

2025 MIT STAMP WORKSHOP
SEPTEMBER 22–30, 2025

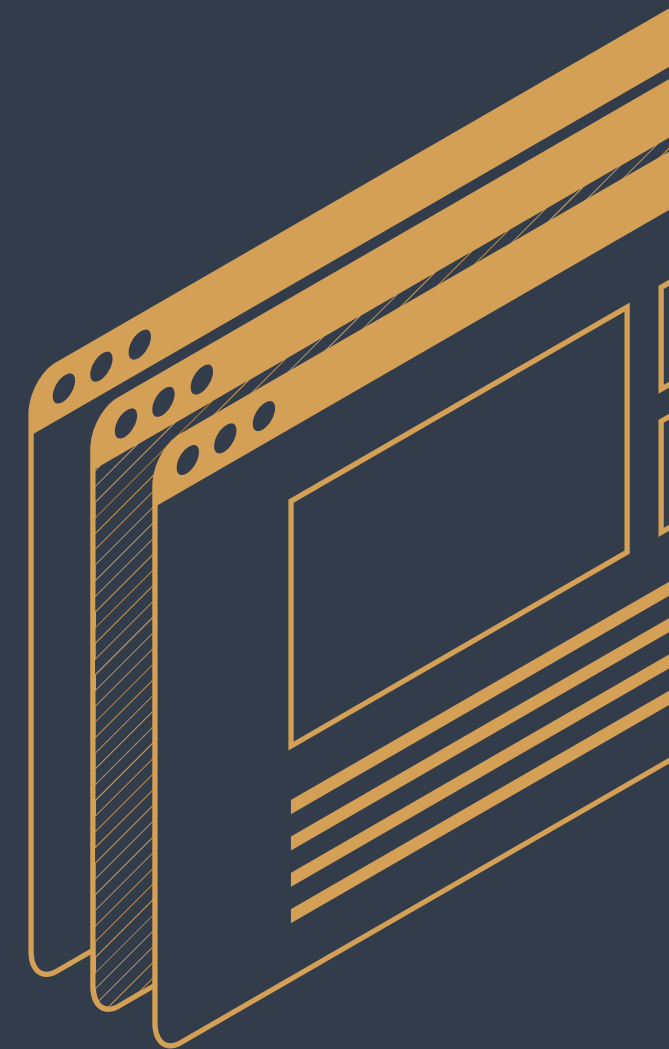


MICROSTAMP



A free and open-source STPA tool based on
microservices architecture

Gabriel Piva Pereira | Gabriel Francelino Nascimento | João Hugo Marinho Maimone
Fellipe Guilherme Rey de Souza | Rodrigo Martins Pagliares



Agenda

- Background and Motivation
- Evolution from 2024 to 2025
- Architecture and Microservices
- Main Features and Improvements
- Demo (Hands On)
- Conclusion & How to Contribute



Background and Motivation

- MicroSTAMP – Microservices for STPA
- Free and open-source web tool
- Designed with a microservices architecture
- Independent STPA services
- Improves modularity, scalability and flexibility.

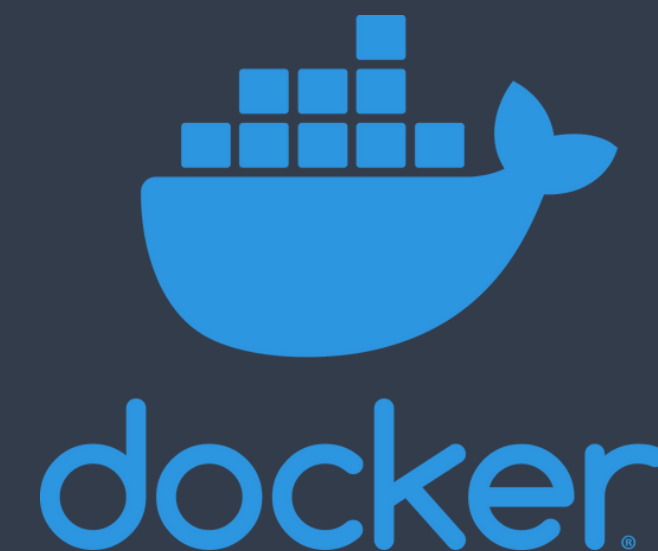


**MICRO
STAMP**



Local-First Tool

- Designed to run locally (on the analyst's or company's network)
- Online version exists only for testing and demonstration purposes
- Main use case → local deployment with Docker

