

# Updates to JOSE Specifications Since IETF 84

John Bradley  
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# JSON Web Signature (JWS)

👁 Normative changes made:

👁 Changed `x5c` (X.509 Certificate Chain) from being a single string to being an array of strings, each representing an element of the cert chain



# JSON Web Encryption (JWE)

👁 Normative changes made:

👁 Merged `enc`, `int`, and `kdf` into single `enc` header parameter

👁 Promoted Initialization Vector from a header parameter to a top-level JWE element



# JSON Web Key (JWK)

👁 Normative changes made:

👁 Changed RSA key parameter names `mod` and `exp` to `n` and `e` (matching RFC 3447)



# JSON Web Algorithms (JWA)

- 👁 Normative changes made:
  - 👁 Merged `enc`, `int`, and `kdf` into single `enc` header parameter
  - 👁 Defined composite algorithms `A128CBC+HS256` and `A256CBC+HS512`
  - 👁 Added additional input values to KDF calculations: `output length`, `AlgID`, `PartyUInfo`, `PartyVInfo`
  - 👁 Changed RSA key parameter names `mod` and `exp` to `n` and `e` (matching RFC 3447)