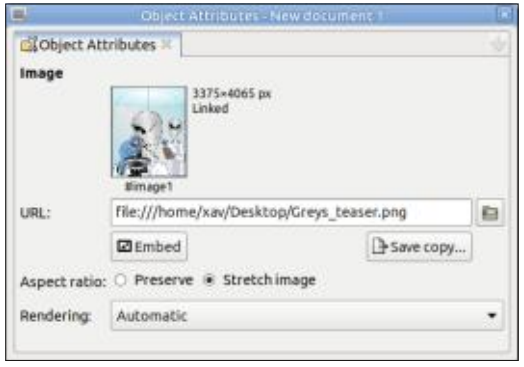
Inkscape - Part 143

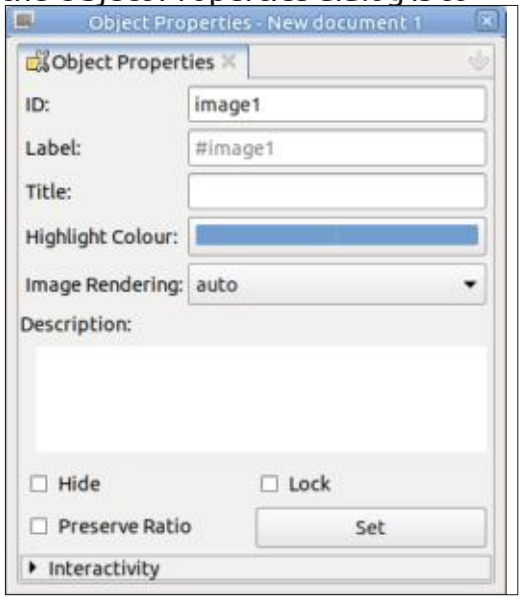
This month, I'll be looking at another dialog that was updated with Inkscape 1.3: the Object Attributes dialog. This is one that I haven't covered in this series before, because, quite frankly, I had no idea it even existed! That came as quite a surprise to me – after more than a decade of writing Inkscape tutorials, I thought I'd found just about every hidden corner of the application, but it turns out I was wrong.

The content of this dialog changes based on the selected object. If a bitmap image is selected, then this dialog replaces the older 'Image Properties…' dialog that was available via the right-click context menu. In fact it replaces it to the extent that it still appears in the context menu with



the same label, but the dialog that opens is definitely now 'Object Attributes'.

At the top of the dialog is a thumbnail of the image, together with its dimensions and a label to indicate whether it's linked or embedded. In the latter case, the label also shows the amount of space the image data takes up, to give you an idea of how much it will bloat your SVG file size. The text beneath the thumbnail shows the image's ID, prefixed by a hash character. This is a little misleading, as the default for showing the ID in the Object Properties dialog is to



not include a hash, whereas the placeholder text for the 'Label' field does include it.

Even if you set a label via this field in the Object Properties dialog, it is not displayed in the Object Attributes dialog. I guess the Inkscape developers must have their own idea of what's a property and what's an attribute, and only the ID counts as the latter.

Moving on down the dialog, the URL field shows the path to the linked image. For an embedded image, this field is disabled. Although the field is editable for a linked image, changes made here are not reflected in the stored data for the image in the SVG file. If, as I do, you keep your linked bitmaps in the same folder as their SVG file, you can sometimes find that moving or copying SVGs results in them being linked to the wrong place, via an absolute path. In older versions it was possible to directly edit the link via this dialog, replacing the absolute path with a local filename. Not any more.

Instead you have to use the button to the right of the URL field which allows you to select a different image to replace the linked or embedded one. Even using this to select a file in the same directory as the SVG results in an absolute 'file://…' URL rather than a simple filename. This is definitely something to be aware of, as it not only results in less transportable files (ie. just sending someone the directory containing both the SVG and the bitmaps probably won't work), but also leaks information about the folder structure on your machine, which might be considered a security risk, albeit a relatively minor one. On reloading your SVG file you may find that Inkscape does replace the URL with a simple filename if they're in the same directory, but I was unable to find any reliable, repeatable steps that would consistently make this happen across the files I tested with. The only way to really be sure is to edit any linked image paths directly in the XML editor.

The buttons below the URL field

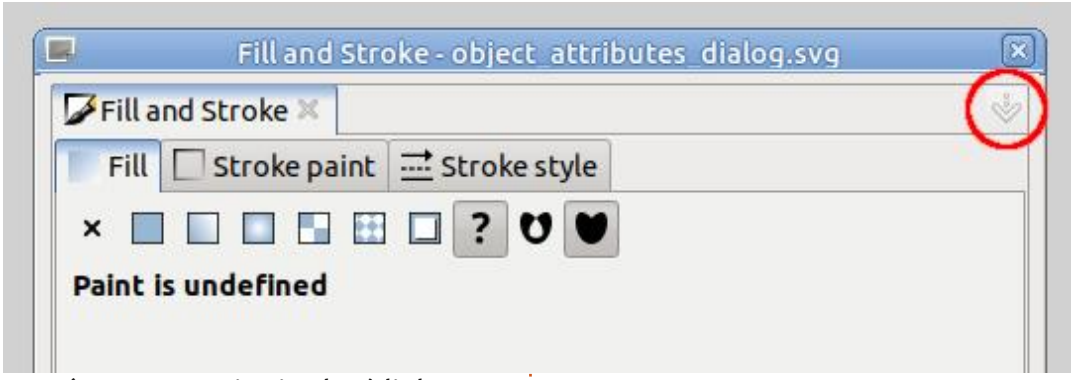
allow you to convert a linked image to an embedded one, or to export a copy of the image – regardless of whether it's linked or embedded – to a new location. One use of this might be to save a copy of an embedded file, then use the folder icon next to the URL to replace the embedded file with a link to the external copy you just saved. A button to achieve this with a single click would be nice, though – making it just as easy to un-embed an image as it is to embed one.

A welcome addition is the pair of radio buttons to select between preserving the aspect ratio of the image, or stretching it out of proportion if necessary. I'd like to see buttons to revert to the original dimensions, or to keep the width or height fixed while changing the other dimension to suit the original proportions. Being able to preserve the aspect ratio allows you to address most of the issues for which such buttons would be of benefit, though, turning these tasks from 'almost impossible' to just 'a bit tricky'. Finally, a popup lets you select between different rendering hints. This is the same as the 'Image Rendering' popup you can see in the Object Properties dialog. Note that selecting any of the options in this menu really is just a hint; whether or not they're honored will depend on the software being used to display or print the SVG.

But what if you want to view the Object Attributes dialog for something other than an image? Common sense would say that you just right-click on the object and select it from the context menu? Or choose it from the main 'Object' menu, right? Common sense, it would seem, is a little short among the Inkscape UX team in this case, as neither of these menus contain an entry for this dialog.

One way to get to it is to use the Image Properties menu option on a raster image, then select the object you're actually interested in. The dialog will change dynamically as objects are selected, so will update to reflect the non-image item you've chosen. But that's hardly an effective way to get to this dialog, and your drawing might not even contain any bitmaps that you can right-click on.

Instead, the official way to open this dialog is to either bind it to a keyboard shortcut via Preferences dialog (in the Interface > Keyboard

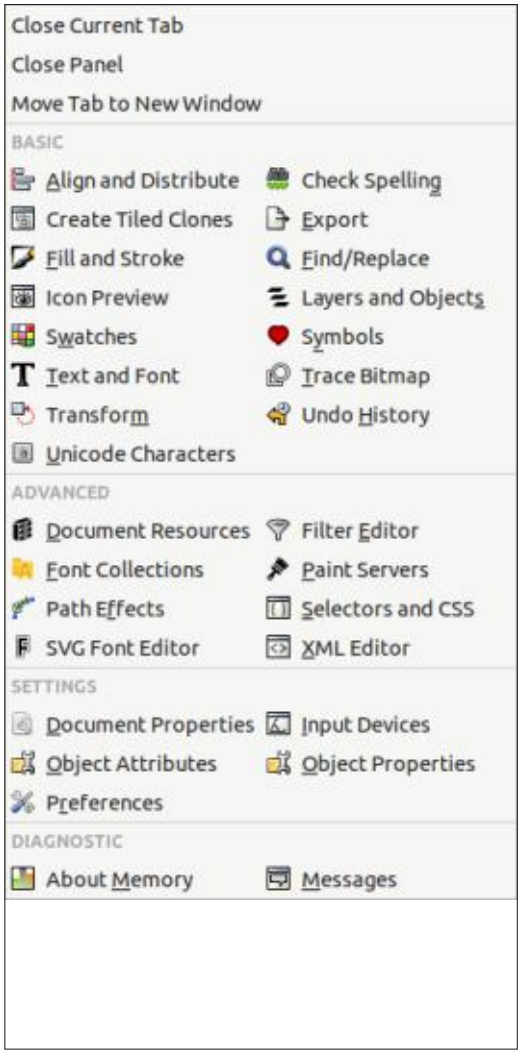


pane), or access it via the 'dialog popup menu'. The what now? If you've no idea what I'm talking about, you're not alone – I also had to go hunting to find this menu, as it wasn't a term I was familiar with.

When you open a dialog – any dialog – within Inkscape, there is an icon at the right of the tab bar (circled top right). This is present whether the dialog is opened in a window, or docked to Inkscape's main window. With the theme I use, this icon appears as a light grey down-facing arrow which is very easy to miss. Here it is at the top-right of the Fill & Stroke dialog on my machine, circled in red because it really is so easy to miss.

Clicking this icon opens the 'dialog popup menu' (right).

In my defence, I was vaguely aware of this menu, but it's not one

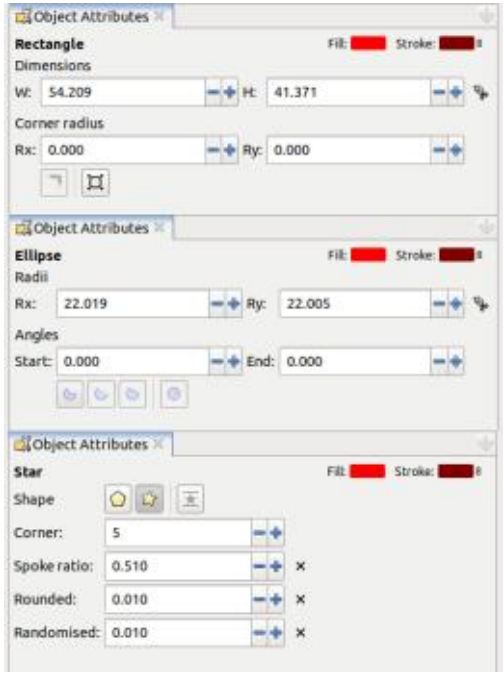


I ever use. The top few entries are useful if you're managing multiple dialogs in a tabbed interface which is probably docked to the main window. That's not the way I work. The remaining entries open various dialogs, but I always open my dialogs via toolbar buttons, menus, and context menus. Never by clicking on a faint icon in some completely different dialog, then selecting the thing I really wanted via this menu.

Towards the bottom of the dialog, in the 'Settings' section, you can find the entry for Object Attributes. If you don't have a bitmap image in your document, and haven't bound a separate keyboard shortcut, this seems to be the only way to access it. To summarise, the steps required are:

- Open a dialog. Any one will do, so feel free to use the "Layers and Objects", "Fill and Stroke", or "Align and Distribute" dialogs if they're already open. If you don't have a dialog open, right-clicking on an object and choosing "Document Properties" feels to me like a route that won't break the mental context of what you're trying to do.
- Click on the icon at the right of the tab bar in your selected dialog.
- Click on "Object Attributes" in the Settings section of the menu.
- On the canvas, select the object whose attributes you wish to view or edit.
- Optionally close the other dialog if you no longer require it.

With nothing selected, the dialog is empty, and with multiple objects selected, it simply shows the text "Multiple objects selected". When an individual object is selected, however, the display will change depending on the type of object. We've already seen how it looks when a bitmap image is chosen, but here are the other possibilities:



Essentially these replicate the controls in the relevant tool control bar for each type of object, but there are some interesting additions and differences. First is that the object's fill and stroke colors, and stroke width, are indicated at the top-right of each view. None of the other stroke properties are reflected here, and unlike the corresponding swatches and numbers in the status bar, you can't change the values in any way from here. Disappointingly, clicking on the swatches doesn't even open the Fill & Stroke dialog.

The top row of fields for Rectangles and Ellipses has a small icon to the right. Clicking this will round the values in those fields to the nearest integer, which is a potentially handy feature that would be nice to have in the main tool control bar fields. Conversely, the quick shortcut values that are present on the context menus for these fields in the tool control bar are not included within this dialog. That limitation applies to all the fields, regardless of the selected object.

The Rectangle pane has a couple of buttons at the bottom. The first sets the corner radius values to zero (i.e. 90° corners) as it does in the tool control bar. But the second button is another useful one which is missing from the tool control bar: it adds the 'Corners' live path effect, allowing each of the four corner radii to be modified independently. The Object Attributes dialog does not actually show the individual values, however – this button is more of a quick way to add the LPE so you can tweak the values on-canvas, but you'll still need to open the LPE dialog for fine control and editing.

The Star pane also has a couple of extra touches compared to the regular tool control bar. The first is the third button in the 'Shape' row – whose drab icon in this theme makes it appear disabled, even though it isn't. The tooltip in this button says 'Level shape', which in this case means that it will be rotated such that the first spoke runs vertically. Inkscape veterans already know to hold the CTRL key and drag upwards when using the Star tool to achieve this type of alignment, but if you're not aware of that trick, or you simply forget to do it on a particular object, reorienting a star or regular polygon to make it neatly aligned

can be a surprisingly tricky task. This button achieves it with one click, and makes me wonder why this isn't also on the tool control bar.

The other feature is less impressive, but a nice touch nevertheless: next to the last three numeric entry fields is a small '×' button which appears when these fields are set to anything other than their default values (0.5, 0 and 0, respectively). Clicking the button simply resets that field back to its default.

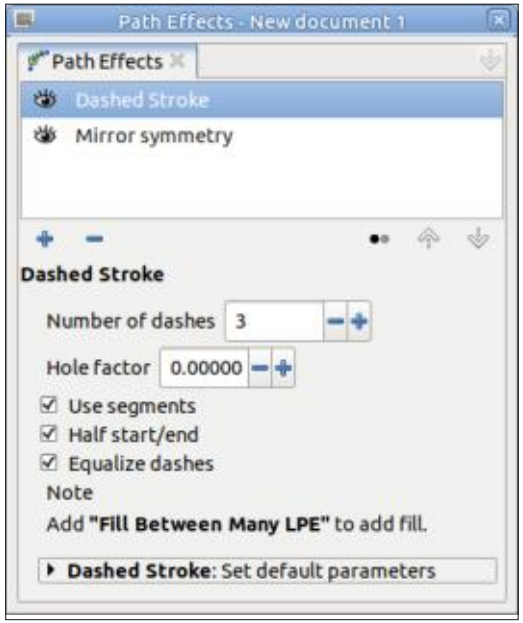
Missing in this image are the Object Attributes panes for Spirals, Paths, Text, and 3D Boxes. None of these objects show any content at all in this dialog – not even the non-editable fill and stroke information. This makes the dialog as a whole feel rather unfinished and inconsistent. Perhaps that's why it's been hidden away so well.

