

An Arithmetic Coding Oriented Single Key Access Control Scheme

J. k. Jan

National Chung Hsing University

R.O.C.

C. C. Chang

National Chung Cheng University

R.O.C.

L. H. Wu

National Chung Hsing University

R.O.C

Abstract

In this paper, we will propose a single key access control scheme. Our scheme assigns each user a key of real numbers between zero and one, which may be viewed as the compressed information including all privileges of the said user to all files. And through a simple formula on the user's key and file's identification number, we can easily compute the corresponding privilege of the information protection system. A famous data compression technique, named arithmetic coding, is employed to construct all users' keys. Meanwhile, a formula to determine the (i,j)th privilege of the i-th user to the j-th file is also derived.

Keywords: Arithmetic coding, Access control, Information protection.