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K2 TimeDelay

APPLICATION SOFTWARE

User Manual

SOFTWARE VERSION 2.1

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Preface

K2 TimeDelay is an optional application designed to interface with AppCenter. Since K2 TimeDelay is not a standalone application, the K2 TimeDelay documentation is provided to supplement the existing server documentation. This manual does not cover basic AppCenter tasks except where they overlap with TimeDelay functions.

Once K2 TimeDelay is installed, AppCenter includes a TimeDelay item in the application droplist on all channels capable of recording.

For more information on installing K2 TimeDelay, see the *K2 TimeDelay Release Notes*.

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About K2 TimeDelay

K2 TimeDelay is an optional control application that runs in the AppCenter application on your local K2 Media Client. TimeDelay records incoming source material and delays the playback of the media. You can determine the length of the delay. The system notifies you if you have exceeded the limit of the available disk space. TimeDelay allows you to start recording on the assumption that you will make sufficient room manually. TimeDelay requires K2 system software version 3.1 or higher.

The record and play channels need to be on the same K2 Media Client. Multiple sessions of TimeDelay can run simultaneously if there are enough record and playback channels on the K2 Media Client. For example, in an HD/SD K2 Media Client with two record and two play channels, you could have two sessions of TimeDelay running, each with one recorder and one playback channel.

This section is divided into the following topics:

