



www.multixscale.eu

EESSI Happy Hour

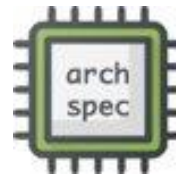
Mondays at 14:00 CE(S)T

Topic Series: EESSI dashboard and ReFrame tests

<https://www.eessi.io/docs/training/2025/happy-hours-sessions>



CernVM-FS



Current session: ReFrame tests

<https://www.eessi.io/docs/training/2025/happy-hours-sessions>



Website: [eessi.io](https://www.eessi.io)

EESSI support portal:

gitlab.com/eessi/support

EESSI Happy Hour

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Session Highlights:

- Goals of the EESSI test suite
- Demo: writing a portable ReFrame test
<https://www.eessi.io/docs/test-suite/writing-portable-tests/>
- Currently available tests
- Current limitations

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Primary goal

- Test the **functionality** and **performance** of EESSI software on **wide range of systems** in a **standardized** way

Challenge

- Every system is different: how to make it **portable**

Solution

- Separate **test-specific** logic from **site-specific** info
 - Test-specific: test classes
 - Site-specific: site configuration file
 - Linking test with site: helper class, hooks, utility functions

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Additional goals

Should work for both EESSI software stack and **local modules**

Running a test should be **flexible**

- Custom cmd-line options (system-partition, module, scale, executable options, threads, processes, ...)

Should run on different **execution environments**: HPC, CI, cloud, laptop

- Include small test variants, skip variants that are too big

Writing a test should be **easy** (and fun)

- Minimize boilerplate, focus on test itself
- Easily extendible (adding test variants)



CernVM-FS



Writing a portable ReFrame test

Demo: mpi4py (MPI for Python)

<https://www.eessi.io/docs/test-suite/writing-portable-tests/#step-by-step-tutorial-for-writing-a-portable-reframe-test>

```
# preparation
git clone https://github.com/EESSI/test-suite.git
unset MODULEPATH
source /cvmfs/software.eessi.io/versions/2023.06/init/bash
module load ReFrame/4.6.2

export RFM_CONFIG_FILES=$PWD/config_demo.py
export RFM_PREFIX=$PWD/reframe_runs
export PYTHONPATH=$PYTHONPATH:$PWD/test-suite
```

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EASYBUILD

Lmod



Currently included tests

1. BLAS (OpenBLAS, BLIS, AOCL-BLAS, MKL)
2. CP2K
3. ESPResSo
4. GROMACS (CPU, GPU)
5. LAMMPS (CPU, GPU)
6. MetalWalls
7. Numpy
8. OpenFOAM
9. OSU Micro-Benchmarks (CPU, GPU)
10. PyTorch-torchvision (CPU, GPU)
11. QuantumESPRESSO
12. TensorFlow (CPU, GPU)

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Current limitations

- Flat (EasyBuild) module naming scheme
- NVIDIA GPUs (CUDA)
- Only tested with Slurm scheduler



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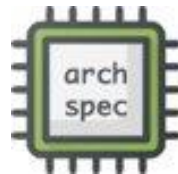
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Next topic series: Scaling Software Builds Across Architectures with Automation

<https://www.eessi.io/docs/training/2025/happy-hours-sessions>



Streaming Optimised
Scientific Software

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