



Composition

Compo PCA Applets
Plug in Compliant Application Specification

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APDL

Composition

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What is PCA?

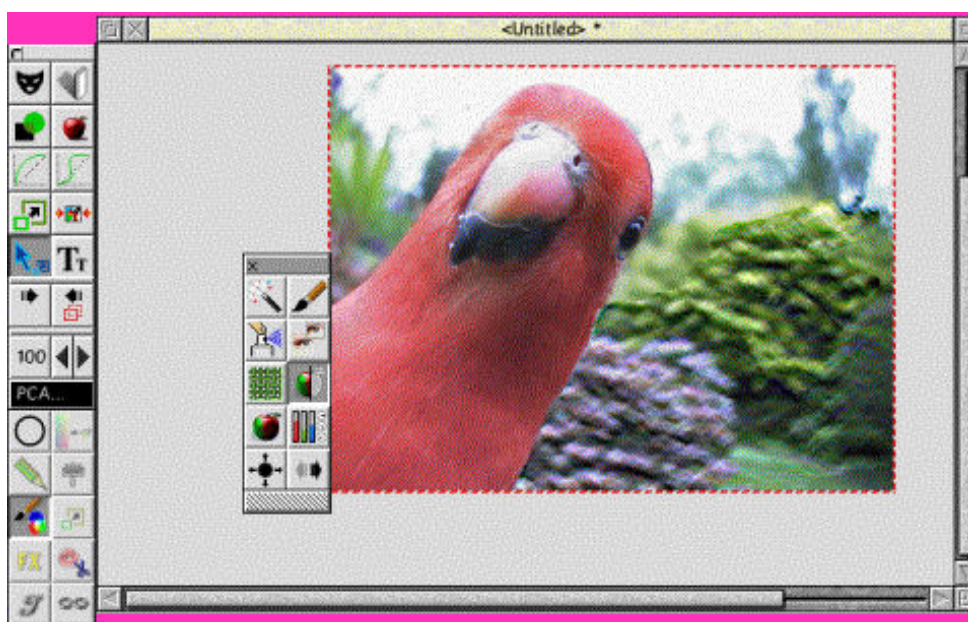
The Plug In Compliant Application (PCA) specification provides an easy to implement way of allowing multiple applications to share common objects in shared memory areas. A program written to the PCA specification will work with any other which supports the standard and uses the same type of objects.

What does PCA do for me as a user ?

The PCA standard works at two levels. In each case a document or object in a common memory area can be 'shared' between two or more applications. This is not like the versions of OLE implemented on the Acorn platform. There is a major difference in that OLE copies the object for the second application to work on, thus your data takes up twice as much RAM. With PCA all applications work on the same object thus incurring no RAM overheads.

The application which owns the object is called the Local application and the tool working on it is called the Remote application. When an object is edited in a Remote application the view of it in the Local application is automatically updated as you make changes.

What we have up to now is a more efficient way of doing OLE. However, PCA does not stop there. Take an application like Composition which provides a page make up environment for bit image and vector images - all of which can be moved and edited - a bit like Draw for bitmap images but with a LOT of extras. Composition does not provide 'painting' tools but because it supports PCA any of a range of tools (including painting, fill and drawing tools) may be used to modify images in it - dramatically extending the capabilities of the program. The available tools add themselves to Composition's normal application toolbar and appear as if they were part of the program.



Composition. The available PCA tools are represented by the icons inside the 'PCA' box.

The selected tool (visible in the document window) is depressed.

All of these tools will work with any other PCA compliant application.

For example, imagine a program that does nothing but display a sprite and conform to the PCA standard. Another application could provide paint tools, yet another could provide filters, another might provide warping tools, and so on. From this range of applets you can construct a toolbox that suits the way you work and has the functions you need. This toolbox can be extended at any time and all of the tools will work with all compliant applications.

Furthermore more than one tool can work on the object at the same time and changes made in any one of these will be immediately reflected in all of them.

This is a lot better than OLE but there's still more.

Instead of each applet opening its own window onto the object we can use 'In-place' editing. This means that only the Local application displays the object and the selected tool merely 'attaches' itself to the object. Any

action to the object (such as a mouse click) then goes to the tool and its functions are used to modify the object until you decide to break the link (or choose another tool). Now you are really able to construct an application from a range of applets. All you will see is one window displaying the document. Imagine a DTP package supporting the PCA standard. It could have a frame containing a graphic image and you could link this to any of the tools you have. Any changes made with a selected tool would be appear in the DTP window.



A PCA Toolbar acting on an image in a DTP frame

What we now have is a system whereby an application can have an infinite number of additional tools and all applications conforming to PCA can be used with and by all other PCA applications.

PCA links can be nested so that tools can use other tools. For example, an image in a DTP frame could be linked to Compo which uses this image as a 'canvas' for a composite picture. From Compo one of these images could also be linked to a painting tool and changes made with this would immediately be reflected in Compo and the combined result would appear in the DTP package.

