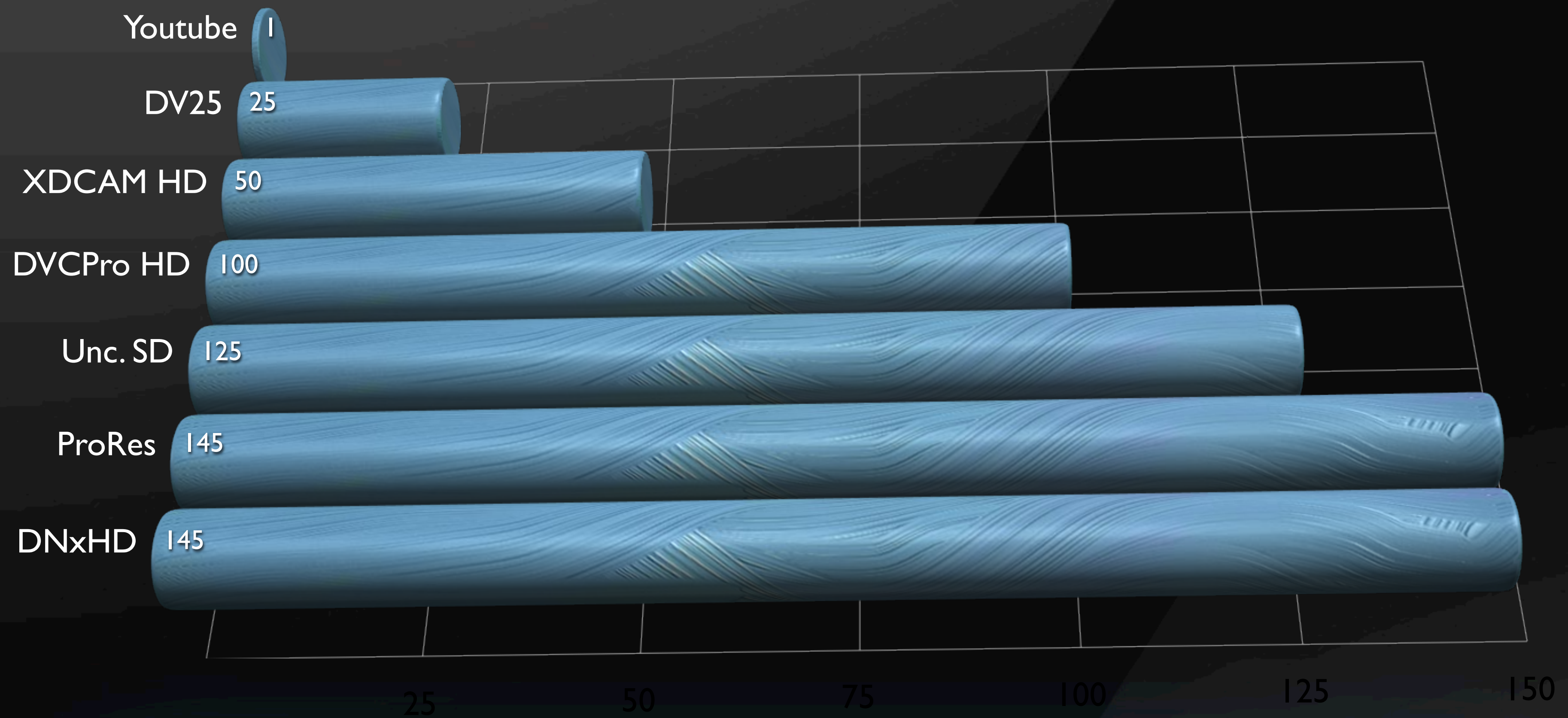
1 hr ~ 600 gigs

**Don't be scared by  
numbers**

dialup	0.058 Mb/s	
youtube	0.6	30:1
cable	4 Mb/s	
p-jpeg offline		30:1
15:1s		30:1
miniDV	25 Mb/s	5:1
HDV	25 Mb/s	30:1
Most DSLRs	17/45 Mb/s	
XDCam HD	25/35/50	
DVCPro 50	50 Mb/s	2.5:1
802.11g	54 Mb/s	
Ethernet	100 Mb/s	
AVC Intraframe	100 Mb/s	
DVCPro HD	100 Mb/s	6:1
UNC SD	125 Mb/s	1:1
ProRes	35/100/145/220/330 Mb/s	4:1 or less
FireWire	400/800 Mb/s	
DNxHD	145/220 Mb/s	4:1 or less
Red One	224/288/336	12:1 or less
UNC HD	880 Mb/s	1:1
Ethernet	1000 Mb/s	

