

PFClean 2.1 Tutorial

Dirt



| | |
|--|----------|
| Introduction | 3 |
| Download Footage | 3 |
| Setting up footage | 3 |
| Loading a clip into the 'Edit' tool | 3 |
| Cut the clip into separate shots | 3 |
| Create a dirt cleanup effect | 4 |
| Prepare the dirt parameters | 4 |
| Cleaning dirt | 7 |
| Manually marking dirt for cleanup | 7 |

Introduction

In this tutorial, we'll show how to automatically detect and clean dirt in a clip, and how to use the manual dirt sampling and marking tools.

Download Footage

This tutorial requires you to download and uncompress the following footage to an easily accessible storage location: http://www.thepixelfarm.co.uk/Footage/New_Filmlight_Footage.tar.gz

Setting up footage

Load the "####.dpx" clip by dragging the folder into the media bins from the file browser.

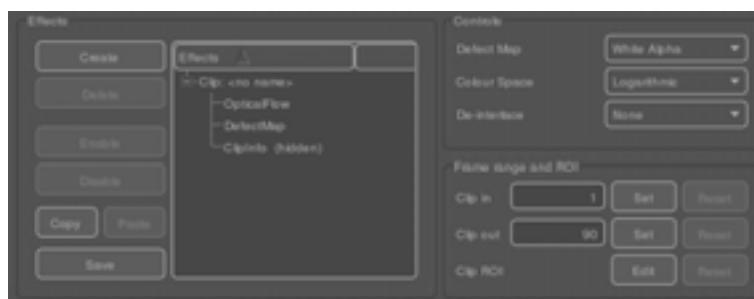
Loading a clip into the 'Edit' tool

Drag the clip into the media bins, highlight the clip by clicking on it with the left mouse button and press the "Select" button to select the clip for editing (or shift-double-click on the clip in the media bins with the left button).

Note that the clip used in this tutorial actually contains a defect map. However, to illustrate workflow for standard clips that do not have this information, we will rely on the dirt detection tools to identify which pixels need cleaning.

To do this, we will tell PFClean that the clip has a defect map by changing the "Defect Map" control to "White Alpha", but then ignore that defect map during dirt cleanup. Click the viewer Alpha button in the RGBA controls, and you will see that the defect map has been removed from the clip. If you are cleaning a clip that does not have a defect map, you will not need to do this step.

This clip is also in log space, so whilst in the clip panel, change the "Colour Space" option to "Logarithmic". This will help PFClean to improve the accuracy of operations applied to the clip.



Cut the clip into separate shots

Now, press the "Done" button to stop editing and switch back to the Media Bins. Before we can start to detect and fix dirt using temporal information, the clip must be cut into separate shots.

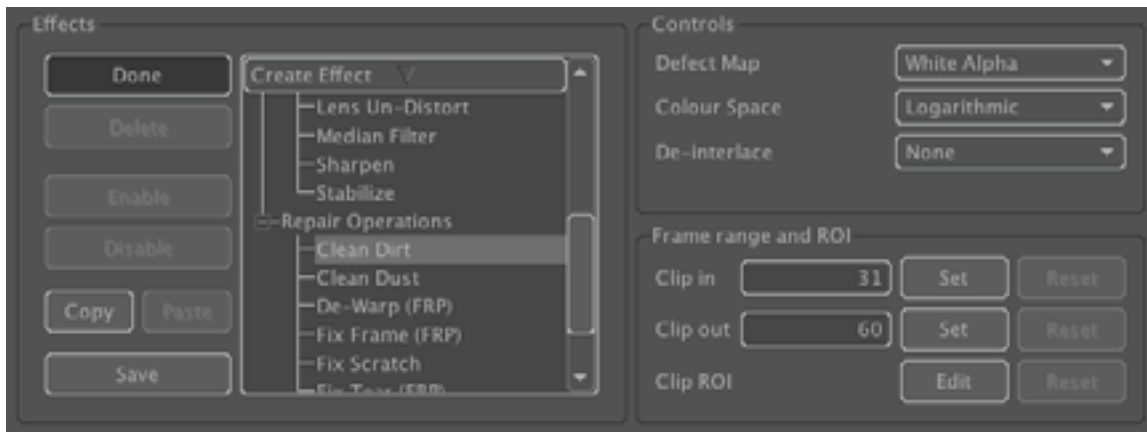
Open the Cut tools by clicking the "Cut" button, and drag the clip into the "Clip" box. Press the "Detect" button and after a short time the cut detection will complete (see the Cut Detection tutorial for more details). Once the cuts have been detected, press "Commit" to store them and go back to the media bins, where you will see the 3 scenes as separate clips.