PCA applets do not need to be loaded to be available to applications. As soon as the directory they are in is 'seen' by the filer they become available in any PCA compliant application. All the applets for a particular filetype will be listed by PCA compliant applications, whether they are loaded or not. This means you don't need to waste memory having applets loaded when you don't need them. An applet is loaded only when you select it for use with an object. Once you have finished with it, the applet will automatically quit after a period of inactivity. If you are short of memory you can, of course, quit it yourself. In either case, it will remain available, and should you need it again later it will be loaded automatically when selected. Applets which are currently not loaded are shown with faded icons. In applications which use a menu rather than a toolbar to list applets, those loaded into memory are listed first and separated from the rest by a dotted line.

This facility is only possible with applications which support version two of the PCA protocol. Applets written using version two of the protocol will work with applications which support version one of PCA (eg OvationPro at the time of writing) - you will however, have to load them yourself.

Esoteric features

Many applications that support PCA provide a number of related options which affect the way the protocol works. Typical options (those provided by Composition) are given below with a brief explanation of what they do.

Compo asks to redraw

When on, Compo asks a selected tool to let it redraw the image when a part of it is modified by the tool. This is because Compo can display the image using a number of special effects such as masking and variable transparency. This is however, only a request and the applet is free to ignore it if it needs to draw user graphics over the image. At the time of writing, only the Painting applet takes note of this option. When it is on, the depth, transparency, masking and other special effects of Compo are visible even when editing with the

painting applet but redraw is slower. When off, the painting applet redraws the image but Compos special effects are disabled until you break the editing link.

Track selected object

When on Compo will move the last applet selected as you select images in Compo so that it is always working on the selected image.

Allow in place edits

When on, Compo allows those tools that can do so to edit the image 'in place' on the canvas instead of opening their own view onto the image. Consequently you can only use one tool on an image at once and all mouse clicks over the image are sent to the tool. Turning this option off makes the selected tool open its own window onto the object and lets you edit an image with more than one tool at once.

The Applets

Note that in the following sections the Left, Centre and Right mouse buttons are referred by their RISC OS names of SELECT, MENU and ADJUST respectively.

Current Colour

The current colour is displayed in a block beneath the Tool Pane. Depending on the tool selected there may be two colours, Primary and Secondary. The Primary colour is the main colour and is used when only one colour is required eg Paint brush, single colour fill etc. The secondary colour is used for graduated fills, shadows, fill colour in Draw objects etc. Use SELECT to select the Primary colour and the ADJUST to select the Secondary colour.

The current colour block is displayed as one solid block when only one colour is used, or as a block of three when two colours are used. This enables a representation of the graduated set of colours. The colours can be edited by clicking on them to bring up a Colour Picker.

In some cases a tool will be a single colour but it can also have a secondary colour, eg Airbrush. By default this is set to a single colour, to mimic a real airbrush, but pleasant effects can be generated by using a secondary colour. To achieve this you must click on the Secondary section, the right hand block, to bring up the Colour Picker. You can then change the colour. Once changed you can then select the Secondary colour from the Palette using ADJUST as usual.

To return to a flat colour (where primary and secondary are the same) click in the middle of the colour block - to set both colours to the same setting. If the current tool does not use a colour then a 'hatched' pattern is displayed in the colour block.

In the Drawing applet the colour block is shown with a diagonal line of the Primary colour with the block filled with the Secondary colour. The Primary colour is used for the lines and outline and the secondary colour is the fill colour. The diagonal line also indicates the line thickness.

Bump arrows

In most cases the action of the bump icons is altered by using Shift or Ctrl. This alters the step size used so you can increase or decrease numeric values faster.

Zoom

Note that when used in non-in place mode applets have an additional pane below the colour pane which lets you zoom into the picture being edited.

Palettes

Some applications provide a palette, which is shown below the main window of the application. This shows a selection of colours which can be altered to suit the picture currently being worked on. It also shows the most recent colours used. It has an eye dropper associated with it. This can be used to pick up colours off the graphic in the window. The colour can then be dropped either in the palette, or into the colour bar in the current applet's tool pane.



Paint applet

This applet provides a general set of painting functions. All tools are applied using the current brush settings, which can also be edited. In all cases SELECT paints and ADJUST undoes any change made.

Note: The paintable undo (on the Right mouse button) obeys the brush settings, including opacity. Set Opacity to 100% to undo completely, lower values reduce the effect of the change instead of undoing completely.

IMPORTANT: All items in this applet are affected by the Brush Designer (the Grey icon at the bottom left of the Tool pane). The size, shape, density, opacity etc of all tools can be altered using the designer. It is a very powerful tool.



Dissolve

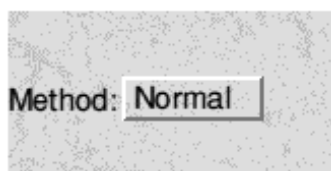
This tool has an additional dialogue box. SELECT reads the area under the brush, breaks it up and writes it back. Use ADJUST to undo. Coverage controls the number of pixels used in the brush.



Paint

Click on the icon in the dialogue box to change modes
This can be

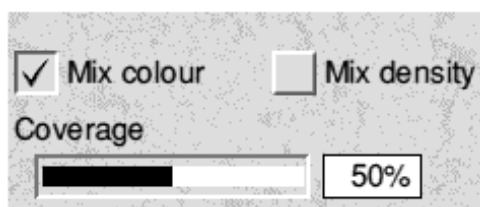
- Normal paint style as defined by Brush Designer. SELECT paints, use ADJUST to undo.
- Additive ie if red is current colour then a red tint is added to the image. NOTE: Colour must be a pure colour ie not a mixture of two colours. Use the Colour picker to select the colour.
- Subtractive ie the current colour is subtracted from the image. NOTE: Colour must be a pure colour ie not a mixture of two colours. Use the Colour picker to select the colour.