"K2 TimeDelay overview" on page 7

"K2 TimeDelay channel panes" on page 8

"K2 TimeDelay menu" on page 9

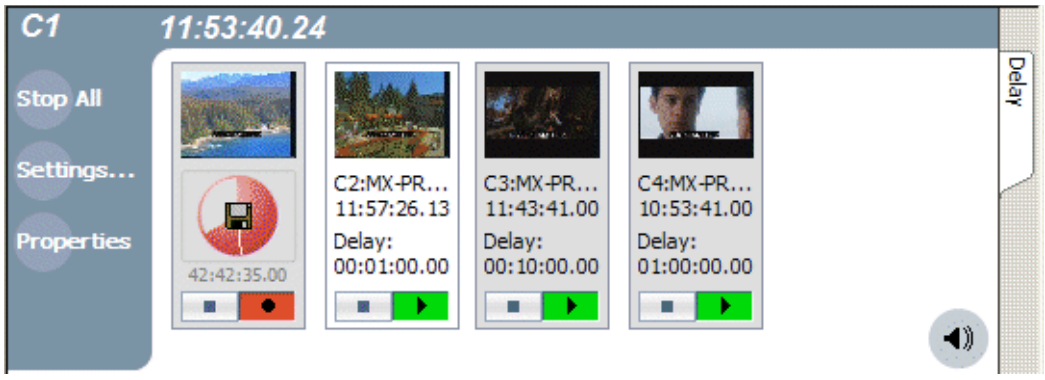
"K2 TimeDelay settings" on page 10

"K2 TimeDelay messages" on page 11

K2 TimeDelay overview

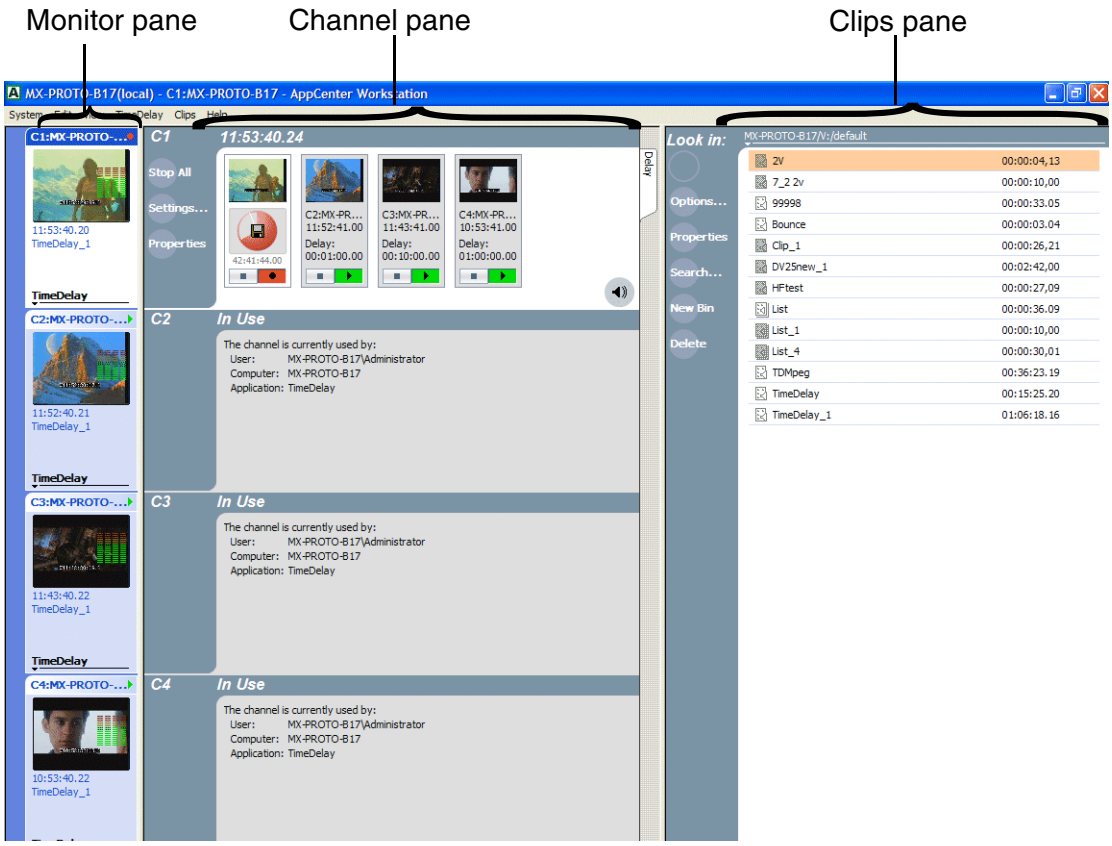
K2 TimeDelay has one view – the Delay view. The Delay view allows you to view a summary of all the channels controlled by this TimeDelay session. When you select a channel, it is highlighted with a white background; all other channels have a grey background. Only the selected channel responds to keyboard input such as using keyboard shortcuts to Play, Record, or Stop.

This section describes the graphical interface. The picture below shows the TimeDelay pane with 3 playback channels – C2, C3 and C4 have started playing. C2 is the selected channel.



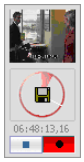
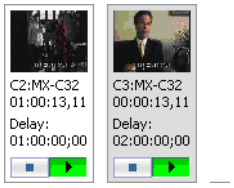
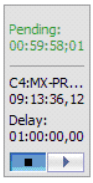
Note that the play channels used by this session of K2 TimeDelay do not show the TimeDelay application to their right. Instead, they show that the channel is in use by the TimeDelay application running on the corresponding record channel. Use the record channel to interact with the TimeDelay application.

The following illustration shows an SD K2 Media Client. Note that channel panes for C2, C3, and C4 show that the channels are in use by the TimeDelay application.



K2 TimeDelay channel panes

When the channel associated with a pane is active, the pane is highlighted with a white background. This indicates that both the keyboard controls and the status bar now belong to this channel. All other channel controls are displayed with a gray background.

