

QuickTime Container: Plug-In to display and control Movies and Audio using QuickTime

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Summary

This plug-in allows a developer to add QuickTime functionalities into a 4D application. Imagine opening a window in 4D to play a QuickTime supported Movie or music audio file. The QuickTime Container plug-in supports all movie and audio formats supported by QuickTime. With the standard QuickTime controller, only minimal coding is required; optional commands allow full access to the plug-in, so that you can create your own custom user interface.

Feature list

The Plug-in allows the following features:

- External area to display the movie and the controller
- Hide the controller
- Hide Volume Icon in Controller
- Hide Step Buttons in Controller
- Allow to select a part of the movie to play
- Enable/Disable "play selection"
- Play normal speed/Stop
- Play with free speed forward/backward, like 25% speed backward
- Frame forward/backward (single step or specified amount of frames)
- Read movie time scale (most movies 600 units/second)
- Read movie length (divide by movie time scale for length in seconds)
- Get/Set Position (between 0 and movie length in movie time scale)
- Get/Set Selection Start (in movie time scale)
- Get/Set Selection Length (in movie time scale)
- Get/Set Volume
- Get original movie width/height
- Set Zoom (Scale to fit, Scale proportional, free Zoom)
- Control Loop (no loop, loop, Palindrome)
- Play Sound (to play short MP3, like Beep) without form/external area

Overview

To get an idea of the features start the example database:



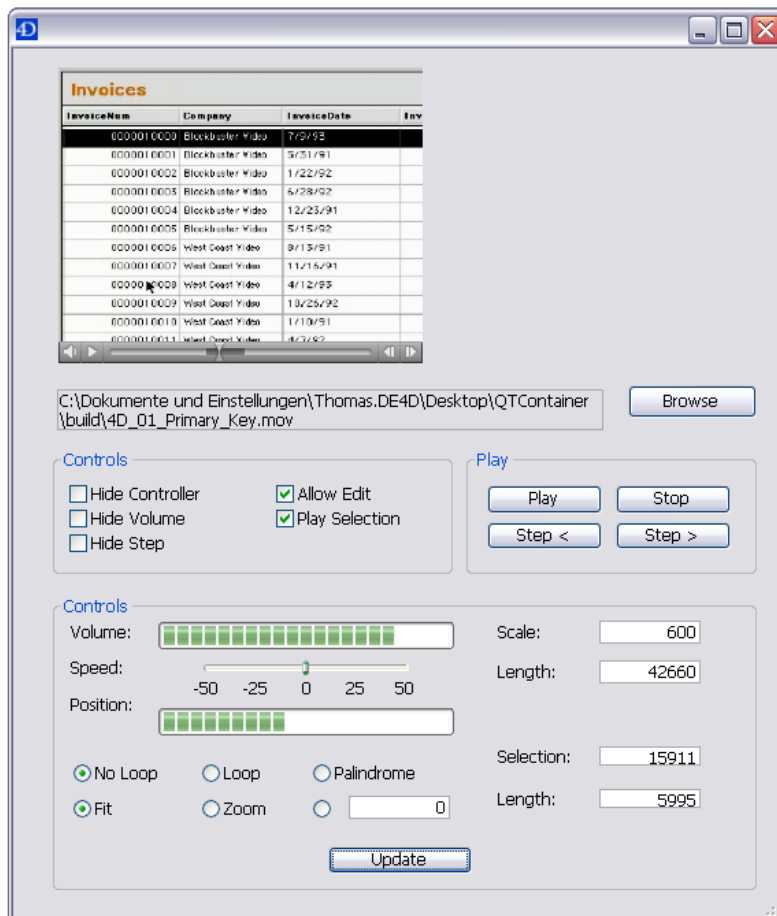
Movies

Use the "Browse" button to select a movie on your hard disk. The movie will be displayed in the upper portion of the screen. Note that you can resize the form and the QuickTime area will resize as well. Use the "Zoom" radio button to scale the QuickTime area proportionally. For example, enter 25% for a reduced display. Note that the maximum zoom size depends of the size of the area, if the values are too large they will automatically be reduced. Use the controller to play movies or music files, change the current play position or change the volume. The Controls group offers a series of check boxes that allows you to hide several user interface elements. The buttons in the Play group allows you to manage the playback even while the controller is hidden.

The second set of Control group at the bottom portion of the screen provides for a more detailed level of control. First click the button "Update". This reads the current settings of the movie and updates all values in the display. Toggle the Volume thermometer to change the volume of the movie. If the movie controller displays the volume icon, it will show the new values.

Use the Position thermometer to move the current position of the movie. The Speed ruler allows for controlling playback speed. If the movie is currently stopped the ruler will be at position 0. Move it to the right to play. The more you move the ruler to the right, the faster it will play. Move it to the left side of 0 to play backward, again faster or slower. The field Scale will show the time scale base on your selected movie, most movies use 600/second. The field "Length" shows the length of your movie. The movie in the screenshot has a length of 42660, divided by it's time scale base (600) returns the length in seconds (71.1 seconds) of the movie.

