Copyright Protection in P2P Networks by False Pieces Pollution

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Abstract

In P2P networks, the typical methods of protecting copyright files are to distribute false files with similar key words, the same file size and so on as the copyright files or publish volumes of error messages to declare the location of nonexistent copyright files. These ways lead to the difficulty in getting the copyright files for abnormal users. But these methods does not work in P2P networks such as eMule and BitTorrent with commentaries on the shared files because users can sift the true files from the false files or error location of the shared files by the commentaries. In this paper, a new technology of copyright protection by polluting pieces of files is proposed. We distribute false pieces with the same authentication keys as normal pieces but their contents are different, which is called the false pieces with authentication collision. The abnormal users will keep sharing the false pieces of copyright files they have since the false pieces can not be identified. People may have fun to download the copyright files but they can not get the correct copyright files. Due to high cost of finding authentication collision for false pieces, the way of embedding the found authentication collisions in the copyright files is also proposed. Extend simulations show approximately 100 %

protection of copyright files can be reached when the associated false pieces are
distributed early in time once the sharing of copyright files happened.

Keyword：Copyright protection, P2P networks, false pieces pollution