

Your First Bluray Disc Quickly

A no-frills simple guide to making a bluray disc with a menu

based on BDS 4.6.2180 Theo de Klerk

Acknowledgements:

Thanks to Alexey Kolesnikov from Blu-Disc Studio for answering all my questions and solving my problems with the product

The author of this user's guide is not associated with Blu-Disc or DVD Logic in any way other than being a mere user of the BDS product.

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Part 1: The Setup

The base material

This guide quickly shows you how to make a simple bluray disc using Blu-Disc Studio (BDS) tools. It will be a basic disc with a simple menu. But once you can do this, you may want to do more and it is time to read the parts of the Blu-Disc User's Guide that informs you about all the additional features of Blu-Disc Studio.

What you need

To create a bluray disc following the instructions in this guide you need:

- 1. An installed and working version of Blu-Disc Studio on a 64-bits Windows-8, 10 or 11 system.
- 2. Three movies that are suitable to become part of the bluray disc that we will use
- 3. Fonts to display texts on menus
- 4. An image (like an arrow or checkmark) to indicate what movie to select from the menu (a "button" it is called)
- 5. A background movie for the menu background.
- 6. Either:
 - a. A software bluray player like Cyberlink's PowerDVD
 - A physical bluray burner to burn the result on a (re)writeable bluray disc that can be played on a standaloner bluray player

Requirements for each

A special zip file has been created with ready-for-use components. It includes three short Star Wars trailers demuxed in video, audio and subtitle streams, a "black menu movie" and checkmark button and some Arial font files. Also a version of the tsMuxer (de)muxer tool has been included. But feel free to experiment with your own movies and button images of course!

Movies

Movies that can be used on a bluray disc have to adhere to special requirements set by the Bluray Disc Association, BDA for short. Usually they have image and sound combined. For BDS these files must be demuxed into separate video and audio streams.

The demuxed streams must be BDA compliant:

- Video at 1920 x 1080 pixels or 1280 x 720 pixels in AVC format.
 File type .264 (if the decoder gives .h264, simply rename)
- Audio in lossy Dolby Digital (file type .ac3) or lossless LPCM (file type .wav) at sample rate 48 kHz (not 44.1 kHz which is the standard CD rate)
- Subtitles must be in the .srt text format (.sup image format is also supported)

If the source files have streams different from these requirements, you need to transcode them first into the proper format. Then you use a demuxer to create the separate video and audio stream.

 You can inspect whether your video file complies to BDA standards by reading its characteristics with the freeware tools MediaInfo (from <u>https://mediaarea.net/en/MediaInfo</u>)

Several tools can perform the transcoding of formats such as AVI, MKV, MP4, MTS to the preferred format .M2TS which has the BDA compliant streams that can be demuxed.

- A transcoder is HD Video Converter Factory Pro of the Wonderfox company (much of the functionality is free to use) (<u>https://www.videoconverterfactory.com/</u>)
- Freeware demuxers are ffmpeg (<u>https://ffmpeg.org/</u>) or tsMuxer (<u>https://www.videohelp.com/software/tsMuxeR</u>) or Haali splitter (<u>https://haali.net/mkv/</u>) The kit provided for this project contains the tsMuxer.

The kit for this project contains three short trailer movies in HD 1920 x 1080 pixel resolution with Dolby stereo sound and English subtitle files.

Fonts

Any TrueType font will do and Windows comes with several in the system folder C:\Windows\Fonts (if C: is the system drive). You may have additional ones on purchased fonts CDs or internet collections. Select one or two fonts and copy them to the BDS project folder (discussed next).

Arial is a standard font available on all systems and used in the provided kit for this project. The font file is copied from the (hidden) Windows fonts folder to the project specific \fonts folder.

ont name: Arial Version: Version 7.00

OpenType Layout, Digitally Signed, TrueType Outlines abcdefghijkImnopqrstuvwxyz ABCDEFGHIJKLMNOPQRSTUVWXYZ 1234567890.:,; ' " (!?) +-*/=

The quick brown fox jumps over the lazy dog. 1234567890 The quick brown fox jumps over the lazy dog. 1234567890

The guick brown fox jumps over the lazy dog. 1234567890

Button image

Any image of type .png suffices. Since it indicates your choice on the displayed menu, something pointing is preferred. An arrow, a finger, a checkmark image. But any image will do. Keep a reasonable size (like 38 x 38 pixels) though the size can be adjusted inside BDS. The kit for this project contains the checkmark.



