Bring Security to the Next Level Using External Black Box Penetration Test

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Abstract. As cyber attack increases, the demand for security proffessionals who possess network penetration testing and ethical hacking skills are more requeried. Network security penetration tests are an excellent method for evaluating the network security level of IT services. The method of penetration testing is complex and without the appropriate care, disastrous effects on the systems that are being tested can happen. This paper gives an overview on how a penetration test can be successfully done. The penetration tests were made on the network of Faculty of Computer Science and Engineering (FCSE) in Skopje. The methodology used in this paper is showing the process that penetration testers should go through. The idea behind the methodology is that the penetration testers should follow a predefined format during tests. We used a mixed one using three existing methodologies. The purpose of this paper is to document and describe how a pen test should be performed and what the potential impacts and effects could be. The results of the realized series of penetration tests show many security flaws on several IT systems.

Keywords: Penetration Test, network security, methodology, vulnerability.