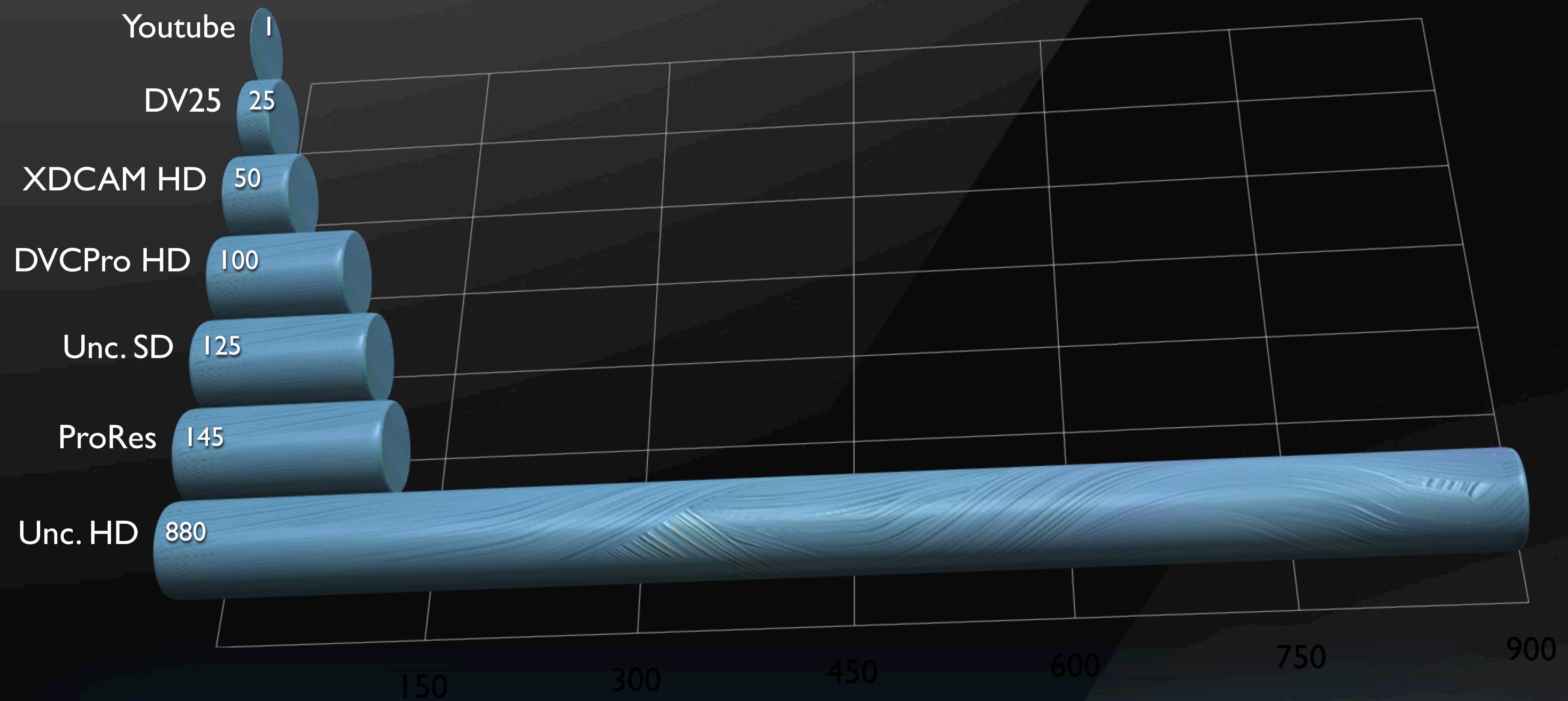


# Graphs mean more





# Unc. HD is huge



# 4 numbers to understand

1

25

125

880



# Common Deliverables

**Avid Mezzanine (sorta  
redundant, unless  
QuickTime ref)**

# Best to do in Squeeze



# **YouTube/Vimeo/Online hosting**

**Large h.264 that matches  
frame size/fps**

**Youtube allows DNxHD  
uploads**

# **Generic distributable (iPad, iPhone, Android)**



# **h.264 @ specific sizes/ rates/profiles**

# **What else is important?**

**DVD**  
**Blu Ray**  
**Online (self hosting)**  
**Flash**



# Squeeze

# Basic workflow

- **Import Video**
- **Add one/multiple compression setting**
- **Filters?**
- **Publish?**
- **Notifications?**

# Global/Source divider

- **“Above the line talent”**
- **Add to a source**
- **or add Globally**



# New Features

# CUDA

- **Has to do with the video card**
- **Most Avid “certified” hardware has this (some iMacs/MBP don’t)**
- **Make sure you have the latest drivers**

# Avid MXF

- **Can generate MXF files directly from Squeeze**
- **Great for online/offline workflows**



# Extra details

- **Needs to be manually moved to Avid MediaFiles/MXF/# folder**
- **Tape name is based on settings**
- **Import the AAF & the unassigned project name = imported project**

# Adaptive Streaming

- **Requires a server**
- **Multiple encodes + stub file = ‘adaptability’ of the stream**
  - **Microsoft Smooth Streaming**