In summary, this dialog is a potentially useful tool which even offers a few capabilities that can't be found anywhere else in Inkscape. That makes it all the more disappointing that it's hidden away in an obscure popup menu, rather than appearing in the context menu. This is doubly baffling when you consider that it does appear there – albeit with a historic title – if the selected object happens to be a bitmap image. I'm not sure I'll use this dialog enough to warrant creating a keybinding for it, but now that I know it exists I've little doubt that I'll have cause to open it from time to time. To be honest, that will mostly be when I forgot to hold CTRL while creating a star.

Mark uses Inkscape to create comics for the web (www.peppertop.com/) as well as for print. You can follow him on Twitter for more comic and Inkscape content: **@PeppertopComics**

Inkscape - Part 144

This month we're continuing to look at the changes to dialogs in Inkscape version 1.3. It's almost become a cliché to see substantial changes to the Live Path Effects dialog with each significant Inkscape release, but here we are again with yet another round of UI updates. As a reminder, in version 1.2 the main LPE dialog looked like this (once a couple of effects had been added):

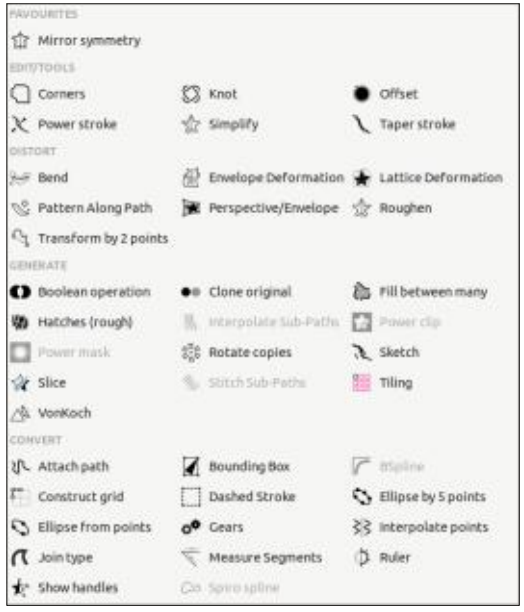


Clicking the '+' button would open a large dialog from which you could select the LPE to add, as well as search, view the entries as a list, or as a more/less compact grid, set LPEs as favorites (and filter to show only those), and toggle the visibility of experimental effects. In fact there's so much functionality baked into this UI that I expected it to hang around for years to come. How wrong I was.

Fast forward to version 1.3. The main LPE dialog no longer shows a list of the applied effects, with a single panel of settings for the currently selected one. Instead, the configuration panels are shown directly, in an 'accordion' UI pattern, such that by expanding one panel, all the others will collapse. You can collapse the current panel, too, if you just want to see a shorter list of effects, which makes it easier to reorder them by dragging the handle at the top-right of each panel.

With this UI, there's no longer a '+' button, and no longer a large dialog that opens. Instead you have two options for selecting the new LPE to add:

- Type something into the search box to be presented with an alphabetically ordered list of LPEs that match the search term. (Hint: if you just want to see a list of all of them, putting a single space in this field seems to do the trick).
- Click the drop-down button next to the search field to be presented with a pop-up that contains a categorised grid of effects.

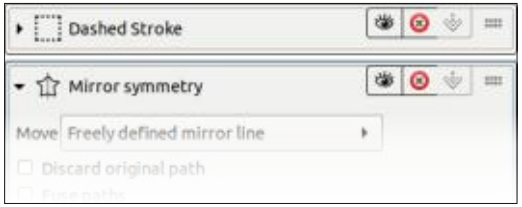


There's no way to change the size or shape of this pop-up, nor the spacing between items, so I'm not sure how well it will work on small screens – especially if you enable the experimental LPEs. Speaking of which, the option for that is now hidden away in the preferences dialog: Edit > Preferences > Behaviour > Live Path Effects (LPE). Enabling the 'Show experimental effects' checkbox in there will add an extra section to the bottom of the pop-up. In that same settings panel, you'll find an option to 'Show deprecated LPE gallery' (i.e. the older UI), if you really don't like the new design. Personally I advise against switching back, as this option – and the whole gallery dialog – will certainly be removed in a later release. You may as well get used to the new approach now, and hope that this one finally sticks around for a while.

I think hiding the option for showing the experimental LPEs was a good move. This isn't something that should be temptingly presented to novice users every time they add an effect. The experimental LPEs are marked as such for good reason. They should only be used with full knowledge of the potential problems – not only in terms of Inkscape's stability, but also considering possible issues loading any files that use them in future releases.

Any LPEs that are set as favorites, appear in a section at the top of the pop-up. Unfortunately they no longer appear in their categorised sections, and the Favorites section is shown in alphabetical order, so any sense of grouping is lost for these. You can either have an LPE categorised or flagged as a favorite, not both. The list view that drops down when you use the search field is purely alphabetical, not only lacking the categories, but also lacking any indication of which effects have been set as favorites. It would be nice to see favorites displayed with a small star or other badge, and I'd rather see the list view also grouped in the same way as the icon pop-up, for consistency.

Without the gallery view, there's a question of how you set (or unset) the favorite flag on an effect. There's no context menu available in the pop-up – right-clicking on an LPE will behave the same as a left-click, and add it to the list of applied effects in the main body of the dialog. Instead, you have to add the effect to a path (perhaps a temporary, sacrificial one), then use the new pop-up menu in the effect's controls pane to toggle the favorite flag. On my system, there's some oddness with the outline style for this pop-up's button, but it still behaves correctly. In this screenshot you can see that there's a group of three buttons which are visible whether the pane is collapsed or open: the first button toggles the visibility of the LPE, the second deletes it from the list, and the third opens the pop-up menu.



The pop-up contains a few useful options for working with effects:

'Duplicate' is pretty self-explanatory, but note that the duplicated effect will appear directly below the original, and you may need to move it up or down in the list by hand. This can be done by dragging with the handle at the right, as previously mentioned, or you can use the 'Move up' and 'Move down' entries in this menu. Only valid options are presented, so you won't see 'Move down' in the menu for the last LPE in the list, for example (as in this screenshot).

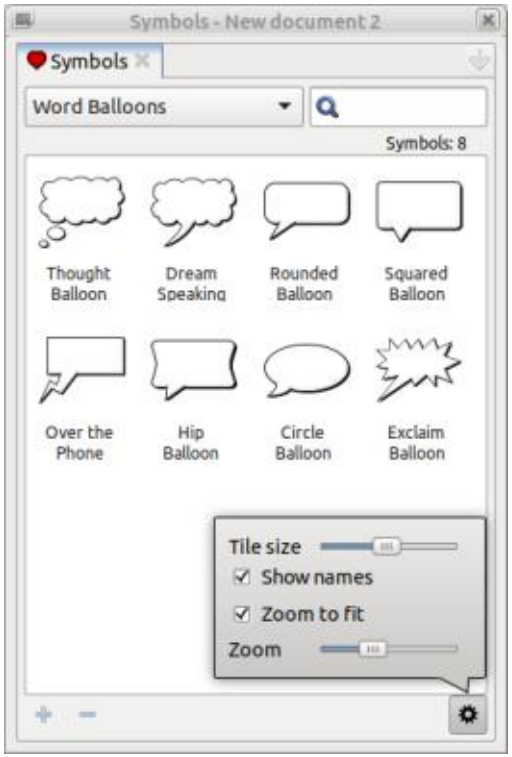
'Flatten' is an interesting new addition. It's always been possible to 'fix' the output of an LPE chain by selecting the Path > Object to Path menu option. This changes the drawing such that the original path is replaced by the result of the entire LPE chain. The Flatten option does something similar, but it stops at the effect on which the option is selected, fixing all the effects up to and including that one, but leaving subsequent parts still as editable LPEs. If you use this on the last effect in the chain, it's the same as using Object to Path, but this could be very useful where you're sure that the first few effects in a chain are correct and won't need to be modified, but still want to leave yourself with the flexibility of fully editable effects for the rest of the chain.

'Set custom defaults' will use a snapshot of the current settings as the default values for this particular effect in future. If there's already a

snapshot set, this changes to 'Forget custom defaults'. Finally we have the 'Set favorite' option (shown with the British English spelling of 'favourite' in this screenshot, as I'm based in the UK). If this LPE is already set as a favorite then, as you've likely guessed, this will display 'Unset favorite' instead.

It's a little unfortunate that the only way to change favorites is to first add the effect to a path, perhaps only to throw it away again afterwards. But changing favorites is likely to be a rare enough occurrence that this additional step probably won't cause any real problems for most users.

I'm going to take a very quick look at a second dialog this month: the Symbols dialog (Object > Symbols). This has seen a bit of UI polish with 1.3, with the confusing array of buttons for adjusting the layout now rationalised into a simple pop-up menu. My tip here is to leave 'Zoom to fit' enabled and just tweak the 'Tile size' slider to adjust the size of the symbols in the dialog, which seems to work well with the predefined symbols, at least.



On that point, version 1.3 ships with a vastly increased number of symbols (596 of them, to be precise), through the addition of the 'SJJB map icons' set. Of course, more symbols are always welcome – if they're high enough quality – so it would be nice to see some Open Source icon sets, of the sort often used in web pages, make their way into future releases.

The plus and minus buttons in the bottom-left replace the similarly-placed buttons from previous versions, which were always somewhat confusing due to less-than-obvious icon designs. These buttons only become active when the 'Current document' set is selected in the dialog's drop-down list. Their tooltips have been reworded to make their purpose far more understandable now:

"Convert selected object(s) to symbol" – this will create a symbol from the currently selected objects, replacing those objects with the symbol, in-place. This may be useful if you need to use the same icon or other design repeatedly within your document, though I'd usually just stick with clones myself.

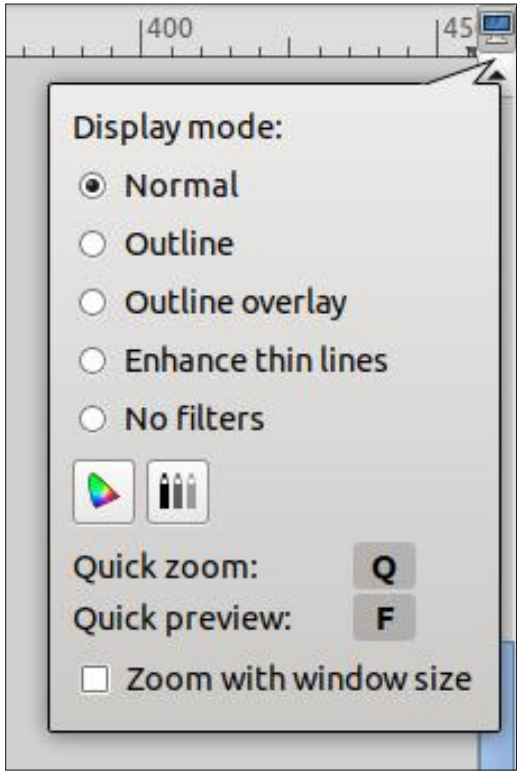
"Convert selected symbol to object, and all symbols of this type to clones of this object" – this one is perhaps more useful, allowing you to select a symbol in the dialog and have the first instance of it on the page converted to a real, editable object. Any further instances will be converted to clones of the object. I can see this coming in handy when one of the predefined symbols is close to your requirements, but needs a little tweaking.

Of course these can be used in series to first convert an existing symbol to an editable object; then edit it on-canvas; then convert the edited version back to a document-specific symbol.

Finally I'll squeeze in one more UI addition – though a pop-up rather than a dialog. At the top-right of the canvas, Inkscape has always had a rarely used button to toggle its behaviour when the window size is changed. The default is to not do anything much, other than to show or hide the relevant parts of the canvas to suit the new window size. In other words, the document is not zoomed in any way. The other mode will scale the document to suit the new window size, which may suit some users who always want to see the same amount of content, regardless of the window size. This feels to me like a feature that novice users might think they want before they discover the myriad ways to zoom and pan in Inkscape, and realise they'd rather control the zoom themselves than have it automatically change when they resize the window.

This button has now been replaced with a pop-up that still contains the previous functionality via an option at the bottom, but which also exposes radio buttons and toggles for the many display

modes Inkscape now has.



Note, however, that the 'Quick zoom' and 'Quick preview' entries can't be clicked – they're just there to remind you of the keyboard shortcuts. These both work as long as the key is held down – though you can also trick them into operating as on/off toggles by focusing another window, or right-clicking to bring up the context menu, while holding the key. In that case the 'temporary' view will remain on releasing the key, and a quick jab of it subsequently will return you to the previous state.

I've covered 'Quick zoom' before – it zooms the display just enough so that the selected object(s) fill the available space. 'Quick preview' is a new addition with 1.3, and temporarily hides grids, guidelines, selection boxes, and so on. It also clips the visible display of objects to the page boundary. Essentially it is intended to give you a rapid preview of how your document might look when printed or exported, without all the Inkscape-specific parts that won't make it to the final document.

Mark uses Inkscape to create comics for the web (www.peppertop.com/) as well as for print. You can follow him on Twitter for more comic and Inkscape content: **@PeppertopComics**

Inkscape - Part 145

Anyone who has used Inkscape's text tool extensively is sure to have come across the issue of too many fonts being listed, making it hard to find the one you're looking for. This may be because you're an ardent collector of all manner of weird and wonderful typefaces, or it might just be because operating systems tend to ship with quite a range by default. This is definitely the case with some Linux distributions, which may come with a variety of fonts to cater for users who need something beyond simple Latin text. For example,

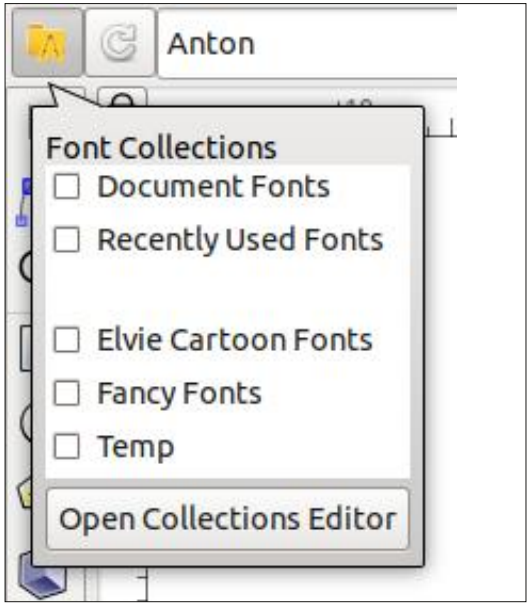
here's a fragment of the font list that Inkscape displays on my British English Ubuntu box, on which I've never knowingly installed non-Latin fonts.

See all those 'Kacst' prefixed entries? A bit of online searching reveals that KACST stands for "King Abdulaziz City for Science and Technology", and this is a family of Arabic typefaces – something that the font preview in Inkscape doesn't indicate. Given that my ability to write Arabic is totally non-existent, I don't really have any need for these fonts, but they're also not intrusive enough to my day-to-day work that I've ever put any effort in to remove them. And so they just sit there, never used, yet taking up space in the font drop-down, forcing me to scroll further to get to all the later fonts in the list.