Create a dirt cleanup effect

Press "Edit" to switch to the clip editing tools. We're going to clean the middle clip in this tutorial, so highlight it by clicking with the left mouse button and press "Select" to start editing. You will notice that the "Defect Map" and "Colour Space" controls are already set from before, and have not been changed by the Cut tool.

To create a dirt effect, click "Create" to display the list of available effects. Scroll down to find "Dirt" and click it with the left button to create a dirt effect. The "Create" button has changed labels to "Done", so click "Done" to stop effect creation and switch to the dirt toolset.

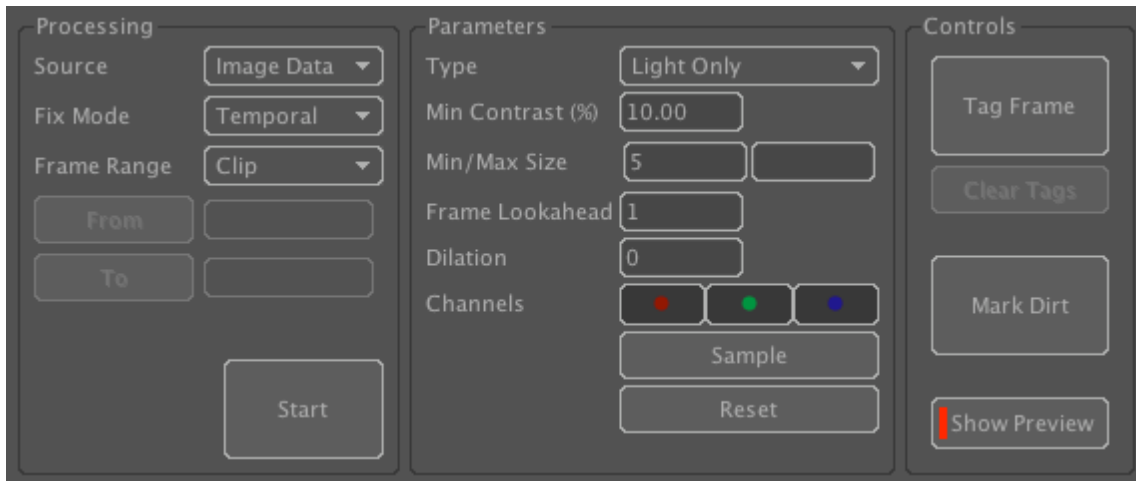


Prepare the dirt parameters

In this tutorial, we are going to ignore the defect map and detect dirt pixels directly from the RGB image data, so change the "Source" option to "Image Data", and change the "Fix Mode" to "Temporal" so we can correct dirt pixels using information from other frames.

Note: if your original clip does not have a defect map, you will not need to do this step, and the source and fix mode will default to "Image Data" and "Temporal" automatically.

Scrub through the clip in the viewer window and take a look at the clip. You will see that the dirt in this clip is always lighter than the background, so the first step is to change the "Type" parameter to "Light Only". This will help PFClean identify the dirt pixels more easily.



Press the "Dirt Preview" button to see the dirt pixels that have been identified. Notice that not all pieces of dirt have been picked up with the default parameters. To correct this, we need to adjust the dirt parameters so they are more suitable for this clip.



