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Honeyword Generation for a Banking Website

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Abstract - *Recently, Juels and Rivest projected honeyword (decoy passwords) to identify attacks against hashed password databases. For every user account, the correct password is kept with many honeywords so as to sense impersonation. If honeywords are selected properly, a cyber-attacker who wish to access someone's system can see the decoy account. Moreover, getting into with a honeyword to login can trigger associate alarm notifying the administrator and user about a password file breach. At slight expense of increasing the storage demand, the author introduces a straightforward and effective resolution to the detection of hacking of user account. During this study, we have a tendency to scrutinize the honeyword system and gift some remarks to spotlight potential weak points. Additionally we advise another approach to protect our system from mistreatment brute force attack.*

Key Words: Honeyword, Decoy, Attack, Alarm, Detection

1. INTRODUCTION

Passwords which are not very strong enought can be cracked easily , which can harm the security of customers and companies like Microsoft, Dell, etc Most hackers take advantage of these weak passwords. These recent events have confirmed that the susceptible password storage strategies are present on many net web sites. For instance, the LinkedIn passwords have been the using SHA-1 algorithm without a salt. So the passwords within the eHarmony gadget have been also saved with use of unsalted MD5 hashes. Therefore, as soon as a password file is stolen, by using the password cracking techniques, one can easily convert the password to plaintext.

In this scenario, there are troubles that should be taken into consideration to overcome these safety problems: First, passwords should be secured by means of taking suitable precautions and storing with their hash values computed via salting or some other complex mechanisms. Therefore, for an attacker it would be difficult to convert hashes to acquire plaintext passwords. The second factor is that a computer machine needs to know whether a password disclosure incident has occurred or not so that it can take preventive measures. Honeypot is one of the strategies to pick out incidence of a password database breach. In this method, the administrator purposely creates decoy window to trap adversaries and detects a password disclosure attack.

1.1 Literature Survey

This thought has been altered by Herley and Florencio to shield web based managing an account from password attacks. As indicated by the investigation, for every client wrong login endeavors with a few passwords prompt honeypot accounts, i.e. malignant conduct is perceived. For example, there are 128 potential outcomes for a 9-digit password and let framework joins 10000 wrong secret key to honeypot accounts, so the foe playing out the savage power assault 10000 times more prone to hit a honeypot account than the veritable record. In this model, the honeywords sets are put away with the genuine client password set to hide the genuine passwords, along these lines constraining a foe to complete a lot of online work before getting the right data. As of late, Juels and Rivest have introduced the honeyword instrument to identify an enemy who endeavors to login with split passwords. Essentially, for each username, an arrangement of sweet words is developed with the end goal that just a single component is the right secret key and the others are honeywords (imitation passwords). Thus, when an enemy tries to go into the framework with a honeyword, a caution is activated to tell the executive about a secret word spillage.

2. METHODOLOGY

2.1 Attack Scenarios

There are three conceivable assault situations identifying with passwords. They are as per the following:

A. Stolen files of password hashes

An enemy takes the archive of mystery key hashes. Further, using disengaged from the net monster control figuring he gets the correct passwords. A foe can take the mystery word hash records on different structures, or on single system at various circumstances.

B. Easily guessable password

A noteworthy division of customers select passwords so insufficiently that an adversary can without a lot of an extend copy in any occasion a couple of customers of a system by endeavoring logins with consistent passwords. Client enter individual points of interest as a secret word. Adversary simply gather your own data to get access into

private framework. So at whatever point client dole out secret word it's not effectively guessable.

C. Obvious secret key

Enemy sees the customer's mystery key when it being entered, or an adversary sees it on a yellow stickie on a screen. A one-time watchword generator like RSA's Secure ID token gives incredible confirmation against this hazard.

2.2 Chaffing-with-a-password-technique

In chaffing with a password technique, all the passwords in the database act as a honeyword for the other users except for the real user. For example in a database, we have stored each user's name and password with a index associated with it. Whenever a user enters his username and password, system matches the user's password with the index. If it matches then it's a authenticated login. In password file, all passwords and usernames are switched in such a way that there is no correct set of username and password. So when some adversary enters a password for a username, system checks for the index of that password. If it does not matches with correct index, we identify it as a honeyword. In this way, system identifies password breach attack.

