# SemperOS: A Distributed Capability System

Contributions

- Propose a HW/SW co-designed distributed capability system.
  - Extends M^3 capabilities to support a large number of non-cache-coherent heterogeneous cores
- Implement a new microkernel-based OS called SemperOS
  - Operate the system by employing multiple microkernels and incorporates distributed capability management protocols
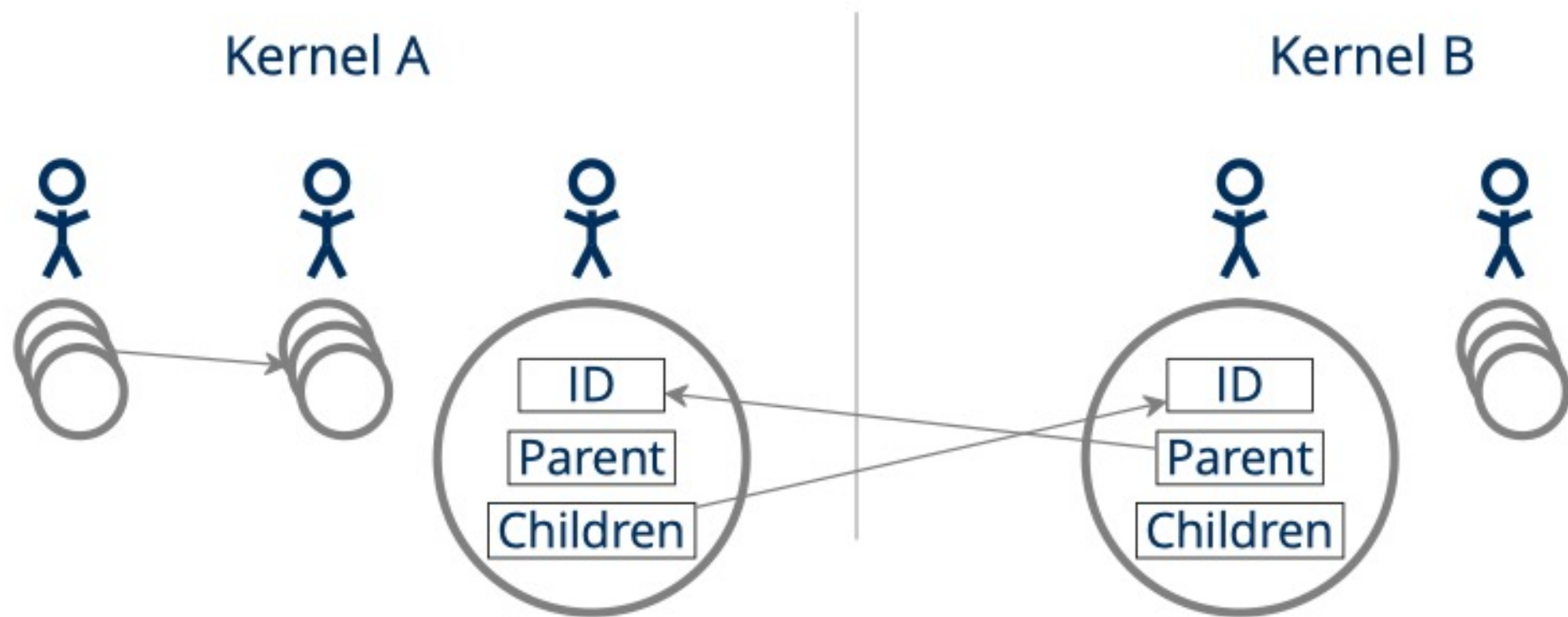- Evaluate the distributed capability management