Background movie

BDS always runs a movie in the background of the menu. This makes the menu livelier, but it can also be a simple black movie with no sound. It doesn't have to run long – a few seconds suffices as the menu movie is repeatedly shown in a loop. The movie must comply to the same BDA rules as the ordinary movies. Its resolution determines the size of the menu (i.e. 1920x1080 or 1280x720 pixels). The kit for this project contains a black movie without sound for 23.9 fps at full HD resolution of 1920 x 1080 pixels.

Player or burner

Cyberlink's PowerDVD (https://www.cyberlink.com/products/powerdvdultra/features en US.html) is one of the few software players capable of imitating a real bluray player. It can read the folders made by BDS as if it was a bluray disc.

Use the free ImgBurn (<u>https://www.imgburn.com/</u>) software to burn the BDS folders onto a writeable bluray disc (either single layer 25 GB or double layer 50 GB in size). I advise you to experiment first with some rewriteable bluray discs so any errors made do not leave you with coaster discs. ImgBurn will recognize bluray disc projects and volunteer to set the disc filesystem to UDF 2.50 and datatype Mode1/2048.

Part 2: Create a BDS project

Folder structure

To keep everything in the right spot, it helps to collect all material for a BDS project together in one folder tree.

You may start with starting BDS and create a new project (press

CTRL/N or click on the new project button <a>> button). Just press "next" on any of the subsequent windows and questions until the project is created.

- Give a name to the project, "Blu Disc Studio First"
- Specify the disc or folder where this project will be inserted into (e.g. I:\BDS Projects)

This results in the creation of the folder I:\BDS Projects\Blu Disc Studio First and some subfolders used by BDS. It also inserts a "project.bdmd" file in the folder. This is the project file that contains everything you specify for the new project. Only the movies are not included but linked to. You can give it any other name or duplicate it if you want another project using the same files (two versions of a disc).

For the rest of this book I will use this folder location as the project we create. If you used a different location, you need to specify that one of course.

For convenience, once BDS has created the project folder, add some folders yourself to keep additional data needed:

BDS Pro	jects → BluDisc Studio First				~ 0
^	Name	Size	Date modified	Туре	Length
	History		2022-12-23 23:13	File folder	
	_JAVA		2022-12-23 23:04	File folder	
	SCRIPTS		2022-12-23 23:04	File folder	
	buttons		2022-12-23 22:55	File folder	
	📕 disc		2022-12-23 23:09	File folder	
	📙 films		2022-12-23 23:09	File folder	
	fonts		2022-12-23 23:13	File folder	
			2022-12-23 23:13	File folder	
	📙 originals		2022-12-23 23:47	File folder	
	🤓 Project.bdmd	86 KB	2022-12-23 23:13	Blu-Disc Studio	
	Project.wizard	44 KB	2022-07-04 22:53	WIZARD File	

- Buttons to contain all button images
- Disc will contain the BDS created disc image folders for burning or playing with a software player.
- Films to receive all demuxed .264 video and .ac3 (or .wav) audio streams
- Fonts to contain all font files used to display menu text
- Originals contains all material that is going to be part of the bluray disc – mostly the video files in BDA compliant format. These are likely not demuxed yet so you may experiment with these movie files and your movie converters and demuxers. A set of compliant demuxed files must be stored in the \films folder.

The BDS created folder "_History" may not be visible if you have set your Windows system not to show hidden folders.

The kit provided for this project has the same folder division and is populated with files containing the various parts needed. All you may need to do is copy those files (or folders) to your newly created project.

