

# Clément Béra ~ Smalltalk, Tips 'n Tricks

## Squeak / Pharo VM documentation links

02 . Monday . JUN 2014

POSTED BY CLEMENT BERA IN COG

≈ 1 COMMENT

A few days ago Dave T. Lewis sent a mail on the VM mailing list giving pointers on documentation about the VM. I decided to write down in this post links to all the documentation I am aware of about it.

If you know some missing references, tell me, I will be happy to add them in this post.

### *The Basics*

- The “Back to the Future” paper by Dan Ingalls et al
- The VMMaker page on the swiki by Tim Rowledge
- “A Tour of the Squeak Object Engine” also by Tim
- General information about the Squeak VM
- The Blue book part 4: Virtual Machine implementation
- Deep into Pharo part 4: Language (Some info about closure and exception implementation)

According to Dave T. Lewis (I am quoting his own words):

*You should definitely start with the Back to the Future paper. I find that it is worth reading about once per year.*

### *The Stack/Cog VM*

The Cog VM provides better performance by mapping the contexts to the native stack, by providing a JIT compiler which maps the stack to registers and adds advanced inline caches to speed up message sends. Recently it also added a new memory manager.

- VMIL paper about Cog’s JIT
- The Cog Blog by Eliot Miranda
- Some of my blog posts: The Cog VM lookup, 7 points summary of the spur memory manager and Spur’s new object format

### *Related documents about high performance VMs*

I can't tell it enough, the Cog VM development is going in the direction of the Self VM to reach high performance. The implementation of the Self VM is described in [Urs Hölzle phd](#), which is very well written. The implementation of Cog's JIT inline caches is widely inspired from the one described in Urs' phd. The rest of the phd, type-feedback optimization, adaptive recompilation and dynamic deoptimization are currently being implemented through the [Sista](#) project. But as long as it is not on production, one can never know if the project will succeed...

## thought on "Squeak / Pharo VM documentation links"

1. *said:*louis-michel

April 4, 2017 at 12:29 pm

Thanks a lot for all the documentations, now i just need to take my time and learn carefully, it's was a pleasure

**REPLY**

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