

## **Compact Course:** *Containers in Science: Using Docker and Singularity*

Date: 7.12.21 9-13 Uhr

Instructor: Dr. Dominic Kempf, Research Software Engineer, Scientific Software Center

Venue:

The course will be given as an in-person event if the Covid-19 situation permits. HeiConf will be used otherwise. A final decision with an announcement of the exact venue will be made two weeks prior to the course.

Prerequisites:

Participants should have a basic understanding of the Unix Shell e.g. be able to execute commands and edit files. Participants are required to bring their own laptops to work on during the course. Root privileges and network access (e.g. through Eduroam) on this computer are required. Instructions on how to install Docker on the participants computer will be sent out before the course. If held online, participants are expected to have audio/video equipment to participate in a video conference (HeiConf).

Summary:

Container technologies (e.g. Docker containers) have emerged as a fundamental tool of the cloud computing era. In scientific applications, containerization is used to encapsulate the complex execution environment of research software with a number of goals in mind: Setting up user landscapes for Continuous Integration testing, ensuring reproducibility of execution environments and packaging code to run on an HPC system. The workshop involves live coding sessions where participants exercise the learned commands on their own computers.

Learning objectives:

After the course participants will:

- Understand the basic terminology of containerization
- Know where to find and reuse ready-to-use containers
- Know how to create containers for their daily work on their own
- Have built and run a parallel application within a Singularity container

Registration:

Please register using this webform:

<https://ssc.iwr.uni-heidelberg.de/form/containers-course-ws21>

Materials:

This workshop will use community-contributed lecture materials of [the Carpentries](#):

- <https://carpentries-incubator.github.io/docker-introduction/>
- <https://carpentries-incubator.github.io/singularity-introduction/>