Airbrush

Provides a user definable Airbrush.

The inner and outer colours can be chosen but initially they are set to the same colour. To select different inner and outer colours you must first click on the left section of the 'Current colour' block and select a colour for the Outer area. Do the same for the Inner area by clicking on the right block of the 'Current colour' block. Once this has been done you can change the colours by clicking on the Palette with the Left and Right mouse buttons. If the 'Mix colour' button is selected then the inner and outer colours are mixed together randomly.



If 'Mixed colour' is off then the colour used is determined by the intensity of the brush at the relevant point, the first colour is used at the outside of the brush (where brush pixels are dark), the second colour on the inside (where brush pixels are white) with a blend between the two extremes.

Obviously this will only take effect if the brush is 'soft' and has grey pixels in it. The airbrush effect is much nicer with a soft brush, so open up the Brush Designer and select one of the other brushes using the bump arrows. You can also design your own brush by clicking on the Edit button (this is only available on the initial

brush). The 'Mix density' button randomizes the brush density. The 'Coverage' slider controls the number of pixels used in the brush.



Sample

This tool enables part of an image to be cloned. Click with SELECT to position the sample point on the thumbnail image in the dialogue box. Alternatively, while the Sample tool is selected, Ctrl clicking on the main image will set the start point. When you paint the canvas is cloned from the start point. Remember that the tool uses the current Brush design. Each time you paint on the canvas the sample re-starts. For example, you could sample a flower and repeat it several times. However, if you hold down Shift whilst painting you can release the Left Mouse button, move to a new position and continue cloning the image ie you do not re-start the sample.

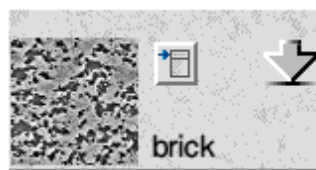


Click on 'Centre' to put the sample point at the centre of the image.



Texture

Applies a transparent texture eg canvas, to the image. Choose textures from the menu which is opened by clicking on the Menu icon. The best effect is achieved with Brush Opacity set to about 20% using the Define Brush option.



Textures may be loaded by dragging a 256 level greyscale sprite or a JPEG to the load target icon on the right hand side of this dialogue box.



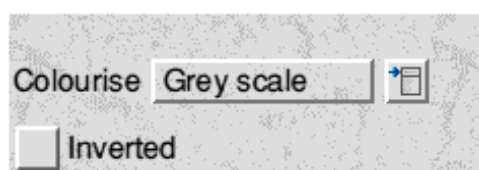
Filters

Various filters can be applied using the current brush. Click on the Menu opener to open the list and select the required filter. Most of the filters have self explanatory names but for the others it is best to just try them.



Colourise

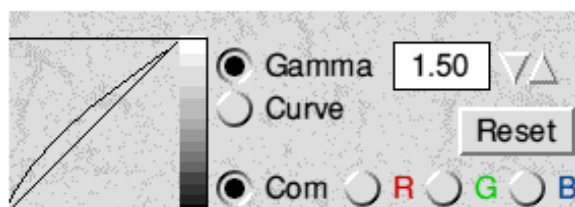
Applies various tints (supplied or user defined) to the image via the current brush. To select a 'Tint set' click on the Menu icon and select from the list. To define your own 'Tint set', click on the left and right blocks in the 'Current colour' block and use the colour pickers to select the colours. To use this set select 'User defined' from the list. The 'Inverted' button, swaps the start and end colours. Initially you should have the Brush Opacity set to 100% as the effect will be more predictable though lower opacity settings can be useful to tint an image.





Munge

Provides Gamma correction and Colour curve correction via brush. For Gamma correction select 'Gamma' and drag the curve to the required position or drag over the graduated bar to the right of the curve box. You can also edit the numeric setting if required. You can edit Combined colours or Red, Green and Blue individually. When modifying the image, the Combined settings is taken into account. Example: Gamma is selected with a Combined value of 1.5. Turn Combined off, switch to Red and set the gamma to 2.0. Switch to Blue and set gamma to 0.8. When the Process button is clicked the Red channel is set to a gamma value of $1.5 * 2.0 = 3.00$ of the original, Green is 1.5 (because we did not set an individual value), Blue is $1.5 * 0.8 = 1.2$ of the original image.



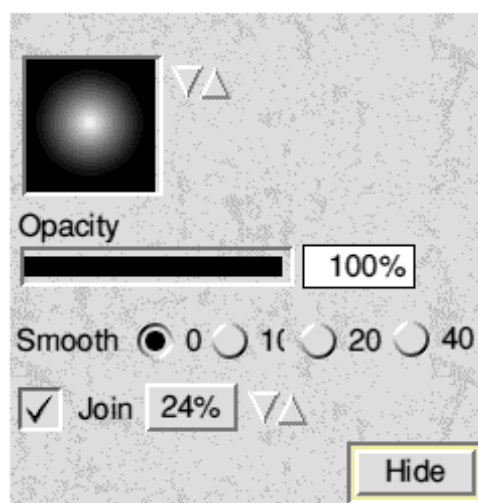
Curve works in a similar way.

