Plaintext   Plaintext   Plaintext

Initialization Vector (IV)

Key   block cipher encryption   Key   block cipher encryption   Key   block cipher encryption

Ciphertext   Ciphertext   Ciphertext

Cipher Block Chaining (CBC) mode encryption

Initialization Vector (IV)

Key   block cipher encryption   Key   block cipher encryption   Key   block cipher encryption

Plaintext   Plaintext   Plaintext

Ciphertext   Ciphertext   Ciphertext
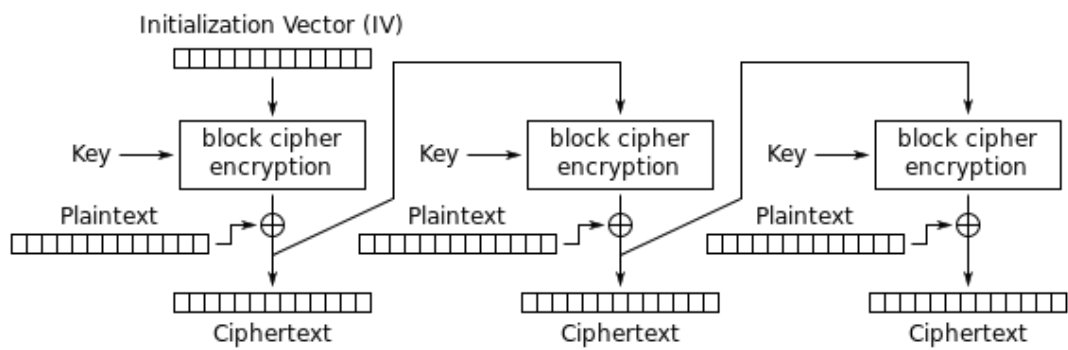
Cipher Feedback (CFB) mode encryption

Initialization Vector (IV)

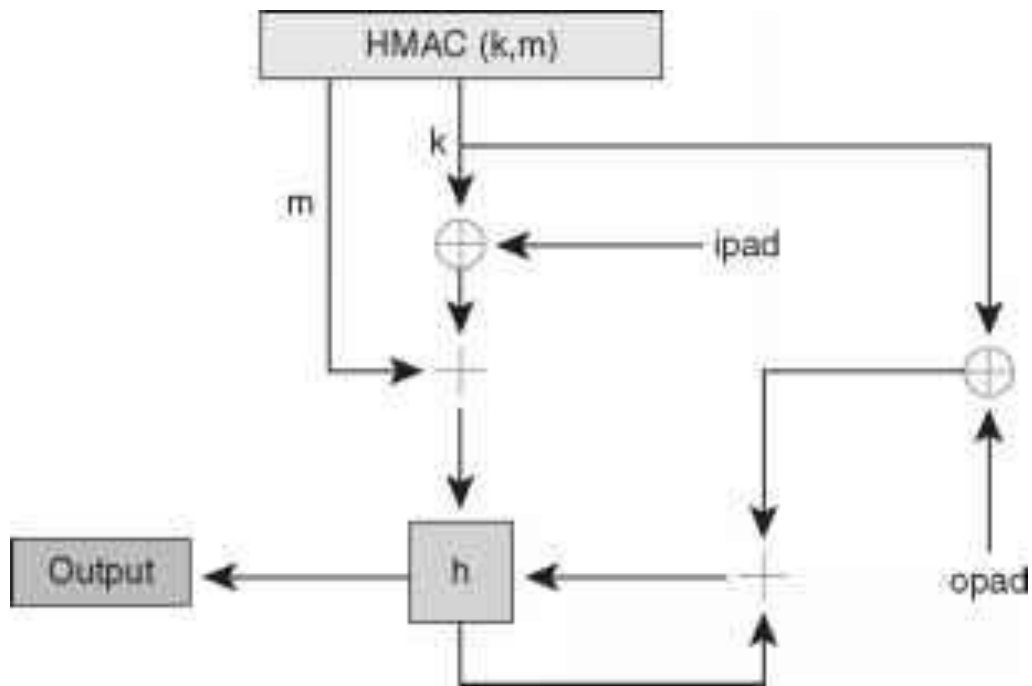Key   block cipher encryption   Key   block cipher encryption   Key   block cipher encryption

Plaintext   Plaintext   Plaintext

Ciphertext   Ciphertext   Ciphertext
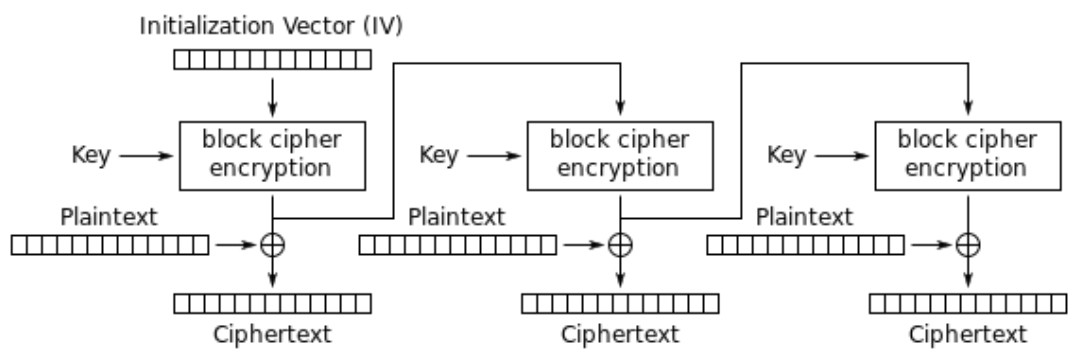
Output Feedback (OFB) mode encryption
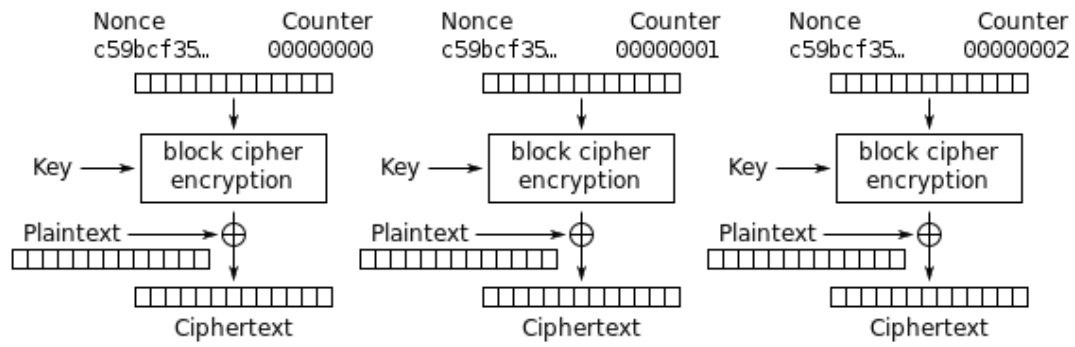
Counter (CTR) mode encryption

HMAC(k,m)= H(H(m X (k+ipad))X(k+opad))