protocols in the gem5 simulator to run real applications: Nginx, SQLite, PostMark and LevelDB
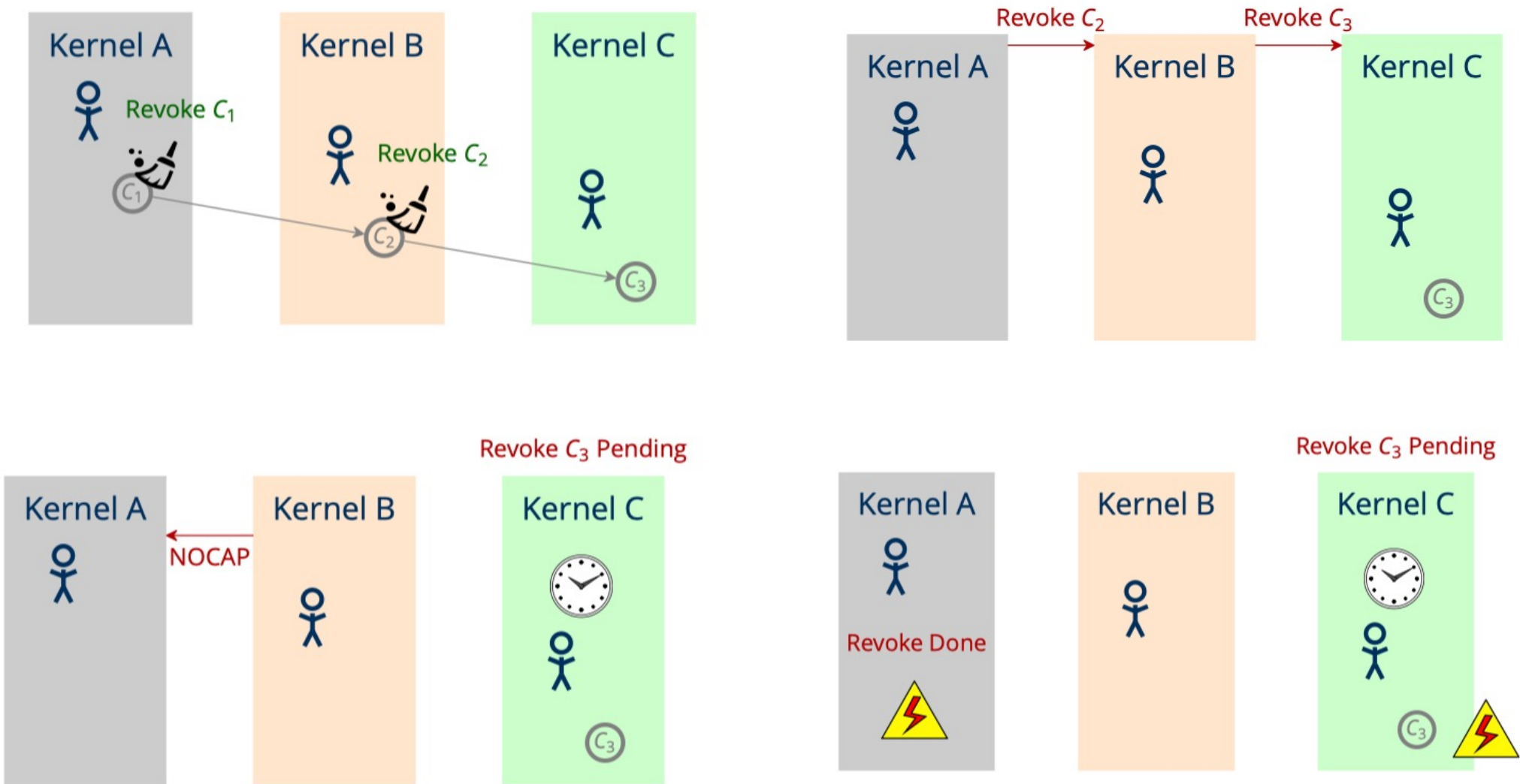
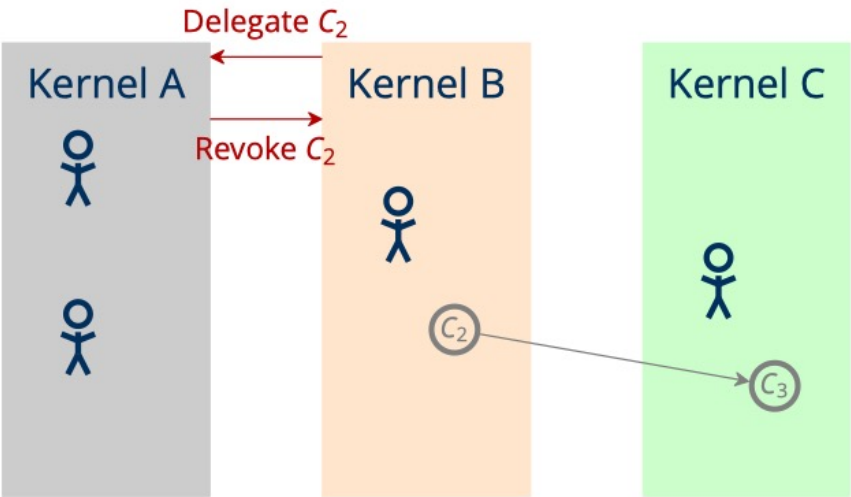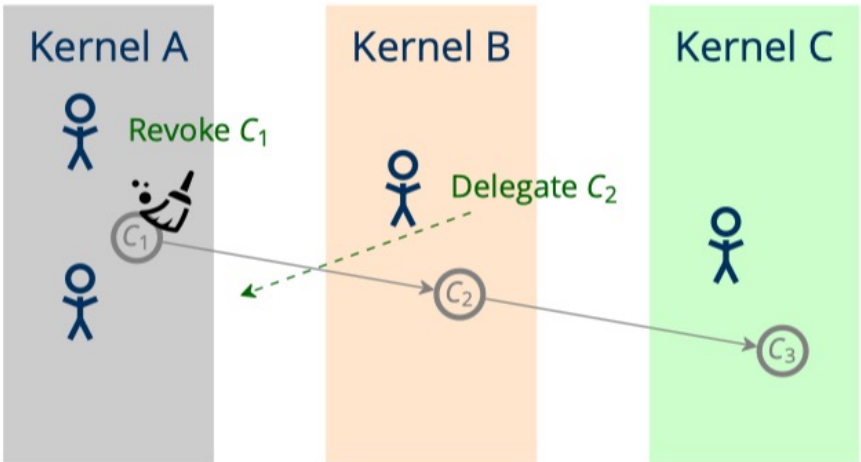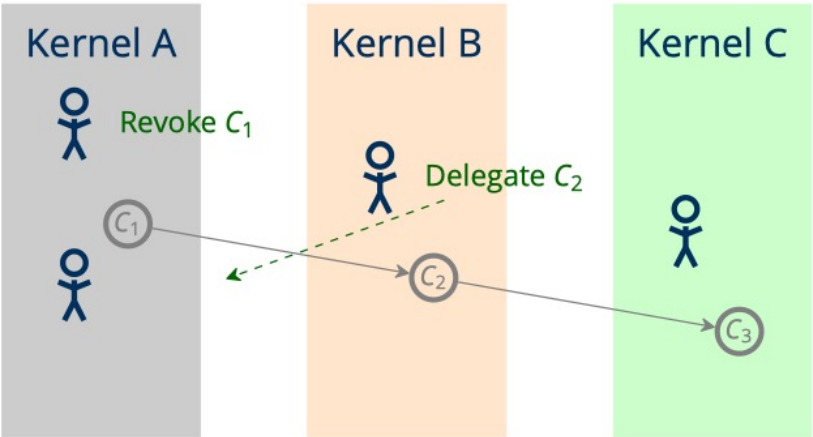