# How to Convert Blu-ray Discs for Audio File Playback

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## **Overview:**

This 'how to' will show how to convert a Blu-ray disc contents to file(s) that can be played back on computers and media players, with a focus on creating lossless surround files. This can also be applied to DVDV discs (as opposed to DVD-A disc).

Blu-ray and DVDs have copy protection/encryption and disc drives are very slow. Step 1 is to decrypt the disc and copy the video and audio streams to your hard disc for further processing from much faster hard drives.

Once we have decrypted the disc, we can then convert the audio to a file format that best suits how we wish to play the contents and device/software intended to use. Often this will be FLAC but there may be a requirement to keep the original codec, such as TrueHD/Atmos, so it can be decoded by an AVR during playback.

## **Requirements:**

You will need the following to decrypt your disc and copy to your hard drive:

- A Blu-ray drive in your PC or MAC
- MakeMKV software (free donationware)

MakeMKV can create a copy of the original disc's video and audio stream in a Matroska MKV video file format. MKV can be played back on most devices.

You will need the following to manipulate and tag your ripped disc:

This 'How To' will use Music Media Helper (MMH) to Extract Audio from your MKV file to audio files. MMH is free but currently runs on Windows only.

For MAC users, MKVToolNix (free) can be used to split the MKV video file to individual MKV song files or to create MKA (Matroska Audio files). I'll eventually cover this topic too.

## Step 1: Use MakeMKV to rip your disc to an MKV file:

Create a working folder on your computer for your project and then Run MakeMKV, which will load the disc contents after a decryption process.

MakeMKV will show the titles on your disc in a Treeview with nodes for each title showing the various video and audio streams in each title in the left pane:

MakeMKV BETA	-		×
Type       Description         >       □ Title       7 chapter(s), 8.1 GB         >       □ Title       1 chapter(s), 8.1 GB         >       □ Title       Lynyrd Skynyrd - Last Of The Street Survivor         >       Chapters         Video       Mpeg4 AVC High@L4.1         ~       □ Audio       DTS-HD MA Surround 5.1 English         □       Audio       LPCM Stereo English         □       □ Title       232.1 MB         □       □ Title       497.9 MB         □       □ Title       158.9 MB         □       □ Title       139.6 MB         □       □ Title       235.2 MB	Output folder         D:/Concerts/Lynyrd Skynyrd - Last Of The Street Survivors         Properties         Name       Lynyrd Skynyrd - Last Of The Street Survivors         Info         Title information         Name: Unyrd Skynyrd - Last Of The Street Survivors         Source file name: 00001.mpls         Duration: 1:38:10         Chapters count: 19         Size: 22.5 GB         Segment count: 1         Segment map: 3         File name: Lynyrd Skynyrd - Last Of The Street Survivors_t01.mkv	Make MKV Profile Default	
File 00021.m2ts was added as title #5 File 00022.m2ts was added as title #6 Title #00023.m2ts has length of 1 seconds which is less than minimum title length DEBUG: Code 233 at 7KejZ4pL8nTQK0fU3rnDL2bs:0 Operation successfully completed	of 40 seconds and was therefore skipped		<b>^</b>

You can work out which title contains the album (or concert) as it usually is the largest size (see the Title Information panel on right). Also opening the Chapters node on the left will show a list of the chapters which will closely match the number of songs listed for the disc (on your disc cover or label). Usually, for a concert the number of chapters is one or two more as concert discs often have an Intro chapter at beginning and a Credits at the end. Often there is a small 'stray' chapter at the end (less than a second or so).

Clicking on an Audio node displays more information about the audio stream highlighted in the right Title Information pane.

In the next figure the TrueHD audio node has been clicked on an Atmos release and the right panel shows 'Atmos'.

**NOTE:** For some audio codecs (DTS and TrueHD) there a sub-nodes displayed. These are the 'core' extension substreams. DTS-HDMA lossless contains a DTS lossy stream. TrueHD contains a Dolby Digital lossy stream.



Audio Streams: Without further processing, if you select all the audio streams, the Default audio stream remains as authored on the disc. That is, the audio stream that plays by default in your BD player is the same as on the rip. Many discs are authored with the stereo stream as the default. To change this, you can just select one stream (say, TrueHD/Atmos) or you can edit the MKV with multiple streams later in MMH or MKVToolNix (free) to define a new default stream.

For this exercise, just select a single title and the Audio streams you wish to copy into the MKV output file. In the above figure all the Audio streams are selected to retain an exact copy of the disc Title contents (for the first Title).

Select the Output folder (your working folder you created) and give the output a Name that is meaningful. To create the MKV file:

click: 'Make MKV' at top right.

MakeMKV goes ahead and copies the selected audio streams (and video and chapters) to the new decrypted MKV file in your selected working folder.

**NOTE:** If you have previously used MakeMKV or another disc ripping program to create a full backup of your disc, you can open the backup file ISO or its disc folder structure backup by running MakeMKV, then using the 'File' toolbar command, then 'Open Files' option to navigate to the ISO file or the 'index.bdmv' file in your disc folder.

## **Step 2: Deciding what File format you want to use for Multichannel Playback:**

At this point you have an MKV file containing both video and the selected audio streams that you can play on a computer or media player. MKV is a video format.

#### Haphazard File Navigation:

If you are a casual listener and just store your files in folders and navigate to an album folder and select files to play, then you can easily just go ahead and copy your MKV file to your music collection and play.

#### **Audio Library:**

Many users already have a dedicated collection of audio files by song that are tagged with artist and album information and disc cover art in an Audio Library. If you wish to play your blu-ray files as song files (one file per song) and tag them with metadata to have a consistent audio library experience I recommend splitting your MKV files into Chapter files in a format where you can tag.