Populate folders from the kit

- One font file is provided in the "fonts" folder. The system provided font files are stored in C:\Windows\Fonts or on CDs with fonts for use in Windows. They are of type .ttf. You can copy any TTF file of your liking into the \fonts folder.
- Copy at least one button image in the "buttons" folder. It must be of type .png for BDS to see it. The kit provides the checkmark image.
- Store three movies in the "originals" folder and if applicable also their .srt subtitle files.

Make fonts known to BDS project

The fonts stored in the "fonts" folder can only be used in menus if BDS knows about them. Execute the following steps:

- Open the "project.bdmd" file to start the BDS project (it may still be open if you did not close BDS after creating the project)
- Open the BDS menu Project > Used Fonts
- In the window that opens, click "Add"
- Navigate to the I:\BDS Projects\BluDisc Studio First\fonts folder
- Select the arial.ttf font file (or any other you stored in that folder) and click "OK"
- It takes BDS a little while, but in the end the window shows all fonts now known to BDS.
- Click "Close"

Provide BDS with a muxer

Unless you bought BDS MX, you need to provide BDS with a muxer that is used to mux video, multiple audio and subtitle streams together into video files for the bluray disc. The standard muxer for this is the freeware tsMuxer.

Once you downloaded it and stored it somewhere you need to tell BDS where it can find it. The kit provides a copy os tsMuxer in the \software folder. Create the folder \Program Files (x86)\tsMuxer on the system disc and copy thr tsMuxer.exe file into that folder.

- Click on BDS menu Tools > Options and in the window that opens, select the "Muxers" tab.
- Specify the storage location of the tsMuxer.exe program in the "Path" text box.



Provide a signature to BDS

All discs created are "signed" which is something important for commercial users. For private use, signing is still required for some BDS features so it's useful to provide the signature now already. But you may skip this step for the moment.

- Click on BDS menu Tools > JAR signing settings
- In the window text box "Organisation ID 0x" specify a unique number different from what you see as default.

JAR signing setting	5		? ×
Keystore password	•••••	On compile Check	only ~ Re-create keystore
confirmation	•••••	Use only latin chara	cters and digits
Root certificate		Application certific	ate
Password	•••••	Password	•••••
confirmation	•••••	confirmation	•••••
Common name	Movie Studio	Common name	BD Studio
Email	mail@moviestudio.com	Email	mail@bdstudio.com
Organization	Movie Company	Organization	BD Company
Organization ID	7fff1111 Use	Organization ID	7fff2222
Organization unit	Department	Organization unit	Department
Location (city)	City	Location (city)	City
State/province	State	State/province	State
Country	US	Country	US
Show detailed lo	g of the signing process		OK Cancel

Demux files

- Transcode the movie files in "original" to a BDA compliant format like .m2ts in 1920x1080 pixels and Dolby sound at 48 kHz sampling
- Demux these files into .264 video and .ac3 (or .wav) streams and store these streams in folder "films".
- If applicable, also store the .srt subtitle files in "films"
- Repeat these steps for the (short) menu movie.

BDS Projects > BluDisc Studio First > films



Part 3: Load movies

Project Tree Window

The movies to play on the final disc are the most important ingredients. To load them into the project do the following:

Add project movie placeholders

- Ensure the movies are demuxed and the streams stored in the "films" folder
- Add a "movie" entry for each movie you want to add to the project:
 - On the BDS window, look at the "Project Tree" subwindow and right click on "Movies"
 - o Click on "New Movie" on the context menu
 - Give a descriptive name to the movie, like "movie 1"
 - Ignore the "Group" value

Repeat the previous steps for each movie (you can combine the first two steps by clicking on the movie button ($\frac{160}{2}$)).



Add movies to placeholders

Now the project has placeholders for the movies, they must be filled with file specifications of the actual movie streams in the "films" folder.

