Developing a multimedia compression algorithm that reduces the size of multimedia files without compromising on quality.

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3 Managing the Storage Space Requirement of Digital Multimedia

A storage server must divide video and audio streams into blocks while storing them on disks. Each such data block may occupy several physical disk blocks. In this section, we will first describe models for storing digital continuous media on individual disks, and then discuss the effects of utilizing disk arrays as well as storage hierarchies.

3.1 Placement of Data Blocks In the broadest terms,

the blocks belonging to a file may be stored contiguously or scattered about the storage device.

Contiguous files are simple to implement, but they are subject to fragmentation problems and can

necessitate enormous copying overheads during insertions and deletions in order to maintain contiguity.

In contrast, scattered placements avoid fragmentation problems and copying overheads. Thus,

contiguous layouts may be useful in read-only systems (e.g. video on demand) but are not viable for

flexible, read-write servers. With regard to continuous media, the choice between contiguous and scattered files relates primarily to intra-file seeks. When reading from a contiguous file, only one initial seek is required to position.

3.2 multiple Disk configurations

So far, we have considered storage on a single disk. If an entire multimedia file is stored on a single disk,

the number of concurrent accesses to that file are limited by the throughput of that disk. One approach

to overcome this limitation is to maintain multiple copies of the file on different disks. However, this

approach is expensive because it requires additional storage space. A more effective approach to this

problem is to scatter the multimedia file across multiple disks. This scattering can be achieved using two techniques: “data striping” and “data interleaving”.