ABSTRACT

IMPLEMENTATION AND ANALYSIS VULNERABILITY MANAGEMENT ON THREE VERSIONS OF UBUNTU USING OPEN SOURCE VULNERABILITY SCANNER BASED ON CIS SECURITY METRICS

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This study analyzes vulnerability management on Ubuntu 18.04, 20.04 and 22.04 based on the CIS Security Metrics standard. The scanning tool used to obtain vulnerability data is OpenSCAP. The CIS Security Metrics standard is limited to Vulnerability Management, Patch Management, Configuration Management, and change management. The test scenario in this study was carried out by scanning vulnerabilities on three versions of Ubuntu. Based on CIS Security Metrics, the vulnerability scanning coverage aspect cannot determine which version of Ubuntu upgrade to use. Then in terms of mean time to mitigate vulnerabilities, number of known vulnerabilities, mean time to patch, percentage of configuration, and configuration management coverage, you can already determine which version of Ubuntu to upgrade to use, namely upgrading the Ubuntu version directly to Ubuntu 22.04 from Ubuntu 18.04. Analysis of the percent of systems no known severe vulnerabilities aspect showed data on 6 unknown vulnerabilities from the vulnerability ID, value, and level, in this aspect it has no effect in determining the decision to upgrade the Ubuntu version because the vulnerability has been removed from the vulnerability database. The mean time to complete change aspect analysis cannot provide advice on upgrading Ubuntu versions because it does not discuss vulnerabilities and only provides references for the release of Ubuntu versions 18.04, 20.04 and 22.04. Recommended conclusion is using Ubuntu version 22.04 directly from version 18.04 because there are fewer vulnerabilities when compared to using Ubuntu version 18.04 to version 20.04 and version 20.04 to version 22.04. Suggestions from this study are to increase the specifications of the hardware devices used to conduct research and look for standards and also more complex vulnerability scanners so that vulnerabilities are more detailed.

Keywords : vulnerability, **CIS** *security metrics*, **Ubuntu,** *management*