# The Bright Side of Data Migration!

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migratelto {-D desk [-I identifier] [-N name]} [-x path] -d desk [-i identifier]
migratelto -h
Migrate from one LTO generation to another LTO generation.

-D one or more source desk's identifiers

-I one or more source cartridge's identifier

-N one or more source cartridge's name

-x path to script to execute

The data are read from the source desk, piped to the script, piped to writing onto the destination desk:
read | script | write

-d destination desk's identifier

-i destination cartridge's identifier

-n destination cartridge's name

:

# Data Migrations

#### 2014

 our internal archive from LTO-4 to LTO-6 (5.7 PB)

## 2014-[2019?]

• [...]

## [2019?]

our internal archive from LTO-6 to LTO-8

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Terminal—less - man openito

-D one or more source desk's identifiers

-I one or more source cartridge's identifier

-N one or more source cartridge's name

-x path to script to execute

The data are read from the source desk, piped to the script, piped to writing onto the destination desk:
 read | script | write

-d destination desk's identifier

-i destination cartridge's identifier

-n destination cartridge's name

-h display a help message

This function may also be used to copy files from one LTO cartridge to another, when data transformation is needed, even between the same LTO generation.

# read | script | write

## script to modify

- container
- codec
- both container and codec

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# #1: ProRes-born Content

## from:

ProRes stored inside QuickTime (.mov)

## to:

ProRes stored inside Matroska (.mkv)

# Examples

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# Update the Container

- → read file from source LTO
- → demultiplex file
  - ProRes 422, 10 bit [yuv422p10le]
  - ProRes 4444, 10 bit [yuv444p10le or yuva444p10le] or 12 bit [yuv444p12le]
- → multiplex file
- → write file to destination LTO

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**SMPTE RDD 36:2015** 

# SMPTE REGISTERED DISCLOSURE DOCUMENT

# Apple ProRes Bitstream Syntax and Decoding Process



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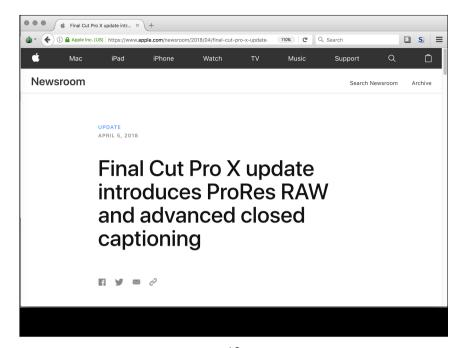
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# **Apple ProRes RAW**

White Paper April 2018



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# #2: Video

### from:

- AVI / 8-bit and 10-bit uncompressed
- MOV / 8-bit and 10-bit uncompressed
- MP4 / 8-bit and 10-bit uncompressed

### to:

Matroska / FFV1

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# Container and Codec

- → read file from source LTO
- → demultiplex file
- → decode file
  - Y'CBCR, 4:2:2, 8 bit, «raw» [uyvy422]
- → encode file
- → multiplex file
- → write file to destination LTO

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# #3: Old Experimentations

## from:

- AVI / HuffYUV
- AVI / FFV1 version 1

## to:

Matroska / FFV1 [version 3]

# Container and Codec

- → read file from source LTO
- → demultiplex file
- → decode file
  - Y'CBCR, 4:2:2, 10 bit, «raw» [yuv422p10le]
- → encode file
- → multiplex file
- → write file to destination LTO

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# #4: Mid Experimentations 1

## from:

- AVI / CineForm (VC-5) with Bayer
- MOV / CineForm (VC-5) with Bayer
- MOV / ProRes

### to:

- Matroska / FFV1 after de-mosaicking
- Matroska / ProRes

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# #5: Mid Experimentations 2

### from:

- AVI / CineForm (VC-5) with Bayer
- MOV / CineForm (VC-5) with Bayer
- MOV / ProRes

#### to:

- Matroska / FFV1 version 4 [with Bayer]
- Matroska / ProRes with 12-bit support

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# Reading

Reto Kromer: On the Bright Side of Data Migrations, in «IASA Journal», n. 49 (September 2018), IASA, p. 14–18

→ https://retokromer.ch/publications/ IASA\_49.html

# #6: New Experimentations

#### from:

- MXF / OpenEXR
- flavour of NUT / multispectral imaging
- flavour of NUT / RGB72 or Y'CBCR 24-bit
- flavour of NUT / expanded OpenEXR

### to:

 Matroska / FFV1 version 4 using RGB48, RGB72, floats and additional metadata

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