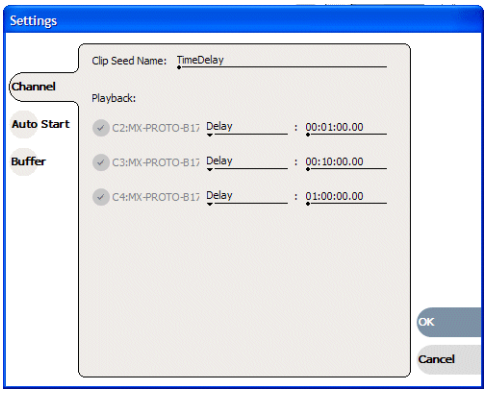
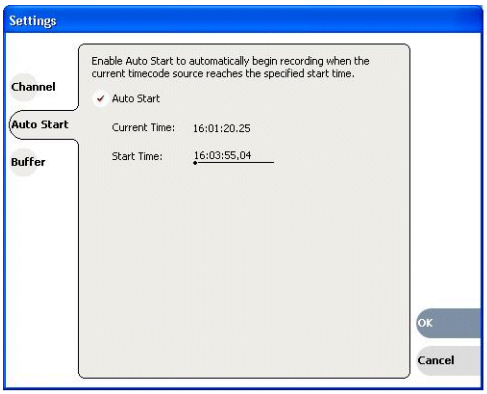
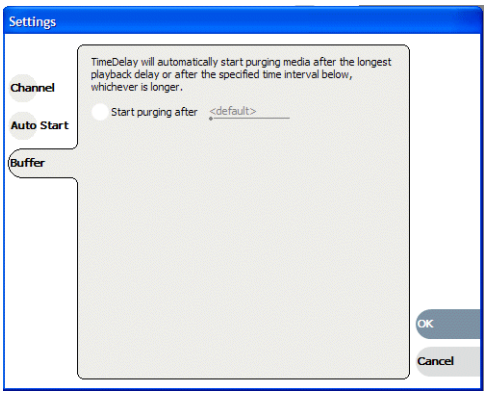
Channel	Description
Record channel 	The record channel pane contains a thumbnail, time dome, and stop and record controls. The thumbnail for the currently recording asset is displayed above the time dome. If no thumbnail can be found or created, an icon is displayed indicating that there is no thumbnail available. Unlike the thumbnail in the Recorder application, this thumbnail is updated every 10–20 seconds to reflect the current record position. The Time Dome control graphically displays the remaining storage and shows estimated remaining time available on the drive. A filled Time Dome represents no storage remaining. A “sweep second hand” shows that recording is in progress. This is represented as a white line on the Time Dome that sweeps through a complete revolution every ten seconds. The Record and Stop controls manually start and stop the TimeDelay session. This starts and stops all channels, including the playback channels. ***NOTE:** Recorded clips are not automatically deleted.*
Play channels (selected and non-selected channels)  Play channel (pending)  	Each play channel contains a thumbnail, the channel and machine name, timecode, preset delay value, and stop and play controls. Before playback starts, the play channel displays a countdown in place of the thumbnail. After playback starts, the thumbnail appears, and is updated every 10–20 seconds to represent a roughly current playback position. The Play and Stop controls can be used to manually start and stop playback. When you press Play, the delay changes to indicate the appropriate time differential. When you press Stop and then press Play, playback does not resume where it was paused. Instead, playback jumps to the correct delay position. If you pause a play channel that was started with Start At, it automatically switches to Delay to maintain the initial offset. If you pause a play channel pause or stop a playing channel, then go to the Settings dialog box to change that channel from Delay to Start At, you must hit Play for the change to take effect.

K2 TimeDelay menu

When the K2 TimeDelay application is active, a TimeDelay menu appears in AppCenter’s main window. The following table describes the menu items.

Menu item	Description
Stop All/Start	This menu item and the corresponding tool bar control toggle between Start and Stop All, depending on whether or not a TimeDelay session is in progress. It has the same effect as the Record and Stop controls on the record channel pane.
Properties	Displays the properties for the program that is being recorded in a dialog box.
Settings	Opens the TimeDelay Settings dialog box.

K2 TimeDelay settings

Setting	Description
Channel 	Allows you to select the playback channel(s). Up to three checkboxes might be available, depending on the number of channels available. Provides a default clip seed name of TimeDelay (e.g. TimeDelay_1, TimeDelay_2). You can enter a clip seed name of up to 28 characters.
Auto Start 	Enables Auto Start to begin recording automatically when the current timecode source reaches the designated start time.
Buffer 	K2 TimeDelay automatically determines the buffer size. By default, the record buffer size is based on the largest playback delay. You can customize the buffer size, but it must always be larger than the minimum buffer size.

K2 TimeDelay messages

This section is divided into the following topics:

"Status Bar messages" on page 11

"Channel status" on page 11

"Error messages" on page 11

Status Bar messages

The K2 TimeDelay application displays status information and error messages on the AppCenter status bar.

