

# **PPT**

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**COLLABORATORS**

	<i>TITLE :</i> PPT		
<i>ACTION</i>	<i>NAME</i>	<i>DATE</i>	<i>SIGNATURE</i>
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**REVISION HISTORY**

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# Chapter 1

## PPT

### 1.1 Welcome to PPT

WELCOME TO PPT

Release: [Descartes](#)

PPT is an interactive image manipulation package. PPT has been written by [Janne Jalkanen](#) , who would very much like to hear your comments.

[Preface](#)

[Introduction](#)

[Requirements](#)

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[Notes](#) <-- Read this!

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For those who were born with an inquisitive mind, here you can visit PPT's past, present and (a possible) [future](#) .

PPT is a modular package, ie. you may write your own effect modules, loaders and savers using a compiled language. The developer stuff is separately downloadable from the [Web site](#) .

#### DISCLAIMER

Any errors in code, spelling, tact or fact are transmission errors. So don't hold me responsible.

While PPT has been tested in multiple Amiga systems, it is quite possible that it is your hardware combination that makes it go haywire and destroy everything. This non-deterministic property of computer software makes it impossible for me to take any responsibility for any damage your computer might take during installation or other stuff.

#### Localization

I am sorry, but at the moment there are no localized version of PPT.

But there will be.

Tut mir leid, aber es gibt kein deutsches Version von PPT. Aber vielleicht schon im einigen Monaten...

Olen pahoillani, mutta PPT:stä ei ole olemassa vielä suomenkielistä versiota. Ehkä joskus...

Je suis désolée, mais il n'ya existe pas une version française de PPT.

Sumimasen ga, Nihon-go no PPT gozaimasen.

Apologies to people whose languages I have mishandled =)

## 1.2 introduction

Any nitwit can understand computers. Many do.

-- Ted Nelson

The Amiga has always been a graphics-oriented computer and there has been a lot of commercial image manipulation software for it.

However, I've often wondered why there are no good 24bit image processing programs released as PD/Freeware or Shareware. Now I know why. It is a gargantuan job :)

Anyway, recently some new programs have emerged which show good promise and nice programming skills. (Hello there, you know who you are :) So, I decided to add my own experience in the ever-growing Amiga Software Pool and here it is.

Another one megabytes the dust.

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You might say: "Oh no, another image processing program. What do we need these all for?" That is true. This is an another image processing program and you might never need it. I just happen to think that it is better to have many programs to choose from than have just one "Market Standard". Just look what happened in the PC-world...

So, try this one out and if you don't like it, throw it away. If you don't like it but would like it to become better, write to [me](#) and let me hear your suggestions.

### 1.3 Requirements

Hardware: The parts of a computer system that can be kicked.

You will need the following things in order to run PPT:

- OS 2.0 or higher (V36+)
- 1 Megabyte of main memory
- several Megabytes of free hard disk space for [virtual memory](#).
- [bgui.library](#) V41+.

To run PPT comfortably, I'd suggest however the following setup:

- OS 3.0+ (V39+)
- AGA Amiga (for many colors...)
- 68020 CPU or better.
- many Megabytes of true FAST RAM.
- lots of hard disk space.

PPT was written on a Amiga 4000 with 68060/50 MHz, 2+12 Megabytes of RAM and very little hard disk space which suddenly became a lot when I got a brand new IBM 1.7 GB disk drive :-)

Software used includes SAS/C 6.58, XDME and lots of other tiny programs.

### 1.4 Installing PPT

PPT does not require much to be installed. Just click on the "Install" - icon and a standard Installer will take care of things for you. If you do not have this magnificent package, check your local Aminet site (or BBS or whatever) for a file called `Installer_43.3.lha` or something similar.

It is possible to install PPT manually. Here's how:

You can run PPT from the directory you extracted it to, no

assignments or anything are necessary. What you have to do is to copy the contents of the 'libs' subdirectory to the appropriate places.

- a) Copy libs/bgui.library to LIBS: (or wherever you keep your libraries). The bgui.library\_e is the 68020 version that requires OS3.0. You may use that if you meet the specs.
- b) Copy libs/bgui\_palette.gadget, libs/bgui\_float.gadget, and libs/bgui\_bitmap.image to SYS:Classes/Gadgets (or wherever you keep your gadgets).
- c) Add an assignment to JPEGTMP: to your User-Startup (or wherever you keep your assignments). It should point to a place where you have plenty of space (a hard drive is preferable).

Other than that, just copy the PPT directory to wherever you like. Just don't mess with the directory structure... (See [Modules](#) for additional info.)

## 1.5 Laws

I would like to take this opportunity to remind you about the simple and basic laws of computer programming:

Troutman's Laws of Computer Programming

1. Any running program is obsolete.
2. Any planned program costs more and takes longer.
3. Any useful program will have to be changed.
4. Any useless program will have to be documented.
5. The size of a program expands to fill all available memory.
6. The value of a program is inversely proportional to the weight of output
7. The complexity of a program grows until it exceeds the capability of the maintainers.
8. Information necessitating a change in design is always conveyed to the implementors after the code is written.

Corollary: Given a simple choice between one obviously right way and one obviously wrong way, it is often wiser to choose the wrong way, so as to expedite subsequent revision.

9. The more innocuous a modification appears, the more code it will require rewriting.
  10. If a test installation functions perfectly, all subsequent systems will malfunction.
-



11. Not until a program has been in production for at least six months will the most harmful error be discovered.
12. Interchangeable modules won't.
13. Any system that relies on computer reliability is unreliable.
14. Any system that relies on human reliability is unreliable.
15. Investment in reliability increases until it exceeds the probable cost of errors, or until someone insists on getting some useful work done.
16. Adding manpower to a late software project makes it later.
17. There's always one more bug.

.

