

**Proceedings of
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on**

***In-World Technologies:
Venture into Next Gen***

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DNA BASED SECURITY FOR CLOUD COMPUTING ENVIRONMENT

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ABSTRACT

Cloud Computing is one of the emerging technology, where the users can store their data over internet. The concept, "Access data anytime, anywhere" is the principle behind cloud computing. Data over internet is highly under threat. Providing security for private data over internet is the greatest challenge ever. Cloud data security is the combination of technology solutions, policies, and procedures that you implement to protect cloud-based applications and systems, along with the associated data and user access.

INTRODUCTION:

The amount of data generation and the number of users are exponentially increasing as of current scenario. The easy accessibility of data is the core cause for high demand of the cloud. The demand for securing the data has raised due to the huge production and continuous transition of data over the network, is the biggest challenge for the service providers. Cryptography plays a significant role to sustain the CIA triad of Confidentiality, Integrity and Availability. DNA cryptography is the latest technology to uphold the CIA triad. Security is concerned with the protection of information while transmitting over the network. DNA based cryptographic approach is proposed in this paper to be used for the purpose of encrypting the information. The security includes the confidentiality, integrity, availability, authenticity and non-repudiation.

DNA COMPUTING:

DNA computing is one of the fastest growing fields in both Computer Science and Biology. DNA computing, encodes the genetic information in computers. DNA computing, literally, is the use of DNA (Deoxyribose Nucleic Acid) molecules, to store the data of a living thing. The mechanism of storing the data is achieved by interpreting the combination of DNA molecules. This interpretation helps in finding the solution to the problems such as Hamiltonian Path Problem using DNA strands. DNA computing is highly interdisciplinary area incorporating both computer science and biology. DNA computing possess the feature of massive parallelism, which the current computer lacks. The other features which include fast computation, large number of simultaneous calculations makes DNA computing more

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