Evolution, Mitigation, and Prevention of Ransomware

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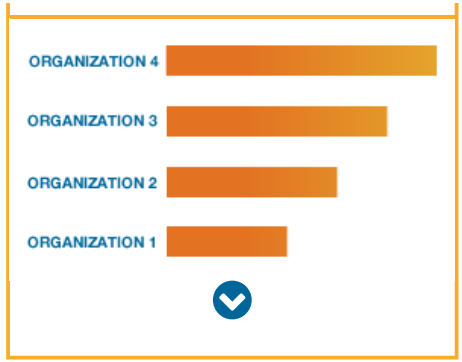
Ikra Afzal Chesti; Mamoona Humayun; Najm Us Sama; NZ Jhanjhi **All Authors**



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Abstract:

Tremendous growth of ransom malware demands valuable security methods to protect individuals and organizations. Ransomware or ransom malware is a type of malware that restricts users from accessing their files or system and demands a ransom payment to get back access to files. The hacked files are encrypted and asked for payment to decrypt and redeliver the files back to the user. To regain access back to hacked files one has to make digital payment. Ransomware of this type is dangerous as it hacks all the files and fails all the security methods available on the system also the possibility for retrieving your file is zero percent. Even if the payment is done still one cannot be sure that files will be delivered back to the user. The earliest ransomware came into existence in 1980, at that time one has to pay through snail mail. Ransomware is considered as the most widespread malware since 1989 and had caused global financial losses both to individuals and big organizations. Every year this loss is increasing. Therefore, protection of our data from ransomware is necessary. Today, originators of ransomware demand for payment via bitcoins or cryptocurrency. This paper provides the detailed overview about ransomware, its evolution, the reasons for paying or not paying a ransom, the existing approaches to avoid this problem, and the recovery techniques in case of infection.

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encryption and demanding ransom payment from the user to redeliver the files [2]. It can also attack mobile devices by altering the PIN of the device and demands a ransom payment to get the new pin. The ransom payment is usually done in bitcoins or cryptocurrency. Ransomware is immensely increasing business. The computer security company Symantec assesses that ransomware obtains under duress millions of currency from targets each year. Symantec also reports that there is no guarantee that an encrypted file will be delivered back to the targeted user in case of ransom payment is done[1]. Based on their behavior ransomware is divided into two basic categories [3] as shown in the below Fig. 1. Fig. 1.

Types of ransomware

Authors

Figures

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