## 1.6 Thanks, guys

I'd like to use this opportunity to thank the following persons, without whom PPT would either not exist or be at least very different:

- Jan van den Baard for **BGUI**, the coolest GUI designer around.
- Ian J. Einman and Manuel Lemos for **BGUI** also.
- Simon P. Bullen for Fortify, which proved to be a very effective tool when tracking down memory leaks.
- Commodore-Amiga design team for the Amiga.
- J. Michael Straczynski, who has proven that you can actually make good TV shows, if you're convincing enough.
- SAS/C guys for continuing the support of THE Amiga C compiler.
- my **betatesters**.
- A. Tolonen for the great-looking icons.

I would also like to extend my gratitude to Heli, who has endured these long hours of coding with patience I don't believe I would have had.

## 1.7 The BGUI package

Software is to computers as yeast is to dough.

-- Chuck Bradshaw

PPT uses BGUI for the graphical user interface. This is a very nice package from Jan van den Baard, that allows one to write scalable, font-independent code with OO methods very easily. I extend my warm

thanks to you, Jan, for releasing this great program.

During 1996, Ian J. Einman (ie@az.com) took over BGUI development and has been pouring sweat and effort into it. Thanks, Ian, for not letting BGUI die.

And, when Ian's Amiga died, Manuel Lemos (mlemos@acm.org) started taking care of it. Geez, this package has died as many times as the Amiga, now =)

PPT requires bgui.library V41.7 or later.

BGUI and bgui.library are (C) Jan van den Baard, 1994-1995, Ian J. Einman 1996-1997 and Manuel Lemos 1998.

## 1.8 Future of PPT

Nobody needs more than 640K of memory, ever

-- Bill Gates

I have some thoughts about how PPT will change in the future:

- Add PPC support. (This actually is already in. Since I don't have a PPC card at the moment, I would like to welcome people who could test PPC effects for me.)
- Add more color spaces. Specifically I'd like to support complex number spaces for FFT and IFFT effects. This is gonna be slow without an FPU, and could really benefit from a fast CPU, such as the PPC.
- Animation support. Basically, the hooks are there, but I haven't yet got a clue how to support such matters.
- Better AREXX scripts, especially better batch processing scripts.

This is really a priority.

If you feel you could contribute to this list, write up a suggestion and [mail it](#) to me!

## 1.9 Virtual Memory

'Virtual' means never knowing where your next byte is coming from.

Virtual Memory is a way to utilize the computer's disk space as memory. That is, data which is currently unused is swapped onto the hard disk and fetched from there whenever the need arises.

The Amiga does not contain built-in virtual memory, but there are several programs like GigaMem and VMM that allow you to have extra memory on disk. However, all these programs require a device called

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Memory Management Unit - or MMU for short - which is not standard in most Amiga models. Only those machines with a true 68030, 68040 and 68060 processors (NOT the EC versions, thus A4000/030 does not qualify) have a MMU.

PPT circumvents this problem by utilizing it's own Virtual Memory scheme, thus allowing even owners of 68000-based Amigas to handle large images. Only thing required is a reasonably fast hard drive and LOTS of space.

One picture is worth 128K words.

You can easily calculate how much free hard drive space you will require: Take the image size and then multiply the height with the width and the multiply the result by three to get how much a full **RGB** picture takes memory.

For example, a standard 320 X 200 image would take  $(320*200*3 == 192000$  bytes (187 kBytes) of memory. A 640 X 480 picture would take 900 kBytes. And of course, if you wish to retain any undo buffers, you will soon notice that your main memory would be completely depleted, if you wouldn't use virtual memory.

PPT will always use virtual memory. It is not possible to turn it off, but if you define a big enough VM page size (see Preferences/VM Settings

NEED the disk space, but retain everything in memory. The disk file is created, anyways, so that undo buffers can be used.

NB: PPT is not compatible with the Shareware program VMM, because the data PPT uses is shared between different tasks all the time, which means PPT makes its memory allocations using the MEMF\_PUBLIC flag. However, you can use RAM: as the PPT virtual memory directory and set RAM to use VMM.

## 1.10 modularity

Every program is a part of some other program, and rarely fits.

PPT - unlike many other programs - cannot do very much by itself.

The functionality for the program comes from external modules, which contain executable code.

Currently PPT understands about two types of external modules: Loaders and Filters.

IOModules are modules, which contain code to either save or load pictures.

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Effects are modules, which take one image as input and produce an another image. They are the basis for PPT's image manipulation.

This modularity means that you can easily extend PPT's functionality by adding more external modules, which will appear to the user just like the ready-made ones.

By default, PPT will search for its modules in the PROGDIR:modules<sup>1</sup> subdirectory.

Since V3 PPT modules contain information about for which CPU type the module has been compiled for. When PPT is starting, it will check the CPU of your machine and use the best possible effects it can find. You can figure out which effect is compiled for which CPU by looking at its name. An effect compiled for the 68020 CPU will have a \_020 - postfix or something similar to its name.

It is quite safe to keep several versions of the same effect in the modules - directory. PPT will figure out which one is the best for your machine.

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<sup>1</sup> PROGDIR: is the directory from which PPT was started.

(Now, why the hell is there a footnote in a hypertext document?)

I must be going mental or something...)

## 1.11 Color Spaces

Wow... Look at all the colors...

-- Dirac

Images can be represented in many ways. Probably the most common two are RGB and grayscale, but there are many others as well. PPT supports the two aforementioned formats:

RGB - Each pixel of the image is represented as a combination of three main colors: Red, Green and Blue. Every component may have up to 256 values (8 bits or one byte) which yields 16 million different color combinations. This is the standard presentation in almost everywhere for true color images.

Greyscale - Every pixel is represented by one byte, giving the effective range of 256 different gray levels. This has the advantage of taking only one third of memory versus RGB, but unfortunately, all color information is lost.