Index	User	Real Password
1	Jane	Password 1
2	Alex	Password 2
3	Arya	Password 3
4	Sansa	Password 4

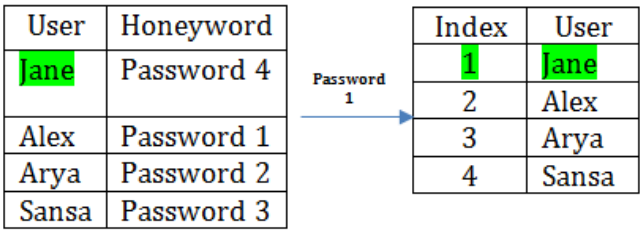

Fig-1: A genuine user login

For a genuine user login , jane enters enter her password and honeychecker matches the entered password with the index. Since both the index and the password matches, access is granted.

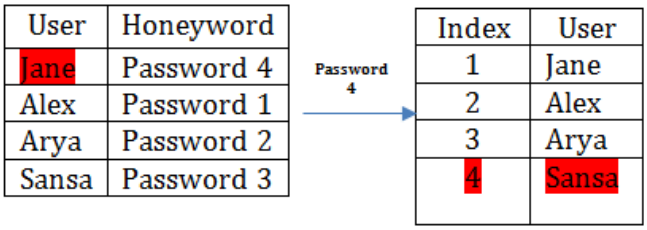

Fig-2: A malicious login

For malicious login , honey checker checks the index of the entered password with user's index. Clearly, it does not match and an attack is identified. When such incident occurs, decoy files come into action. Adversary is led to fake account. By the time he realizes this is a trap, his IP address and the details would have been tracked.

BANKING MODEL :

An authenticate person who has an authorized access to the system is said to be a user. Here, User is going to register into system. While registration, for the given password by the user, the system generates honeywords using honeyword generation technique. By using strong and secure hashing techniques(MD5) the hashes for honeywords as well as actual password are generated and stored into the table in database. Along with Hash Values the original password hash is also stored at specific random position. While registration, a valid e-mail id need to be provided. Whenever a new user registers, administrator sets up a fake account for that user. Since we have designed a system for banking, we have provided many options to user like upload and download files and passbook. All the transactions are present in the log. One can also transfer money to other users of the system. In case a user forgets password, we have "forgot password?" for that. An OTP(one time password) is generated and sent to the user's email id. With its help, user can update his password. We have also provides a "my key " feature. With this help, user can search for a particular file of the system. Each file has its own unique key. whenever there would be a attack, both user and admin would be notified.

