

BASIL - The FuSa Spice

2025 Recap - 2026 Goals

Luigi Pellecchia
Red Hat



ELISA
Enabling **Linux** in
Safety Applications

Aerospace · Automotive · Linux Features

OS Engineering Process · Safety Architecture · Systems · Tools

Lighthouse · Space Grade Linux

What is it?

A collaborative tool for software traceability management

- Web user interface and API
- Multi user
- Granular permissions management
- Granular traceability capability (snippets)
- Embedded Test infrastructure and integration with many external ones
- Import/Export (SPDX, yaml, csv, xlsx, json, html, pdf)
- Track progress and clarifies gaps
- In-app AI suggestions
- ...
- <https://github.com/elisa-tech/BASIL> for more details

How it looks like?

BASIL
The FuSa Spice

Home
Traceability Scanner
User Management
Test Run Plugin Presets
Settings
SSH Keys
User Files
Libraries >
Useful Links >
Version: 1.8.6

Completion: ████

.SH DESCRIPTION
The
.BR chmod ()
and
.BR fchmod ()
system calls change a file's mode bits.
(The file mode consists of the file permission bits plus the set-user-ID,
set-group-ID, and sticky bits.)
These system calls differ only in how the file is specified:

Justification 352
ver. 2.1 new 100.0% Completion 0
High level description. That is analyzed with more details in other sections of the specifications.

Completion: ████

.IP \[bu] 3
.BR chmod ()
changes the mode of the file specified whose pathname is given in
.IR pathname ,

Test Case 25
ver. 2.1 new 100.0% Completion 0
chmod01.c
LTP test case [testcases/kernel/syscalls/chmod/chmod01.c](#)
Verify that **chmod(2)** succeeds when used to change the mode permissions of a file or directory.

Test Case 388
ver. 1.2 new 100.0% Completion 0
chmod03.c

2025 Recap

Q1 2025



34 PRs | Focus: CI Testing & User Experience



HIGHLIGHTS:

- └─ Testing Initiative: API unit testing framework (UserLogin, Documents, SwRequirements)
- └─ Auth: Password reset via email, user profiles
- └─ User Experience: simplified permissions management
- └─ Import/Export: Multi-format requirements (CSV/JSON/YAML/SPDX), SPDX Model 3
- └─ UX: Multi-browser snippet selection, test result improvements
- └─ DevOps: Docker→Podman migration, Raspberry Pi support



KEY METRICS:

- 6 API unit test PRs
- 5 new features PRs
- 4 deployment/infra PRs



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Q2 2025

 20 PRs | Focus: API Quality, Container Optimization and Test infrastructure

 HIGHLIGHTS:

- └─ Testing: Comprehensive endpoint coverage (SwRequirements, Documents, Mappings)
- └─ Optimization: Container size reduction (165MB), npm vulnerabilities fixed
- └─ Features: LAVA plugin, UI AutoRefresh, Email notifications
- └─ Email: SMTP_SSL support, better login feedback, template system
- └─ Code Quality: Pytest coverage reporting, code decorators, version checks


 KEY METRICS:

- 8 unit test PRs (comprehensive API coverage)
- 5 feature PRs
- 165MB container (50% reduction)
- 3 security fixes

Q3 2025

 25 PRs | Focus: PostgreSQL Migration , SPDX and AI

 HIGHLIGHTS:

- └─  PostgreSQL Migration: SQLite3→PostgreSQL (major architectural change)
- └─ Standards: SPDX 3.0.1 export/import, traceability visualization
- └─ Features: AI integration, document hierarchies
- └─ Deployment: Apache scripts, env file support, database initialization
- └─ Testing: TMT plugin fixes, E2E testing on Ubuntu
- └─ Community: Discord integration, version notifications

 KEY METRICS:

- 1 major infrastructure change (DB migration)
- 5 feature PRs
- 6 deployment/DevOps PRs
- 10+ fixes & improvements

Q4 2025



21 PRs | Focus: Traceability & Document Management



HIGHLIGHTS:

- └─ 🌟 Traceability as Code: Configuration-driven external repo integration
- └─ Documents: Hierarchical mapping, document forking, granular control
- └─ Features: Traceability as Code, Export to HTML and PDF, alert endpoint, release notifications, version displays
- └─ Deployment: Unified scripts, automated backups, CI improvements
- └─ Bug Fixes: SPDX export, port detection, settings initialization



KEY METRICS:

- 1 transformative feature (Traceability as Code)
- 3 major feature PRs
- 5 bug fixes
- 4 deployment improvements

Releases

Jan V1.6.0

Mar V1.6.4

Mar V1.6.5

Aug v1.7.3

Oct V1.8.3

Oct V1.84

Nov V1.8.5

Nov v1.8.6

Forums 2025

FOSDEM - Feb - Bruxelles - [Link](#)

