AES-128 and AES-256 are the two most common encryption standards in use today (AES-256 is used by Signal, for instance). It would take 70,000,000,000,000,000,000,000,000 years for it just to crack AES-128.

**Algorithms for encryption** **Industry standards**

AES 128 bits and higher

TDES Minimum double-length keys

RSA 2048 bits and higher

ECC 160 bits and higher

ElGamal 1024 bits and higher

**AES**

AES is also deployed in many different transmission technologies and protocols, such as WPA2 protection for Wi-Fi networks, voice over IP technology (VoIP), and signaling data. The encryption algorithm has become a trusted standard for the United States Government and various organizations.

**TDES**

It was one of the more commonly used encryption schemes before the rise of AES. Microsoft’s Outlook, OneNote, EMV payment systems and System Center Configuration Manager 2012 also use Triple DES to protect user content and system information.

**RSA**

It was traditionally used in [TLS](https://www.comparitech.com/blog/information-security/beginners-guide-ssl/) and was also the original algorithm used in[PGP encryption](https://www.comparitech.com/blog/information-security/pgp-encryption/). RSA is still seen in a range of web browsers, email, VPNs, chat and other communication channels. RSA is also often used to make secure connections between VPN clients and VPN servers. Under protocols like [OpenVPN](https://www.comparitech.com/vpn/protocols/), TLS handshakes can use the RSA algorithm to exchange keys and establish a secure channel.

**ECC**

Typically, ECC is applicable for key agreements, pseudo-random generators, and digital signatures. Researchers are developing ECC as the successor to the popular RSA approach.

**ElGamal**

The encryption technique is used in the recent Pretty Good Privacy (PGP) versions and GNU Privacy Guard. Besides that, ElGamal encryption is used in a hybrid cryptosystem, where the symmetric cryptosystem encrypts the plaintext, then the system deploys ElGamal to encrypt the key.