



CAN DV Documentation V1.3

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Summary: CAN DV seamlessly plays DV25 video files out the firewire port of a computer based on a running order or schedule. It was designed to play out preproduced material with a minimum of live/real time changes to the schedule. If desired it will automatically load schedules (on the half hour) based on time of day and execute them.

System Requirements: CAN DV currently runs in MacOS X. A version for Mac OS9 could be made, but the threaded environment of OS X is better suited for the task, and the superior networking performance of OS X makes it easier/faster to copy media onto the playout box. A Windows version may also be possible but I has not been developed. Quicktime must be installed and obviously the computer must have a firewire port.

Connection Requirements: Optimally the application must be run on the computer that contains the video clips to be played. Accessing clips on a shared drive via gigabit Ethernet or a SAN has been tried successfully, but especially the Ethernet solution is subject to too many outside influences to be completely reliable. On better Ethernet option is to buy an additional NIC and run the share on a dedicated connection.

Schedule Requirements: The schedules for CAN DV are best created in it's companion application "CAN Schedule". It is not recommended that schedules be modified with CAN Schedule on the same computer while playback is happening. A temporary schedule can also be made, or a premade schedule added to from within CAN DV (see below), but it is not intended for heavy use, especially while playback is happening.

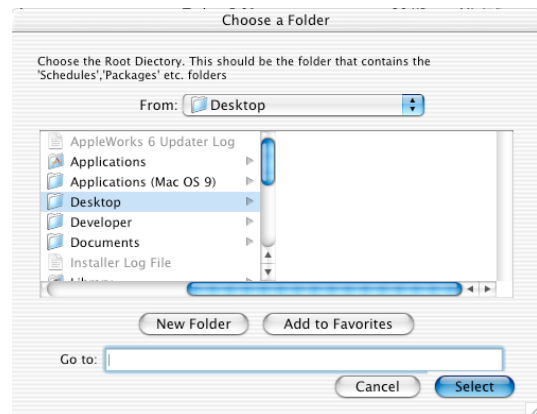
Video Clip Requirements: The video clips **must** all have the same audio encoding frequency. The port is initialized by the audio rate in the clip "blacknstd.mov", or "blackpal.mov" (see installation) which as they are distributed is 48khz, 16bit. I hope to be able to mix audio encoding rates in the future, but for the time being if the application is asked to play a clip with an audio rate other than the one it was initialized with it will play the video out fine, but direct the audio to the macs speaker, not the firewire port. If you would like to use another default audio rate please contact IMC and we can tell you how to modify the required resources.

I. Installation:

Make a new folder on the computer you want to run the application on. Copy the “CAN DV” application to that folder. Make an alias or shortcut to the application and place it on the desktop, or other convenient spot from which to launch the application.

II. First Run / Set Up and Associated Files

The first time you run the application (or when you trash the preference file) you will be asked to choose a “Primary Working Folder” (see figure) direct the dialog to a new, or existing folder on the local computer, or on a shared volume where you want to keep the schedules, and where you will be placing the video clips.

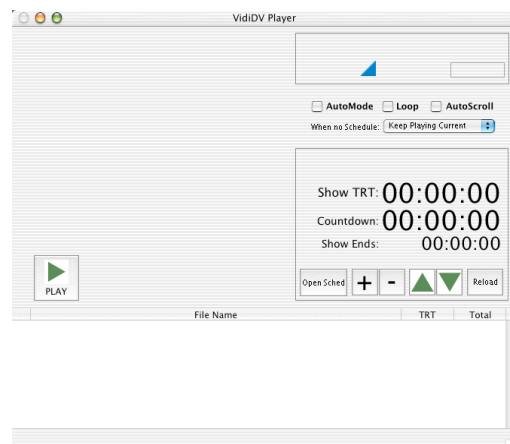


III. Before Playing Video / Main Window

Run the application. After the splash screen, the window should look like this...(see figure)

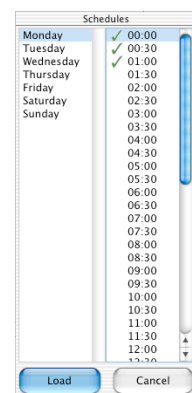
At this point you can get items into the schedule one of two ways.

