

From Squeak to Pharo:

Modernizing the Eclipse SageTea Runtime
for Edge AI and Sovereign Computing



Squeak



Pharo



SageTea Runtime

<https://gitlab.eclipse.org/eclipse/sagetea>



Proven Runtime
Architecture



Modern Pharo
Tooling



Eclipse Foundation
Governance

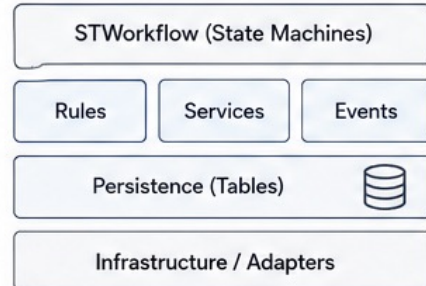


Ready for Local AI
and Sovereign Computing

Over 15 Years of Smalltalk Development

Evolving the SageTea Runtime for a modern ecosystem and local AI

1. Preserve Proven Runtime Architecture



- Deterministic execution model
- Table-oriented persistence
- Workflow and rule engine
- Runtime introspection and APIs
- Backward compatible behavior

2. Adopt Modern Pharo Tooling



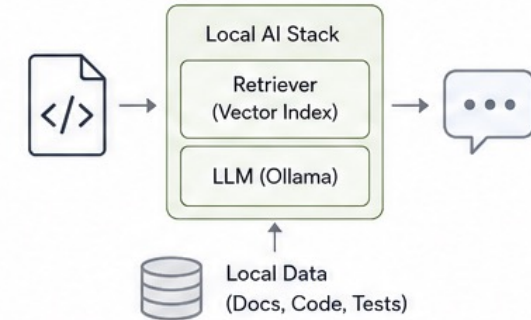
- Modern development environment
- Better tooling, debugging, and UI
- Reproducible builds with Metacello
- Active community and releases

3. Eclipse Foundation Governance



- Vendor-neutral governance
- IP due diligence and compliance
- Long-term project sustainability
- Community driven development
- Transparent processes

4. Prepare for Local AI



- Retrieval-augmented capabilities
- Runs entirely on your infrastructure
- No cloud dependency
- Offline-capable and private
- Designed for edge environments

From Squeak to Pharo under Eclipse



Goal: A modern, maintainable Smalltalk runtime platform ready for **edge AI** and **sovereign computing**.

SageTea Runtime

RAG AI for Smalltalk Developers

Bring your Smalltalk code, docs and data to life with **Retrieval Augmented Generation**.

-  **Local.** Everything runs on your machine.
-  **Private.** No cloud. No leakage.
-  **Powerful.** Grounded answers from your own knowledge.



Built on
 **Pharo**
Modern. Clean. Productive.
The best Smalltalk
experience.



Your Code. Your Data.

Everything runs locally.
No cloud. No leakage.



Grounded & Transparent

Citations show exactly where
information comes from.



Fast & Private

Low latency with local models
and a local vector index.



Bridge Legacy & Modern

Add AI assistance to your existing
Squeak or Pharo images—no rewrite.

THE RAG WORKFLOW

1 Ingest



Bring in your Smalltalk
code, docs, tests, PDFs,
and websites.

2 Index



Chunk, embed and store in
a local vector index (SQLite
+ embeddings via Ollama).

3 Retrieve



Relevant chunks are found
using semantic search
(cosine similarity).

4 Generate



Local LLM (Ollama) generates
grounded answers with
citations to your sources.

✓ Grounded answers. Transparent citations. Works offline. Built for developers.

MADE FOR SMALLTALK DEVELOPERS



Works with Squeak

Use today via CLI or HTTP
(ZnClient). Export your
packages and start asking.



Built for Your Workflow

REPL, SUnit, Inspectors and
Morphic UIs—supercharged
with local AI.



Web Ready

Roadmap to WASM brings
Smalltalk + RAG to the
browser.

PERFECT FOR

- ✓ Understanding any class, method, or design
- ✓ Generating tests and refactors with confidence
- ✓ Exploring idiomatic patterns and best practices
- ✓ Documenting and onboarding faster



GET STARTED IN MINUTES

1



Install Ollama
& pull models



2



Add your docs
./smalltalk_docs



3



Index
python3 smalltalk_rag.py index



4



Ask
python3 smalltalk_rag.py ask "..."



SageTea Runtime – RAG AI
for Smalltalk Developers



Local



Private



Powerful

ECLIPSE
FOUNDATION

Open Source.
Open Community.
Open Possibilities.

- Local documents
- Vector index
- Ollama
- Grounded answers with citations
- Next step is integration with SageTea Smalltalk
- Control with business objects
- Test performance with SAGETEA database (RAG)

Example



XTC Mobile
xfoneos@xtcmobile.com



Reply Forward Archive Spam Delete More

To David Long

2026-07-05, 11:40 a.m.

Re: VOIP

Hello,

Thank you for reaching out about the Voice over IP (VOIP) issues on your XT XTC Mobile LynX. Based on our understanding, it seems that the default dial dialer app in XFoneOS might not have all the necessary components to fully support VOIP services due to the custom nature of the OS.

Here are a few steps we recommend:

- **Install Google Dialer:**** You can try installing the [Google Dialer](https://play.google.com/store/apps/details?id=com.google.android.dialer) app, which might provide the necessary support for VOIP if you have access to a sandboxed Google Play environment.
- **Alternative VOIP App:**** Consider using an alternative VOIP application such as [Jitsi Meet](https://jitsi.org/). This can be a good substitute and often works well on custom OS builds like XFoneOS.
- **Contact Support:**** For more tailored assistance, feel free to reach out to our support team who can provide specific recommendations or develop an app for the device that meets your needs.

We hope these suggestions help resolve the issue with VOIP functionality on your XTC Mobile LynX.

Regards,
XFoneOS Assistant

Join. Contribute. Shape the Future.

The Eclipse SageTea Runtime is open source and community driven.

Your ideas, code, and feedback make it better for everyone.

How You Can Help



Contribute Code

Fix bugs, add features, improve documentation, or refactor. Code contributions of all sizes are welcome.



Report Issues

Found a problem or have an idea? Open an issue and help us prioritize what matters.



Improve Docs

Help make the documentation clearer, complete, and easier for others to get started.



Share & Discuss

Join discussions, answer questions, and share your experience with the community.



Spread the Word

Tell others about the project, give talks, write blog posts, and help the project grow.

Contributing is Simple



Fork the repository



Make Changes and commit



Push to your fork



Open Merge Request for review



Collaborate and merge

Get Involved



Code & Issues

gitlab.eclipse.org/eclipse/sagetea/sagetea-smalltalk



Join the Discussion

[#sagetea-runtime](https://eclipse.dev/sagetea) (Eclipse Mattermost)



Stay Informed

Subscribe to updates and release notes on the project site.



Try It. Build With It.

Clone the repo, run the image, explore, and experiment!



The future of Smalltalk is in our hands.

Together we can build a runtime for edge AI, sovereign computing, and beyond.