Channel status

The K2 TimeDelay application displays status messages on the AppCenter status bar for the active channel. The message describes whether the channel is recording, playing, pending, or stopped.

The messages have this format:

```
<channel>: <machine> - '<timedelay session name>' message.
```

Error messages

The K2 TimeDelay application displays error messages in the AppCenter status bar. For example, if recording fails for some reason after a record session has begun.

Using K2 TimeDelay

This section is divided into the following topics:

"Before using K2 TimeDelay" on page 12

"Starting a new session manually" on page 13

"Starting a new session automatically" on page 13

"Stopping a K2 TimeDelay session" on page 13

"Modifying the time of day timecode source" on page 14

"Adjusting K2 TimeDelay playback" on page 14

"Changing K2 TimeDelay audio levels" on page 15

"Recovering from K2 TimeDelay disruptions" on page 15

"Purging media with K2 TimeDelay" on page 15

"Using K2 TimeDelay clip in another application" on page 16

Before using K2 TimeDelay

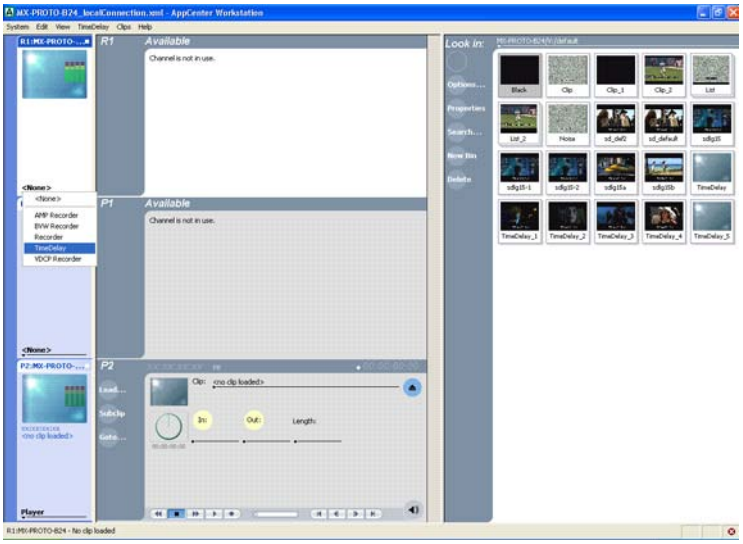
Before you can access K2 TimeDelay, you need to log on to a K2 Media Client and launch AppCenter. (You can set up AppCenter to log you in automatically. For more information, see the *K2 Media Client User Manual*.) When AppCenter is started, an application is launched for each channel. To change the application running on a channel, select a new application from the channel's application drop-down list.TimeDelay only appears in a channel's drop-down list if that channel is capable of recording.

TimeDelay uses one record channel and one or more play channels. To interact with the TimeDelay application, you must activate the record channel that it is using. To activate the channel, you can select the channel from inside the channel status pane or click on the TimeDelay application in the applications pane.

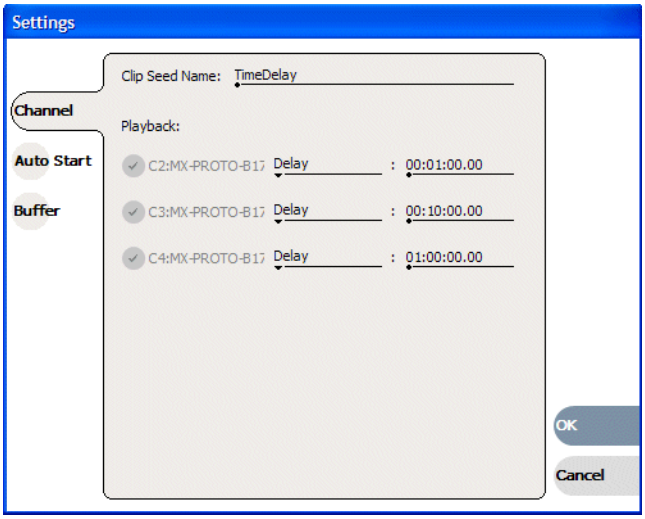
To start TimeDelay on a channel, follow these steps:

1. Select the channel you want to record on.
2. Select TimeDelay from the channel's application drop-down list. (If the channel is

not capable of recording, TimeDelay does not display as an option.)



