

Analysis of string matching compression algorithms

ABSTRACT

The improvement rate in microprocessor speed by far exceeds the improvement in DRAM memory. This increasing processor-memory performance gap is the primary obstacle to improved computer system performance. As a result, the size of main memory has increased gradually. To utilize main memory's resources effectively, data compression can be applied. Through compression, the data can be compressed by eliminating redundant elements. Thus, this study incorporates compression to main memory in order to fully utilize its resources and improve performance of data access. This project evaluates the performance of the compression algorithms in order to increase the performance of memory access. The compression algorithms are string matching based which are LZW and LZSS. Through simulation, the effectiveness and compressibility of the algorithms were compared. The performances of the algorithms were evaluated in term of compression time, decompression time and compressed size. The simulation result shows that LZSS is an efficient compression algorithm compared to LZW.

Keyword: LZSS; LZW; String matching; Lossless compression