Finally to play only a section of the movie, enable the "Allow Edit" check box. Highlight a selection of the movie by using the Ctrl/Command-key + Mouse click.....

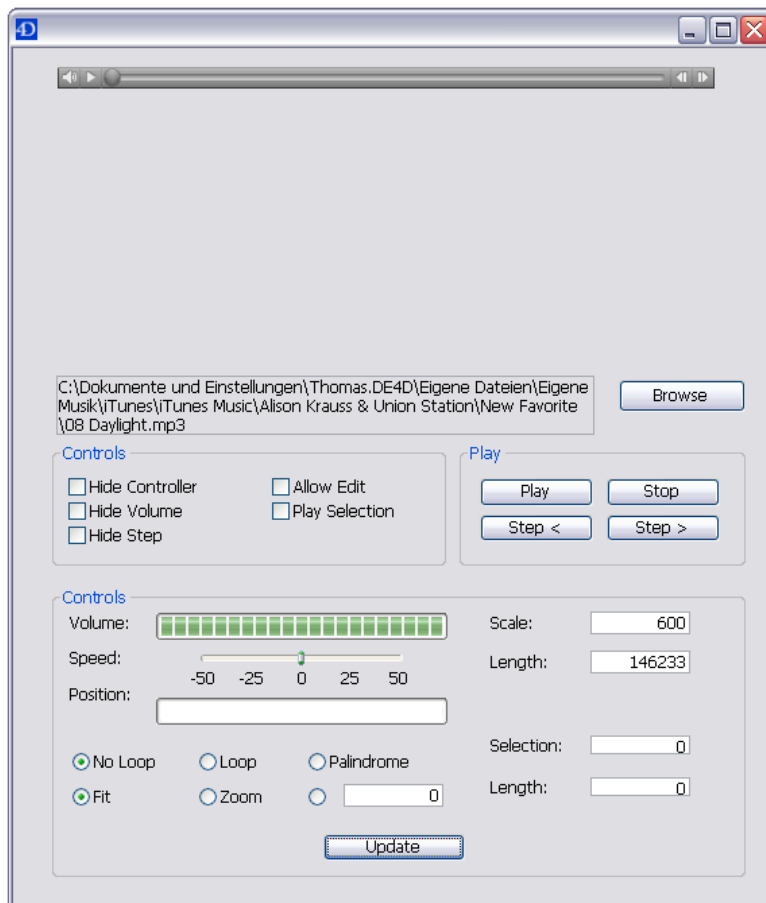


Clicking on the button "Update" will read in this selection data and displays it in the lower right fields Selection and Length. In this example the selection starts at unit 15911 (divide by time scale unit: $15911/600=25.5$, this means selection starts at 25.5 seconds), the selection is 5995 units long, this is around 10 seconds.

Note: You can also set the selection manually by entering values directly into Selection or Length.

If you have enabled the option "Play Selection", only this selection will be played. Using the radio buttons "No Loop – Loop – Palindrome" you can choose if the movie stops at the end, starts again from the beginning of the selection or returns, this means plays with standard speed backwards till the begin of the selection, then play forward again and so on.

Audio



If the selected file contains is not a movie track (in the case of a music file), the movie area remains empty except the controller (if set to visible). Still you can control all features like position, speed, loop, etc of the audio track.

Command Description

All commands except QTPlaySound and QTStopSound requires a displayed form (using Dialog, Modify Record, etc) with an external area "QTContainer". The first parameter of the commands is the variable of the external area.

QTSetMovie

QTSetMovie(Area; Documentpath) -> errorcode

Parameter	Type	Description
Area	Longint	QTContainer area
Documentpath	Text	Full Path to movie/sound document
Function result	Longint	Error code (0 = No error)

Description

The command QTSetMovie is the first command you need to apply to an area, it specifies the movie (or sound) to be opened.

Function result

If the movie was successfully opened it returns 0. Otherwise it was an error:

-1	No area was specified
-2	The specified area is not a QTContainer area
-3	The passed path was larger than 255 characters
-43	File not found
-33 - -84	see chapter OS File Manager Errors in 4D language reference

QTSetControl

QTSetControl(Area; selector; value) -> errorcode

Parameter	Type	Description
Area	Longint	QTContainer area
selector	Longint	Code of the function to write
value	Longint	new value of the parameter
Function result	Longint	Error code (0 = No error)

Description

The command QTSetControl allows you to change the value of several functions of a movie container. Most features can be read and write, although some can only be read.

