

Title

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Abstract

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1 Introduction

The UDC SQL component provides two concrete data cube implementations which use a SQL database as a data store: one writable data cube implementation based on the star schema concept, and one read-only data cube implementation for exposing existing databases as data cubes without modification.

2 Star Schema Based Implementation

A star schema is a common and efficient way of storing data cubes in relational databases. In a star schema, there is a central table which has one row for each data cube cell, containing its address and its measure values. This central table is called the *fact table*. In the fact table, data cube cells are addressed by combinations of record keys. The record keys are resolvable into record descriptors via *dimension tables*. Each dimension of the data cube has its own dimension table which is just a mapping between record keys and record descriptors.

3 Database Wrapper Implementation

Publishing data in existing databases without modification is an essential requirement of the UDC System. To accomplish this, a data cube implementation which wraps existing databases was created.