Chapter 12

Transaction Management and Concurrency Control

Web Resources

1. Concurrency Control and Recovery in Database Systems

   Concurrency Control and Recovery in Database Systems by Philip A. Bernstein,
   Vassos Hadzilacos, and Nathan Goodman is made available in its entirety online.
   Available: http://research.microsoft.com/~philbe/ccontrol/

2. Concurrency Control

   This site describes the behaviour of the PostgreSQL database system when two or
   more sessions try to access the same data at the same time. Application of
   concurrency control in PostgreSQL is discussed in detail.
   http://developer.postgresql.org/pgdocs/postgres/mvcc.html

3. Advanced SQL Server Locking

   SQL Server has a number of lock types and different granularities on these locks. The
   article provides an applied viewpoint to the locking mechanisms as they are used in
   SQL server. http://www.sql-server-
   performance.com/articles/per/advanced_sql_locking_p1.aspx

4. Programming your applications for concurrency using DB2

   The IBM DB2 Universal Database Guide provides help on DB2 and describes how to
   design to ensure concurrency is improved.
   Available:
   http://publib.boulder.ibm.com/infocenter/dzichelp/v2r2/index.jsp?topic=/com.ibm.db
   29.doc.pmtg/db2z_programapps4concurrency.htm

5. DBAsupport.com

   The article presents a basic introduction to transaction processing in PL/SQL and
   primarily focuses on the Autonomous transaction processing feature of PL/SQL.
   Also, the changes made in Oracle 9i are discussed.
   http://www.dbasupport.com/oracle/ora9i/autonomoustrans.shtml

6. Optimistic Locking with Concurrency in Oracle

   The article presents two ways of locking in Oracle: Pessimistic and Optimistic. The
   author presents different problems with pessimistic locking and discusses how
   optimistic locking can be gained via concurrency.
   http://www.orafaq.com/papers/locking.pdf

7. Data Concurrency and Consistency in ORACLE 10g

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This document provides some good definitions of concurrency and how data is kept consistent in a multi-user environment.

Available:http://download.oracle.com/docs/cd/B19306_01/server.102/b14220/consist.htm#i13945

8. Features, strengths and weaknesses comparison between MS SQL 2005 (Yukon) and Oracle 10g databases.

This paper contains a comparison between Oracle 10g and Microsoft SQL Server 2005 databases. Some of the items compared include concurrency strategies and locking protocols.

Available:

http://www.wisdomforce.com/dweb/resources/docs/MSSQL2005_ORACLE10g_compare.pdf

9. ORACLE 11g New features

This article discusses the new features of ORACLE 11g.

Available: http://www.dba-oracle.com/oracle11g/oracle_11g_new_features.htm

10. Concurrency in ORACLE 11g.

This website contains a downloadable chapter on how the ORACLE 11g database maintains concurrency of data.

Available:

http://download.oracle.com/docs/cd/B28359_01/server.111/b28318/consist.htm#i13945