

DAFTAR ISI

ABSTRAK	i
<i>ABSTRACT</i>	ii
LEMBAR PENGESAHAN	iii
LEMBAR PERNYATAAN ORISINALITAS	iv
KATA PENGANTAR	v
DAFTAR ISI	vi
DAFTAR GAMBAR	viii
DAFTAR TABEL	ix
DAFTAR LAMPIRAN	x
DAFTAR SINGKATAN	xi
BAB I PENDAHULUAN	1
I.1 Latar Belakang	1
I.2 Rumusan Masalah	3
I.3 Tujuan Penelitian	3
I.4 Manfaat Penelitian	3
I.5 Batasan Penelitian	3
I.6 Sistematika Penulisan	4
BAB II TINJAUAN PUSTAKA	5
II.1 Penelitian Terdahulu	5
II.2 <i>Big Data</i>	7
II.3 <i>Virtualization</i>	8
II.4 Hadoop	9
II.4.1 HDFS	9
II.4.2 Mapreduce	10
II.4.3 Arsitektur Infrastruktur Hadoop	10
II.5 <i>Data Security</i>	11
II.5.1 CIA (<i>Confidentiality, Integrity, Availability</i>)	11
II.6 <i>Security Audit</i>	12
II.7 Greenbone Security Manager Trial	13
II.7.1 Greenbone Community Feed	13
II.8 <i>Hardening</i>	14
II.9 <i>Encryption dan Decryption</i>	14
II.10 Hadoop <i>Data at Rest Encryption</i>	16
II.11 Hadoop <i>Data-in-transit Encryption</i>	17
II.12 eCryptfs	18
BAB III METODOLOGI PENELITIAN	20
III.1 Model Konseptual	20
III.2 Sistematika Penelitian	21
BAB IV DESAIN SISTEM DAN IMPLEMENTASI PENGUJIAN	23
IV.1 Rancangan Sistem	23
IV.1.1 <i>Hardware</i>	23
IV.1.2 <i>Software</i>	24
IV.1.3 Rancangan Topologi	25
IV.2 Hadoop <i>Multi-node</i>	26
IV.3 Implementasi GSM Trial	27
IV.4 Implementasi Hadoop <i>Data at Rest Encryption</i>	32
IV.4.1 Implementasi <i>Filesystem Encryption</i>	32
IV.5 Implementasi Hadoop <i>Data-in-Transit Encryption</i>	36

IV.5.1 Hadoop RPC <i>Encryption</i>	37
IV 5.2 HDFS <i>data transfer protocol encryption</i>	39
BAB V HASIL DAN ANALISIS	43
V.1 Hasil <i>Vulnerability Scanning</i> GSM Trial	43
V.2 Hasil Implementasi <i>Hardening Encryption</i>	46
BAB VI KESIMPULAN DAN SARAN	52
VI.1 Kesimpulan	52
VI.2 Saran	52
DAFTAR PUSTAKA	54
LAMPIRAN 1 INSTALASI HADOOP	56
LAMPIRAN 2 DOKUMENTASI PENGOLAHAN DATA MENGGUNAKAN PROGRAM WORDCOUNT	68
LAMPIRAN 3 INSTALASI GSM (GREENBONE SECURITY MANAGER) TRIAL	69
LAMPIRAN 4 INSTALASI ECRYPTFS	78