  - **Apple HTTP Live Streaming**
  - **Adobe Flah Based Dynamic Streaming**

# 360 account

- **5 gigs/ 2 gig of bandwidth = free**
- **Embeddable**
- **Review & Approval (via email/sms)**



# Preset tricks

- **Formats vs. Workflows**
- **Favorite**
- **Exporting Preset**

# Examining Presets

- **Create custom**
- **adjust original or apply to ‘play’**
- **Import/export-able**

# Filters

- **Timecode**
- **watermark**
- **deinterlacing i material**
- **VNR**
- **Watermark**
- **VST compression?**



# Filtering SMART

- **Remember TETO?**
- **Add filter/adjust till happy**
- **Save filtering**
- **use on only 30 seconds to check with I/O in player**
- **View video full screen/2nd screen**

# Publishing

- **360 account**
- **Youtube**
- **FTP**
- **Amazon A3**
- **Local folders**

# Notifications

- **Email**
- **SMS**
- **Review/approval**



# Smarter Preerences

- **Custom output naming**
- **System performance**
- **Auto filtering**
- **GPU check**

# Watch Folders

- **Requires squeeze to be running**
- **QuickTime Full > Reference for networking**

# Other Tools



# 4 that you should have

- **VideoSpec**
- **MediaInfo**
- **MPEGStreamclip**
- **Handbrake**

# Closing thoughts

# Certified training?

- **Intense 2/3 8 hour days**
- **Small classes 2-6 people**
- **Taught by professionals**
- **Authorized Adobe/Apple/Avid**
- **BRAND NEW OFFICE in IRVINE!**



[FMCTraining.com](http://FMCTraining.com)



