TRENT**OS** Basic Trainings

Remote / Non-remote

This training introduces the fundamental aspects of TRENTOS, a novel secure embedded operating system based on the seL4 microkernel, the only microkernel that offers end-to-end proof of implementation correctness and security enforcement. The training is split into a lecture part, which covers the theoretical background including the basic aspects of seL4 and CAmkES, and a practical part that provides basic hands-on exercises to teach participants how to create their very first TRENTOS application.

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The theoretical part of the training aims to provide the participants with a solid understanding of the underlying technologies of TRENTOS.

It will start from the bottom up with an introduction to relevant hardware aspects before transitioning over to the design, architecture, and essential building blocks of the seL4 microkernel. Fundamental aspects like inter-process communication (IPC) or the core concept of capabilities will be explained in more detail.

Based on top of seL4, the training will also cover the architecture, components, and usage of the CAmkES framework. This framework provides kernel abstractions that are helpful for further OS and application development, allowing the provision of a suitable userland environment on top of seL4.

The last part of the theoretical section will then serve as a detailed introduction to the core concepts and basic software modules of TRENTOS that utilizes both the seL4 microkernel and the CAmkES framework.

Once the theoretical foundation has been laid, the practical part of the course will give participants the chance to hands-on understand the inner workings of the OS by developing a first TRENTOS application that makes use of central OS functionalities such as storage and networking.
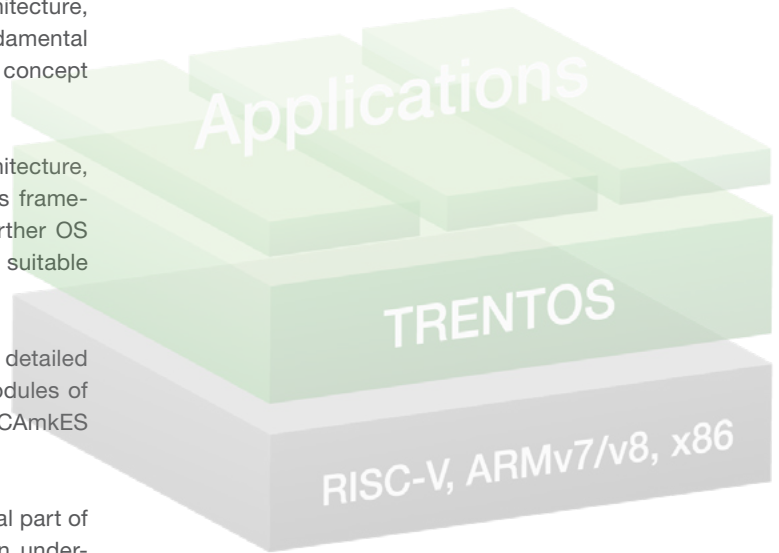
Training including the TRENTOS Evaluation kit

TRENTOS Evaluation kit

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