Colour Curve is chosen by selecting the Curve button. There are 4 points on the line and these can all be dragged independently. The graduated bar indicates the effect that the tool will have. These tools are useful for enhancing photographs, especially if they are a little dark or light.



Define brush

This is probably the most important and powerful tool in this applet. It lets you select from various supplied brush styles or create a user defined one. Various 'Vignettes' are supplied and can be accessed using the bump arrows. A representation of the brush is shown.



The Opacity slider lets you set the brush opacity so that you can have semi transparent brushes. More rarely required settings are available by toggling the box to full size as shown in the picture above. Interpolation can be turned on or off using the 'Join' button. When on, this joins up painting points, producing continuous lines. This is most evident on small brushes.

'Smooth' averages mouse coordinates so that you can draw smooth curves

Smooth 0 turns it off, the other settings smooth the output position more and tend to eliminate fine detail (like the wobbles you get when painting with the mouse). You can use any combination of Smooth and Join settings.

To define a brush click on the bump arrows until an Edit button appears. Click on the Edit button to open the edit window. The window consists of an area for editing the Gradient and another for editing the size, shape and feathering properties. You can alter the brush shape by dragging the brush representation in the right half of the window. You can also control the size this way, but it is much easier to use the left hand slider to control

the size of the solid core of the brush and the right slider to control the size of the feathered area. It is this that gives a smooth outline to the brush. The Gradient section has 4 points that can be dragged and this controls the rate of change between the solid core of the brush and the feathered edge. This is best viewed in the brush representation of the Brush Edit window ie the one where you select the vignettes using the bump arrows.

The Presets button opens a menu of useful preset brush shapes and sizes.



Undo

Provides a one step undo. All work done with a particular tool will be undone but as soon as another tool is selected the image is fixed. Clicking again will perform a Redo, that is it undoes the Undo. A paintable Undo is available by using ADJUST to paint. This also obeys the opacity and brush settings. Whilst working with a tool you can 'confirm' your changes to date by pressing the Spacebar. Undo will then return you to that point.



Draw applet

Objects are selected in the normal manner. A dialogue indicates the line width and enables you to alter it using the bump arrows. The line thickness is indicated by a diagonal line in the 'Current colour' block. The colour of the diagonal line is the Line colour and the colour of the box is the Fill colour. The default Grey means that there is no Fill colour. Selecting a colour with SELECT sets the Line colour and using ADJUST selects the Fill colour. Colours can be changed whilst an object is still being edited.



When an object is completed you have the option to edit it in various ways. A bounding box appears around the object with 3 points joined by lines. The centre point is the 'Origin' and this is the point about which the object will be rotated or scaled. Double click on the point for a graphical input dialogue.

The top point is the 'Rotation' point and dragging on it rotates the object about the Origin. Holding down Ctrl rotates in steps of 15 degrees. Double click on the point for a dialogue box where you can enter the number of degrees of rotation required. Hold down Shift to step 5 degrees at a time when using the bump arrows or Ctrl to step 10 degrees at a time.

The lower point is the 'Scale' point. Drag on it to scale the object about the origin. Hold down Ctrl to retain the Aspect ratio.

The object is fixed to the canvas by Double clicking over it, or single clicking outside it. To abandon the object before fixing it to the canvas double click ADJUST

The Drawing tools are:



Bezier curves

Plot start point, move and plot end of curve segment. You can now move the pointer to modify the curve. When the curve is satisfactory plot another point and do the same for that segment. At any time you can click ADJUST to modify the existing curves by dragging the anchor points around. To resume adding points click with ADJUST again. Double click to complete the object or double click the Right Mouse button to cancel the object.

Objects will be automatically closed when the curve being added gets close to the starting point. You can then cut holes inside a closed, filled object by creating another closed object inside it.



Straight lines

Plot start point of the line segment with SELECT and then plot end point with SELECT. Continue dragging and clicking until you have the required shape. Click ADJUST to edit the control points, which are draggable. Click again with ADJUST to continue adding line segments with SELECT. Double click to complete the object or double click ADJUST to cancel the object.



Freehand

Hold Left Mouse Button down and draw. Release to stop drawing. The objects created with this tool cannot be rotated or scaled and are deleted using the Undo button.



Rectangle

Plot start point and drag, in any direction, to required size. Hold down Ctrl whilst dragging to create a square. Click with Left button to complete object. Click to fix the object or double click the Right Mouse button to cancel the object.



Ellipse

Plot start point and drag, in any direction, to required size. Hold down Ctrl whilst dragging to create a circle. Click with Left button to complete object. Click to fix the object or double click the Right Mouse button to cancel the object.



Rectangle with round corners

Plot as for normal rectangle.



Graduated ellipse

As for ordinary ellipse but colours are graduated.



Graduated rectangle

As for normal rectangle but colours are graduated.



Graduated diamond

Plots a graduated diamond shape. Ctrl maintains aspect ratio.



Graduated star

Plots a graduated star shape. Ctrl maintains aspect ratio.



A Draw object

If the contents of the Clip Board are a Drawfile then choosing this icon reads the drawing from the clipboard and plots the object. Ctrl will retain the original aspect ratio.

