

NVLH: Crash-consistent Linear Hashing for Non-Volatile Memory

SPEAKER Mr WAN Hu

PhD Student
Department of Computer Science
City University of Hong Kong
Hong Kong

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VENUE CS Seminar Room, Y6405
6th Floor, Yellow Zone
Yeung Kin Man Academic Building
City University of Hong Kong
83 Tat Chee Avenue
Kowloon Tong

ABSTRACT

Linear hashing is a dynamic hashing scheme widely used in modern database systems. However, linear hashing is considered to be difficult and complicated to maintain crash consistency in disk-oriented systems. Without consistency support, linear hashing indexes might need to be rebuilt after a database crash in the case of unwritten changes, thereby degrading performance. This paper revisits linear hashing in the context of fast, byte-addressable non-volatile memory (NVM) and presents NVLH, a novel crash-consistent NVM-resident linear hashing. The proposed linear hashing is persistent and can guarantee persistent data consistency across power failures and crashes. Preliminary experiments show that NVLH improves performance significantly compared to persistent double hashing.

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Supervisor: Dr XUE Chun Jason

Research Interests: Storage Systems; Non-volatile Memory

All are welcome!



In case of questions, please contact Dr XUE Chun Jason at Tel: 3442 9815, E-mail: jasonxue@cityu.edu.hk, or visit the CS Departmental Seminar Web at <http://www.cs.cityu.edu.hk/news/seminars/seminars.html>.