Professionals in the design industry may be familiar with font organisers that work at the OS level, either included as a native part of the operating system or via a third-party tool. These allow you to create collections of fonts which can be enabled or disabled on the fly. This might allow you to create a base collection of general workaday fonts as a single group. You could then have another collection with some customer-specific fonts in it, and enable both the base and the customer-specific one at the same time. This makes it more convenient to work on a specific customer's projects, as you're presented with only the relevant fonts within your design software. It also makes it much easier to deal with commercial fonts that might be licensed to one single customer and which shouldn't be used on other projects.

Inkscape 1.3 adds a similar capability built directly into the application, rather than operating at the OS level. By default, you'll still be presented with the complete list of all fonts on your machine, but the tool control bar for the Font tool now features a couple of new buttons at the far left which help you to work with font collections.

Clicking the leftmost button will open a pop-up which lists your current font collections, plus a button for opening the collections editor. At the top of this list will always be a pair of pseudo-collections that contain only those fonts currently being used in the document ('Document Fonts'), or those that you've recently used across any documents ('Recently Used Fonts'). For a lot of casual users, these alone might be sufficient to make font selection a more sane operation.

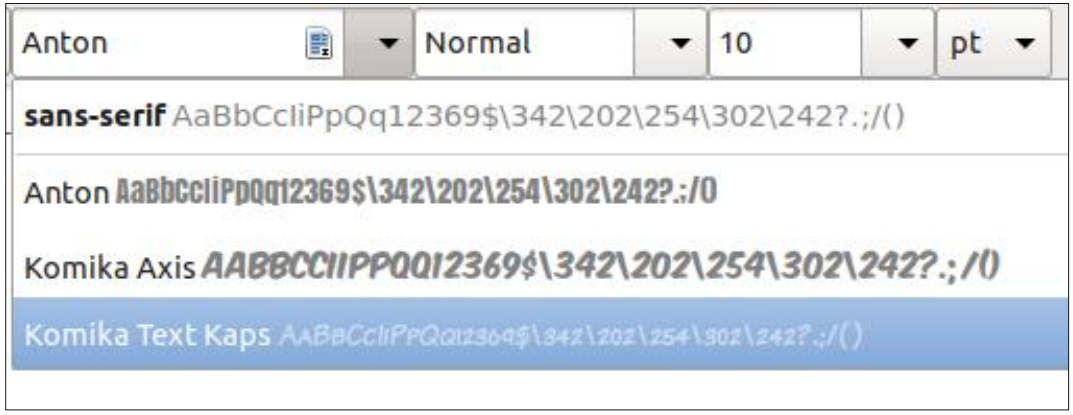


For those who want to go a bit further in their font management, clicking the button to open the collections editor is your route to creating as many different collections of fonts as you wish, as we'll see shortly. While we're looking at this pop-up, however, it's worth noting two key things about font collections:

- A single font may appear in as many (or as few) collections as you wish. It's fine to have your favourite handwriting font in both your 'Cursive' and 'Favourites' collections, while leaving never-used fonts out of all your custom collections entirely.

- You may select more than one collection at a time in this pop-up. The list of available fonts will then contain an alphabetically sorted combination of the fonts across all the selected collections, though duplicates are removed so that each font will appear in the final list only once.

Looking at this in practice, you've already seen how my unfiltered list of fonts contains many that I'll never use. If I'm working on one of my 'Elvie' comics (which appear in Linux Pro Magazine), then I want to limit the fonts to those that are used for the strip. This is especially important to get right, because Elvie is released entirely under a CC-BY-SA licence – including the source files – so I use only freely licensed fonts that I can also distribute alongside the artwork itself. In the pop-up, therefore, I can select just that one collection and my list of fonts becomes a whole lot more manageable, and my licensing concerns become a lot simpler.



Returning to the longer list that shows the complete list of fonts can be achieved in one of three ways:

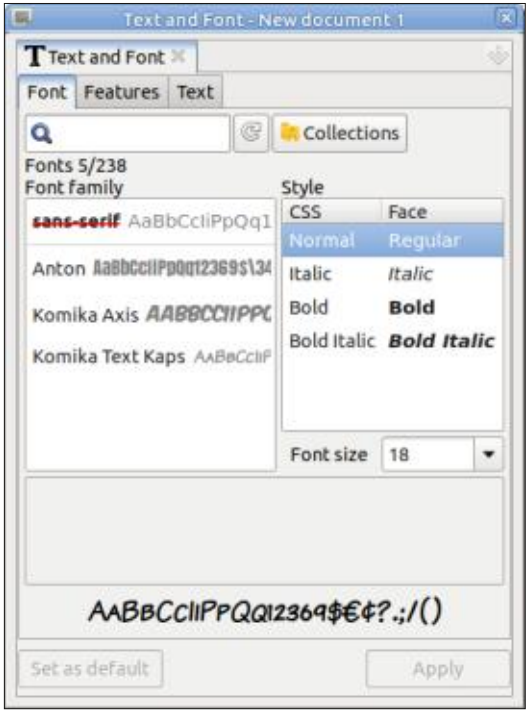
- Open the pop-up again, and un-check all the collections

- Click on the second button on the toolbar, which does the same thing with a single click

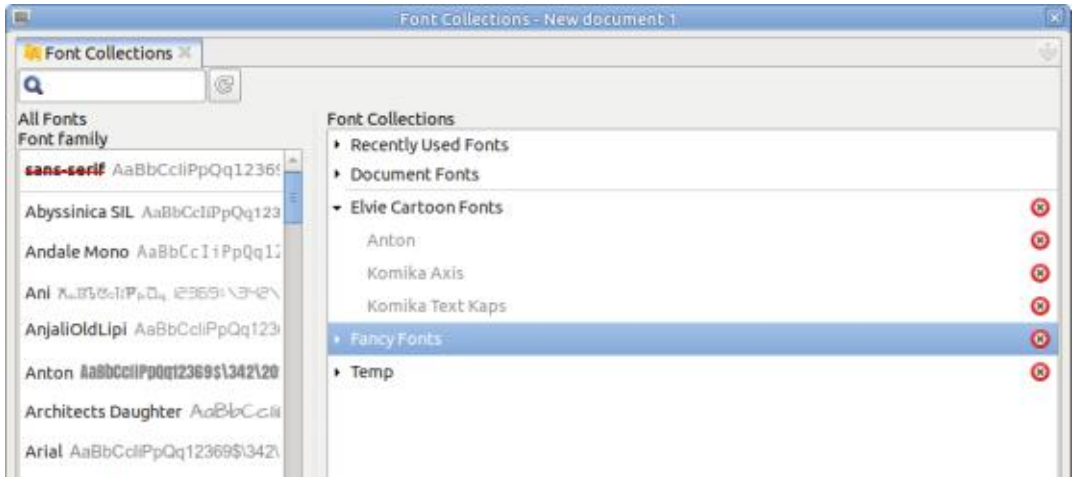
- Click the similarly styled 'Reset filters' button in the 'Text and Font' dialog

Rather than returning to the complete list, you're also free to open the pop-up and toggle any of the collections on or off at any time. It's important to note that turning collections off here affects only the visibility of the fonts in the font selection drop-down and in the 'Text and Font' dialog. It doesn't alter your drawing in any way, so don't worry that de-selecting a collection will disable or hide any existing text in your document.

The 'Text and Font' dialog (under the 'Text' menu, or press Ctrl-Shift-T by default) has also gained a reset button, as mentioned above, as well as a 'Collections' button which opens the same pop-up for enabling and disabling collections. There's even a count of how many fonts are being displayed compared with the total you have available. I'm not sure how useful that statistic is in practice, but at least it acts as an indicator that you have one or more collections enabled, rather than leaving you thinking you've lost some fonts.



That's enough about turning collections on and off: the question now is how you go about creating them in the first place? The pop-up



features a button at the bottom labelled 'Open Collections Editor', which does indeed open a dialog to manage the collections. Unfortunately this is where the feature begins to lose its polish somewhat.

This dialog definitely does its job, but it feels like it escaped the attention of the UX team who have been doing such great work with recent Inkscape releases. Even the search box and reset button feel a bit cramped up in the corner. They're pretty tight to the edge in the 'Text and Font' dialog, but this part of the application reduces some already tight spacing even further.

It's easy enough to get past minor layout issues like that, but it's when you start to interact with this dialog that it becomes especially clunky. Initially the Font Collections list will just show the pseudo-collections for recently-used and document fonts. Clicking the '+' button at the bottom lets you create your own custom collection. You'll be presented with a blank row in the list, with an input field to give it a name. You can actually just press Enter and you'll be left with a confusing entry that has no name, and to which you can't add any fonts. If you change your mind and press the Esc key to cancel the operation, you similarly end up with a blank entry. So don't do that: make sure to give your collection a name as you create it, to avoid confusion later.

Your newly created collection will appear in the list, but without the small disclosure triangle next to it. Let's add some fonts to it, by first selecting the collection and… then what? My immediate assumption was that I would be able to click on fonts in the list at the left to toggle them on and off: selected fonts would be in the collection, while unselected fonts wouldn't. But it doesn't work like that. My next attempt was to click on each of the fonts I wanted in the collection in turn – but that just selects them one at a time, and doesn't add them to the collection at all. Perhaps double clicking on a font name would work? Nope. Select and press Enter? Also nope.

Instead you have to drag-and-drop the fonts from the left-hand list into the collection using the mouse. One-by-one. There's no multi-selection allowed in the list, even if you want to drag a whole block of fonts, such as those from the same family. Drag-and-drop is an awful approach for something like this: it's too easy to slip with the mouse and drop your font into the wrong collection. By all means allow it as an option, but it's not a great design for a dialog in which you might be dragging dozens – maybe even hundreds – of items, one-by-one, to a relatively small target.

You can improve your odds once the first font has been added by opening the collection using the newly-appeared disclosure triangle on the left. Now the drop target is double the size, and grows larger still as more fonts are added. As you drag fonts over the collection, rows and the spaces between them get highlighted as a drop target indicator. But ignore the fact that this indicator changes in a way that suggests you can order the entries in the collection, because you can't. It doesn't matter where in the list you drop a font, they will appear in alphabetical order.

This alphabetical ordering extends to the font selection drop-down in the tool control bar, and to the list in the 'Text and Font' dialog. This means that, although font collections allow you to work with shorter, curated lists of fonts, you still have no way to ensure that your preferred fonts always appear at the top of the list, especially once you begin to enable multiple collections. To be fair, such a feature would raise other UX questions which don't have clear-cut answers. But if the developers aren't prepared to tackle those questions, the editor shouldn't

work in a way that suggests the ability to order the items, even though it doesn't actually allow it.

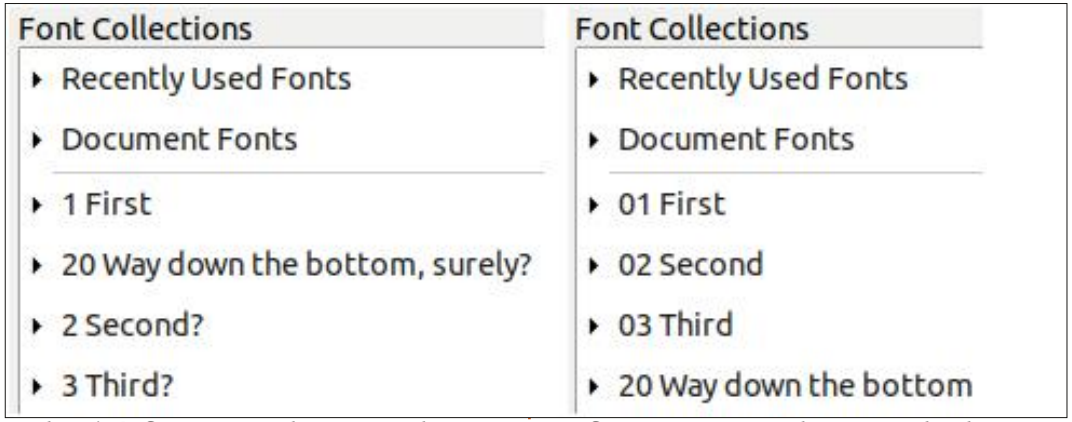
My next complaint with this dialog is that the fonts that have been added to a collection appear in a greyed-out color, as though they've been disabled in some way. I understand that this is probably to distinguish them from the collection title, but the indentation level is largely sufficient for that without giving the impression that the fonts are somehow not available or not working. Once added to a collection, the entry in the list also lacks any preview of the font (like the one that's present in the left-hand panel). This makes it harder to review collections when you return to them some time later – especially if you have a lot of similarly named fonts, as can easily happen with some families of related designs (such as those 'Kacst' fonts from earlier).

Removing a font from a collection is as simple as clicking the button at the right of the row, or the delete button at the bottom when a row is selected – but not by pressing the Delete button on the keyboard, that would make far too much sense. The font is removed from the collection immediately, with no confirmation. While that makes it more immediate when initially setting up your collections, it also opens up the possibility of a mis-click removing the wrong font. Perhaps an option to 'lock' a collection against edits might be a useful addition for a future release.

Deleting an entire collection is a little more sensible: the button is the same, but this time the deletion occurs immediately if the collection is empty, but with a prompt if it's not. At least that prevents a simple mis-click when removing a font from deleting an entire collection.

Finally, you're free to edit the collection name whenever you wish, even after it's been created and populated. There's a dedicated 'pencil' button at the bottom of the list for this, but just clicking twice on a collection name in the list does the same job. As does pressing Enter when the collection is selected.

The fact that they're so easily editable means that you can use this as a way to 'archive' collections that you're not using at the moment, given that there's no way to disable a collection. Prefix them with a 'Z', for example, to push them to the bottom of the list. Or perhaps you could use this to promote more important collections to the top (prefixed with an 'A' or a punctuation character). This possibility relies on the fact that collections are also displayed in alphabetical order – but, unlike fonts, you have control over the names you use. Just be aware that this sorting is based on alphabetical order and doesn't really have a concept of number systems: in this case '20' comes between '1' and '2', so if you want to use numbered prefixes to sort your collections into order, make sure to add a zero to the start of the single digit entries (if you expect to go beyond ten).



In general I really like the addition of font collections to Inkscape. It's just a shame that the UI for managing them is a little clunky and too easy to make mistakes with. Hopefully this is something that will improve in time. Even just being able to double-click fonts rather than drag-and-drop them would be a huge usability improvement, though I'll also hold out hope for being able to disable and lock collections. Who knows, perhaps we will be able to sort fonts one day – or at least flag some of them as favourites to have them consistently appear at the top of the list.

