Computation and storage in the cloud : understanding the trade-offs / Dong Yuan and Yun Yang, Jinjun Chen

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Abstrak

Computation and storage in the cloud is the first comprehensive and systematic work investigating the issue of computation and storage trade-off in the cloud in order to reduce the overall application cost. Scientific applications are usually computation and data intensive, where complex computation tasks take a long time for execution and the generated datasets are often terabytes or petabytes in size. Storing valuable generated application datasets can save their regeneration cost when they are reused, not to mention the waiting time caused by regeneration. However, the large size of the scientific datasets is a big challenge for their storage. By proposing innovative concepts, theorems and algorithms, this book will help bring the cost down dramatically for both cloud users and service providers to run computation and data intensive scientific applications in the cloud. Covers cost models and benchmarking that explain the necessary tradeoffs for both cloud providers and users. Describes several novel strategies for storing application datasets in the cloud. Includes real-world case studies of scientific research applications.