ARGB - This format is like the RGB format, but it contains an extra channel for transparency. It is thus possible to specify a

transparency value between 0 and 255 for each pixel separately, at the cost of some extra memory consumption. 0 means no transparency and 255 means fully transparent. Check out the Transparency effect.

The extra memory cost compared to an RGB image is 1 byte/pixel.

For more information, see [Alpha Channels](#) .

In the future, PPT may well support more color space formats, as it has been designed to be as extensible as possible.

## 1.12 Menu selections

By clicking the right mouse button you will get a bunch of menus, from which you can choose the following items:

Project Menu:

- [New...](#)
- [Open...](#)
- [Open As...](#)
- [Save As...](#)
- [Rename...](#)
- [Hide/Show](#)
- [Close](#)
- [Preferences...](#)
- [About PPT](#)
- [Quit](#)
- [Quit, lose changes](#)

Edit Menu:

- [Undo](#)
- [Cut](#)
- [Copy To New](#)
- [Copy](#)
- [Paste](#)
- [Zoom In](#)
- [Zoom Out](#)
- [Select All](#)
- [Edit Info...](#)

Display Menu:

- [Settings...](#)
  - [Render](#)
  - [Close Render](#)
-

- Correct Aspect
- Palette >>

Process Menu:

- Process...
- Break

Window Menu :

- Frames
- Toolbar
- Select
- Effects
- Loaders
- Scripts

## 1.13 Windows

There are many windows to look about.

- Images
- Frames
- Toolbar
- Select
- Effects
- Loaders
- Scripts

You can toggle the existence of these windows by using the Windows menu and selecting the item. A checkmark tells you if this window is currently open.

## 1.14 Making up a new project from scratch

You can use this menu item to create a new, empty image. Note that what this actually does is that it calls the external I/O module called 'Plain', so the effect is the same as if you had used the "Open As..." menu item and opened the 'Plain' loader.

For more information on how this one works, see [here](#).

## 1.15 Loading a new project

When you choose to open a new project, a standard ASL requester will pop up and ask for the file name. When you've chosen a file, PPT will automatically attempt to recognize the file type and load it in. You may also choose several files, but not directories.

The last selected path is saved along with other preferences, when you select "Save" in the **Preferences** requester.

---

## 1.16 Loading a new project

This will proceed exactly as a standard **Open** , but you will be asked for a file type first. This may be useful if a loader cannot recognize a file, so you can try to feed the file directly to it.

Some loaders do not need a file, but they create the frame with algorithms. This is the only way to access those loaders. One such loader is called Plain.

## 1.17 Saving a project

Save As... : Saves the current frame onto the disk, asking for the format and filename first. You will be presented a requester, in which you can select the filename (click on the gadget at the top right corner to select the file using ASL File Requester).

You can also choose the format to save the image as by clicking on the listview requester at the left. If the saver supports other image formats than 24 bit, you may click on the multiple-choice gadgets on the right to select the more precise format.

There are currently two choices: 24 bit and colormapped. To save a colormapped image, you must first render the picture separately. (See **Render/Settings** ).

Finally, click "OK" to save the image on the disk. Should the saver require any additional parameters, you will be asked them before the save is commenced.

See here for a list of the savers.

NB: At the moment I have not implemented a pure 'save'. This is because I haven't figured out how it should work in the terms of options, such as if you have a JPEG image, should it automatically remember the compression options, etc? **Send me** some feedback, if you have any ideas...

## 1.18 rename

Renames the current frame. Just use the keyboard to edit a new name for the frame. Note that if a frame with the same name already exists, a number in brackets will be added to the name.

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## 1.19 Hide/Show

This menu item will hide the image, or if the image is hidden, it will re-open the window.

Another possibility to reopen the window is to double-click on the name of the image in the **Frames** window.

Also, you can use the gadget in the image window top border to hide the image. Sorry for the imagery, it sucks.

## 1.20 Closing a project

When you get bored with a frame use this menu item to delete it away. Poof, it says and goes away. Asks you first, though. It does.

This does not delete the image file from the disk, only from memory.

## 1.21 Preferences Settings

Reality is nothing but 80 million polygons per second.

-- Alvy Ray Smith, 1960s

We can do that now.

-- Silicon Graphics, 1997,  
when releasing the Onyx2.

You can configure several program related preferences here. They are divided on four pages:

System

VM Directory

Page Size

External Stack

External Nice

GUI

Main Font

List Font

Screen Mode

Color preview

Preview Mode

Dither preview

Misc

Max. Undo Levels

Flush Modules

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### Enable Tips

### Show splash screen

### Toolbar

### Available Buttons

### Toolbar

### Toolbar Item Type

At the bottom of the window, you have three choices for different actions after you've changed the settings:

#### Use

The preferences will be acted upon immediately. However, some settings cannot be used until the next restart of PPT and if you've made any such modifications you'll be told about it.

(When you quit, preferences are automatically saved.)

#### Cancel

Discards changes and reverts back to old settings.

## 1.22 System Settings

There are two variables PPT cares about when dealing with virtual memory:

### VM Directory

This variable tells where PPT should keep its virtual memory files. I suggest you choose a fast hard drive with lots of free space. It is quite possible to have it in RAM: or T:, if you can afford the memory. Then the overhead of reading and writing to the VM file is quite small.

PPT is uses T: by default for its VM directory.

### Page Size

The size of the 'chunk' PPT reserves from the main memory pool for each frame. If the image is smaller, then PPT will only reserve as much memory as it needs.

The larger this value is, the faster PPT gets, because it does not have to do as many page swaps per image. It basically tells how much memory PPT is allowed to use per frame and if you set it to something like 2 Megabytes (2000 kbytes) only the largest images will then use virtual memory and the smaller ones will just use the RAM.

The size is in KBytes. The minimum possible value is 96 Kbytes.

Note that PPT won't allocate more memory than is needed for the

image. Also, undo images require very little memory, as they're kept almost completely in the VM directory.