Mark uses Inkscape to create comics for the web (www.peppertop.com/) as well as for print. You can follow him on Twitter for more comic and Inkscape content: **@PeppertopComics**

Inkscape - Part 146

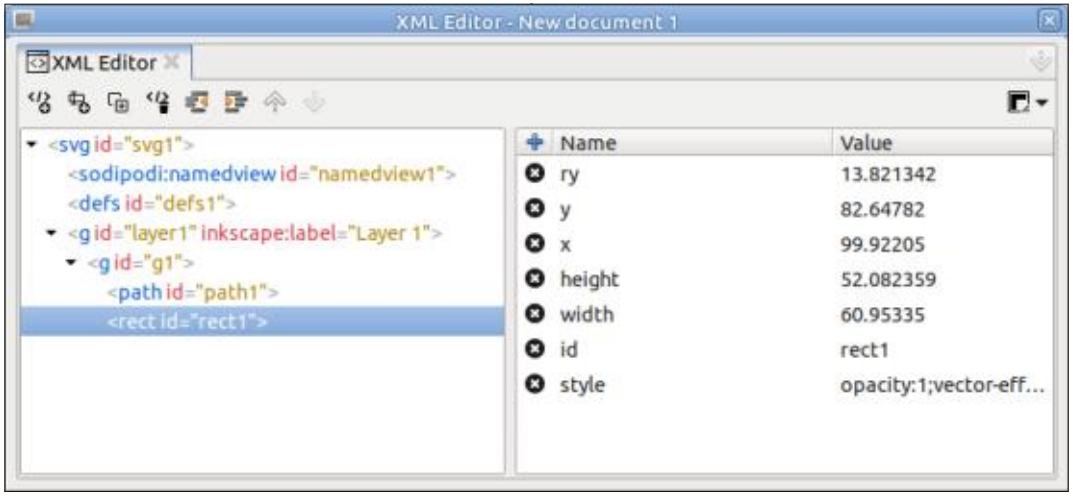
This month I'm going to rattle through a handful of smaller improvements in Inkscape 1.3 that don't really warrant an in-depth exploration, but which are worth calling out nevertheless.

XML Editor

This is the dialog we all love to hate. Ideally there would never be a need to edit a file's XML data directly. Practically, however, there are some more advanced tricks that can be done only this way, and for anyone creating SVG files to be manipulated by JavaScript on a web page, this can be an invaluable tool.

The most immediately obvious change in 1.3 is the addition of syntax highlighting to the DOM tree in the left-hand pane. This makes it much quicker and easier to visually distinguish the elements, attributes and values – assuming you're familiar enough with XML to know what those terms mean.

The toggle to switch between horizontal and vertical layout has been moved into a drop-down at the top-right of the dialog. It's gained an 'Automatic layout' option, too… though that doesn't seem to work terribly well, as it's based solely on the dialog's width rather than its aspect ratio. If you really want a vertical layout for this dialog, better to select it explicitly.

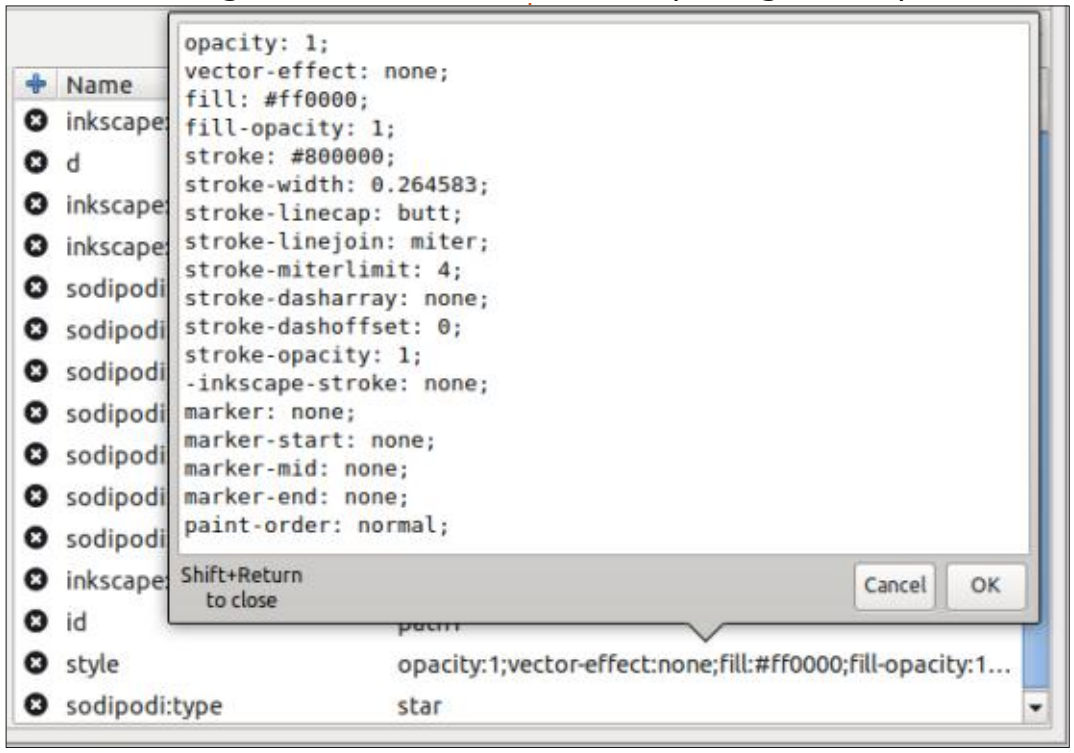


The rather useless option to hide the attributes pane has also been removed.

The editing pop-ups have been improved with this release. Selecting a 'style' attribute's value now shows the properties as a vertical list, much like you would use when writing a CSS file by hand. There's no syntax highlighting in here though, unfortunately.

When editing the 'd' attribute of a path element of some sort (a list that includes things like stars and spirals, as well as the more obvious Béziers and pencil lines), there's a small button and pop-up at the bottom of the editor. Clicking the button will round the path values to the number of digits selected in the pop-up, as shown in this before and after image.

This is something that can be achieved across a whole document when exporting as an 'Optimized

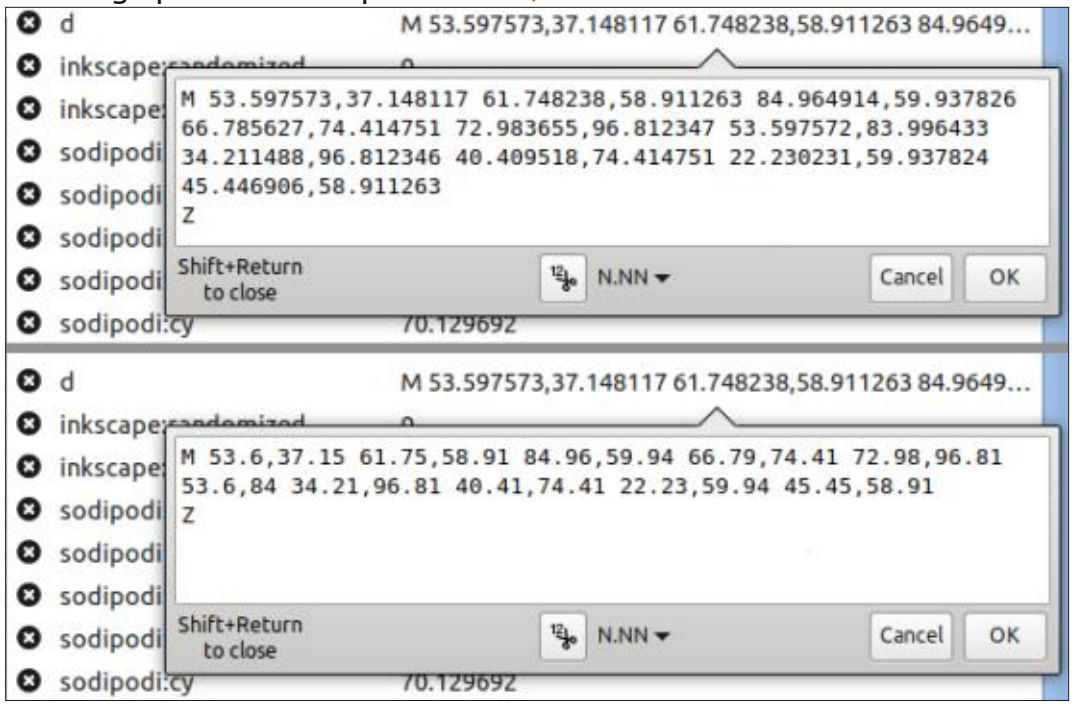


SVG', or more generally by adjusting the 'Numeric precision' value in the 'SVG Output' pane of the Inkscape Preferences dialog (Edit > Preferences), but it's quite nice to be able to do this on a more ad-hoc basis here. I imagine this might be of use to people creating small icons, for example, who want to ensure that their path coordinates all correspond to whole pixel values.

Touch selection of path nodes

'Touch selection' is a long-standing option in Inkscape that is often missed by new users, as it's not triggered by any obvious button or toggle in the UI. It's a feature of the Selector tool (F1) whereby holding down the ALT key allows you to draw a thin red line on your page: any element touched by that line will be selected when you release the mouse button. This option has now been made available in the Node tool (F2) as well.

'Touching' nodes with the red line isn't quite as easy as touching entire objects, so this is best used by roughly drawing a line around the nodes you wish to select.



Inkscape does a pretty good job of working out which ones you intended to include, and which your line is just passing by, so you don't have to be terribly accurate, nor do you have to form completely closed loops around the nodes.

There's one big caveat with this feature for Linux users though. It's something I've discussed several times in the past, but it bears repeating: most Linux window managers use the ALT key for window operations. Typically, holding the ALT key and dragging the mouse (with the button pressed) will move the window, rather than activate Inkscape's touch mode. There are three solutions to this that I'm aware of:

- Change the settings for the ALT key in your window manager
- Hold the SUPER key at the same time as ALT
- Change the keyboard shortcut in Inkscape's Preferences dialog

I don't like the first of these, as I don't believe you should be forced to make a global change to your environment just to support a feature in a single application. But if you find you're frequently triggering window movements through ALT-dragging in other applications as well, this might be something to consider.

Option 2 is not guaranteed to work with all window managers – though it's done the job with all the ones I've used over the years, and is my preferred solution to this problem. Simply hold the SUPER key (the 'Windows' key on most PC keyboards) at the same time as ALT for any Inkscape functions that need the ALT key. This seems to be enough to not trigger the window manager's default actions, but Inkscape usually ignores the distinction and carries on as expected. This typically works well for features that have a long-standing history in Inkscape, but not for newer additions, as we'll see later.

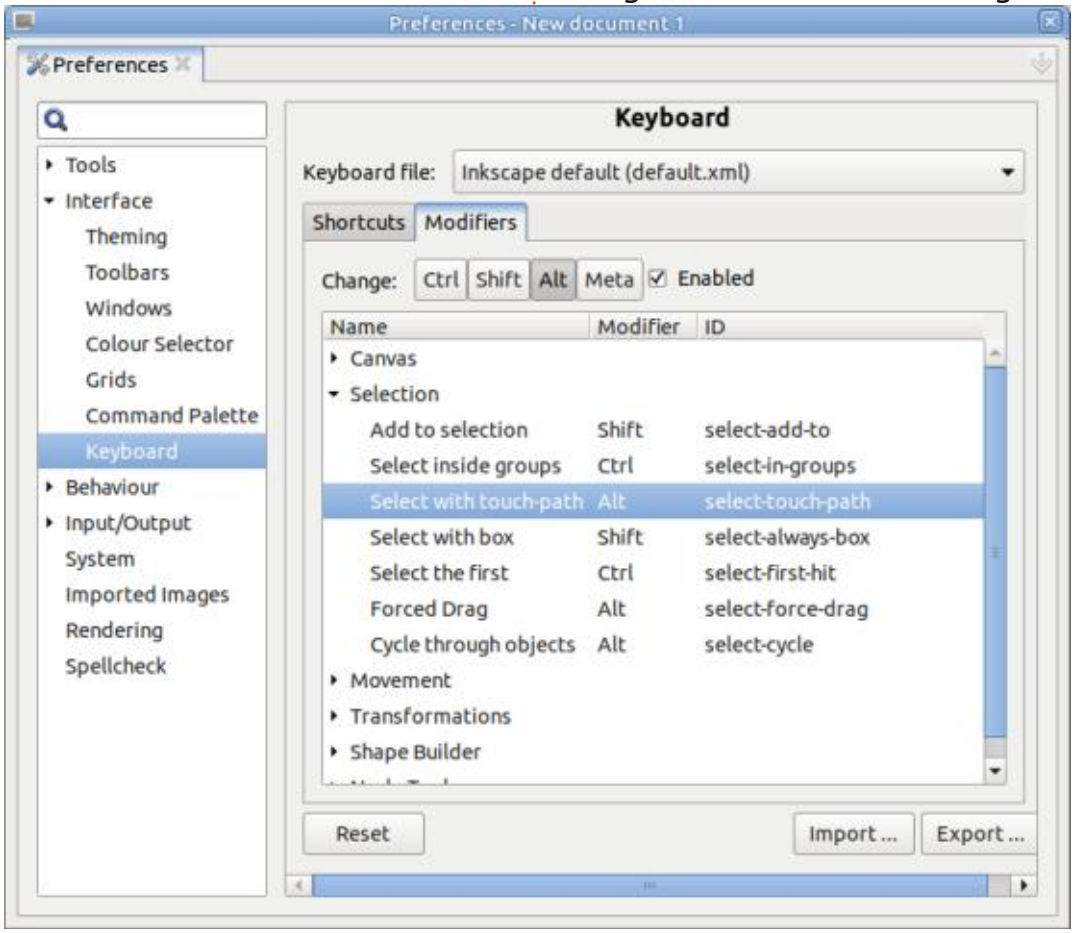
The third option is to change the Inkscape keyboard bindings so that this mode is triggered by a key other than ALT. I'm not a fan of this approach, as it takes you off on a non-standard path to using Inkscape that might lead to confusion when trying to follow instructions, YouTube videos, or even future instalments of this series. But you may prefer it to option 1 if the second approach doesn't work. The location of this

setting is buried within the Preferences dialog (Interface > Keyboard > Modifiers tab > Selection), so you might want to follow the image below as a guide.

Selector tool improvements

There's now an option to enable selecting transparent objects. In the Preferences dialog, expand the 'Behaviour' section and click on the 'Selecting' entry. The new option is the second one in the pane, labelled as 'Select transparent objects, strokes and fills' on my system. Enabling this may avoid a few trips to the Display Mode menu if you have to work with transparent objects frequently.

There's now a way to save and restore the current selection, though it's not the easiest thing to use. You can access it by pressing the '?' key to open the 'Commands bar', then search for 'selection backup' to find the commands to set, restore, and empty the saved selection. It works for selected objects or nodes, but you can save only one selection at a time, which somewhat limits its usefulness. I've always found Inkscape's implementation of a command palette to be a bit clunky, so if you do want to use this feature, I'd recommend setting keyboard shortcuts for the set/restore commands, at least.



There's a keyboard shortcut to reapply the last transform. For example, if you rotate an object by 15°, then press CTRL-ALT-T, it will be rotated by another 15°. Based on what you've read so far, Linux users might expect to use SUPER-CTRL-ALT-T to achieve the same result, but unfortunately this is one case where Inkscape doesn't treat it as the same command. You can reassign this feature to that shortcut (or any other) via the Preferences dialog – search for 'Reapply Transforms' in the Interface > Keyboard pane.

It might not be immediately obvious to you why you would want to use this shortcut. Surely you could just rotate by 30° in the first place? In theory this could be useful for applying the same transform to multiple objects, one by one. In practice the reapplied transform is based on the same rotation origin as the original object, which makes this less useful for rotating, skewing, and scaling. In the rotation example, using this feature on a second object won't rotate it in place, but rather may send it shooting off to another part of the canvas entirely, if it's located some way from the first object's center of rotation.