1. Press the “Open Sched” button and select a schedule to be loaded in.
2. Press the large “+” button and then manually direct the dialog box to .dv clip files. These will be added to the blank schedule on the screen.



Let's start with #2 just to fill things up.

-After pressing the “Open Sched” button you will be asked to pick a schedule date/time which to load. (see figure) When you select a day a “√” will be displayed next to each time that has a schedule with items in it. This is important and comes into play later on when you tell the application what to do when it does not find a schedule (see later). Any time without a “√” next to it will trigger this “no schedule” action. To load the selected schedule, click the “Load” button.

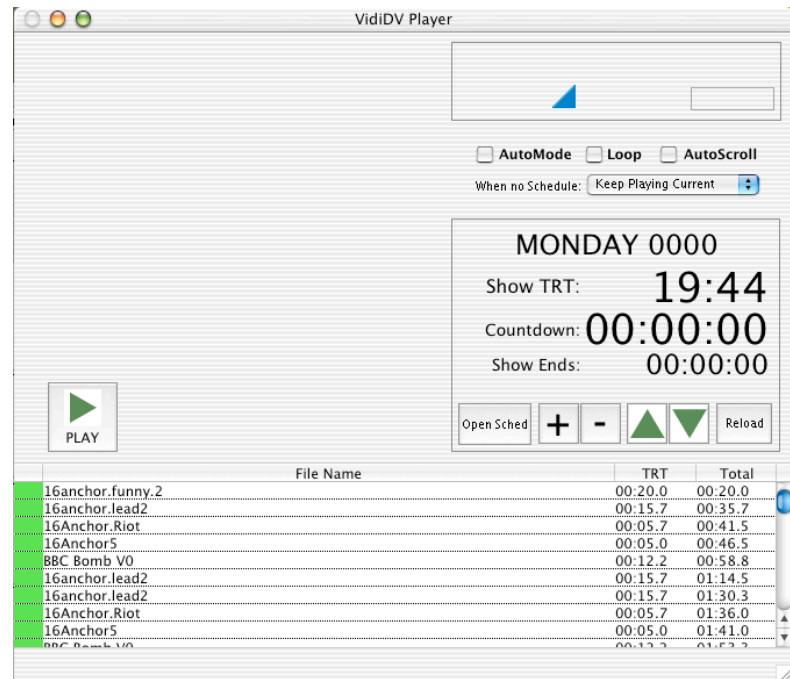


-Loaded up, the main window will now look something like this...

Note: as of this writing, the blank space in the upper left is reserved for a local mirror of the video being played out. It has not been enabled yet as I am evaluating the load it takes, and it's real usefulness.

The name of the currently loaded schedule appears at the top of a sub box on the left. In this case "Monday 0000".

The schedule list is at the bottom. Green marks available clips, red marks clips that are not in the specified place on the server.



You can reorder items in the schedule by selecting the item you want to move and then using the green "up and down" buttons, or you can drag and drop the item to a new position. (Drag and drop is not recommended while the schedule is playing)

You can manually add/delete items from a schedule by pressing the "+" and "-" buttons. The newly added clip will be inserted after the current selection in the schedule.

A set of checkbox options are towards the top of the window. They function as follows...

"**Automode**" if selected the application will attempt to load and play the schedule that would apply to the current time. i.e. if you press it a 9:35 on Monday, at 10am it would load the 10am Monday schedule and begin playing it. From that point on it would monitor the time and load in schedules (if the exist) on the half hour. (See the following description of the "When no schedule" popup menu for your options when no schedule is available.

"**Loop**" if selected will cause the application to repeat the current schedule if it runs out before it is time to load another schedule automatically. If automode is off then this will cause the current schedule to loop endlessly. This "loop" value can be specified on a schedule by schedule basis from within the "CANSchedule" application.

"**Autoscroll**" if checked will scroll the list to the currently playing item (always keep it visible on the screen). This is desirable in autoplay on a long schedule, but you would want to turn it off if you are changing a schedule order while playing out.

“When no schedule” popup... this allows you to choose what happens when the application seeks to automatically load a schedule and there is no schedule available for that day/time. The options are...

Keep Playing Current: This is the default, and will just keep playing the current schedule. If the schedule is finished and “Loop” is selected it will just keep looping the schedule until the next time it is scheduled to try and load a schedule.

