DECLARATION

I hereby declare that the thesis entitled "**Secure Healthcare Services using Replicated Kerberos"** which is being submitted to the Delhi Technological University, in partial fulfillment of the requirement for the award of degree of Master of Technology in Software Engineering is an authentic work carried out by me.

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CERTIFICATE

This is to certify that the work being presented in Major Project - I entitled **"Secure Healthcare Services using Replicated Kerberos"** *by* ***Chauthmal Vaibhav Manikrao*** **(2K12/SWE/11),** is authentic record of work carried out under my guidance and supervision and refers other researcher's work which are duly listed in the reference section.

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ABSTRACT

It's been a very long years the healthcare industry has considered as a slow adaptor of technology. But in recent years, the picture is changing with adoption of new information technologies solutions. This got various benefits like improved hardware infrastructure, new advanced medical applications, improved data processing speed, etc. The new healthcare technologies are crucial part of medical treatment and follow up procedures.

To secure these healthcare services and to stop replay attacks is a big task. Here in this work we have deployed replicated Kerberos cryptographic servers. Kerberos will authenticate the service and the clients, while replication of Kerberos will provide reliability, by providing service even if one Kerberos server goes down due to some cause. Also Kerberos will mitigate the replay attacks. We have introduced the Intermediate Server as Load Balancer to share the authentication requests over the replicated Kerberos servers to improve the performance of authentication service in terms of resilience, better response time and availability of authentication service.

The Intermediate Server is implemented using Java RMI Server and all the Kerberos Server which gives authentication service as well as the clients requesting Kerberos authentication service are Java RMI Clients. Hence, the Intermediate Server comprises of implementation of various java interfaces which are requested by its clients i.e. Kerberos Server (KDC's) and Clients requesting its authentication service.

Keywords: Healthcare, Kerberos, Replication, Java Authentication and Authorization Service (JAAS), Generic Services Application Program Interface (GSS-API), Java Remote Method Invocation (RMI)

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES