

Acknowledgement

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Dedication

I dedicate this thesis to my mother, father, supervisor, and my teachers. Without their patience, understanding, and support, the completion of this work would not be possible.

Abstract

Selection of an appropriate Database Management System (DBMS) to support the particular database system is considered as crucial stage in the associated development lifecycle. The selection process supposes undertaken prior physical design stage and based on numerous DBMS evaluation features and criteria, which in line with the given system requirements. Recently, security features raise and become a foremost selection criterion as well as an elementary system requirement. Therefore, this study contributes to such context by conducting a comparative study intended for the security perception and features of the most three famed and widely used Relational DBMSs, namely Oracle, MS SQL Server, and MySQL. The study proposes and formulates security evaluation features derived from the standard criteria in order to accomplish such appraisal. The result of the study classifies and grades the three chosen RDBMSs consistent with the developed security evaluation criteria, which ranks Oracle on the topmost.

المستخلص

عملية اختيار نظام ادارة قواعد البيانات تعتبر من المراحل المهمة والحاسمة في دورة حياة تطوير النظام، وهذه العملية يفترض القيام بها قبل مرحلة التصميم المادي للنظام وتتم وفقا للعديد من الخصائص والمعايير التي تتماشى مع متطلبات النظام. في الآونة الأخيرة، أصبحت المعايير والخصائص الامنية من اهم الاشياء التي يتم علي ضوئها اختيار نظام ادارة قواعد البيانات. ولذلك، فإن هذه الدراسة تساهم في هذا المجال من خلال إجراء دراسة مقارنة لخصائص وملامح السرية لثلاثة من أكثر نظم ادارة قواعد البيانات العلائقية شيوعا واستخداما، وهي (Oracle, MS SQL Server, MySQL). وتقتصر هذه الدراسة على خصائص ومعايير امنية مستمدة من المعايير الموحدة من أجل تقييم هذه النظم. ونتيجة لهذه الدراسة نجد ان (Oracle) يأتي في المرتبة الاولى، ويليه (MS SQL Server)، ثم (MySQL).

TABLE OF CONTENTS

<i>Topic</i>	<i>Page No</i>
Acknowledgement	I
Dedication	II
Abstract	III
المستخلص	IV
Table of Contents	V
List of Tables	XI
List of Figures	X
CHAPTER ONE: Introduction	
1.1 Introduction	1
1.2 Research Problem	2
1.3 Research Objectives	3
1.4 Importance of the Research	3
1.5 Scope of the Research	3
1.5 Thesis Organization	3
CHAPTER TWO: Literature Review	
2.1 Information Security	5
2.1.1 Security Classification for Information	6
2.1.2 Access Control	6
2.2 Database Security	7
2.2.1 Access Control	7
2.2.2 Auditing	9
2.2.3 Authentication	10
2.2.4 Encryption	10
2.2.5 Data Integrity	10
2.3 RDBMS Security	11
2.4 Security Evaluation Criteria	13
2.4.1 The Orange Book	14
2.4.2 Information Technology Security Evaluation Criteria (ITSEC)	18
2.4.3 The Common Criteria	20
2.5 Related Work	23