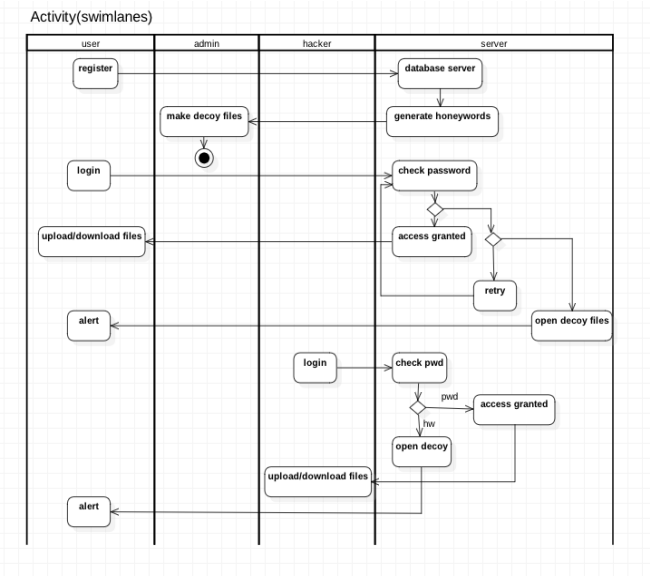

Fig-3: Activity – Swim lanes

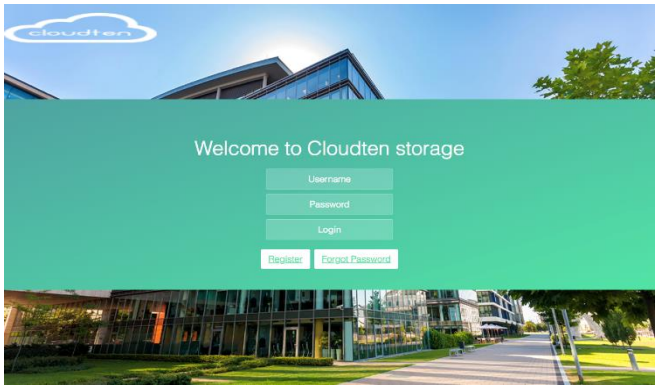

Fig-4: Screenshot 1

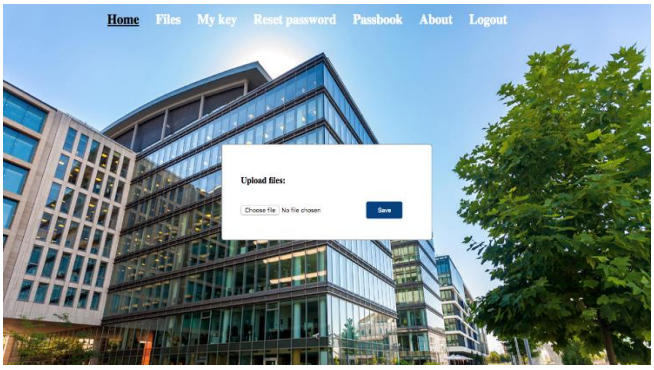

Fig-5: Screenshot 2

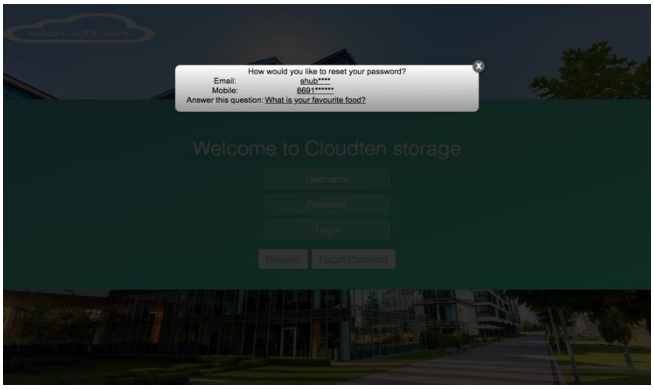

Fig-6: Screenshot 3

Fig-7: Screenshot 7

3. CONCLUSIONS

In this study, we've analyzed the protection of the honeyword system. this method helps to user and admin. User gets instant alert once some hacker tried to access his account. Additionally hacker can see the list of decoy files within the system. Thus he feels that he have hacked the account. We've conferred a replacement approach to form the generation rule as shut on attribute by generating honeywords with every which way choosing passwords that belong to alternative users within the system. We've compared the planned model with alternative strategies with reference to DoS resistance, flatness, and storage price and usefulness properties.

REFERENCES

[1] A. Juels and R. L. Rivest, "Honeywords: Making Password cracking Detectable," in Proceedings of the 2013 ACM SIGSAC Conference on Computer & Communications Security, ser. CCS '13. New York, NY, USA: ACM, 2013, pp. 145–160. [Online]. Available: http://doi.acm.org/10.1145/2508859.2516671

[2] F. Cohen, "The Use of Deception Techniques: Honeypots and Decoys," Handbook of Information Security, vol. 3, pp. 646–655, 2006.

[3] D. Mirante and C. Justin, "Understanding Password Database Compromises," Dept. of Computer Science and Engineering Polytechnic Inst. of NYU, Tech. Rep. TR-CSE-2013-02, 2013.

[4] M. H. Almeshekah, E. H. Spafford, and M. J. Atallah, "Improving Security using Deception," Center for Education and Research Information Assurance and Security, Purdue University, Tech. Rep. CERIAS Tech Report 2013-13, 2013.

[5] C. Herley and D. Florencio, "Protecting financial institutions from brute-force attacks," in SEC'08, 2008, pp. 681–685.