A related feature that might prove more useful, though, is 'Duplicate and Transform'. By default, this is bound to CTRL-ALT-D, but Linux users will probably also have to re-bind this in the Preferences dialog, as adding the SUPER key to the mix doesn't work by default. With this shortcut, the selected object is duplicated and has the previous transformation applied to it as well. For example you might use these steps to create several objects that are equally spaced:

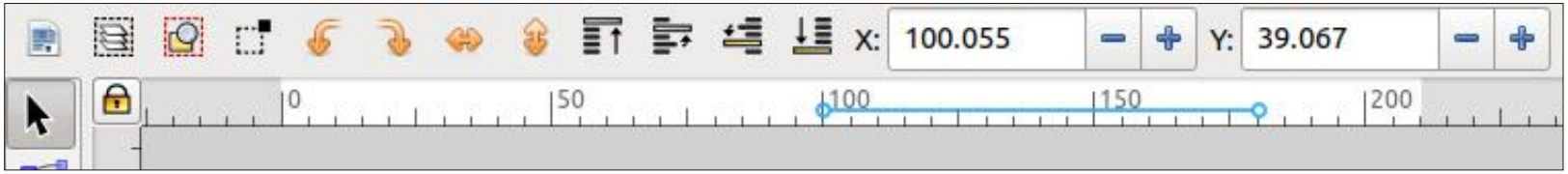
- Select an object.

- CTRL-D to duplicate it.
- Drag or otherwise move the duplicate to a new location.
- With the duplicate still selected, press CTRL-ALT-D (or the keyboard shortcut you've set) to create another duplicate spaced apart by the same amount.
- Repeat the keyboard shortcut to create a series of duplicates with equal spacing.

Unfortunately there isn't an equivalent of this for creating clones rather than duplicates, which is a slightly odd omission given the next addition to the Selector tool…

You may be familiar with the ability to drag an object around the canvas and hit the Spacebar to 'stamp' a copy. With 1.3, you can do the same but pressing 'C' instead of the Spacebar, resulting in a clone being created each time rather than a copy.

The next feature isn't exactly part of the Selector tool, but selections play their part. The rulers have been improved to provide a little more information, including some about the current selection. They now have a different colored background to indicate the page



boundaries, and a thin blue line, with circles at either end, to indicate the size and position of the current selection.

I'm not sure how useful it is to be able to see the size of the selection at all times, but it doesn't hurt either. More beneficial is the fact that you can now right-click on a ruler to set the document units, rather than having to do so via the Document Properties dialog. As this is a global setting for the document, it also affects the units used for number fields elsewhere in the application. If you have to switch between multiple units in the same document this will certainly be faster than opening a dialog.

Pasting options

The options for pasting in Inkscape have increased over the years. As well as the most common case of pasting objects that have been copied to the clipboard, additional capabilities have been added to allow just pasting the width or height, for example, which lets you easily set one object on the canvas to the same dimensions as another. With this increase in options, the Edit menu was starting to get a little long, so all the 'special' pasting modes have been moved to a separate sub-menu, simply called 'Paste…'. This should not be confused with the normal 'Paste' menu entry just above it (which has no ellipsis after the name), which is the one to use for simply pasting an object onto the canvas. The new menu contains these options:

'In Place' will paste the object back at exactly the same coordinates from which it was copied. While this may seem the same as simply creating a duplicate, the difference is that you have the opportunity to change layers, enter/exit a group, or even switch to a completely different document before pasting. I often use this to remove individual objects from within a group, but put them back at the same location so that the drawing looks the same, even if the structure has changed a little.

'On Page' is new with version 1.3, and is similar to 'In Place' except that it is relative to the current page in a multi-page document. This can be used to copy an object from one page to exactly the same place on another (e.g. a common header or border). Before using this, the destination page has to be made 'active' by selecting an object on it, selecting the page itself using the Page tool, or by changing the current page using the pop-up menu in the status bar (which is only visible if the document contains multiple pages).

The next three size-related entries are pretty simple. Copy an object to the clipboard, then select another object on the canvas. Select Edit > Paste… > Width to change the width of the selected object to match that of the copied object. 'Height' behaves similarly, and 'Size' sets both the width and height at once.

If, before choosing these paste options, you select multiple objects rather than just one, the behaviour may not be quite what you expected. The width/height/size is applied to the entire selection, rather than each individual object. If you want that behaviour, then the last set of options will provide you with the desired result. If you have only one object selected, then either set of options will give the same effect.

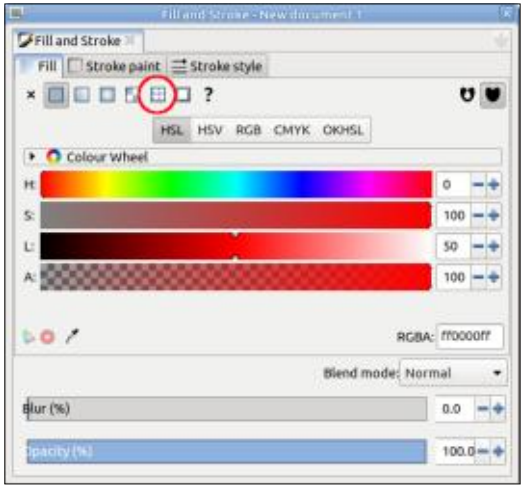
Mark uses Inkscape to create comics for the web (www.peppertop.com/) as well as for print. You can follow him on Twitter for more comic and Inkscape content: **@PeppertopComics**

Inkscape - Part 147

One of the most welcome changes in Inkscape version 1.3 is the addition of a Pattern Editor in the Fill & Stroke dialog. It's definitely not without its issues, but it's such a vast improvement over the UI in earlier releases that I'm more than prepared to forgive a few UX missteps.

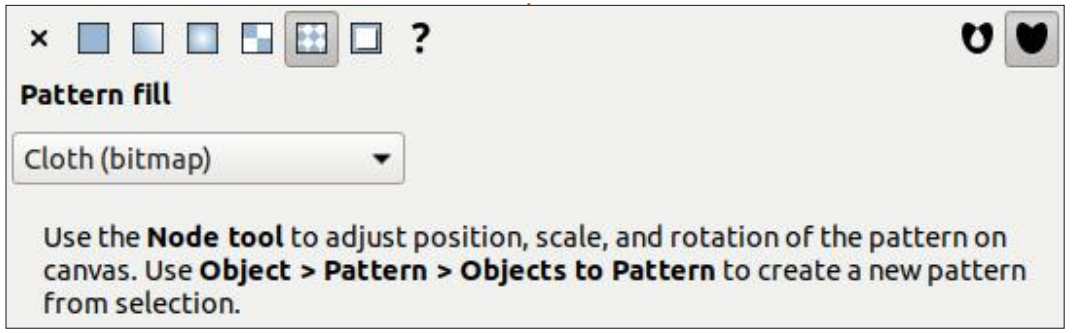
First a reminder about patterns in general, as they're not a feature that all users have a lot of experience with. The short, technical explanation is that a pattern is a section of SVG content that can be used in place of a color or gradient for the fill or stroke of an object, and which will automatically be tiled in both the horizontal and vertical directions if it's not large enough to fill the required space. Inkscape comes with a large number of built-in patterns, and it's those I'll focus on in this article. If you need something else, however, you can create your own patterns by selecting one or more objects in your image, and using the Object > Pattern > Objects to Pattern menu entry.

Let's look at adding a pattern to the fill of a rectangle. In this screenshot of the Fill & Stroke dialog, the object currently has a solid red fill. I've drawn a red circle around the button that switches from a flat color fill to a pattern fill, and there's a similar button on the 'Stroke paint' tab.



Clicking that button in an old Inkscape release produces a rather underwhelming UI, consisting of just a single pop-up selector and a lot of explanatory text.

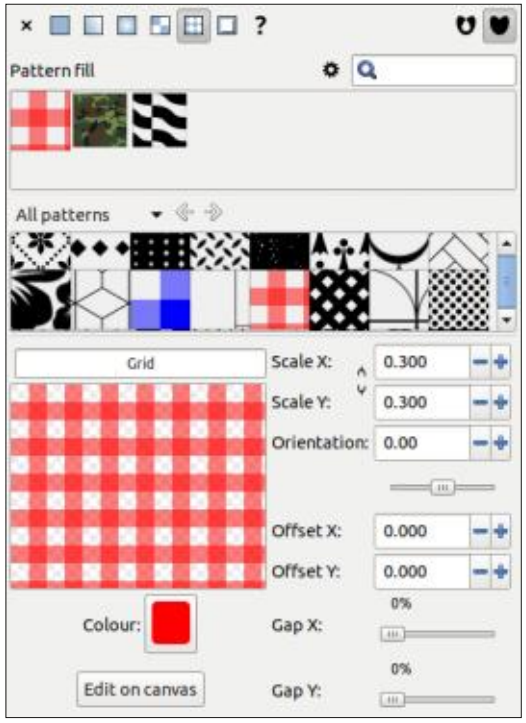
Opening that pop-up presents a long list of pattern names,



consisting mostly of stripes of different ratios, some polka dots, a few miscellaneous vector entries, and three bitmap designs. But one thing that's conspicuous by its absence is any sort of preview of each pattern – you have to just apply each of them to your shape in turn to see what they look like. That's it for the UI in the dialog. There are some on-canvas handles for repositioning and sizing the pattern (more on those later), but in terms of selecting a pattern you just pick the name from a list and hope for the best.

Compared with that sparse interface, 1.3 offers a wealth of controls and previews, to the point that it's almost overwhelming!

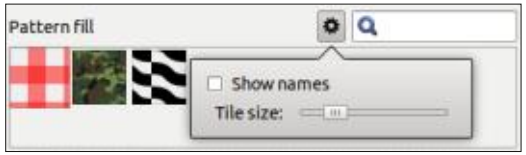
With so much more to show, you may find that there's even a



scrollbar to let you access all of it if you have the dialog sized too small. Below this UI you'll also find the Blend Mode, Blur, and Opacity controls that are common across all the fill types, so fitting the entire

Fill & Stroke UI on screen at once requires quite a bit of vertical space and is likely to require some scrolling up and down on a smaller screen.

Let's break down the various parts of this UI to make more sense of the features that are now exposed, starting from the top:

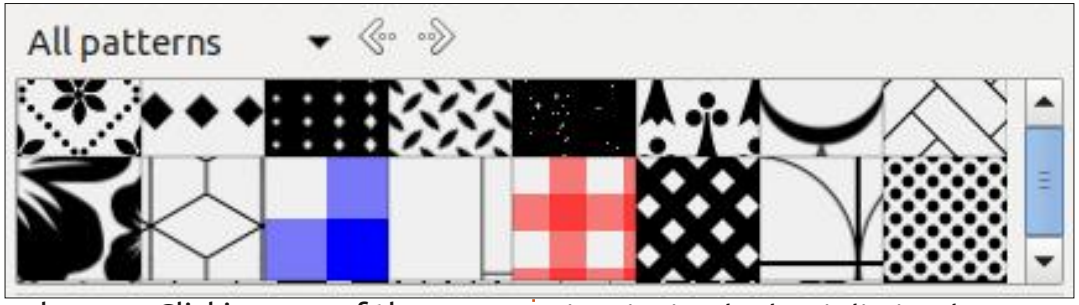


After the 'Pattern fill' label, the first actual control is a button with a gear icon which opens a pop-up with a couple of settings. The first of these is a checkbox to turn on or off the display of the pattern names below each swatch. Personally I find that displaying the names is largely useless, as you may see only the first few characters, which are often identical across multiple different patterns. Hovering over a swatch displays the full name in a tooltip, so if you just want to know or memorize the names of your most commonly used patterns, there's little need to have them permanently displayed.

With the slider in this pop-up you can adjust the size of the pattern swatches (referred to as 'tiles'). Larger tiles show more of the pattern content (and more characters in the name, if you have enabled that option), but reduces the number of swatches that are visible at once. Inkscape tries to update the dialog live as you move this slider: on my machine this was jerky, hanging the UI for a second or two with each re-render. I advise dragging the slider very slowly to allow the application to keep up, especially when trying to finetune the tile size to your exact preference.

Next to the gear button is a search field for filtering the displayed swatches based on their name. With the number of patterns in Inkscape at the moment it seems unlikely that much use will be made of this feature. Perhaps if many more designs are added in a future release, this will make more sense.

The remainder of this top section is taken up by a box that shows a swatch for each pattern that is used in the current document. Note that this is one swatch per pattern, not per object using a pattern. If you use the exact same pattern on, say, five different objects it will still appear in here only once. Clicking one of these swatches will apply the pattern to the currently selected object(s) – but make sure you read the rest of this article to understand the difference between picking a pattern here versus the next box of tiles, as they don't do quite the same thing.



That 'next box of tiles' is a similar region containing swatches for patterns, but this time it shows all the ones that are available in the application, rather than just those that are being used in the document (shown above).

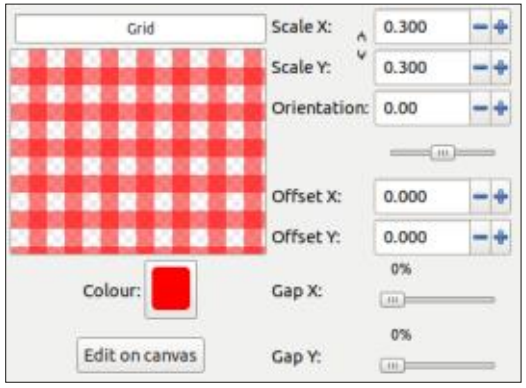
At the top-left is a pop-up menu that lets you select between different categories of pattern. The categories are rather arbitrary – what makes a pattern 'Asian' rather than 'Decorative' or causes it to appear in the 'Geometrical' section, rather than the confusingly named 'Patterns' group? The real benefit to being able to view one group at a time is simply that it limits the number of patterns to display at once, in this scrollable letterbox view that is clearly too small for the purpose except on the largest of screens.

Next to the pop-up are arrows that simply step through the groups, offering little additional benefit. Furthermore, the stepping doesn't wrap around, so when you get to the last group you'll probably end up opening the pop-up anyway to jump back to the beginning.

Then we have the pattern swatches themselves. Clicking a swatch in here will apply it to the currently selected object(s), but again make sure to read to the end of this article. Whereas the top set of swatches is likely to have only a handful of entries at most, this one can potentially contain a huge number. Not only is this box often too small to practically scroll, but many of the patterns run into each

other in a way that sometimes makes it hard to distinguish them from each other. Inkscape devs: can we have an option for a gap between tiles, please?

Finally, we have the largest part of the dialog: the section for previewing and editing the currently selected pattern. This consists of a large preview box, with a number of fields and controls wrapped around it which affect the preview, as well as having a live effect on the pattern(s) on the canvas.