There are also settings concerning the externals:

#### External Stack Size

You can use this to set the stack size of the external processes that are launched for different processes. You may not go below 5000 bytes and the recommended setting is 10000 bytes. If you start to see really strange crashes, try increasing this value and see if the problems go away.

#### Priority

You can set the priority of any subprocess started by PPT with this gadget. I recommend you keep it below zero, as then any processing you do should not affect your other duties. If you don't know about processes, don't touch this knob ;-)

#### External Nice Value

If you have Petri Nordlund's excellent Executive package installed, you can use this slider to set the nice value for all external processing. The larger the nice value is, the easier it is for other tasks to take the CPU from the external process. The default value is 10, a good value if you run a lot of processing. You can set it to anywhere between -20 and 20 (but I really don't recommend setting it smaller than zero!)

By the way, did you know that a polar bear is just a cartesian bear undergoing a coordinate transformation?

## 1.23 PPT Fonts

PPT uses two fonts:

#### Main Font

This is the font which is used for the screen, gadgets, window titles, etc. I suggest this font is a large and readable one.

#### List Font

This font is used in any list PPT creates. For example, the loaders and effects lists use this font. I suggest you keep this font a bit smaller and more condensed, which allows you to have smaller windows but still see things.

## 1.24 Setting the Main Screen

### Screen Mode

This tells which screen mode you are currently using. Click on the button gadget on the right to get a standard ASL screen requester (ASL.library V38+ required!) in which you can set the screen depth, size, resolution and mode.

### Color Preview

If this is toggled, then all PPT preview windows will be in color. Note that you need at least a 32 color (depth 5) screen for this to work.

If a color screen cannot be opened or this item is not set, then PPT will use a grayscale screen.

PPT supports OS 3.0 color sharing schemes. All the colors PPT uses have been locked using shared mode and some colors may not be locked at all.

### Dither Preview

If you check this option, the displays are dithered. Unfortunately this will somewhat slow down the display, though this should be quite unnoticeable. Dithering is done with a very simple ordered dither technique, but the pictures look a lot better.

Note that this does in no way effect how the image really looks in memory. It just helps to show more colors if your display cannot display all the colors in the picture.

This setting is ignored for hi- and truecolor displays.

### Preview Mode

Some effects can show a real-time preview. You can use this to control the size of the preview images. You should do this to reflect the speed of your machine: on a 060 the 'Large' setting should be your choice. The Huge setting is for those with both graphics and CPU power to spare.

You can also turn the previews off completely.

## 1.25 Miscellaneous Settings

### Max. Undo Levels

You can only have this many undo levels. Note that this means that for every undo frame, a copy is held in the **VM directory** and thus will eat away your RAM or hard drive space (depending

on where the **VM directory** is placed.)

The default is 4 undo levels. There is no practical limit to this value.

Flush modules when they're not needed?

If you check in this box, PPT will attempt to reduce its memory consumption by flushing all unused external modules from memory.

Depending on the situation, this can free a lot of memory. On the downside, this slows down operation a bit, since any modules must still be loaded from disk when it is used.

The default is to keep all modules in memory.

NB: Since PPT modules are standard Amiga shared libraries, you can use any suitable tool to flush them from memory. For example, saying "Avail FLUSH" in a CLI window will flush away all unused libraries, including PPT modules.

Confirm Requesters?

Sometimes saying 'OK' to all kinds of boring requesters can be dull. If you think that this is the case, then uncheck this box and PPT won't ask you to confirm your choices. For example, if this box is unchecked and you decide to delete a frame, you won't be asked if this is what you really want to do.

Also, some of the more obvious error messages are replaced with a sound signal and a flashing screen (DisplayBeep() for those who care.)

This option is for power users and thus should be used sparingly if you're not quite sure what you're doing.

Enable Tips?

If you want to see tips when PPT starts, then check this box.

If you find tips annoying, uncheck this box.

Show splash screen?

If you don't like the nice PPT startup splash screen, then uncheck this box to speed up starting.

Note that on an Amiga with OS3.x the splash screen contains a banner image. You may exchange your own banner by putting it into the PROGDIR:GUI directory under the name "Banner".

The image is loaded using datatypes, and should contain at most 256 colors.

---

## 1.26 Toolbar Settings

Here you may configure the toolbar. The left-hand listview shows which items you have available and the middle listview displays the current toolbar configuration. Use the arrows in the middle to move things back and from the toolbar. You may also use drag & drop.

It's possible to use either images or text as the labels for the buttons, though in order to use images, you must be running AmigaOS 3.0 or later. Sorry, this may change in the future.

In order to use a button image, just load in any bitmap image you'd like. There are no color/size restrictions, though some combinations will look funny.

A default button set is in the GUI/toolbar/standard directory. If you make a good-looking button set, why don't you send me yours.

The standard icon set was kindly provided by A. Tolonen and is is a 22x17 pixels, 4-color set.

## 1.27 About PPT

This menu selection will show you some information on the current status of PPT, as well as the **Author's** name and address.

## 1.28 Quitting PPT

Quits the program. You'll be asked if you really want to do this or not, unless you have set **Confirm Requesters** to off.

Preferences are saved automatically on exit, unless you choose Quit, lose changes. The preferences file resides in ENVARC: and is called PPT.prefs. It's in ASCII, so the more technically minded may get a kick by checking it out.

## 1.29 Cropping an image

Copy To New

Creates a new frame and puts the cropped area into that one, leaving the original one unscatched.

## 1.30 Copying and pasting

You may **select** an area of an image and then copy it to the PPT clipboard. Then, when you select Paste, it will launch the Compositing module, which allows you to place the image within the target image.

If you choose 'Cut' instead of 'Copy', the area you have cut will be cleared to black.

This is almost the same as dragging an image from the list of frames into a frame, but this allows more flexibility.

## 1.31 Render Settings

In this window you can select how your project will be rendered.

