Advanced Block Nested Loop Join for Extending SSD Lifetime

ABSTRACT

Flash memory technologies have recently advanced substantially in terms of densities between cells and read/write bandwidth. Storage technology evolution is leading an evolution of computational technologies, creating renovation pressures on upper computer system architectures including host interfaces such as NVMe, block layer software stacks; OS file systems, and DBMSs.

EXISTING SYSTEM

Flash technology trends have shown that greater densities between flash memory cells increase read/write error rates and shorten solid-state drive (SSD) device lifetimes. This is critical for enterprise systems, causing such problems as service instability and increased total cost of ownership (TCO) because of SSD replacement. Therefore, numerous studies have focused on decreasing the amount of the DBMS writes. However, there has been no research that focused on decreasing the amount of temporary writes, which are primarily created by join processing. In DBMSs, there are two major join-processing algorithms, i.e., hybrid hash join (HHJ) and sort merge join (SMJ), proven to be the best according to DBMS workload; however, the two algorithms produce temporary writes of intermediate results.

DRAWBACKS

- Reduction in flash memory life time.
- cause service instability
- Increase cost of ownership because ssd replacement

PROPOSED SYSTEM

Therefore, we instead look to the block-nested loop join (BNLJ); it is well-known that the two algorithms are better than BNLJ, but BNLJ creates no intermediate result writes. It is reasonable to use BNLJ for a major join algorithm if its performance can be enhanced similar to those of

HHJ and SMJ, considering BNLJ's advantage of extending SSD lifetimes. We proposed ANL join algorithm (ANLJ) to decrease the join processing time of BNLJ by nearly half with no reduction in flash memory life times. The major join algorithms wear flash memory because of their excessive temporary file writes on SSDs.

ADVANTAGES

- Increases flash memory life time.
- Good processing time

MODULES

ANLJ Algorithm

SYSTEM REQUIREMENTS

H/W System Configuration:-

Processor	-	Pentium –III
RAM	-	256 MB (min)
Hard Disk	-	20 GB
Key Board	-	Standard Windows Keyboard
Mouse	-	Two or Three Button Mouse
Monitor	-	SVGA

S/W System Configuration:-

Operating System	:	Windows95/98/2000/XP
Application Server	:	Tomcat5.0/6.X
Front End	:	HTML, Jsp
Scripts	:	JavaScript.

Server side Script : Java Server Pages.

Database : MySQL 5.0

Database Connectivity : JDBC