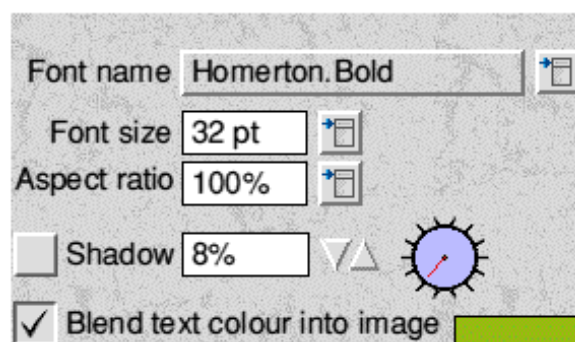
You can also load and plot any Drawfile by simply dragging its file icon to the drawing tools toolbar.



Text applet

There is no Tool pane associated with this applet as there is just one dialogue box where you can select Font, Size, Aspect ratio and Shadow for use in adding text to the canvas. Once fixed the text becomes part of the image and cannot be edited though it can be undone by the undo button on the main toolbar.

To enter text, select the required settings and click on the canvas. A box appears and as you type the box expands to encompass the text. You can insert carriage returns, if required, to produce multi line text and the text remains editable until you click outside the text box or double click on the text. Whilst the text is editable any of the settings can be changed and viewed.



The text bounding box can be dragged to re-position the text. There is also a diagonal line with a scaling point. This point can be dragged to alter the scale of the text. If you hold down Ctrl whilst scaling the Aspect ratio is maintained.

The Blend Text button is used to provide true anti aliasing to each pixel. If the text is on a single colour background or is going to be filled using the graduated fill tool after it is fixed to the canvas then this option should be turned off.

You can also add a Shadow by selecting the Shadow button. The percentage figure is the size of the shadow in relation to the point size of the font. The Shadow Dial is used to set the direction of the shadow by dragging the pointer to the required angle.

When shadow is on, clicking the Left button over the colour patch selects the text colour and the Right button selects the Shadow colour.

Importing text

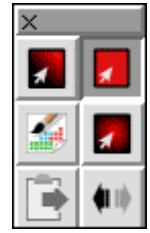
If the Clipboard contains text then it can be pasted onto the canvas using the Paste from Clipboard icon. The text is scaled to fit a sensible amount on the screen but you can still edit any of the settings and the text itself before fixing it to the canvas. The text is clipped after 99 lines and is indicated in the text by 'Clipped here'.

Alternatively, drag a text file onto the text applets dialogue box to load, format and display it.



Fill applet

Five fill types are supported. Note that fills can only be carried out on single blocks of plain colour eg a whole screen of one colour, a Draw object filled with a colour or connected pixels of exactly the same colour.



Angled graduated

Fills the area with a graduated fill using the graduations in the Current colour block.

The start colour is selected with the Left mouse button and the end colour with the

Right Mouse button. Plot the start point, drag out line and release. Fill direction is controlled by start and end points. The length of the line controls the rate of colour change. Click the Right mouse button to undo the last fill made.



Flat

Fills an area with the current colour. Click with Left Mouse Button to select the colour from the palette. Click on the canvas with the Left Mouse button to start the fill. Click the Right mouse

button to undo the last fill made.



Bitmap fill

Click on this icon to open a dialogue that shows a thumbnail of the current bitmap. Use the Menu opener to view the menu and select the required bitmap. To fill an

area with the tiled bitmap click on the canvas. Click the Right mouse button to undo the last fill made. You can also fill with any jpeg file by dragging it onto the load target in this dialogue box.



Circle

Fills the area with a circular graduated fill using the graduations in the Current colour block. The start colour is selected with the Left mouse button and the end colour with the Right Mouse

button. Plot the start point, drag out line and release. Fill direction is controlled by start and end points. The length of the line controls the rate of colour change and the size of the circular fill. Click the Right mouse button to undo the last fill made.



Sprite plot

If a suitable bitmap image is on the Clipboard then this icon lets you fill with the image. The image is tiled to cover the area being filled. Click the Right mouse button to undo the last fill made.



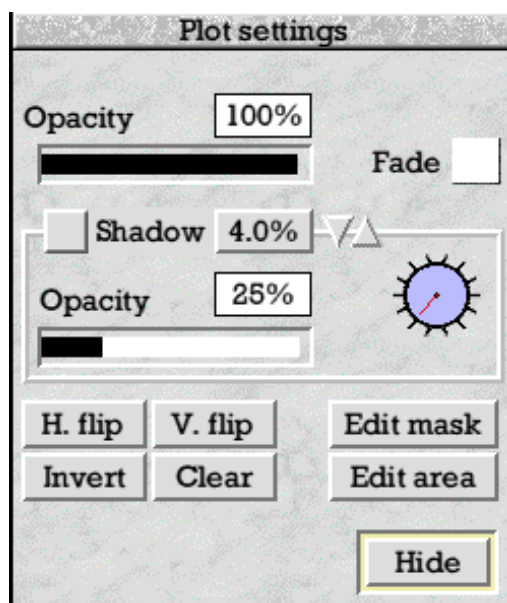
Stamper applet



This tool is used to cut sections of the canvas and paste them back in a different position or use the stamp as a brush. The user interface is very similar to that used by the Draw applet. It is also used, by default, when pasting a sprite or JPEG picture from the clipboard.