This 'How To' will next show how you can easily Split and Extract an MKV audio stream to output types: FLAC, WAV, M4A (Mpeg audio file) and MKA (Matroska audio file):

- **FLAC**: Lossless, supported on all players, limited to 8 channels (7.1), Tagging widely supported.
- WAV: Same as FLAC. Disadvantage is files are much larger the FLAC.
- M4A: Lossless, supported on very few players (Kodi 19, Foobar with ffmpeg add-on), Can contain Atmos and DTS-HDMA streams, Tagging widely supported.
- **MKA**: Lossless, supported on most players, can contain Atmos and DTS-HDMA streams, Tagging not well supported.
- **CUE Files**: It's possible to create a CUE file which contains 'tag data' to play MKV and MKA files with 'tags' (a single CUE file per album appears as multiple tracks in your player with metadata).

Only M4A and MKA audio containers and MKV files can hold TrueHD/Atmos and DTS-HDMA/DTS:X streams. If you wish to play these codecs, as originally mixed, you must choose M4A or MKA output and you must use HDMI passthrough to your Atmos/DTS-HDMA capable AVR or Processor to decode.

#### **Playback Devices/Software:**

Most devices and media player software will play MKV files. But to decode Atmos you must use HDMI to passthrough to an AVR with Atmos decoder to get all channels and objects. Without this your player will play the TrueHD 8 channel 'core stream' only, with the height and extra channels and objects folded down into the mix.

When playing 8 channel streams (7.1) converted to FLAC, WAV, M4A, MKA etc on a 5.1 system your decoder will automatically combine sides and rear channels into a single pair. No audio is lost.

#### **Gapless Playback:**

Additionally, some albums are recorded with continuous music (no gaps between tracks: Abbey Road, Dark Side of the Moon come to mind). Ideally, you would want to play these in 'gapless' mode. Unfortunately, gapless playback depends on both output type and the player/device. You may need to experiment or ask for feedback online.

This is what we know: FLAC and WAV gapless is standard in most all players/devices. CUE files to MKV and MKA files not split into chapter files is usually gapless. M4A in Kodi 19 is gapless on some devices (Intel NUCs) but not others.

## Step 3: Use Music Media Helper to Extract Audio from new MKVs to wav or FLAC files:

From the MMH tool Launcher dialog:

Click: 'Extract Audio from MKV'

🤌 Music Media Helper Tools Launcher									
Preferences About Ch	eck For Updates								
Concert Video Tools									
Split & Rename Concerts	Split MKV video file into Chapters, Rename Concert Chapter files (lookup releases on Musi	:Brainz)							
Batch Split MKV Files	Batch Split multiple MKV files into Chapters (all at once - only MKVs already with Chapters)								
Scrape a Concert Folder	Scrape a single Concert Video folder to get Poster and Fanart and/or Create NFO files for	Kodi							
Edit Chapters in MKV	Create & Edit Chapters in a MKV or MKA files (titles & times). Create CUE. Change Default	Audio stre	eam						
Batch Creation Tools	Scrape, Create NFO or XML files or M3U Playlists for All Music Concerts/Video folders (all a	t once)							
Audio and Video Tools:									
Play List Editor	Create and Edit M3U Playlist files for both Audio and Music Video files								
Media File Manager	Create a List of all Media files from multiple Sources, Copy selected files to another disc et	c							
Rename/Tag Media Files	Rename files (Supports Copy & Paste from track list) and/or Tag from MusicBrainz. Create	CUE file.							
Merge MKV and FLAC files Merge MKV video and FLAC audio files to create new MKV files with FLAC default track									
Audio Tools:									
Extract Audio from MKV	Split MKV into chapters to create Audio files and Tag (lookup releases on MusicBrainz)								
Join or Split Audio	Join or Split WAV or FLAC files. Create CUE file.								
Resample	Resample Audio files (stereo or multichannel)								
Channel Volume	Edit Channel Volume (Gain) for Audio files (mono, stereo or multichannel FLAC or WAV)								
Remix Channel Layout	Edit Channel Layout, Add Silent Channel(s) to Quad (4.0 to 5.0 or 5.1), Remove Channels	, Invert P	hase						
Channel Delay	Edit Channel Alignment/Delay in multichannel files (FLAC, WAV or DSF)								
Channel Split & Merge	Split MCH files into Mono Channel files. Merge Mono files to create MCH files.								
Batch Audio Tools	View and/or Analyze & update ReplayGain; Update/Report Cover Art; Report Disc Art & I	)R							
Update Penteo Files	Batch Tag Penteo MCH FLACs. Copy Tags from input Wav files & rename. Add Quad silen	ch.							
Rename Audio Folders	Restructure Audio files from single: 'Artist - Album' folders to: 'Artist\Album' folders for Koo	di							
Version: 4.1.8		Exit							

The Extract Audio from MKV tool appears:

### **Functionality:**

This tool enables you to do the following:

Split an MKV or MKA file containing High Resolution Audio into lossless FLAC, M4A, WAV, MKV, MKA or MP4 files (multichannel and lossless DTS-HDMA, TrueHD and Atmos supported and any sample rate including 192/24 from BD ripped to MKV/MKA and DTS 96/24 from DVDV ripped to MKV/MKA)

- Automatically Rename and Tag the FLAC, M4A, WAV, MKV, MKA and MP4 output files based on Artist and Album lookup to MusicBrainz online database or copy and paste tracks form a copied list.
- For JRiver users, optionally create JRiver XML sidecar files to add tags for MKV files (if output is set to MKV)

If selecting a single MKV/MKA file it should contain chapters and at least one Audio stream. This tool automatically uses the only audio stream to extract to FLAC if the MKV contains just a single audio stream, otherwise the user is asked to select which audio stream to use to create the output files.

If you select MKV or MP4 as the output MMH copies both the video and all Audio streams to the output MKV or MP4 files, making the Selected Audio stream the default audio stream.