3. The K2 TimeDelay application starts. In the Settings dialog box, select the play channel or channels for this TimeDelay session.



4. Specify the playback start time either in terms of delay or give an exact start time.
5. (Optional) Set up the AutoStart or Buffer. For more information, see "K2 TimeDelay settings" on page 10.
6. Click **OK**. The settings do not take affect until you click **OK**.

NOTE: *If any of the selected play channels are currently in use, no confirmation message box appears before TimeDelay commandeers the channel.*

Starting a new session manually

If you are already in the K2 TimeDelay application, you can start a new session manually. To start a new session, do the following:

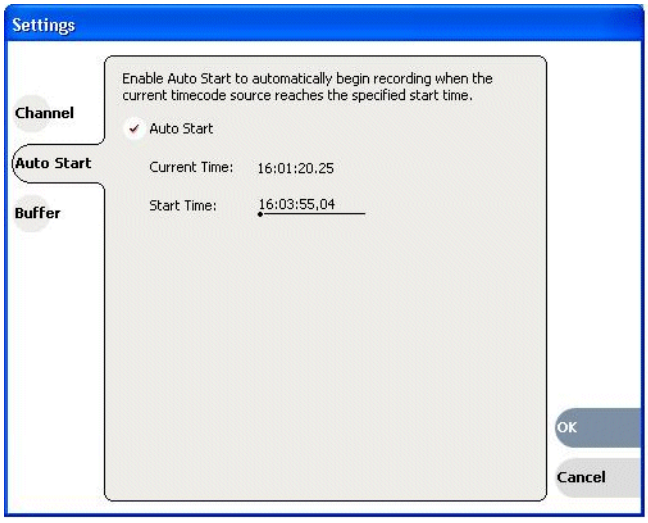
1. If any channel controlled by TimeDelay is still running, click the Stop control on the record channel.
2. You can click the Settings button to open the TimeDelay Settings dialog to setup the new session. Otherwise, the last settings are used.
3. Click the Record control on the record channel, click the Start tool bar control, or select the Start menu item. The play channel(s) will start their delay session.

Starting a new session automatically

The TimeDelay process can be started automatically at a specific timecode value, regardless of the timecode source.

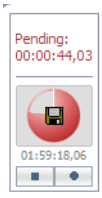
To automatically start TimeDelay, do the following:

1. To open the TimeDelay Settings dialog box, click on Settings button or select **TimeDelay | Settings.**
2. Select the Auto Start tab.



3. Check the Auto Start checkbox.
4. In the Start Time field, enter the appropriate start time. The start time must be at least 10 seconds ahead of the current time.
5. Click **OK** to close the TimeDelay Settings dialog box. The record is not scheduled until you press **OK**.

When auto start is activated, a countdown is shown in place of the thumbnail for the record channel.



Stopping a K2 TimeDelay session

To stop the TimeDelay session, do one of the following:

- Click the Stop All tool bar button.

  — or —

- Select the Stop All menu item.

  — or —

- Click the Stop control on the record channel.

Modifying the time of day timecode source

The time of day timecode is displayed in the upper-left of the TimeDelay title bar. It is used to schedule playback (and record when using the auto start feature) and is the timecode recorded to the TimeDelay clip.

NOTE: To ensure frame accuracy, Grass Valley recommends using an external timecode source such as LITC or VITC.

To modify the time of day source, do the following:

1. Select **System | Configuration**.
2. Select the System tab.
3. In the Time Of Day section, select the source: System Clock, VITC input, or LTC input.
4. Click **OK** to close the Configuration dialog box.

Adjusting K2 TimeDelay playback

Use the TimeDelay Settings dialog box to modify the start time either in terms of delay or give a specific start time. Once you have clicked the **OK** button, TimeDelay adjusts the playback in one of two ways:

- If playback has not started, TimeDelay schedules the playback as usual.