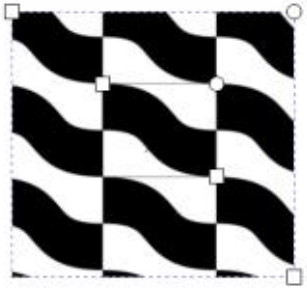
Top-left is a field that holds the name of the pattern. You can also edit the name here, though your changes don't take effect immediately, even if you press the Enter or Tab key. Instead you have to interact with some other control – one of the buttons in this dialog, or selecting a different object on the canvas, for example. Only then does the change kick in, and the tooltip on the swatch will update.

Running down the right are controls for changing the way the pattern appears. You can alter the scale in the x and y directions, with the '(un)broken chain' toggle that is common in many graphics programs being used to switch between proportional and free scaling. You can also rotate the pattern using either the 'Orientation' field or the unlabelled slider beneath it. 'Offset X' and 'Offset Y' are used to adjust the placement of the pattern within your fill or stroke.

ll of these controls can also be changed graphically on the canvas. There are two ways to enable this mode: the first – which has been available in Inkscape for a long time – is to switch to the Node tool (F2) while an object with a pattern is selected; the second is simply to click the 'Edit on canvas' button in the Fill & Stroke dialog, which actually just switches you to the Node tool anyway.

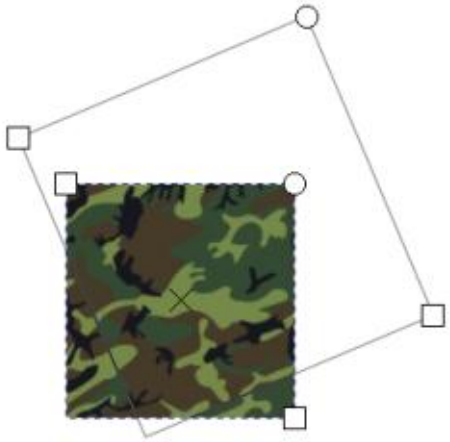
Whichever approach you take, Inkscape will display a square or rectangle with three handles on the canvas which represents the outline of a single tile of your pattern. In older releases, this rectangle always appeared at the top-left of your document, but 1.3 changes this so that it appears on the object you're editing. This makes a lot more sense, especially if you're trying to adjust the pattern on an element that's far from the top-left corner.

The style of the handles, however, is rather confusing. They look identical to the handles for editing a rectangle, such that it's easy to get them mixed up when they happen to be close together on the canvas. In this image you can see the rectangle's handles around the outside, and the pattern's handles inside the object – just imagine the confusion when the pattern is a similar size to the object, so that the handles start to overlap. Wouldn't it make so much more sense to render these handles with a different shape, color, or line thickness?



Dragging the top-left handle will reposition the pattern (equivalent to the 'Offset X' and 'Offset Y' controls). Dragging the bottom-right handle will resize the pattern (equivalent to 'Scale X' and 'Scale Y') – hold Ctrl at the same time for proportional scaling. When scaling proportionally, the handle fixes the aspect ratio that is currently set, rather than forcing x and y to the same value. This is a good thing, as it lets you set the aspect ratio for the pattern then adjust its actual size without that ratio changing, but there doesn't seem to be a shortcut to force it back to a 1:1 ratio, should you wish to, leaving you to edit the fields in the dialog instead. Finally, dragging the round handle at the top-right will rotate the pattern (equivalent to the 'Orientation' field and slider).

If your pattern is small enough to repeat within your shape, clicking within it will move the handles to the corresponding 'copy' of the pattern. If your pattern is larger than the shape it's applied to, the handles can appear outside the object, as in this example with a large rotated pattern.

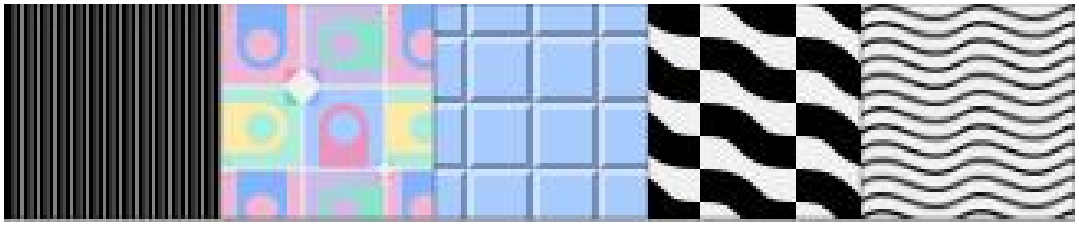


Within the dialog is also a pair of sliders labelled as 'Gap X' and 'Gap Y'. These allow you to add gaps between the copies of your pattern but, quite frankly, they feel like an afterthought. The size of the gap is represented on them as a percentage (of what?), but they allow steps of only 20% at a time – and there's no input field to enter an arbitrary value. Digging into the XML editor, I think that these actually set the 'width' and 'height' attributes on the <pattern> element (which is hidden away in the <defs> section), with the percentages being based on the width/height of the pattern content. They're certainly not stored as simple percentages in the XML, so if you want a value that doesn't fall on a 20% step, you'll have to do the math, or manually tweak the values in the XML editor, until the result looks right.

Now that I've explained the bulk of the pattern editing controls, we get to one of those caveats I mentioned earlier. If you click on a swatch to select a pattern – even if it's the same one that's already been applied to your object – all those fields are reset to their defaults. On the one hand, this is a quick and easy way to revert all your changes if you've been playing around with the handles on the canvas, but on the other hand, it's a quick and easy way to accidentally revert some carefully curated changes in a way that you might not spot until it's too late for Edit > Undo to save you.

There's one final control I haven't described yet, which you might think I've skipped over because it's so obvious what it does: the 'Color' button (labelled 'Colour' in the screenshots from my British English installation). Unfortunately, while it is indeed obvious what it should do… it doesn't always do it.

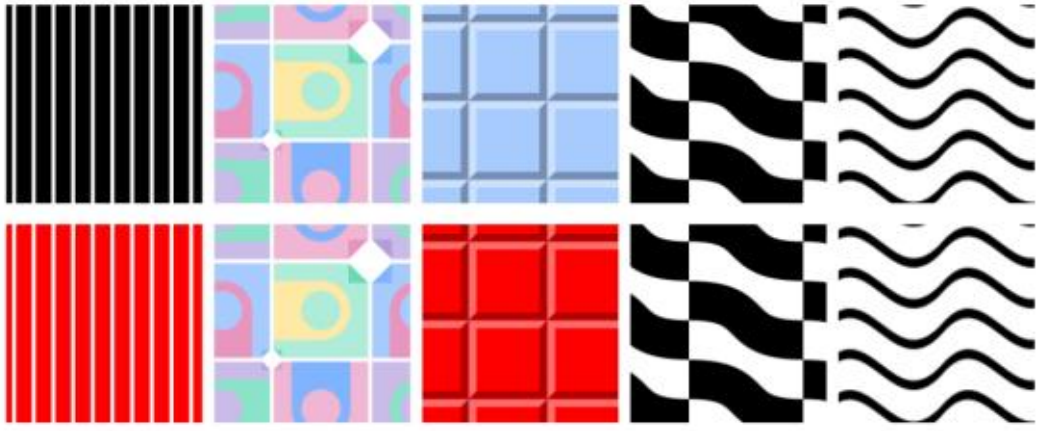
With some patterns, selecting a color will change the pattern to that color, as you might expect. But with others, it doesn't have an



effect at all, or the button simply doesn't do anything (it's disabled, but although the label appears greyed out, the button itself doesn't look obviously inactive in any way). Take these five patterns – the last five of the 'Patterns' group – and see if you can predict how each one will behave when I try to apply the same color to them?

The first ("Stripes 13 (4:1)"), is a simple vector pattern, and accepts the color as you might expect. The second ("Table Cloth") disables the button, which I guess makes sense given the mixture of colors in the pattern. But although the third one ("Tiles") also appears to contain multiple colors, it will happily accept a color change. The fourth pattern ("Tiles 2") will let you open the color picker and set a value, but then it still appears in only black. The last one ("Wavy"), despite looking like a simple vector pattern, also disables the button. Here are those results, in graphical form, with the default appearance in the top row, and the bottom showing all the patterns after (trying to) set them to pure red.

There's one more caveat to using this dialog, and it's a very, very important one. Depending on how you use it, Inkscape will sometimes create a copy of a



pattern, and sometimes it won't. This can have a huge effect on what happens when you play with the editing controls, and makes the result very hard to predict.

If you set a pattern fill by clicking on the top section of the dialog – i.e. choosing a pattern that has already been applied to another object in your document – both those objects use the same pattern definition. If you change the color on one of them, the other one will change as well.

If you now change the other pattern controls for one of those objects, such as the scale or orientation, Inkscape creates a new pattern which references the first, but applies its own position and transformation data. Other types of data are inherited from the referenced pattern though. This means that even though there are now two patterns, they still share the same color data, so changing the color of one will still also change the color of the other.

Now draw another shape and set a pattern on it. This time select it from the main section of the dialog, using the large list of grouped patterns. Even if you select the same basic pattern as above, Inkscape creates a fresh copy of it, not just a reference. You can change the color of this one without it affecting anything else.

If this sounds confusing, it's because it is. Sometimes Inkscape creates a copy, sometimes it creates a reference to an existing pattern. There's some logic to it, but nothing that's very obvious from a user's perspective. I've distilled the complexity down into two rules, which should hopefully help you to make the right choice when setting a pattern:

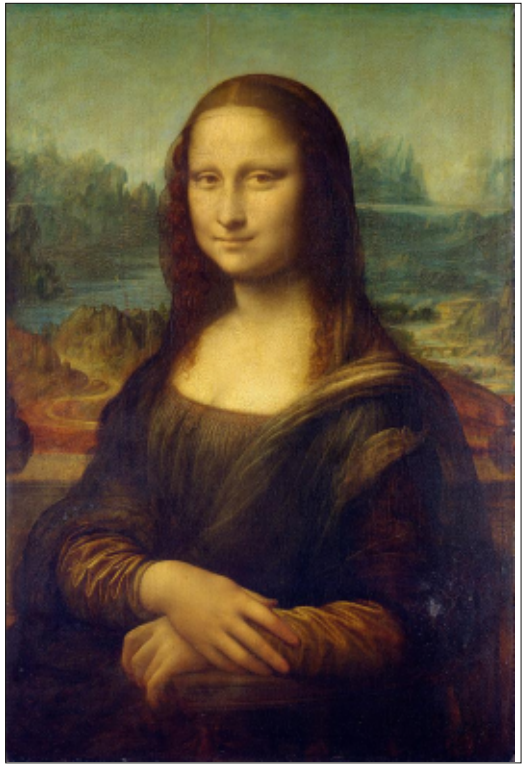
1/ If you want an independent pattern for your object that will not be affected by changes to the pattern on other objects, make sure to select it from the main list of swatches, not from the top region that shows the ones already applied in the document.

2/ If you want objects to share the same pattern such that changing the color of one changes the others, select the pattern from those that are already in the document, using the top section of the dialog. The on-canvas controls for setting scale and orientation (or those at the bottom right of the dialog) will still operate on each element separately though.

Mark uses Inkscape to create comics for the web (www.peppertop.com/) as well as for print. You can follow him on Twitter for more comic and Inkscape content: **@PeppertopComics**

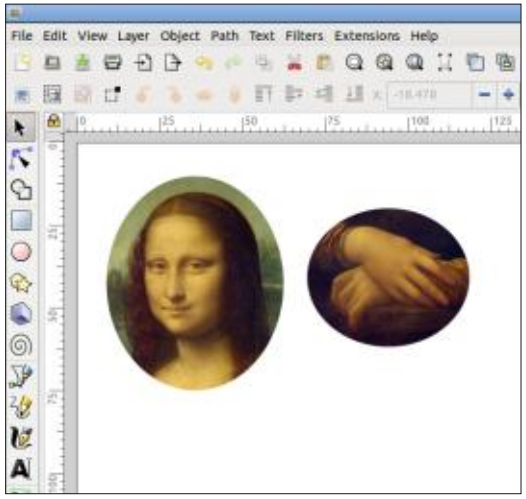
Inkscape - Part 148

I've looked at using clipping paths in Inkscape on several occasions in this series. This time, I'm going to hark all the way back to part 32, which appeared in FCM #92 in December 2014! In that article, I looked at some clipping techniques that could be applied to any type of object, but which were particularly suited to bitmap images. I used this familiar lady as my subject.



The highest resolution version of this file weighs in at nearly 90MB, so it's not the sort of thing you'd want to embed into an SVG file – especially not multiple times. One solution to this is to link the image into your Inkscape document rather than embed it, but there are occasions when embedding is the better option. The classic example of this is when you want to share the file with somebody else. Inkscape will also sometimes use absolute rather than relative paths when embedding images, which makes them less practical to move between systems. You can manually edit the paths to make them relative, which helps the situation a lot, but you're still left with an Inkscape document that actually consists of two or more files that have to be moved as one. Embedding images solves all these problems, but this comes at the cost of a larger file, since it now contains a copy of the bitmap data in a text-based encoding that bloats it even further.

The main subject of part 32 was therefore how to avoid embedding multiple copies of an image in your document when you need to reference different parts of it. The example provided was of an information leaflet that contains clipped images of La Giaconda's head and hands.

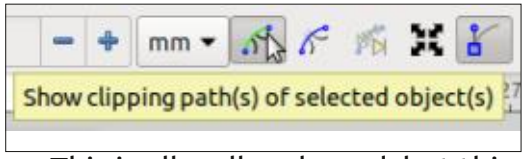


Despite appearances, the document in this screenshot contains only a single copy of the original image file. The secret is well known to Inkscape veterans, but is perhaps the single most useful tip I can provide when working with clipping paths (or masks): the content to be clipped is placed inside a group.

That alone isn't enough to get this effect, but it's a prerequisite that makes for a good tip in general. With the clipping path applied to the group rather than the image itself, you can still double-click to enter the group, then move the image within it to change the point of focus. What you can also do is clone the image within the group, then cut it to the clipboard, exit the group, and paste it somewhere else (even on another layer). Because you've cloned the image itself, not the clipped group, you get a complete copy of the image that can be further manipulated. In this case, the requirement was to clip the clone to show only the hands, and position it beside the head.

While we're on the subject of clipping tips, another useful tip is to always convert your clipping shape into an actual path if it's not already one. That means any rectangles, ellipses, stars, or regular polygons, that you want to use as a clipping path, should generally be converted using the Path > Object to Path menu entry before you apply the clip. The reason? It means that the

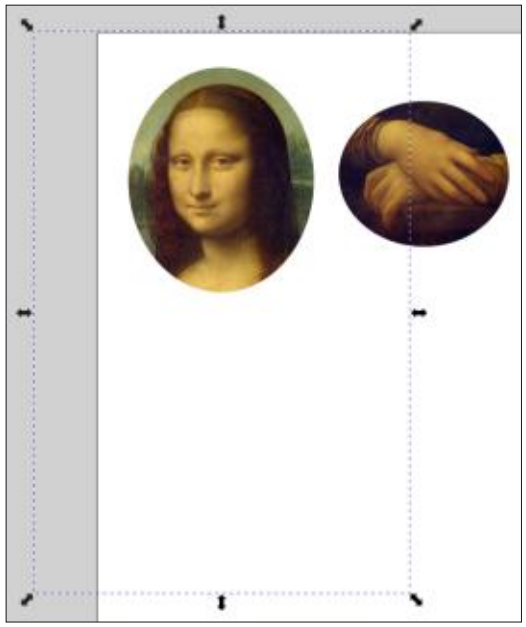
path can be edited using the Node tool (F2) without unclipping first, which is not only a time-saver but also gives you a more representative view of how the final clipped object will look while you're editing the path. Note that this capability can be toggled on and off when the Node tool is selected, by using this button in the toolbar; so make sure it's enabled if necessary.