**HINT**: When you create an MKV or MKA from your Blu-ray, DVD or other source you can pre-select the audio track(s) to include in the MKV file in MakeMKV prior to using this tool.

Extract Audio from MKV/MKA dialog description:

Click 'Extract Audio from MKV' from the Launcher dialog.

This displays the Extract Audio from MKV Tool dialog:

🔊 Split MKV into chapters and Create Audio files				- 🗆 X
Preferences Edit Selected Tags				
Open MKV/MKA File Output: FLAC - Auc	lio Stream:	Status:		
Current Proposed New Na Title	Artist Album	Album Artist Year Genre C	Comment Album Tags:	
			Album Artist: Album: Releases:	Find
			Year: Genre: Comment: Tracks:	Genre
	ck Clear List Stop Proces			

**BEFORE** opening your input MKV or MKA file, **first select the Audio Output format** (FLAC, WAV, M4A, MKV, MKA or MP4) from the Output dropdown list at top left, the default is FLAC. NOTE: M4A is a MPEG container that can hold lossless audio codecs and be tagged and used in Kodi's Music Library and other media players.

You can then go ahead and select your input MKV (or MKA file) using the tool menu (highlighted above at top left):

Click: 'Open MKV/MKA File'

The next screen shot shows a File Selection dialogue used to select the MKV file:



MMH will pop up the 'Select Audio Stream' dialog, allow you to choose which audio stream to convert to your already selected Output format (FLAC or WAV) or stream to copy to M4A, MKV, MKA or MP4 output files:

Sele	Select Audio Stream												
	Double-Click to Select												
	Audio Stream	Channels											
•	Atmos (16Ch)/TrueHD (8Ch) 24/48kHz (Lossless)	Front: L C R, Side: L R, Back: L R, LFE											
	Dolby Digital (6Ch) 16/48kHz (Lossy)	Front: L C R, Side: L R, LFE											
	PCM (Stereo) 16/48kHz	Front: L R											
		Select Cancel											

Go ahead and *double-click* on the Audio Stream to select (or select and click: 'Select').

**NOTE:** If you select an Atmos stream its TrueHD 7.1 core lossless stream will be used for FLAC and WAV. If you select a DTS:X stream its core lossless DTS-HDMA stream will be used for FLAC and WAV. Atmos and DTS:X are object-based audio streams, FLAC is limited to 8 channels and furthermore, there is no direct relationship between 'objects' and 'channels'. You can playback Atmos or DTS:X in MKV, MP4 and M4A file as well as Matroska audio (MKA) files.

After selecting an MKV file, MMH processes the MKV, splitting into chapters and converting the selected audio track to FLAC or other output type selected. The output audio files are saved to the same folder as your source MKV file initially selected.

When completed the dialogue will contain all the chapters (output files) as seen in the next figure:

ð	Split MKV into chap	ters and Create Audio f	îles								-		$\times$
Pre	ferences Edit Se	elected Tags											
C	Open MKV/MKA File	Output: FLAC -	Using: Atmos	(16Ch)/Trueł									
	Current Filename	Proposed New Name	Title	Artist	Album	Album Art	Y	Ge	Comment	Album Tags:			
	Output-01.flac	01. Chapter 01	Chapter 01							Album Artist:	-	Find	
	Output-02.flac	02. Chapter 02	Chapter 02							Album			
	Output-03.flac	03. Chapter 03	Chapter 03										
	Output-04.flac	04. Chapter 04	Chapter 04							Keleases:			
	Output-05.flac	05. Chapter 05	Chapter 05										
	Output-06.flac	06. Chapter 06	Chapter 06										
	Output-07.flac	07. Chapter 07	Chapter 07										
	Output-08.flac	08. Chapter 08	Chapter 08										
	Output-09.flac	09. Chapter 09	Chapter 09							Year:		Genr	e
	Output-10.flac	10. Chapter 10	Chapter 10							Genre:			
	Output-11.flac	11. Chapter 11	Chapter 11										
	Output-12.flac	12. Chapter 12	Chapter 12							Comment:			
										Tracks:			
F	aste Track Titles list	from clipboard Rem	ove Track C						Rename & Tag				

Now we need to rename the files to their song titles and tag for use in our media player software.

Please see the sections that follow on methods to get the track names into this grid.

When you are happy with the file and tag data.

Click: 'Rename & Tag'

MMH will go ahead and rename the extracted audio files and tag with the appropriate data fields (either the values in the grid for song specific tag data or the 'Album Tags' text boxes and Track List (on right) for Album specific tag data.

**HINT**: If the folder that contains the source MKV file has a file named **folder.jpg** or **cover.jpg** (the album cover art saved from the Artwork download dialog or manually copied) MMH will tag each audio file with the cover art jpg automatically.

#### Tagging Tracks from Musicbrainz (online music database):

Once the MKV conversion to FLAC files is completed, you can now search for the album details by manually entering the Album Artist and Album text boxes (if they have not already been added) and click: 'Find' to get do a search for the album on the MusicBrainz online music database server.

**NOTE:** Please ensure you have the EXACT artist and album names. In MMH 4.0.11 the album name search was changed to a 'fuzzy search' so album names don't have to be an exact match, example: 'Division Bell' vs. 'The Division Bell'.

**NOTE:** If there is more than one matching 'Album Artist' name found in the Musicbrainz database, MMH will ask you to select the correct artist from the Album Artist dropdown list. Once selected, MMH will then search for your entered Album Name by the Album Artist chosen.

If you enter valid names the 'Releases' list will be populated with all known releases. Click on any release to see its track names.

If the selected release (from the Releases list) contains multiple discs, MMH displays a Disc list on the left. Selecting a Disc updates the Track List to the selected disc. If a single disc release the Disc list is not displayed.

Artist, Album, Year, Genre and Comment values from the text boxes are used for tagging the audio files.

