

This paper dwells theoretically on the application of Elliptic Curves Cryptography (ECC) for the web and Cloud and Cloud Computing environments. ECC is still in its embryonic utility formation unlike the RSA that has gained much ground in its application on the web security as it offers extensive applications to the various aspects of authentications, e-commerce and mobile phones; but it consumes a lot of power that may not be useful to Smartphones in the context of Mobile cloud computing. Notwithstanding, there is some remarkable deployment of ECC for web security currently on-going. This paper establishes the position and role of ECC in the web computing environment. A general introduction to the web and security threats emerging from the use of the web is discussed. Different types of security protocols on the web (IPSec, SSL/TLS and SSH) are discussed. The paper expounds how ECC is deployed on the SSL/TLS protocol-the dominant security protocol on the web- to contain the adversaries. Moreover, we made an effort to discover why people may make the choice of ECC over other cryptographic systems like RSA and discrete logarithm cryptographic systems. Finally, with the hype in mobile Cloud Computing, the paper discusses the security implementations how ECC is applied on Digital Signature