

1999 Paper 4 Question 7

Operating System Functions

The following are three ways which a file system may use to determine which disk blocks make up a given file.

- (a) chaining in a map
- (b) tables of pointers
- (c) extent lists

Briefly describe how each scheme works. [3 marks each]

Describe the benefits and drawbacks of using scheme (c). [6 marks]

You are part of a team designing a distributed filing system which replicates files for performance and fault-tolerance reasons. It is required that rights to a given file can be revoked within T milliseconds ($T \geq 0$). Describe how you would achieve this, commenting on how the value of T would influence your decision. [5 marks]