CHAPTER THREE: The Selected Security Evaluation Criteria	
Introduction	26
3.1 The Selected Criteria	26
3.1.1 High Availability	26
3.1.1.1 Addressing System Failures	27
3.1.1.2 Addressing Data Failures	27
3.1.1.3 Addressing Human Errors	27
3.1.1.4 Addressing System Maintenance	28
3.1.1.5 Addressing Data Maintenance	28
3.2 Access Control	28
3.2.1 Label-Based Access Control (LBAC)	28
3.2.2 Role-Based Access Control (RBAC)	29
3.2.3 Virtual Private Database (VPD)	29
3.2.4 View	30
3.2.5 Authentication	30
3.3 Auditing	31
3.4 Encryption	31
3.4.1 Stored Data Encryption Using DBMS_CRYPTO Hashing	31
3.5 Data Integrity	33
CHAPTER FOUR: Comparative Study for the Chosen RDBMSs	
Introduction	35
4.1 High Availability	35
4.1.1 Addressing System Failures	35
4.1.2 Addressing Data Failures	38
4.1.3 Addressing Disaster Recovery	40
4.1.3.1 Oracle Data Guard	40
4.1.3.2 Microsoft Database Mirroring	40
4.1.3.3 Microsoft Log Shipping	40
4.1.3.4 MYSQL DRBD(Distributed Replication Block Device)	41
4.1.4 Addressing Human Errors	44
4.1.5 Addressing System Maintenance	47
4.1.6 Addressing Data Maintenance	48
4.2 Access Control	55
4.2.1 Oracle Access Control	55
4.2.1.1 Discretionary Access Control	55
4.2.1.2 Oracle Label Security	55
4.2.2 SQL Server Access Control	61
4.2.2.1 SQL Server Roles	51
4.2.2.2 SQL Server Views	64
4.2.2.3 SQL Server Authentication	64
4.2.3 MySQL Access Control	65
4.2.3.1 MY SQL Views	66
4.2.3.2 MYSQL Authentication	66

4.3 Auditing	68
4.3.1 Oracle Auditing	68
4.3.1.1 Statement Auditing	69
4.3.1.2 Privilege Auditing	69
4.3.1.3 Schema Object Auditing	69
4.3.1.4 Fine-Grained Auditing	69
4.3.2 SQL Server Auditing	69
4.3.3 MySQL Auditing	70
4.3.3.1 MySQL Trigger	70
4.4 Encryption	71
4.4.1 Oracle Data and Network Encryption	72
4.4.1 Transparent Data Encryption	72
4.4.2 SQL Server Data and Network Encryption	73
4.4.3 MYSQL Data and Network Encryption	74
4.5 Data Integrity	75
4.5.1 Oracle Data Integrity	75
4.5.1.1 Data Integrity Algorithms supported	75
4.6 Result Discussion	77
CHAPTER FIVE: Conclusion, Limitation, and Future Work	
Conclusion	81
Limitation	81
Future Work	82
References	83

LIST OF TABLES

<i>Table NO.</i>	<i>Table Title</i>	<i>Page No.</i>
Table 3.1	The selected security evaluation criteria	34
Table 4.1	Addressing System Failures	36
Table 4.2	Addressing Data Failures	38
Table 4.3	Addressing Disaster Recovery	42
Table 4.4	Addressing Human Errors	45
Table 4.5	Addressing System Maintenance	47
Table 4.6	Addressing Data Maintenance	49
Table 4.7	High Availability tools Comparison	51
Table 4.8	High Availability features comparison	52
Table 4.9	Access Control Features Comparison	67
Table 4.10	Encryption Algorithms Comparison	74
Table 4.11	Data Integrity Algorithms Comparison	76
Table 4.12	Database security features Comparison	77

LIST OF FIGURES

<i>Figure NO.</i>	<i>Figure Title</i>	<i>Page No.</i>
Figure 2.1	Oracle faults VS. Microsoft faults	24
Figure 2.2	Oracle 10g VS. Microsoft SQL server 2005 faults	24
Figure 4.1	High Availability tools supported: Oracle vs. SQL Server vs. MYSQL	54
Figure 4.2	Data Access Control tools supported: Oracle vs. SQL Server vs. MYSQL	68
Figure 4.3	Auditing tools supported: Oracle vs. SQL Server vs. MYSQL	71
Figure 4.4	Encryption algorithms supported Oracle vs. SQL Server vs. MYSQL	75
Figure 4.5	Data Integrity algorithms supported Oracle vs. SQL Server vs. MYSQL	76
Figure 4.6	Security Features Comparison Oracle vs. SQL Server vs. MYSQL	80