- For each movie click on a movie placeholder (like "movie 1")
- In the "Properties" window of the BDS GUI you can specify the "Video" stream and the "Audio 1" stream of the real movie in the "films" folder. If there are more audio streams, also fill the "Audio 2" text box. And for a subtitle the "Sub 1" text box. If the language is not english, adjust the value in the dropbox box at the end of the audio or subtitle text box.
- If there are subtitles, specify them in the same order for each movie (e.g. English first, Dutch second, French third etc)
- If there are subtitles, modify the "Group" value of all movie placeholders to the same value (e.g. "movie 1")

Below we illustrate how placeholder movie 3 is filled with the Star Wars Eps 9 trailer.

Project Tree	д	Objects
🎬 🛍 🖆 🗙	* *	<u>□·× ∓ + ±</u>
Menus Main Main Popup menus Movies Movie 1 Movie 2 Movie 3 Playlists		Object Anim group Linked
Properties		
Common		
Name	Movie 3	
Group	Movie 1	renam
Disabled actions		
Start Action		
End Action	Menu: Main [Movie 1]	
Action every second		
Scenes	4	
Auto show popup		
Numeric select scenes		
Virtual		
Allow save state	\checkmark	
Popup menu	Menu: Main	
Remote control buttons		
Streams		
Video	I:\BDS Projects\BluDisc S	Studio First\films\Star Wars 9 The Rise of Skywalker Trailer 2
Audio 1	I: \BDS Projects \BluDisc S	Studio First\films\Star Wars 9 The Rise of Skywalker eng
Audio 2		eng
Sub 1	I:\BDS Projects\BluDisc S	Studio First\films\Star Wars 9 The Rise of Skywalker eng
Sub 2		eng
PIP		

The disc consumption of the movies can be seen in the BDS GUI at the top right. A single layer (1L) or double layer (2L) shows the used byte count for the movies within the available capacity of 25 GB or 50 GB. Click on "1L 25" to change to "2L 50" and vice versa.



Generate chapter index files

• Click on BDS menu Project > Project properties. On the "General" tab click on the button "Generate missing index files" at the bottom of the window.

This action creates files that are required to hold the chapter info. Even if you have no other chapters than the start of each movie, they need to be there. The generation may take some time.

Project properties ? X
General Menu Streams Functions Advanced Search
Output folder Default language code eng v
BD-J profile version 1 V Disc profile version force version 1 V Combine images In a single image V
JAR signing Sign the JAR Application ID 0x 4000 Sign settings Place images outside the JAR-file
Disc settings Restore by command V Storage file name BDS.properties
Scenarist Volume label BLDIsc Studio First
Region limitation Allowed region codes Image: Region A market in Java too Wrong region image or video Image: Region A market in Java too
3D 3D 3D project Prable "no 3D hardware" warning Edit Startup mode 3D Switch 2D/3D mode Immediately Use TWOD_MODE instead of ONE_PLANE for 2D
Save as Default Delete all index files Generate missing index files in Min OK Cancel

Once completed, close the window by clicking on OK.

If you want to generate automatic chapters (say each 5 minutes) for a movie, then do the following:

- Double click on a movie placeholder. This opens the Scenes window to specify the chapters.
- Click the "Generate playmarks" button 📒
- In the window that opens, specify the number of chapter (play)marks to generate. The number to specify should be duration of the movie divided by 5 minutes (e.g. 6 for a 30 minutes movie).

minutes moviej.					
Generate	e playmarks		×		
Number	of playmarks 7	lemove existing	9		
From	00:00:00:00 V To	00:38:48:01	\sim		
Method	Method Minimal keyframe (black screen) $$				
Scan distance, % 10					
\fbox Include in chapters menu $\ref{eq:loss}$ Add playmark at the end					
	OK	Cancel			

- Click "OK". This will generate the number of chapters plus a mark at the start and end of the movie.
- Close the Scenes window.

Part 4: Create the menu

BDS Menu Generator

With the movies specified in the placeholders, they must be addressed and started through a menu.

Menu components

Menus are the human interface with the movies stored on disc. Through menus you navigate to the movie of your choice and activate it.

