

# Work breakdown

The following is a rough breakdown of work needed to create a functional native Wayland toolkit.

| Graphics      |  |  |
|---------------|--|--|
| 1             | Basic drawing support using shared memory                                  |  |
| 2             | CPU rendering  |  |
| 3             | Unaccelerated VolatileImage support  |  |
| 4             | Accelerated rendering support (VolatileImage)                              |  |
| 5             | GraphicsEnvironment /GraphicsDevice/etc, including multiple screen support |  |
| 6             | HiDPI  |  |
| 7             | Top-level window transparency  |  |
| 8             | Image formats (native 64bits?), HDR / color profiles?                      |  |
| 9             | Color blending with transparency support                                   | alpha, pre-multiplied?   |
| 10            | AlphaComposite support on client side ?                                    | main Porter-Duff rules like CLR, SRC_OVER or more?   |
| Input         |  |  |
| 11            | Mouse  | Only 3-button mice with vertical scrolling is supported  |
| 12            | Keyboard   |  |
| 13            | Touch (hi-resolution scrolling, gestures)                                  |  |
| 14            | Input methods  |  |
| GUI           |  |  |
| 15            | Frame decorations  | Basic title bar decorations, "native" look-and-feel is a separate task   |
| 16            | Interactive resize/drag/minimize /maximize                                 |  |
| 17            | Modal and non-modal dialogs  |  |
| 18            | Correct Z-order for complex window hierarchies with modal dialogs          |  |
| 19            | Fullscreen support   | But can't specify the device yet   |
| 20            | Tooltips, menus, comboboxes, etc   |  |
| 21            | GTK support (making GTKLookAndFeel work)                                   |  |
| 22            | Splash screen support  |  |
| 23            | ToFront/toBack support   | ToFront can be implemented through an activation token (as if the window just appeared); toBack can be implemented through a synthesized gesture on the title bar (also needs mouse serial). See GTK implementation.   |
| 24            | AWT components (java.awt.Button, java.awt.Checkbox, etc)                   | AWT components were implemented in the Caciocavallo project using Swing itself. It is a good idea to take inspiration from there for the Wayland implementation: <a href="https://hg.openjdk.org/caciocavallo/ng/">https://hg.openjdk.org/caciocavallo/ng/</a> |
| 25            | AWT File dialogs/Print dialogs   |  |
| Robot support |  |  |
| 26            | For testing  |  |
| 27            | Full support in a production environment                                   | Probably not feasible in full  |
| Misc          |  |  |
| 28            | Clipboard support  |  |
| 29            | Drag-n-drop support  |  |

|    |                      |
|----|----------------------|
| 30 | Taskbar/tray support |
|----|----------------------|

Legend:

- - feature is functional at the basic level (for example, mouse support means 3-button mice, nothing fancy)
- - task not started yet
- - task is being worked on