The next screenshot shows the Extract Audio from MKV dialogue after a MusicBrainz search has located the album. The selected Release is populated into the grid views tag fields after the 4<sup>th</sup> disc in the release is selected from the 'Discs list' at bottom right (The selected release is a 4 disc set):

J	Split MKV into chap	ters and Create Audio f	îles									— I	⊐ ×
Pre	ferences Edit Se	elected Tags											
	Open MKV/MKA File Output: FLAC - Using: Atmos (16Ch)/TrueHD (8Ch) 24/48kHz (Lossless)												
	Current Filename	Proposed New Name	Title	Artist	Album	Album Art	Y	Ge	Comment	Album Tags:			
	Output-01.flac	01. Guns in the…	Guns in the…	INXS	Kick	INXS	1_	Alt.		Album Artist:	INXS		Find
	Output-02.flac	02. New Sensation	New Sensation	INXS	Kick	INXS	1	Alt.		Album	Vick		
	Output-03.flac	03. Devil Inside	Devil Inside	INXS	Kick	INXS	1	Alt.		Album.	NUK		
	Output-04.flac	04. Need You Ton_	Need You Ton	INXS	Kick	INXS	1	Alt_		Releases:	Kick	2017 LP	
	Output-05.flac	05. Mediate	Mediate	INXS	Kick	INXS	1	Alt.			Kick	N/A CD	
	Output-06.flac	06. The Loved One	The Loved One	INXS	Kick	INXS	1_	Alt_			Kick 30	1987 3xDigit	al Medi
	Output-07.flac	07. Wild Life	Wild Life	INXS	Kick	INXS	1	Alt_			K1CK 30	2017 3XCD B1	u-ray
	Output-08.flac	08. Never Tear U_	Never Tear U_	INXS	Kick	INXS	1	Alt_					
	Output-09.flac	09. Mystify	Mystify	INXS	Kick	INXS	1_	Alt_		Year:	1987		Genre
	Output-10.flac	10. Kick	Kick	INXS	Kick	INXS	1_	Alt_		Conrol	Alternative Rede		
	Output-11.flac	11. Calling All_	Calling All	INXS	Kick	INXS	1_	Alt_		Genre:	Alternative Rock		
•	Output-12.flac	12. Tiny Daggers	Tiny Daggers	INXS	Kick	INXS	1	Alt_		Comment:			
										Tracks:	Guns in the Sky		
										Discs:	New Sensation		
										2 CD 🔺	Devil Inside		
										3 CD	Need You Tonight		
										4 Blu-ray	Mediate		
											wild Life		
											Never Tear Us Apart		
											Mystify		
											Kick		
												0-1.41	
F	aste Track Titles list	from clipboard Rem	ove Track Cl						Rename & Tag		Copy Track Titles to Edit	Get Alb	um Artwork

#### **Copying all the Track Titles from the clipboard:**

Sometimes the Musicbrainz lookup won't find the release (maybe it doesn't yet exist in the database or you search names entered aren't a close enough match to find the entry). In this case you can copy a list of track name from a text list.

If you do not already have a list of all the titles that you can copy, use your favourite web browser, search for your Concert or Album in Google, find a web page that lists the songs, select all the list text and 'copy' (CTRL-C) to your clipboard.

The next figure shows a webpage from Discogs where a mouse was dragged over the track list (ready to copy):





#### The Beatles – Abbey Road

Genre:	Rock
Style:	Pop Rock
Year:	1969
Notes:	Released originally in 1969, the 2019 50 years anniversary editions have the same basic artwork but contain a remix/remaster of the album and the arrangements do differ from the original album.

More Images

#### Tracklist

Come Together	4.21
Something	3.03
Maxwell's Silver Hammer	3.27
Dhl Darling	3.27
Detopus's Garden	2:51
Want You (She's So Heavy)	7:47
Here Comes The Sun	3.05
Because	2:46
You Never Give Me Your Money	4:02
Sun King	2:27
Mean Mr. Mustard	1:06
Polythene Pam	1:13
She Came in Through The Bathroom Window	1:57
Golden Slumbers	1:32
Carry That Weight	1:37
The End	2:20
Her Majesty	0:23

After highlighting (selecting) the track list press CTRL-C to copy the selected text to your clipboard

**NOTE:** If you do have the titles already in a file then open the file, select all the track list text and 'copy' (CTRL-C) to your clipboard.

**HINT:** Sometimes the published concert Track List does not include the introduction chapter or the credits chapter, so sometimes the number of chapters (hence the number of chapter files) is not the same as the number of track list songs. In this case you may wish to first copy your clipboard selection to a temporary text file and manually add an intro at the beginning and/or credit at the end. You can remove the first and/or last chapters from the Rename dialog's list by selecting the file and clicking 'Remove'. Once you have your updated Track List copy that to your clipboard and you are ready to continue.

Now click: 'Paste from clipboard' command in the main MMH dialog:

This pops up the MMH Track Editor:



Click: 'Paste Track Titles from Clipboard' (top toolbar above)

The text copied from Discogs webpage is pasted to the Track Text Editor, but it includes the track lengths:



To remove the track lengths, use the Track Text Editor's Remove menu option 'Remove Trailing Numbers' as shown above. This removes the unwanted trailing numbers:



Click: 'Copy Tracks' to update the titles and proposed new file names on the main MMH dialog grid.

#### **Edit Grid Data manually:**

You can edit any cell in the grid at any time or do a multi-column (bulk) edit and change all the values of all the selected rows with a single edit.

#### To do a multi-column edit (bulk edit):

First select the rows you wish to edit (clicking on a row select that single row), CTRL + A key selects all rows, holding the CTRL key down while clicking rows selects the rows clicked. CTL + SHIFT after selecting a single row selects all rows from the first row selected to the last and every row in between. (typical Windows selection methods)

Click: Edit Selected Tags from the tool

MMH pops up the Multi Edit tags dialog:

In the next figure CTRL-A was used to select all the rows (tracks). MMH shows every column that is editable and checked the current values of each column's cells for every selected row.