When a stamp has been created using one of the tools, a dialogue becomes available where you can change various settings.

NOTE: These settings only take effect with 32K and 16M colour images and when the image and the stamp have the same number of colours.



Opacity: Use the slider to alter the Stamp's opacity.

Fade: You can click on the Fade button to cycle through the available fades. These are Solid, top to bottom, bottom to top, right to left, left to right and circular. The stamp is then plotted according to the fade type selected.

Shadow: You can add Shadow by ticking the box and alter the amount of shadow using the bump arrows. Holding down Ctrl or Shift will advance in larger steps.

Shadow Opacity: This can be altered by dragging the slider. Shadow colour is black at 100% opacity and graduates through shades of grey as opacity is reduced.

Shadow Angle: Drag the pointer on the dial to change the angle of the shadow.

Horizontal flip: This flips the stamp in the horizontal plain ie right to left.

Vertical flip: This flips the stamp in the vertical plain ie top to bottom.

Both flips can be used together.

Invert: This reverses the relationship of the stamp and the mask. A stamp is created from a rectangular object that has a transparent mask applied to it in order to provide the irregular shape. Using Invert makes the initial stamp transparent and the mask visible, so you end up with a rectangle with an irregular shape cut out of it.

Clear: This clears the area of the selected region covered by the mask to a flat colour. The colour can be changed by clicking on it and using the standard Colour Picker. You will not see the effect of this until you Invert the mask.

If you have cleared a mask and then done an Invert you can then clear the 'new' mask to give two blocks of

solid colour, the stamp and the mask.

Edit mask allows you to edit the mask using any of the other available PCA tools (the mask is used to define the irregularity of the selected region).

Edit area lets you edit the selected region using any other available PCA tools.



Bezier curves

Plot start point, move and plot end of curve segment. You can now move the pointer to modify the curve. When the curve is satisfactory plot another point and do the same for that segment. At any time you can press ADJUST to modify the existing curves by dragging the anchor points around. To resume adding points, click with ADJUST again. Double click to complete the object or double click the Right Mouse button to cancel the object.

Objects will be automatically closed when the curve being added gets close to the starting point. You can then cut holes inside a closed, filled object by creating another closed object inside it.

Once an object is cut it can be used to paint with by using the Left Mouse button. A single click of the Right Mouse button returns you to editing the object and a double click of the Right Mouse button abandons the object.

Selecting irregular objects

(You may like to increase the view scale to 200% or 400% to allow for accurate placement).

Trace round the edges of the object, plotting another point whenever the straight line cuts too much of the object out. Don't worry too much where there are smooth curves, just plot from one side to the other. Where object edge complexity increases add more control points and make them closer together.

After you have traced completely around the object and closed the shape the Stamper tool will automatically switch to path edit mode (pointer changes shape). You can then drag the path control points to fine tune the shape of the path. In all cases, try to adjust the path so that it passes over the very edge of the object.

Increasing the view scale even further to 800% or 16:1 will help you do this and tidy up finer points.

To cut a hole in an irregular object (for example, in the gap between a persons arm and their body) click the right mouse button to switch back to path create mode and create the 'subpath' inside the original. The area inside this path will be made transparent.

To see this more clearly, you can make Stamper display the selected area inverted by pressing the RETURN key. However, this tends to obscure the object you are interested in so press RETURN again to go back to outline.



Straight lines

Plot start point of the line segment with Left Mouse Button and then plot end point with Left Mouse Button. Continue dragging and clicking until you have the required shape. Click the Right button to edit the control points, which are draggable. Click again with the Right button to continue adding line segments with the Left button. Double click to complete the object.

Once an object is cut it can be used to paint with by using the Left Mouse button. A single click of the Right Mouse button returns you to editing the object and a double click of the Right Mouse button abandons the object.



Edit

Select this icon to edit the control points of the current stamp.



Rectangular stamp

Plot start point and drag in any direction to required size. Hold Ctrl whilst dragging to create a square. Click with SELECT to complete the object.

Once an object is cut it can be used to paint with by using SELECT. A single click with ADJUST returns you to editing the object; the Left Mouse button moves the position and ADJUST changes its size and shape. Holding down Ctrl creates a square. At any time double click ADJUST to abandon the object.



Elliptical stamp

Plot start point and drag, in any direction, to required size. Hold down Ctrl whilst dragging to create a circle. Click with SELECT to complete the object

Once an object is cut it can be used to paint with by using SELECT. A single click of ADJUST returns you to editing the object. SELECT moves the position and ADJUST changes its size and shape. Holding down Ctrl creates a circle. At any time a double click with ADJUST to abandon the object.

**Text stamp**

Click this icon to open a dialogue where you can select the Font and its size. The X and Y values let you alter the aspect ratio of the font making it taller or fatter. The text is used as the shape for the Stamp. Select the font and size you wish to use (this can be changed at any point before the stamp is fixed). Now click on the canvas and type some text, which appears in white. You can drag the text around with the mouse and when it is in the correct place click SELECT to complete the stamp. Once an object is cut it can be used to paint with by using SELECT. A single click with ADJUST lets you add more text. After editing a double click with SELECT is required to complete the stamp. At any time a double click with ADJUST abandons the object.

**Cut stamp**

Click on this icon to cut the currently selected area as a stamp. This duplicates the double click action.

