Protecting Investors Privacy in Online Trading System

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Abstract:
The web based exchanging framework is a built up worldview to scatter the information from financial specialists to Share-holders in an approximately coupled way utilizing a system of broker. The delicate information could be exposed or revealed to the outside entity if broker get compromised and the intermediaries themselves are interested to find out about the information. A portion of the methodologies enable Brokers to perform malicious activities. However, if malicious brokers collude with malicious entities, they can learn the interests of investors, even when the interests are encrypted. In this project, we present a trading system that ensures confidentiality of the investors in the presence of untrusted brokers by splitting up the operations of brokers. Whether, each broker can able to acquire partial information regarding what the operation they are performing in the trading. The usage of unique identity for the investor will be providing more secure trading environment. Furthermore, our solution resists collusion attacks between untrusted brokers and malicious.

I. INTRODUCTION

Online trading is simply buying and selling assets through a brokerage's internet-based proprietary trading platforms. The use of online trading increased dramatically in the mid- to late-90s with the introduction of affordable high-speed computers and internet connections. Stocks, bonds, mutual funds, can all be traded online. Traditionally, investors and traders have to call their brokerage firms to make a trade for them. The investment representative must also confirm the commission costs for making the trade. When all has been established, the broker would place the trade in the system which is linked to trading floors. The advent of the internet in the digital era, more and more investors are using online trading platforms. In such an environment there are some brokers who try to know the confidential details of the investors and there may be a chance to outsource the data and to threaten the associated entity with that data. So that, in an increasing utility of the online there must be additional security concerns should be considered and must the data should be secured in order to protect from the third party entities.

II. EXISTING SYSTEM

In existing systems present several security and privacy challenges as the data is routed through a broker in a multi-party system. Indeed, investors may send sensitive data, such as confidential information used for trading. Thus, the brokers could collect sensitive information about the investors whether all the information are gathered by broker for trading. Thus every information will be kept under single data storage so that it can be revealed or outsourced. Unfortunately, these servers can be compromised or hacked. Since brokers handle sensitive data and could be compromised, it is reasonable to treat them as untrusted entities

III. PROPOSED SYSTEM

In our proposed system, the investor generates some interests and the related tags. Before publishing to the broker, it encrypts both the tags and the necessary data for the trading operation. Each investor defines according to its interests, such that it receives only the partial data. The set of brokers are employed with different functionalities and managed in different domains. The main idea of our solution is to divide the match operations between into three different phases where each phase is performed by a different type of broker. In our system, we allow at most two types of brokers to collude and still be able to protect the content of the investors data. Each type of broker only knows some partial information. Thus, even if malicious brokers collude with any two types of the brokers (out of the three types supported in our solution), they are unable to infer every private data of the investor.
B. Online Broker
Online broker is the first broker involved in the trading process. The main responsibility is to create an account for an investor as well as to create unique identity for that investor to perform the trading process. The account involves the each every share records of the investor. The rules for creating account will be followed by the online broker. Once the account created, then the investor’s request for buying share will be transferred to the next broker i.e Stock exchange.

C. Stock Exchange:
Stock exchange having the information about the Shareholders who are all willing to sell their shares. This module holds the investors partial data and the shareholders share details. Then the matching operation will be performed for transferring the company details. This broker initiates an IPO process (initial Public outsourcing) to outsource the details of the shares to the investor.

D. Depository
The depository module is responsible for the financial related account maintenance involved in the trading process. For maintaining the account related details between the investors and the shareholders and this module performs the basic banking process. The depository is the entity to provide authorization to the brokers who are all involved in the trading process. After the authentication given by the depository module the brokers can able to involve in the share trading.

IV. RESULT AND DISCUSSION:
We propose a solution for secure trading between the trading entities without the data regarding the trading will not be revealed or identified by the brokers. We use different types of brokers and splits the matching operation into set of phases, where each phase is executed by a different type of broker. Even in the case of malicious brokers colluding with third party entity, they are unable to get the data. In this work, the brokers are assumed to follow the protocol honestly. In practice, compromised brokers may tamper the data actively. As future work, we aim to investigate approaches to identify the malicious behaviour of brokers. In general, our goal is to make brokers accountable for actions they perform.

ACKNOWLEDGMENT
I would like to express great fullness to U.G..Department of Computer Science Engineering, Prince. Dr. K. Vasudevan College of Engineering and Technology, ponmar.

V. REFERENCES