Following options are available:

### Screen Mode

Use this to set the rendering screen mode. The field will show the display id and next to it is a button from which you can call up the ASL screenmode requester. This function requires asl.library V38 or newer.

### Render Mode

This is a cycle gadget, from which you can select how your render is to be made. Here you can specify if you want it to be normal color, Extra Halfbrite, HAM or HAM8.

PPT uses a specialized algorithm for HAM images to provide a great image quality. Which is why it takes a bit longer to generate the palette for a HAM/HAM8 image. Just sit tight :-)

### Dither

There are several dithering options available. The least effective and also least computationally intensive (read: faster) are on top and the slower but better ones are nearer the bottom. You can, if you really want to, use dithering while in HAM modes, but it is not recommended, however.

### Colors

If you're using Normal Color - option in the Render Mode-gadget, you can specify the amount of colors here.

### Force B/W?

Normally after PPT places the darkest color (ie the most black) at color table position 0 and the brightest color (ie the most white)

at color table position 1. If you want the color table entries 0 and 1 to actually be black and white, respectively, then check this option. It can sometimes enhance the image quality if you're using a very small number of colors.

Palette

Tells how the palette should be chosen. There are three methods available:

Median Cut : An optimized Heckbert median cut algorithm, which often produces the best results.

Popularity : A simple algorithm that uses the most popular colors in an image.

Force : This forces the palette from an other image onto this image. You may enter the filename into the string gadget next to this or by clicking the button to the right of the gadget, use the ASL file requester.

The palette must be in IFF format, so you can use any colormapped ILBM image to get the palette from.

Draw Alpha?

If the checkbox is selected, then the image alpha channel will be rendered as well. This means that if there are some areas which have been marked as totally transparent, you will not see anything on them. However, this is quite useful if you're planning to save a transparent image.

OK

Click this to accept the current settings and start rendering.

Cancel

This will forget your changes and close the window.

## 1.32 Rendering

PPT handles images internally in full **24bit format** (or 8bit, if the image is a grayscale image). Sometimes it may be necessary however to reduce the colors of an image or view it in color (if you happen to use the grayscale preview...)

Rendering will take the **existing preferences** and attempts to render your image according to them. You may then save this rendered image to disk as a colormapped image.

Rendering will be done in a separate process yet again, so you can always do something else while the system chews on your image.

---

### 1.33 Close a Rendered Image

Select this menu item to close a rendered image. Until you do this, the image will be out there, eating away your precious RAM.

### 1.34 Correct Aspect Ratio

Since PPT allows you to resize the image at will, you'll get very easily distorted images. This operation allows you to instantly resize your image window so that it has the correct aspect ratio.

### 1.35 Palette editing

If you have a rendered image, you can use this menu item to further edit it.

This menu item has three sub-menus:

Edit...

Opens up a palette editor in the screen that contains the image. It is quite a normal palette editor with R, G and B components, but you can also use it to set the Alpha channel information on each color.

When you save a rendered image in a file format that supports transparent colors, the transparency information is now saved along with the colormap. PNG images support full transparency information for each color, whereas GIF images support only one transparent color. If only one transparent color can be saved, the color with the highest transparency value is marked as transparent \*or\* the one that is the first to have a transparency value of 255.

Load...

Loads a palette on the image. It was better if you used the Force Palette on the Rendering settings, as it can cope with some things better than this.

Save...

Use this to save the current palette on disk. The palette is saved in IFF format and can be read in by almost any software package. Note that PPT saves the alpha channel information in a separate hunk called "ALFA". Unfortunately, this is an unregistered hunk and can cause confusion with some software. Let me know if this happens.

---



## 1.36 Processing images

After selecting this item, you can choose an effect through which your **selected area** will be run. You must first click on the name of the filter and then choose Execute. Some filters will require you to set some additional options before actually executing. You will then see a progress display in a window while the filter does its job.

The processing is done as a separate process, so you can still continue to work on other images, but you cannot work on this image, until the processing has completed. It is possible to resize or close the image window, but you will only see a busy text if you attempt to redraw the window.

You may break the process any time by clicking on the **Break** - button on the progress window or by choosing the **Break** Menu item.

## 1.37 Break

Clicking on this button or choosing the menu item causes a CTRL-C signal to be sent to the external process (ie. Load, Save, Effect or Render) that is currently processing this frame. The execution should stop.

Note: Due to the multitasking nature of the software, it may be possible that it takes a short while for the signal to get through to the external process. Do not get alarmed, if nothing happens at first.

## 1.38 Alpha channels

NB: This changed completely in v4.3!

Alpha channels define the transparency of a pixel. If the transparency value (also called alpha) of a pixel is zero, then that pixel is completely opaque. If it is 255, then the pixel would be completely transparent, regardless of what color the image might be. A value of 128 would mean that the pixel is half-transparent. You can add an alpha channel to the image at any time by dragging the alpha channel image you want from the main frame list into the target image. This will produce a requester window from which you can choose to add the alpha channel. (The other possibility would

be to Composite the images together.)

When you add the alpha channel, the target image will become an ARGB type image, with the alpha values taken from the alpha image. Also, if there was a previous alpha channel, the values will be replaced by the new alpha values.

If the alpha image is an RGB image, the alpha values will be based on the intensity of each image. White color will produce a transparent pixel, and black color will produce an opaque pixel.

If the alpha image is an ARGB image, you will be presented a requester, from which you can choose whether to copy the alpha channel of the alpha image to the target image or to use the intensity values of the alpha image to build the alpha values.

Displaying alpha channels

When an image contains an alpha channel, you will notice this by a checkerboard pattern in the image. You can think of it as a background pattern, which can be seen through when the transparency value of the image allows it.

When you **render** an image, you can choose, whether you'd like the transparency to be taken into account. See [Render Settings](#) .