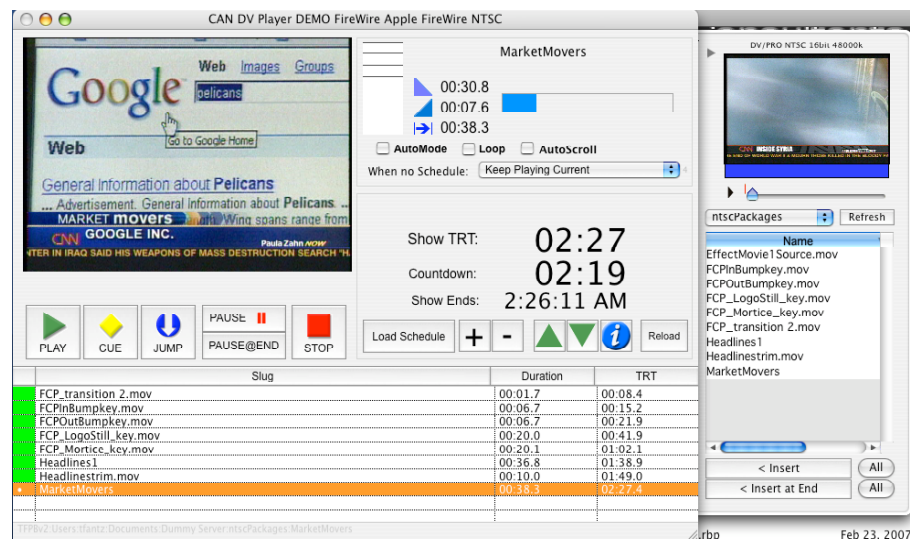
Reload Current Sched: This option instructs the app to reload the current schedule and start playing from the top. This would allow you to change a schedule via CANSchedular and have the CAN DV automatically pick up those changes on the half hour.

Load -1hr Schedule: This option instructs the application to load a schedule that is one hour older than the schedule it was trying to load and couldn't. Example. It is Monday and the clock strikes 6pm (1800), there is no Monday/1800 schedule, this option would cause the application to try and load the 5pm (1700) schedule.

IV. Playing Video

To start playing the current schedule you press the “play” button. If there is no selection in the schedule, the play will begin at the top of the schedule, otherwise it will begin playing at the selected item.

Once playing, other buttons become available (see figure) and some fields will start having active information.



Fields: The sub box at the top right will now contain the current clip name, the current (time) position of the clip, the total running time of the clip and a progress bar “counting down” to the end of the clip. The progress bar will change from blue, to yellow, to red as the end of the clip approaches. It is not advisable to change the schedule running order while the progress bar is showing red. The other sub box will now show the time when it thinks the current schedule will be finishing airing and a countdown to the end of the schedule.

Buttons: Next to the play button there are now five new buttons.

“Cue”: Loads a clip and freezes on the first frame... pressing play will cause it to continue.

“Jump”: Will immediately jump from what is currently playing to the selected item.

“Pause”: Pauses the video playback. When paused the button title will change to “Unpause”. If you wish to pick up right where you are, press this “Unpause” button. If you wish to skip to something else in the schedule, select it in the schedule list and then press the “Play” button.

“Pause@End:” When this is highlighted the currently playing clip will freeze on the last frame and the application will be switched into “Pause” mode. Refer to the “Pause” button as to what you can do then. After unpausing, the pause at end function will be reset. I.e. you have to press it on each clip if you want to pause at the end of each clip... it will not stay active.

“Stop:” Stops video playback. The only way to get video going after this is selected is to press the “Play” button.

“Jump:” This will load the next item in the schedule and start playing it immediately.

“Jump and Pause:” The will load the next item in the schedule, jump to it, but pause on the first frame. See the “Pause” button for what you can do then.

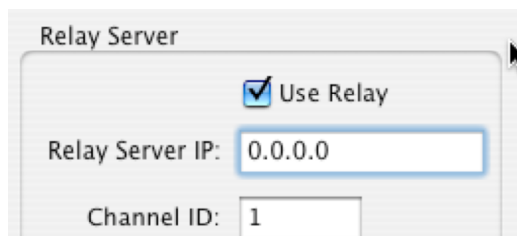
“Mirroring Video:” This is accessed from a menu item. This duplicates the firewire output on a section of the screen. This is mainly for diagnostic purposes and it is NOT recommended that it be on during normal operation. Toggling this on and off can lead to dropped frames on playback.