If all the values for the column are identical MMH displays that value.

If all the values for the column are NOT identical MMH displays '[multiple values]' and then loads the unique values into a drop-down list. You can easily open the drop-down list to see the different values currently in that column. You can either enter a new value or select one of the existing values to use for all rows.

The figure below shows an example where two columns display '[multiple values]' (Title and Year) with their values in drop-down lists. Each of the other columns have the same values shown in text boxes. The Year has its drop-down

list open displaying the two values in the Year column of the grid (values 1973 and empty). You can select '1973' and the value of the drop-down list will show 1973 (replacing [multiple values]).

Bulk Edit (Editing 10 of 10 files)											
Artist	The Rolling Stones										
Title	[multiple values] -										
Album	Goats Head Soup										
AlbumArtist	The Rolling Stones										
Year	[multiple values]										
Genre	1973										
Comment											
	Save Can	cel									

The next figure shows the grid behind the Multi Edit dialog so you can see the Year column with one track with no year value:

Edit Selected Tags												F
	Artist		Title			Album	Albu	m Artist		Year	Genre	C
	The Roll:	ing Ston	Dancing	With Mr. D.		Goats Head Soup	The	Rolling	Stones	1973	Rock	
	The Rolls	ing ston	100 Vear			Coate Mead Cour	Tha	Polling	Stones	1973	Rock	
	The R 🎴	Bulk Edit	Editing 10 of 10 files)					×	Stones	1973	Rock	
) (Heartbreaker)	The R	Artist		The Delling Stopes					Stones	1973	Rock	
	The R	Arust		The Rolling Stones					Stones	1973	Rock	
	The R	Title		[multiple values]			-		Stones	1973	Rock	
	The R	Album		Goats Head Soun					Stones	1973	Rock	
	The R	Album							Stones	1973	Rock	
usic	The R	AlbumArtis	t	The Rolling Stones					Stones	1973	Rock	
	The R	Year		[multiple values]			-		Stones		Rock	
		Genre Comment		Rock								
						Save	Can	cel				ļ

To save the dialog data to every column of every selected row in the grid: Click 'Save'

**NOTE:** MMH never saves to any column if its dialog column value is '[multiple values]'. The original values remain in the grid.

For all other values: For each column, its value for every selected row is updated to the value in this dialog for its column.

In the example above: The Artist textbox value is saved to the Artist column in the grid. No data is saved to the Title column in the grid.

When you are happy with the file name and tag metadata data using one of the methods just described:

Click: 'Rename & Tag'

MMH will go ahead and rename the extracted audio files and tag with the appropriate data fields (either the values in the grid for song specific tag data or the 'Album Tags' text boxes and Track List (on right) for Album specific tag data.

**HINT**: If the folder that contains the source MKV file has a file named **folder.jpg** or **cover.jpg** (the album cover art saved from the Artwork download dialog or manually copied) MMH will tag each audio file with the cover art jpg automatically.

#### Tagging Album Cover Art from Fanart.tv (online artwork database):

After searching the Musicbrainz database for tags a new feature introduced in MMH 3.8.2 that allows users to find and download album art images from the Fanart.tv website.

**Click: Show Artwork** 

This pops out the MMH Album artwork gallery. MMH will always attempt to download all cover art and disc art on the Fanart.tv website for the release selected in the Release list box from the Musicbrainz lookup:



To save any album artwork to the current working folder (with FLACs): *Double-Click* on the art image.

After closing this Artwork dialog:

You can manually edit the file grid and change the proposed file names and tags.

## **Playback Software Discussion/Recommendations:**

This section will discuss various methods to best get your audio files into audio libraries for Kodi and JRiver (initially).

Kodi 19: I recommend FLAC for everything except Atmos streams, where I use M4A files as they can be tagged easily and appear in the Kodi audio library just like any other audio file.

Kodi 18 and earlier: I recommend FLAC for everything except Atmos streams, where I used MKA files. Kodi can't read MKA tags so create a CUE file for your MKA files after creation and renaming.

**JRiver (Audio library):** I recommend FLAC for everything except Atmos streams, where I'd recommend MKA files. JRiver can't read MKA tags so create XML sidecar files or a CUE file for your MKA files after creation and renaming. Use a single MKV or MKA file with chapters with a CUE file for gapless playback.

JRiver (Video Library): Use a single MKV file a CUE file for gapless playback.

**Foobar2000:** I recommend FLAC for everything except Atmos streams, where I use M4A files as they can be tagged easily and appear with metadata just like any other audio file played in Foobar.

VLC: I recommend FLAC for everything except Atmos streams, where I'd use MKA files.

Using a Blu-ray Player (Oppo etc): TBA – I need some feedback from users please?

#### **TO DO: Complete these topics:**

Setting up Foobar2000 to play MKA and m4A audio files.

## **Original MKV file without splitting into separate song/chapter files using a CUE file:**

For gapless playback in most media software players you can use an MKV file with chapters (the original MKV created in MakeMKV) with a CUE file generated my Music Media Helper. Refer to the first post in this thread:

https://www.quadraphonicquad.com/forums/threads/mmh-how-to-create-cue-files-for-mkv-files.30206/

## Using MKVToolNix to create MKA files on Apple MAC OS:

On MAC OS (and Windows) you can use MKVToolNix to split an MKV file created with MakeMKV in Step 1 of this 'How To' to create MKA (Matroska Audio files) that can be played back in VLC and other media plyer software.

Get MKVToolNix from: https://mkvtoolnix.download/downloads.html

Choose your Operating System and install.