---

Why use alpha channels? Because they're cool. And they make your web page look a lot better ;-)

## 1.39 Undo

Sometimes even the wisest make mistakes. That is why an undo -function is a necessity.

Whenever you modify an image, PPT will keep a copy of the original one, so that when you choose this menu item, you'll get the previous version back.

You can set how many copies PPT keeps from the [Preferences](#) menu. Note that if you keep very many copies your disk space will be seriously depleted, however main memory is not used almost at all.

## 1.40 Zooming

Use these two menu items to control zooming in and out, respectively.

Zoom In takes the currently **selected area** and enlarges it to fill the entire window.

Zoom out currently zooms back to the entire image.

You can move around in the image while zoomed by using the slider gadgets in the window borders.

---

## 1.41 Selecting an area

It is not necessary to apply your effects to the entire image. You can use the PPT selection tool to limit the area you are going to edit. This can happen in several ways.

### The Mouse

Use the mouse to select an area. That's right, just click anywhere on the image and drag the mouse around and keep the left mouse button pressed down.

If you are not happy with the area you selected, you can grab the corners of the area (use the small squares) and resize it again. If you wish to move the area you have selected, press down CONTROL and grab the area with the left mouse button.

### The Edit Menu/Select All

Use the Edit menu and select "Select All". This selects the entire image to be your select area.

### The Selection Window

Open up the Selection window (from the Window menu). In this window you will see the selected area in real-time. You can also write the exact values into the string gadgets of this window.

If you do not select anything, the entire image will be affected.

Note that some effects may well reset the selected area, because it may be difficult to predict what the area should be after a modification.

## 1.42 Editing interesting tidbits

Extensions could be almost anything: some image types use an extension to save image-specific data like compression options or something else; some use it to save textual information about the image or its creator. Extensions can be edited using the "Edit" menu item "Edit Info".

PPT understands three standard Extension names:

"Author" - this is basically your own name.

"Annotation" - this is an annotation string, for example image copyright, what software was used and so on. Basically any information you might want that the user sees.

"Date" - A string containing the creation date for this image.

You are not restricted to these, of course. You can invent your own

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and some image formats can retain most of them when saving your image. However, you should see the descriptions of the IO modules to see which loaders save which Extensions.

Another possible use for this screen is that you might want to remove an existing Extension from a saved image. This you can do by selecting the Extension name using the left-hand listview and then clicking on "Remove". You will, of course, be asked for confirmation before the item is removed.

Note that the Extension names are case specific, i.e. "Author" is different from "AUTHOR" or "auThoR". PPT understands only when the extension is written verbatim.

### 1.43 The frames window

If a train station is where the train stops, what is work station?

This window contains the master list of different images you have opened. It will also inform you about the status of the images, by showing the letter 'B' next to the image if the image is busy at the moment and 'R' if it has a currently open rendered image.

On the bottom line, you can actually see some attributes valid for this image.

If the image is hidden, (see [Project/Hide](#) ) you can also reopen the image by double-clicking on the image name.

If you wish to composite images, you can grab a frame in this window and drag&drop it to another window. Just click on a name, keep the mouse button pressed and move the cursor onto the image you wish to composite this image on. You will be presented with three choices:

Alpha Channel

See [Alpha Channels](#)

Composite

See Composite.

Cancel

Selbstverständlich.

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## 1.44 Toolbar

The toolbar is a small window located initially to the bottom left corner of the display. It has a couple of useful buttons and it also can tell you the co-ordinates of your mouse cursor relative to the current image.

This window will, in the future contain a lot more functionality. You can close the window by clicking on the close gadget or by using the 'Windows' - menu to toggle it off. You can get it back on by using the Windows - menu.

## 1.45 Effects Window

This window lists all of the effects at your disposal. You can get information on any effect module by selecting it (click once over the name) and then clicking on the 'Info' gadget.

You can execute an effect on the current image by double-clicking the name or by selecting it and then selecting 'Go!'.

This window can be toggled on and off by the Windows - menu.

See the chapter about [Processing](#) .

## 1.46 Loaders window

This window will list all of the loaders at your disposal. You can use this window to get information on a loader, just click on the name and then on "Info".

The other main use of this window is to force to run a certain loader. Normally, when you tell PPT to load a file, it will go through all loaders until it can find one which can understand the file in question. However, some loaders may not be capable of recognizing file types (for example, if the data is in a raw format) and you may need this option then.

Also, some loaders do not do disk loading, but they generate the image by some algorithmic means. This window is the only way (save AREXX) to use those loaders.

## 1.47 Scripts window

The script window shows all AREXX scripts available to you. Or to be more precise, those scripts PPT knows about.

You can run a script by double-clicking on it's name or selecting it and clicking on "Go!". "Info" will show you what the script looks like.

NB: "Info" uses MultiView on systems that have Workbench 3.0 installed.

If you have 2.x, then PPT will check your "PAGER" environment variable.

If that does not exist, it uses "More". Note that More is not able to open on the right screen, so you'll have to look it up in your Workbench screen. One more reason to upgrade to 3.x.

The program specified in PAGER should support the "PUBSCREEN" command line argument.

You can close this window by clicking on the close gadget or by toggling the "Scripts" - menu item from Window menu.

## 1.48 The image itself

This window will show you a quick preview of an image. Depending on the current **settings** it may be in

**black and white** or in color

Colorspace}. Of course, a black and white image cannot be rendered in color, even if the window was in color.

You may resize this image at will and you can choose

**Correct Aspect** in the Display Menu to

restore the original aspect ratio.

Also, after **zooming** in, you can use the slider gadgets in the window borders to center more accurately to the area you wish to see.

Lastly, there's an extra gadget at the top of the window in addition to the standard Intuition gadgets. Use this gadget to **iconify** the image.