  — or —

- If playback has already started, clicking the **OK** button causes TimeDelay to stop the playback on that channel, cue to the new delay offset, and begin playback at the new position.

The maximum delay allowed is 23:59:59;29. If a delay larger than the maximum is entered, TimeDelay converts the entered value to less than the maximum. For example, if you enter a value of 24:10:59;29 TimeDelay converts it to 00:10:59;29. If you enter a value of 25:10:59;29 TimeDelay converts it to 01:10:59;29.

Playback delays that are too small are automatically adjusted to the closest valid value. The minimum playback delay is based on the video server that the TimeDelay channels reside on; it is summarized in the following table.

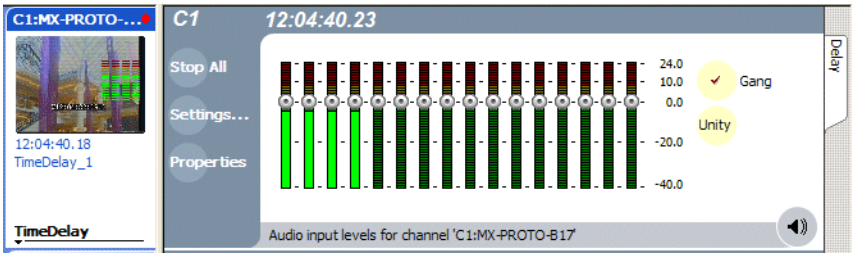
Video server	Minimum playback delay (seconds)
K2 Media Client with internal storage	15
K2 Media Client with external storage	25

You can modify the length of the K2 TimeDelay playback delay. The system notifies you if you have exceeded the limit of the available disk space. TimeDelay allows you to start recording on the assumption that you will make sufficient room manually.

Changing K2 TimeDelay audio levels

You can modify the audio levels for the record channel or any one of the playback channels independently. To open the Meters window, select the TimeDelay channel and click on the Meters button in the lower right-hand corner.

This window contains a meter for each audio input or output (depending on the current channel selection) that displays the audio level.



Each audio meter indicates the final (adjusted) audio level on the audio input or output for that track. A decibel scale is displayed alongside the sliders.

To adjust the input gain for the record channel or the output gain for a play channel, move the slider on the meter. To snap all the gain levels back to Unity default, click the Unity button. To change all gain levels proportionately when any one of them is moved, click the Gang checkbox.

Recovering from K2 TimeDelay disruptions

If K2 TimeDelay is disrupted, due to operator error or power cycle, it restarts automatically at the correct position. (To restart TimeDelay without logging in, you need to configure auto login in Appcenter. For more information, see the *K2 Media Client User Manual*.)

To initiate auto recovery, AppCenter must be restarted, either manually or automatically on reboot. TimeDelay reloads the clip, jumps to the correct position, and begins recording or playback depending on which operations were in progress during the failure. It fills in black video where the system was not recording, so that the clip length and delays are exactly maintained.

Purging media with K2 TimeDelay

By default, K2 TimeDelay automatically starts purging media after the longest playback delay, but you can specify a longer time interval after which purging will begin. This could be useful if you want to use the underlying clip in another application, potentially on another server that shares the same storage. The purge interval is the period between the start of recording and the start of the media purge.

You are notified if there is not enough disk space to support recording for this time interval. If so, the application allows the record to start on the assumption that you will make sufficient room manually. If the server runs out of storage, recording stops.

To set the time interval for purging, do the following:

1. Click the Settings button or select Settings menu item from the Menu to open the TimeDelay Settings dialog box.
2. Select the Buffer page.
3. Check the Start purging after check box and enter a time interval. If the specified time interval is shorter than the longest playback delay, then purging does not begin until after the longest playback delay.
4. Click **OK** to close the TimeDelay Settings dialog box.

Using K2 TimeDelay clip in another application

The clip recorded by K2 TimeDelay can be used in other applications, in a similar manner to any other clip on the system. For example, you can load it into the Player application and play it or create subclips from it.

NOTE: *When the purge interval is reached, the oldest media is purged. The first frames will be deleted as the session continues along. For more information on purging media, see* *"Purging media with K2 TimeDelay"*.

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