codee

Automated Inspection of Fortran/C/C++ Code Using Codee for Correctness, Modernization, Optimization, and Security on HPE/Cray

CUG 25 Tutorial

May 5, 2025

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CUG 2025
NEW YORK
COMPUTING HORIZONS

Agenda

Part I **- 1pm - 2:30pm EDT**

1:00 – 1:15 *Introduction*

1:15 – 1:45 Automated code inspection for correctness, modernization, optimization, and security using Codee

1:45 – 2:30 Hands-on #1: Quickstart Guides of Codee

Part II **- 2:45pm - 4:15pm EDT**

3:00 – 4:15 Hands-on #2: Putting it together using an HPC code

4:15 - 4:30 *Conclusions and closing*

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Some logistics (1)

Mentors

Manuel Arenaz (Codee)

Álvaro Goldar (Codee)

Ulises Costi (Codee)

Tamara Laranga (Codee)

Resources

Google Meet for remote support during the tutorial:
meet.google.com/rvc-wead-yxv

Slack Channel at Cray User Group:
#cug2025-tutorial-2b
https://crayusers.slack.com/archives/C08QRF4F3JP

Google Docs for Q&A:
tinyurl.com/tutorial-qa

Download link of materials (docker, slides,
step-by-step):
tinyurl.com/tutorial-codee-materials

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Some logistics (2)

1. **Install Docker; refer to its official installation instructions if needed:**

- Docker Engine for Linux: https://docs.docker.com/engine/install/
- Docker Desktop for Windows & macOS: https://docs.docker.com/desktop/

2. **Download the materials, containing the Docker image, step-by-step guide, and slides:**

- tinyurl.com/tutorial-codee-materials protected by the password **CUG25CODEE**

3. **Follow "Section 1. Set up the environment" from the step-by-step guide, verifying that Codee's Docker image works as expected:**

- Note that the contents of the Docker container will be reset on exit, requiring you to repeat some of the steps in the section to proceed with the rest of the tutorial:
  - Launch a new Docker container instance
  - Connect VSCode to the new Docker container and install the Modern Fortran extension within it
  - Download the Thornado project and install required APT packages again

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Contact me while at CUG 2025 for further discussion!

Manuel Arenaz

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