SEE ALSO: **Selecting an area.**

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## 1.49 Technical notes

People who deal with bits should expect to get bitten

-- Jon Bentley

There are some ... quirks in how PPT handles things. Here's a short list of them:

- You may notice, that after the installation procedure PPT has many external modules in the modules-subdirectory, and some of these seem to be the same module, except that some have been compiled for different processors. This is not an error, since PPT can recognise the different versions during run-time. You can safely keep the different versions in the directory, PPT will figure out by itself, which one to use.
  - PPT has a rudimentary form of memory protection built inside. It checks its internal pointers from time to time and will notify you if it finds something wrong with them. If you see a message that claims an "Illegal Memory Access" has happened, it means that the machine is in an unpredictable state. You should quit PPT immediately in order to minimize the damage.
  - You may also see a "Soft Error" message. This is PPT's way of telling you that it has noticed a bug in itself. If this ever happens, please **send me a message** and describe which message you got and how did you get it.
  - Lastly, if things go real bad, PPT will tell you it is panicking and will attempt to quit. It will attempt to kill all of its threads and if it cannot succeed, it'll notify you.
  - PPT cleans out the VM directory when it starts. This behaviour may later be changed, but at the moment it makes sense.
  - If a window refuses to open, there are two possible reasons:
    - a) you have run out of memory, or
    - b) the screen is too small for the window to open. There should be none of these...
  - DO NOT RENAME FILES IN THE MODULES -directory. AmigaOS seems to get confused, if the library name within the library is different from the actual file name! If you don't want the 000-versions of the libraries hanging around on your hard drive, just delete them. PPT knows automatically which version is the fastest for you.
-

## 1.50 Known bugs

Any program that runs right, is obsolete

This is a list of well-known, bigger bugs in the software. Of course, by the time you read this, I probably know of lots more bugs, but since you are reading this, I cannot add anything to it. Clear?

However, if you find any new ones, please submit **a bug report** . OK?

- PPT does not work with VMM. There are some quite big problems with this... In the mean time, you *\*can\** utilize VM by using a relatively small buffer size and setting the RAM: device to use VMM. Do not forget to set the VMM prefs as N N for PPT.
- It would seem that PPT does not live well together with the V43 FFS and large blocks. I really can't figure out why...
- If you get a lot of Enforcer hits when you use a file requester, then get a newer version of bgui.library. The v41.8 filerequester class is buggy...
- PPT seems quite slow with CyberGFX. This is not actually so, the culprit is BGUI. The newer versions of BGUI *\*fly\** on my CV/3D, so you don't need to worry about this, just get the newest BGUI library when it comes out (Manuel keeps promising this RSN.)
- PPT crashes if you select Palette/Edit... OK, this is really BGUI's fault: it crashes, if it cannot locate the bgui\_palette.gadget in SYS:Classes/Gadgets/
- PPT sometimes hangs input.device when using Drag&Drop. This is BGUI's fault and will be fixed in a future version. In the meantime, just use Cut/Copy/Paste in the Edit window.

## 1.51 Reporting bugs

One night debugging multi-threaded code makes a hard man humble  
Not much between despair and ecstasy.

-- Chess

OK, so you've found a bug in PPT. Cool. What should you do?

- a) Write down what you did. Useful bits of information would be:
  - The image you were trying to process (format, type and size)
  - The exact sequence of commands that caused the bug to emerge (the bug may well manifest only when several commands are used in a certain order!)



- If it was a script, then write down the script as well.
- b) Try to repeat what you just did. If you can repeat the bug every time, good. If you can send me any Enforcer output, even better! (Don't forget to run SegTracker also, otherwise the Enforcer output has almost zero value...)
- c) Write down your hardware configuration. Useful information is:
  - Your machine (A500, A4000, etc.)
  - Main processor (68000, 68010, 68020, 68030, 68040, 68060, PPC)
  - Operating system version (2.0, 2.1, 3.0, 3.1, etc.)
  - If you're using CyberGraphics, EGS or Picasso96 (or something similar) please tell me your graphics configuration.
  - Amount of CHIP and FAST RAM and an estimate of how much was in use at the time of the bug appearance. If you're using virtual memory, please tell which program you use (VMM, GigaMem) and how much of it is allocated.
  - Any Commodities you are using (like MCP, MultiCX, Yak, PatchPointers, etc.)
  - Any non-standard hacks you're using (FastIPrefs, SysIHack, etc.) Try to run PPT without them, as well...
  - If you get Software Failures (or Enforcer hits), please check the task name that crashed! It may have been one of the subtasks instead of the main program. (BTW: you should be able to quit PPT if one of the subtasks crashed. Neat, huh?)
  - And last, but not least, which version of PPT you were running at the time the bug happened.
- d) Send everything you wrote down to **me** .

## 1.52 There's no warranty

The headline says it all. I will not be held responsible for any damage that might happen to anyone through the use of this program. The next generation of computers will have a "Warranty Expired" interrupt.

## 1.53 Distribution conditions

The PPT main archive is Freely Distributable - you may copy and use it as much as you want, provided that all copyright notices are left intact and that the archive is distributed as whole.

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However, I ask you that you **drop me a little e-mail** saying that you use PPT - and what you think of it. Though if the only thing you can say is 'it sucks', you can leave that unsaid. I know better than anyone exactly which parts of it suck - I could tell you several...

Note To Magazine Editors

You may freely distribute PPT also in unarchived form on your Coverdisks, as long as you send me e-mail telling that you're going to do so. Also, if you want to send me a copy of your magazine, I would be very happy => You can find my contact information [here](#) .

Note To BBS Sysops And Other People Who Hoard Stuff And Let Others Benefit From It Such As Shareware Libraries

You may also freely distribute PPT, but I ask you that you keep the archive intact, and that you check Aminet or my WWW site once a month to see if a new version has been released and download it to your system for free uploading. I just don't like the idea that there are a billion old versions floating around in the World ;-)

## 1.54 Yes, there is even support

Hi! I'm Janne Jalkanen.