**Paint**

Click on this icon to use the current stamp as a brush. This is selected automatically when painting with the stamp and is for information only.

**Paste from Clipboard**

If there is a sprite or JPEG on the clipboard then choosing this reads a copy of it and paints with it. Alternatively a sprite file may be dragged onto the Stamper tool to plot with it. Remember that it must be in the same number of colours as the image being stamped into before special effects like opacity will work.



FX applet

This tool provides features that work on the whole canvas rather than just parts of it.

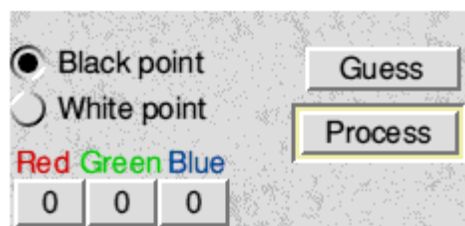


Colour Balance

This tool lets you modify the colour balance of the whole image by selecting a point of reference and then adjusting the image so that the point of reference appears black or white.



For example, select 'White point' and drag over the image to set the reference point. As you drag, the colour of the pixel under this reference point is displayed as numeric values in the Red, Green and Blue boxes. Colours can thus be described in numeric terms eg white is 255, 255, 255 (full red, full green and full blue). Conversely, black is 0, 0, 0.



Dragging to a point that is nearly white and then choosing Process sets that point to full white and adjusts the rest of the image accordingly. Try 'Process' with the reference point over different 'bright spots' in a digitised image. You will see the colour cast and brightness of the image change with different points of reference. If you choose 'Guess' the program will attempt to find a colour in the image as near to perfect white as possible for you. Often the scanning or digitising process introduces a slight colour cast to the image so if the best white point found was 255,255,230 there could be a slight yellow cast to the image. Processing this reference point to full white would correct it.

Alternatively, the tool can be used to introduce a slight tint or cast to the image by your deliberately choosing a point that is not quite white in a balanced image and processing based on that point.

The Black point selection is similar but tends to darken the image instead of lightening. Drag the reference point to shadows and dark areas for best results



Clear

Clears the screen to the selected colour. Click on the colour block to choose a new colour.



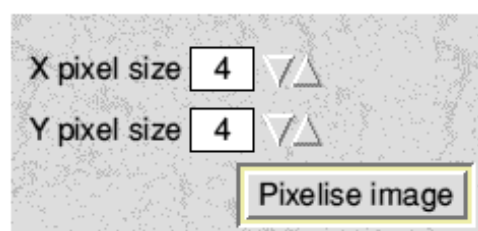
Filter

Applies the selected filter to the canvas. The filter can be applied to all colour channels or those selected by the RGB buttons.



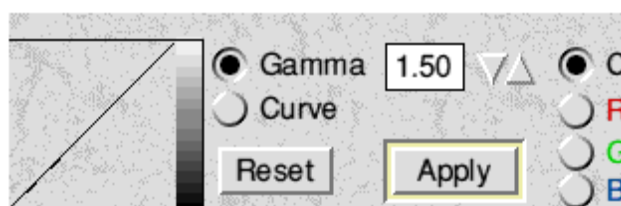
Pixelise

Pixelises the canvas by increasing the pixel size. The pixel size is selected using the bump arrows. Try it to see the effect, you can always use Undo.



Colour Munge

This is similar to the Colour Munge tool in the Painting applet and provides Gamma correction and Colour curve correction to the whole image.



To do Gamma correction select the Gamma button and drag the curve to the required position or drag over the graduated bar to the right of the curve box. You can also edit the numeric setting manually or by using the bump arrows. You can edit Combined colours or Red, Green and Blue individually. When modifying the image, the Combined settings is taken into account.

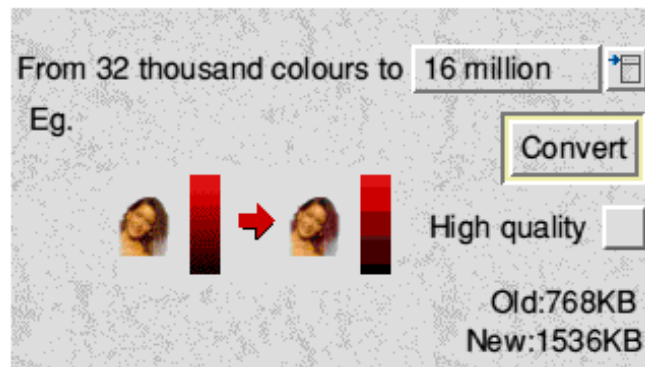
Colour Curve is chosen by selecting the Curve button. There are 4 points on the line and these can all be dragged independently. The graduated bar indicates the effect that the tool will have. These tools are useful for enhancing photographs, especially if they are a little dark or light.



Convert applet

This tool enables you to convert an image from one colour mode into any other mode. This can be done using a 'quick and dirty' method or a high quality option can be selected. The change in file size is also indicated.

The current number of colours is shown and you use the menu opener to select from the available options. Select the High Quality option if required and click on Convert. The Undo button in the main toolbar can be used to reverse this process, but only until you select another tool.



Note that if you convert to a smaller number of colours or greys and then try to convert back to a larger number of colours, you will not get back to the original image. For example, from 32k colours to 256 greys and then 256 greys to 32k colours will result in a 32k image but it will be grey.

