

Cloud based Video Storage System with Privacy Protection

Kang Il Choi, Jung Hee Lee, Bhum Cheol Lee

Network Computing Convergence Lab., ETRI, Daejeon, Korea
forerunner@etri.re.kr, jhlee@etri.re.kr, bclee@etri.re.kr

Abstract— In this paper, we present a novel method to protect privacy information for the Cloud based Video Storage System (CVSS). We present how this system stores the video stream data transferred from the network connected camera such as IP CCTV. As the system receives the video stream, it masks the privacy related part, such as facial information or car plate number and so on, of the video stream data with a scrambling key and it also encrypts the scrambled video stream data with an encryption key. In this paper, we also present how the system retrieves the privacy information protected video image requested by either the network control centre or end users. When the network control centre or end user requests the networked video, it retrieves the corresponding video image from the video storage first. Then, it decrypts the image with the decryption key and unscrambles the decrypted image with the unscrambling key. Then it transfers the network video back to the network control center or to the end-user.

Keywords— Cloud Video Storage System, Privacy Protection



Kang Il Choi received B.S. degree in Computer Science from KAIST, Korea and M.S. degree in Computer Science from Sogang University in 1992 and 1994, respectively. He is currently senior researcher of Electronics and Telecommunications Research Institute (ETRI), Korea. His research interests are Multicore Parallel Processing, Distributed Cloud Data Center, Data Plane Acceleration Technology (Intel DPDK, ODP etc) and Network Virtualization.



Jung Hee Lee received B.E. and M.S. in Electronic Engineering at Kyungpook National University in 1984 and 1991, respectively. She is currently principal researcher of Electronics and Telecommunications Research Institute (ETRI), Korea. Her research interests are Flow based Network Processor, Multicore Parallel Processing, High Speed Parallel Switching and Network Virtualization.



Bhum Cheol Lee received M.S. and Ph.D. degree in Electric Engineering from Yonsei University, Korea in 1983 and 1997, respectively. He is currently Manager of Networking Computing Convergence Lab. in Electronics and Telecommunications Research Institute (ETRI), Korea. His research interests are Smart Network, Parallel Flow Processing and Network Virtualization.