After this rather bad nod towards the 'Fast Show', I'd like to come to the matter of support. PPT is a free program, and thus cannot sport the same amount of support as good shareware or commercial programs - hey, I have a day job, too ;-)

But it would be quite irresponsible (not to mention odd) to write 100,000 lines of code and then just put it out to the Web and forget about it. So yes, I like to talk to people who use PPT and give me ideas how to make it better.

There are several ways to contact me or get new information about PPT. I've listed them here, and wish that anyone who uses PPT would drop me a line.

Aminet

I will release the stable releases to Aminet, to gfx/conv. This is probably the method most of you will use. However, if bugs annoy you, check the Web page.

World Wide Web

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This best thing since sliced bread (which isn't that great an idea) allows me to keep an up-to-date version of PPT at your instant disposal. I will upload the newest releases there, so check it to see what's new. The site address is:

<http://www.iki.fi/%7ejalkanen/PPT.html>

E-mail

I can also try to answer your questions if you send me e-mail. I check my mail every day, unless I am traveling or something...

My e-mail is: [Janne.Jalkanen@iki.fi](mailto:Janne.Jalkanen@iki.fi)

If you use PPT more, and you use e-mail anyway, why don't you join the mailing list?

PPT Mailing List

Yes, there is now even a mailing list for general discussion about all matters PPT. There you will meet like-minded users and of course, receive the latest information on how development is going. Subscribe by sending an e-mail to [ppt-list-request@egroups.com](mailto:ppt-list-request@egroups.com), and you should get more instructions to your reply address. If you wish to just browse the list archives, point your WWW browser at <http://www.egroups.com/list/ppt-list>

(Sorry about the commercials EGroups adds to the messages. But they do offer a free, fast, and very well run service!)

Snail Mail

Lastly, if you're not very internet-enabled, you can try writing regular mail to me to:

Janne Jalkanen

Tavaststjernankatu 1A23

FIN-00250 Helsinki

Finland

But don't expect a speedy reply - I am very lazy at writing letters by hand. Anything between 1-3 weeks is normal...

## 1.55 What Does Alpha Mean?

Alpha is the first letter in Greek alphabet. When used in software development, it means that the program is still inherently unstable, crashes without any serious reason and is generally more of a nuisance than of actual use. See [beta](#) .

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## 1.56 What Does Beta Mean?

Beta is the second letter in Greek alphabet. In software development it means that the program is in much better condition than **Alpha** but you definitely don't want to spread it around, except to some brave individuals who are called **beta-testers** .

These men and women boldly risk their hard-drives, machines and sanities to try out the program and submit their bug reports to the **Author** , who, in turn, will create more beta-test versions for them to test.

Sometimes there are even additional phases (surprisingly called Gamma, etc.), but most of the time the next phase after Beta is the real release, which should be bugfree.

## 1.57 Betatesters

Thanks go to the brave betatesters of PPT, who have sacrificed their mental health and their hard drives (no kidding) in the valiant search for yet another bug. Here's a Hall of Fame. (Or more accurately, the names of those people who have found an alarming number of bugs...)

- Peter Bornhall
- Gary T. Nelson
- Patrik Nydensten
- Brian Jones
- Ivo Kroone

And don't forget: Faith Manages

## 1.58 Archimedes

Archimedes (c. 287-212 BC)

Archimedes was a Greek mathematician, physicist, and inventor. He is generally regarded as the greatest mathematician of antiquity. His rigorous geometrical technique of measuring curved lines, areas, and surfaces anticipated modern calculus, and he laid foundations of mechanics, statistics and hydrostatics.

Dictionary of Mathematics

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## 1.59 Bessel

Friedrich Wilhelm Bessel (1784 - 1846)

A German Astronomer, who calculated the orbit of Halley's comet while a 20-year-old warehouseman. He later made the first accurate measurements of stellar positions and became Professor of Astronomy at Königsberg.

Dictionary of Mathematics

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See also [Archimedes](#)

## 1.60 Baron Augustin Louis Cauchy

Augustin Louis Cauchy (1789 - 1857)

French mathematician and physicist whose work had great impact on, and introduced rigour to, virtually all branches of mathematics. In particular, he laid the foundations of modern analysis in terms of limits and continuity, and developed the theory of functions of complex variables. After serving as an engineer in the force preparing Napoleon's abortive invasion of Britain, he was encouraged to pursue a mathematical career by Laplace (whom he had met when his family fled from the Reign of Terror) and by Lagrange. He became Professor at the École Polytechnique, the Sorbonne, and the Collège de France. Because of his political and religious views, he refused to take the oath of allegiance to Louis-Philippe on 1830 and followed Charles X into exile; the University of Turin appointed him to a specially created Chair, but he left to tutor the grandson of Charles X. He published a total of 789 works, including monographs on definite integrals and on wave propagation, and papers on geometry, number theory, elasticity, the theory of error, astronomy, and optics.

Dictionary of Mathematics

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See also [Archimedes](#) ,

[Bessel](#)

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## 1.61 René Descartes

René Descartes (1596-1650)

French scientist, philosopher, and mathematician, who founded analytic geometry, and introduced exponential notation, cartesian coordinates, and methods of solving polynomial equations to mathematics. His work as a whole was ruled by the desire to systematize all knowledge as resting only on what is clearly self-evident, on the axiomatic model of Euclid's geometry, and thereby to achieve certainty. His method involved the suspension of belief in anything that could conceivably be doubted, and he then founded his edifice on the argument, while doubting, one cannot doubt that one doubts, and therefore thinks; he expressed this single self-justifying proposition in his famous Latin phrase "Cogito, ergo sum" ("I think, therefore I am"). The adjective Cartesian is derived from the archaic spelling Des Cartes.

Dictionary of Mathematics

(used without permission)

See also [Archimedes](#) ,

[Bessel](#) ,

[Cauchy](#) .