Menus consist of three parts:

- A background menu movie that always plays in a loop. This can be a short movie but can also be a black short silent movie giving the impression to the viewer as if nothing runs
- Menu texts (usually film titles and options) and images
- Buttons. These are situated next to menu texts (movie titles) that the viewer can select (through the arrow keys on the remote control). By pressing OK the selected button is activated and the associated movie runs.

Create a menu

Like movies each menu has a menu place holder. It is then filled with the menu items the user sees on the screen.

- Create a new menu in the Project Tree window by right clicking on "Menus" and select "New menu" from the context menu that is shown. Alternatively, you can click on the menu button (
) or press CTRL/Shift/M
- Enter a descriptive name to the menu (e.g. "Main")



hen the menu placeholder is created, the "Designer" window is filled with a blank menu of size 1920x1080 pixels. Objects such as texts, images and buttons can be placed on it.

Menu movie

A (short) menu movie must be specified that runs as background of the menu. With multiple menus using the same menu movie, transition between menus leaves the movie running without interruption.

Specify the menu movie in the properties window for the menu.

 The resolution of the menu movie determines the size of the menu (1920x1080 or 1280x720 pixels). The "Designer" window always shows the largest menu, but only use 1280x720 pixels of it if the menu movie has that resolution.

• From the kit you can copy the "black silent 5s 24 fps" movie into the \films folder if you did not do this already. Then add it to the video/audio stream of the main menu.

Project Tree	Ф	Objects		Ą
📰 🛍 🖆 🗙	1	-× - +	+ ±	
Menus Popup menus Movies Movie 1 Movie 2 Movie 3 Playlists		Object P Item 1 Movie 1 Movie 1 Movie 1 Movie 1 Movie 2 Movie 2 Movie 2 Movie 2 Movie 2 Movie 2 Movie 3 Movie 3 Movie 3 Movie 3 Movie 3 Movie 3 Movie 3 Movie 3 Movie 3 Movie 3	Anim group	Linked
On JAR 00000 V Menu: Main [Movie 1]			
Top Menu 00000 Menu: Main [Movie 1]			
Properties				Ą
Common				
Name	Main			
Draw method	Selected, Current, Normal			
Intro Movie [none]				
Inactivity timeout 0				
Inactivity action				
Action every second				
On update current				
Open sound				
JAR 00000				
Allow save state				
Streams				
Video	I:\BDS Projects\BluDisc St	udio First\films\black silent 5s 24	4fps.264	
Audio I: \BDS Projects \BluDisc Str		udio First\films\black silent 5s 24	4fps.ac3	
E Remote control buttons				
- Enter				

Menu text

The background menu text and images are specified from within BDS. Create a new menu object in the "Objects" window. Use the "Add" button (____) and select "New Text" from the dropdown list.



This opens the "New Object" window.

- The text is static
- The text can be written in any font we made known to BDS earlier

- You can specify the colour of the text as well as the font size
- If you want different colours, make additional text objects
- Click OK when done. This enters an "Item 1" object in the Objects window.
- Click on "Item 1" and the Properties window is now dedicated to this Item 1. You can give it a more meaningful name, such as "movie titles"
- The item itself is shown on the "Designer" window in the top left corner.
- Drag the item to the location on the menu where you want it.
- The yellow square at the bottom can be dragged to enlarge or reduce the size of the item.(there is no "proportional resize" so be careful when you do this – otherwise the Properties window "left"/"top/"height"/"width" properties can also size the item).



Add two text objects: one with a title "Star Wars Trailers" and one with the texts "Trailer Eps 2 / Trailer Eps 5 / Trailer Eps 9". Use any colour or size you fancy. The colour is set using the colour box and the slider at its side determines the intensity.

Menu buttons

Each menu item that specifies a movie name must have a button.

With your remote control you can navigate from button to button. All buttons are in the "normal" state. Only the button you navigated to is in the "Selected" state. If you press the "OK" button on the remote control the menu button that is selected becomes "Activated".

Often the "normal" state of buttons is being invisible. The "selected" button has an indicator (an arrow, a checkmark). In its properties you specify how to navigate to another button or what to do when the "OK" button is pressed on the remote. This usually involves either playing the movie or opening another menu.