# Other sessions

## Wednesday

2:15 Digital Cinema Workflows in Avid

3:45 Scriptsync/Phrasefind

## Thursday

9 Adv. Compression in Avid with Squeeze

10:30 BCC Effects in Avid

Noon FCPX Mastering Magnetic Timeline

3:45 Adv. Color Correction in MC

## Friday

9 Practical Video Compression in a Post YouTube world

11:15 Adobe Premiere Pro Expert Tips

2:15 Media Composer Expert Tips

**Jeff @ J Greenberg Consulting . Com**

# Jeff @ J Greenberg Consulting . Com

## Master Trainer



CERTIFIED INSTRUCTOR



Certified Trainer

**Avid**®

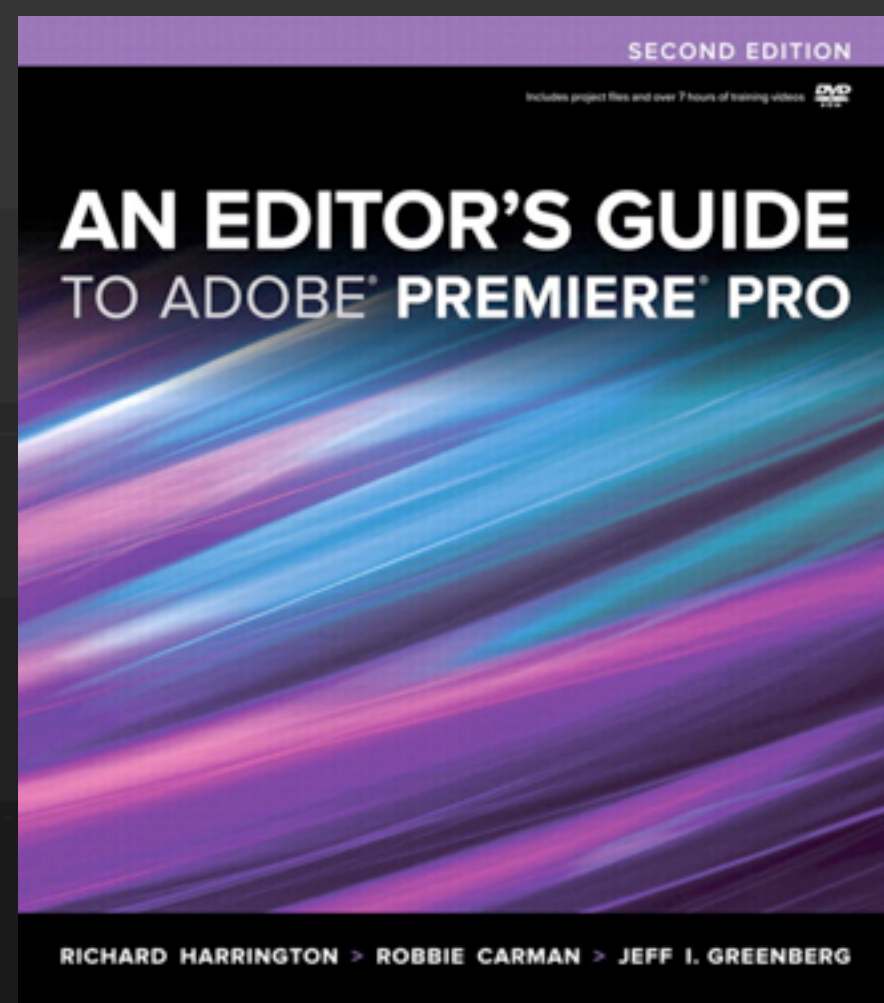
Certified  
Instructor



You **should** follow me on [twitter.com/filmgeek](https://twitter.com/filmgeek)



# Jeff @ J Greenberg Consulting . Com



Peachpit

Amazon.com

iBooks

Kindle

**macProVideo.com**

Comprehensive Media

Composer 6 Training

Premiere Pro and FCPX DSLR

workflow training

**Lynda.Com**

Compressor

Training

You should follow me on [twitter.com/filmgeek](https://twitter.com/filmgeek)



# Jeff @ J Greenberg Consulting . Com

Session Notes @ J Greenberg Consulting  
(along with my blog)

Yes, you can have me educate  
your group directly or talk at  
your event

You **should** follow me on [twitter.com/filmgeek](https://twitter.com/filmgeek)