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Computer Network Security Strategy Based on Data Encryption Technology

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Abstract: *Recently, there has been a lot of room for the security elements of computer networks due to the rapid proliferation of information. Hacking and data breaches are two security dangers that have already inserted themselves into the computer network security framework's jigsaw puzzle. One timely security measure for computer networks is data encryption technology. It reduces security threats and safeguards data availability, confidentiality, and integrity. The research development and application status of computer network security techniques based on data encryption technology were summarized in this paper using the literature review method, which involved evaluating and analyzing pertinent research material from different nations. It also looked at the benefits and importance of data encryption technology in network security, as well as its drawbacks and future directions. According to research, the TLS/SSL protocol raised email confidentiality breaches from 318 to 81 and decreased email integrity breaches from 378 to 73. This implies that our data security can be successfully safeguarded by data encryption technology. It offers a wide range of potential applications to enhance network security performance. The intricacy and speed of encryption algorithms, for example, are some of the drawbacks and restrictions of data encryption technology itself that require further research. Therefore, it is highly justified to investigate data encryption technology for application-based research in the future, bolstering it with this context for ever-increasing security.*

Keywords: computer network, access control, network security, and data encryption