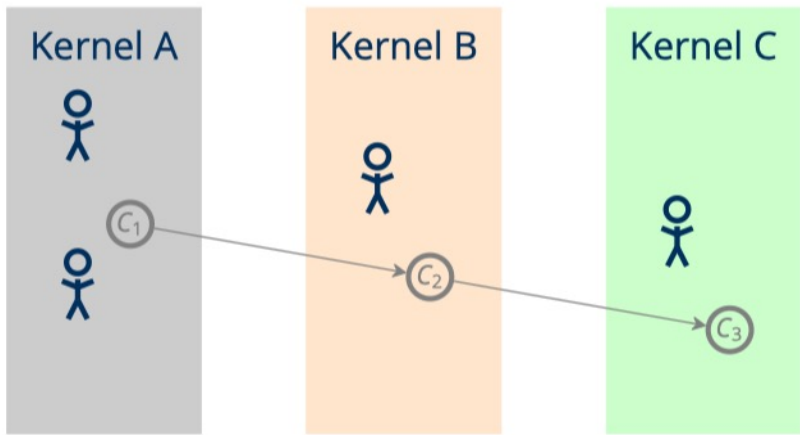# Capability Systems
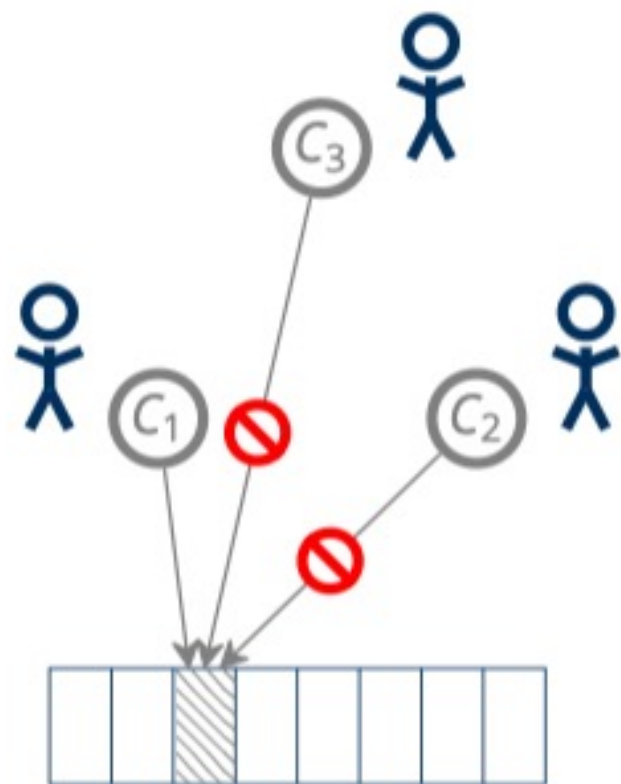
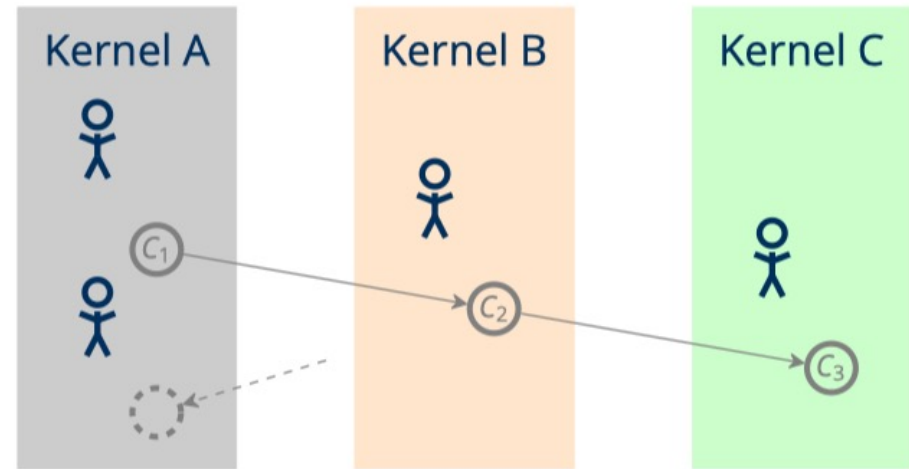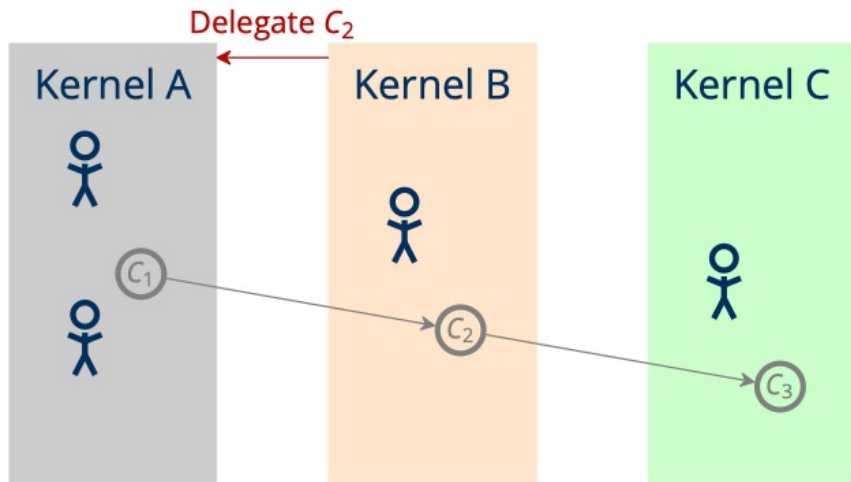Capability Tree
