

OpenLink Virtuoso as the universal database engine for the semantic web applications

Master Thesis

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Preface

This thesis is submitted in complete fulfilment of the requirements for the author in the Masters's Degree in Advanced Computer Systems on The University of the Basque Country. It contains work done from May to September 2012. The supervisor of the project was Arantza Illarramendi, Ph.D. from The Faculty of Computer Science of San Sebastián. The document of this thesis has been made solely by the author who focused mainly on the analysis of the OpenLink Virtuoso database engine.

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Abstract

You can put an abstract of what the Thesis is about here.

Chapter 1

Introduction

1.1 Motivation

Why do we make the research? Requirements of the Semantics Web Research. Current solutions. The main research papers that are going to be used as the basis for the study. There is no definite guide for the software (feel the gap between the detailed documentation and superficial general-purpose manuals).

1.2 The OpenLink Virtuoso System

The general info about the Virtuoso System. It's properties and applications - general description.

1.3 Objectives

The main objective of the thesis[?] is to analyse and describe the properties of the Virtuoso System that are crucial for the research over the semantic webs.

Chapter 2

Problem analysis

2.1 Semantic Webs

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2.1.1 Field of study

2.1.2 Research trends

2.1.3 Data Storage

2.2 Data Storage Formats

2.2.1 Relational DBs

2.2.2 RDF

2.3 Overview of existing systems

...

2.3.1 Commercial Platforms

Platform 1

...

2.3.2 OpenSource Platforms

Platform 11

...

2.4 General properties of the Virtuoso System

2.4.1 History of development

2.4.2 Main applications

2.4.3 Aspects important for the Semantic Webs

2.5 Used Tools

2.5.1 LUBM Benchmark

Chapter 3

System analysis

3.1 Internal Structure

3.1.1 Reasoning

Forward/backward chaining.

3.1.2 SPARQL end-point

3.2 Comparison with similar systems

3.2.1 Virtuoso vs Oracle NoSQL

Chapter 4

Conclusions

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Appendix I

First appendix

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This is the first appendix.

I.a First section

This is the first section of the first appendix.

Publications

This is a list of publications.

- **My first article**
M. Y. Name
Journal **year**, *volume*, pages.