Run: mkvtoolnix-gui.exe

The main window looks like this after using command 'Add Source Files' at the bottom of the dialog and selecting an MKV file created by MakeMKV:

	JI Multiplexer Window Help The Beatles - Abbey Road.mkv 🙁													
Header editor Header editor Chapter editor	Input Output Attachments Source files: File name File name Tracks, chapters and tags: Codec AVC/H.264/MPEG-4p10 PCM DTS-HD Master Audio TrueHD Atmos Ac-3 TrueHD Atmos Ac-3 TrueHD Atmos	t00.mkv Type Type Type Type Type Type Type Type	Copy iten	Container Matroska en en en en en	Name Stereo Surround 5.1 Surround 5.1 Surround 7.1 Surround 5.1	File size [ 12.4 GiB [ 0 1 2 3 4 5	Directory Default track 2 No 2 No 2 No 2 No 2 No 2 No 2 No 2 No	Forced Properties No 1920x 1080 pixels No 96000 Hz, 2 channels, 24 bi No 48000 Hz, 6 channels No 48000 Hz, 8 channels, 24 bi No 48000 Hz, 8 channels	P₁ > ts ts ts	roperties: General options Copy this item: Track name: Language: "Default track" flag: "Forced display" flag: "Hearing impaired" flag: "Visual impaired" flag: "Text descriptions" flag: "Original language" flag: "Commentary" flag: Compression: Tags: Timestamps and default of Delay (in ms):	Yes Surround 7.1 English (en) Determine automatical No No No No No No Determine automatical furthered for the second seco	y v v v v v		
	Destination file Destination file: D:\Audio Surround	d∖The Beatles - ,	Abbey Road	d\The Beatles	- Abbey Road.n	nkv iiles 🔻 💽 s to execute:	) Start multipl 0 automatic	lexing 💌 🖘 Add to job queue 🔍 , 0 manual, 0 running [ 🗼 0 warnin	- ngs (	▼ 0 errors Progress:	0%	3	20%	

Initially, the dialog displays all the video and audio streams and their properties. On the right you can set an audio stream as the new default stream. There is no need to set a default audio stream if you select only one audio stream.

To create an MKA, simply deselect all video streams and select the audio stream you want in the output MKA file(s) as shown in the next figure.

MKVToolNix	x GUI v56.1.0 ('My Friend') 64-bit								-		>
	I Multiplexer Window Help										
•	The Beatles - Abbey Road.mka 🗵										
lexer	Input Output Attachments										
	Source files:							Properties:			
/	File name			Container		File size Directory		General options			^
	🗒 The Beatles - Abbey Road_t	t00.mkv	i i	Matroska		12.4 GiB D:\Audio Sur	ound\The Beatles - Abbey Road	General options			
reditor								Copy this item:	Yes	~	
/								Track name:	Surround 7.1	~	
er editor								Language:	English (en)	1	
	<						>	"Default track" flag:	Determine automatically	~	
queue	Tracks, chapters and tags:							"Encod display" flags	Ne		
	Codec	Туре	Copy item	Language	Name	ID Default track	Forced Properties	Forced display flag:	INU	-	
outout	AVC/H.264/MPEG-4p10	👑 Video	Ø No	en		0 🥝 No	Ø No 1920x1080 pixels	"Hearing impaired" flag:	No	$\sim$	
output	PCM	Audio	🖉 No	en	Stereo	1 🥝 No	🤣 No 96000 Hz, 2 channels, 24 bits	"Visual impaired" flag:	No	$\sim$	
	DTS-HD Master Audio	Audio	🧭 No	en	Surround 5.1	2 🧭 No	🧭 No 96000 Hz, 6 channels, 24 bits	"Text descriptions" flag:	No	$\sim$	
		Audio	Ø No	en	Surround 5.1	3 🧭 No	No 48000 Hz, 6 channels	"Original language" flag:	No	$\sim$	
	TrueHD Atmos	Audio	V Yes	en	Surround 7.1	4 🥝 No	Ø No 48000 Hz, 8 channels, 24 bits	"Commentany" flags	No	~	
	AC-3	Chapterr	Var	en	Surround 5.1	5 🥑 No	No 48000 Hz, 6 channels	Commentary mag.		-	
	<ul> <li>If entities</li> </ul>		• 165					Compression:	Determine automatically	~	
								Tags:			
								Timestamps and default	duration		
								Delay (in ms):			
	<						>				~
	Destination file										
	Destination file: D:\Audio Surround	\The Beatles - /	Abbey Road	The Beatles	- Abbey Road.n	nka			8		
				•	+ Add source f	iles 🔻 🕑 Start multip	lexing 🔻 🕄 Add to job queue 🔻				
					Job	is to execute: 0 automat	ic, 0 manual, 0 running 🛛 🕭 0 warnin	gs 🔀 1 error 🛛 Progress:	0%	100%	Ň

If you click: 'Start Multiplexing' now, you will get a new MKA file containing all the chapters (since the '17 Chapter entries' checkbox is enabled).

To Split the input MKV into multiple output files by Chapter (Song):

Click: 'Output' tab near the top left of the dialog

#### You will now see this Output screen:

MKVToolNix G	x GUI v56.1.0 ('My Friend') 64-bit	- 🗆 X
Multiplexer		
	General	File/Segment linking
	File title: The Beatles - Abbey Road	Segment UIDs:
Header editor	Global tags:	Previous segment UID:
	Segment info:	Next segment UID:
Chapter editor	Splitting	Chapters
	Split mode: V	Chapter file:
101	Chapter numbers: all 💿 🗸	DVD title number: 1
Job output	Maximum number of files: Unlimited	Language: Undetermined (und)
	Link files	Character set:
	Miscellaneous	Cue name format:
	Create WebM compliant file	Delay (in ms):
	Additional options:	Stretch by:
		Generating chapters: V
		Name template: Chapter < NUM>
		Interval:
	Destination file	
	Destination me: D. vaudo Surround (me beaues - Abbey Road (me beaues - Abbey Road.mka	
	🚽 Add source files 💌 🕑 Start mu	Itiplexing 🔽 🕄 Add to job queue 💌
	Jobs to execute: 0 autom	atic, 0 manual, 0 running 膨 0 warnings 🖬 0 errors Progress: 0% 100% 🌿

