

Abstract: Storing and Querying of Time Series Sensor Data on ORDBMS

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Abstract

This paper describes how to support time series sensor data on the modern object-relational DBMS. Sensors are being widely deployed for monitoring continuously changing environments and objects. In most sensor network applications, the sensor readings are reported to a centralized system, and stored into some conventional database systems. These database systems lack functionalities for storing and querying sensor data. Most ORDBMS provide user-defined function (UDF) features that allow the user to include application-specific functions into the DBMS for their execution within database queries. In this paper, we define new data types and table creation functions for various sensor data. Also, we propose some time series functions for sensor queries. These new data types and functions are implemented in user-defined functions on the PostgreSQL object-relational database system. Our experiment results show not only that the performance of proposed functions is reasonable, but also that the new queries provide dramatic useful functions for sensor applications.

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