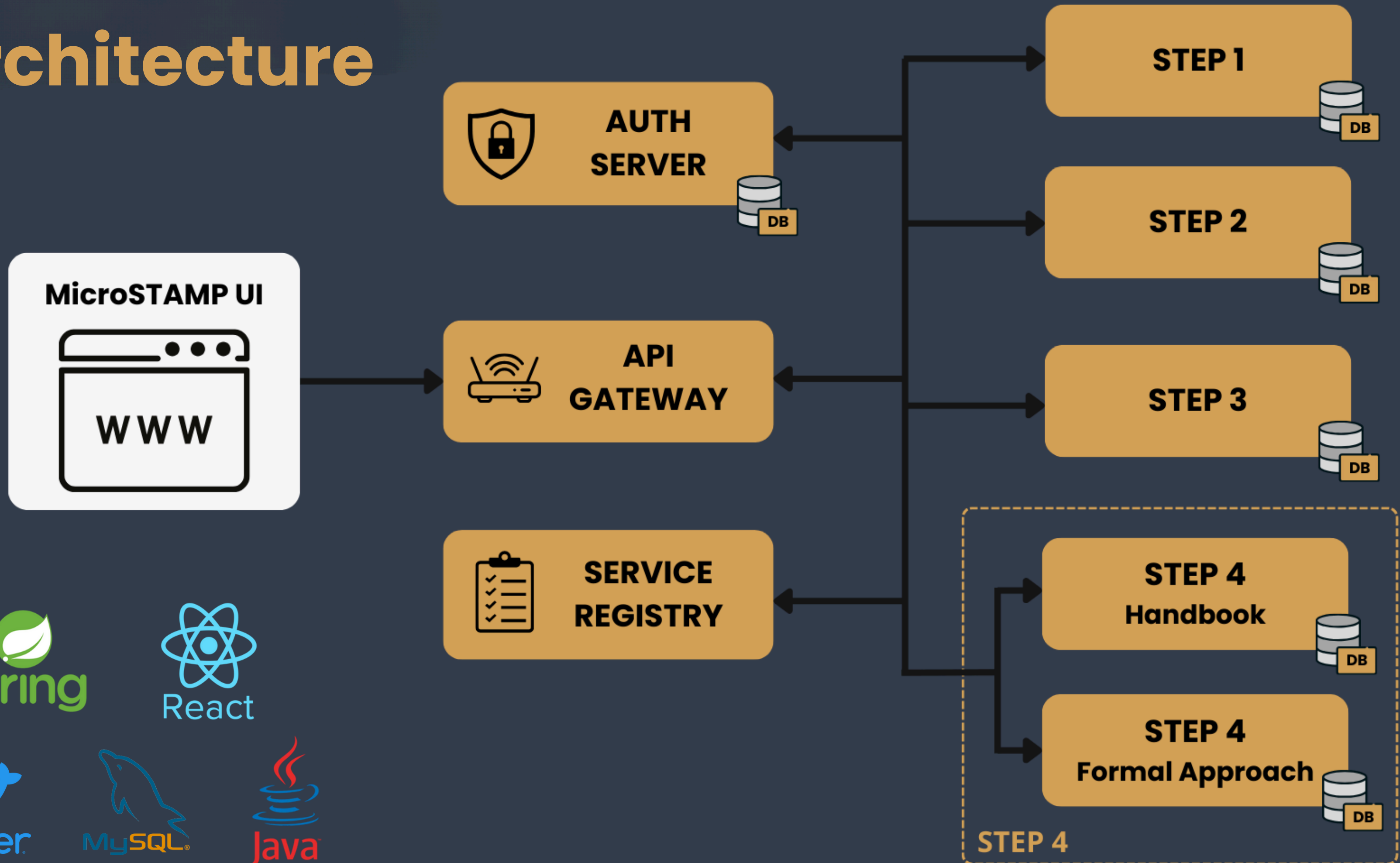


Evolution from 2024 to 2025

- 2024: Steps 1, 2 and 3 supported
- 2025: Step 4 with two approaches:
 - Handbook approach
 - Formal approach
- Feedback-driven improvements:
 - Better exports (PDFs with links)
 - Built-In Example Analyses
 - Enhanced integration in the UI