In the 'Splitting' panel select (centre left):

Chapter numbers: Enter the text 'all'

Now click: 'Start Multiplexing'

#### MKVToolNix processes the multiplexing command and creates a new MKA file for every chapter:

-   🛃 🚽	Play D:\Audio Surround\The Beatles	- Abbey Road			_		$\times$
File Home Share View V	/ideo Tools						^ ?
Pin to Quick Copy access	t Move Copy to ~ Lo ~	New item • Easy access • Propertie	Edit	Select all Select none Invert selection			
Clipboard	Organise	New	Open	Select			
← → 👻 ↑ 📙 « Local Disk (D:) → A	Audio Surround > The Beatles - Abbey Road	v Ö 🗸	Search The Beatles	- Abbey Road			
🗸 🛄 This PC	Name	Date	Туре	Size	Length		
> 🧊 3D Objects	The Beatles - Abbey Road-001.mka	19/04/2021 3:50 PM	MKA File	410,366 KB	00:04:20		
> Desktop	The Beatles - Abbey Road-002.mka	19/04/2021 3:50 PM	MKA File	316,351 KB	00:03:02		
> 🖹 Documents	The Beatles - Abbey Road-003.mka	19/04/2021 3:50 PM	MKA File	335,159 KB	00:03:28		
	The Beatles - Abbey Road-004.mka	19/04/2021 3:50 PM	MKA File	360,158 KB	00:03:27		
	The Beatles - Abbey Road-005.mka	19/04/2021 3:50 PM	MKA File	287,424 KB	00:02:50		
> J Music	The Beatles - Abbey Road-006.mka	19/04/2021 3:50 PM	MKA File	813,186 KB	00:07:47		
> 📰 Pictures	The Beatles - Abbey Road-007.mka	19/04/2021 3:51 PM	MKA File	326,385 KB	00:03:05		
> 📑 Videos	The Beatles - Abbey Road-008.mka	19/04/2021 3:51 PM	MKA File	264,469 KB	00:02:45		
> 🏪 Local Disk (C:)	The Beatles - Abbey Road-009.mka	19/04/2021 3:51 PM	MKA File	373,774 KB	00:04:02		
🗸 📥 Local Disk (D:)	The Beatles - Abbey Road-010.mka	19/04/2021 3:51 PM	MKA File	229,799 KB	00:02:26		
> Audio (Penteo UM)	The Beatles - Abbey Road-011.mka	19/04/2021 3:51 PM	MKA File	115,307 KB	00:01:06		
Audio Surround	The Beatles - Abbey Road-012.mka	19/04/2021 3:51 PM	MKA File	120,492 KB	00:01:12		
	The Beatles - Abbey Road-013.mka	19/04/2021 3:51 PM	MKA File	208,940 KB	00:01:58		
Concerts	The Beatles - Abbey Road-014.mka	19/04/2021 3:51 PM	MKA File	136,806 KB	00:01:31		
> Temp	The Beatles - Abbey Road-015.mka	19/04/2021 3:51 PM	MKA File	166,760 KB	00:01:36		
	The Beatles - Abbey Road-016.mka	19/04/2021 3:51 PM	MKA File	221,964 KB	00:02:21		
	The Beatles - Abbey Road-017.mka	19/04/2021 3:51 PM	MKA File	22,281 KB	00:00:23		
> 👝 Working2TBSSD (E:) 🗸 🗸	🛓 The Beatles - Abbey Road_t00.mkv	18/04/2021 9:55 AM	MKV Video Fil	13,075,319	00:47:30		
18 items						[	:== <b>E</b>

The files should now be renamed so you can recognise which song is in each file.

Copy the files to your final music folder for the album or concert disc and play your files. For Atmos you'll need an HDMI output to an AVR with an Atmos decoder. Your media player software needs to support HDMI pass-through as an output option and be configured to use that option.

**NOTE:** If your leave a video stream selected, MKVToolNix will Split the source MKV into chapters and create MKV files.

## **Appendix: Using MMH's Channel Volume tool to adjust channel levels:**

Sometimes you can improve the surround experience by increasing the rear channel volume by 3db or so, or changing the Centre or LFE volume can also improve the mix.

If you have FLAC or WAV files MMH's Channel Volume tool can help out

From the MMH tool Launcher dialog:

Click: 'Channel Volume'