This is all well and good, but this month's column isn't really about repeating some tips from a decade ago, no matter how useful they still are. Instead, I want to talk about a new feature in Inkscape 1.3 which might make the previous approach redundant… at least in some cases.

Looking back at the original requirement, the aim was to cut out two sections from the original image which could then be moved around and manipulated independently. Although the group-and-clone technique achieved this visually, it didn't really "cut out" the sections at all. The final pieces were just clipped versions of the full-sized image – which becomes very obvious when you look at the bounding box when I select one.

Obviously there's at least one

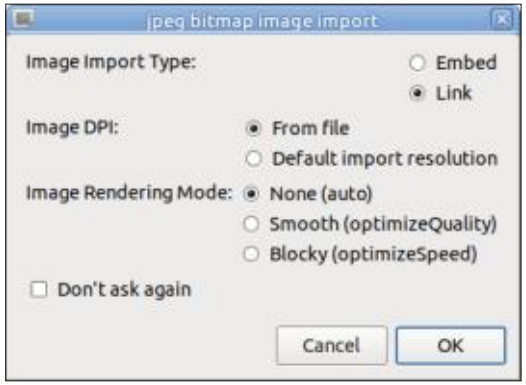


copy of the entire image embedded into the Inkscape document, even though the vast majority of the pixels don't appear in the final output. All those invisible pixels still contribute to the file size.

The most obvious way to avoid this is to edit the original image using a bitmap editor such as The GIMP or Krita, but that assumes you know how to use such programs to slice your image into individual parts, and save them as separate files. Wouldn't it be nicer if Inkscape could take care of this for you, using the tools you already know? Well now it can.

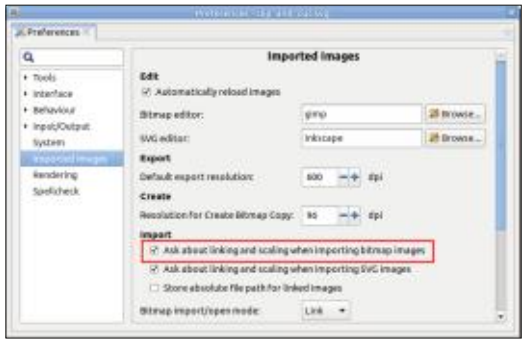
To demonstrate I'm going to drag and drop my image into the Inkscape window. By default, you will be prompted as to whether you wish to link or embed the file, and I'll choose to link it.

If you don't see that dialog then



you likely clicked the "Don't ask again" checkbox on a previous occasion. It doesn't really matter too much whether the image is linked or embedded at this point (it will end up embedded by the end anyway), but I prefer to link it to avoid bloating the SVG file when I save incremental work-in-progress copies of the file. If you do want to reinstate this dialog, then open the Inkscape preferences (Edit > Preferences), select the "Imported Images" entry on the left, and ensure that you check the "Ask about linking and scaling when importing bitmap images" option.

In this particular case, I want to



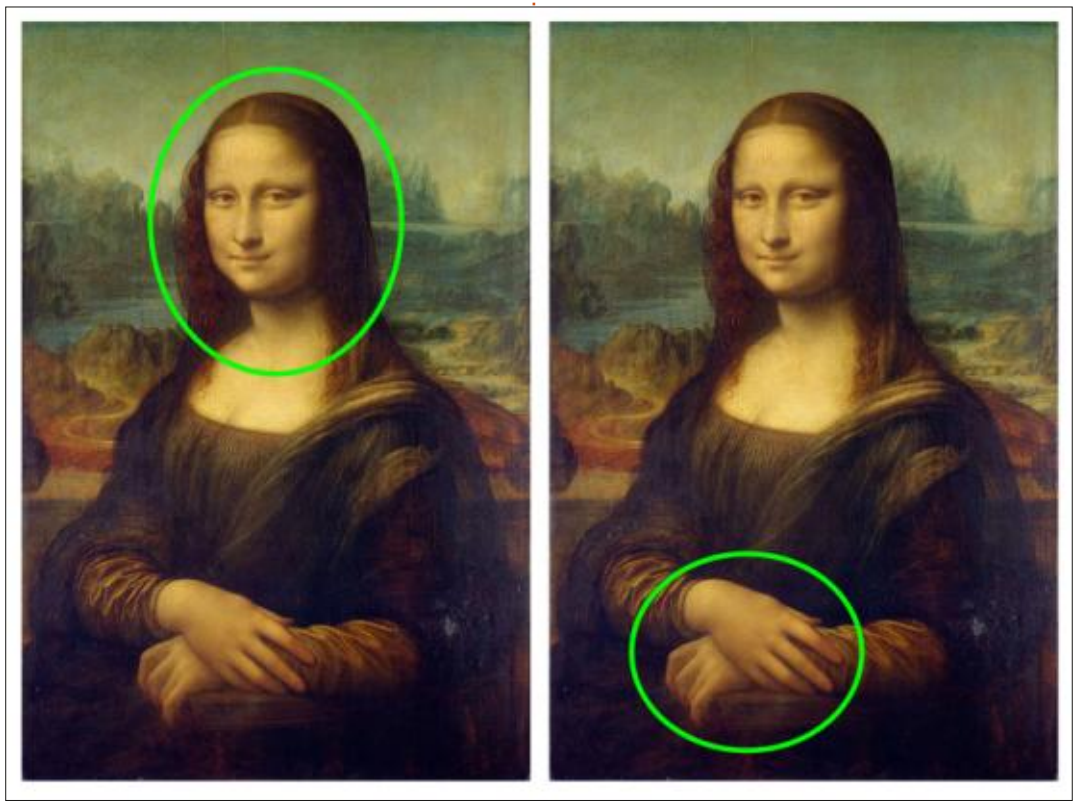
use two sections of this image, but this technique is just as applicable to a single clipping path on a single image, should you want to remove the extraneous pixels that take up space in your SVG file. But, for two sections, I need two copies of the image: not clones this time, but real copies. Selecting my imported image and duplicating it (Ctrl-D) does the job. If you embedded the image, then saving at this point will result in a very large file, with the content of your image stored twice in the SVG file. If you linked the file there will be no such concerns, and your SVG file remains almost as svelte as ever.

Now I'll create the clipping paths that mark out the sections of the

images that I want to keep. The tip about converting any primitive objects to paths still applies. Here's how my document looks so far with my clipping paths given a bright green stroke as is my usual preference.

The next step is to select one image and its associated clipping path, and apply the clip. I usually right-click and select 'Set Clip' from the context menu, but Object > Clip > Set Clip does the same thing if right-clicking isn't practical for you. Repeat for the other image and path.

This is the time to get the shape, position and size of your clipping paths absolutely perfect. We didn't group the image first, so the trick of double-clicking to move the focus won't work here. But we can switch to the Node tool and move the entire clipping path if necessary – just select all the nodes (Ctrl-A will do the job) and you can drag the entire thing around. Of course you can also edit individual nodes to change the shape of the path. If you need to change its size, but not its shape, select all the nodes and use the '<' and '>' keys. '[' and ']' will similarly rotate the path.



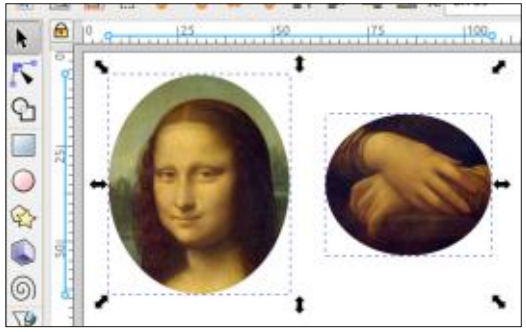
Right, are you happy with the clipping? Make sure you are, because once you take the next step, Inkscape will throw away much of the original image, so there's no turning back. (Okay, Ctrl-Z works to undo as usual, but what I mean is that this is a destructive change that can't be undone once you've closed and reopened the file later).

Right-click on one of the clipped images and you should find a new entry in the context menu: "Crop Image to Clip". Select that, and Inkscape will throw away the hidden pixels… sort of. The reason for that caveat is that there aren't any widely used bitmap formats that support non-rectangular images, so in the case of a non-rectangular clipping path, you'll still find that some hidden pixels remain (you can remove the clip to see them). But for all practical purposes, your image has been reduced to just the clipped area, even if a few extraneous pixels are technically still present in the corners.

Now it would be a big problem if Inkscape clipped a linked image in this way. You wouldn't want Inkscape to destructively modify your original image. What happens if that same image is linked into another document, perhaps in a completely different application? For that reason, Inkscape embeds the destructively edited image file if it was originally linked. In the case of our example document, therefore, this means we've embedded two small images – one of the head and one of the hands – but the combined size of those two pictures is still likely to be significantly less than our single embedded file using the previous approach.

Our final cropped and clipped images can now be positioned and manipulated as normal, with the advantage that the bounding boxes look a lot more sensible.

This new feature will be useful



in a lot of cases where users want to use Inkscape to clip or crop bitmap images, but it's not a panacea, and needs to be used with consideration for its merits and its drawbacks. Where your clipping path encompasses most of the image – just removing a small amount from around the edges – it's probably not worth using this technique. The savings in file size will be minimal, and the destructive nature of the editing means you'll lose some ability to tweak and refine your clipping path or image position later on.

The example I used here does make sense… but if we'd wanted larger areas, or boxes that overlap the same part of the original image, the file size might not actually get much smaller. Each embedded cropped image carries some overhead, so it's even possible that taking multiple views in this way could result in a larger SVG file than if the entire original image was just embedded once.

The feature itself is not very discoverable. You have to have already applied a clip to an image directly (not an image in a group), and only then does it appear in the context menu. Why can't we have a "Crop and clip" context menu entry that does both steps as one?

It's also worth noting that this applies to only bitmap images. For simple vector shapes, the equivalent method is to use the Boolean operations, but for complex groups of objects, there is no easy equivalent that will cut away the parts of objects that are not visible due to clipping. While the file size argument is less pressing with vector objects, there are times when it would be nice to be able to 'tidy up' an image in a similar way. I suspect there are too many edge cases for that to be an easy thing for the developers to achieve, though.

Overall I think this is a very useful addition to Inkscape's arsenal. It's just a shame that the lack of discoverability means that the people who will most benefit from it – the new users who also aren't comfortable with bitmap editors – are those most likely to miss it. If you know someone like that, point them in the direction of this article.

Image Credits

"La Gioconda" (aka "Mona Lisa") by Leonardo da Vinci
http://en.wikipedia.org/wiki/File:Mona_Lisa,_by_Leonardo_da_Vinci,_from_C2RMF_retouched.jpg

Mark uses Inkscape to create comics for the web (www.peppertop.com/) as well as for print. You can follow him on Twitter for more comic and Inkscape content: **@PeppertopComics**

Inkscape - Part 149

As I write this, the third beta for Inkscape 1.4 has just been released, primarily fixing some Windows issues. I encourage any readers who are so inclined to download the beta versions, try them out, and report any issues they find. If you're not a programmer, it's perhaps one of the best ways to contribute back to Open Source software, helping to ensure that the quality of the final release is as high as possible.

Despite version 1.4 looming large on the horizon, there are still a couple of features from 1.3 for me to cover. This month, I'm going to look at some new on-canvas controls that have been added. As has often happened with Inkscape, these controls don't actually provide any new functionality, but they do expose existing features in the UI in a way that might make them more discoverable, or easier to access, when you need them.

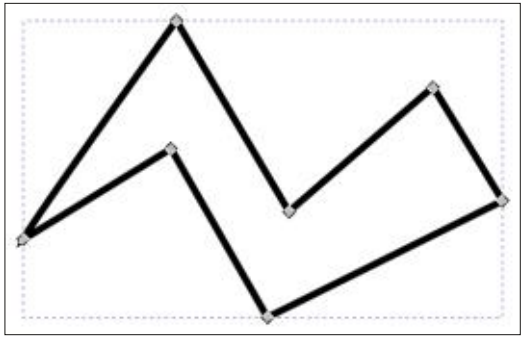
The first of these is on-canvas editing of corners for paths and other shapes. In other words, the ability to turn sharp corners into fillets (curved corners) and chamfers (angled corners) directly on the canvas. This brings Inkscape somewhat up to parity with other applications which often offer such functionality, but there's a good reason why it wasn't present previously: the SVG file format.

SVG doesn't support filleted or chamfered corners, other than through them being drawn as real path segments. Inkscape often gets around such limitations through the use of Live Path Effects (LPEs). These are a means by which Inkscape can store the 'original' path or object data in its own custom fields, while also creating a version of the shape using 'normal' SVG paths, so that other applications can still render the result. Those applications won't have the same editing capabilities as Inkscape, but at least the end result can still be displayed and used, even if some of the Inkscape-specific editing options are lost.

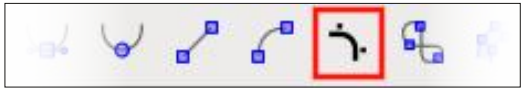
LPEs have been exposed as on-canvas tools before: if you draw a Spiro path using the Pen tool (aka the Bézier tool) or the Pencil tool, Inkscape automatically adds the Spiro LPE to produce the effect. Creating a BSpline similarly adds the BSpline LPE, while selecting a shape for the path (e.g. Ellipse or Triangle In) adds the Pattern Along Path or Power Stroke LPE. These effects stack, so drawing a Spiro path with the Triangle Out shape adds both the Spiro and Power Stroke LPEs.

This approach does a good job of hiding the complexity of the main LPE dialog, while still allowing more advanced users to edit the LPE parameters directly, or flatten the path to remove the overhead of the LPE calculations. In the same manner, the new on-canvas editing of corners exposes the Corners LPE in a more intuitive way, while still allowing access to the LPE parameters if necessary.

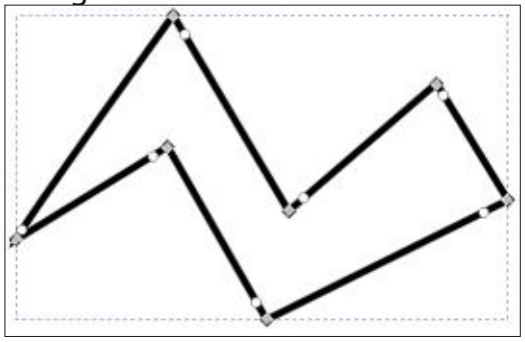
To begin, let's use this feature on a simple path drawn using the Bézier tool. Here's how my semi-random shape looks with the Node tool selected (F2).



With the Node tool still selected, we can add the Corners LPE simply by clicking a button in the tool control bar (outlined in red in this image). Note that clicking it a second time removes the LPE, losing any changes you've made, though Edit > Undo (Ctrl-Z) should save you if you click it by mistake.