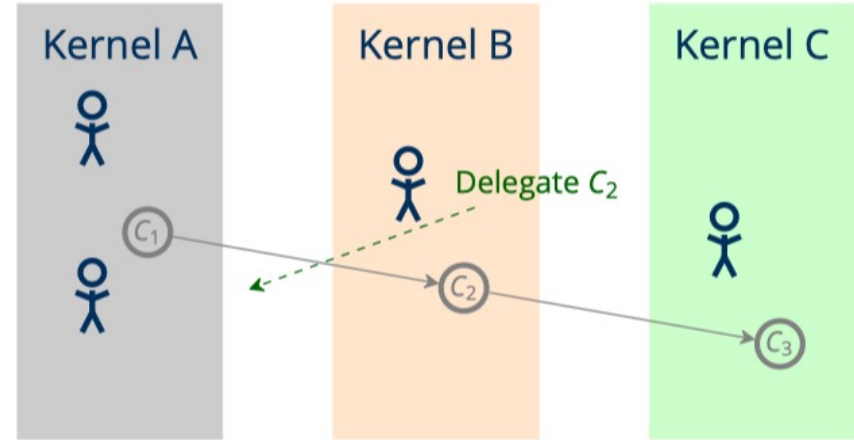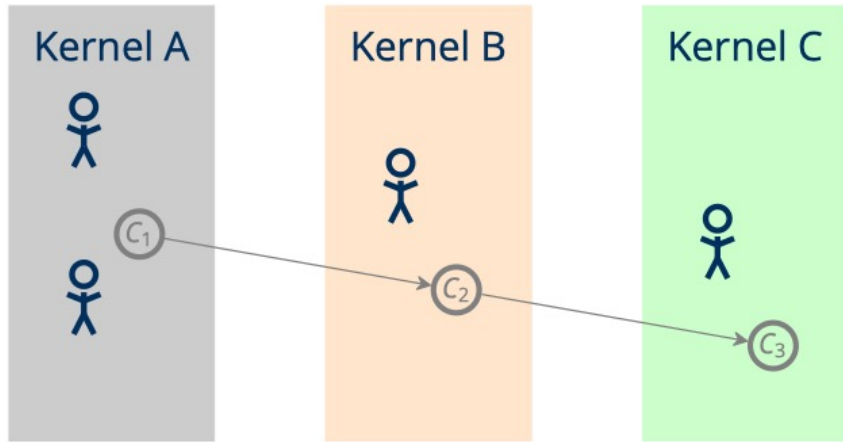
The Distributed Data Lookup – DDL

Revocation

Delegation
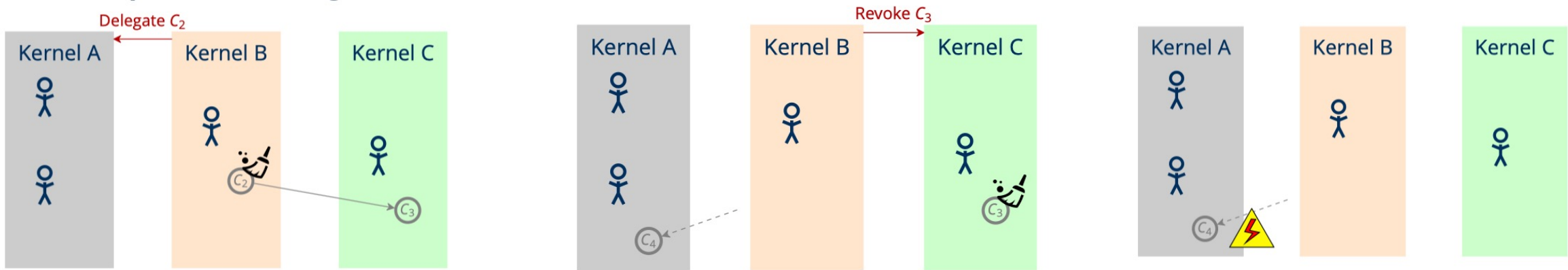
Delegation

Delegation Cont'd

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