Music Media Helper Tools	Launcher	<b>!</b>	×
Preferences About Ch	eck For Updates		
Concert Video Tools			
Split & Rename Concerts	Split MKV video file into Chapters, Rename Concert Chapter files (lookup releases on Mus	icBrainz)	
Batch Split MKV Files	Batch Split multiple MKV files into Chapters (all at once - only MKVs already with Chapters	)	
Scrape a Concert Folder	Scrape a single Concert Video folder to get Poster and Fanart and/or Create NFO files fo	r Kodi	
Edit Chapters in MKV	Create & Edit Chapters in a MKV or MKA files (titles & times). Create CUE. Change Defaul	t Audio stre	eam
Batch Creation Tools	Scrape, Create NFO or XML files or M3U Playlists for All Music Concerts/Video folders (all a	at once)	
Audio and Video Tools:			
Play List Editor	Create and Edit M3U Playlist files for both Audio and Music Video files		
Media File Manager	Create a List of all Media files from multiple Sources, Copy selected files to another disc e	tc	
Rename/Tag Media Files	Rename files (Supports Copy & Paste from track list) and/or Tag from MusicBrainz. Creat	e CUE file.	
Merge MKV and FLAC files	Merge MKV video and FLAC audio files to create new MKV files with FLAC default track		
Audio Tools:			
Extract Audio from MKV	Split MKV into chapters to create Audio files and Tag (lookup releases on MusicBrainz)		
Join or Split Audio	Join or Split WAV or FLAC files. Create CUE file.		
Resample	Resample Audio files (stereo or multichannel)		
Channel Volume	Edit Channel Volume (Gain) for Audio files (mono, stereo or multichannel FLAC or WAV)		
Remix Channel Layout	Edit Channel Layout, Add Silent Channel(s) to Quad (4.0 to 5.0 or 5.1), Remove Channel	s, Invert P	hase
Channel Delay	Edit Channel Alignment/Delay in multichannel files (FLAC, WAV or DSF)		
Channel Split & Merge	Split MCH files into Mono Channel files. Merge Mono files to create MCH files.		
Batch Audio Tools	View and/or Analyze & update ReplayGain; Update/Report Cover Art; Report Disc Art &	DR	
Update Penteo Files	Batch Tag Penteo MCH FLACs. Copy Tags from input Wav files & rename. Add Quad siler	it ch.	
Rename Audio Folders	Restructure Audio files from single: 'Artist - Album' folders to: 'Artist\Album' folders for Ko	di	
Version: 4.1.8		Exit	

The Channel Volume tool dialog appears:

ᢧ Edit Channel Volume (Gain)				-		×
Output (Remixed) File Location: Remix Folder (under Source	=) 🔻					
					Add Fol	der
					Add Fil	es
		Copy First File Gain	Apply Gain (All Files)			

Click: 'Add Folder' or 'Add files'

The next figure shows 'Add Files', after navigating to the multichannel FLACs prior to Merging with MKVs:

🔊 Open						×
← → → ↑ 📙 🛚 Concerts → Lynyrd Skynyrd -	Last Of	The Street Survivors		xt to search		م
in New Folder					8==	
> 🟪 Local Disk (C:)		Name	Date modified	Туре	Size	
🗸 👝 Local Disk (D:)	ø	Output-01.flac	15/04/2021 3:23	FLAC File	56.0 MB	
> 🛃 Audio (Penteo UM)	ø	Output-02.flac	15/04/2021 3:23	FLAC File	157 MB	
> 🛃 Audio Surround	ø	Output-03.flac	15/04/2021 3:23	FLAC File	108 MB	
Concerts	ø	Output-04.flac	15/04/2021 3:23	FLAC File	120 MB	
📙 Bryan Adams - Anthology (2007) ADVD	ø	Output-05.flac	15/04/2021 3:23	FLAC File	196 MB	
🔄 David Bowie. Rockpalast Open Air Festi	ø	Output-06.flac	15/04/2021 3:23	FLAC File	136 MB	
🔄 David Byrne	ø	Output-07.flac	15/04/2021 3:23	FLAC File	128 MB	
Hunters & Collectors - Live at The Palai	ø	Output-08.flac	15/04/2021 3:23	FLAC File	130 MB	
🔄 Jean Michel Jarre - Jarre In China	ø	Output-09.flac	15/04/2021 3:23	FLAC File	189 MB	
🔄 Jean Michel Jarre - Jarre In China (HD)	ø	Output-10.flac	15/04/2021 3:23	FLAC File	133 MB	
Joe Jackson	ø	Output-11.flac	15/04/2021 3:23	FLAC File	128 MB	
Lynyrd Skynyrd - Last Of The Street S	- 0	Output-12.flac	15/04/2021 3:23	FLAC File	191 MB	
File Name: "Output-01.flac" "Output-02.flac" 👻 FLAC Files	(*.flac) (	(*.FLAC)		Open	Cancel	

Select the FLACs and click: Open

🔰 Edit Channel V	/olume (Gain)								—	□ ×
Output (Remixed)	) File Location:	Remix Folder (u	nder Source)							
File: D:\Conce	erts\Lynyrd Sk	ynyrd - Last	Of The Street	Survivors\0	utput-01.flac					Add Folder
	FL	FR	С	LFE	SL	SR				Add Files
Peak (db)	-2.11	-3.66	-11.23	-28.10	-3.71	-3.63				
RMS (db)	-21.78	-21.68	-35.73	-49.03 0.0 _	-22.98 0.0 _	0.0 1		Apply Gain		
Gain (ub)								hppiy dain		
File: D:\Conce	erts\Lynyrd Sk	ynyrd - Last (	Of The Street	Survivors\0ι	utput-02.flac					
	FL	FR	с	LFE	SL	SR				
Peak (db)	-2,44	-2.52	-8.48	-17.65	-3.72	-4.68				
RMS (db)	-17.08	-17.24	-27.50	-30.40	-25.29	-25.55				
Gain (db)	0.0 🗘	0.0 ‡	3.0 🌲	0.0 🗘	0.0 🌲	0.0 🗘		Apply Gain		
File: D:\Conce	erts\Lynyrd Sk	ynyrd - Last (	Of The Street	Survivors\0	utput-03.flac					
	FL	FR	С	LFE	SL	SR				
Peak (db)	-2.04	-1.74	-6.90	-17.83	-7.70	-7.75				
RMS (db)	-16.97	-16.95	-26.53	-30.82	-24.11	-24.19				
Gain (db)	0.0 🗘	0.0 🗘	3.0 ‡	0.0 ‡	0.0 🛟	0.0 🗘		Apply Gain		
4	1.11 [6]			<u> </u>						
							Copy First File Gain	Apply Gain (All File	es)	

The dialog list each selected file and displays audio statistics for each file for each channel.

Simply edit the gain to adjust each channel up or down.

Click: 'Apply Gain (All Files)' at the bottom of the dialog to batch update all files

Or

Click: 'Apply Gain' next to each file to update each file individually