

Exploiting Bugs to Take Advantage of Vulnerabilities on the Operating System

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Abstract—One of the biggest issues that an operating system can suffer through is the privilege escalation. Privilege escalation is the act of exploiting a bug, design flaw or configuration oversight in an operating system or software application to gain elevated access to resources that are normally protected from application or user. Understanding weaknesses and flaws of a security level issue for the operating system can help to implement better approaches and techniques to improve the software itself. Having the latest update and patches of the operating system doesn't mean it is completely secure. Windows, for example, has a series of vulnerabilities that can affect the operating system and can't be solved by Microsoft because the updates can create incompatibilities with an older system or with some security network protocols. Privilege Escalation technique takes advantage of these vulnerabilities to gain privileges within a remote system, run applications and commands on it. The main focus on this paper is to list the vulnerabilities that have been demonstrated by third party systems in different operating systems and provide a technical point of view on what could be done to avoid vulnerabilities or impacts. Successful privilege escalation attacks enable attackers to increase their level of control over target systems, such that they are free to access any data or make any configuration changes required to ensure freedom of operation and persistent access to the target system (Williams, 2016). It brings the study importance of the way in which current systems are defended from this mechanism.

Index Terms—Computer Society, IEEE, IEEEtran, journal, L^AT_EX, paper, template.

1 INTRODUCTION

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2 CONCLUSION

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APPENDIX A

PROOF OF THE FIRST ZONKLAR EQUATION

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APPENDIX B

Appendix two text goes here.

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REFERENCES

- [1] H. Kopka & P. W. Daly, *A Guide to L^AT_EX*, 3rd ed. Harlow, England: Addison-Wesley, 1999.
- [2] A. Kurmus, N. Ioannou, M. Neugschwandtner, N. Papandreou & T. Parnell *From random block corruption to privilege escalation: A filesystem attack from rowhammer-like attacks* (Zurich, Switzerland, 2017).
- [3] M. Rangwala, P. Zhang, X. Zou & F. Li *A taxonomy of privilege escalation attacks in Android applications* (Indianapolis, USA, 2014).

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