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**PONDICHERRY – VILLUPURAM – CUDDALORE - CHENNAI**

## **ID2S Password-Authenticated Key Exchange Protocols**

### **ABSTRACT**

In two-server password-authenticated key exchange (PAKE) protocol, a client splits its password and stores two shares of its password in the two servers, respectively, and the two servers then cooperate to authenticate the client without knowing the password of the client. In case one server is compromised by an adversary, the password of the client is required to remain secure. In this paper, we present two compilers that transform any two-party PAKE protocol to a two-server PAKE protocol on the basis of the identity-based cryptography, called ID2S PAKE protocol. By the compilers, we can construct ID2S PAKE protocols which achieve implicit authentication. As long as the underlying two-party PAKE protocol and identity-based encryption or signature scheme have provable security without random oracles, the ID2S PAKE protocols constructed by the compilers can be proven to be secure without random oracles. Compared with the Katz et al.'s two-server PAKE protocol with provable security without random oracles, our ID2S PAKE protocol can save from 22% to 66% of computation in each server.

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### **EXISTING SYSTEM:**

Earlier password-based authentication systems transmitted a cryptographic hash of the password over a public channel which makes the hash value accessible to an attacker. When this is done, and it is very common, the attacker can work offline, rapidly testing possible passwords against the true password's hash value. Studies have consistently shown that a large fraction of user-chosen passwords are readily guessed automatically.

### **DISADVANTAGES:**

- 1.The hash value accessible to an attacker.
- 2.The attacker can work offline, rapidly testing possible passwords against the true password's hash value.
- 3.An adversary can always succeed by trying all passwords one-by-one in an on-line impersonation attack. A protocol is secure if this is the best an adversary can do. The on-line attacks correspond to Send queries.

### **PROPOSED SYSTEM:**

Typical examples are the "encrypted key exchange" (EKE) protocols given by Bellare and Merritt, where two parties, who share a password, exchange messages encrypted by the password, and establish a common secret key. The formal model of security for PAKE was

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firstly Based on the security model, PAKE protocols have been proposed and proved to be secure.

A security model for ID2S PAKE protocol was given and a compiler that transforms any two-party PAKE protocol to an ID2S PAKE protocol was proposed on the basis of the Cramer-Shoup public key encryption scheme and any identity-based encryption scheme, such as the Waters' scheme.

#### **ADVANTAGE OF PROPOSED SYSTEM:**

- 1.Establish a cryptographic key for secure communications after authentication.
- 2.The sense that an adversary attacking the system cannot determine session keys with advantage non-negligibly greater than that of an online dictionary attack.

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### SYSTEM SPECIFICATION

#### HARDWARE REQUIREMENTS:

- ✓ Processor - Pentium –III
- ✓ Speed - 1.1 Ghz
- ✓ RAM - 256 MB(min)
- ✓ Hard Disk - 20 GB
- ✓ Floppy Drive - 1.44 MB
- ✓ Key Board - Standard Windows Keyboard
- ✓ Mouse - Two or Three Button Mouse
- ✓ Monitor - SVGA

#### SOFTWARE REQUIREMENTS:

- ✓ Operating System - Windows 7/8
- ✓ Application Server - Tomcat 5.0
- ✓ Front End - Java
- ✓ IDE - NetBeans 7.1

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