



**International Conference on Innovative Research in Engineering,
Science and Management (ICIRESM – 2020)
29th June, 2020**

CERTIFICATE NO : ICIRESM /2020/ C0620234

**A SCALABLE AND EFFICIENT USER AUTHENTICATION SCHEME
FOR CLOUD COMPUTING ENVIRONMENTS**

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ABSTRACT

User identification, access control, and guaranteeing the security of data kept in cloud servers are some of the most significant concerns that might arise in a cloud-based environment. Cloud computing is a young technology that is still open to many security problems. As a result, the purpose of this work is to present a user authentication technique that is both effective and scalable for cloud computing environments. By applying the idea of an agent to the model that has been suggested, a number of different tools and strategies have been developed and utilized. As a result, a user authentication agent that is client-based has been implemented so that the identity of the user may be verified on the client side. In addition, a software-as-a-service application that is hosted in the cloud has been employed to validate the procedure of authentication for devices that have not been registered. In addition, there are two different servers that store authentication and cryptography resources from the main servers. This helps reduce the amount of reliance that user authentication and encryption operations have on the main server. Additionally, a cryptography agent was implemented in order to encrypt resources prior to their storage on cloud servers. Overall, the theoretical analysis of the proposed scheme demonstrates that the development of this user authentication and access control model will enhance the reliability and rate of trust in cloud computing environments as an emerging and powerful technology in a variety of industries. This is the conclusion reached by the analysis of the suggested scheme.

Keywords: Efficient User Authentication Scheme, Cloud Computing Environments