Create button

We will create three buttons (one for each movie). Navigation moves from button 1 to button 2 and vice versa. Pressing "OK" starts the movie whose title is linked with that button.

- Create a new menu object in the "Objects" window. Use the "Add" button () and select "New image button"
- The "New Object" window has four tabs click on the "Selected" tab.
- Ensure the "Image" radio button is selected
- Navigate to the "buttons" folder of the BDS project and select the button image to display (I use "checkmark.png")
- Click OK

New object	×
Object type O Static Button Synchronize text	
/ Normal / Selected / Activated / Current \	
Object state type	
File name : BDS Projects BluDisc Studio First buttons Checkmark.png	

This way the "Selected" state of the button will show the checkmark. All other buttons (in their "Normal" state remain invisible, i.e. have no image for that state).

Position button

In the Objects window four new items appear with the same name. They represent the four states the button can have.

- Click on the BDS red menu button to make images of buttons
 - in the "selected" state visible in the Designer window.
- The checkmark is now visible at the left top of the menu.
- Drag it to position it next to the "movie 1" menu text made earlier
- Use the yellow square to resize the button if necessary



• In the Properties window of the button, change its name from "Item 1" into something descriptive, such as "movie 1"

Specify Activate action

 Click on the ">" button at the end of the "OK Press ENTER" property and navigate to "Play movie" > "Movie 1" > "Chapter 1". This will start the movie in placeholder "movie 1" from the start (chapter 1)

Properties		д
Common		
Name	Movie 1	Button
Selected state	Checkmark.png	Image
Effect	scale 184.2/166.7	
Тор	430	Height: 70
Left	630	Width: 60
Actions		
 Press Left 		standard
anim left		
 Press Right 		standard
anim right		
Press Up		standard
anim up		
Press Down		standard
anim down		
OK Press ENTER	Movie: Movie 1 [1]	standard
anim enter		

Duplicate button and modify properties

- Select the button on the Designer Window and right click.
- Select "Copy to" . This will give one option in our case: "main menu".
- Click OK. A copy of the button is made on top of the original button. Therefore you may not see it as new button.
- Select the button image and drag it to the other menu text "Movie 2". You will now have two button images. The properties of the selected one show in the Properties window.
- Rename the button to something descriptive like "movie 2" in its properties window.
- Set the "OK Press Enter" value to start the movie in movie placeholder 2, chapter 1
- Repeat the copy operation for a third button that starts movie
 3.

Add navigation

Now the buttons are positioned and play a movie when selected and the remote control OK button is pressed, we still need to be able to move from one button to the next.

We will show how to move from button 1 to button 2. The navigation from button 2 to button 1 is just the reverse.

- Select the button with name "movie 1" in either the Objects window or the Designer window. This makes the Properties window show the properties of that button.
- Click on the ">" button at the end of the "Press Down" property
- Navigate to "Select button" > "Movie 2"
- Do the same for "Press Up" property pointing to "Movie 3" (this will create a circular loop)
- Complete the navigation so that the "Press Down" moves from button "movie 1" to "movie 2". Button "movie 2" moves to button"movie 3". Button "movie 3" moves to button "movie 1" again. Continue in the opposite way: "Press Up" repeatedly moves from button "movie 1" to button "movie 3" to button "movie 2" back to button "movie 1" again.

All buttons will be in their "normal" state and without an image for that state, remain invisible. Only one button is pre-selected and shows its checkmark image. By pressing an up or down arrow key, another button becomes selected and shows itself.

Revisit movies

Now that menus exist, we need to complete the properties of the movies.