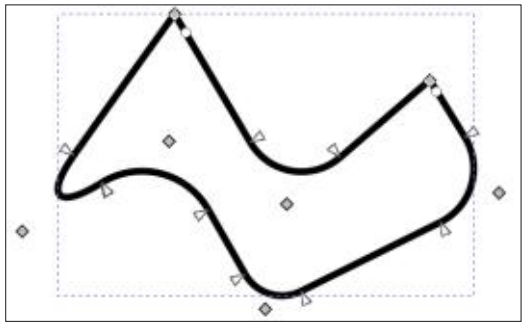


Note that the button doesn't appear as a visible toggle: it doesn't change state when the LPE is

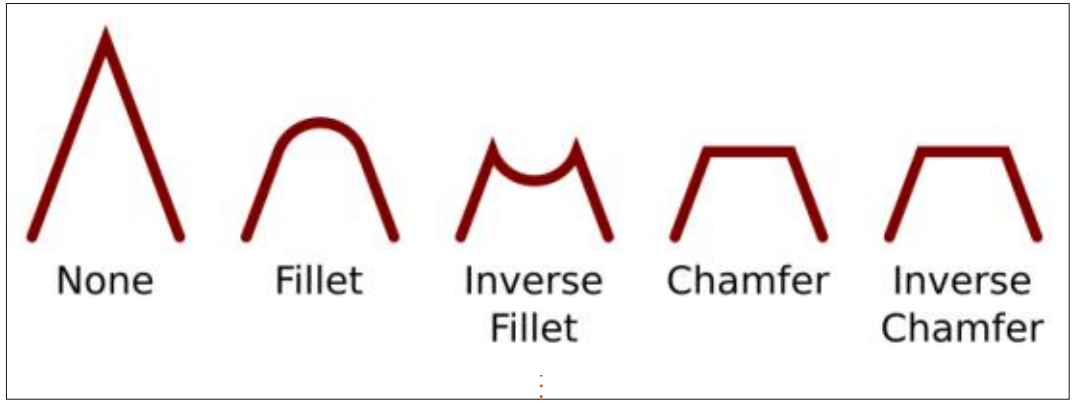


applied. The most obvious way to tell, however, is just to take a look at your path, which will have gained a new handle by each node (the small round circles in this image).

Drag any of those handles to set the fillet radius for the corner. As you do so, the single circular handle will be replaced by two triangular handles, allowing further tweaks to the radius to be made from either side of the underlying node. Dragging a few of these handles makes it very easy to turn our sharp, spiky shape into a mixture of spikes and curves.



Holding Control while clicking on any of these handles will cycle the corresponding node through the various types of corner that the LPE offers: fillet, inverse fillet, chamfer and inverse chamfer. The latter two appear identical at this point, just cutting off the corner with a straight line, but we'll do



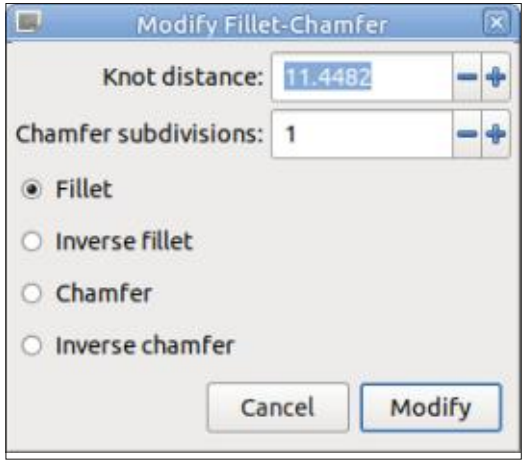
something more interesting with them in a moment. For now, here's what the same corner looks like in each mode.

At this point it's worth noting a small bug when using anything other than a normal corner or fillet. If you copy and paste, or duplicate your shape, the LPE sometimes loses track of the type of corner you had selected, so inverse fillets, or either type of chamfer, are converted to normal fillets in the new object. The behaviour is a little erratic so this is just something to keep an eye out for, though you may get lucky and never be affected by it.

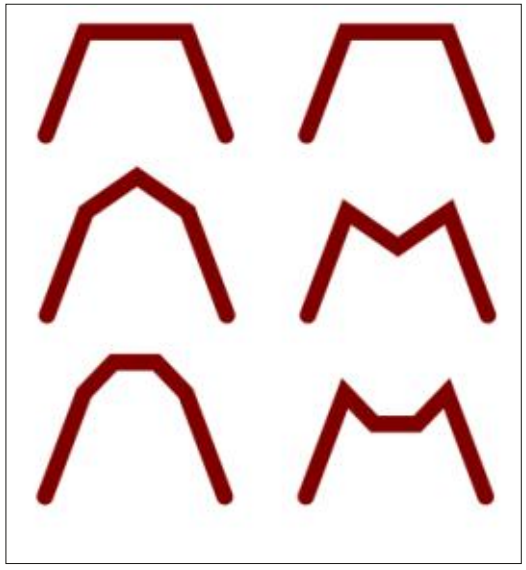
For setting the position of the corner handles there's a useful trick that can save a lot of time with complex paths. If you have any nodes selected, their handles will also be modified to match the same relative position of the one you've dragged (whether the drag handle is on a selected node or not). This makes for a quick way to set all corner handles to the same relative position by pressing Ctrl-A to select all the nodes before dragging. Unfortunately, Ctrl-Clicking to set the corner type still only works on the clicked handle, regardless of any selected nodes. It is possible to set the type for all nodes, or all selected nodes, at once via the main LPE controls. See part 121 of this series (FCM #181) for more details about the controls and parameters available via the LPE dialog.

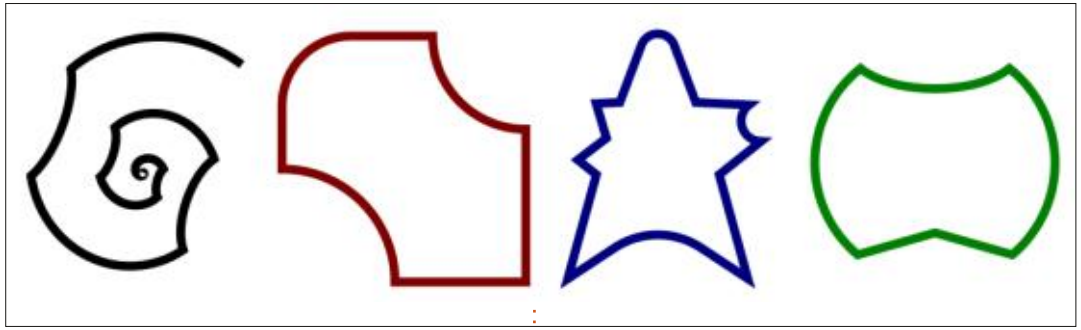
Shift-Clicking on a handle opens a small dialog that allows you to set various parameters for that specific corner:

This is an alternative way to set the corner type, or to accurately



position the handle (labelled as 'Knot distance' in the dialog), but it also offers one other field to set the 'Chamfer subdivisions'. Increasing this beyond 1 reveals the difference between a chamfer and an inverse chamfer. This image shows each type of corner, with 1, 2 and 3 subdivisions.





So far we've looked at using this feature on paths, but it also works on 2D shapes. Squares, rectangles, and the shapes created with the Star/Polygon tool, seem like obvious candidates, due to their sharp corners, but you might be surprised to find that this feature can also be useful on circles and spirals. This image shows a spiral, rectangle, star and circle, with the corners LPE applied and edited on-canvas to give you an idea of the sort of effects you can now easily achieve.

As well as the on-canvas editing of corners, Inkscape 1.3 also introduced some on-canvas handles for editing blurs. You may already be aware that blurs in Inkscape are implemented using SVG's Gaussian Blur filter primitive and can, of course, be added via the Filter Editor dialog. This is a rather tricky part of the UI for beginners (and many experts) to understand, but because blurring an object is a pretty common requirement, Inkscape has always offered a shortcut in the form of the slider at the bottom of the Fill & Stroke dialog.

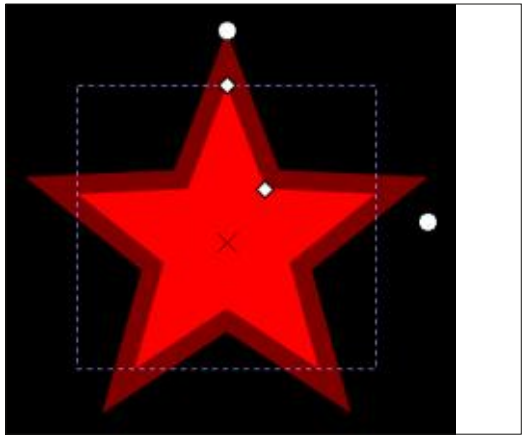
The slider in this dialog is fine for most cases where you simply want the object to be blurred in all directions. But the UI in the Filter Editor actually splits the blur into separate controls for the amount of blur in the horizontal and vertical directions. Usually the little 'chain' button next to the controls links both sliders so that the values remain identical, giving the same effect as the slider in the Fill & Stroke dialog. But toggle that button and you can set each slider separately – ideal for 'motion blur' effects which only occur in one direction.

The new on-canvas UI provides the best of both options: separate controls for the horizontal and vertical blur, but with the ability to easily set both to the same value. The only tricky bit is getting the controls to appear in the first place!

This feature appears only when the Node tool (F2) is selected. But unlike the Corners LPE, there's no button in the toolbar to make the handles appear. Instead they are only visible if the object you're editing already has the blur effect applied. This does make the handles a little redundant, in my view, as you'll have already had to interact with the Fill & Stroke slider, the Filter Editor, or one of the predefined blur filters, in order for the on-canvas controls to appear. They're possibly useful for fine-tuning the blur in the context of the rest of your drawing, but it would be nice if there was a toolbar button to add and remove a simple blur filter in the same way as the Corners LPE can be toggled on and off.

Your first step, therefore, is probably to select your object and open the Fill & Stroke dialog. There are various ways to do this, from the Object menu or keyboard shortcut (Ctrl-Shift-F), through to my preferred method, which is just to click on the Fill or Stroke color swatches at the bottom left of the window, below the palette. Or you may be the sort of person who always has it open in a sidebar and just needs to make sure the right tab is active. Whichever approach you take, you then need to nudge the Blur slider up a little. I recommend just a single click on the '+' button at the right,: that's enough to add the effect, but not so much that it has a significant effect on Inkscape's redraw speed.

Now switch to the Node tool, if it's not already selected, and you should find that the object has an additional pair of circular handles, just outside the bounding box. In this screenshot, I've put my object over a black background to make the white handles stand out a little more:

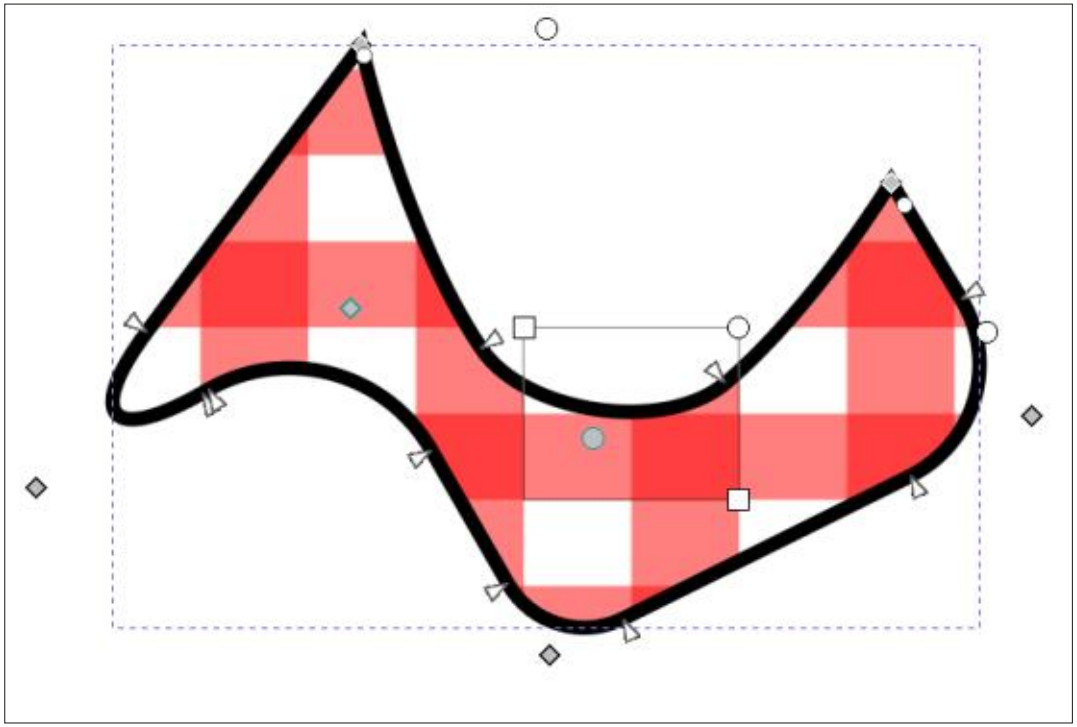


The handles will always be perpendicular to each other, with one at the top and the other at the right for newly created objects. If you've rotated the object, however, they may not appear in this orientation. The handles give an indication of the direction that the blur will take (if you don't have a uniform blur in all directions), so can act as a flag that you might not be blurring in the direction you want to! A quick tip in that case is to remove the blur from the object itself (set it to zero in the Fill & Stroke dialog), then group the rotated object – it's fine for it to be in a group of its own, with nothing else in it. If you add a blur to the group, you'll now find that the blur is back to the default orientation, while your object remains rotated. Another tip, if you do need to work with rotated blurs, is to remember that Inkscape can now rotate the canvas during editing. See part 98 of this series in FCM #158 for details.

With the handles visible, it's rather obvious how you can adjust the blur on-canvas. Dragging either handle will adjust the blur in that direction. Hold the Control key at the same time to adjust both handles to the same value – you'll usually want to do that unless you specifically require an asymmetric or motion blur effect.

You can also hold both Shift and Control to adjust the handles proportionally. That is, if the handles have different values then dragging one will cause the other to move by an amount that is proportional to the difference between them. In other words, use this if you have an asymmetric blur and want to preserve the overall direction while adjusting its strength. There is a big caveat to this feature, however: if the handle has a value of 0 when you start dragging then Inkscape's maths can sometimes go awry, sending the other handle zooming off towards infinity and blurring the object so much that it might even disappear from view, replaced by a slight smudge on the canvas. The solution is to nudge the handle above zero first with no modifiers held before trying to drag it proportionally with Ctrl-Shift.

These new additions to on-canvas editing definitely improve the usability of Inkscape, especially in the case of the Corners LPE. One concern, however, is that Inkscape is stacking up ever more handles on the canvas, leading to potential confusion about what feature any given handle corresponds to. Just take a look at this image of my random shape from earlier, once I've added a pattern fill, changed the type of some of the nodes, and added a little blur. That's too many handles for me to make sense of – and I know what each of them are for! Could we end up in a situation where each of these additions, intended to make the program more user-friendly, actually combine to scare new users away from the complexity they see on the canvas?



Mark uses Inkscape to create comics for the web (www.peppertop.com/) as well as for print. You can follow him on Twitter for more comic and Inkscape content: **@PeppertopComics**