Software Bill of Materials (SBOM) Track - BASIL an open source tool that supports requirements traceability with design SBOM

ELISA Workshop 1 - May - Lund - [Link](#)

KernelCI, BASIL & Testing

Open Source Summit Europe - Amsterdam - [Link](#)

Safety-critical software - BASIL - What's New, What's Next

ELISA Workshop 2 - Nov - Munich - [Link](#)

BASIL

Linux Plumbers - Dec - Tokyo - [Link](#)

Safe Systems with Linux MC - BASIL: Traceability as Code

Support Channels

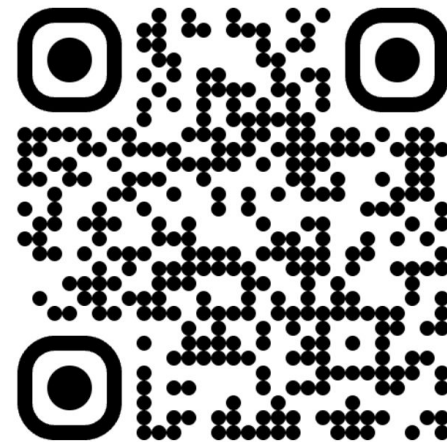
Github - <https://github.com/elisa-tech/BASIL>

ELISA Mailing List

- tool-investigation@lists.elisa.tech

Discord

- Tools WG - basil
- Tools WG - general chat



discord

Instructional Videos

Youtube Channel - <https://www.youtube.com/channel/UC8grEPwi7yqJ3iBUwXJ93-w>

- BASIL - User Files Management - Feb
- BASIL - How to Deploy on a Debian machine - March
- BASIL - tmt (Test Management Tool) - April



Youtube channel

Synergies

InfoMagnus presented “Continuous Compliance in Safety-Critical Open Source Projects” at ELISA Workshop in Munich illustrating their work on a Continuous Compliance framework that can work in synergy with BASIL leveraging the traceability matrix export in SPDX 3 format.

<https://elisa.tech/event/elisa-workshop-munich-2025/>

Traceability as Code

- Proposal to abstract the traceability that can be adopted to any tools
- Goal: Define a standard in traceability definitions
- Move traceability rules in a configuration file
- Scan multiple external git repositories to extract data
- Shareable configuration file generates same results
- Automatically takes into account new work items
- Recreate the traceability of a target git commit
- Not tied to a single work item format
- Can be used in CI as the feature is provided by a command line tool
- Easy to extend with custom rules
- Can be used in CI automating the generation of an SBOM

2026 Goals

Seminar 2026

ELISA Seminar – From Requirements to Code: Managing End-to-End Traceability with BASIL

Wednesday, March 11, 2026, 7:00-8:00 Pacific / 14:00-15:00 UTC / 15:00-16:00 CET

<https://elisa.tech/event/elisa-seminar-from-requirements-to-code-managing-end-to-end-traceability-with-basil/>

Roadmap

Features

- Baseline
- Extend user files section to support nested folders
- Increase API test coverage
- Extend traceability as code to Test Runs
- Extend traceability to link Test Cases to Documents
- Support for git hooks




ELISA

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BASIL - ELISA Instance

BASIL - ELISA online public instance

**BASIL**
The FuSa Spice

admin

Home

Traceability Scanner

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Version: 18.6

Welcome to the public ELISA BASIL instance! Feel free to create an account and start experimenting with the tool.

experimentation **syscalls** test

Search Identifier

API Listing for syscalls Covered 2.7%

1 - 10 of 348

ID	API	Version	Owner	Category	Last Completion	Notifications	Actions
3	accept	1e2d36deb2deldba7...	lpellecc		✓0000		⋮
4	accept4	1e2d36deb2deldba7...	lpellecc		00000		⋮
5	access	1e2d36deb2deldba7...	lpellecc		00000		⋮
6	acct	1e2d36deb2deldba7...	lpellecc		✓0000		⋮
7	add_key	1e2d36deb2deldba7...	lpellecc		00000		⋮
8	adjtimex	1e2d36deb2deldba7...	lpellecc		00000		⋮
9	afs_syscall	1e2d36deb2deldba7...	lpellecc		00000		⋮
10	alarm	1e2d36deb2deldba7...	lpellecc		✓0000		⋮
11	arch_prctl	1e2d36deb2deldba7...	lpellecc		00000		⋮
12	bind	1e2d36deb2deldba7...	lpellecc		✓0000		⋮



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<http://elisa-builder-00.iol.unh.edu:9056/>



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Thanks