# Pharo Status

## April 2020

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# Objective & Agenda

- Present what we are doing
- Give a picture where we want to go
- Open the game to get your opinion

# Pharo 9

## Community Impact

- Since Mid December 2019
- Issues Closed: 1600, 220 since Pharo 9
- Issues Open: 529, 191 since Pharo 9
- Contributors: 60 in Pharo 9

# Pharo 9

## Improvements

- Improvements in the compiler
- Improvements in speed of source files - Better usage of buffers
- Clean up of World / Hand handling - Clean up of OSWindows
- Fixing of flaky tests
- Improving Documentation / Categorization of Methods and Classes
- Improvements in code completion (see large images support)
- Improvements in spotter (see large images support)

# Pharo 9

## Improvements (cont…)

- Improving Exception handling and hierarchy
- Fixes in the minimal image generation
- Fixes in Iceberg & Tonel: better handling of class side traits
- Improving the API of Collections
- Improving Epicea
- Improving Settings saving, loading, and defaults.

# Pharo 9

A lot of Improvements, available to download, test and have fun

pharo.org

pharo-project/pharo

Pharo Launcher

# Pharo Launcher

## New Release

- Fully rewritten using Spec2 and Commander
- Improved documentation website!
- Image configurations (configure each image, arguments, vm, …)
- Initialisation Scripts
- More metadata per image, and everything stored side by side with the image

# Pharo Launcher

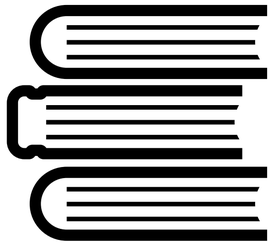
## New Release

- Better Error handling
- Launch Configurations
- Faster in installations with a lot of images
- Templates Improvements:
  - Custom templates
  - Adding private Jenkins
  - Support for Jenkins Pipelines

# Pharo Launcher

pharo.org/download

pharo-project/pharo



pharo-project.github.io/pharo-launcher/

# Large Images

- Images with a lot of Objects
  - Code
  - Data
- Pharo was slow… we improved that

# Large Images

- Improving the startup and shutdown
- Improving responsiveness of Calypso and other tools
- A new tab-based morph that only draws the visible tab
- Improving the Syntax highlighter speed.
- Handling methods with big literals (Highlighting / QA Rules)

# Large Images

- Adding more settings to enable/disable long time consuming features.
- Removing the non-essential calls to #allInstances
- Remove the use of pragmas in menus and commands
- A new code completion framework (Stream & Context based)
- A new Spotter backend (Stream & No-Pragmas)
- Improving loading of code, changes and source files

# Large Images
## External Tools

- An index manager for all the cross-reference activities
- An efficient implementation of Optimized Tries
- Integration of the Indexes
- Configuring the GC from the image to minimize the GC trashing during the generation of the indexes.

# Large Images
## External Tools

pharo-project/largeImages

# Open Projects

Where we are going…

# NewTools

## using Spec2


- Iteration on the playground
- Iteration on the inspector
- New Object centric Debugger
- Improvements in the DebuggerSession API and backends.
- Tab based playground
- Improving API of Code Widget for Syntax Highlighting
- Improving API of Commands in the editor

# Lowcode


- Ronie Salgado is working on it
- Some issues still to fix
- Some design problems are not yet completely explored (Debugging, Stack handling, …).
- First iteration on Memory access primitives: Benchmarks
- Documenting, adding tests
- **Objective**: pass from a prototype stage to a production-ready stage, replace in image FFI marshallings

# IDLE VM


- Headless took away events from the VM
- Need for an interruptible event poll
- Reducing CPU usage while idle
- Requires Graphic Backends in the image side
- Reducing dependencies for Server installations

# GTK Backend


- Using Cairo for rendering
- Needed for development of GTK applications using live programming
- Improvements in HDPI screens
- Reduction of platform-dependent code
- Better UI resources: menu handling from the image, OS UI notifications, better look and feel

# GTK Backend


- Separation of the Morphic UI thread from the event processing.
- Removing Poll of events. Events are pushed to the image using callbacks.
- All events are handled in independent Callbacks
- The requirement for good support for debugging callbacks: default return values, the correct order of return in case of multiple concurrent debuggers, management of the C call stack, extending the Debug capabilities to allow extensions.

# SDL Backend


- Using Cairo for rendering
- Porting the SDL binding to UFFI
- Implementing two strategies: the main thread is the VM thread, the main thread is not the VM thread.
- Lighter backend: fewer dependencies.
- Removing redundant event polling
- More limited than GTK backend

# Documentation

## A never ending task…

- Improving Pharo documentation
- New open books & booklets in the production
- A new blog to document even more
- Adding tests as documentation in the VM and in the image

# Thanks!!!

pharo.org

pharo-project/pharo

discord.gg/QewZMZa


thepharo.dev