The case for an "icon" protocol

kaeser@gubbe.ch / furball@google.com

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Who? Why?

Who? Philipp Käser, Zurich, Switzerland

- Site Reliability Manager @ Google
- Day job: Run Google Cloud IAM
- Linux for half my life, didn't contribute .. so far 😬

Why?

- Wayland (finally) replacing X11.
- Coding is fun 🤡

X11 ICCM for Icon

- Name, Pixmap or Window
- XSetIconSizes / GetIconSizes
- Also FreeDesktop spec _NET_WM_ICON…
- Permits set icons for other windows (xseticon)

(Ab)Used for docked Apps (Afterstep, Window Maker, …)

4.1.9. Icons

A client can hint to the window manager about the desired appearance

- A string in WM_ICON_NAME.

  All clients should do this because it provides a fallback for windo... about icons differ widely from those of the client.

- A **Pixmap** into the icon_pixmap field of the WM_HINTS propert... the icon_mask field.

  The window manager is expected to display the pixmap masked b... should be one of the sizes found in the WM_ICON_SIZE propert... erty is not found, the window manager is unlikely to display icon... agers usually will clip or tile pixmaps that do not match WM_ICO...

- A window into the icon_window field of the WM_HINTS propert...

  The window manager is expected to map that window whenever t... state. In general, the size of the icon window should be one of the... WM_ICON_SIZE on the root, if it exists. Window managers are... dows.

In the Iconic state, the window manager usually will ensure that:

- If the window's WM_HINTS.icon_window is set, the window it r...
- If the window's WM_HINTS.icon_window is not set but the wind... WM_HINTS.icon_pixmap is set, the pixmap it names is visible.
- Otherwise, the window's WM_ICON_NAME string is visible.

=> No equivalent for Wayland! :sadface:

Protocol extension: Associate an icon surface with a XDG toplevel

- Icon as a surface: Flexible use (static/dynamic), …
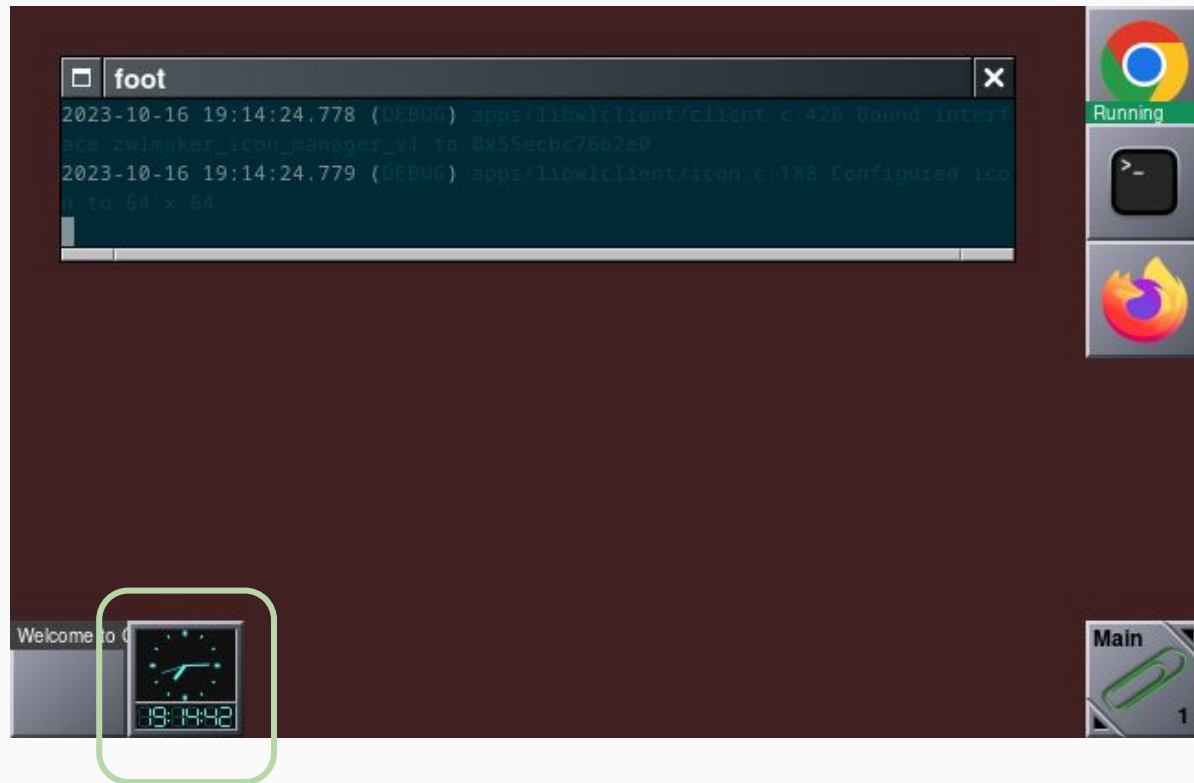- Use configure/ack_configure to negotiate dimensions

```xml
<request name="get_toplevel_icon">
  <description summary="Creates a new Toplevel Icon object.">
    Creates a new icon object associated with the given XDG toplevel.
  </description>
  <arg name="id" type="new_id" interface="zwlmaker_toplevel_icon_v1"/>
  <arg name="toplevel" type="object" interface="xdg_toplevel" allow-null="true"/>
  <arg name="surface" type="object" interface="wl_surface"/>
</request>
```

- [Github: [...]/protocols/wlmaker-icon-unstable-v1.xml](#)

Application: Create the "icon" surface.

Compositor: Bind surface as icon, show accordingly.

https://github.com/phkaeser/wlmaker

Now what?

Coming up

- Upstream the protocol extensioN (... wlroots? wayland?)
- Clean up demo compositor + app(s), release.

Challenges ahead

- Dock may be a separate binary/process: Need more protocol?
- How to associate with app (client? App ID? …?)

end.

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