



INFORMATICS COLLOQUIUM

Speaker:

Prof. Philippe Bonnet, IT University Copenhagen

Database Storage Management on Computational Storage

Abstract:

After years of focus on main-memory systems, storage management is again considered a significant component of database management systems. A database storage manager typically relies on a file system for storing data on Solid-State Drives (SSDs). The I/O path thus comprises four layers, each independently managing similar indirection, journaling, and garbage collection mechanisms. Such overhead is increasingly problematic. First, the advent of microsecond-scale SSDs makes it necessary to streamline the I/O software stack. Second, the increasing volume of stored data makes it necessary to reduce CPU storage overhead. A solution is to collapse database storage manager, file system, and SSD management layers into a single software layer embedded on computational storage. This talk will briefly review recent evolutions in the storage landscape and present the OX framework for programming storage controllers. We will review the lessons learned integrating OX with LLAMA and RocksDB.

Bio:

Philippe Bonnet is professor at the IT University of Copenhagen. Philippe is an experimental computer scientist with a background in database management. For twenty years, he has explored the design, implementation and evaluation of database systems in the context of successive generations of computer classes.

Date and time: Wednesday November 27, 2019, 11.00 am
Location: Pérolles 21, room C130, Bd de Pérolles 90, Fribourg
Contact person: Prof. Philippe Cudré-Mauroux

The colloquium is free and open to the public.