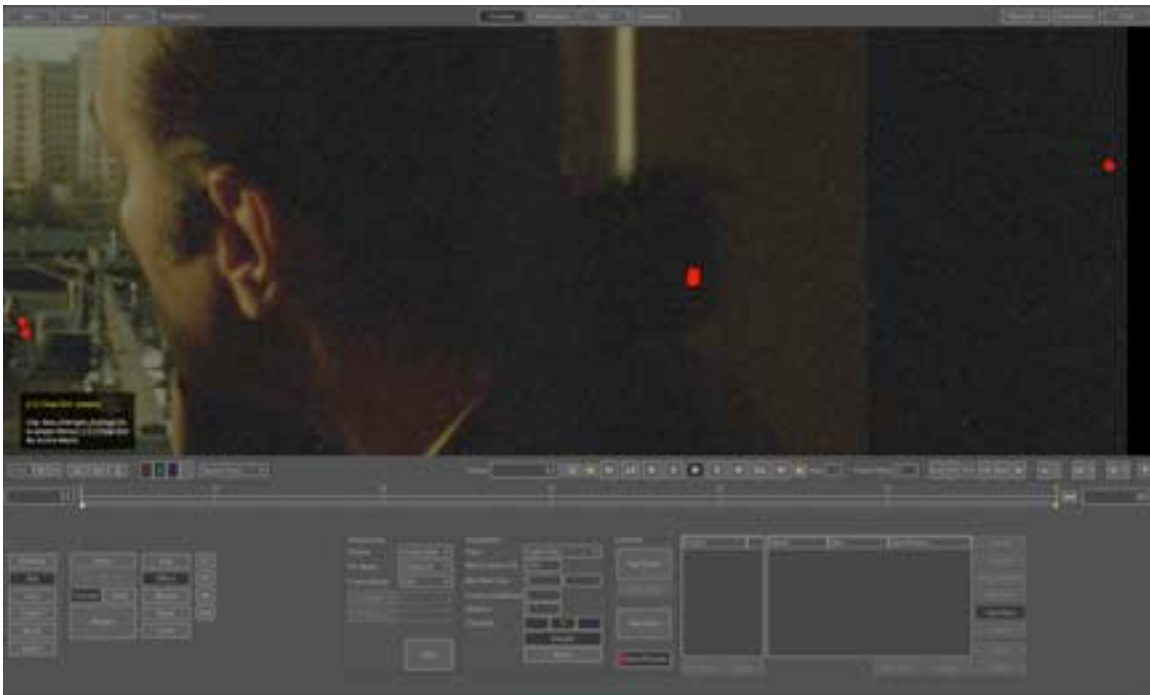
There are two ways to set the dirt contrast and size parameters: using the Sample tool, or by manually changing the values in the edit boxes.

To use the sample tool, press the "Sample" button and zoom the viewer window to show a close-up of a missing piece of dirt. Sampling the dirt parameters should be done with care - try to select a simple piece of dirt rather than something like a faint line or hair. For example, we can sample from the small piece on the right of the first frame, as shown in the image below.

To sample dirt parameters from the image, click and drag with the left mouse button to draw a rectangle around the dirt. Try to make sure the rectangle isn't too big because that will make the detection process more difficult for PFClean.



After the mouse button is released, you will see the dirt parameters update accordingly. If you still have the Dirt Preview switched on, you will also see the overlay update, hopefully showing that the dirt you have just sampled is now picked up correctly.



You can sample again if you wish, and the parameters will update again. Once you're done, switch the "Sample" button off by clicking it again.

Alternatively, you can adjust the dirt parameters manually by editing their parameters. For example, click and drag with the left mouse button in the "Min Contrast" box to adjust the contrast parameter. Each time you

release the mouse button, the preview will update to show the dirt that has been identified using those parameters.

Cleaning dirt

To remove the dirt from the clip, first switch off the Dirt Preview, and make sure the cleanup "Frame Range" is set to "Clip" to clean the entire clip.

Pressing "Start" will begin the cleanup process, and afterwards you will see a list of frames and a list of dirt areas that were fixed in the current frame.

To show the location of the fixes, select all dirt in the current frame by pressing the "All/None" button underneath the dirt area list, and make sure the "Highlight" button is pressed.

Now, play back the entire clip in the viewer. You will see that most of the dirt has been corrected, but some small pieces still remain. These could be corrected automatically by fine-tuning the "Min Contrast" parameter and repeating the cleanup, but instead we'll show how to use the manual "Mark Dirt" tool to correct them by hand.

Manually marking dirt for cleanup

To correct dirt by hand by, click the "Mark Dirt" button and move to a frame that you want to fix (for example, frame 35 in the tutorial clip contains a hair that has been missed, as seen in the image below).

With the "Mark Dirt" button pressed, draw a rectangle around the hair by clicking and dragging with the left mouse button. You will see the hair disappear and the list of dirt in the current frame will update.



To see the fix that has been applied, click the "All/None" underneath the list of dirt areas to highlight them, or press the "Marquee" button and draw a selection rectangle.

You can also use the A/B split to examine the image before and after the fix. To do this, press the "A/B" button underneath the viewer. With the Shift key held, click and drag the split line with the middle mouse button.

Now, you can go through and manually fix any other pieces of dirt you wish to. Keep the "Mark Dirt" button pressed, and use the left/right arrow keys to shuttle forwards and backwards through frames the clip. Each time you see a piece of dirt, draw a rectangle around it to remove and then shuttle back/forwards again to check the result.