You should also be aware that some applications, Compo for example, only allow a limited range of colour depths.



Scale/Crop/Rotate applet

This provides tools that transform the whole image in terms of size and rotation.

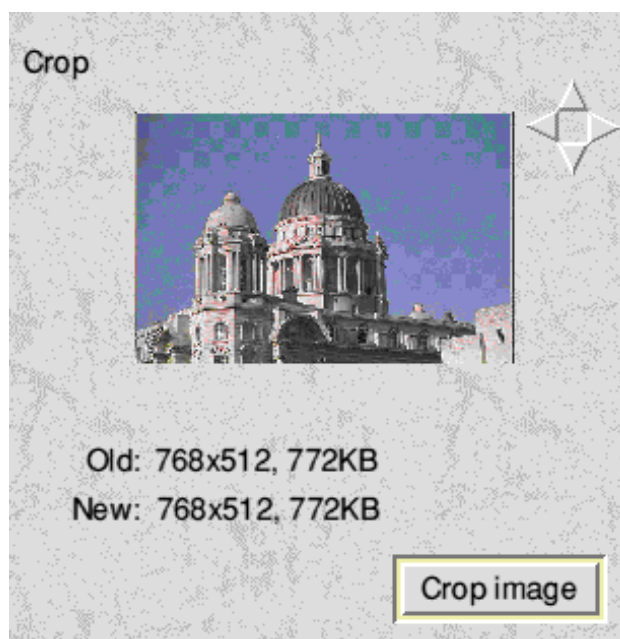


Crop

This tool lets you cut an area from the canvas or enlarge the area of the canvas. You can use the bump arrows on the dialogue to increase the canvas area - the size is indicated in pixels in the 'New' line of the dialogue.



You can reduce the canvas size by clicking on the bump arrows with ADJUST. The effect of this is visible on the thumbnail image.



To define the area for cropping you can drag a box over the required area on the thumbnail or on the main image itself. The old and new values are shown.

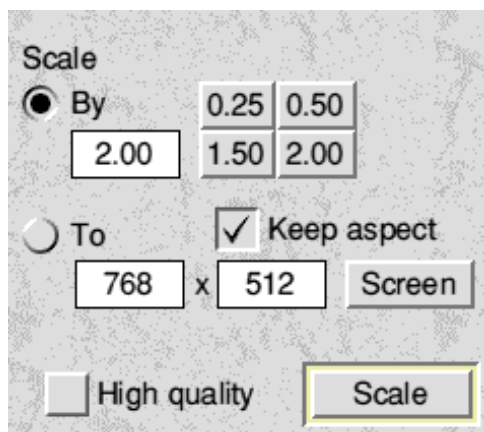
NOTE: Cropping is not the same as Scaling. Cropping means things stay the same scale but part of the image is thrown away.



Scale

The image can be scaled using preset ratios or user applied ratios when the 'By' button is selected. An option to retain aspect ratio is also supplied.

Scaling can be 'quick and dirty' or a 'High quality' option can be selected.

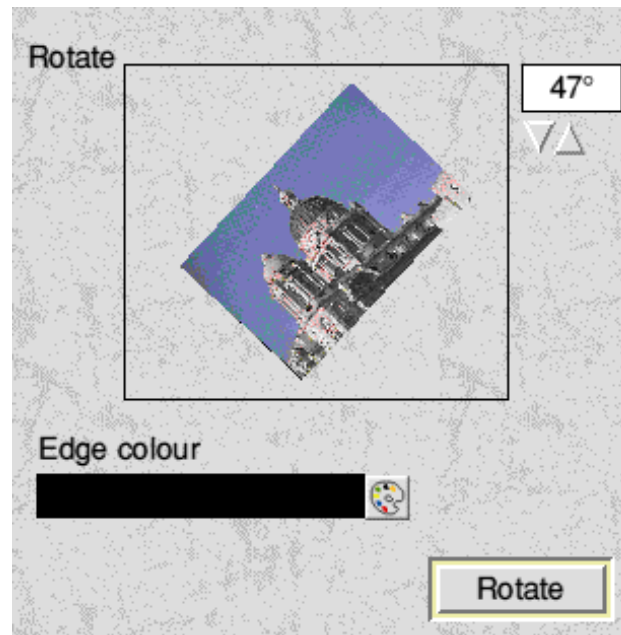


The 'To' option enables you to set a size in pixels. Clicking on the 'Screen' button reads the screen size and puts it in the boxes. Click on the 'Scale' button to carry out the scale. Undo will reverse the scaling.



Rotate

This tool allows you to rotate the canvas by setting a value, in degrees, for rotation. The value can be entered manually or using the bump arrows. Alternatively, you can drag the image in the Rotate window. The canvas is enlarged to accommodate the rotated image.



When you rotate the image there may be blank areas so an 'Edge' colour can be selected for use as the background after rotation. The colour can be selected from the palette or the 'Previous' palette using the Left Mouse button. Or you can use the Colour Picker available from the Rotate dialogue window.

Hint: If you want to match a colour exactly, the dropper can be used to select a colour, which you can then drop into the 'Previous' palette. You can then select the Edge colour from the Previous palette. Click the Rotate button to rotate the image.

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