The selector parameter designates the parameter to write. The plug-in offers you the following predefined constants, which are in the "QTControlCommands" theme:

Constant	Selector	Description
QTPlay	1	1 to play the movie forward, standard speed 0 to stop playing. Write only. Use QTSpeed to read the current status
QTStep	2	Moves the current frame specified number of frames forward or backwards (negative numbers). Values specifies real displayable frames, which may be a larger number of units in the movie time scale. Write only
QTGoto	3	Current position in the movie, in units in time scale of the movie. Needs to be between 0 and QTGetLength. Note that not each position needs to display a different frame. Read/Write.
QTVolume	4	Sets the volume of the movie. Value between 0 and 255. Read/Write.
QTController	5	1 to show the Controller, 0 to hide. Read/Write
QTVolumeIcon	6	1 to show the Volume Icon, 0 to hide. Read/Write
QTStepIcon	7	1 to show the Step Icons, 0 to hide. Read/Write
QTSpeed	8	Controls the speed of the movie. 0 = stop 5 = half, 10 = normal, 20 = double speed forward, negative numbers backward. Read/Write
QTGetLength	9	Number of time units of the movie. Divide by QTGetTimeScale to get length in seconds. Read only.
QTLooop	10	0 = loop, 2 = no loop, 1 = Palindrome, playing forward till end, then play backward till start, again forward and so on. Read/Write
QTSize	11	Resize/Zooms the display of the movie. 0 = Scale to fit. -1 = scale proportional >0 = Zoom in %, like 100=100%. Maximum value is Scale proportional, movie cannot be displayed larger than area rect. Read/Write
QTGetTimeScale	12	Returns Units per Seconds of the movie. Most movies uses a 600 units per Second time scale. Read only.
QTGetMovieWidth	13	Returns the original movie width in pixel. Read only.
QTGetMovieHeigth	14	Returns the original movie height in pixel. Read only.
QTSelectionStart	15	Sets the beginning of a movie selection (see QTPlaySelection and QTEditSelection). Value needs to be between 0 and QTGetLength in movie units. Read/Write
QTSelectionLength	16	Sets the length of a movie selection in movie units. Value must be smaller than QTGetLength - QTSelectionStart. Read/Write.
QTPlaySelection	17	1 enables PlaySelection mode. Enabled only the current selection is played, not the full movie. Read/Write
QTEditSelection	18	Enables the controller to select a part of the movie. This changes the position icon of the controller, using the Command/Ctrl key the end user can select a part. The Selection can be read/set with QTSelectionStart and

QTSelectionLength. This values are used if QTPlaySelection is enabled. Read/Write.

Function result

If the movie was successfully opened it returns 0. Otherwise it was an error:

- 1 No area was specified
- 2 The specified area is not a QTContainer area
- 3 No movie is opened
- 4 The media does not support controller actions (Image/picture)

Other negative numbers: See Apple QuickTime Documentation

QTGetControl

QTGetControl(Area; selector; value) -> errorcode

Parameter	Type	Description
Area	Longint	QTContainer area
selector	Longint	Code of the function to read
value	Longint	Current value of the parameter
Function result	Longint	Error code (0 = No error)

Description

The command QTGetControl allows you to read the current value of several functions of a movie container.

The selector parameter designates the parameter to read. The plug-in offers you the following predefined constants, which are in the "QTControlCommands" theme. For a description see the command QTSetControl.

Function result

See command QTSetControl

Commands without user interface

The commands QTPlaySound and QTStopSound allows you to play a sound without any user interface, you actually do not need a form or have a QTContainer area. The purpose is to play a sound (not a movie!) like the 4D command PLAY. The QTPlaySound command is not supposed to be used to play music files, but short sounds, like a beep. QTPlaySound is executed synchronous meaning the process is stopped while the sound is played. If you need to play a lengthy sound you should launch a separate process (or use an external area QTContainer with a hidden controller).

QTPlaySound

QTPlaySound(Documentpath) -> errorcode

Parameter	Type	Description
Documentpath	Text	Full Path to sound document
Function result	Longint	Error code (0 = No error)

Description

The command QTPlaySound allows you to play sound files supported by QuickTime, like MP3 files. While the sound plays the process is paused, other processes continues to work normal (sound is played synchronous), like how the 4D command PLAY works for a beep. To play a sound while your process continues to work start an additional local process.

Note: The command QTStopSound executed from another process stops a QTPlaySound play immediately.

Function result

The Function returns 0 if the sound was played correctly. Negative numbers between 0 and -99 are Apple File Manager errors, see:

<http://www.4d.com/docs/CMU/CMU02028.HTM>

Negative numbers between -2000 and below are Apple QuickTime error codes, see:

<http://developer.apple.com/documentation/QuickTime/APIREF/ErrorCodes.htm>

Example

```
If (Count parameters=0)
    $p:=New process("Example_PlaySound";32000;"PlaySound";"Play";*)
Else
    $err:=QTPlayMovie ("C:\klingklong.mp3")
    If ($err#0)
        ALERT("Error: "+String($err))
    End if
End if
```

QTStopPlay

QTPlaySound

Description

The command QTStopPlay stops a sound played from the command QTPlaySound. If there is no sound played this command does nothing. It does not need any parameter or returns a result.

Because QTPlaySound pause the current process this command can only be executed from another process.