-When a clip is loaded and is playing it will have a “•” placed next to its entry in the schedule list. When it is finished playing it will have a “√” placed next to its entry in the schedule list.

V. Multiple CAN DV’s in Sync and CAN Relay.

Several CAN DV applications can be setup to run in tandem or “sync”. To do this all the CAN DV computers need to be networked and you need to running the CANRelay application on a computer with a fixed IP number. The CANRelay app takes commands from CAN DV and CANSchedule applications and relays them to each other. This means that when you press “play” on one CAN DV it will tell the other CAN DV to “play” etc. This also allows a CANSchedule application to send commands to CAN DV applications... a kind of “remote control”.

To set CAN DV up to work with CANRelay... go to the “Options/Preferences” menu and look in the bottom left hand corner...



The “Use Relay” checkbox determines if CAN DV should attempt to make and sustain a connection to CANRelay.

The “Relay Server IP” field is for the IP number of the computer running CANRelay.

The “Channel ID” is to identify “sets” of CAN DV apps that will be “synced”. There is no need to change this unless you are trying to run more than one channel through a single CANRelay application.

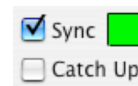
The “Workstation” field is a unique identifier for the individual CAN DV application. The default is the Ethernet MAC id number of the computer. This should only need to be changed (to something unique) if you are trying to run CAN DV and CANSchedule off of the same computer.

Once you change these settings CAN DV will attempt to connect/reconnect to CANRelay, you do not need to restart the computer.

-If the connection goes down between CAN DV and CANRelay, CAN DV will repeatedly attempt to reconnect to it.

-If the connection goes down, CAN DV will not stop, but it will not be able to synchronize it’s actions with the other copy of CAN DV, nor inform CANSchedule what it is doing.

Once connected you will see two new checkboxes in the upper right hand corner of the main window... The “Sync” button determines if the individual copy of CAN DV will “listen” and “send” commands to the sync group. When this is unchecked, the CAN DV is disconnected from the others and will not respond to commands sent by other CAN DV apps, or CANSchedule apps.



The “Catch Up” button is used to get two servers back in sync when one has been stopped intentionally or unexpectedly. For Catchup to work the “Sync” must be on all the CAN DV’s and they must have the same schedule loaded. In this case, when you check the “Catchup” checkbox on, the stopped CAN DV will start playing when the next clip starts on the other CAN DV... putting them back in “sync”. Once this is done, the “Catchup” box will uncheck itself.

That’s it for now.

Documentation needs to be added on how to trim clips.

Troubleshooting CAN DV:

1. Video is not playing out the firewire port:

Sometimes the firewire port gets locked up and is not available to the computer. CAN DV does not have a method for really determining a successful “binding” to the port yet. The best way to determine if this is the problem is to first see if other applications (such as Imovie) can play out through your system successfully. If not then it is possible the PRAM needs to be reset so that the computer can do a new “electrical inventory” as to what is available. Another option to determine if this is necessary is to run the “Apple System Profiler” utility, and look under the devices tab. If you have something plugged into the firewire port it should show up under the firewire device tree. If not, then it is another sign you may have to “zap” the PRAM of the machine. (Note: This situation has not arisen under OSX v >10.3)

How to zap the PRAM to potentially reset your firewire ports.

- 1.If the computer is on, turn it off.
- 2.Reset the power manager by simultaneously pressing and then releasing Shift-Control-Option-power on the keyboard. Do not press the fn (Function) key while using this combination of keystrokes.
- 3.Wait 5 seconds.
4. Press the power button to restart the computer.

If no firewire device works after this then I suggest consulting the Apple knowledge base at ww.apple.com or contacting your technical support person.

If just CAN DV doesn't play out video, please make sure that the “bars” and “black” movies for your particular format are in the same folder as the CAN DV application.

2. Video is playing out, but the sound is coming out the computer speaker, not the firewire port.

This usually means that the encoded audio frequency of one or more of your clips does not match the initialized frequency of the port. Please see “Video Clip Requirements” at the beginning of the documentation.