- Select the "movie 1" movie placeholder in the Movies list to show its properties in the Properties window
- For "End Action" navigate to "Jump MENU" > "Main" > "Movie 2". This is the "movie 2" button. When the movie ends, the Main menu is shown and button "movie 2" becomes selected. This action happens when the movie ends.
- Repeat these steps so that the end playing of movie 2 ends on the main menu at button "movie 3" and the end of playing movie 3 selects button "movie 1" again.
- For "Popup menu" navigate to "Jump MENU" > "Main" > Default. If during movie playback you press the "popup" button on the remote control, the movie stops and the Main menu is shown again.
- Repeat the previous step for all movie placeholders

Pr	operties		₽
	Common		
	Name	Movie 1	
	Group	Movie 1	rename
	Disabled actions		
	Start Action		
	End Action	Menu: Main [Movie 2]	
	Action every second		
	Scenes	9	
	Auto show popup		
	Numeric select scenes		
	Virtual		
	Allow save state		
	Popup menu	Menu: Main	>
	- · · · · · · · · · · · · · · · · · · ·		

Remote control buttons

Check menu

To ensure all navigation and activations have been set correctly, you can and should test the menu. To do this, follow these steps:

- Specify the starting action when the disc is played. This is specified as the "Startup Action" for the JAR file that is opened when the disc starts playing. The entire disc runs by executing JAVA code stored in one or more Java ARchive files – JAR for short. In this first disc project there is only a single JAR file, named 000000.
- Open the JARs window (if not shown, press F12). select the 000000 JAR file and right click on the "Startup Action" and select Menu > Main > Movie 1 The last part is the button the menu that will play Movie 1.

JARs	→ ‡
	• × * *
JAR	Startup action
00000	Menu: Main [Movie 1]
Top Me	nu JAR 00000
action	

- Click on the "play" button of the BDS menu (▷)
- The menu simulator starts. Use the keyboard arrow keys to move between buttons to check if navigation is complete
- Press on the ENTER key to activate the selected button. Normally this would play the movie, here just a black screen is shown. Press the END keyboard key to simulate the movie ended. Or press F5 to simulate the pressing of the popup key.

Part 5: Create and burn disc

Create the disc

All steps are now taken. The movies are present, the menus created with buttons that activate the movies. BDS can now use all the information to create the disc.



- Ensure the"mux" button of BDS is set to "Mux by tsMuxer"
- Ensure the location of tsMuxer is specified in Tools > Options > tab "muxers"
- Click on "muxer" (⁽⁾) This opens the project properties window.
- Specify the output -folder in which the disc image must be made (use the "disc" folder within the project folder tree)
- Click "OK"

Project properties	? ×
General Menu Streams Functions Advanced	Search
Output folder I:\BDS Projects\BluDisc Studio First\disc	Default language code eng 🗸
BD-J profile version 1 \checkmark Disc profile version force version 1 \checkmark	Combine images $\$ In a single image $\$ $\$
JAR sianina	

- Sit back and wait for the project to compile the menus and mux the video/audio/subtitle streams and connect them to the menu buttons.
- Progress can be seen in the log window of the BDS GUI.
- If there are no problems, it should finish successfully and create and fill the folders "\disc\BDMV" and "\disc\CERTIFICATE".

