

1. Record Nr.	UNINA9910810226003321
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Titolo	RDF database systems : triples storage and SPARQL query processing / / by Olivier Cure, Guillaume Blin
Pubbl/distr/stampa	Waltham, Massachusetts : , : Morgan Kaufmann, , 2015 ©2015
ISBN	0-12-800470-3
Edizione	[First edition.]
Descrizione fisica	1 online resource (256 p.)
Disciplina	005.74
Soggetti	Database management RDF (Document markup language) Query languages (Computer science) Querying (Computer science)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Cover; Title Page; Copyright Page; Contents; List of Figures and Tables; Preface; Who should read this book; Organization of the book; Guidelines for using this book; Conventions used in this book; Supplemental materials; Acknowledgments; Chapter one - Introduction; 1.1 - Big data; 1.2 - Web of data and the semantic web; 1.3 - RDF data management; 1.4 - Dimensions for comparing RDF stores; Chapter two - Database Management Systems; 2.1 - Technologies prevailing in the relational domain; 2.1.1 - Relational model; 2.1.2 - Indexes; 2.1.3 - Query processing; 2.1.4 - ACID transactions and OLTP 2.1.5 - Row versus column stores2.1.6 - Distributed and parallel DBMS; 2.2 - Technologies prevailing in the NoSQL ecosystem; 2.2.1 - Introduction; 2.2.2 - CAP and BASE; 2.2.3 - NoSQL systems; Key-value stores; Document stores; Column family; Graph database stores; 2.2.4 - MapReduce; 2.3 - Evolutions of RDBMS and NoSQL systems; 2.4 - Summary; Chapter three - RDF and the Semantic Web Stack; 3.1 - Semantic web; 3.2 - RDF; 3.2.1 - RDF/XML; 3.2.2 - N-triples; 3.2.3 - N3; 3.2.4 - Turtle; 3.2.5 - Other serializations; 3.3 - SPARQL; 3.4 - SPARQL 1.1 update; 3.4.1 - Graph update 3.4.2 - Graph management3.5 - Ontology languages; 3.5.1 - RDFS;

3.5.2 - OWL; 3.5.3 - OWL 2; 3.5.4 - OWL 2 profiles; 3.5.5 - SKOS; 3.5.6 - RDFS+; 3.5.7 - OWL Horst; 3.6 - Reasoning; 3.7 - Benchmarks; 3.8 - Building semantic web applications; 3.9 - Summary; Chapter four - RDF Dictionaries: String Encoding; 4.1 - Encoding motivation; 4.2 - Classic encoding; 4.2.1 - Classic string dictionary techniques; Hashing; Front coding; Grammar based; Self-indexing; 4.2.2 - RDF dictionaries; 4.3 - Smart encoding; 4.4 - Allowing a full text search in literals 4.5 - Compressing large amounts of data 4.6 Summary; Chapter five - Storage and Indexing of RDF Data; 5.1 - Introduction; 5.1.1 - Native approaches; 5.1.2 - Non-native approaches; 5.1.3 - Native and non-native comparison; 5.1.4 - Chapter overview; 5.2 - Native storage approach; 5.2.1 - RDF engines based on multiple indexes; 5.2.1.1 - Project emerging from academia; 5.2.1.2 - Production-ready systems; 5.2.2 - Highly compressed storage; 5.2.2.1 - Multiple indexes; 5.2.2.2 - Self-index engines; 5.3 - Non-native storage approach; 5.3.1 - Storage systems based on RDBMS; 5.3.1.1 - Triples table 5.3.1.2 - Property table 5.3.1.3 - Vertical partitioning; 5.3.1.4 - Other approaches; 5.3.2 - Ontology-based data access; 5.3.3 - NoSQL; 5.3.3.1 - Key-value store; 5.3.3.2 - Document stores; 5.3.3.3 - Column family; 5.3.3.4 - Graph databases; 5.4 - Complementary surveys; 5.5 - Summary; Chapter six - Query Processing; 6.1 - Introduction; 6.2 - Query parsing; 6.3 - Query rewriting; 6.3.1 - Query simplification; 6.3.2 - Query encoding and decoding; 6.3.3 - Query translation; 6.4 - Optimization; 6.4.1 - SPARQL graphs; SPARQL join graph; SPARQL variable graph; SPARQL hybrid graph 6.4.2 - Heuristics-based query optimization

Sommario/riassunto

RDF Database Systems is a cutting-edge guide that distills everything you need to know to effectively use or design an RDF database. This book starts with the basics of linked open data and covers the most recent research, practice, and technologies to help you leverage semantic technology. With an approach that combines technical detail with theoretical background, this book shows how to design and develop semantic web applications, data models, indexing and query processing solutions. Understand the Semantic Web, RDF, RDFS, SPARQL, and OWL within the context of relational database management
