

Data Manipulation: Encryption Program Key Infrastructure Cloud Server Client Cloud Front End \underline{CA} Create TLS Connection Give Certificate Validate Certificate Using OCSP Manipulate a Chunk Request DEK of Chunk Decrypt DEK Decrypted DEK Manipulate Chunk Create DEK Encrypt DEK with KEK DEK and Encrypted DEK Key Exchange with Cloud Server Send Wrapped DEK and Encrypted DEK Unwrap DEK **Encrypt Chunk** Delete DEK