

vpyetools Intro



About vptype and this extension

vptype is a command processor working with SVG files. It can do a lot of productive steps to optimize files for different purposes like pen plotting, laser cutting or the generation of creative artwork. vptype is really powerful and helps to extend Inkscape feature capability. vptype contains a lot of functionality which is included natively within Inkscape. The extension "vptype for Inkscape" does not deal with all features but with a set of important commands like `linemerge`, `linesort`, `linesimplify`, `occlude`, etc. We can use it to shorten tool path lengths, remove hidden lines and so on.

vptype converts all elements into simple SVG elements like **svg:line**, **svg:polyline** and **svg:polygon**. They can be displayed properly in Inkscape, but they have no knot handles to edit (see

<https://alpha.inkscape.org/vectors/www.inkscapeforum.com/viewtopicb51d.html?f=16&t=32562>). We need to convert those elements to **svg:path** using key combination **CTRL + SHIFT + C** ("object to path"; do not use "stroke to path" because it will duplicate your outline with inset and outset contours). Our extension allows to do this conversion **automatically**.

Caveats of vptype

- requires to simplify bezier curves to polylines (reduces quality)
- does not honor the individual line styles (like width, color, miter, ...) - the output lines all will have the same style. We can work with vptype layerwise to distinguish between different styles
- output is done in `svg:line`, `svg:polyline` and `svg:polygon`. Converting them back in Inkscape (we need paths) is really slow. Native `svg:path` output would be great

(Info) Source code → <https://github.com/abey79/vptype>

Preparations (Installation of vptype)

At first we need to install vptype and occult extension. It was tested successfully...

- with Python 3.8.5 on Ubuntu 20 LTS (Python 3.9 failed to install vptype and occult)
- with Python 3.9 on Windows 10

We use vptype 1.7 (2021-06-10)

vptype Changelog: <https://vptype.readthedocs.io/en/stable/CHANGELOG.html>

Linux / Windows Python modules

```
pip install vptype
#pip install git+https://github.com/abey79/vptype.git

#or by using pipx
pip uninstall vptype
pip install pipx
pipx ensurepath
# restart your shell
pipx install "vptype[all]"

#extra module occult
pip install git+https://github.com/LoicGoulefert/occult.git#egg=occult
#or
pip install vptype-occult

#extra module deduplicate
pip install git+https://github.com/LoicGoulefert/deduplicate.git#egg=deduplicate
```

Special inclusions and similarities to existing Inkscape extensions

- linemerge: [Join Paths / Create Tabs And Dimples](#), [Close Paths](#) and [Chain Paths](#)
- linesort: [Optimize Sequence: Travel Distances](#) and [Optimize Sequence: Small Holes First](#)

- linesimplify: native function "Path → Simplify"
- filter: [Contour Scanner And Trimmer](#)
- multipass: none
- occult: [Purge Duplicate Path Nodes](#) and [Purge Duplicate Path Segments](#)
- trim: [Destructive Clip](#)

Overview by docs

- [Deduplicate Plugin](#)
- [Filter](#)
- [Line Merging \(Combine Paths\)](#)
- [Line Sorting](#)
- [Multipass](#)
- [Occult Plugin \(Hidden / Superimposed Line Removal\)](#)
- [Relooping](#)
- [Split All](#)
- [Trimming](#)
- [vptype Free Mode](#)

Feature exclusions

As mentioned vptype has a lot of features, but we do not need all of them. We decided to exclude or handle the following functions more strictly because a lot of stuff is integrated in Inkscape natively. You can try to use [vptype Free Mode](#) to use these.

category	comments
Primitives	arc, circle, ellipse, line, rect
Block control	begin, end

category	comments
Operation	<pre>crop # we use trim feature instead layout #Inkscape: CTRL + SHIFT + D pagesize #Inkscape: CTRL + SHIFT + D reverse #Inkscape: Path > Reverse</pre>
Generators	<pre>frame #see "Bounding Box" extension random</pre> <p>See Bounding Box</p>
Block processors	<pre>grid, repeat</pre> <p>Native functions inside Inkscape</p>
Layers	<pre>lcopy, ldelete, lmove</pre> <p>This is too generic to make use inside Inkscape</p>
Input	<pre>script</pre> <p>This is too generic to make use inside Inkscape</p>
Transforms	<pre>rotate, scale, scalet, skew, translate</pre> <p>See Scale To Path Length, Scale To Real, Scale To Size (Replaced by default transform scale) and native functions like path effects and transformations</p>
Filters	<pre>squiggles</pre>
Text	<pre>text</pre> <p>See Hershey Text Alternative</p>

Troubleshooting

Problem:

```
Traceback (most recent call last):
  File "C:\Users\tomate\AppData\Roaming\inkscape\extensions\mightyscape-1.2\extensions\fablabchemnitz\vpypetools\vpypetools.py", line 17, in <module>
    import vptype_viewer
  File "C:\Users\tomate\AppData\Local\Programs\Python\Python39\lib\site-packages\vptype_viewer\__init__.py", line 6, in <module>
    from .engine import *
  File "C:\Users\tomate\AppData\Local\Programs\Python\Python39\lib\site-packages\vptype_viewer\engine.py", line 13, in <module>
    from ._painters import (
  File "C:\Users\tomate\AppData\Local\Programs\Python\Python39\lib\site-packages\vptype_viewer\_painters.py", line 9, in <module>
    from ._utils import ColorType, load_program, load_texture_array
  File "C:\Users\tomate\AppData\Local\Programs\Python\Python39\lib\site-packages\vptype_viewer\_utils.py", line 9, in <module>
    from PIL import Image
ModuleNotFoundError: No module named 'PIL'
```

Solution:

```
Traceback (most recent call last):
  File "C:\Users\tomate\AppData\Roaming\inkscape\extensions\mightyscape-1.2\extensions\fablabchemnitz\vpypetools\vpypetools.py", line 17, in <module>
    import vptype_viewer
  File "C:\Users\tomate\AppData\Local\Programs\Python\Python39\lib\site-packages\vptype_viewer\__init__.py", line 6, in <module>
    from .engine import *
  File "C:\Users\tomate\AppData\Local\Programs\Python\Python39\lib\site-packages\vptype_viewer\engine.py", line 13, in <module>
    from ._painters import (
  File "C:\Users\tomate\AppData\Local\Programs\Python\Python39\lib\site-packages\vptype_viewer\_painters.py", line 9, in <module>
    from ._utils import ColorType, load_program, load_texture_array
  File "C:\Users\tomate\AppData\Local\Programs\Python\Python39\lib\site-packages\vptype_viewer\_utils.py", line 9, in <module>
    from PIL import Image
ModuleNotFoundError: No module named 'PIL'
```

Version #2

Erstellt: 2025-05-24 16:36:35 CEST von Mario Voigt

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