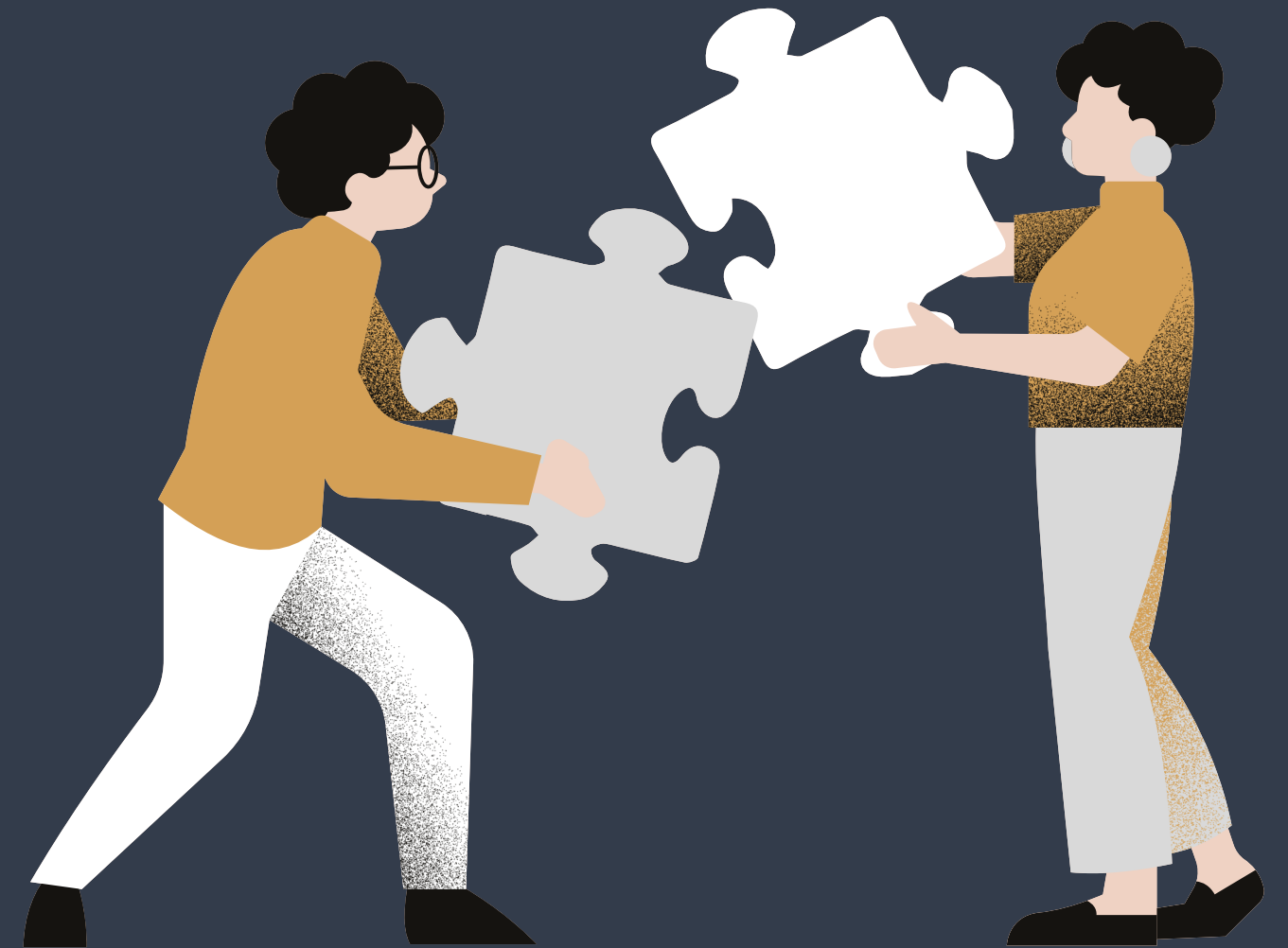


Architecture



Main Features

- Support for all 4 steps of STPA
- Step 4 with two approaches
- Unified interface
- Microservices APIs
- Built-In Example Analyses
- PDF/JSON export
- Secure access (OAuth2 + OpenID)





Demo

Conclusion

- From partial to full STPA support
- Two alternative approaches for Step 4
- Used as a unique tool or integrated with external tools
- Free, open-source, ready for collaboration



How to Access & Contribute

- Source code available on our [GitHub organization](#)
- Detailed instructions of how to install and run the tool
- Explore the tool, try it out, give feedback



The screenshot shows the GitHub repository page for **Micro-STAMP/microstamp**. The repository is described as the "Central repository for the source code of all MicroSTAMP microservices". It has 7 contributors, 0 issues, 18 stars, and 0 forks. The repository name is **Micro-STAMP/microstamp: Central repository for the source code of all MicroSTAMP microservices**. The description below the name reads: "Central repository for the source code of all MicroSTAMP microservices - Micro-STAMP/microstamp". The GitHub logo is visible in the bottom right corner of the repository card.



Thanks a Lot!