mode: Mux by tsMuxer mode: Mux by tSMuxer 00:46:38 - Validating... 00:46:38 - Ardding video asset for "Main" (black silent 5s 24fps.264) 00:46:38 - Adding video asset for "Main" (black silent 5s 24fps.ac3) PL BDD = 00001 - menu "Main" 00:46:38 - Adding video asset for "Movie 1" (Star Wars 3 Revenge of The Sith Trailer 24 fps.264) 00:46:38 - Adding video asset for "Movie 1" (Star Wars 3 Revenge of The Sith Trailer 24 fps.ac3) PL BDD = 00002 - movie "Movie 1" 00:46:38 - Adding video asset for "Movie 2" (Star Wars 5 The Empire Strikes Back Trailer 24 fps.ac3) PL BDD = 00002 - movie "Movie 2" (Star Wars 5 The Empire Strikes Back Trailer 24 fps.ac3) PL BDD = 00003 - movie "Movie 3" (Star Wars 9 The Rise of Skywalker Trailer 24 fps.ac4) 00:46:38 - Adding video asset for "Movie 3" (Star Wars 9 The Rise of Skywalker Trailer 24 fps.ac3) PL BDD = 00004 - movie "Movie 3" 00:46:38 - Preparing menu... 00:46:38 - Optimizing... 00:46:38 - Generating fonts... 00:46:38 - Step 1/4: started 00:46:39 - Step 1/4: done 00:46:39 - Step 2/4: started 00:46:39 - Step 2/4: done 00:46:39 - Step 3/4: started 00:46:40 - Step 3/4: started 00:46:40 - Starting sign process... 00:46:40 - OrgID: 7fff22aa, AppID: 4000 00:46:40 - Signing... 00:46:42 - (notice) OpenSSL is not specified/found - signature verification skipped 00:46:42 - Sign process finished 00:46:42 - Step 4/4: done Source graphic size: 119 116 px Result graphic size: 128 304 px 00:46:42 - Muxing menu "Main" (BDID: 1) 00:46:43 - (notice) changed events: 1, removed events: 0 00:46:43 - Muxing movie "Movie 1" (BDID: 2) 00:46:51 - Muxing movie "Movie 2" (BDID: 3) 00:46:57 - Muxing movie "Movie 3" (BDID: 4) 00:46:59 - Updating movie "Movie 1" playlist 00:47:00 - Updating movie "Movie 2" playlist 00:47:00 - Updating movie "Movie 3" playlist ● 00:47:00 - Copying files to the folder: I:\BDS Projects\BluDisc Studio First\disc\... 00:47:00 - Copying finished Fixed images: 10
 Src overs:
 9

 Groups:
 6

 Fades:
 0

 Translators:
 0

 Scales:
 3

 Clipped:
 0

 Assemblies:
 2

 RC handlers:
 27

 Segments:
 16

 Segment-dones:
 1

 Other:
 4

 TOTAL:
 78
 Src overs:

00:47:00 - [FINISHED] (warnings: 0, notices: 2)

Play the disc

Use some software player like PowerDVD to "play movie folder" and select the "\disc" folder of the project. The play should start with the menu and button specified in "On JAR startup". Here it will be the one and only Main menu at button for "movie 1".



Burn the disc

- Use ImgBurn to burn the project to a writeable bluray disc
- Select "Write files/folders to disc"

- Select the "folder" button () and navigate to "\disc\BDMV" and add this to the folder list.
- Do the same for "\disc\CERTIFICATE"
- Specify a disc label in the "Labels" tab
- Press the "Burn" button.
- ImgBurn will inform you it thinks you want to create a bluray and therefore sets mode and UFD file structure accordingly.
- Confirm and let the burn process start.

When finished, take the disc to a standalone player and play it. Or leave the disc in the pc and use a software player to play the disc.

Next...

BDS capabilities

Now you made your first, perhaps not so exciting, bluray disc, imagine you want more. BDS allows you to be more creative if you use all of its capabilities. To understand these features , you may need to read the User's Guide on BDS that discusses most of the possible features.

To wet your appetite:

Menu

- Move some menu elements in and out of screen: animation
- Use different button images
- Have multiple menus that invoke each other as well as give access to the movies
- Remember earlier choices made in menus (like preferred language audio track)
- Use Photoshop to create menu images and buttons instead of BDS own menu creation
- Avoid the maximum size of all images together by spreading them over multiple JAR files
- Perform multiple actions or select some depending on conditions when you press a remote control button
- Put actions between the red/green/yellow/blue buttons on your remote control
- Add playlists (like a "play all" option instead of individual movies)

Movie

- Create slide shows from stills run as a movie (MX only)
- Allow picture-in-picture (behind the scene footage within the main movie) (MX only)
- Jump between chapters (chaining movies, skipping titles)
- Create chapter menus as list or caroussel or a timeline through wizards almost automatically.
- Insert "points of return"

Disc

- Resume disc playing when it is re-inserted into the player
- Make 3D movie discs
- Use Javascript programming to do many more things not available behind a BDS button or menu option (such as Easter Eggs, bookmarks to return to). In fact with programming the sky is the limit in possibilities.

So dig out the BDS User's Guide and create the bluray disc you always wanted to create.